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MICRO PHOTO DIVISION
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JLN

U.S. DEPARTMENT OF COMMERCE
OFFICIAL GAZETTE of the UNITED STATES PATENT OFFICE
September 2, 1969 Volume 866 Number 1

PATENTS

NOTICES

Board of Appeals Decisions Rendered in the Month of July 1969

Examiner affirmed	114
Examiner affirmed in part	19
Examiner reversed	33
Total	166

Disclaimer

3,303,825.—*Robert Cowan Shuman*, Janesville, and *Francis John Meinhardt*, Edgerton, Wis. BALL POINT WRITING INSTRUMENTS. Patent dated Feb. 14, 1967. Disclaimer filed July 17, 1969, by the assignee, *The Parker Pen Company*.

Hereby enters this disclaimer to claims 5, 6, 7, 8, 9, 10, 11 and 12 of said patent.

TITLE 37—PATENTS, TRADEMARKS, AND COPYRIGHTS

Chapter I—Patent Office, Department of Commerce

PART 1—RULES OF PRACTICE IN PATENT CASES

Interference Practice

Notice of proposed rule making regarding changes in the rules of the Patent Office relating to interference practice was published in the Federal Register of December 28, 1968 (33 F.R. 19949). Interested persons were invited to submit written comments, suggestions, or objections, and to attend a hearing scheduled for April 1, 1969.

Full consideration has been given to the comments and testimony received and changes in the text of the original proposal have been effected where appropriate.

In consideration of the foregoing, and pursuant to the authority contained in section 6 of the Act of July 19, 1952 (66 Stat. 793; 35 U.S.C. 6), Parts 1 of Title 37, Code of Federal Regulations, is hereby amended as follows:

1. Paragraph (b) of § 1.55 is amended by deleting from the third sentence the words "when specified in §§ 1.216 and 1.224" and inserting in lieu thereof "(§ 1.224)." As thus amended, paragraph (b) reads as follows:

§ 1.55 *Serial number and filing date of application.*

* * * * *

(b) An applicant may claim the benefit of the filing date of a prior foreign application under the conditions specified in 35 U.S.C. 119. The claim to priority need be in no special form and may be made by the attorney or agent if the foreign application is referred to in the oath as required by § 1.65. The claim for priority and the certified copy of the foreign application specified in the second paragraph of 35 U.S.C. 119 must be filed in the case of interference (§ 1.224); when necessary to overcome the date of a reference relied upon by the examiner; or when specifically required by the examiner; and in all other cases they must be filed not later than the date the final fee is paid. If the papers filed are not in the English language, a translation need not be filed except in the three particular instances specified in the preceding sentence, in which event a sworn translation or a translation certified as accurate by a sworn or official translator must be filed.

2. Paragraph (c) of § 1.204 is revised to read as follows:

§ 1.204 *Interference with a patent; affidavit by junior applicant.*

* * * * *

(c) When the effective filing date of an applicant is more than 3 months subsequent to the effective filing date of the patentee, the applicant, before the interference will be declared, shall file two copies of affidavits by himself, if possible, and by one or more corroborating witnesses, supported by documentary evidence if available, each setting out a factual description of acts and circumstances performed or observed by the affiant, which collectively would prima facie entitle him to an award of priority with respect to the effective filing date of the patent. This showing must be accompanied by an explanation of the basis on which he believes that the facts set forth would overcome the effective filing date of the patent. Failure to satisfy the provisions of this section may result in summary judgment against the applicant under § 1.228. Upon a showing of sufficient cause, an affidavit on information and belief as to the expected testimony of a witness whose testimony is necessary to overcome the filing date of the patent may be accepted in lieu of an affidavit by such witness. If the examiner finds the case to be otherwise in condition for the declaration of an interference he will consider this material only to the extent of determining whether a date prior to the effective filing date of the patent is alleged, and if so, the interference will be declared.

3. Paragraph (b) of § 1.215 is amended by deleting the words "including any" after "preliminary statement," second occurrence, and inserting in lieu thereof the words "and all." As thus amended, paragraph (b) reads as follows:

§ 1.215 *Preliminary statement required.*

* * * * *

(b) A party who files a preliminary statement shall at the same time notify all opposing parties of that fact and by the time set for that purpose he shall serve a copy of his preliminary statement and all attached documents on every opposing party from whom he has received notification of the filing of a statement.

* * * * *

4. Paragraph (a) of § 1.216 is amended by deleting from the second sentence "including a brief statement as to the

New Applications Received During June 1969

Patents	8843
Designs	562
Plant Patents	4
Reissues	46
Total	9455

Issue—September 2, 1969

Patents	1300	No. 3,464,063 to No. 3,465,362, incl.
Designs	60	No. 215,007 to No. 215,136, incl.
Reissues	1	No. 26,656
Total	1361	

specific nature of each of the respective acts alleged"; and paragraph (b) of § 1.216 is amended by adding at the end thereof the reference "(See § 1.223(c).)." As thus amended, the introductory text of paragraph (a) and paragraph (b) reads as follows:

§ 1.216 *Contents of the preliminary statement.*

(a) The preliminary statement must state that the party made the invention set forth by each count of the interference, and whether the invention was made in the United States or abroad. When the invention was made in the United States the preliminary statement must set forth as to the invention defined by each count the following facts:

* * * * * *

(b) When an allegation as to the first drawing (paragraph (a)(1) of this section) and/or as to the first written description (paragraph (a)(2) of this section) is made, a copy of such drawing and/or written description must be attached to the statement. (See § 1.223 (c).)

* * * * * *

5. Paragraph (a)(1) of § 1.217 is amended by striking the period at the end thereof, and adding "and documentary attachments if the allegations relate to a drawing or written description.". As thus amended, paragraph (a)(1) reads as follows:

§ 1.217 *Contents of the preliminary statement; invention made abroad.*

(a) * * *

(1) When the invention was introduced into this country by or on behalf of the party, giving the circumstances with the dates connected therewith which are relied upon to establish the fact and, when appropriate, including allegations of activity in this country of the nature of that represented by § 1.216(a) (1) to (6) and documentary attachments if the allegations relate to a drawing or written description.

* * * * * *

6. Section 1.222 is revised to read as follows:

§ 1.222 *Correction of statement on motion.*

In case of material error arising through inadvertence or mistake, the statement or attachments may be corrected or omitted attachments may be supplied on motion (see §1.243), upon a satisfactory showing that such action is essential to the ends of justice. The motion must be made, if possible, before the taking of any testimony, and as soon as practicable after the discovery of the error.

7. Paragraphs (a) and (c) of § 1.223 are revised to read as follows:

§ 1.223 *Effect of statement.*

(a) The preliminary statement should be carefully prepared, as a party will not be allowed to amend his statement in any way expect by motion under § 1.222, and any doubts as to definiteness or sufficiency of any allegation or compliance with formal requirements will be resolved against the party concerned by restriction to his effective filing date or to the latest date of a period alleged as may be appropriate. Prior to final hearing a party will not be notified of any defect in his statement except that a junior party, subject to restriction resulting from such a defect and by virtue of that restriction being subject to judgment under § 1.225, will be notified of that defect and also notified that judgment on the record will be entered against him at the expiration of a time set, not less than 30 days, unless cause be shown why judgment should not be entered. Each of the parties by whom or on whose behalf a preliminary statement is made will be strictly held in his proofs to the dates set forth therein. This includes joint applicants or patentees; a new preliminary statement will not be received in the event the application is amended or the patent is corrected to remove the names of those not inventors, nor will a preliminary statement alleging different dates be received if an application is amended or a patent is corrected to include a joint inventor, except by motion under § 1.222.

* * * * * *

(c) If a party to an interference fails to file a statement, testimony will not be received subsequently from him to prove that he made the invention at a date prior to his effective filing date. If a party alleges in his statement a date of first drawing or first written description but does not attach a copy of such drawing or written description as required by § 1.216(b), he will be restricted to his effective filing date as to that allegation unless such copy is admitted by motion under § 1.222.

* * * * * *

8. Section 1.224 is revised to read as follows:

§ 1.224 *Reliance on prior application.*

A party will not be permitted to rely on any prior application to obtain the benefit of its filing date unless the prior application is specified in the notice of interference (see § 1.226) or its benefit is sought by a motion filed in accordance with § 1.231. In the latter case, complete copies of the contents of the application file the benefit of which is sought, except affidavits under §§ 1.131, 1.202, and 1.204, must be served on all opposing parties with the motion, and in the case of a foreign application the necessary papers to prove a date of priority under 35 U.S.C. 119 including a translation where required (§ 1.55), must be filed and copies served on all opposing parties with the motion except for such papers as were of record in the involved application when the interference was declared. In either case proof of service required by § 1.247 must include reference to the prior application as well as the motion or, in the case of the stated exception, note that the papers in question were of record when the interference was declared.

9. Section 1.228 is revised to read as follows:

§ 1.228 *Summary judgment.*

When an interference is declared on the basis of a showing under § 1.204(c), such showing will be examined by an Examiner of Interferences. If the Examiner considers that the facts set out in the showing provide sufficient basis for the interference to proceed, the interference will proceed in the normal manner as provided by the rules in this part; otherwise an order shall be entered concurrently with the notice of interference pointing out wherein the showing is insufficient and notifying the applicant making such showing that summary judgment will be rendered against him because of such insufficiency at the expiration of a period specified in the notice, not less than 30 days, unless cause be shown why such action should not be taken. In the absence of a showing of good and sufficient cause, judgment shall be so rendered. Any response made during the specified period will be considered by a Board of Patent Interferences without an oral hearing unless such hearing is requested by the applicant, but additional affidavits or exhibits will not be considered unless accompanied by a showing in excuse of their omission from the original showing. If the applicant files a response to the order to show cause, the patentee will be furnished with one copy of the showing under § 1.204(c) and will be allowed not less than 30 days from its mailing date within which to present his views with respect thereto. He shall also be entitled to be represented at any oral hearing on the matter. The Board will determine, on the basis of the original showing and the response made, whether the interference should be allowed to proceed or summary judgment should be entered against the junior applicant.

10. Paragraphs (a) and (d) of § 1.231 are revised to read as follows:

§ 1.231 *Motions before the primary examiner.*

(a) Within the period set in the notice of interference for filing motions any party to an interference may file a motion seeking:

(1) To dissolve as to one or more counts, except that such motion based on facts sought to be established by affidavits or evidence outside of official records and printed publications will not normally be considered, and when one of the parties to the interference is a patentee, no motion to dissolve on the ground that the subject matter of the count is unpatentable to all parties or is unpatentable to the patentee will be considered, except that a motion to dissolve as to the patentee may be be brought which is limited to such matters as may be considered at final hearing (§ 1.258). Where a motion to dissolve is based on prior art, service on opposing parties must include copies of such prior art. A motion to dissolve on the ground that there is no interference in fact will not be considered unless the interference involves a design or plant patent or application or unless it relates to a count which

differs from the corresponding claim of an involved patent or of one or more of the involved applications as provided in §§ 1.203(a) and 1.205(a).

(2) To amend the issue by addition or substitution of new counts. Each such motion must contain an explanation as to why a count proposed to be added is necessary or why a count proposed to be substituted is preferable to the original count, must demonstrate patentability of the count to all parties and must apply the proposed count to all involved applications except an application in which the proposed count originated.

(3) To substitute any other application owned by him as to the existing issue, or to declare an additional interference to include any other application owned by him as to any subject matter other than the existing issue but disclosed in his application or patent involved in the interference and in an opposing party's application or patent in the interference which should be made the basis of interference with such other party. Complete copies of the contents of such other application, except affidavits under §§ 1.131, 1.202, and 1.204, must be served on all other parties and the motion must be accompanied by proof of such service.

(4) To be accorded the benefit of an earlier application or to attack the benefit of an earlier application which has been accorded to an opposing party in the notice of declaration.

(5) To amend an involved application by adding or removing the names of one or more inventors as provided in § 1.45.

* * * * * *

(d) All proper motions as specified in paragraph (a) of this section, or of a similar character, will be transmitted to and considered by the primary examiner without oral argument, except that consideration of a motion to dissolve will be deferred to final hearing before a Board of Patent Interferences where the motion urges unpatentability of a count to one or more parties which would be reviewable at final hearing under § 1.258(a) and such unpatentability is urged against a patentee or has been ruled upon by the Board of Appeals or by a court in ex parte proceedings. Requests for reconsideration will not be entertained.

* * * * * *

11. Section 1.238 is revised to read as follows:

§ 1.238 *Addition of new party by examiner.*

If during the pendency of an interference, another case appears, claiming substantially the subject matter in issue, the primary examiner should notify the Board of Patent Interferences and request addition of such case to the interference. Such addition will be done as a matter of course by a patent interference examiner, if no testimony has been taken. If, however, any testimony may have been taken, the patent interference examiner shall prepare and mail a notice for the proposed new party, disclosing the issue in interference and the names and addresses of the interferants and of their attorneys or agents, and notices for the interferants disclosing the name and address of the said party and his attorney or agent, to each of the parties, setting a time for stating any objections and at his discretion a time of hearing on the question of the admission of the new party. If the patent interference examiner be of the opinion that the new party should be added, he shall prescribe the conditions imposed upon the proceedings, including a suspension if appropriate.

12. Section 1.252 is amended by adding a new sentence at the end of the section. As thus amended, § 1.252 reads as follows:

§ 1.252 *Failure of junior party to take testimony.*

Upon filing of a motion for judgment by any senior party to an interference stating that the time for taking testimony on behalf of any junior party has expired and that no testimony has been taken and no other evidence offered by said junior party, an order shall be entered that the junior party show cause within a time set therein, not less than 10 days, why judgment should not be rendered against him, and in the absence of a showing of good and sufficient cause, judgment shall be so rendered. In the absence of such a motion, if any junior party fails to file an evidentiary record by the date set as provided in § 1.253(d), a patent interference examiner shall enter the order to show cause.

13. Paragraph (a) of § 1.253 is amended by inserting after "(§§ 1.275 to 1.278)" the words "or executed copies of affidavits or stipulated testimony or facts (§ 1.272)", and the last sentence of paragraph (c) of § 1.253 is revised. As thus amended, paragraphs (a) and (c) read as follows:

§ 1.253 *Copies of the testimony.*

(a) In addition to the certified transcript of the testimony (§§ 1.275 to 1.278) or executed copies of affidavits or stipulated testimony or facts (§ 1.272), three true copies of the record of each party must be filed for the use of the Patent Office (a total of four copies), and one true copy of the record must be served upon each of the opposing parties.

* * * * * *

(c) These records, whether printed or typewritten, must include the testimony presented by the party filing the same. A copy of the counts of the interference and the preliminary statement required by §§ 1.215 to 1.227 must be included. Each record must contain an index of the names of the witnesses, giving the pages where their examination and cross-examination begin, and an index of the exhibits, briefly describing their nature and giving the pages at which they are introduced and offered in evidence, and also the pages where copies of exhibits are shown when such exhibits are copies in the record. The pages must be serially numbered throughout the entire record and the names of the witnesses must appear at the top of the pages over their testimony.

* * * * * *

14. Section 1.254 is revised to read as follows:

§ 1.254 *Briefs at final hearing.*

Briefs at final hearing before the Board of Patent Interferences shall be submitted in printed form, except that when not in excess of 50 legal-size double-spaced typewritten pages, or the equivalent thereof, and in any other case where satisfactory reason therefor is shown, they may be submitted in typewritten form. If submitted in printed form, they shall be the same in size and the same as to page and print as is specified for printed copies of testimony. Typewritten briefs shall conform to the requirements for typewritten copies of testimony, except that legal-size paper may be used and the binding and covers specified are not required. Every brief of more than 15 pages shall contain a subject index with page references, supplemented by a list of all authorities referred to, together with references to pages thereof. Each party should make a statement in his brief identifying those parts of his record upon which he relies. Three copies of each brief must be filed. The times for filing briefs will ordinarily be set in the order setting times for taking testimony. The brief for the junior party shall present a full and fair statement of the questions involved, including his position with respect to priority evidence on behalf of other parties, and a clear statement of the points of law or fact upon which he relies.

15. Paragraph (a) of § 1.256 is amended by adding a new sentence between the fifth and sixth sentences reading: "A junior party may reserve a portion of his time for rebuttal purposes, but a full and fair opening of his case must be made.". As thus amended, paragraph (a) reads as follows:

§ 1.256 *Final hearing.*

(a) Final hearings will be held by the Board of Patent Interferences on the day appointed at the deisgnated time, if either party appears at the proper time, he will be heard. After the day of hearing, the case will not be taken up for oral argument except by consent of all parties. If the Board of Patent Interferences be prevented from hearing the case at the time specified, a new assignment will be made, or the case will be continued from day to day until heard. Unless it shall be otherwise ordered before the hearing begins, oral arguments will be limited to not more than 1 hour for each party. A junior party may reserve a portion of his time for rebuttal purposes, but a full and fair opening of his case must be made. After a contested case has been argued, nothing further relating thereto will be heard unless upon request of the Board of Patent Interferences.

* * * * * *

16. Paragraphs (a) and (b) of § 1.258 are revised to read as follows:

§ 1.258 *Matters considered in determining priority.*

(a) In determining priority of invention, the Board of Patent Interferences will consider only priority of invention on

the evidence submitted. Questions of patentability of a claim generally will not be considered in the decision on priority; and neither will the patentability of a claim to an opponent be considered, unless the nonpatentability of the claim to the opponent will necessarily result in the conclusion that the party raising the question is in fact the prior inventor on the evidence before the Office, or relates to matters which have been determined to be ancillary to priority and must be considered. A party shall not be entitled to raise such nonpatentability unless he has duly presented a motion for dissolution under § 1.231 upon such ground or shows good reason (e.g., that such nonpatentability became evident as a result of evidence extrinsic to an involved application) why such a motion was not presented; however, to prevent manifest injustice the Board of Patent Interferences may in its discretion consider a matter of this character even though it was not raised by motion under § 1.231.

(b) At final hearing a party shall not be entitled to urge consideration of a matter relating to the benefit of an earlier application of his own or of another party unless he has presented such matter in connection with a motion under § 1.231 (a)(4), or shows good reason why it was not so presented.

* * * * *

17. Section 1.281 is revised to read as follows:

§ 1.281 *Additional time for taking testimony.*

If either party has proceeded with the taking of testimony on his behalf but is unable to complete his case because of inability to procure the testimony of a witness or witnesses within the time limited and said time has expired, and he desires additional time for such purpose, he must file a motion, accompanied by a statement under oath setting forth specifically the cause of such inability, the name or names of the witness or witnesses, the facts expected to be proved by such witness or witnesses, the steps which have been taken to procure such testimony, and the dates on which efforts have been made to procure it. (See § 1.245 for extensions of time in other situations.)

18. Section 1.283 is revised to read as follows:

§ 1.283 *Testimony taken in another interference or action.*

Upon motion, supported by a showing demonstrating its relevance and materiality to the issue, duly made and granted, testimony taken in another interference proceeding or action, between the same parties or those in interest, may be used in an interference proceeding, subject, however, to the right of any contesting party to recall or demand the recall of witnesses whose testimony has been taken and who are physically and mentally able to testify, and take other testimony in rebuttal of the testimony.

19. Paragraph (b) of § 1.284 is amended by striking at the beginning of the section the words "It must appear" and inserting in lieu thereof "It must be demonstrated". As thus amended, paragraph (b) reads as follows:

§ 1.284 *Testimony taken in foreign countries.*

* * * * *

(b) It must be demonstrated that the testimony desired is material and competent, and that it cannot be taken in this country at all, or cannot be taken here without hardship and injury to the moving party greatly exceeding that to which the opposite party will be exposed by the taking of such testimony abroad.

* * * * *

Effective date. This revision shall become effective 30 days after publication in the Federal Register.

WILLIAM E. SCHUYLER, JR.,
Commissioner of Patents.

Approved: July 29, 1969.

MYRON TRIBUS,
Assistant Secretary for Science and Technology.

[F.R. Doc. 69-9080; Filed, Aug. 1, 1969; 8:45 a.m.]

Published in 34 F.R. 12629-32, Aug. 2, 1969

Certificates of Correction for the Week of Sept. 2, 1969

D. 210,617	3,373,604	3,434,176
D. 210,657	3,373,950	3,437,715
D. 214,191	3,374,294	3,440,123
Re. 26,370	3,375,574	3,440,483
Re. 26,377	3,375,719	3,440,687
2,954,036	3,376,525	3,440,950
3,095,322	3,376,733	3,441,501
3,149,725	3,377,300	3,441,503
3,230,193	3,377,391	3,441,958
3,238,513	3,377,451	3,441,997
3,239,674	3,378,109	3,443,967
3,281,701	3,378,233	3,444,069
3,291,619	3,378,747	3,444,265
3,297,104	3,378,787	3,445,071
3,314,992	3,378,991	3,445,080
3,321,000	3,379,254	3,445,806
3,345,713	3,379,622	3,445,808
3,347,278	3,379,913	3,446,348
3,355,368	3,380,012	3,446,708
3,356,376	3,380,818	3,447,751
3,362,369	3,385,151	3,448,073
3,362,956	3,407,140	3,448,275
3,365,423	3,409,575	3,449,005
3,367,181	3,417,024	3,449,372
3,368,484	3,418,324	3,449,727
3,370,087	3,428,343	3,450,345
3,373,148	3,432,284	

Foreign Patents Received in the Search Center as of July 31, 1969

Source	Date received	Highest number
Australia:		
(*Abstracts*)	July 30, 1969	53,932/68
(*Patents*)	July 29, 1969	288,228
Austria	July 24, 1969	271,400
Belgium	June 2, 1969	679,100
Canada	July 29, 1969	818,750
Czechoslovakia	June 23, 1969	129,250
Denmark:		
(*Applications*)	June 19, 1969	113,700
(*Patents*)	June 23, 1969	112,299
East Germany	July 30, 1969	67,553
Egypt	June 28, 1967	6,873
Finland:		
(*Applications*)	Apr. 7, 1969	40,621
(*Patents*)	Apr. 7, 1969	37,180
France:		
(*Patents*)	July 30, 1969	1,565,250
(*Additions*)	July 23, 1969	93,350
(*Medicaments*)	July 25, 1969	6,200
(*Additions*)	May 23, 1969	212 CAM
Germany:		
(*Auslegeschriften*)	May 20, 1969	1,290,900
(*Offenlegungsschriften*)	Feb. 3, 1969	1,424,800
(*Patents*)	May 20, 1969	1,267,156
Great Britain	July 3, 1969	1,155,800
India	July 18, 1969	102,055
Ireland	July 8, 1969	28,331
Italy	Feb. 3, 1969	700,000
Japan	July 29, 1969	14,640/69
Korea	July 29, 1969	124/69
Netherlands:		
(*Octrooiaanvragen*)	May 20, 1969	1,002/69
(*Patents*)	May 20, 1969	120,325
Norway:		
(*Applications*)	July 30, 1969	117,069
(*Patents*)	July 25, 1969	115,618
Pakistan	Mar. 3, 1964	112,446
Philippine Republic	Apr. 13, 1962	458
Poland	May 21, 1969	57,964
Rumania	May 9, 1969	51,341
Sweden:		
(*Applications*)	June 27, 1969	310,810
(*Patents*)	July 29, 1969	309,000
Switzerland	July 29, 1969	472,822
U.S.S.R.	July 30, 1969	233,479

Australia: First 2,000 incomplete
Belgium: First printed 493,079/1950
Canada: First printed 445 931/1948
Czechoslovakia: Not received between 81,300/1952 and 91,901/1959
Finland: First printed 19,428/1941
First 500 incomplete
Hungary: First received 5,792/1896
Latest 140,582/1951
Ireland: First received 10,000/1929
Italy: First 243,000 incomplete
Rumania: First received 40,380/1957
U.S.S.R.: Not received between 2,496/1928 and 116,000/1958
Yugoslavia: First received 10,001/1933
Latest 16,461/1941

Adverse Decisions in Interferences

In the designated interferences involving the indicated claims of the following patents final decisions have been rendered that the respective patentees were not the first inventors with respect to the claims listed.

Patent No. 3,001,895, R. S. Schwartz and B. N. Slade, SEMICONDUCTOR DEVICES AND METHOD OF MAKING SAME, decided Feb. 27, 1969, Interference No. 96,230, claims 1, 2 and 3.

Patent No. 3,226,246, G. A. W. Vermeulen and J. C. Gravesteijn, METHOD OF MANUFACTURING DISPLAY SCREENS FOR CATHODE-RAY TUBES, decided Feb. 6, 1969, Interference No. 95,766, claim 3.

Patent No. 3,278,448, D. Lauerer, M. Pestemer, M. Coenen and G. Buchwald, ULTRA-VIOLET PROTECTIVE LIGHT FILTER, decided July 1, 1969, Interference No. 95,964, claims 1, 2, 6 and 7.

Patent No. 3,358,054, D. Hardt and H. Bartl, GRAFT COPOLYMERS OF VINYL CHLORIDE ONTO ETHYLENE-VINYL ESTER COPOLYMERS, decided June 19, 1969, Interference No. 96,629, claims 1, 3, 4, 6 and 7.

PATENT EXAMINING CORPS

R. A. WAHL, Assistant Commissioner

CONDITION OF PATENT APPLICATIONS AS OF AUGUST 11, 1969

PATENT EXAMINING GROUPS	Actual Filing Date of Oldest New Case Awaiting Action
*Denotes oldest new application.	
CHEMICAL EXAMINING GROUPS	
GENERAL CHEMISTRY AND PETROLEUM CHEMISTRY, GROUP 110—M. STERMAN, Director. Inorganic Compounds; Inorganic Compositions; Organo-Metal and Organo-Metalloid Chemistry; Metallurgy; Metal Stock; Electro Chemistry; Batteries; Hydrocarbons; Mineral Oil Technology; Lubricating Compositions; Gaseous Compositions; Fuel and Igniting Devices.	8-01-67
GENERAL ORGANIC CHEMISTRY, GROUP 120—I. MARCUS, Director. Heterocyclic; Amides; Alkaloids; Azo; Sulfur; Misc. Esters; Carbohydrates; Herbicides; Poisons; Medicines; Cosmetics; Steroids; Oxo and Oxy; Quinones; Acids; Carboxylic Acid Esters; Acid Anhydrides; Acid Halides.	*12-14-66
HIGH POLYMER CHEMISTRY, PLASTICS AND MOLDING; GROUP 140—L. J. BERCOVITZ, Director. Synthetic Resins; Rubber; Proteins; Macromolecular Carbohydrates; Mixed Synthetic Resin Compositions; Synthetic Resins With Natural Polymers and Resins; Natural Resins; Reclaiming; Pore-Forming; Compositions (Part) e.g.: Coating; Molding; Ink; Adhesive and Abrading Compositions; Molding, Shaping, and Treating Processes.	2-23-67
COATING AND LAMINATING, BLEACHING, DYEING AND PHOTOGRAPHY, GROUP 160—A. P. KENT, Director. Coating; Processes and Misc. Products; Laminating Methods and Apparatus; Stock Materials; Adhesive Bonding; Special Chemical Manufactures; Special Utility Compositions; Bleaching; Dyeing and Photography.	1-06-67
SPECIALIZED CHEMICAL INDUSTRIES AND CHEMICAL ENGINEERING, GROUP 170—W. B. KNIGHT, Director. Fertilizers; Foods; Fermentation; Analytical Chemistry; Reactors; Sugar and Starch; Paper Making; Glass Manufacture; Gas; Heating and Illuminating; Cleaning Processes; Liquid Purification; Distillation; Preserving; Liquid and Solid Separation; Gas and Liquid Contact Apparatus; Refrigeration; Concentrative Evaporators; Mineral Oils Apparatus; Misc. Physical Processes.	1-23-67
ELECTRICAL EXAMINING GROUPS	
INDUSTRIAL ELECTRONICS AND RELATED ELEMENTS, GROUP 210—W. S. COLE, Director. Generation and Utilization; General Applications; Conversion and Distribution; Heating and Related Art Conductors; Switches; Miscellaneous.	1-04-68
SECURITY, GROUP 220—S. BOYD, Director. Ordnance, Firearms and Ammunition; Radar, Underwater Signalling, Directional Radio, Torpedoes, Seismic Exploring, Radio-Active Batteries; Nuclear Reactors, Powder Metallurgy, Rocket Fuels; Radio-Active Material.	*10-31-66
INFORMATION TRANSMISSION, STORAGE AND RETRIEVAL, GROUP 230—J. F. COUCH, Director. Communications; Multiplexing Techniques; Facsimile; Data Processing, Computation and Conversion; Storage Devices and Related Arts.	1-05-67
ELECTRONIC COMPONENT SYSTEMS AND DEVICES, GROUP 250—W. L. CARLSON, Director. Semi-Conductor and Space Discharge Systems and Devices; Electronic Component Circuits; Wave Transmission Lines and Networks; Optics; Radiant Energy; Measuring.	6-07-67
PHYSICS, GROUP 280—R. L. EVANS, Director. Photography; Sound and Lighting; Indicators and Optics; Measuring and Testing; Geometrical Instruments.	11-16-67
DESIGNS, GROUP 290—S. BOYD, Director. Industrial Arts; Household, Personal and Fine Arts.	11-27-68
MECHANICAL EXAMINING GROUPS	
HANDLING AND TRANSPORTING MEDIA, GROUP 310—A. BERLIN, Director. Conveyors; Hoists; Elevators; Article Handling Implements; Store Service; Sheet and Web Feeding; Dispensing; Fluid Sprinkling; Fire Extinguishers; Coin Handling; Check Controlled Apparatus; Classifying and Assorting Solids; Boats; Ships; Aeronautics; Motor and Land Vehicles and Appurtenances; Railways and Railway Equipment; Brakes; Rigid Flexible and Special Receptacles and Packages.	4-03-68
MATERIAL SHAPING, ARTICLE MANUFACTURING, TOOLS, GROUP 320—N. BERGER, Director. Manufacturing Processes, Assembling, Combined Machines, Special Article Making; Metal Deforming; Sheet Metal and Wire Working; Metal Fusion—Bonding, Metal Founding; Metallurgical Apparatus; Plastics Working Apparatus; Plastic Block and Earthenware Apparatus; Machine Tools for Shaping or Dividing; Work and Tool Holders Woodworking; Tools; Cutlery; Jacks.	*12-01-67
AMUSEMENT, HUSBANDRY, PERSONAL TREATMENT, INFORMATION, GROUP 330—A. RUEGG, Director. Amusement and Exercising Devices; Projectors; Animal and Plant Husbandry; Butchering; Earth Working and Excavating; Fishing, etc.; Tobacco; Artificial Body Members; Dentistry; Jewelry; Surgery; Toiletry; Printing; Typewriters; Stationery; Information Dissemination.	1-03-68
HEAT AND POWER ENGINEERING, GROUP 340—C. F. GAREAU, Director. Power Plants; Combustion Engines; Fluid Motors; Pumps; Turbines; Heat Generation and Exchange; Refrigeration; Ventilation; Drying; Vaporizing; Temperature and Humidity Regulation; Machine Elements; Power Transmission.	7-01-68
FIXED CONSTRUCTIONS, SUPPORTS, AND HARDWARE, GROUP 350—T. J. HICKEY, Director. Joints; Fasteners; Rod, Pipe and Electrical Connectors; Miscellaneous Hardware; Locks; Building Structures; Closure Operators; Bridges; Closures; Earth Engineering; Drilling; Mining; Furniture; Receptacles; Supports; Cabinet Structures.	4-26-68
TEXTILES, CLEANING AND FLUID HANDLING, GROUP 360—F. H. BRONAUGH, Director. Fluid Handling, including Valves; Conduits; Filling Receptacles; Lubrication; Joint Packing; Bathroom Fixtures; Centrifugal Separators; Cleaning; Coating; Pressing; Agitating; Foods; Textiles; Apparel and Shoes and their Manufacture; Sewing Machines; Winding and Reeling.	2-08-68

Total number of pending applications (excluding Designs)	184,690
Total number of Design applications pending	2,960

Expiration of patents: The patents within the range of numbers indicated below expire during August 1969, except those which may have expired earlier due to shortened terms under the provisions of Public Law 690, 79th Congress, approved August 8, 1946 (60 Stat. 940) and Public Law 619, 83rd Congress, approved August 23, 1954 (68 Stat. 764), or which may have had their terms curtailed by disclaimer under the provisions of 35 U.S.C. 253. Other patents, issued after the dates of the range of numbers indicated below, may have expired before the full term of 17 years for the same reasons, or have lapsed under the provisions of 35 U.S.C. 151.

Patents	Numbers 2,605,466 to 2,608,686, inclusive
Plant Patents	Numbers 1,117 to 1,123, inclusive

DECISIONS IN PATENT AND TRADEMARK CASES

U.S. Court of Customs and Patent Appeals

IN RE HOWARD M. DURBIN AND JOHN F. WOOD

No. 8053. Decided January 16, 1969

[56 CCPA —; 404 F.2d 990; 160 USPQ 408]

1. APPEAL TO U.S. COURT OF CUSTOMS AND PATENT APPEALS—RECORD—ASSESSMENT OF COSTS.

"Certain material including decisions on motions in the two terminated interferences involving appellants was added to the record on motion of the Commissioner with the matter of assessment of printing costs to be determined at final disposition of the appeal. It having been found necessary to refer to the added material for a full understanding of the Examiner's rejection, we assess the costs of printing it against appellants."

2. PATENTABILITY—PARTICULAR SUBJECT MATTER—"PHONOGRAPH PICKUP AND TURNOVER MECHANISM."

The refusal of certain claims in an application entitled "Phonograph Pickup and Turnover Mechanism," as unpatentable over the prior art, is affirmed.

APPEAL from Patent Office. Serial No. 438,002.

AFFIRMED.

Marshall A. Burmeister for appellants.

Joseph Schimmel (*Jere W. Sears*, of counsel) for the Commissioner of Patents.

Before WORLEY, *Chief Judge*, and Judges RICH, ALMOND, BALDWIN, and KIRKPATRICK [1]

ALMOND, *J.*, delivered the opinion of the court.

This is an appeal from the decision of the Board of Appeals affirming the rejection of claims 6 through 9 of appellants' application.[2]

The invention relates to a pickup device for use with stereophonic phonograph records wherein the two sound channels are recorded in a single groove. One system of cutting such a record involves simultaneously modulating the cutting head by impressing the signal of one of the channels along a vertical axis and that of the other along a horizontal or lateral axis. In a second system, the cutting head is modulated along two orthogonally related axes which are disposed at 45 degrees to the plane of the record. While the application describes both systems, the appealed claims are drawn to a pickup particularly suitable for use with records constructed according to the latter method.

Claim 6, which is representative, reads:

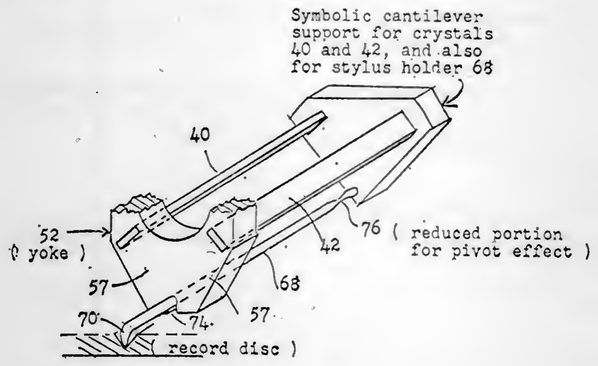
6. A stereophonic phonograph pickup comprising a pair of piezoelectric elements having elongated bodies and electrodes disposed on opposite surfaces thereof, each of said elements generating electrical potentials of opposite sign on the electrodes responsive to bending along an axis normal to the axis of elongation and normal to the axis between electrodes, means for mounting the elements at one end in parallel spaced relationship with the axis between and perpendicular to the electrodes of one element disposed normal to the axis between and perpendicular to the electrodes of the other element, the end of the element opposite said mounting means being free for movement parallel to the axis between the electrodes of said element, respectively, a yoke having in a first portion thereof a slot extending therein on a plane normal to the plane of the axes of elongation of the generating elements and equally spaced from

[1] Senior District Judge, Eastern District of Pennsylvania, sitting by designation.

[2] The application, Serial No. 438,002, filed March 8, 1965, entitled "Phonograph Pickup and Turnover Mechanism," is denominated a continuation of an application filed May 21, 1958, and includes several allowed claims.

the generating elements, said yoke having two other elongated portions of compliant material extending from the first portion with the axes of elongation of said other portions being generally normal to each other, the piezoelectric elements being secured at the ends opposite the mounting means to the ends of said other portions opposite the first portion respectively, the axis between the electrodes of each piezoelectric element being generally parallel to the axis of elongation of the other portion of the yoke secured thereto, a stylus holder having a rod disposed in the plane of the slot and mounted at one end to the means for mounting the elements, said rod being compressed within the slot of the yoke, and a stylus secured to the end of the stylus holder opposite the mounting means and disposed in the plane of the slot.

A simplified sketch, sufficiently representative of the features of appellants' pickup that are in issue here for present purposes, was provided as an appendix to the brief for the Commissioner.[3] That sketch is reproduced below:



Referring to the sketch, appellants' structure includes two piezoelectric generating elements 40 and 42 mounted along parallel-spaced axes but with their transverse axes normal to each other and each at 45 degrees to the record disc. The rear end of each of the generating elements is embedded in a block shown to the right of the drawing, which block is of electrically insulating material such as rubber or vinyl plastic secured in a pickup casing not shown. The front end of each generating element is embedded in a yoke 52 which is of electrically insulating compliant material such as rubber or vinyl plastic and floats within the casing for the pickup. A circular opening in the yoke 52 between the ends of the elements 40 and 42 has the effect of forming two leg portions 57 in the yoke which extend normally from the transverse axes to intersect remotely thereof. A stylus 70 is mounted on the end of a holder comprising a rod 68 attached at its other end to the pickup casing. The rod has a restricted portion represented at 76 to cause it to act as if pivotally connected to the attaching means. The rod 68 is "wedged" within a groove 74 at the lower end of the yoke 52.

In operation, movement of the stylus 70 is transmitted to the yoke 52 and hence through the legs 57 to the generating elements 40 and 42. Since the force impressed on the stylus responsive to one channel of the recording is at 45 degrees to the axis of the stylus, the force is normal to the transverse axis of one generating element 40 or 42

[3] The nature of the views of the pickup in the application drawings and the large amount of detail shown therein make those drawings unsuitable for use here.

greater degree than the other, thus producing a substantially greater electrical

and parallel to the transverse axis of the other generating element. In this connection the application states:

Because the generating elements are more compliant to forces normal to the transverse axis, one of the elements will be deflected or bent to a substantially response than the other element. Further, the element driven normal to its transverse axis is driven by compressing the compliant yoke 52, while the other element is driven by shearing the compliant yoke. Both of these effects combine to result in a substantial electrical output from one element and a small electrical output from the other element, or in other words, electrical isolation between channels.

The electrical circuits, not shown in the above sketch, require only brief comment. Thus, the generating elements 40 and 42 are provided throughout their length with electrical contacts engaging the opposing surfaces which are normal to the effective direction of operation of the respective legs 57. The pair of contacts for each generating member is connected to energize a different one of the sound reproducing channels of a phonograph with an electrical signal corresponding to the deflection or vibration of the stylus in the appropriate plane.

The claims stand rejected as obvious over prior art under 35 U.S.C. 103. The references are:

Batsch, German printed application T11092 VIII*d*/42*g*, Dec. 13, 1956.
Keller et al., 2,114,471, Apr. 19, 1938.
Burt, 2,328,952, Sept. 7, 1943.
Ross, 2,991,331, July 4, 1961.

Batsch discloses a pickup or recording head for two-channel stereophonic operation illustrated as follows:

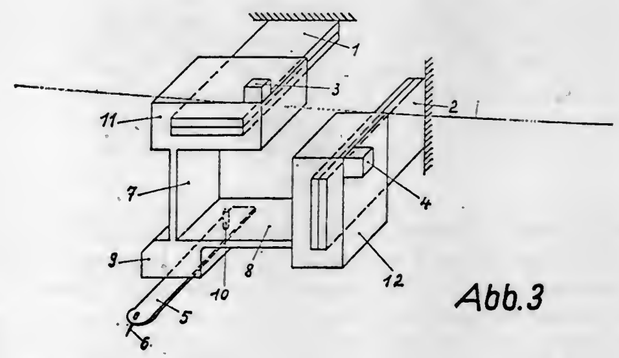


Abb. 3

The system shown is for use where one channel is represented by deflections in a vertical direction and the other in a horizontal or lateral direction. Two crystals 1 and 2 are of the "torsion-flexing" or twister type, attached to a support at their rear ends and to supports or "noses" 3 and 4, respectively, at one corner of the front ends. As a result, twisting of the crystals by forces exerted on the respective unsupported corners provides corresponding electrical signals. A one-piece coupling member attached to the front end of the crystals and carrying a stylus 6 acts to transmit the vertical and lateral vibrations of the stylus to the crystals 1 and 2, respectively. According to Batsch:

The arms 7 and 8 of this member extend at right angles to each other and merge at the center in an enlarged portion 9. The dimensions of this portion must be such that the needle support 5 can be secured to it by the pin 10. The other ends

of the arms are enlarged to form rectangular portions 11 and 12, each of which is provided with a rectangular aperture, in which the crystals 1 and 2 may be firmly fitted.

Batsch also states:

It may be mentioned that the terms vertical and lateral recording include generally two recordings having vibration planes which extend at right angles to each other. The vibration planes may be inclined, e.g., by 45° from the horizontal.

Keller compares stereophonic recording and reproducing systems where the two channels are formed in a single groove as vertical and lateral undulations with systems in which the planes of vibration are normal to each other and at 45 degrees to the surface of the record. Illustrative of the Keller disclosure are FIGS. 3 and 5 below:

FIG. 3

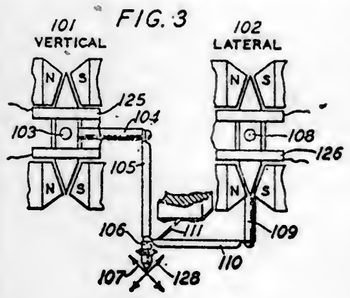


FIG. 5

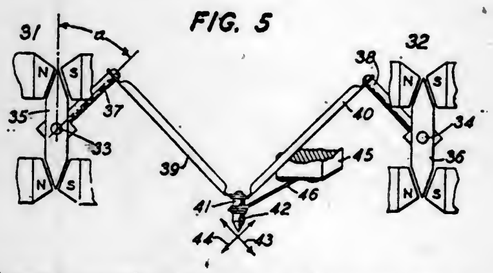


FIG. 3 shows a recorder adapted to cut vertical and lateral undulations in a record groove as a result of signals impressed on electromagnetic units 101 and 102, respectively.[4] The patent states:

In this recorder the shaft 103 of the unit 101 has a horizontal arm 104 connected to the vertical arm 105 which is secured to the stylus holder 106 and is adapted to drive the stylus 107 vertically to cut a hill-and-dale record. The shaft 108 of the unit 102 has a vertically depending arm 109 and a horizontal arm 110 secured to the stylus holder 106 for driving the stylus laterally to produce a lateral cut record. The arm 110 has a section of reduced stiffness at each end and the arm 105 has a similar section at its upper end so that both units may drive the stylus simultaneously without reacting on one another and the vibrating system is constrained to move only in the desired modes by the cantilever spring 111.

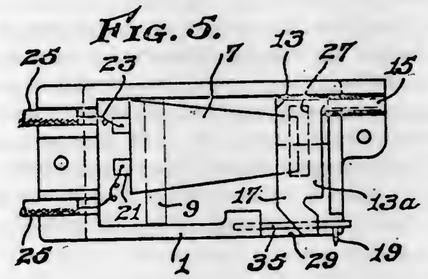
FIG. 5, in a manner apparent from mere inspection, operates to cut undulations normal to each other and at 45 degrees to the record in response to signals impressed on the electromagnet units 31 and 32, respectively.

[4] Keller contemplates electrically combining the signals from the two channels to provide two resultant signals which are applied to the electromagnetic driving units so as to provide a groove having 45 and 45-degree relationship relative to the original channel signals. That, however, is immaterial to the significance of the reference as used in the rejection.

While the specific description of the Keller structure refers to recording rather than reproducing, the patent states that the structures "when proportioned according to well-known reproducer requirements * * * will also serve to reproduce both recordings in the groove simultaneously * * *."

Burt discloses several single channel phonograph pickup devices, the most pertinent being that of FIG. 5 shown below:

FIG. 5.



In this device, a piezoelectric crystal 7 of the twister type is clamped at one end between a pair of clamping blocks 9 with the other end received in a crystal holder 13 of rubber having a downwardly extending needle holding portion 17. With respect to this figure, the patentee states:

* * * I mount the needle 19 on the forward end of a short length of wire 35 secured to the casing 1 and received in a slot formed in the lower portion of the needle holder, the wire being preferably compliant in all directions.

Burt further states that "[t]o those skilled in the art, it will undoubtedly be obvious that * * * instead of applying my improved crystal holder to a crystal of the torsional or twisting type, as herein described, it may be applied to a crystal of the bending type equally well."

Ross also relates to single channel phonograph pickup devices using a single piezoelectric generating element. He discloses different structures using twister and bender type elements, respectively. In the latter, a nose piece extending forwardly of the floating end of the element has a slot in its end, and a member carrying a stylus at one end and anchored to the housing at the other end fits within that slot at an intermediate point.

The Examiner rejected the claims as obvious under 35 U.S.C. 103 on Batsch in view of Keller, referring specifically to the application of those references in framing rejections in previous decisions on motions in two dissolved interferences involving the appellants. He further referred to Burt and Ross on the point of substitution of bender type piezoelectric elements for the twister type and the use of a drive utilizing a slot-type connection for the stylus arm. We find that rejection, sustained by the Board, to be free of reversible error.

Although the Batsch FIG. 3 structure is arranged for use with records grooved with vertical and lateral projections for the respective channels, the disclosure in the reference that the vibration planes may be inclined by 45 degrees to the horizontal constitutes a clear suggestion that the illustrated FIG. 3 construction thereof be modified to function according to the latter alternative mode. Moreover, each of Burt and Ross provides clear and convincing evidence that one skilled in the art would be aware of the interchangeability of bender type piezoelectric elements for the twister type elements in pickup structures such as that of Batsch's FIG. 3.

Appellants contend that the appealed claims are patentably distinguished in the limitations "the end of the element opposite * * *

[said] mounting means being free for movement parallel to the axis between the electrodes of said element" (claim 6) and "a stylus coupled to the first portion of the yoke and disposed in a plane normal to the plane defined by the axes of elongation of the piezoelectric elements" (claim 7) and similar recitations. In support of that position, they argue at length the alleged difficulties in modifying Batsch in accordance with the prior art teachings to provide a pickup utilizing bender type piezoelectric elements and operable on records with vibration planes normal to each other and at 45 degrees to the horizontal.

We do not find the suggested modification to be either as difficult as appellants would make it or unobvious. Rather, we agree with the Solicitor who urges (with reference to record omitted):

> Of course, the Examiner's rationale contemplates elimination of the noses 3 and 4 [of Batsch's FIG. 3] "so that conventional bender type of piezoelectric elements can be substituted for the twister type elements." This is perhaps the simplest and most obvious change in Batsch's construction, to accommodate bender crystals in place of twister crystals. Realization that a cantilevered element can be flexed by a normal force is as commonplace as bouncing up and down on a diving board. Anyone of normal experience would appreciate that forces exerted through Batsch's arms 7 and 8 would bend flexible elements disposed as 1 and 2 are, absent the corner anchors 3 and 4. As for balancing the forces transmitted by the arms 7 and 8 to avoid twisting of the substituted bender elements, such would merely require the obvious centering of arms 7 and 8 medially of the widths of the bender elements. Again, this follows from commonplace experience. To avoid rocking the boat, stay in the center.

Appellants emphasize that Batsch does not disclose a symmetrical arrangement wherein the stylus is "equidistant from the piezoelectric elements." However, as stated in one of the interference motion decisions to which the Examiner referred, a symmetrical arrangement inherently results from the conversion to a 45–45° system suggested in Batsch in place of the 0–90° system illustrated in Batsch. Moreover, comparison of the FIGS. 3 and 5 systems of Keller, as suggested in the same motion decision, plainly teaches the use of a symmetrical arrangement for the 45–45° system. We further agree with the observation of the Solicitor that "[b]ilateral symmetry for Batsch's compliant FIG. 3 yoke, when converted to a 45–45° system, is naturally indicated by the need for equal amplitude reproduction in the two channels."

The recitation concerning the disposition of the rod carrying the stylus within the slot in the bottom of the yoke is also relied on by appellants as to claims 6, 8 and 9 in which it appears. The Examiner took the position that it was obvious from Burt and Ross to drive the rod of Batsch in that manner. The Board concurred.

Appellants urge in their brief:

> The recited structure of claims 6, 8 and 9 is the structure which provides mechanical advantage with a compliant yoke for the first time known to the art. The amplification of force exerted on the bender element through a compliant yoke is novel and achieves a greater output than could be achieved otherwise.

However, we note that the "needle holder 17" of Burt having a notch for the stylus arm 35 therein is an integral part of compliant holder 13 and agree with the Solicitor that "the arm 35 clearly provides a lever-type mechanical advantage for the compliant holder or yoke." We are satisfied that Burt makes it obvious to employ the construction in question on the Batsch pickup as modified, with such mechanical advantage as appellants obtain constituting an obvious and inherent result of such action.

We also agree with the Examiner that the recited arrangement of the stylus holder in a slot in the yoke would be obvious from Ross, having particular reference to the structure used with his bender type element.

[1] Certain material including decisions on motions in the two terminated interferences involving appellants was added to the record on motion of the Commissioner with the matter of assessment of printing costs to be determined at final disposition of the appeal. It having been found necessary to refer to the added material for a full understanding of the Examiner's rejection, we assess the costs of printing it against appellants.

[2] The decision of the Board is affirmed.

AFFIRMED.

U.S. Court of Customs and Patent Appeals

IN RE LOUIS H. MORIN

No. 8079. Decided February 6, 1969

[56 CCPA —; 405 F.2d 1313; 160 USPQ 548]

1. APPEAL TO U.S. COURT OF CUSTOMS AND PATENT APPEALS—MATTER BEFORE COURT—REFERENCES NOT CONTROVERTED BY APPELLANT.

"Inasmuch as appellant has only cursorily discussed the Arenson and Morin references in his brief, and has not pointed out where the Board erred in employing them to sustain the rejection of claim 6, those references need no further discussion on our part."

2. PATENTABILITY—PARTICULAR SUBJECT MATTER—"INTERCAST RELATIVELY MOVABLE PLASTIC ELEMENTS."

The refusal of certain claims in an application entitled "Intercast Relatively Movable Plastic Elements," as unpatentable over the prior art, is affirmed.

APPEAL from Patent Office. Serial No. 396,455.

AFFIRMED.

Burgess, Ryan & Hicks (*John F. Ryan*, of counsel) for appellant.

Joseph Schimmel (*Fred W. Sherling*, of counsel) for the Commissioner of Patents.

Before WORLEY, *Chief Judge*, and Judges RICH, ALMOND, BALDWIN, and KIRKPATRICK [1]

WORLEY, *Chief Judge*, delivered the opinion of the court.

The issue here is whether the Board of Appeals committed reversible error in sustaining the Examiner's rejection of claims 1, 2 and 6–8 [2] as unpatentable in view of certain prior art under 35 U.S.C. 103.

The invention relates to intercast plastic articles which are so cast as to provide free relative movement of the interconnected elements of the article with respect to each other—for example, a ball and socket, or a nut and bolt. One part, e.g., the ball, is cast by injection molding using a higher melting thermoplastic resin, while a second part, e.g., the socket, is cast at least partially about the first using a lower melting thermoplastic resin. The difference in melting point of the resins employed prevents fusion of the two cast parts, thus allowing relative movement between them. Claim 1 is representative:

> 1. A product of the character defined comprising two thermoplastic elements arranged one upon the other, said elements being relatively and freely movable, one element comprising a molded thermoplastic of one melting point, the other

[1] Senior District Judge, Eastern District of Pennsylvania, sitting by designation.

[2] Appearing in application Serial No. 396,455, filed August 17, 1964, for "Intercast Relatively Movable Plastic Elements." The application is a division of Serial No. 203,759, filed June 20, 1962.

element being arranged upon the first element, and said other element comprising a molded thermoplastic of a melting point lower than the melting point of said first element.

Claims 1, 2, 7 and 8 were rejected under § 103 in view of Mainardi [3] alone, with Arenson [4] and Morin [5] being relied on in conjunction with Mainardi for certain details of claim 6. As noted by the Examiner and Board, the main difference between Mainardi and appellant is that Mainardi, in intercasting a threaded container cap with a thermoplastic container body and container head utilizing the cap as a mold, expressly employs a cap which:

* * * may be made of metal or of *a plastic material preferably a thermosetting resin*, and, *in any case* the *melting temperature of said resin* must be *higher* than the *melting temperature of the plastic material constituting the body of the container*. [Emphasis supplied.]

Said the Board:

* * * We are of the opinion that the words "metal or of a plastic material preferably a thermosetting resin" would include or make obvious the use of thermoplastic material for the cap * * * to one with ordinary skill in the art. * * *

We can say little more than that we agree with the Board. There being, in general, but two classes of plastic resins—thermosetting and thermoplastic—the use of thermoplastic resins possessing the requisite melting point for the cap of Mainardi would be no less obvious to one of ordinary skill than the use of thermosetting resins.

We have examined the other allegations of error asserted by appellant, but find no merit in them. [2] The decision is affirmed.

AFFIRMED.

KIRKPATRICK, *J.*, took no part in the decision of this case.

[3] U.S. Patent 2,945,266, issued July 19, 1960.
[4] U.S. Patent 3,038,194, issued June 12, 1962.
[5] U.S. Patent 2,768,415, issued October 30, 1956.
[1] Inasmuch as appellant has only cursorily discussed the Arenson and Morin references in his brief, and has not pointed out where the Board erred in employing them to sustain the rejection of claim 6 those references need no further discussion on our part.

U.S. Court of Customs and Patent Appeals

HOT SHOPPES, INC. *v.* THE BORDEN COMPANY

No. 8039. Decided December 19, 1968.

[56 CCPA —; 404 F.2d 999; 160 USPQ 43]

1. TRADEMARK—CONFUSING SIMILARITY—"MIGHTY MALT" AND "MIGHTY MO" FOR FOOD PRODUCTS.

"Certainly it appears that there is nothing particularly distinctive in the concept of a two-word combination including the prefix MIGHTY as a trademark for a food product, that is likely to fasten itself in the mind of a consumer as identifying a particular source for the product. It therefore seems unlikely to us that a consumer faced with ice milk marked MIGHTY MALT would be likely to think it had the same source as sandwiches or restaurant services marked MIGHTY MO, assuming an acquaintance with the latter."

APPEAL from Patent Office. Serial No. 44,529.

AFFIRMED.

Browne, Schuyler & Beveridge (*Francis C. Browne, Richard G. Kline*, of counsel) for appellant.

John A. Sigalos, Maurice T. McElligott for appellee.

Before WORLEY, *Chief Judge*, RICH, SMITH, ALMOND, and BALDWIN, *Associate Judges*

ALMOND, *J.*, delivered the opinion of the court.

Hot Shoppes, Inc. appeals from the decision of the Trademark Trial and Appeal Board [1] dismissing its opposition to the application [2] of The Borden Company to register "MIGHTY MALT" for frozen confection, namely, ice milk.

Appellant (opposer) is the registrant of the mark "MIGHTY MO" for sandwiches [3] and for restaurant services.[4]

The record shows, and appellee does not dispute, opposer's prior use of "MIGHTY MO" for sandwiches and drive-in restaurants. The only issue is likelihood of confusion.

On this issue the Board found for The Borden Company, stating:

The marks "MIGHTY MO" and "MIGHTY MALT" each suggests that the product or services in connection with which it is used is somewhat larger and better than the average like product or service. In view of this suggestive connotation and the overall differences between the marks, it is not believed that confusion or mistake is likely to occur in the marketing of the respective goods and services of the parties.

* * * * * * *

The opposition is dismissed.

On appeal, appellant stresses the common distinctive feature MIGHTY M of the two marks and alleges that it is common practice for the public to use such contractions when referring to a trademark. Appellant emphasizes this point, stating:

* * * It is the unique combination of the word MIGHTY and an associated suffix beginning with the letter "M" which appellee has attempted to misappropriate. Bearing in mind that the initial portion of a mark is better remembered than the terminal portion and that comparison of these features is not to be made side-by-side, but in the light of a purchaser's inability to retain the respective marks in his memory for any appreciable length of time, the combination of an identical prefix and associated suffix beginning with the same letter may not be disregarded in determining the question of confusing similarity. * * *

Appellant also draws attention to the finding of the Board that "ice milk and sandwiches are related food items which are conjointly offered for sale and consumption in restaurants." We note that the Board discussed the related nature of the goods only for the purpose of observing that *if* the products were to be sold under the same or *confusingly similar* marks, confusion as to source would be likely to occur. However, as the Board did not find that the goods were being sold under confusingly similar marks, the related nature of the goods did not require the Board's further consideration.

It is appellee's position that there is no confusing similarity between the marks and that appellant's argument as to the significance of the MIGHTY M combination is without merit. In this connection, appellee, in its brief, makes the following argument:

* * * It is apparent that the Patent Office has concluded that no single registrant has an exclusive monopoly in and to the designation MIGHTY when used in combination with another word, letter or designation in the foods field. It seems almost obvious that the use of the designation MIGHTY in combination with another designation is entitled to only limited protection. This limited degree of protection is specifically what appellee herein seeks, that is, a registration of its mark MIGHTY MALT for the product ice milk and no more. Appellee contends that it is entitled to the same degree of latitude granted by the Patent Office to other "MIGHTY" registrants in Class 46.

[1] Board opinion abstracted, 150 USPQ 836.
[2] Serial No. 155,887, filed October 25, 1962.
[3] Reg. No. 668,454, registered October 14, 1958.
[4] Reg. No. 769,701, registered May 12, 1964.

In reviewing the positions taken by the parties, it seems to us that appellee's arguments are the more persuasive. [1] Certainly it appears that there is nothing particularly distinctive in the concept of a two-word combination including the prefix MIGHTY as a trademark for a food product, that is likely to fasten itself in the mind of a consumer as identifying a particular source for the product. It therefore seems unlikely to us that a consumer faced with ice milk marked MIGHTY MALT would be likely to think it had the same source as sandwiches or restaurant services marked MIGHTY MO, assuming an acquaintance with the latter.

The decision of the Trademark Trial and Appeal Board is therefore affirmed.

AFFIRMED.

Judge Smith participated in the hearing of this case but died before a decision was reached.

WORLEY, *Chief Judge*, dissenting.

It seems inescapable to me that when the average purchasers of "MIGHTY MO" sandwiches see "MIGHTY MALT" on frozen confections, they would be clearly justified in assuming, and would doubtless assume, that the goods have a common source.

There is no apparent reason applicant could not have selected a less confusing mark. And certainly, on this record, the first user and registrant of "MIGHTY MO" is entitled to have doubt on "a likelihood of confusion" resolved in its favor and against the newcomer "MIGHTY MALT."

I would reverse.

In the United States Patent Office
Before the Board of Appeals

Decided September 3, 1968

1. DESIGN—PATENTABILITY—STATUTORY BAR—35 U.S.C. 102(d) AND 172.

In affirming the final rejection of a claim in a design application filed about 15 months after the same design was the subject of a design registration in Germany, "as being barred by the provisions of 35 U.S.C. 102(d) and 172," *Held* that "* * * it is sufficient if the inventor who applied here has received in the foreign country 'such exclusive privilege as its laws provide for or sanction.'"

2. SAME—APPLICATION—BENEFIT OF FILING DATE OF FOREIGN APPLICATION—APPLICATION FOR DESIGN REGISTRATION IN GERMANY—35 U.S.C. 119.

"Appellant does not comment on the fact that applications for registration of designs in Germany are routinely accepted as a basis for the right of priority under 35 U.S.C. 119, which refers only to 'an application for patent for the same invention in a foreign country,' and that the assignee takes advantage of the practice of considering foreign applications for registration of designs as equivalent to applications for patent."

AFFIRMED.

Otto John Munz for appellant.

Before ASP, FEDERICO and MANGAN, *Examiners-in-Chief*

FEDERICO, *Examiner-in-Chief*.

This is an appeal from the final rejection of the single claim in conventional form in an application for patent for a design of a "_____"

The present application was filed on _____. The same design is the subject of a design registration in Germany effected [about

15 months earlier] by appellant or appellant's assignee. The claim has been rejected as being barred by the provisions of 35 U.S.C. 102(d) and 172, which read as follows:

102. "A person shall be entitled to a patent unless—

"(d) the invention was first patented or caused to be patented by the applicant or his legal representatives or assigns in a foreign country prior to the date of the application for patent in this country on an application filed more than twelve months before the filing of the application in the United States."

172. "The right of priority provided for by section 119 of this title and the time specified in section 102(d) shall be six months in the case of designs."

The issue and the questions presented by this appeal are the same as those presented in *Ex parte Weiss*, 852 O.G. 255, 854 O.G. —, decided September 26, 1967, reconsideration December 18, 1967, in an appeal in an application owned by the assignee of the present application. The prior appeal was heard and decided after the briefs had been filed in the present case. At the hearing appellant confined his remarks to some analysis and discussion and disagreement with the decision in the prior appeal. A memorandum summarizing the remarks at the hearing has been filed by appellant and has been made of record.

The various considerations raised by appellant in this case, in the briefs and at the hearing, have been considered, but we arrive at the same conclusions as in the prior appeal. To avoid repetition we will merely refer to the prior opinion, which has been published, and consider it incorporated herein by reference, and comment on the matters emphasized at the hearing.

The differences in the scope of rights in a United States design patent and a German design registration was acknowledged and taken as a premise in the decision on the prior appeal. Appellant takes issue with the statement that the rights under a German design registration (which incidentally do not exist unless there is a registration, section 7 of the law) are "exclusive rights." This is tantamount to maintaining that the rights in a copyright of literary or artistic works in the United States are not exclusive rights and hence do not even comply with the requirements of the Constitution that exclusive rights be secured. Appellant's main contention is that the German design law is similar to the United States copyright law, but this is in connection with the nature of the rights, and as has been indicated, the nature of the exclusive rights are admittedly similar. The nature of the subject matter protected by the German design law is the same in character as the nature of the subject matter protected by United States design patents. This may be observed, for example, by noting design patents issued in the United States for designs which have also been registered in Germany and the right of priority of which German design application is claimed. Issues of the United States OFFICIAL GAZETTE in 1967 and 1968 show: Sound tape spool holder; magnetic tape sound recording and reproducing machine; toy spinning top; typewriter; side-view mirror; foodmixer (207,859, issued to assignee of the present application); housing for a cartridge magnetic tape player; housing for a writing instrument; wall plaque; tape dispenser; cabin for harvester-threshers; ski binding; calculating machine; vegetable dish; collapsible trailer and boat combination; clock; toy funicular car; tractor cabin; camera; instrument panel; babyfood heater; and the coffee grinder of the prior appeal and the flash light of the present application may also be noted. The two laws are designed to protect substantially the same field of subject matter often referred to as industrial designs, ornamental articles of manufacture, but differ in the scope of the exclusive rights which are conferred (and in procedure

and some conditions).[1] **[1]** As indicated in *Atlas Glass Co.* v. *Simonds Mfg. Co. et al.*, 102 Fed. 643 (CCA 3, 1900), in dealing with the predecessor of the present statute, it is sufficient if the inventor who applied here has received in the foreign country "such exclusive privilege as its laws provide for or sanction."

[2] Appellant does not comment on the fact that applications for registration of designs in Germany are routinely accepted as a basis for the right of priority under 35 U.S.C. 119, which refers only to "an application for patent for the same invention in a foreign country," and that the assignee takes advantage of the practice of considering foreign applications for registration of designs as equivalent to applications for patent.

The decision of the Examiner is affirmed.

AFFIRMED.

[1] The substantial identity of the field of subject matter of design registration laws of the type of the German law and the subject matter of United States design patents is strikingly indicated by the present activities toward the adoption of a uniform international classification of such designs. A draft treaty and classification schedule have been developed and will be the subject of a diplomatic conference in October 1968 (Locarno Conference for the purpose of setting up an International Classification of Industrial Designs (1968), BIRPI, Geneva, Document L/1, October 15, 1967, 71 pages). The international classification schedule proposed (pages 63–71 of the cited document) was developed by a committee of experts including representatives from the United States and Germany (page 8 of the cited document).

First Assistant Commissioner's Decision

IN RE APPLICATION FILED JULY 13, 1965

Decided February 18, 1969

1. PRACTICE—TIMELY RESPONSE—EXTENSION OF TIME—RULE 7.

"The fact that an expiration date falls on Saturday, Sunday or a holiday permits an action taken on the next secular or business day to be considered timely, but it does not change the expiration date for the purpose of computing an extension. This is thought to be the only reasonable interpretation of the language of Rule 7. It is to be noted that the rule does not state that the last day of the period is moved to the next secular or business day but that the action may be taken on the next such day after the expiration date. The granting of a thirty day extension should merely serve to make the time thirty days longer than it was originally and the fact that if it had not been extended it would have expired on a Sunday has no significance in this connection."

ON PETITION

EDWIN L. REYNOLDS, *First Assistant Commissioner.*

This is a petition to revive the above-entitled application which became abandoned through failure to file a timely appeal brief.

It appears that the brief was originally due on July 21, 1968, which was a Sunday, that the Board of Appeals granted a thirty day extension and that the brief was filed on Wednesday, August 21, 1968. It is stated in the petition that the attorney assumed that since the first expiration date fell on Sunday, so that the brief might have been seasonably filed on the following day, the thirty day extension would be counted from the Monday and thus would not have expired until August 21.

It is not thought that this method of computation is correct. **[1]** The fact that an expiration date falls on Saturday, Sunday or a holiday permits an action taken on the next secular or business day to be considered timely, but it does not change the expiration date for the purpose of computing an extension. This is thought to be the only reasonable interpretation of the language of Rule 7. It is to be noted that the rule does not state that the last day of the period is moved to the next secular or business day but that the action may be taken on the next such day after the expiration date. The granting of a thirty day extension should merely serve to make the time thirty days longer than it was originally and the fact that if it had not been extended it would have expired on a Sunday has no significance in this connection.

While the application thus became abandoned, the attorney's interpretation was not an unreasonable one and it is thought that the resultant delay in prosecution may therefore be considered unavoidable. The petition to revive is accordingly granted.

PATENT SUITS

Notices under 35 U.S.C. 290; Patent Act of 1952

2,540,345, W. A. Pipkin, METHOD OF AND APPARATUS FOR EXTRACTING JUICE FROM WHOLE CITRUS FRUIT AND EXCLUDING ATMOSPHERE FROM CONTACT THEREWITH; **2,622,733,** Pipkin and Smith, FEEDER FOR WHOLE CITRUS FRUIT; **2,649,730,** J. M. Hait, METHOD OF AND APPARATUS FOR EXTRACTING JUICE FROM WHOLE CITRUS FRUIT; **2,780,988,** Belk and Frost, Jr., METHOD OF AND APPARATUS FOR PROCESSING WHOLE FRUIT, **filed** Nov. 15, 1966, D.C., M.D. Fla. (Tampa), Doc. 66–394–CT, *W. A. Pipkin, W. O. Kinnebrew, Arthur S. Gibbons, and The Exchange National Bank of Tampa, Florida* v. *FMC Corporation, formerly known as Food Machinery Corporation and/or Food Machinery & Chemical Corporation of Delaware.* Summary judgment for defendant, Apr. 7, 1969.

2,570,304, J. B. Crawford, SELF-ADJUSTING RECIRCULATING OVERFLOW, **filed** May 6, 1969, D.C., C.D. Calif. (Los Angeles), Doc. 69–894–IH, *Wilbur Kinkead et al.* v. *Broadway-Hale Stores, Inc. et al.* **Same, filed** May 8, 1969, D.C., C.D. Calif. (Los Angeles), Doc. 69–894–EC, *Wilbur Kinkead, Alden Tollefson et al.* v. *Broadway-Hale Stores et al.* **Same, filed** June 3, 1969, D.C., C.D. Calif. (Los Angeles), Doc. 69–1074–F, *Wilbur Kinkead et al.* v. *Lucky Stores, Inc., etc. et al.*

2,622,733. (See 2,540,345.)

2,632,921, W. H. Kreidl, METHOD FOR IMPROVING THE BONDING PROPERTIES OF POLYETHYLENE PLASTICS; **2,648,097,** M. F. Kritchever, METHOD OF SECURING DECORATIVE MATTER TO A SURFACE OF A POLYETHYLENE BODY; **3,018,189,** G. W. Traver, METHOD OF CONDITIONING POLYETHYLENE SURFACES FOR THE ADHESION OF MATERIALS COATED THEREON AND RESULTING PRODUCT, **filed** Apr. 27, 1965, D.C., N.D. Ill. (Chicago), Doc. 65c651, *E. I. du Pont de Nemours and Company* v. *Union Carbide Corporation.* Stipulation of the parties, complaint and counterclaims relating to Patents Nos. 2,632,921 and 2,648,097 having heretofore been dismissed by agreement. Complaint and the supplemental counterclaim as amended relating to Patent No. 3,018,189 be dismissed without prejudice, May 26, 1969.

2,648,097. (See 2,632,921.)

2,649,730. (See 2,540,345.)

2,652,874, A. E. Armstrong, COVERING FOR TOILET FLUSH TANKS, **filed** Dec. 3, 1963, D.C., S.D.N.Y., Doc. 63–C–3513, *Glen Mfg. Inc.* v. *Perfect Fit Industries, Inc.* Filed consent, counterclaim dismissed, May 13, 1969.

2,658,496, N. Hoglund, WHEEL DRESSING APPARATUS, **filed** Apr. 11, 1967, D.C.N.J. (Newark), Doc. 404–67, *Hoglund Engineering & Manufacturing Company, Inc.* v. *J & S Tool Company, Inc., Jerzy B. Grabowski.* Consent order of dismissal, May 19, 1969.

2,742,462, G. Gever, NEW H-(5-NITRO-2-FURFURYLIDENE)-3-AMINO-2-OXAZOLIDONES, **filed** Aug. 28, 1968, D.C. Minn. (Minneapolis), Doc. 4–68–C–296, *The Norwich Pharmacal Company* v. *Richard Hanson.* Consent judgment enjoining defendant, May 16, 1969. **Same, filed** Aug. 28, 1968, D.C. Minn. (Minneapolis), Doc. 4–68–C–297, *The Norwich Pharmacal Company* v. *Robert M. Petersen.* Consent judgment enjoining defendant, May 19, 1969. **Same, filed** June 22, 1967, D.C., N.D.N.Y. (Utica), Doc. 67–CV–216, *The Norwich Pharmacal Company* v. *Pelmyra Trading Company et al.* Plaintiff is owner of the patent; defendants enjoined, June 6, 1969.

2,753,694. (See 3,319,438.)

2,778,637, G. H. Eash, ENDLESS MAGNETIC TAPE CARTRIDGE; **2,876,005,** same, RECORDER-PLAY BACK INSTRUMENT EMPLOYING ENDLESS MAGNETIC TAPE, filed July 13, 1966, D.C., S.D.N.Y., Doc. 66–C–2093, *Ohio Citizens Tr. Co. et ano.* v. *Audio Devices Inc.* Order dismissing action for lack of prosecution without prejudice, May 15, 1969.

2,780,988. (See 2,540,345.)

2,809,892, F. W. Chornock, ZINK BACITRACIN FEED SUPPLEMENT, **filed** Nov. 3, 1965, D.C., Del. (Wilmington), Doc. C.A. 3105, *Commercial Solvents Corporation* v. *Pabst Brewing Company, Inc. and Premium Malt Products, Inc.* Dismissed on stipulation and order, May 23, 1969.

2,856,653, R. H. Sutter, METHOD AND APPARATUS FOR MAKING HOLLOW SHELL FOUNDRY SAND ARTICLES; **2,867,017,** same, METHOD OF AND APPARATUS FOR MAKING RESIN BONDED SAND SHELL MOLDS AND CORES, **filed** Apr. 8, 1963, D.C., N.D. Ill. (Chicago), Doc. 63c579, *Sutter Products Company* v. *Pettibone Mulliken Corporation.* Patents Nos. 2,856,653 and 2,867,017 not infringed by defendant. Claim 3 of Patent No. 2,867,017 held invalid. Complaint dismissed, Mar. 28, 1969.

2,867,017. (See 2,856,653.)

2,876,005. (See 2,778,637.)

2,897,313, E. S. Burgess, COAXIAL CABLE SWITCH, **filed** July 27, 1966, D.C.N.J. (Newark), Doc. C–757–66, *Edward S. Burgess* v. *General Electric Co.* Consent order dismissing complaint, May 21, 1969.

2,905,601, Rinker and Duva, ELECTROPLATING BRIGHT GOLD, **filed** Aug. 17, 1962, D.C., E.D.N.Y. (Brooklyn), Doc. 62C–905, *Sel-Rex Corp.* v. *Lea Ronal, Inc. et ano.* Order on stipulation dismissed without prejudice, Apr. 11, 1969.

2,954,073, B. B. Junkunc, FOLDING TABLET ARM CHAIR, **filed** June 10, 1966, D.C., N.D. Ill. (Chicago), Doc. 66c1046, *Bela Seating Company, Inc.* v. *Textron, Inc.* Consent judgment, plaintiff owner of patent, which is valid. Defendant guilty of infringement of each of claims 1, 2, 3, 4, 5, 6 and 13. Counterclaim of defendant Textron dismissed on the merits with prejudice, May 20, 1969.

2,955,645, H. W. Cramer, COMBINED STEP AND STOOL, **filed** Feb. 24, 1969, D.C. Kans. (Kansas City), Doc. KC–2933, *Cramer Industries, Inc.* v. *Cole Steel Equipment Company, Inc., Litton Industries.*

2,990,094, R. F. Reifers, MOLDED PULP EGG CARTON, **filed** Mar. 5, 1962, D.C., N.D.N.Y. (Utica), Doc. C–8917, *Diamond International Corporation* v. *Herkimer Pulp & Packaging Corporation.* Consent decree holding Reifers' patent valid. Defendant enjoined, Feb. 13, 1969. **Same, filed** Jan. 16, 1969, U.S. Ct. of App., 4th Cir., Va. (Richmond), Doc. 13,152, *Diamond International Corporation* v. *Harry C. Walterhoefer, Jr., William D. Walterhoefer and John A. Walterhoefer, doing business as Harry C. Walterhoefer & Sons, and Packaging Corporation of America.* Appeal dismissed pursuant to Rule 42(b) of the Federal Rules of Appellate Procedure, Mar. 26, 1969. **Same, filed** May 26, 1969, D.C. Md. (Baltimore), Doc. 20809–C, *Diamond International Corporation* v. *Maryland Fresh Eggs Inc.*

3,004,298, R. N. Haynie, METHOD FOR MAKING FLUID SEALS, **filed** May 20, 1969, D.C., N.D. Ill. (Chicago), Doc. 69c1062, *Federal-Mogul Corporation* v. *Chicago Rawhide Manufacturing Company.*

3,018,189. (See 2,632,921.)

3,050,768, S. N. Rosenthal, FELT PACK CONSTRUCTION OF PENS, **filed** Feb. 9, 1968, D.C., N.D. Ill. (Chicago), Doc. 68c250, *Magic Marker Corporation* v. *Dri Mark Products et al.* On stipulation of parties, complaint and counterclaim dismissed with prejudice, May 15, 1969.

3,059,823. (See D. 203,783).

3,171,652, J. W. Newman, EXERCISING WEIGHT FILLED WITH SOLIDIFIED MATERIAL; **D. 203,837,** F. H. James, BARBELL WEIGHT, **filed** May 19, 1969, U.S. Ct. of App., 4th Cir., Va. (Richmond), Doc. 13,548, *Diversified Products Corporation and Newman, Dukes, & Cline, Inc.* v. *Sports Center Co., Inc. and Billard Barbell Company, Inc.*

3,306,506. (See D. 203,783.)

3,319,438, Kuebler and Freese, AUGER ICE MAKER; **2,753,694,** Trow and Nelson, ICE DISINTEGRATING AND CHIP DELIVERING SPIRAL ICE CHIP PRODUCING MACHINE, **filed** Nov. 16, 1967, D.C., E.D. Mich. (Detroit), Doc. 3057S, *Uniflow Manufacturing Company* v. *King-Seeley Thermos Company, Inc.* Order dismissing complaints and permanently enjoining plaintiffs, May 16, 1969.

3,401,944, J. S. De Metrick, TAPE CARTRIDGE INSERT; **Reg. No. 851,039** (GIDET), Automatic Radio Mfg. Co., Inc., Adaptor for tape cartridges, **filed** Feb. 5, 1959, D.C., N.D. Ill. (Chicago), Doc. 69c237, *Automatic Radio Mfg. Co., Inc.* v. *Leonard Fish et al.* On motion of plaintiff, complaint dismissed without prejudice, May 19, 1969.

3,406,881. (See D. 203,783.)

D. 195,420, Talge and Dykes, COMBINED ELECTRIC CAN OPENER AND KNIFE SHARPENER, **filed** Sept. 26, 1966, D.C., S.D.N.Y., Doc. 66-C-3079, *Rival Manufacturing Company* v. *Van Wyck International Corporation.* Consent judgment, counterclaim dismissed with prejudice. Defendant refrained from infringing, May 16, 1969.

D. 199,583, C. J. Rogers, CANDLE LAMP, **filed** Mar. 2, 1966, D.C., N.D. Ill. (Chicago), Doc. 66c413, *The Candle Man, Inc.* v. *Exclusive Candle, Inc. and Lee Miller.* By agreement of parties, cause dismissed with leave to reinstate within 90 days, July 12, 1968.

D. 201,793, J. K. Rains, SWIMMING POOL, **filed** Mar. 22, 1966, D.C., S.D.N.Y., Doc. 66-C-811, *John K. Rains* v. *Allstate Decorators Inc. et ano.* Order, dismissed for lack of prosecution with prejudice, May 13, 1969.

D. 202,783, R. D. Kahn, FUSED MULTIPLE ELECTRICAL OUTLET BOX WITH MASTER SWITCH AND PILOT LIGHT, **filed** Jan. 24, 1966, D.C., S.D.N.Y., Doc. 67-C-296, *Fedtro, Inc.* v. *Jerry Franklin Associates, Inc. et ano.* Consent judgment, defendants permanently enjoined. Counts of the complaint and the counterclaims are dismissed, May 29, 1969.

D. 203,783, J. H. Batts, GARMENT HANGER; **D. 210,434,** same; **3,306,506,** same, GARMENT HANGER CONSTRUCTION; **3,059,823,** same, COAT HANGER; **3,406,881,** same, CONTOURED ONE-PIECE HANGER, **filed** Mar. 7, 1969, D.C., E.D.N.Y. (Brooklyn), Doc. 69-C-245, *John Thomas Batts, Inc.* v. *Benjamin Zuckerman et ano.*

D. 203,837. (See 3,171,652.)

D. 204,124, Rawson and George, CHAIN SAW, **filed** May 22, 1969, D.C. Md. (Baltimore), Doc. 20803-C, *Textron, Inc.* v. *Arthur Cook Supply Corp. et al.*

D. 210,434. (See D. 203,783.)

Reg. No. 851,039. (See 3,401,944.)

DEFENSIVE PUBLICATIONS

PUBLISHED SEPTEMBER 2, 1969

Published at the request of the applicant or owner in accordance with Notice of Apr. 11, 1968, 849 O.G. 1221. The abstracts are identified by serial number of the applications and arranged in chronological order. The heading of each abstract of application published herein indicates the number of pages of specification, including claims and sheets of drawing contained in the application as originally filed. The files of these applications are available to the public for inspection and reproduction may be purchased for 30 cents a sheet.

Applications published under the Defensive Publication Program have not been examined as to the merits of alleged invention. The Patent Office makes no assertion as to the novelty of the disclosed subject matter.

788,684

METHOD FOR COATING SELECTED PORTIONS OF AN ARTICLE WITH A PLASTIC COATING MATERIAL

Raymond E. Sutherland, Kingsport, Tenn., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

Continuation of application Ser. No. 467,756, June 28, 1965. This application Dec. 23, 1968. Published Sept. 2, 1969

Int. Cl. B44d *1/14;* **C23d** *1/00*
U.S. Cl. 117—21

No Drawing. 8 Pages Specification

A method for coating selected portions of a heat conductive article including the steps of heating the article to a temperature below its flow-out temperature, contacting a portion of the article with a first plastic coating material, heating the article to the flow-out temperature of the first plastic coating material, cooling the article, heating the article to a temperature below the flow-out temperature of the article and the first plastic coating material, contacting another portion of the article with a second plastic coating material having a substantially lower flow-out temperature than the first coating material, heating the article to the flow-out temperature of the second plastic coating material, and cooling the article.

814,847

POLYETHYLENE PHONOGRAPH RECORD

Edward A. Naudain, Newark, Del., assignor to Hercules Incorporated, Wilmington, Del., a corporation of Delaware

Continuation of application Ser. No. 480,122, Aug. 16, 1965. This application Apr. 9, 1969. Published Sept. 2, 1969

Int. Cl. C08f *27/04, 45/08*
U.S. Cl. 260—41

No Drawing. 11 Pages Specification

This disclosure relates to highly filled polyethylene phonograph record compositions which can be injection or compression molded to form hard, non-brittle records of good sound fidelity and wear properties. The disclosed compositions contain 40 to 60% of a polyethylene having a density of at least 0.955 and a melt index (I_2, 190° C.) of 0.75 to 3.5 and 60 to 40% of a carbon black having a surface area ranging from 10 to 60 square meters per gram.

816,168

2,2,4,4-TETRAALKYL-3-THIOXOTHIOBUTYRAMIDES AND DERIVATIVES THEREOF

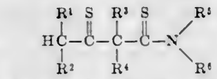
Edward U. Elam and Herman E. Davis, both of P.O. Box 511, Kingsport, Tenn. 37662

Continuation of application Ser. No. 586,052, Oct. 12, 1966. This application Apr. 9, 1969. Published Sept. 2, 1969

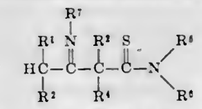
Int. Cl. C07c *153/05*
U.S. Cl. 260—551

No Drawing. 12 Pages Specification

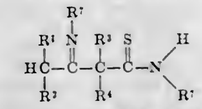
2,2,4,4-tetraalkyl-3-thioxothiobutyramides, having the formula



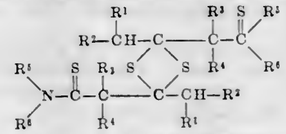
in which R^1, R^2, R^3 and R^4, taken singly, is alkyl and in which R^1 and R^2, when taken collectively with the carbon atom to which they are attached, and R^3 and R^4 when taken collectively with the carbon to which they are attached, represent alkylene groups completing a saturated carbocyclic ring; R^5, when taken singly, is alkyl or aryl, and R^6, when taken singly, is hydrogen, alkyl or aryl; R^5 and R^6, when collectively taken with the nitrogen atom to which they are attached, represent a saturated heterocyclic ring, which are useful as epoxy polymerization catalysts, are prepared by reacting a 4-alkylidene-3,3-dialkyl-2-thietanethione with an amine. The use of primary amines in the above reaction also produces 2,2,4,4-tetraalkyl-3-iminothiobutyramides of the formula



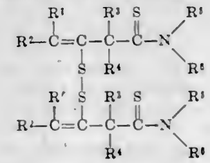
and iminothiobutyramides of the formula



wherein R^7 is alkyl or aryl. The 2,2,4,4-tetraalkyl-3-thioxothiobutyramides may form dimers of the formula



or be oxidized by air to 3,3'(dithio)bis[2,2,4,4-tetraalkyl-3-buteneamides] of the formula



665,271
GRANULAR POLYOLEFINS
Richard L. McConnell, P.O. Box 511, Kingsport, Tenn. 37662
Filed Sept. 5, 1967. Published Sept. 2, 1969
Int. Cl. C08f *47/03*
U.S. Cl. 260—88.2
No Drawing. 14 Pages Specification

A process for preparing granular polyolefin which comprises dissolving poly-α-olefin prepared from at least one α-olefin monomer having at least four carbon atoms in at least one saturated aliphatic alcohol containing 5 to 8 carbon atoms at an elevated temperature and cooling the polyolefin-alcohol mixture to precipitate the polyolefin as a granular product.

689,793
FUEL OILS HAVING IMPROVED VISCOSITY AND LUBRICATING CHARACTERISTICS
Duncan M. Cameron, 354 London Road (Lambton), Sarnia, Ontario, Canada, and Stephan Ilnyckyj, 31 Taylorwood Drive (York), Islington, Ontario, Canada
Filed Dec. 12, 1967. Published Sept. 2, 1969
Int. Cl. C10l *1/16, 1/18*
U.S. Cl. 44—58
No Drawing. 10 Pages Specification

The hydrocarbon fuel base stocks to be used in preparing the compositions of this invention include the distillate fuels containing at least 95 volume percent of a liquid hydrocarbon boiling within the range between about 250° and 580° F. These fuels include aviation turbine engine fuels such as JP–1, JP–4 and JP–5 fuels, and diesel fuels such as marine, stationary and automotive diesel engine fuels. The preferred fuel oil additive of this invention is a mono-alkyl or di-alkyl benzene, more preferably the mono-alkylated benzenes and may contain from about 6 to about 30 carbon atoms. It is most preferred, however, that the additive be a mono-alkyl benzene containing from about 10 to about 20 carbon atoms in the alkyl group. The boiling range of the alkyl benzene may be within the range between about 430° and 650° F. Specific examples of alkyl and acyl substituted cyclic hydrocarbons useful herein include, 1-methyl naphthalene, 2-butyl-5-hexyl-indan, 2 - propyl - keto - 5-hexyl-indan, 2-cyclo-hexyloctane, 2,2 - dimethyl - propyl-cyclohexane, 9(2-cyclohexyl-ethyl) heptadecane, etc.

746,313
PROCESS FOR FORMING ALPHA-OLEFIN BLOCK COPOLYMERS
George O. Cash, Jr., P.O. Box 511, Kingsport, Tenn. 37662
Filed July 22, 1968. Published Sept. 2, 1969
Int. Cl. C08f *15/04, 1/42*
U.S. Cl. 260—878
No Drawing. 11 Pages Specification

Process of preparing alpha-olefin block copolymers comprising:

(a) initially reacting ethylene with an aluminum compound having the formula AlR_3 wherein R represents alkyl, aryl or cycloalkyl, to form a long chain aluminum hydrocarbon compound of the formula

$$Al[(-C_2H_4)_y-C_2H_5]_3$$

wherein y is an integer of at least about 19, and

(b) subsequently contacting the product of said aluminum compound and ethylene with an alpha-olefin having the formula $CH_2{=}CHR$ wherein R is alkyl, alkenyl, aryl, cycloalkyl or cycloalkenyl, and a halide or acetyl acetonate of a transition metal of Groups IV–B to VI–B of the Periodic Table.

The resultant block copolymer has the structure

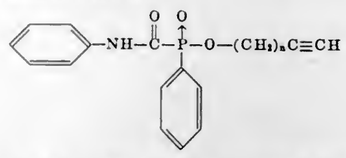
$$A-(C_2H_4)_y-C_2H_5$$

wherein (A) is derived from the alpha-olefin added in step (b). Specific alpha-olefins contemplated are propylene, 4-methyl-1-pentene, 1-hexene, 1-octene, butadiene, isoprene, styrene and dimethylene cyclohexene.

Block copolymers with widely varying properties can be prepared. Relatively low molecular weight copolymers containing polymeric blocks of 3-methyl-1-butene or 4-methyl-1-pentene are useful as additives to lubricating oils to maintain a constant viscosity over a broad temperature range, for instance, while copolymers with polymeric blocks of propylene or 1-butene can be extruded to form tough, clear film or fibers with high tensile strength.

751,354
INSECTICIDES AND SYNERGISTS
Ronald Eugene Montgomery, Middleport, and Harry Hobart Incho, Medina, N.Y., assignors to FMC Corporation, New York, N.Y., a corporation of Delaware
Filed Aug. 9, 1968. Published Sept. 2, 1969
Int. Cl. A01n *9/36, 9/24;* **C07f** *9/46*
U.S. Cl. 424—214
No Drawing. 10 Pages Specification

Synergistic insecticidal combinations of esters of chrysanthemumic acid, for example pyrethrins, allethrin, and (1-cyclohexene-1,2-dicarboximido)methyl chrysanthemumate, with certain ω-alkynyl phenyl(phenylcarbamoyl) phosphinate synergists, are described. These synergists have the general formula:

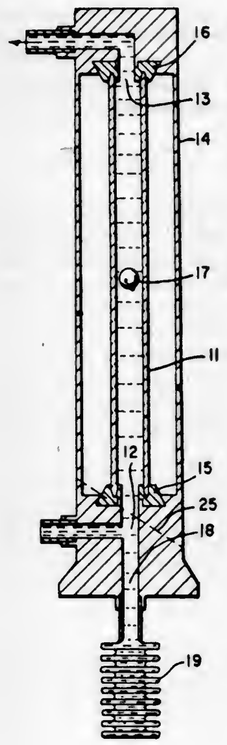


wherein *n* is an integer of one to three inclusive. The preparation of 3-butynyl phenyl(phenylcarbamoyl)phosphinate, M.P. 83–85° C., and the synergistic activity of said phosphinate with representative chrysanthemumate insecticides, are described in detail.

783,425
OLEAGINOUS GELS FROM POLYOLEFIN MICROPARTICLES
Charles W. Hock, Wilmington, Del., assignor to Hercules Incorporated, Wilmington, Del., a corporation of Delaware
Filed Dec. 12, 1968. Published Sept. 2, 1969
Int. Cl. C10m *5/10;* **C10l** *7/02*
U.S. Cl. 252—59
No Drawing. 6 Pages Specification

Oleaginous gels are prepared by subjecting a mixture of olefin polymer particles to high shear agitation in an organic diluent at a temperature at which the polymer remains in solid form. The olefin polymer is in the form of small particles of less than one micron in at least one dimension. They can be polymers or copolymers of α-olefins of 2 to 6 carbon atoms which are about 50 to 90% crystalline. Small particles can be prepared by a nitric acid treatment which fractures the bonds between individual microcrystals to prepare a friable, loosely bound accumulation of microcrystals, whose shape depends on the form of polymer at the start of the acid treatment. The product from treatment of a bulk polymer which has been crystallized from the melt is comprised of shingle-shaped lamallae, whereas that from an oriented film is comprised of needle-shaped fibrils. Either of these particle types can be employed in the invention. The high shear agitation is preferably accomplished by ultrasonic vibration which causes the polymer-diluent mixture to gel to the consistency of a smooth, non-flowable grease. Such gels are usable as lubricants, bonding agents for paper or as fillers for other plastic materials.

788,156
BUBBLE FREE FLOWMETER
Herman R. Felton, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Dec. 31, 1968. Published Sept. 2, 1969
Int. Cl. G01f *1/00*
U.S. Cl. 73—209
1 Sheet Drawing. 7 Pages Specification



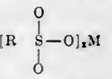
In a rotameter, the improvement of adding to the inlet of the rotameter a deformable chamber with a variable volume large enough so that deformation of the chamber will force enough fluid into the rotameter to cause the indicator in the rotameter to move a sufficient distance to dislodge bubbles adhering to it.

795,353
CHEMICAL SENSITIZATION OF UNSENSITIZED PHOTOGRAPHIC SILVER HALIDE
Judith A. Schwan, Kodak Park Division, Rochester, N.Y. 14650
Filed Jan. 30, 1969. Published Sept. 2, 1969
Int. Cl. G03c *1/08, 1/74, 1/34*
U.S. Cl. 96—108
No Drawing. 18 Pages Specification

An unsensitized photographic silver halide emulsion layer is chemically sensitized at a desired time prior to exposure by subjecting the emulsion layer to elevated temperatures in the presence of a chemical sensitizer. A sulfur and gold-sensitized emulsion layer is provided by contacting the layer with a gold sensitizer subsequent to sulfur sensitization.

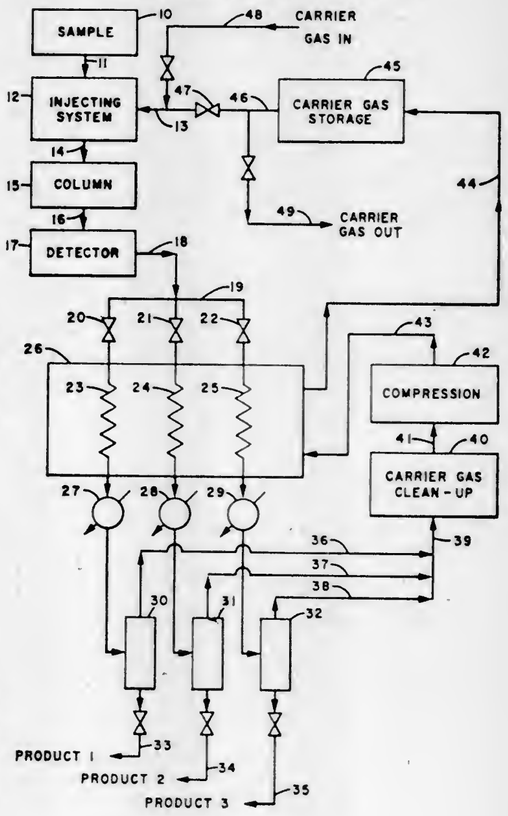
809,368
CORROSION INHIBITING
Joseph B. Arots, Wilmington, Del., and Joseph E. Mirolli, Chester, Pa., assignors to Hercules Incorporated, Wilmington, Del., a corporation of Delaware
Filed Mar. 21, 1969. Published Sept. 2, 1969
Int. Cl. C08g *51/62, 43/00*
U.S. Cl. 260—37
No Drawing. 11 Pages Specification

The corrosive effects of carbon black filled epihalohydrin polymer vulcanizates can be inhibited by the addition of at least about 5%, based on the weight of the polymer, of a lead compound, such as a lead oxide, and from about 3% to about 20%, based on the weight of the polymer of a sulfonate corrosion inhibiting agent such as barium dinonylnaphthalene sulfonate. The sulfonate corrosion inhibiting agent will have the general formula



where R is an alkaryl radical, M is a metal selected from Groups I–A, II–A, II–B, IV–A and VIII of the Periodic Table, ammonia and amine radicals and *x* is an integer from 1 to 3. The epihalohydrin polymers treated in this way are polyethers containing halomethyl groups attached to the main polymer chain.

821,426
CHROMATOGRAPHIC SEPARATION
Dennis Jack Royer, 1012 E. Hartford, Ponca City, Okla. 44601
Filed May 2, 1969. Published Sept. 2, 1969
Int. Cl. B01d *15/08*
U.S. Cl. 55—67
1 Sheet Drawing. 5 Pages Specification



Separated effluent product slugs from a chromatographic column operated at elevated temperature are passed through indirect heat exchange to carrier gas separation zones; the separated carrier gas is then cleaned, compressed, and passed to the aforementioned indirect heat exchange.

REISSUES

SEPTEMBER 2, 1969

Matter enclosed in heavy brackets [ ] appears in the original patent but forms no part of this reissue specification; matter printed in italics indicates additions made by reissue.

26,656

CONTAINER FABRICATING AND ORIENTING APPARATUS

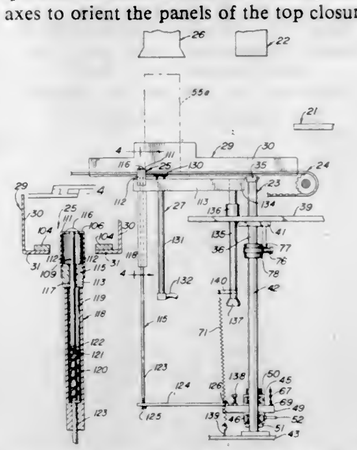
Raymond W. Guzzardo, McHenry, Ill., assignor to E. M. Melahn, doing business as Northern Illinois Machine Company, McHenry, Ill.

Original No. 3,370,515, dated Feb. 27, 1968, Ser. No. 514,868, Dec. 20, 1965. Application for reissue Apr. 29, 1968, Ser. No. 729,873

Int. Cl. B31b *1/74*

U.S. Cl. 93—36 **20 Claims**

1. In a machine for forming tubular paperboard cartons having bottom and top closures formed by folding panels thereof along predetermined fold lines, said cartons being carried on mandril means while the bottom closures thereof are formed and sealed: stripper means for removing cartons from said mandril means, top former means located remotely of said mandril means, means for transferring cartons from said stripper means to said top former means and cooperating with means positioning cartons for introduction to said former means, and means operable to index cartons selectively about their tubular axes to orient the panels of the top closures thereof in predetermined alignment for the folding thereof by said top former means.

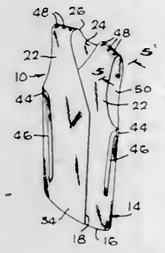


PATENTS

GRANTED SEPTEMBER 2, 1969

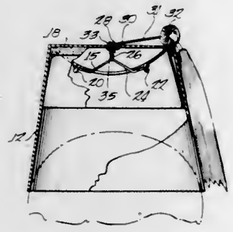
GENERAL AND MECHANICAL

3,464,063
MEDICAL EXAMINATION GOWN
Henry J. Hoegerman, 44 El Arco Drive, Santa Barbara, Calif. 93105
Filed Mar. 10, 1967, Ser. No. 622,221
Int. Cl. A41b 9/16; A61b 9/06
U.S. Cl. 2—114 **8 Claims**



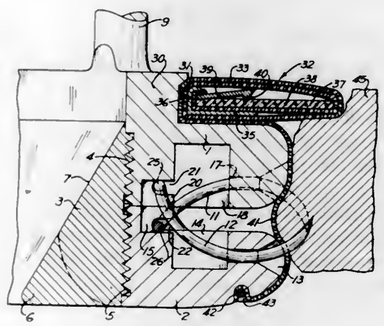
A medical examination gown to be worn in wraparound relation to the patient's body and having overlapping front and rear skirt folds or flaps which may be individually folded aside to permit selective partial or total exposure of the lower anterior and posterior regions of the body, and upper front and back flaps releasably joined by shoulder fasteners which may be released to permit selective partial or total exposure of the upper anterior and posterior regions of the body.

3,464,064
LINER FOR HEAD COVERING
Don L. Cook, 3409 Oak St., Mattoon, Ill. 61938
Filed May 19, 1967, Ser. No. 639,878
Int. Cl. A42c 5/00
U.S. Cl. 2—190 **10 Claims**



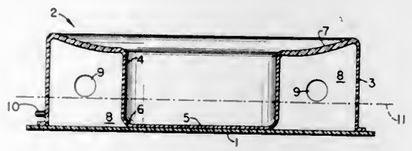
A liner for a head covering, such as a fez, comprising an annular portion, a downwardly and outwardly sloping wall extending from the periphery of the annular portion, means attached to the outside of the wall for engaging the inner surface of the head covering, an elastic band attached to the annular portion, and a fastener attached to the band and engaging the top of the head covering.

3,464,065
PROSTHETIC HEART VALVE
Harry W. Cromie, Pittsburgh, Pa., assignor to Surgitool Incorporated, Pittsburgh, Pa., a corporation of Pennsylvania
Filed July 8, 1965, Ser. No. 470,395
Int. Cl. A61f 1/00
U.S. Cl. 3—1 **12 Claims**



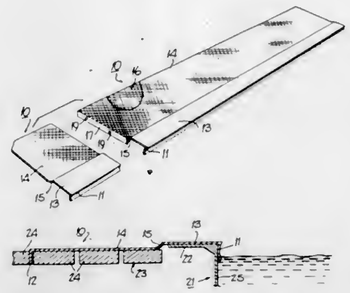
An artificial heart valve having an annular body with an axial fluid passage through it and a movable closure member for the passage is encircled by a toroidal fabric cuff that projects radially from the body. The cuff is formed from a fabric tube anchored at its inner end to a rigid ring and wrapper axially upon itself completely around the ring, which holds the cuff against the valve body.

3,464,066
COLLAPSIBLE, INFLATABLE, DISPOSABLE BED PAN
Dorothy J. Marks, 1200 Pacheco, San Francisco, Calif. 94116
Filed Dec. 5, 1967, Ser. No. 688,238
Int. Cl. A61g 9/00
U.S. Cl. 4—113 **6 Claims**



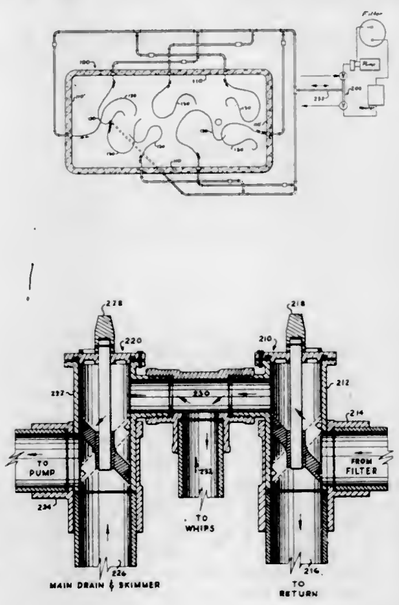
A bed pan formed from non-metallic material having flexible walls supported on and secured to a semi-rigid base adapted to be positioned flat on a mattress or the like, and having a conformation and size similar to a conventional bed pan. The pan is collapsible to a flattened condition for storage and for insertion under a patient, and is inflatable for use and for also assisting in elevating the patient when placed below the latter in flattened or collapsed condition.

3,464,067
INTEGRAL COPING AND WALK FOR SWIMMING POOLS
Charles J. Hauck, 112 Heller Way, Upper Montclair, N.J. 07043
Filed June 30, 1967, Ser. No. 650,429
Int. Cl. E04h 3/16
U.S. Cl. 4—172 **13 Claims**



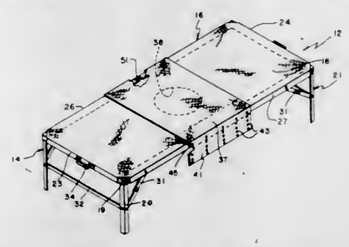
The coping and walk strip is made of sections which have integral coping and roughened walk positions. The sections have depending flanges to abut the side wall of a swimming pool and to anchor the section between the planks of a surrounding walkway. The sections are made of fiber glass and are secured end-to-end through depending plates.

3,464,068
SWIMMING POOL CLEANING SYSTEM
Brackston T. Whitaker, 1220 S. Alvernon Way, Tucson, Ariz. 85711
Filed May 2, 1967, Ser. No. 635,444
Int. Cl. E04h 3/20; B08b 9/08
U.S. Cl. 4—172 **2 Claims**



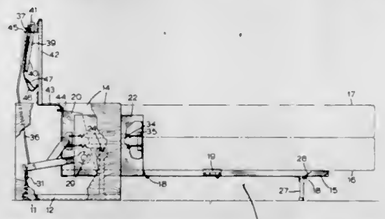
An hydraulically operated swimming pool cleaning system, wherein by a flow of water through two actuating valves, plural water exhaust whips may be extended and retracted into the pool closure in a submarine fashion to agitate the water within to perform the cleaning function on the walls and floor of the swimming pool. The system is mounted for facile cleaning replacement and maintenance.

3,464,069
PORTABLE SUNBATHING COT
Elaine M. Bien, 2406 Andros Lane, Fort Lauderdale, Fla. 33312
Filed May 5, 1967, Ser. No. 636,429
Int. Cl. A47c 17/64; A61s 1/00
U.S. Cl. 5—110 **3 Claims**



This invention relates to a new and novel sunbathing cot structure and, more particularly, to a readily portable sunbathing cot structure adapted for usage by people with enlarged abdomen areas, namely, pregnant women. Still, more specifically, this invention relates to a sunbathing cot structure having an upper horizontally extended support surface with an enlarged opening therein adapted to receive one's enlargement abdomen area and an auxiliary cover member adapted to expose or cover the enlarged opening as desired. Additionally, this invention relates to a sunbathing cot structure having an upper support surface with a central portion thereof formed of elastic material so as to resiliently receive and support one's abdomen area.

3,464,070
STORABLE BED
Wilfred D. Driver, P.O. Box 132, Thessalon, Ontario, Canada
Continuation-in-part of application Ser. No. 557,690, June 15, 1966. This application Sept. 14, 1967, Ser. No. 667,714
Int. Cl. A47c 17/16, 17/22
U.S. Cl. 5—136 **13 Claims**



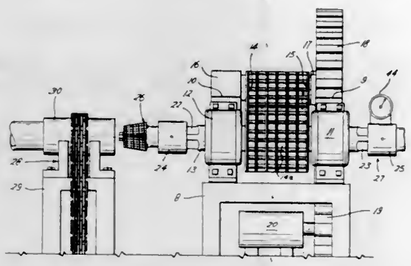
A storable bed is of the type comprising a base frame, a bed frame that swings about a first pivot axis between a vertical stored position and a horizontal sleeping position, arm means which are pivoted to the bed frame about a second pivot axis and counterbalance springs acting between the bed frame and the arm means; the arm means carry bed clothes retaining means that clamp the bedclothes to the bed under the action of the counterbalance springs as the bed frame approaches the stored position, a connection between the arm means and the base frame permitting operation of the clamping means only while the bed frame is a predetermined distance from the stored position.

3,464,071
NAVIGATIONAL BUOY CONSTRUCTION
James Donald Starratt, Hudson, Ontario, Canada
Filed Aug. 3, 1967, Ser. No. 658,080
Int. Cl. B63b *51/02*
U.S. Cl. 9—8 **3 Claims**



A navigational spar buoy manufactured from hollow reinforced fiber glass plastic thus giving a relatively lightweight yet strong construction. It consists of upper and lower portions and the flotational characteristics are controlled by a plug of foam plastic which is foamed into the upper section depending upon the depth of water within which the buoy is placed. It also includes apertured sides which permit water to enter and exit from the upper and lower portions of the buoy once again stabilizing the flotation characteristics.

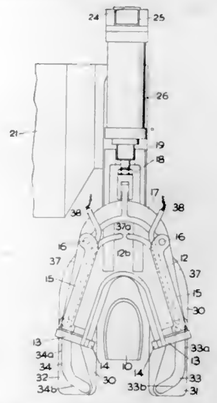
3,464,072
THREAD FORM RESTORING TOOL
Wiley B. Noble, Houston, Tex., assignor, by mesne assignments, to Herman J. Schellstede, New Iberia, La.
Filed Nov. 7, 1966, Ser. No. 592,598
Int. Cl. B23g *1/06*
U.S. Cl. 10—1 **3 Claims**



A tool for reforming threads as of a drill pipe tool joint, including a threaded surface conforming in profile with the mating thread of the thread to be reformed and axial slots therein forming thread lands. One wall of each slot is radial and forms with the thread surface a scarfing edge without rake or following clearance.

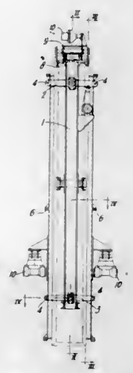
3,464,073
APPARATUS FOR USE IN SHOE MANUFACTURE
Harold Albert Boddy, Leicester, England, assignor to Ralphs Unified Limited, Leicester, England, a British company
Filed Nov. 8, 1967, Ser. No. 681,481
Claims priority, application Great Britain, Nov. 12, 1966, 50,815/66
Int. Cl. A43d *95/00, 21/00*
U.S. Cl. 12—54.3 **9 Claims**

Apparatus for pre-heating an end part of a shoe upper comprising a heatable solid male die, a band of flexible elastomeric material forming a co-operating flexible female die and means for causing the flexible band to embrace the male die with the shoe upper on the latter by first gripping between the dies the end part of the



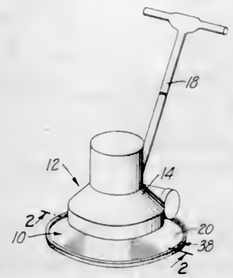
shoe upper and then causing the flexible band to close in towards the sides of the male die. The flexible band is thereby caused to draw the side parts of the shoe upper into intimate contact with the male die after first gripping the material at the end part of the shoe upper.

3,464,074
APPARATUS FOR CLEANING THE SEALING SURFACES OF COKE OVEN DOORS AND DOOR JAMBS
Walter Stanke, Essen, and Gottfried Mertens, Essen-Borbeck, Germany, assignors, by mesne assignments, to Koppers Company, Inc., Pittsburgh, Pa., a corporation of Delaware
Filed June 29, 1967, Ser. No. 650,031
Claims priority, application Germany, July 26, 1966, K 59,883
Int. Cl. C10b *25/16;* **B08b** *13/00*
U.S. Cl. 15—93 **8 Claims**



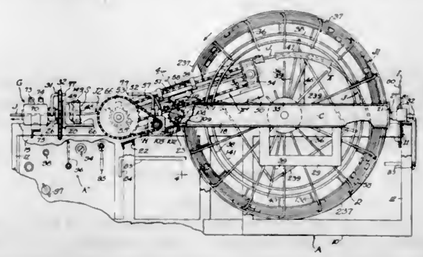
A support frame that is movable into position for cleaning a coke oven door supports pivotal levers to which are mounted a plurality of cleaning tools. The levers are connected to vibrators that, when actuated, reciprocate the cleaning tools and they remove deposited matter from the sealing surfaces of the coke oven door A similar frame suports cleaning tools and vibrators that reciprocate the cleaning tools and thereby remove deposited matter from the door jamb. A temporary plug is movable into the coke oven doorway to prevent heat loss when the door and door jamb are being cleaned.

3,464,075
PAD HOLDER FOR MOTOR POWERED FLOOR MACHINES
Frank D. Sullivan, 1347 Gates Ave., Manhattan Beach, Calif. 90266
Filed June 6, 1967, Ser. No. 643,949
Int. Cl. A47l *11/14*
U.S. Cl. 15—98 **8 Claims**



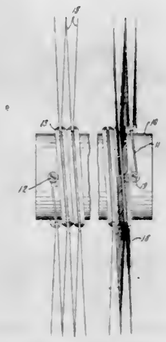
A pad holder for a floor machine including a horizontally extending, concave, vertically resilient, lightweight metal disc overlying a floor pad and carrying the weight of the machine's motor to uniformly distribute the weight over the entire pad.

3,464,076
SEWER RODDING MACHINE WITH POWER REEL
Peter L. Ciaccio, Los Angeles, Calif., assignor to Flexible, Inc., Pittsburgh, Pa., a corporation of Delaware
Continuation-in-part of application Ser. No. 636,838, May 8, 1967. This application Mar. 4, 1968, Ser. No. 710,352
Int. Cl. B08b *9/04;* **B65k** *75/00*
U.S. Cl. 15—104.3 **10 Claims**



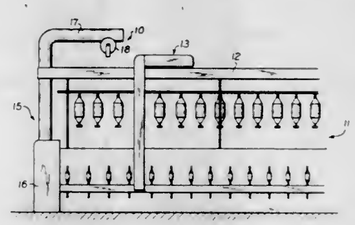
A sewer rod feeding machine having a rod-storage reel mounted in a rotating carriage and turning therewith so that sewer rod fed tangentially from the reel may be rotated for driving a cleaning tool in a sewer. The reel is mounted for rod-feeding rotation on an axis that is generally transverse to the carriage axis, but diagonally disposed so that the reel extends diagonally within the carriage and the rod passes diagonally through an opening in one side of the reel in a plane generally parallel to the carriage axis so that the rod may be fed in as nearly a straight line as possible from the reel to a tubular guide at the forward end of the carriage through which it is issued from the machine on the carriage axis. Between the reel and the tubular guide is a rod feed unit driven by a hydraulic motor mounted on the carriage. The feed unit and motor both turn with the carriage. A one-way slipping drive to the reel is provided by a pulley driven in timed relation to the rod-feed unit and frictionally engaging the rim of the reel so as to force-feed the rod out of the reel to the rod-feed unit. This slipping drive is overruled by the rod feed unit during reverse operation, the rod-feed unit feeding the rod back into the reel without interference by the reel-drive unit.

3,464,077
SPIRAL WOUND BRUSHES
George B. Hunt, 648 N. 79th St., Wauwatosa, Wis. 53213
Continuation-in-part of application Ser. No. 661,405, Aug. 17, 1967. This application June 20, 1968, Ser. No. 748,147.
Int. Cl. A46b *5/00*
U.S. Cl. 15—182 **8 Claims**



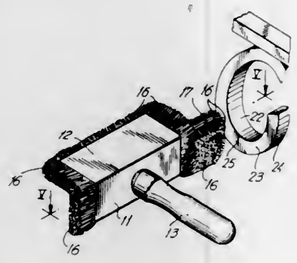
A spiral wound brush in which the cord which is used to hold brush filaments in place in a channel is also used to determine the position of the channel and to hold the channel on a brush core.

3,464,078
FILTER CLEANING OF TRAVELING OVERHEAD CLEANERS
Ernst Nagel, Weisslingen, Zurich, and Werner Steinmetz, Wetzikon, Zurich, Switzerland, assignors, by mesne assignments, to Luwa Ltd., Zurich Switzerland, a corporation of Switzerland
Filed Aug. 25, 1965, Ser. No. 482,362
Claims priority, application Switzerland, Aug. 26, 1964, 11,166/64
Int. Cl. A47l *5/00;* **B01d** *33/00*
U.S. Cl. 15—312 **3 Claims**



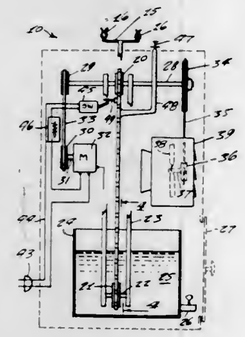
Suction cleaning equipment for cleaning the filter screen of traveling overhead cleaners in which ambient air is passed through the screen and directed over the production apparatus in a textile mill to clean same. The improved filter cleaning equipment employs a cylindrical suction head with its axis perpendicular to the path of travel of the traveling cleaner, with an intake orifice in the cylindrical suction head extending over the width of the filter screen of the traveling cleaner. A yoke shaped closure valve is mounted to pivot about the axis of the cylindrical suction head to keep the intake orifice closed until the traveling cleaner moves adjacent the suction head, with the weight of the valve serving to close off the suction head intake orifice to minimize air handling requirements, and simplify the cleaning mechanism.

3,464,079
PAINT APPLICATOR
Joseph Palmeri, 720–28 Crescent St., Brooklyn, N.Y. 11208
Filed Mar. 21, 1968, Ser. No. 714,915
Int. Cl. A46b *15/00;* **B44d** *3/28*
U.S. Cl. 15—235 **7 Claims**



A pair of sides adjoining each other along a longitudinally extending line form a substantially dihedral back of a paint applicator. One of the sides has an extending portion in the longitudinal direction extending beyond the corresponding end of the other side. Paint applying material consisting essentially of fur nap is affixed to the inside surfaces of the sides and to the inside and outside surfaces of the extending portion. A handle is affixed to and extends from one of the sides.

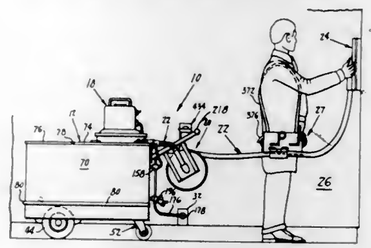
3,464,080
EYEGLASS CLEANER
Beatrice Certo, 199 Hunter Ave., Staten Island, N.Y. 10306
Filed Aug. 21, 1967, Ser. No. 662,117
Int. Cl. A47l *5/38, 25/00;* **G02c** *13/00*
U.S. Cl. 15—302 **2 Claims**



An apparatus for cleaning eyeglasses, including a mechanism that first dips the eyeglasses in a cleaning solution, then scrubs, rinses and dries the same.

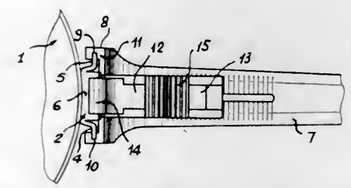
3,464,081
MOBILE WALL WASHING APPARATUS
John A. Wisner, 5207 Tilbury Way, Homeland, Baltimore, Md. 21212
Filed June 24, 1966, Ser. No. 560,281
Int. Cl. A47l *7/00*
U.S. Cl. 15—321 **9 Claims**

Wheel mounted wall washing apparatus including a frame supporting a plurality of tanks each containing a liquid under pressure, and liquid vacuum cleaning means; a wall engageable porous cleaning element; conduit means connecting, respectively, each tank and said liquid cleaning means in communication with said wall engageable means; valve means connected in each conduit means to



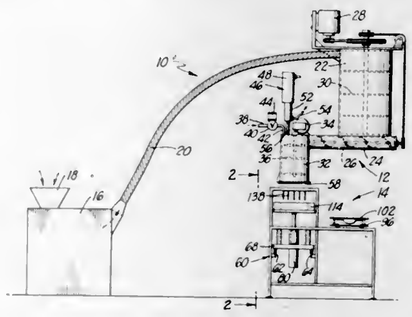
selectively control fluid flow through the wall engageable means to a wall to be cleaned and operable to apply suction thereon to remove excess liquids from the wall therethrough.

3,464,082
CONTAINER WITH DETACHABLE HANDLE
Oscar Friberg, Avenue de France 24, Lausanne, Switzerland
Filed Mar. 16, 1967, Ser. No. 623,750
Int. Cl. B65d *25/28*
U.S. Cl. 16—114 **2 Claims**



A detachable handle for a container comprising a latching element permanently secured to a container and a handle containing a slidable latch whereby the two latching elements may be coupled together.

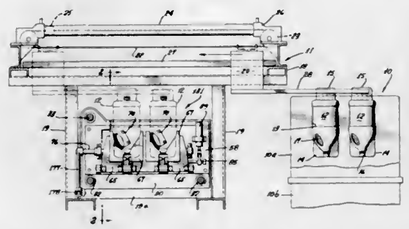
3,464,083
APPARATUS FOR MANUFACTURING ARTICLES
Seymour Adler, El Segundo, Calif., assignor to Mattel, Inc., Hawthorne, Calif., a corporation of California
Filed Feb. 16, 1967, Ser. No. 616,655
Int. Cl. B29c *3/02*
U.S. Cl. 18—4 **5 Claims**



The apparatus comprises a storage chamber for chopped foamed material particles and a screw for extruding the chopped foamed material particles into a

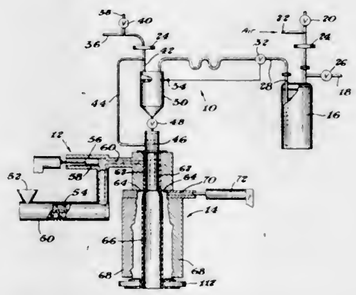
mixing chamber. The mixing chamber has mixing propellers which tumble the foam extruded therein. Adhesive is injected into the mixing chamber while the particles are tumbled. The adhesive coated particles are poured into a mold. The mold top is put in place and the mold is moved to a press station. Press structure presses the mold top into place and latches retain the mold top in place. Adhesive hardening treatment means is provided, preferably in the form of a furnace. The mold is thereupon placed in the furnace and the adhesive is set. The process comprises the introduction of predetermined quantities of chopped foamed material and adhesive into a mixing chamber, including the tumbling of the foam material during adhesive charging. The process further includes the steps of placing the adhesive coated foamed material particles in a mold, closing the mold and setting the adhesive.

3,464,084
FLASH TRIMMING OF BLOW MOLDED ARTICLES
Robert D. Thompson, Anaheim, Calif., assignor to Purex Corporation, Ltd., Lakewood, Calif., a corporation of California
Filed Mar. 7, 1966, Ser. No. 532,228
Int. Cl. B29c *29/00;* **B26d** *5/00*
U.S. Cl. 18—5 **16 Claims**



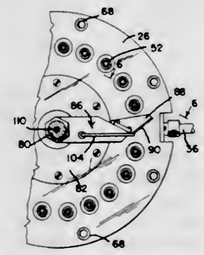
Severance of flash from blow molded containers is realized in a new and efficient manner through grasping the container by its flash while heated and flexible and moving the same to a flash removal station and there severing the flash.

3,464,085
PACKAGING APPARATUS
Francis L. Burkett, Breckenridge, and Richard J. Lee, Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
Filed Sept. 26, 1966, Ser. No. 581,931
Int. Cl. B65b *31/02, 55/10*
U.S. Cl. 18—5 **4 Claims**



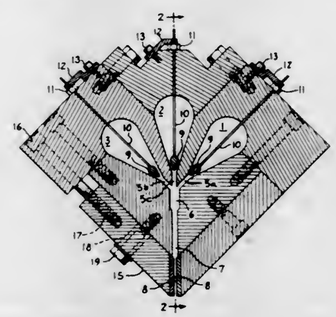
Apparatus for blow molding thermoplastic containers, filling the same with a sterile product immediately upon their formation while the containers are yet in a sterile condition, and sealing the filled containers while they still remain sterile. The apparatus is basically a three component system, one component for extruding a parison, a second for blow molding the parison and sealing the same, and a third for supplying a sterile product to the blown parison. All of the components are in sealed communication with one another to maintain sterility.

3,464,086
EXTRUSION APPARATUS
Mark Hasten and Floyd Lobash, Minneapolis, Minn., assignors to General Mills, Inc., a corporation of Delaware
Filed Nov. 25, 1966, Ser. No. 596,846
Int. Cl. B29f *3/04;* **B29c** *17/14*
U.S. Cl. 18—12 **10 Claims**



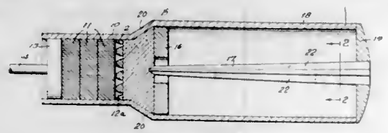
An apparatus for slicing ropes of extruded material into predetermined lengths as the ropes are forced through extrusion orifices in an extrusion apparatus. A motor and clutch are provided for activating the slicing apparatus. A brake, a rotatable cam, and a cam sensing device are provided for stopping the slicing apparatus at a predetermined location, so that none of the orifices are blocked by the slicing apparatus.

3,464,087
MULTIPLE-CHANNEL EXTRUSION DIE FOR THE PRODUCTION OF MULTILAYER THERMOPLASTIC SHEET MATERIALS
Edward J. Koch, Dallas, Tex., assignor to St. Regis Paper Company, New York, N.Y., a corporation of New York
Continuation-in-part of application Ser. No. 437,840, Mar. 8, 1965. This application Aug. 8, 1967, Ser. No. 662,267
Int. Cl. B29f *3/04*
U.S. Cl. 18—12 **3 Claims**



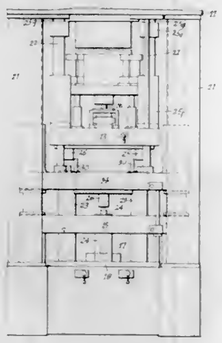
A multiple-channel die is disclosed in which the thickness of the sheet that is extruded from each channel is controlled by a wedge that can be moved toward or away from the entrance to the channel.

3,464,088
APPARATUS FOR FORMING ROCKET PROPELLANT GRAINS
Richard G. Guenter, Wilmington, Del., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Army
Original application July 16, 1965, Ser. No. 472,742. Divided and this application Jan. 19, 1968, Ser. No. 721,904
Int. Cl. A29f *3/014, 3/04*
U.S. Cl. 18—12 **1 Claim**



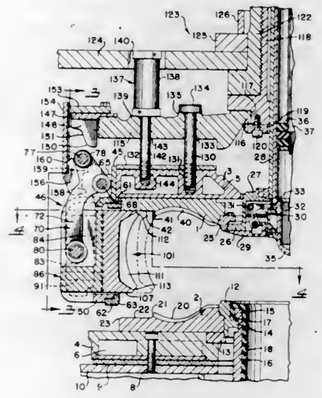
An apparatus for forming a large grain propellant comprising an elongated cylindrical housing having a reduced section at one end, and outwardly expanding walls connecting the reduced section with a non-reduced section. A partition having a multiplicity of orifices is positioned traversely in the reduced section. A removable cap, having a tapered stake attached thereto, which extends through the non-reduced section, incloses the top of the non-reduced section. A disk shaped ram, which is positioned in the non-reduced section, slides loosely on the tapered stake. In operation, a consolidation ram forces the material through the orifices whereby retarding forces result in the formation of a larger grain than the starting material. The product is impaled on the integral stake of the removable cap and recovered therefrom.

3,464,089
COMPACTING PRESS
Joe A. Smith, Cincinnati, Ohio, assignor to The Cincinnati Shaper Company, Cincinnati, Ohio, a corporation of Ohio
Filed May 19, 1967, Ser. No. 639,762
Int. Cl. B29c *3/00*
U.S. Cl. 18—16.7 **2 Claims**



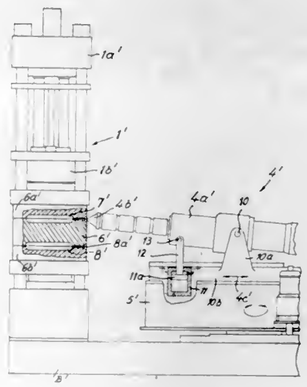
An improvement upon a floating platen compacting press making possible the use of "shelf" type dies in the top platen. Spacers are provided between the top and intermediate platens and the stop release means for the intermediate platen are retractable so that the intermediate platen stop is not released before the top platen abuts the spacers. Auxiliary means are then provided to release the stop at the end of the compacting stroke.

3,464,090
TIRE CURING PRESS
Armindo Cantarutti, Akron, Ohio, assignor to NRM Corporation, Akron, Ohio, a corporation of Ohio
Continuation of application Ser. No. 399,543, Sept. 28, 1964. This application Sept. 26, 1967, Ser. No. 670,805
Int. Cl. B29h *5/02, 5/4*
U.S. Cl. 18—17 **12 Claims**



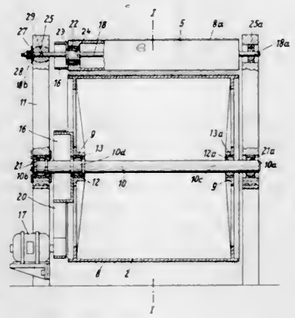
A tire curing press having radially movable mold sections operated by pivoting levers having cam followers thereon, the latter being engaged by cams upon the relative movement of the movable mold section and the supporting bolster; and further including pilot means ensuring the proper vertical and concentric registry of the sidewall mold sections prior to closing of the tread sections.

3,464,091
INJECTION MOLDING MACHINE
Friedrich Bernd Bielfeldt, Pappenheim, Germany, assignor to Eckert und Ziegler G.m.b.H., Weissenburg, Bavaria, Germany
Filed Sept. 8, 1966, Ser. No. 578,018
Claims priority, application Germany, Sept. 16, 1965, E 30,111
Int. Cl. B29f *1/00*
U.S. Cl. 18—30 **9 Claims**



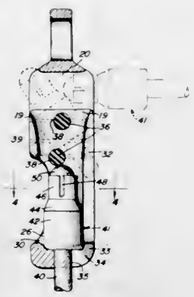
An injection molding machine wherein the shooting cylinder is pivotable about a vertical axis and about a horizontal axis so as to move its nozzle into registry with a selected one of several multi-stage mold units and into registry with the inlet of a selected mold cavity in the selected mold unit. The cylinder is mounted on a horizontal pivot carried by a slide which is reciprocable in a horizontal plane on a turntable rotating about the vertical axis.

3,464,092
SHAFT AND BEARING ARRANGEMENT FOR A CARDING MACHINE
Hans-Friedrich Bovensiepen, Hasseler Str. 32, Metzkausen, Germany
Filed Oct. 9, 1967, Ser. No. 673,899
Claims priority, application Germany, Oct. 8, 1966, B 89,259
Int. Cl. D01g *15/12, 15/28*
U.S. Cl. 19—98 **10 Claims**



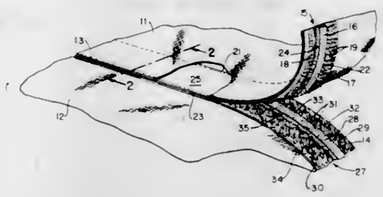
The main cylinder and the worker rollers of a carding machine are supported by self-aligning bearings on non-rotatable shafts so that oscillations due to unbalanced masses are eliminated, and the distance between the worker rollers and the carding cylinders remains constant.

3,464,093
BUTT HOOK WITH CHOKER RETAINER AND CHOKER FERRULE
Milo L. Laharty, Rte. 4, Box 331-J, Roseburg, Oreg. 97470
Filed Nov. 14, 1967, Ser. No. 682,802
Int. Cl. F16g *11/00;* **B66c** *1/34*
U.S. Cl. 24—123 **9 Claims**



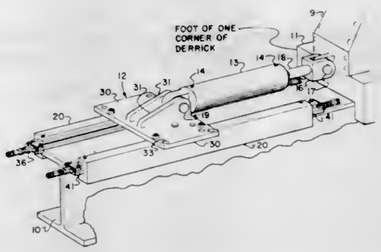
A cable fastening assembly including a hollow housing having a central chamber adapted to receive a ferrule terminated choker cable. The ferrule is inserted within the housing by passing it through an enlarged portion of the chamber then through a narrower concentric portion to a final seated position. Rubber rods project inwardly from the interior housing wall into the central chamber above the upward end of a normally seated ferrule to prevent same from becoming unseated. A choker cable is fastened to the ferrule by a babbeting process prior to insertion into the housing.

3,464,094
FLUID-TIGHT CLOSURE ASSEMBLY
Jack K. Mates, Scarsdale, N.Y., assignor to American Velcro, Inc., a corporation of New Hampshire
Filed July 12, 1967, Ser. No. 652,852
Int. Cl. A44b *17/00*
U.S. Cl. 24—204 **9 Claims**



A closure assembly for releasably joining sheet members in fluid-tight relationship including tape members secure to respective sheets at the portions to be joined, each tape member being provided with two or more longitudinally extending strips of hook type hooking elements and loop type hooking elements and one or more longitudinally extending strips of compressible material, the compressible strips and the hooking element strips of each tape member being arranged to register with the compressible strips and hooking elements strips of the other tape member when the respective tape members are aligned and forced together in face-to-face engagement.

3,464,095
HYDRAULIC GRIPPER FOR DERRICK SKIDDING
Henry B. Chambers, Santa Barbara, Calif., assignor to Hydronautics, Santa Barbara, Calif., a corporation of California
Filed Feb. 19, 1968, Ser. No. 710,432
Int. Cl. B66c *23/60*
U.S. Cl. 24—263 **7 Claims**

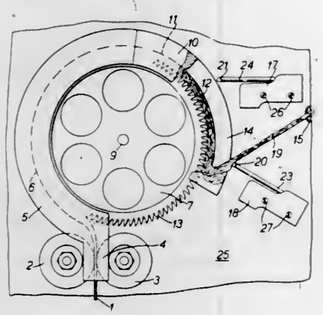


A pair of C shaped or channel shaped gripper members fit over the outer edges of a flange of an I beam which supports a sliding oil derrick. The gripping of the I beam is accomplished by a flattened tube lying inside each channel member. Fluid is pumped under pressure into the tubes which tend to assume a round cross section, pressing against the I beam and one rib of the channel members. This causes the other rib of the channel member to be pressed tightly against the I beam flange, giving rise to a powerful gripping action. A hydraulic motor connects the channels to the derrick, and the channels act as an anchor against which the derrick can be pushed or pulled. The cross plate connecting the channel members is large enough to adjust the channels to different widths of I beams.

3,464,096
APPARATUS AND METHOD FOR CRIMPING YARN

Ronald McIntyre, Rochdale, Lancashire, England, assignor to The Klinger Manufacturing Company Limited, London, England, a British company

Filed Oct. 3, 1966, Ser. No. 583,642
Claims priority, application Great Britain, Oct. 23, 1965, 44,959
Int. Cl. D02g *1/00*
U.S. Cl. 28—1.7 **13 Claims**

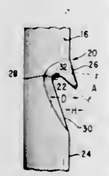


Yarn crimping apparatus in which crimped yarn is drawn off by winding means from the leading end of a plug of crimped yarn advancing through a passage into which yarn has been fed and longitudinally compressed includes means for varying the rate of operation of the winding means so as to maintain the leading end of the plug in a predetermined range of position. The means includes a switch controlling the rate of operation of the winding means and actuating means for the switch arranged to be operated by the yarn being drawn off changing its position consequent upon the leading end of the plug moving beyond the predetermined range of position.

3,464,097
FELTING NEEDLE

Josef Zocher, Haaren, Aachen, Germany, assignor to The Singer Company, New York, N.Y., a corporation of New Jersey

Filed June 1, 1967, Ser. No. 642,753
Int. Cl. D04h *18/00*
U.S. Cl. 28—4 **9 Claims**

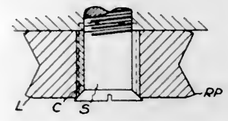


This disclosure relates to the needle art and in particular to felting needles and methods of making the same. Felting needles are of the general type which have barbs or other irregularities on their surfaces for engaging the loose fibers presented in a batt of loose fibers and for compacting the fibers into a relatively dense mat of fiber material. The present disclosure deals with improvements in needles of this type and in methods of making the same with the result being an overall improvement in the felting process.

3,464,098
CUTTING TOOLS

Arthur Ivan Walter Moore, John Howard Porter, and George Henry Middle, all of Staveley Lodge, Melton Mowbray, Leicestershire, England, and Richard Frank Vearncombe, Oadby, Leicester, England (Staveley Lodge, Melton Mowbray, Leicestershire, England)

Original application Jan. 24, 1966, Ser. No. 533,107. Divided and this application Oct. 31, 1966, Ser. No. 590,953
Claims priority, application Great Britain, Nov. 1, 1965, 46,098/65
Int. Cl. B26d *1/12*
U.S. Cl. 29—105 **6 Claims**

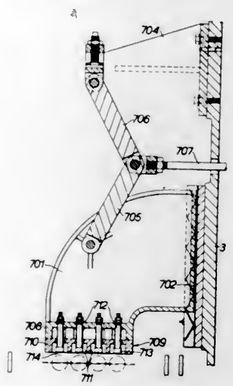


A tool especially a face milling cutter, comprises a body and a detachable indexable bit of slice-like form with a plurality of cutting edges. The end face of the bit is the clearance face and the wall the rake face. Each cutting edge is convex with the greatest curvature at the greatest depth of cut and the thickness of the chip falls to zero at this point so that this zone gives a finishing cut while the other part gives a roughing cut. There may also be additional roughing cutters which cut in advance of the slice-like bit. The latter may be held by a gapped sleeve and a sleeve-expanding screw.

3,464,099
MANUFACTURE OF PLASTIC ARTICLES

Norman Ashcroft Hurst, Four Oaks, Thomas Edward Horace Gray, Sutton Coldfield, and James Jones-Hinton, Tanworth-in-Arden, England, assignors to Dunlop Rubber Company Limited, London, England, a British company

Filed Dec. 14, 1966, Ser. No. 601,731
Claims priority, application Great Britain, Dec. 15, 1965, 53,345/65
Int. Cl. B21h *1/14;* **B21d** *53/12*
U.S. Cl. 29—148.4 **14 Claims**



A method and apparatus for trimming surplus material from the equatorial region of an article, such as a table tennis ball, in two stages, firstly by passing the article through a hollow die to crop off part of the surplus and then rotating the article while mounted on a spindle to trim substantially the remainder. A pointed tool is used which can be moved to follow the required profile of the article in the trimming region.

3,464,100
PROCESS FOR THE MANUFACTURE OF PISTONS MADE OF A LIGHT ALLOY AND HAVING A COOLING FLUID CIRCULATION ARRANGEMENT, FOR INTERNAL COMBUSTION ENGINES

François Foulet, Gasny, France, assignor to Societe A.M.O., Colombes, France

Filed Sept. 8, 1964, Ser. No. 394,983
Claims priority, application France, Sept. 8, 1964, 946,673
Int. Cl. B23p *15/10*
U.S. Cl. 29—156.5 **3 Claims**

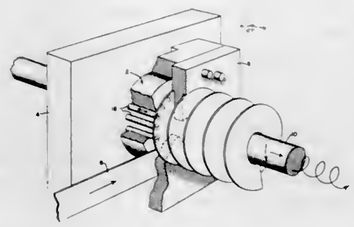


In an internal combustion engine, a method for obtaining a cooling fluid flow channel in the body of a piston by drilling separate holes in said piston starting from the outer or inner surface thereon; machining said channel starting from said holes by known means and plugging the holes with the exception of the cooling fluid inlet.

3,464,101
METHOD AND APPARATUS FOR HELICALLY WINDING STRIP MATERIAL

Anthony Zubal, Latham, and Harry F. Davis, Amsterdam, N.Y., assignors to General Electric Company, a corporation of New York

Filed Mar. 30, 1967, Ser. No. 627,109
Int. Cl. B21d *11/06*
U.S. Cl. 29—157.3 **5 Claims**



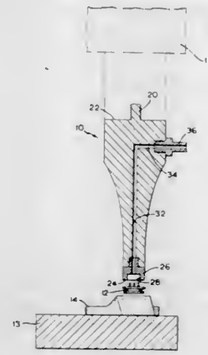
Gripping mechanism to force continuous thin metal strip through an arcuate path defined by a shoe. Resulting spiral of strip is continuously applied to the outer surface of a rotating-translating cylindrical tube.

3,464,102
SOLID ACOUSTIC HORN WITH SUCTION MEANS

Robert S. Soloff, Hillsdale, N.J., assignor to Branson Instruments, Incorporated, Stamford, Conn., a corporation of Delaware

Filed Mar. 10, 1967, Ser. No. 622,113
Int. Cl. B23p *17/00;* **B23k** *5/20, 29/00*
U.S. Cl. 29—200 **4 Claims**

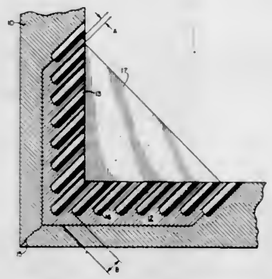
A solid acoustic horn used for sonic or ultrasonic energy insertion or welding is provided with a central bore terminating at the front surface of the horn. Responsive to vacuum applied to the bore, the horn is adapted to temporarily retain at its front surface small elements to be inserted into or welded to a workpiece under the influence of the sonic energy transmitted by the horn.



3,464,103
METHOD OF REPAIRING CRACKED METALLIC CASTINGS

Cleon B. Harris, 1732 Sherwood Forest Blvd., Baton Rouge, La. 70815

Filed July 13, 1967, Ser. No. 653,193
Int. Cl. B23p *7/04;* **B22d** *19/10;* **B23k** *31/02*
U.S. Cl. 29—402 **3 Claims**



A method of making cold repair on cracked or broken machine parts or pressure vessels of cast or forged metals where the crack or break occurs at an inside corner of the piece to be repaired. The method involves excavating metal from the corner of the piece and subsequent insertion of a metal angular repair member at the corner site of the crack or break. The angular repair member is then secured in-place by means of screws, wedges, or the like.

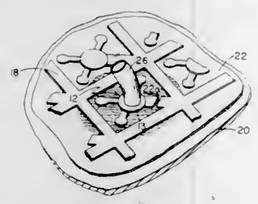
3,464,104
METHOD OF PRODUCING SEMICONDUCTOR DEVICES

Richard C. Tonner, Braintree, and Nino P. Cerniglia, Revere, Mass., assignors to Sylvania Electric Products Inc., a corporation of Delaware

Filed Aug. 21, 1967, Ser. No. 661,995
Int. Cl. B01j *17/00;* **H01l** *7/00*
U.S. Cl. 29—582 **12 Claims**

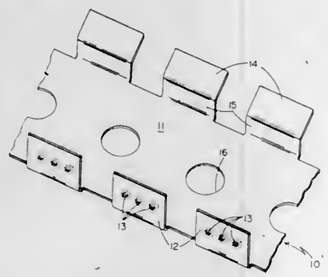
Semiconductor elements formed in a wafer and held in fixed position with respect to each other by the wafer material or the supporting structure of an array are

frozen to a thermo-electric cooling block by an intervening layer of a frozen fluid. While the elements are frozen to the block, the material or structure holding one or more of the elements in the wafer or array is removed



or severed. An individual semiconductor element is then removed from adjacent others by means of a heated vacuum pick-up tool which melts the frozen fluid contacting the element.

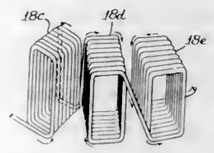
3,464,105
METHOD OF PRODUCING SEMICONDUCTOR DEVICES
Paul L. Chagnon, Hamilton, Mass., assignor to Sylvania Electric Products Inc., a corporation of Delaware
Filed Apr. 21, 1966, Ser. No. 544,186
Int. Cl. B01j *17/00;* **H01l** *1/10*
U.S. Cl. 29—588 **9 Claims**



Method of fabricating transistors by mounting groups of three leads in a carrier strip with one end of each lead welded to a portion of the strip and the other end projecting through a hole in the strip. A semiconductor element is mounted on the projecting ends of each group of leads with appropriate connections between the semiconductor element and the leads. Each semiconductor element and the adjacent portions of the leads of each group are encapsulated in plastic. The portion of the strip with the welded ends of the leads is severed from the strip permitting the completed transistors to be removed from the strip.

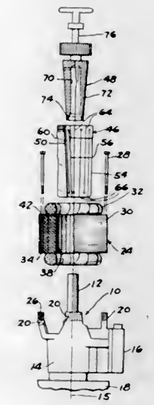
3,464,106
METHOD FOR WINDING COILS
Edward L. Barrett, La Grange Park, Ill., assignor of eleven percent each to Louis K. Pohl, Oak Park, H. P. Reynolds, Wilmette, and Frank A. Furar, Riverside, Ill., and William G. Pohl
Original application June 18, 1962, Ser. No. 203,023, now abandoned. Divided and this application Mar. 10, 1966, Ser. No. 533,347
Int. Cl. H02k *15/04;* **H01f** *7/06*
U.S. Cl. 29—596 **5 Claims**

The invention concerns a method for providing an alternator winding of a series of interconnected coils wherein the coils are each of a single layer of windings, adjacent coils are of opposite polarity and interconnected by an unbroken conductor comprising part of the winding con-



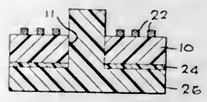
ductor, and with all of the coils being initially wound in one direction on a single mandrel.

3,464,107
COMPRESSOR-MOTOR ASSEMBLY
Arthur J. Geisenhaver, Tecumseh, Mich., assignor to Tecumseh Products Company, Tecumseh, Mich., a corporation of Michigan
Filed July 28, 1966, Ser. No. 568,612
Int. Cl. H02k *15/16, 15/14*
U.S. Cl. 29—596 **7 Claims**



Stator core laminations of an electric motor are assembled on a compressor having a crankshaft operatively connected to the compressor by disposing the laminations on the crankcase of the compressor and then locating the laminations accurately concentric to the crankshaft by means of a radially expandable collet and an arbor which pivots on the crankshaft. The stator is then secured in place while being held concentric to the crankshaft so that the inside diameter of the stator is made uniform due to limited shifting of the individual laminations at the same time that the inside diameter is made concentric with the compressor crankshaft.

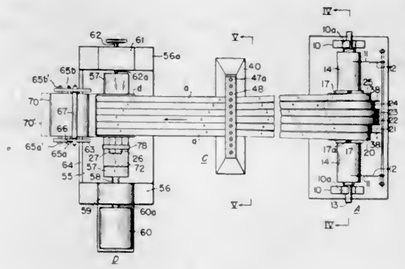
3,464,108
METHOD OF MAKING COMMUTATOR DISCS
Emil R. Boodman, Los Angeles, Douglas McGuire, Altadena, and Emerson B. Wilce, Los Angeles, Calif., assignors to Litton Systems, Inc., Beverly Hills, Calif.
Filed Dec. 8, 1965, Ser. No. 513,900
Int. Cl. H01r *43/00;* **H02k** *13/04*
U.S. Cl. 29—597 **7 Claims**



A method of forming a commutator disc including the steps of forming a registration hole in a supporting substrate; inserting a plastic plug in said registration hole;

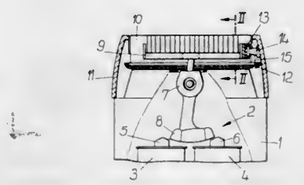
placing a layer of conductive material on said supporting substrate; placing a masking material on said layer of conductive material in registration with said registration hole to leave exposed only preselected portions of said conductive material; removing said plastic plug; removing unmasked portions of said layer of said conductive material to form a commutator pattern; removing said masking material; inserting a preformed commutator hub into said registration hole; and bonding said preformed commutator hub to said commutator pattern to prevent the relative motion thereof and to provide support thereto.

3,464,109
METHOD OF MANUFACTURING ELECTRICAL INDUCTION COILS
Delbert R. Parker, Mount Pleasant, Pa., assignor to R. E. Uptegraff Manufacturing Company, Scottdale, Pa., a corporation of Pennsylvania
Filed Oct. 7, 1966, Ser. No. 585,032
Int. Cl. B65h *81/00;* **H01f** *27/28*
U.S. Cl. 29—605 **13 Claims**



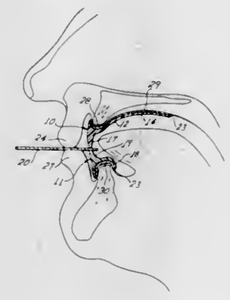
This disclosure relates to windings for electrical apparatus and particularly, to electrical coil windings for induction equipment, such as electrical transformers. A phase of the invention deals with procedure for forming and means for providing an improved and more versatile winding construction for electrical transformers.

3,464,110
SYSTEM FOR RETAINING THE HAIR DUST IN AN ELECTRIC SHAVER CUTTING HEAD WITH AN ELECTRICAL FIELD
Otto Konrad Anna, Niederhochstadt, Taunus, Germany, assignor to Braun Aktiengesellschaft, Frankfurt am Main, Germany
Filed Oct. 31, 1966, Ser. No. 590,858
Claims priority, application Germany, Nov. 17, 1965, B 84,531
Int. Cl. B26b *19/02, 19/38*
U.S. Cl. 30—41 **4 Claims**



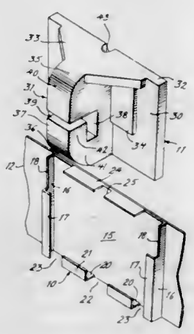
Disclosed is an electric shaver with an electric field system for retaining hair dust. The electric field may be generated by piezoelectric means or a voltage multiplier circuit.

3,464,111
COMPLETE PROSTHETIC DENTURE AND METHOD FOR SELF-FITTING
Frederick B. Gillard, Phoenix, Ariz., assignor of fifty percent each to Peter G. Bidstrup, Phoenix, Ariz. and Robert I. Jones, Lake Forest, Ill.
Filed May 9, 1967, Ser. No. 637,245
Int. Cl. A61c *13/08*
U.S. Cl. 32—2 **4 Claims**



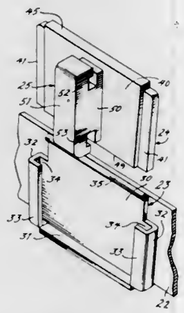
A complete prosthetic denture having the maxillary denture and the mandibular denture releasably attached in centric registry to opposite sides of an alignment plate. The denture bases are lined with a hardenable plastic denture lining material and can be self-fitted by the patient.

3,464,112
ORTHODONTIC APPLIANCE
Elliott Silverman, 4829 Atlantic Ave., Ventnor, N.J. 08406, and Morton Cohen, Medical Arts Bldg., Jenkintown, Pa. 19046
Continuation-in-part of applications Ser. No. 520,383, Jan. 13, 1966, Ser. No. 551,022, May 18, 1966, and Ser. No. 569,967, Aug. 3, 1966. This application June 30, 1967, Ser. No. 650,527
Int. Cl. A61c *7/00*
U.S. Cl. 32—14 **8 Claims**



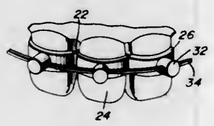
This invention is concerned essentially with the provision of a unique bracket for attachment to the labial side of a tooth, wherein a receiver projects outwardly from the bracket and is provided with a laterally extending thru opening for receiving a wire, and a passageway extending outwardly from the opening for passing a wire sideways into and out of the opening. Resilient detent means projecting into the passageway for releasably retaining a received wire in the opening.

3,464,113
ORTHODONTIC APPLIANCE
Elliott Silverman, 4829 Atlantic Ave., Ventnor, N.J. 08406, and Morton Cohen, Medical Arts Bldg., Jenkintown, Pa. 19046
Continuation-in-part of application Ser. No. 551,022, May 18, 1966. This application Aug. 3, 1966, Ser. No. 569,967
Int. Cl. A61c *7/00*
U.S. Cl. 32—14 **10 Claims**



This invention is essentially concerned with an orthodontic appliance wherein a substantially rigid carrier is removably attached to a tooth, and a bracket is provided on the front side of the carrier which includes an attachment part fixed to the carrier and a receiver part configured to define a laterally extending thru opening for slidably receiving an orthodontic wire and a slot extending laterally across the receiver and communicating with the opening, the slot being configured of a width less than wire thickness for snap engagement of the wire through the slot.

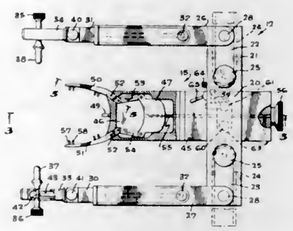
3,464,114
DENTAL ATTACHMENT WITH COOPERATING EXTENSION OR SOCKET
Allen C. Brader, 1350 Hamilton St., Allentown, Pa. 18102
Filed Sept. 21, 1967, Ser. No. 669,598
Int. Cl. A61c *7/00*
U.S. Cl. 32—14 **15 Claims**



A dental attachment employed in the practice of orthodontic methods which is fixed retentively in contact with a tooth to be moved and embodying an extension or socket capable of attachment with an arch form of wire or other resilient material with the arch form having an arch form attachment thereon for connection with the extension or socket.

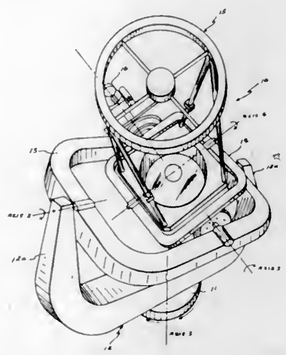
3,464,115
PLANE OF OCCLUSION INDICATOR
Robert C. Baker, 6437 Whitsett Ave., North Hollywood, Calif. 91606
Filed Nov. 22, 1965, Ser. No. 508,902
Int. Cl. A61c *9/00*
U.S. Cl. 32—19 **5 Claims**

A plane of occlusion indicator is disclosed having extendable means adapted to span the face of a patient in a condylar plane and means for establishing the plane of occlusion. Adjustable means are movably interconnected



between said extendable and said establishing means adapted to selectively vary the space therebetween.

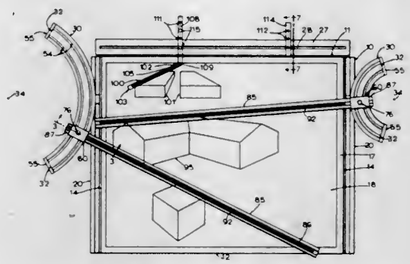
3,464,116
FOUR-AXIS SATELLITE-TRACKING MOUNT
Kenneth E. Kissell, Dayton, Ohio, assignor to the United States of America as represented by the Secretary of the Air Force
Filed Apr. 6, 1967, Ser. No. 629,874
Int. Cl. G01c *21/02, 17/34*
U.S. Cl. 33—61 **5 Claims**



A satellite-tracking mount having a base member, a yoke adjustably positioned on said base member, an outer gimbal mounted for rotation on said yoke member an inner gimbal rotatably mounted within said outer gimbal, and a main detection or transmitting instrument positioned for rotation within and relative to said inner gimbal to an offset position.

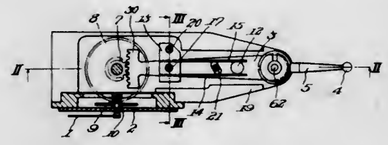
3,464,117
PERSPECTIVE DRAFTING DEVICE
James R. Johnson, 1554 N. 4th St., Fresno, Calif. 93703
Filed June 11, 1968, Ser. No. 736,068
Int. Cl. B43l *13/14*
U.S. Cl. 33—77 **6 Claims**

A perspective drafting dveice providing a substantially flat board having marker guide means disposed in superimposed relation thereon and arcuate support means mounting said marker guide means for movement through an arcuate path providing a variety of selectively adjusted positions on the board with the support means having a locus constituting a vanishing point for said marker guide means spaced outwardly from the support means and from the board with the marker guide means



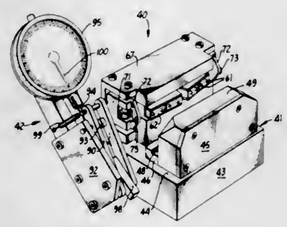
being precisely aligned with said vanishing point in all said adjusted positions.

3,464,118
DIAL GAUGE AND THE LIKE MEASURING INSTRUMENT
Kaneo Nagata, 5–6 1-chome, Saginomiya, Nakano-ku, Tokyo, Japan
Filed May 5, 1967, Ser. No. 636,504
Claims priority, application Japan, July 29, 1966, 41/49,378
Int. Cl. G01b *3/22*
U.S. Cl. 33—172 **3 Claims**



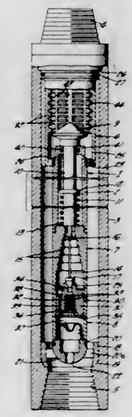
An improved dial gauge including a pivotally mounted feeler lever is operable with the same values of measuring pressure in both plus and minus ranges of indication. The gauge utilizes a pair of identical spring wires, a cylindrical pin laterally movable to deflect either one of the spring wires to provide a measuring pressure, and constraining means in the form of an elliptical projection for holding one spring wire in its normal position while allowing the other spring wire to be deflected.

3,464,119
CLASSIFICATION GAGE
Elmer L. Griggs, 1720 Toledo, Burlingame, Calif. 94010
Filed July 15, 1966, Ser. No. 565,521
Int. Cl. G01b *3/38*
U.S. Cl. 33—174 **4 Claims**



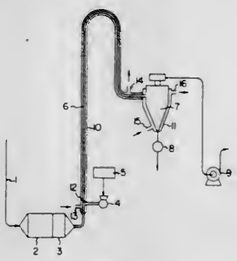
A classification gage is provided with a precision jig which holds the structure to be classified in a certain angular relationship. A classifying dial and a tilting platform are also provided including linkage means connecting the dial and platform to classify each structure relative to a known standard.

3,464,120
DRIFT INDICATOR KNOB VIBRATION LIMITING MEANS
Robert Lee Alder, Pasadena, Calif., assignor to Byron Jackson Inc., Long Beach, Calif., a corporation of Delaware
Filed May 23, 1966, Ser. No. 552,150
Int. Cl. E21b *47/02*
U.S. Cl. 33—205 **10 Claims**



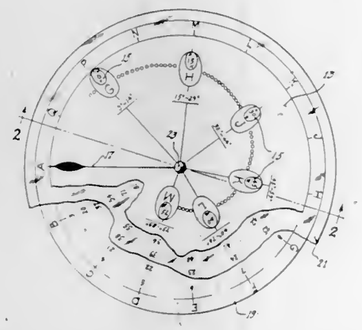
A signalling drift indicator of the type in which a knob moves through pulse rings to produce pressure signals in a stream of drilling fluid indicative of the disposition of the drill string and in which longitudinally extended ribs are provided between the pulse rings for limiting lateral vibration of the shaft which supports the knob.

3,464,121
PARALLEL-FLOW PNEUMATIC-CONVEYING DRYING
Joji Fukada, Seiji Akatsu, Mitsuaki Sugahara, Yoshiji Kurita, and Naoshi Kawabe, Iwaki-shi, Japan, assignors to Kureha Kagaku Kogyo Kabushiki Kaisha, Tokyo-to, Japan
Filed Dec. 13, 1966, Ser. No. 601,443
Claims priority, application Japan, Dec. 29, 1965, 40/80,920
Int. Cl. F26b *3/08, 3/10*
U.S. Cl. 34—10 **5 Claims**



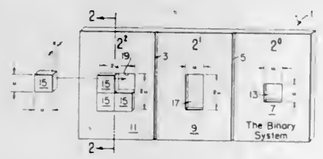
In drying substances which are readily decomposed or melted by heat in a parallel-flow pneumatic-conveying drying apparatus, there is an introduction of forced cooling of the drying tube and the product collector from their external surfaces so as to avoid adherence of the melted substance onto the internal wall of the tube causing lowering of the product quality and efficiency of the apparatus.

3,464,122
LATITUDE-LONGITUDE COMPUTER
Thomas F. McGraw, Sunnyvale, Calif., and Richard R. Frank, Panama City, Fla., assignors to the United States of America as represented by the Secretary of the Air Force
Filed Jan. 20, 1967, Ser. No. 610,699
Int. Cl. G09c *5/00*
U.S. Cl. 35—2 **3 Claims**



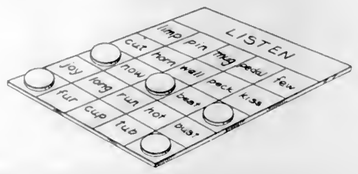
A computing device having three discs independently rotatable around a common central pivot point, the two outer discs being provided with spirally disposed openings through which figures graphically depicted on the center disc can be observed to make determinations of latitude and longitude positions on the earth's surface based on information received in codified form.

3,464,123
MATHEMATICAL TEACHING AID
Carl R. Hurtig, Greenbush, Mass., assignor to Damon Engineering, Inc., Needham Heights, Mass., a corporation of Delaware
Filed Apr. 17, 1967, Ser. No. 631,321
Int. Cl. G09b *23/02*
U.S. Cl. 35—30 **6 Claims**



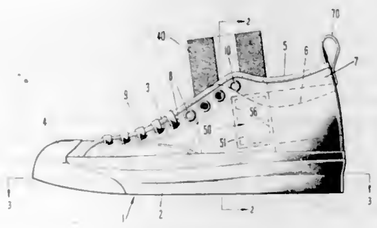
This application discloses an aid for teaching the expression of numbers in a number system having an integral base. For a three digit number in the trinary system, a number board, having three sequential panels labelled 3^2, 3^1 and 3^0 is provided. On each panel are two receptacles, each of area k on panel 3^0, $3k$ on panel 3^1, and $9k$ on panel 3^2. A set of 26 unit counters of area k each adapted to fit the receptacles can be used to represent any number from 000 to 222 by taking that number of counters and placing them in th receptacles in a prescribed way. The invention is applicable to any number system having an integral base. The full specification should be consulted for a complete understanding of the invention.

3,464,124
PHONOGRAM TEACHING DEVICE
Inez A. Lynd, Ironton, Ohio, assignor to Wayne Lynd, trustee, Ironton, Ohio
Filed July 14, 1967, Ser. No. 653,524
Int. Cl. G09b *19/04;* **A63f** *3/00*
U.S. Cl. 35—35 **1 Claim**



A teaching device is shown having a square playing board for each player which has adjoining square spaces, each space with a word in it, and all of the spaces covering the board; having a deck of phonogram cards, each having a phonogram on it; and having several sets of markers for positioning on the proper playing board spaces in response to the sequential drawing of the phonogram cards and pronunciation of the phonograms thereon.

3,464,125
SNEAKER
David H. Conway, 368 S. Goodman St., Rochester, N.Y. 14607
Filed Jan. 9, 1967, Ser. No. 608,096
Int. Cl. A43b *5/10, 23/28, 7/16*
U.S. Cl. 36—2.5 **10 Claims**

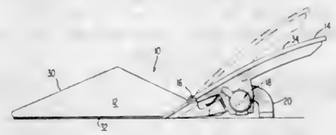


An athletic sneaker with restraining means in the sneaker consisting of an M-shaped resilient elastic fabric band adjustably engageable about a wearer's instep with the bight of the band under the instep of the sneaker. A second band is secured to the rear quarter of the shoe and engages the fabric band. Supports under the insole are also provided.

3,464,126
SHOE WITH A HINGED MECHANICALLY ADJUSTABLE HEEL
Vahe B. Sarkissian, Verdun St., Ghanem's Bldg., Beirut, Lebanon
Filed Apr. 8, 1968, Ser. No. 719,482
Claims priority, application Lebanon, Oct. 30, 1967, 334
Int. Cl. A43b *21/42*
U.S. Cl. 36—2.5 **4 Claims**

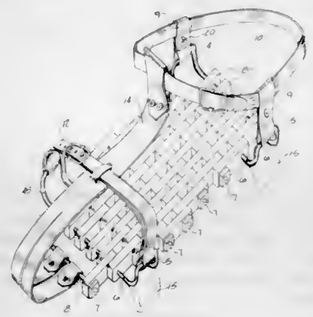
A shoe is provided with a hinged mechanically adjustable heel. An upper shank and heel member is hinged to a toe portion of the shoe, there also being a rearwardly extending ground engaging member. A concealed lock holds the hinged shank and heel member at desired

adjustable position relative to the ground engaging member while lock operator buttons can free the lock and



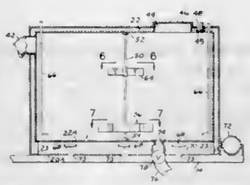
allow adjustment of the heel about the hinge to change the height and angle of the shank and heel member.

3,464,127
CLEATED WADING SANDAL
M. M. Muncie, 823 4th Ave., Plattsmouth, Nebr. 68048
Filed Feb. 17, 1967, Ser. No. 618,277
Int. Cl. A43b *3/12, 5/08*
U.S. Cl. 36—7.6 **6 Claims**



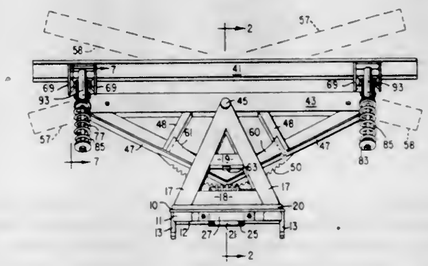
This invention pertains to a sandal adapted to be detachably secured to the sole of a shoe or boot having a plurality of spaced apart links mounted on a plurality of parallel retaining rods disposed transversely to the sole, wherein each intermediate rod receives alternately the rear end of one link and the front end of another link in side-by-side relation. The links and rods are detachably securable to the sole by a connecting device secured to the rods which loops around the shoe and ankle of the wearer, and further wherein the connecting device is reversibly secured to the rods for permitting utilization of both the bottom and top walls of the links as a ground engaging auxiliary sole.

3,464,128
SNOW REMOVER WITH MELTING MEANS
Eli G. Krickovich, R.F.D., De Witt, Iowa 52742
Filed Aug. 10, 1967, Ser. No. 664,592
Int. Cl. E01h *5/10;* **F24h** *1/00*
U.S. Cl. 37—12 **1 Claim**



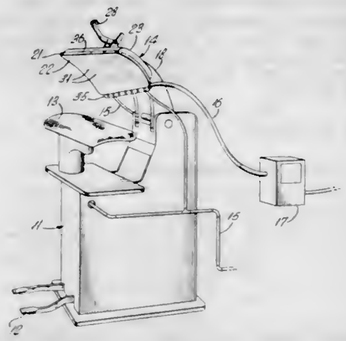
A substantially hollow tank is mounted on a truck chassis having an engine and a control cab. A snowplow is transversely mounted across the lower front end portion of the truck chassis and connected with the tank by a tube. Burners below the tank melt snow placed therein. Agitators within the tank insure complete melting of the snow which is exhausted as water through a drain.

3,464,129
BLADE AND MOLDBOARD SUPPORTING AND ADJUSTING STRUCTURE FOR SNOWPLOWS
Thomas M. Bogenschutz, Clayton, N.Y., assignor to Frink Sno-Plows, Inc., Clayton, N.Y., a corporation of New York
Filed Oct. 11, 1967, Ser. No. 674,405
Int. Cl. E01h *5/06;* **E02f** *3/84;* **A01b** *51/00*
U.S. Cl. 37—50 **6 Claims**



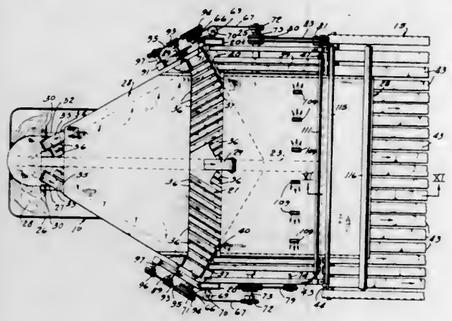
A structure for detachably mounting a heavy blade and moldboard assembly of a large snowplow to a vehicle permitting limited movement of the assembly about a fore and aft axis. The blade and moldboard assembly is angulated by reversible power operated worm gear mechanism. The invention further includes spring means yieldingly restraining upward movement of the blade and moldboard assembly.

3,464,130
PRESSING APPARATUS
Max Rappaport, River Edge, N.J., assignor to New York Pressing Machinery Corporation, Paterson, N.J., a corporation of New York
Filed Feb. 17, 1967, Ser. No. 616,811
Int. Cl. D06f *71/34*
U.S. Cl. 38—15 **4 Claims**



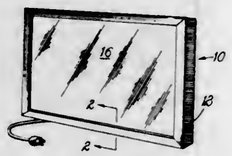
A head for a pressing machine which has a relatively thick head plate and heaters mounted within the plate for the heating of the plate. Wet steam passes through apertures in the plate and the location of the heaters within the plate reduces the drying effect of the heaters on the steam.

3,464,131
COMBINATION SPREADER-FEEDER FOR FLAT WORK IRONER
Logan D. McCabe, Lubbock, Tex., assignor to G. A. Braun, Syracuse, N.Y., a corporation of New York
Filed Apr. 21, 1966, Ser. No. 544,137
Int. Cl. D06f *67/04*
U.S. Cl. 38—143 **19 Claims**



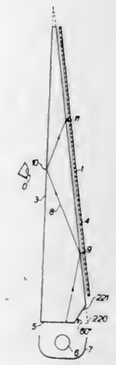
Apparatus for spreading flatwork prior to ironing and supplying the flatwork to an ironer in a centered and squared condition. A longitudinal conveyor belt and a vertically spaced aligned gripper belt extend along the center of the apparatus and draw the flatwork over a pre-spreader bar at the front of the apparatus. Parallel spreader belts are spaced along opposite sides of the conveyor belt and extend at oblique angles with respect to the conveyor belt and are flared outwardly from the conveyor belt as they extend therealong. Parallel oblique tensioning belts extend along the outer sides of the outermost spreader belts. Cooperating aligned endless tensioning belts are spaced above the oblique tensioning belts and are driven at a higher rate of speed than the speed of travel of the tensioning belts. The laundered article is delivered by the spreader belts to a series of parallel conveyor belts driven at a higher rate of speed than the speed of the spreader belts. Jets of air are impinged on the article outwardly of the center of the article toward the edges thereof as it leaves the spreader belts and is conveyed to an ironing machine conveyor by the downwardly inclined conveyor belts.

3,464,132
GRAPHIC DISPLAY
Paul Henri Robert Matisse, Cambridge, Mass., assignor, by mesne assignments, to Kalliroscope Corporation, Cambridge, Mass., a corporation of Massachusetts
Continuation-in-part of application Ser. No. 486,363, Sept. 10, 1965. This application Jan. 24, 1967, Ser. No. 611,406
Int. Cl. G09f *13/34, 3/00*
U.S. Cl. 40—106.52 **13 Claims**



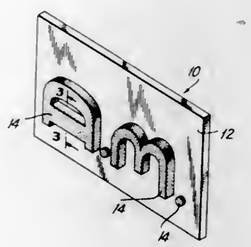
Graphic device has sealed receptacle containing a liquid suspension of minute, light-weight, transparent, very thin platelets (preferably quanine) each having a pair of generally flat light reflective surfaces, the receptacle having a transparent display wall against which the suspension is held to receive stimuli for the production of graphic patterns dependent upon patterned variation in the orientation of the platelets.

3,464,133
DISPLAY APPARATUS
Marcel C. K. De Poray, 74 Rue de St. Lazare, Paris 9, France
Filed Oct. 20, 1965, Ser. No. 502,773
Claims priority, application Great Britain, Apr. 30, 1965, 18,392/65
Int. Cl. G09f *13/30*
U.S. Cl. 40—130 **22 Claims**



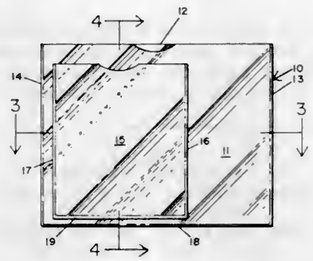
This invention is directed to an apparatus for display purposes which includes a reflecting surface with a multiplicity of facets arranged in predetermined different orientations with a source for illumination of the facets so that an observer looking at the surface sees an effect of animation.

3,464,134
MAGNETIC DISPLAY
Robert J. Franklin, New York, N.Y., assignor to Schenley Industries, Inc., New York, N.Y., a corporation of Delaware
Filed June 22, 1966, Ser. No. 560,384
Int. Cl. G09f *7/02*
U.S. Cl. 40—142 **7 Claims**



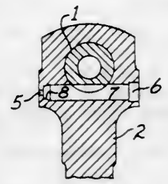
A display assembly enabling display elements, such as letters of the alphabet, for example, to be removably mounted on a suitable support means. The support means is made of a magnetizable material, and a display member is situated in front of and adjacent to this support means. A magnetic tape is situated between the display member and the support means in engagement with the latter so as to be magnetically attracted thereto. A mounting means mounts the tape on the display member so that the latter is carried by the tape while the tape is magnetically held on the support means. Between the magnetic tape and the display member is metallic plate which is also of a magnetizable material, so that the magnetic tape is sandwiched between the magnetic support means and the magnetic metallic plate to provide an exceedingly effective support for the display member.

3,464,135
HOLDER FOR X-RAY FILMS AND REPORTS
Robert Eldinger, 13185 Coronado Terrace, Keystone Point, North Miami, Fla. 33161
Filed Apr. 3, 1967, Ser. No. 628,063
Int. Cl. G07f *1/10;* **G09f** *3/18*
U.S. Cl. 40—159 **2 Claims**



A holder for X-ray films and reports having a pair of rectangular members made of translucent vinyl plastic material open along one edge to form a pocket for X-rays and a second smaller transparent rectangular vinyl plastic member joined along three edges to the one side of the one of the pair of rectangular members to form a second smaller pocket for containing reports of said X-rays.

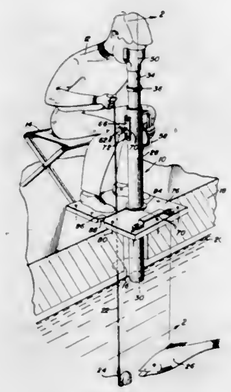
3,464,136
LOCKING PIN AND METHOD FOR LOCKING A GUN BARREL TO A GUN FRAME
Gary Wilhelm, Hamden, Conn., assignor to Stoeger Arms Corporation, South Hackensack, N.J., a corporation of New Jersey
Filed Apr. 1, 1968, Ser. No. 717,847
Int. Cl. F41c *27/00, 21/00*
U.S. Cl. 42—75 **3 Claims**



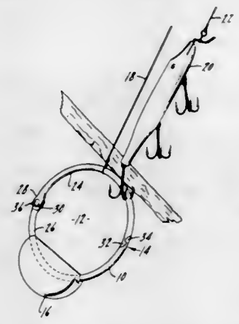
A method and means for locking a gun barrel within its seat in a gun frame utilizing a sequence of drilled holes and a force fit locking pin having a tapered end bearing on a tapered wall inside the frame.

3,464,137
ICE AUGER HOLE VISUAL FISHING AID
Harold H. England, 14616 88th Ave., Edmonton, Alberta, Canada
Filed Apr. 20, 1967, Ser. No. 632,255
Int. Cl. A01k *97/00, 69/00*
U.S. Cl. 43—4 **11 Claims**

A visual aid for ice hole fishing includes telescopically and adjustably associated opaque tubular members having a transparent window closure at the lower end of one member and a cushioned eye shield at the upper end of the other member. An opaque cover for the ice hole has a central opening provided with a resilient, light-sealing gasket frictionally engaging one of the tubular members. The cover has anchor spikes for engaging the ice and a slit for receiving a fishing line.



3,464,138
DEVICE FOR RELEASING A SNAGGED FISHING LURE
Edmund G. Lindner, 2578 N. Booth St., Milwaukee, Wis. 53212
Filed Apr. 25, 1967, Ser. No. 633,578
Int. Cl. A01k *97/00*
U.S. Cl. 43—17.2 **3 Claims**

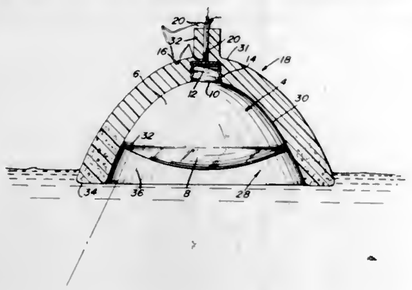


A fishing lure releasing device has an openable and closable ring body. A weight attached to the body has a chordal portion within the ring and a tapered portion exteriorly thereof. A hauling line is attached to the body at one end and to a spool at its other end.

3,464,139
ILLUMINABLE FISH ATTRACTING FLOAT
Walter A. Eggers, Springfield, Mo., assignor of one-half to Larry A. Eggers, Springfield, Mo.
Filed Sept. 21, 1967, Ser. No. 669,644
Int. Cl. A01k *97/00;* **F21v** *31/00;* **F21l** *15/08*
U.S. Cl. 43—17.5 **3 Claims**

A device expressly adapted for night fishing that floats atop the water comprising a sealed-beam lamp removably lodged in the upper chamber portion of a molded

recess in a canopy-like float. The bottom face or lens of the lamp is elevated above the bottom of the float and is spaced above the water. Current can be supplied



to the lamp by conducting wires having spring clips which are capable of being attached to terminals on a storage battery or the like aboard a fishing boat.

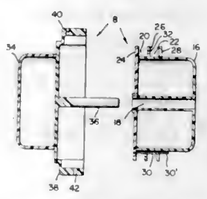
3,464,140
COMPOSITE FISHING LINE
André Carabasse, 20 Rue du Tribunal, Doullens, Somme, France
Filed June 15, 1967, Ser. No. 646,229
Claims priority, application France, June 24, 1966, 66,773; May 26, 1967, 108,114
Int. Cl. A01k *91/00*
U.S. Cl. 43—42.74 **2 Claims**



A fishing-line composed of a "nylon" line surrounded over at least a portion of its length by an unsinkable sheath formed of woven silk. The silk is woven into a cylindrical portion having tapered portions on each end thereof, the cylindrical portion having a cross-section equal to the maximum cross-section of each tapered portion.

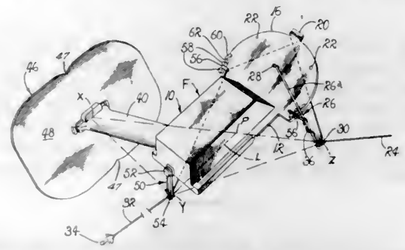
3,464,141
FLOAT FOR FISHING LINES
Lovis J. Amlin, 13061 Fairview St., Garden Grove, Calif. 92640
Filed May 19, 1967, Ser. No. 639,761
Int. Cl. A01k *93/00, 91/00*
U.S. Cl. 43—43.11 **1 Claim**

A float or bob for fishing lines having a buoyant spool for winding and unwinding predetermined lengths of line in two discrete channels on the spool. The float also has a one-piece disk-shaped annular buoyant member having a shaft extending from the center of its closed side. A collar having line guide means is affixed to the disk-shaped member. The spool is rotatably mounted on the



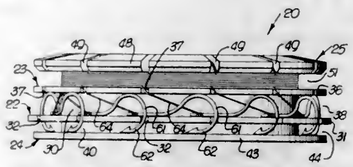
shaft, and the channels are completely contained within the collar. The float permits suspension of a sinker-hook assembly to any adjustable depth beneath the surface of the water or immediately adjacent the float.

3,464,142
ANGLING DEVICE
Jason C. Hubbart, 4640 E. Lowe Ave., Fresno, Calif. 93702
Filed Aug. 4, 1967, Ser. No. 658,555
Int. Cl. A01k *91/00, 93/00*
U.S. Cl. 43—43.13 **10 Claims**



An angling device adapted for use with a fishing line, and lures employed therewith. The angling device has a buoyant body with a pivoted bridle means, an outrigger having a planing surface for tacking operation, the planing surface being disposed substantially parallel to the longitudinal axis of the body, and an improved line connecting means. The line connector has a pair of legs which extend downwardly and below the body and whose distal ends form a guide eyelet. The legs are movable relative to each other. The connector functions such that drag or weight forces of a lure, or the body, do not detract from desired action of the planing surface of the outrigger, or cause undesired actions of the body during operation.

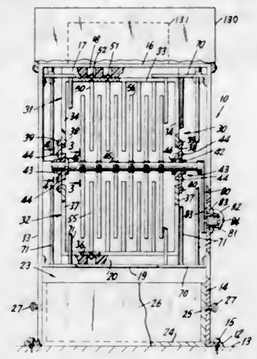
3,464,143
SNELLED FISHHOOK RECEPTACLE
Ozbert M. Scott, Montrose, Calif. 91020
Filed Apr. 9, 1968, Ser. No. 719,921
Int. Cl. A01k *97/06*
U.S. Cl. 43—57.5 **11 Claims**



A receptacle for holding a plurality of snelled fishhooks includes a cylindrical body portion and at least one radially outwardly extending flange which has circumferentially spaced notches therein for receiving and holding

fishhooks, so that the leader attached to each may be wound around the cylindrical body portion. A separate anchor secures the free end of each leader.

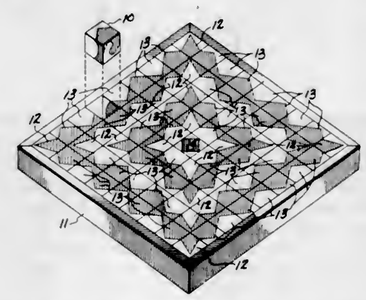
3,464,144
ELECTRIC INSECT KILLER
Irving Kannett, G.P.O. Box 1651, New York, N.Y. 10021
Filed Feb. 7, 1968, Ser. No. 703,723
Int. Cl. A01m *1/22*
U.S. Cl. 43—112 **15 Claims**



A stand has fixed thereon a frame having top and bottom conductive grid parts insulated from one another and supporting an oscillatory cross-rod therebetween. The rod carries diametrically opposed radial conductive pins disposed between conductive pins on the grid parts. The shaft can be oscillated manually or by motorized mechanism to clean out electrocuted insects stuck between the pins on the shaft and on the grid parts.

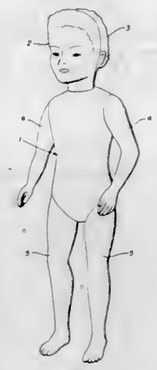
The motor is controlled by magnetic switch means. The stand carries an insulated box at the top for a transformer, fuses and the like electrical parts. Lamps are provided to attract insects and indicate when the electric system is "on." One grid part may be controlled by house current while the other grid part is controlled by a battery. A pan is provided at the bottom of the stand to catch dead insects which drop down from the grids. The pins on the shaft are adjustable by rotation to vary the spaces between the pins on the shaft and the pins on the grid parts.

3,464,145
SET OF BLOCKS FOR GENERATING DESIGNS
Patricia C. Martin, 1804 Augusta Drive, Champaign, Ill. 61820
Filed Aug. 12, 1966, Ser. No. 572,125
Int. Cl. A63h *33/00, 33/22*
U.S. Cl. 46—17 **2 Claims**



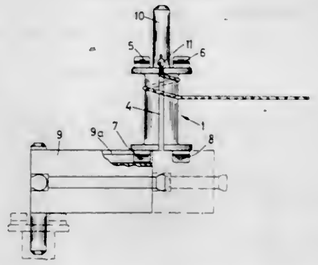
A plurality of blocks for creating unique designs is described. The blocks are of three general types, one type being used to form the diagonals of the designs, another being used to form the center of the design and the third used for the remainder of the design.

3,464,146
DOLL WITH ROTATABLE HEAD HAVING INTERCHANGEABLE FRONT AND BACK PARTS
Lois M. McCurdy, P.O. Box 103, Point Reyes Station, Calif. 94956
Filed Mar. 13, 1967, Ser. No. 622,682
Int. Cl. A63h *3/16, 3/46*
U.S. Cl. 46—22 **1 Claim**



The disclosure covers dolls in which the face, head, and limb members may be removed from the torso and replaced with different ones, the interchangeable elements being detachably held in rotatably adjustable position on the torso of the doll by magnetic means which are incorporated in and made an inherent part of the doll construction. The head has interchangeable back and face portions and is rotatably joined to the torso.

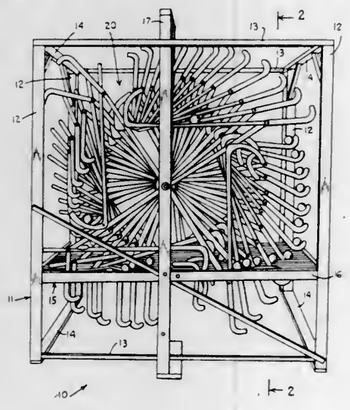
3,464,147
STRUCTURAL ELEMENT FOR A TOY ASSEMBLY KIT
Artur Fischer, 133 Grunmettstetterstrasse, 7241 Tumlingen, Germany
Filed Sept. 19, 1966, Ser. No. 580,240
Claims priority, application Germany, Sept. 25, 1965, F 47,255; Jan. 13, 1966, F 48,156; May 13, 1966, F 49,205
Int. Cl. A63h *33/10*
U.S. Cl. 46—26 **15 Claims**



My invention resides in the provision of a pulley member in an assembly kit of the type which comprises building blocks provided with at least one undercut elongated groove. Such pulley member comprises a tubular center

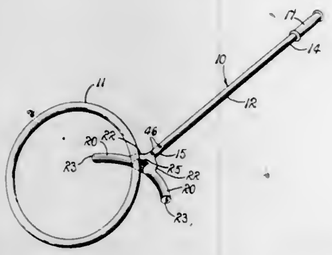
portion and radially extending flange portions at opposite ends of the tubular center portion. The radially extending flange portions are provided with oppositely directed axial end faces. At least one of the axial end faces is provided with a connecting head which extends in axial direction beyond this end face and is adapted to be at least partly received in an undercut groove of a building block to which the pulley member is to be secured. The head comprises a neck portion which is rigid with the axial end face in question and securing means which includes a securing portion of a cross-section greater than the neck portion.

3,464,148
MULTIPLE ARM ARTICULATED TOY
John J. Moritz, 201 W. 88th St., Apt. 1A, New York, N.Y. 10024
Filed Nov. 13, 1967, Ser. No. 682,375
Int. Cl. A63h *33/00*
U.S. Cl. 46—43 **6 Claims**



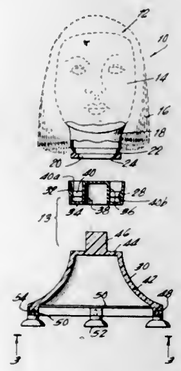
A toy for visual admiration and wonder, wherein a series of balls in sequence assume changing positions while being transported upon a rotatable assembly, and the balls rolling along an inclined platform while not being carried by the rotatable assembly; all the above steps of action proceeding at the same time before the eyes of the beholder.

3,464,149
CONTROL DEVICE FOR HOOP TOYS
Leroy R. Batterson, 3420 S. 182nd Place, Seattle, Wash. 98148, and Robert L. Batterson, 5581 N. Callisch, Fresno, Calif. 93726
Filed Feb. 8, 1968, Ser. No. 703,928
Int. Cl. A63h *33/02*
U.S. Cl. 46—114 **2 Claims**



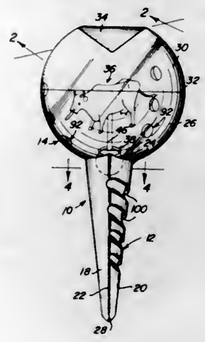
A control device for a hoop toy having an elongated control rod providing a handle end and an opposite hoop engaging end including hoop driving means and hoop centering means on said hoop engaging end of the control rod for rotatably driving the hoop in a substantially upright longitudinally aligned attitude with respect to the control rod incident to the application of a pushing force against the handle end of the control rod.

3,464,150
ROTATABLY SUPPORTED DOLL'S HEAD
Nathan Troy, Roslyn Heights, N.Y., assignor to Nasco Doll Inc., Brooklyn, N.Y., a corporation of New York
Filed July 6, 1967, Ser. No. 651,599
Int. Cl. A63h *3/48*
U.S. Cl. 46—135 **1 Claim**



A doll's head which is rotatably mounted on a support and which is held upright by the support to permit the hair of the doll's head to be combed, set, etc. in a convenient manner. The support includes a base which is held on any flat surface by suction cups and a cup rotatably mounted on the base. The cup receives the neck of the doll's head and holds the head upright. The cup is rotatable with respect to the base to thereby enable rotation of the doll's head about a vertical axis.

3,464,151
CHILD'S RATTLE WITH BELLS AND SIMULATED ANIMAL
Robert L. Motley, P.O. Box 369 Madison, Conn. 06443
Filed Oct. 7, 1966, Ser. No. 585,131
Int. Cl. A63h *5/00*
U.S. Cl. 46—175 **17 Claims**



A child's rattle having a hollow body and a hollow handle extending therefrom each having sound produc-

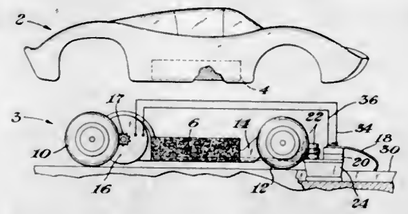
ing elements therein. An animal is universally supported in the body which has transparent characteristics to enable observation thereof with the animal including a movable component operative in response to movement of the rattle.

3,464,152
GUN TOY HAVING SOUND PRODUCING MEANS
John W. Ryan, Los Angeles, Richard Shih-Teng Chang, Gardena, and Robert Rosen, Los Angeles, Calif., assignors to Mattel, Inc., Hawthorne, Calif., a corporation of Delaware
Original application Dec. 28, 1965, Ser. No. 516,927, now Patent No. 3,420,530, dated Jan. 7, 1969. Divided and this application Sept. 24, 1968, Ser. No. 762,045
Int. Cl. A63h *5/04*
U.S. Cl. 46—175 **5 Claims**



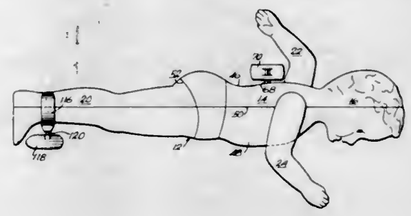
A toy gun with a recording of a gun shot sound cut into a rotatable record, the cutting being of amplified depth, and a spring-loaded rack for rotating the record. A manually operable gear cocks the rack and a trigger releases the same. The rack acts to retract and release a tone arm having a needle for reproducing the recorded sound. Integral resilient means on the record serve to bias weights of a centrifugal governor.

3,464,153
METHOD OF ASSEMBLING TOY OR MODEL VEHICLE AND THE SO ASSEMBLED VEHICLE
Robert W. Small, 1120 W. Collins St., Midland, Mich. 48640
Filed Jan. 30, 1967, Ser. No. 612,511
Int. Cl. A63h *17/26*
U.S. Cl. 46—223 **8 Claims**



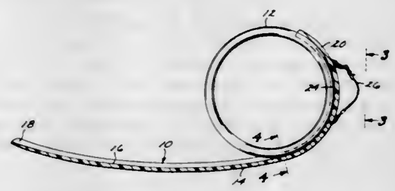
Members of a toy, miniature, display, or experimental vehicle are assembled, to make a sturdy general purpose vehicle that can be subsequently quickly disassembled as desired, by adhering, to mating or complementary areas of each member, a piece of fabric at least one of such pieces having extended flexible upstanding threads, formed in the shape of hooks and the other piece either being of the same type as the first piece but having hooks that are more-or-less at right angles to the hooks of the first piece or being a deep pile or nap so that when the two members to be assembled are brought into contact with each other in aligned mating relationship.

3,464,154
SWIMMING FIGURINE WITH STEERING MEANS AND PROPULSION MOTOR
Anthony Joseph Di Leva, New York, N.Y., assignor of fifty percent interest to Darwin G. Chamberlain, Miami, Fla.
Filed Nov. 8, 1966, Ser. No. 592,940
Int. Cl. A63h *3/16, 33/26*
U.S. Cl. 46—247 **9 Claims**



A toy, buoyant figurine provided with motor-operated arms and/or legs in which the operating motor is battery or spring powered, and in which either or both of the legs of the figurine have adjustable, rudder-like elements removably mounted adjacent simulated ankle portions of the figurine to afford a peculiar movement to the figurine as the arms and/or arms and legs simulate a swimming movement caused by the motor.

3,464,155
GAME ELEMENT FOR MANIPULATING A HOOP
Nick N. Capalia, 1231½ W. 23rd St. 90731, and John J. Burich, 721 S. Ellery Drive 90732, both of San Pedro, Calif.
Filed Aug. 12, 1966, Ser. No. 572,016
Int. Cl. A63h *33/02;* **F41b** *3/04*
U.S. Cl. 46—220 **4 Claims**



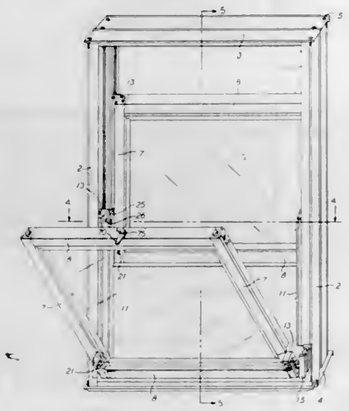
A game element having an inclined track at one extremity for receiving a hoop, and having an arcuate track at the other extremity for receiving and slowing the hoop, the game element also including a handle having an opening through which the user can project his fingers so that he can wrap his fingers around the track and around the rim of the hoop to keep the hoop from falling out of the track.

3,464,156
AGRICULTURAL SOIL COMPOSITIONS AND METHOD FOR USING SAME TO TREAT AGRICULTURAL SOIL
Dilworth T. Rogers, Summit, and John C. Munday, Cranford, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware
No Drawing. Continuation-in-part of application Ser. No. 368,729, May 19, 1964. This application Dec. 19, 1967, Ser. No. 691,724
Int. Cl. A01c *7/00;* **C08h** *13/00;* **C07d** *33/30*
U.S. Cl. 47—58 **11 Claims**

This disclosure relates to an agricultural soil or soil conditioning composition comprising (1) a reaction product of a phosphorus compound, such as a sulfide, halide,

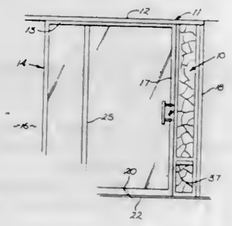
or oxide of phosphorus, and a residual petroleum hydrocarbon and, additionally, may contain (2) asphalt and/or (3) agricultural soil, which reaction product, if desired, may be reacted with a basic material such as an alkaline hydroxide, oxide, or carbonate. Also disclosed is a method for treating an agricultural soil with a growth improving amount of the aforesaid composition.

3,464,157
WINDOW CONSTRUCTION
Ramon Rodriguez, New York, N.Y.
(531 Earl Ave., New Kensington, Pa. 15068)
Filed Nov. 18, 1966, Ser. No. 595,463
Int. Cl. E05d *15/22*
U.S. Cl. 49—161 **12 Claims**



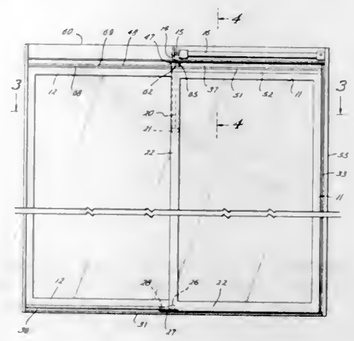
A double hung window is constructed so that each sash includes a pair of side members constrained to move vertically within adjacent jambs and a center section which, once a locking mechanism is disengaged and while at any elevation, may be rotated about a hidden pivot to any selected angle between a horizontal and a weather-tight vertical position. One component of the pivot includes a deformable housing containing a pliable material having a high coefficient of friction and the other component includes a cylindrical shaft dimensioned to fit within the pliable friction material.

3,464,158
PET PORTAL FOR SLIDING GLASS DOORS
David B. Greene, 4363 Sarah St.,
Burbank, Calif. 91505
Filed Nov. 3, 1967, Ser. No. 680,469
Int. Cl. E05d *15/48;* **E05f** *11/52*
U.S. Cl. 49—168 **6 Claims**



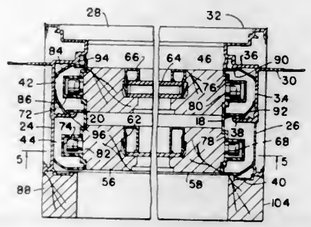
The pet portal for sliding glass doors is located in a separate portal panel which is slidably mounted in the door frame in the same manner as the sliding door. The panel is inserted between the edge of the sliding door and the door frame and can be locked both to the permanent door frame and to the sliding door to prevent access through the door while still providing a pet portal. To gain access through the door, the panel can be unlocked either from the stationary door frame or from the sliding glass door.

3,464,159
SWINGING SLIDE PANEL CONSTRUCTION
Lew V. Hewitt and Dee D. Horton, Corpus Christi, Tex., assignors to Horton Automatic, Inc., Corpus Christi, Tex., a corporation of Texas
Filed Oct. 17, 1967, Ser. No. 675,965
Int. Cl. E05d *15/06, 15/58, 15/48*
U.S. Cl. 49—177 **8 Claims**



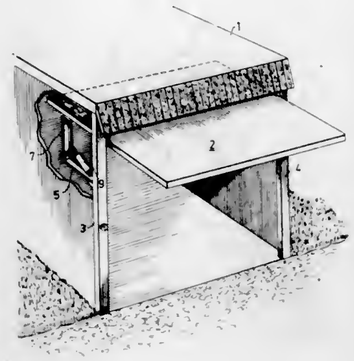
A swinging slide panel construction adapted for sliding movement along a predetermined path and for swinging movement away from the aforesaid path. It is particularly useful in connection with automatic entrances of the sliding door type, which are used extensively in grocery stores and the like.

3,464,160
WINDOW STRUCTURE
Richard N. Anderson, Miami, Fla., assignor to V. E. Anderson Mfg. Co., Owensboro, Ky., a corporation of Kentucky
Filed Apr. 27, 1967, Ser. No. 634,169
Int. Cl. E05d *15/22, 15/18*
U.S. Cl. 49—181 **11 Claims**



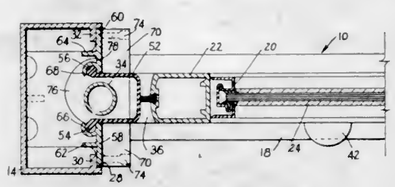
Tilting double hung window construction including a single plastic guide member at each side of a window sash for providing compression between a window frame and the window sash mounted therein and weatherstripping therebetween as well as guiding the window sash in sliding movement relative to the frame and camming locking structure for securing the window sash in a vertical position, especially in conjunction with counterbalance structure which is readily engageable with and releasable from the counterbalance structure.

3,464,161
DOOR ASSEMBLY
Karl O. Jonsson, Elvagen 4, Tillberga, Sweden
Filed Jan. 29, 1968, Ser. No. 701,141
Claims priority, application Sweden, Jan. 27, 1967, 1,229/67
Int. Cl. E05d *15/56, 15/38*
U.S. Cl. 49—197 **3 Claims**



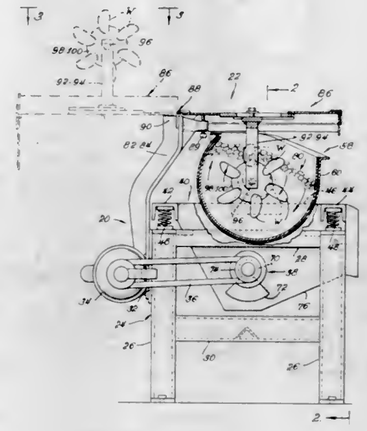
A pair of horizontal support arms rigidly secured to a door frame. A pair of movable arms are rigidly secured to a garage door and are pivotally connected to the inner ends of the support arms. A damping means is connected between each support arm and its associated movable arm.

3,464,162
HINGE SHAFT ASSEMBLY FOR BALANCED DOORS
Gary G. Ingham, Oklahoma City, Okla., assignor to Roto-Swing Door Co., Inc., Oklahoma City, Okla, a corporation of Oklahoma
Filed Jan. 15, 1968, Ser. No. 697,981
Int. Cl. E05d *7/08, 15/28;* **E06b** *7/23*
U.S. Cl. 49—383 **8 Claims**



A hinge shaft assembly for balanced doors wherein the hinge shaft for the door is disposed in such a relationship with respect to the vertical door frame as to permit clearance for the pivot arms of the door without the necessity of providing slots in the upper and lower portions of the door frame. The inner edge of the vertical door frame is open for receiving the hinge shaft assembly therein, and the hinge shaft is vertically disposed in the open edge of the door frame in such a manner that at least half the shaft extends beyond the confines of the door frame thus eliminating or precluding interference between the pivot arms and vertical door frame during opening or closing of the door. A yieldable finger guard member is disposed over the exposed portion of the shaft which extends beyond the door frame for protection of the shaft and protection of the users during use of the door. The entire hinge shaft assembly may be quickly and easily installed in the open edge of the door frame.

3,464,163
VIBRATORY FINISHING MACHINE
Achille K. Ferrara, 1941 72nd Court, Elmwood Park, Ill. 60635
Filed Oct. 26, 1966, Ser. No. 589,662
Int. Cl. B24b *19/00, 31/00*
U.S. Cl. 51—7 **8 Claims**

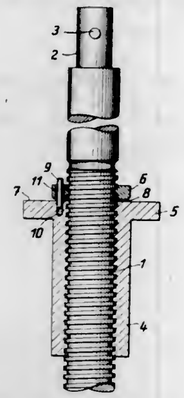


In a vibratory finishing machine of the type having a stationary supporting frame, a vibratory drum containing finishing media, and drive means for imparting vibratory motion to said drum, there are provided a fixture for carrying workpieces to be finished by the finishing media contained within the drum and fixture supporting means for supporting the fixture for rotation about a horizontal axis. The fixture supporting means is supported by the stationary supporting frame independently of the drum for pivotal movement of the fixture supporting means about a horizontal axis between an operative position wherein the fixture is substantially submerged in the finishing media contained within the drum and an inoperative position wherein the fixture is removed from the media. In one form of the invention, drive means are provided for positively rotating the fixture while the fixture is substantially submerged in the finishing media contained within the drum. Preferably, the last-mentioned drive means is adapted to positively rotate the fixture at varying speeds higher and lower than the speed of movement of the media.

3,464,164
FALL-THROUGH BARRIER FOR THREADED SPINDLES
Robert Blohm, Hampchaussee 59/33, Hamburg 80, Germany
Filed Jan. 30, 1967, Ser. No. 612,520
Claims priority, application Germany, Feb. 3, 1966, B 85,639
Int. Cl. B24b *41/04;* **B66f** *3/18*
U.S. Cl. 51—168 **1 Claim**

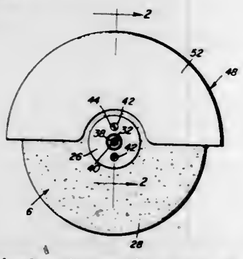
A stationary or driven spindle for height adjustment of the grinding disk of a grinding machine cooperates with a driven or stationary nut, respectively. The nut is subjected to considerable stress due to the forces occurring with the grinding operation. The considerable wear of the nut inside thread caused thereby produces the danger

of the spindle falling through the nut. A safety ring screwed on the spindle eliminates this drawback and



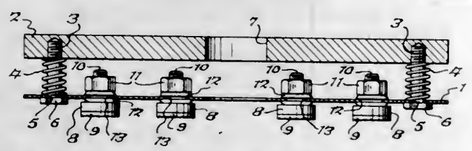
allows a permanent and easy inspection of said wear in the course of operation.

3,464,165
GRINDING WHEEL AND SAFEGUARDING MOUNT THEREFOR
Eugene V. Meredith, R.D. 2, Apalachin, N.Y. 13732
Filed Mar. 8, 1967, Ser. No. 621,510
Int. Cl. B24b *41/04, 45/00, 55/04*
U.S. Cl. 51—168 **6 Claims**



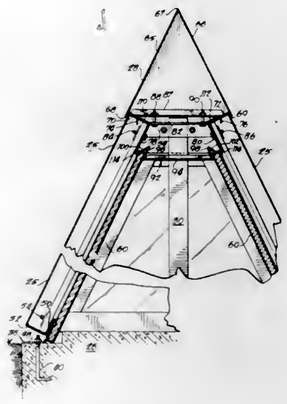
A grinding wheel and mounting means having features found on no other competitive grinder. The outer wall of a semicircular guard housing has minimal but safe clearance relative to outer flat surface of grinding wheel. Permits operator to work closer to workpiece being ground or milled. The means (1) bushing the arbor hole of grinding wheel and (2) mounting and bolting wheel to recessed head at outer end of the main arbor (shaft or mandrel) does not (3) project and (4) accordingly allows tool and die makers to safely grind dies close to guide pins—even with guard in place.

3,464,166
POLISHING PLATE
John J. Bouvier, Tonawanda, N.Y., assignor to Ferro Corporation, Cleveland, Ohio, a corporation of Ohio
Filed May 23, 1967, Ser. No. 640,686
Int. Cl. B24b *29/00, 5/00, 7/00*
U.S. Cl. 51—209 **8 Claims**



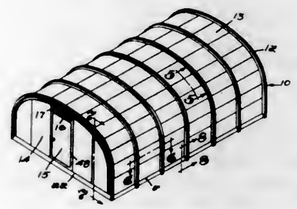
Small abrasive faced studs (particularly diamond faced) are resiliently held in a drive plate so that gentle abrasion and minimum scratching of work will result during use.

3,464,167
A-FRAME CONSTRUCTION
Steven J. Mason, The Ledges, Roscoe, Ill. 61073
Filed July 13, 1967, Ser. No. 653,225
Int. Cl. E04b *7/06, 7/02;* **E02d** *27/32*
U.S. Cl. 52—22 **15 Claims**



An A-frame building includes a ridge member, parallelly spaced base angle members, and sculptured metal wall panels. The ridge member has two parallel side plates connected together by a plurality of spacers, each of the side plates having an outwardly extending top flange, an angular side and a straight bottom flange. The sculptured metal wall panels are fastened to the angular sides of the side plates with the outwardly extending flange resting against one end thereof, the other end being fastened to a base angle member. The base angle member is mounted to a concrete foundation by anchor bolts.

3,464,168
PORTABLE SHELTER
Frank L. Russell, West Lebanon, N.H., and Thomas P. Lyons, Jr., Middleborough, Mass., assignors to the United States of America as represented by the Secretary of the Army
Filed Nov. 3, 1967, Ser. No. 681,066
Int. Cl. E04b *1/343, 7/10*
U.S. Cl. 52—63 **5 Claims**



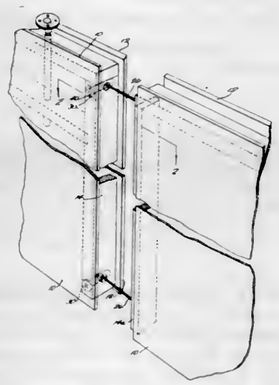
A lightweight, weathertight, easily-erected, portable shelter, having a rigid floor, a plurality of upright, spaced-apart, arches of inverted T cross section, spanning and fixed to the floor, the space between each pair of arches being covered with a roofing strip or section formed of a plurality of blocks in an edge to edge relationship adapted to ride in the seat formed by the inverted T of a pair of arches and held in place by compressive friction resulting from a tensioning of the arch components by cables which extend through all the arches.

3,464,169
LIFTING DEVICE FOR A TELESCOPIC MAST
Faustin Potain, La Clayette, France, assignor to Etablissements F. Potain, La Clayette, Saone-et-Loire, France, a French joint-stock company
Filed June 26, 1967, Ser. No. 648,605
Int. Cl. E04h *12/34*
U.S. Cl. 52—115 **5 Claims**



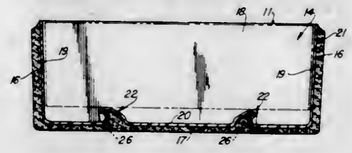
A lifting device is provided comprising a stand, a fixed strut, upper and lower lateral members, and a jack between the lateral members. The device is employed to effect the telescoping of a mast having a fixed lower part and a raisable part. The upper and lower lateral members are alternately latched to the raisable member, and the jack extended and contracted in correlation therewith. Supports are provided for supporting the raised part in its new raised position relative to the fixed part, and the jack and lateral members may be operated to raise the lifting device to a fresh starting position.

3,464,170
WINCH LOCK MOVABLE PARTITIONS
Morgan Grover, 3618 Tulara Drive, Boise, Idaho 83704
Filed Feb. 8, 1968, Ser. No. 703,989
Int. Cl. E04g *21/00*
U.S. Cl. 52—122 **4 Claims**



A winch lock movable partition of fastening movable wall panels together by means of winding rods or small winches, using a rope of nylon or similar strength material for engaging the adjacent edges of wall panels together and locking the winding rods in position.

3,464,171
BURIAL VAULTS
Wesley M. Chandler, St. Paul, and Bernard T. Juba, White Bear Lake, Minn., assignors to Wilbert, Inc., Forest Park, Ill., a corporation of Illinois
Filed Nov. 20, 1967, Ser. No. 684,251
Int. Cl. E04h *13/00*
U.S. Cl. 52—124 **15 Claims**



A burial vault is provided embodying a box-like base and cover unit which may be formed entirely of concrete or partly of concrete with one or more plastic resinous liners integrally and adhesively bonded thereto. The bottom wall of the box-like base has formed integrally therein a pair of horizontally spaced transversely extending members which serve as casket rests, and as vault lifting members to assist in raising and lowering the box-like base of the vault, and also as primary reinforcing members for reinforcing the side walls of the base of the vault in the areas where the side walls of the vault need such reinforcement. Each of the combination casket rest, vault lifting members, and side wall reinforcing members extends between the side walls of the base of the vault inwardly of the end walls thereof, and projects above the bottom wall or floor of the box-like base of the vault, and has an upwardly and longitudinally outwardly extending shoulder formed therein and below which an inwardly extending recess is formed in each side wall reinforcing shoulder for the reception of a vault lifting device attached to flexible hoist cables, or like vault lifting means, so that the box-like base of the vault may be raised and lowered by inserting the lifting device in the aforesaid recesses and then operating the vault lifting means. Auxiliary reinforcing members are embedded in the transversely extending casket rest, vault lifting and primary reinforcing members to strengthen the latter and enable them to resist the strains applied thereto as an incident to the raising and lowering of the base of the vault.

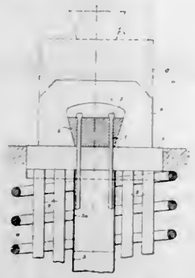
3,464,172
FIRE-RESISTANT STRUCTURAL MEMBERS FOR BUILDINGS
Andrew J. McGee, Jr., Rte. 1, Coward, S.C. 29530
Filed Jan. 10, 1967, Ser. No. 608,295
Int. Cl. E04b *1/94*
U.S. Cl. 52—168 **3 Claims**



A structural member for use in building construction, wherein all of the weight-bearing portions of the member subject to stress have internal cooling passages constructed and arranged to receive water. The structural member is thus rendered fire-resistant and may also constitute a part

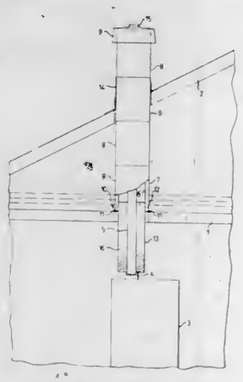
of a fire extinguishing sprinkler system as when sprinkler heads are provided at spaced intervals along the member in communication with the internal cooling passages.

3,464,173
TENSIONING APPARATUS FOR PRESTRESSED CONCRETE CONSTRUCTIONS
Mirko R. Roš, Asylstrasse 58, Zurich, Switzerland, by Erika E. Roš, Franziska J. Roš, and Cornella E. Roš, sole heirs of said Mirko R. Roš, deceased
Filed Sept. 8, 1964, Ser. No. 394,951
Int. Cl. E04h *14/00;* **E04c** *5/08, 3/26*
U.S. Cl. 52—173 **7 Claims**



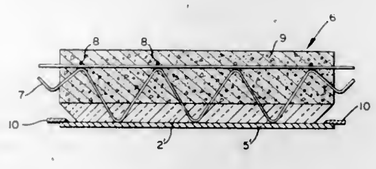
A prestressing arrangement for concrete components is disclosed as including tension elements connected to an anchoring block which bears, either directly or indirectly, on one relatively narrow surface of one or more bearing members each forming a part of a pile cluster including piles imbedded in the concrete and each having an outer end bearing against the opposite relatively narrow surface of an associated bearing member. The anchoring body transmits the prestressing force exerted by the symmetrically positioned tension elements substantially only to the outer ends of the piles which are symmetrically arranged outside the central cluster of tension elements. Thereby the prestressing force is applied to the concrete substantially solely by the frictional surface adherence between the piles and the concrete in which the piles are imbedded.

3,464,174
CHIMNEYS
Per Jan Åke Rosenberg, Malmo, Sweden, assignor to Rosengrens Plat AB, Malmo, Sweden
Filed Nov. 16, 1967, Ser. No. 683,592
Claims priority, application Sweden, Nov. 18, 1966, 15,803/66
Int. Cl. E04h *12/28*
U.S. Cl. 52—218 **7 Claims**



A chimney composed of stacked prefabricated elements and a smoke flue extending in the middle of the stacked elements which produce around the smoke flue a first space located closest to the smoke flue for insulation purposes and a second space located outside said first space for ventilation purposes, said first space allowing the use of such insulating material as burnt expanded clay.

3,464,175
LOW TEMPERATURE LIQUID STORAGE TANK
Yoshio Akita and Toyoo Maeda, Tokyo-to, and Toshio Yada, Funabashi-shi, Japan, assignors to Ishikawajima-Harima Jukogyo Kabushiki Kaisha, Tokyo-to, Japan, a company of Japan
Filed May 26, 1966, Ser. No. 553,248
Claims priority, application Japan, May 31, 1965, 40/32,071
The portion of the term of the patent subsequent to Oct. 8, 1985, has been disclaimed
Int. Cl. E04b *1/32*
U.S. Cl. 52—249 **9 Claims**



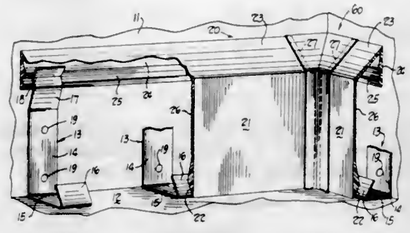
1. A low temperature fluid storage tank, comprising a plurality of individual units, each of said units comprising a section of insulating material, a construction layer adjacent said insulating material, a bar extending through and beyond said construction layer, and means for securing the ends of adjacent ones of said bars for joining adjacent ones of said units, to thereby form said tank.

3,464,176
BUILDING CONSTRUCTION
Arthur C. Clements, Santurce, Puerto Rico, assignor to Interstruct Corporation, Carolina, Puerto Rico, a corporation of Puerto Rico
Filed Dec. 19, 1966, Ser. No. 602,647
Int. Cl. E04b *5/18, 5/06*
U.S. Cl. 52—251 **14 Claims**



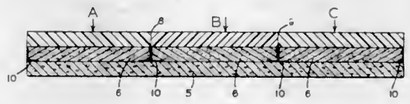
A monolithic building structure including a plurality of coplanar precast concrete blocks supported by precast concrete columns. Each block is provided with a beveled peripheral flange adjacent one of its faces and a keyway in each side wall. The keyways have converging side portions which intersect the opposite face of the block and extend in uniform flat planes to the peripheral flange. Cementitious material is poured between the blocks and into the keyways to form two-way shear keys which resist shear stresses in the plane of the blocks and also in directions perpendicular thereto.

3,464,177
SNAP-ON BASEBOARD
William J. Amato, 4187 Regal Ave., Brunswick, Ohio 44212
Filed Nov. 21, 1967, Ser. No. 684,846
Int. Cl. E04f *19/02*
U.S. Cl. 52—287 **1 Claim**



A clamp-on room baseboard, having wall mounted means to which the baseboard may be easily secured, or detached, without the use of tools.

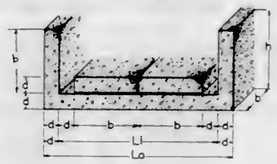
3,464,178
COMPOSITE FLOOR STRUCTURE—METHOD OF INSTALLATION
James W. Deichert, Rohrerstown, and Richard J. Evans, Millersville, Pa., assignors to Armstrong Cork Company, Lancaster, Pa., a corporation of Pennsylvania
Filed June 8, 1965, Ser. No. 462,292
Int. Cl. E04c *1/00*
U.S. Cl. 52—309 **2 Claims**



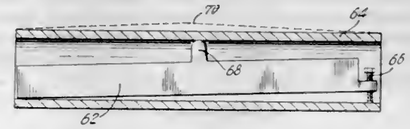
An installation procedure for resilient sheet flooring having a porous backing layer and a thermoplastic resin containing decorative wear layer which shrinks in both machine and across-machine direction. The steps of the procedure include bonding the porous backing layer of sheet flooring to the subfloor at the perimeter of the room and to each other, at the seams formed by adjacent sheets, using an adhesive which forms a permanent irreversible bond under the conditions of room use.

3,464,179
UNIT CONSTRUCTION SYSTEM WITH INTERLOCKING U-SHAPED ELEMENTS
Wolfgang Rathke, Wuppertal-Elberfeld, Lyubomir Szabo, Dusseldorf, and Gert V. D. Mühlen, Wuppertal-Elberfeld, Germany, assignors to Bau-Stahlgewebe G.m.b.H., Dusseldorf-Oberkassel, Germany, a corporation of Germany
Filed Aug. 18, 1967, Ser. No. 661,639
Claims priority, application Germany, Aug. 19, 1966, B 88,554
Int. Cl. E04c *1/10, 1/30;* **E04b** *5/08*
U.S. Cl. 52—584 **7 Claims**

In a unit construction system utilizing U-shaped unitary construction elements, the latter consist of a rectangular base and a pair of side walls having a thickness equal to the wall thickness of said base and extending at right angles from the short ends of the rectangle. The height, width and length dimensions of the elements are whole number multiples of said wall thickness and are mutually interrelated in a predetermined manner, whereby to enable variant groups of elements to be assembled in varying spacial combinations and to be firmly mutually interlocked, substantially without the use of separate fastening devices or joining materials, in such a manner as to enable a progressive assemblage of any number of elements to form a uni-directional, two-directional or three-directional assembly structure, or combination, of desired configuration and mechanical stability.



3,464,180
STRAIGHT EDGE, BEAM OR OTHER SIMILAR ARTICLE OF MANUFACTURE
Joseph N. Bond, Commack, N.Y., assignor to Potter Instrument Company, Inc., Plainview, N.Y., a corporation of New York
Filed Oct. 7, 1966, Ser. No. 585,058
Int. Cl. E04c *3/10;* **B21d** *7/00, 11/10*
U.S. Cl. 52—720 **6 Claims**

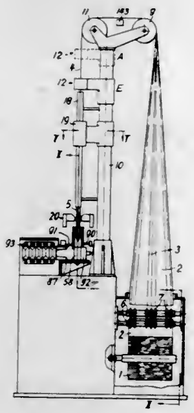


The specification and drawings describe an article of manufacture such as a straight edge, beam or the like in which two more or less co-extensive members are joined near their ends and at one or more intermediate points. The joined members have similar sectional properties and are loaded, one against the other, at the intermediate points deflecting one of the members to a predetermined curvature.

3,464,181
APPARATUS FOR MAKING AND FILLING RECTANGULAR CONTAINERS
Hans Hechenleitner, Villach, Austria, assignor to Hechenleitner & Cie, Villach, Austria, a corporation of Austria
Filed Feb. 8, 1966, Ser. No. 525,953
Claims priority, application Austria, Feb. 9, 1965, A 1,143/65
Int. Cl. B65b *3/02, 9/12*
U.S. Cl. 53—180 **18 Claims**

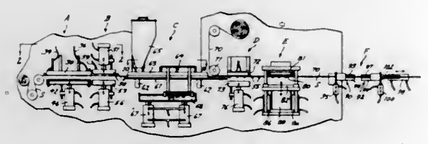
An apparatus for making and filling rectangular containers comprising a pair of grooved rolls arranged after a delivery roll for forming longitudinal folding lines for the top and bottom edges, a stamping means for stamping transverse folding lines drawing off a length of the strip from the delivery roll during stamping, welding means for a longitudinal seam of the tube on the side walls, a folding device for forming square containers, means for separating the containers while the open stamping means is returned to its original position, a slide operable to push the separated container to a finishing device, interacting ribs on the grooved rolls performing a longitudinal groove in the central fold edge as well as folding lines for the longitudinal seam of the tube, a guide roll diagonally

arranged relative to the delivery roll by 90° after the pair of grooved rolls, a distance of several tubular lengths being provided between the welding means for the longitudinal seam of the tube and a tubular jacket having a flat hexagonal cross-section symmetrical along two axes arranged between the welding means and two support



walls arranged for folding the container under the welding device dies for the side wall seams which dies are horizontally movable, and a moulding die and plate are pivotally connected between the support walls on each side if the tubular part and are movable against the latter and against the welding dies on circular tracks.

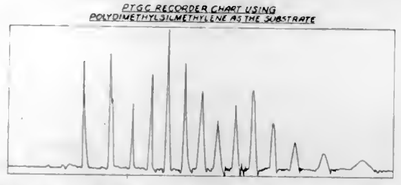
3,464,182
PACKAGING MACHINE
Matthew Nichols, Norristown, Pa., assignor to Sauter Packaging Company, Souderton, Pa., a corporation of Pennsylvania
Filed Apr. 7, 1967, Ser. No. 629,143
Int. Cl. B65b *9/04;* **B29c** *1/00*
U.S. Cl. 53—184 **10 Claims**



A machine for forming blisters in thermo-plastic material for receiving the object to be packaged, and sealing the object-containing blisters. The machine is particularly designed for packaging medicinal pills or tablets but has other applications.

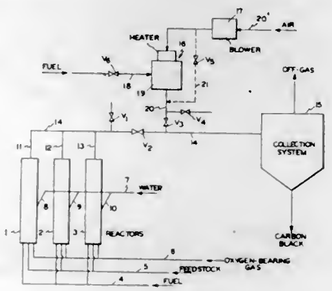
3,464,183
CHROMATOGRAPHIC SEPARATION METHOD
David J. Gordon, Essexville, Mich., assignor to Dow Corning Corporation, Midland, Mich., a corporation of Michigan
Filed Oct. 7, 1966, Ser. No. 585,020
Int. Cl. B01d *15/08*
U.S. Cl. 55—67 **4 Claims**

Improved chromatographic substrates for use in chromatographic columns, said substrates being capable of withstanding temperatures of up to about 420° C. In addition, the substrates of the present invention result in a far more efficient separation of pertinent components and also have a substantially longer service life than these



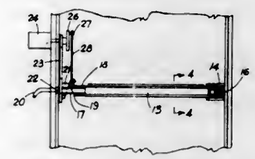
known heretofore. Illustrative of the substrates which can be employed herein is a polydimethylsilmethylene polymer having an intrinsic viscosity of at least 0.10.

3,464,184
METHOD AND APPARATUS FOR PREVENTING CONDENSATION IN A COLLECTION SYSTEM
William R. Wright, Rockport, Tex., assignor to Ashland Oil & Refining Company, Houston, Tex., a corporation of Kentucky
Filed June 21, 1965, Ser. No. 465,481
Int. Cl. B01d *46/00*
U.S. Cl. 55—97 **8 Claims**



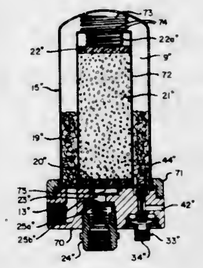
A collection system for separating solids from hot, moisture-laden gases equipped with apparatus for causing heated gases of relatively low moisture content to circulate through the system prior to introduction of the hot, moisture-laden gases and/or to purge the system of said moisture-laden gases upon shutting down of the system.

3,464,185
FLUID TREATING APPARATUS FOR AN ELECTROSTATIC PRECIPITATOR
Walter M. Fields, Fern Creek, Ky., assignor to American Air Filter Company, Inc., Louisville, Ky., a corporation of Delaware
Filed Aug. 28, 1967, Ser. No. 663,767
Int. Cl. B03c *3/78*
U.S. Cl. 55—118 **2 Claims**



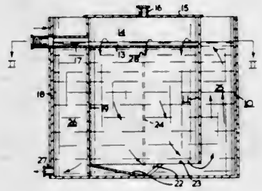
An improved fluid treating arrangement for the collector plates of an electrostatic precipitator including a crank and cam assembly both directly cooperating with an elongated fluid header assembly to provide oscillatory and axial movement thereof to effect efficient fluid treatment of the collector plates.

3,464,186
DRYER FOR COMPRESSED FLUID SYSTEMS
Paul M. Hankison, Peters Township, Washington County, and William Foster Walker, Bethel Park Borough, Allegheny County, Pa., assignors to Hankison Corporation, Canonsburg, Pa., a corporation of Pennsylvania
Continuation-in-part of application Ser. No. 547,115, Mar. 22, 1966. This application Feb. 10, 1967, Ser. No. 637,860
Int. Cl. B01d *41/00, 50/00*
U.S. Cl. 55—163 **29 Claims**



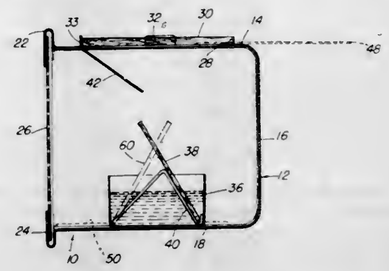
A drying tower is disclosed which is capable of periodic regeneration. The tower is employed within a pressurized system, and regeneration of the desiccant is accomplished by periodically backflowing a portion of the compressed fluid through the desiccant material at reduced pressure. In some embodiments, regenerating means are coupled between a compressor or other source of pressurized fluid and the drying tower in order to reduce the moisture content of the fluid before entering the tower to facilitate regeneration of the desiccant and to provide a dryer end product. In other arrangements, the drying tower is provided with an annular passage and spiral vane for the purpose of whirling the incoming pressurized fluid to separate oil droplets and other foreign matter before the incoming fluid reaches the desiccant.

3,464,187
COMBINED DEGASIFIER AND REACTING CHAMBER
Gothe Oscar Westerlund, % Chemech Engineering Ltd., 401—2695 Granville St., Vancouver, British Columbia, Canada
Filed June 9, 1967, Ser. No. 644,864
Claims priority, application Canada, Feb. 1, 1967, 981,753
Int. Cl. B01d *53/24*
U.S. Cl. 55—199 **8 Claims**



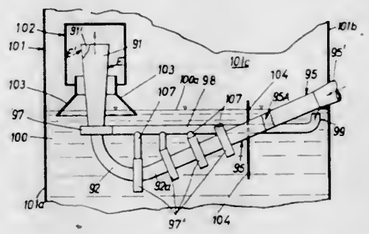
In a reaction vessel involving liquor containing entrained gases, the entrained gases are removed from the liquor by the use of a concentrically disposed degasifier chamber connected by weir means to a main liquor chamber, whereby liquor overflows the weir means from the liquor chamber to the degasifier chamber, there being restricted egress means from the degasifier chamber to discharge liquor in turbulent flow therefrom, there also being a weir-type divider disposed within the main liquor chamber.

3,464,188
AIR PURIFIER AND HUMIDIFIER
Henry P. C. Keuls, 205 E. 63rd St., New York, N.Y. 10016
Filed Nov. 22, 1967, Ser. No. 685,034
Int. Cl. B01d *47/02*
U.S. Cl. 55—234 **1 Claim**



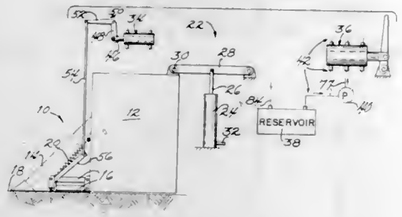
A window-mounted air purifier and humidifier comprising a housing having an inlet for external air covered by an insect excluding, non-dirt-filtering screen and an air outlet covered by an air filter. Incoming air impinges upon an air scrubber or wick mounted in a liquid reservoir and generation of proper air flow paths are facilitated by a depending vane directed toward the wick.

3,464,189
GAS CLEANING APPARATUS
Helmut Mergenthaler, Jesingen, near Kirchheim unter Teck, Wurttemberg, Germany, assignor to Otto Keller, Jesingen near Kirchheim unter Teck, Wurttemberg, Germany
Filed May 6, 1965, Ser. No. 453,646
Claims priority, application Germany, May 19, 1964, K 52,984; September 23, 1964, K 54,069
Int. Cl. B01d *47/02*
U.S. Cl. 55—256 **8 Claims**



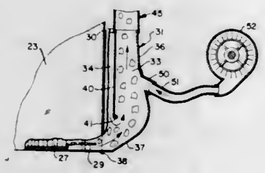
A gas cleaning apparatus in which a stream of gas to be cleaned is fed through a nozzle into the throat of a tubular member having a diffuser extending upwardly from the throat. The nozzle defines with the throat an annular gap through which water contained in a tank surrounding the gap is sucked and atomized so that impurities contained in the gas will adhere to the atomized liquid and will settle at the botom of the tank. The gap is surrounded by shielding means which communicate with the tank through a tube having an inlet end spaced from the bottom of the tank so that impurities settling on the tank bottom will not be recirculated through the tubular member.

3,464,190
COTTON PICKER LIFT CONTROL
William D. Lester, and Monroe C. Barrett, Memphis, Tenn., assignors to International Harvester Company, Chicago, Ill., a corporation of Delaware
Filed Aug. 2, 1966, Ser. No. 569,748
Int. Cl. A01d *45/18*
U.S. Cl. 56—11 **5 Claims**



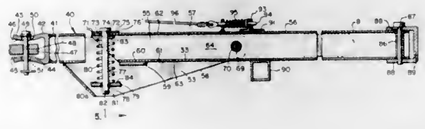
A cotton harvester having a picker unit and including a hydraulic system having supply and return circuits interacting with a ram which is operative to lift and vertically position the units in response to corresponding conditions of automatic and manual control valves interconnected in the circuits for selective manual and automatic control of the unit, the manual valve connected to the supply and return circuits and selectively supplying the automatic valve and the ram to effect respective automatic and manual positioning of the unit, the automatic valve actuated by means responding to changes in ground contour and being serially connected in the return circuit between the ram and the manual valve to limit lowering of the unit to a predetermined optimum height and to maintain the unit at that height independent of supply pressure and fluid flow.

3,464,191
DISCHARGE STRUCTURE FOR COTTON HARVESTER
Russell Dean Copley, Ankeny, and Gail Russell Sutherland, Des Moines, Iowa, assignors to Deere & Company, Moline, Ill., a corporation of Delaware
Filed Dec. 9, 1966, Ser. No. 600,523
Int. Cl. A01d *45/20*
U.S. Cl. 56—12 **9 Claims**



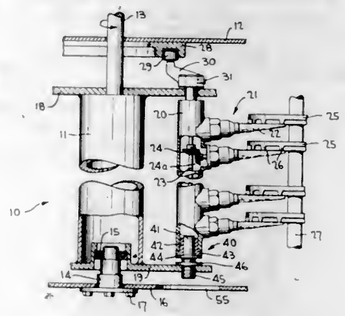
A compartment adapted to be supported on the rear central side of a cotton picker housing structure and centrally between a pair of transversely spaced plant passages in the housing structure, upright harvesting mechanism disposed within the housing structure and adapted to harvest cotton from adjacent rows of plants moving through the respective passages and for discharging the cotton into the centrally located compartment, the compartment being characterized by having an upright transverse plate extending across the compartment and blocking passage of cotton directly into the compartment by deflecting it downwardly to a lower transverse horizontal edge of the panel spaced from the floor of the compartment whereby the cotton will move into the rear portion of the compartment via an opening between the lower transverse edge and the floor, and blower means having a blower outlet directed into the rear portion of the compartment and positioned above the lower transverse edge whereby the air will move into and be deflected upwardly through an outlet at the top of the compartment.

3,464,192
AGRICULTURAL APPARATUS
Charles V. DeVries, Palos Park, and Arnold Zimmerman, Downers Grove, Ill., assignors to International Harvester Company, Chicago, Ill., a corporation of Delaware
Filed Oct. 19, 1966, Ser. No. 587,820
Int. Cl. A01d *35/02, 35/04*
U.S. Cl. 56—25 **11 Claims**



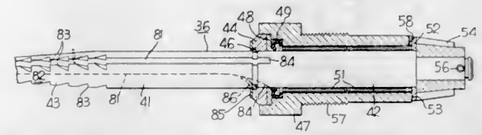
A device for overcoming static inertia to promote springing of an implement over obstructions, the device comprising a pair of vertically superposed portions, of a draft structure one connectible to a tractor and the other attached to the implement, and a spring interposed therebetween and supporting the implement-connected other portion and arranged to initiate upward springing motion when the implement strikes an obstruction to overcome the static inertia of the implement to upward movement whereby the springs supporting the implement are caused to lift the implement upwardly.

3,464,193
BAR PIVOT FOR COTTON HARVESTING MACHINE
Everett F. Mason, 415 N. Cornell St., Greenville, Miss. 38701
Filed June 2, 1967, Ser. No. 643,148
Int. Cl. A01d *45/18*
U.S. Cl. 56—47 **10 Claims**



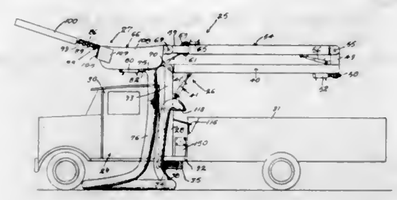
An adjustable support for setting the operating relationship between the rotating spindles and doffing means of a cotton harvesting machine which includes an upright threaded shaft for threadedly engaging the frame of the machine and locking means for setting the adjusted position. In an alterntaive embodiment a roller bearing is utilized for larger loads which bearing is supplied with lubricating oil from the excess in the spindle driving system.

3,464,194
COTTON HARVESTER
Rector C. Fergason, Gadsden, Ala., assignor to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.
Filed July 28, 1967, Ser. No. 656,811
Int. Cl. A01d *45/20*
U.S. Cl. 56—47 **8 Claims**



A cotton picker spindle and stripper apparatus having a releasable thrust collar which normally moves the stripper and being releasable in the event the stripper encounters excessive resistance.

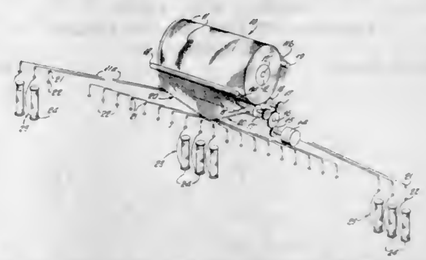
3,464,195
MACHINE FOR PICKING FRUIT FROM TREES
Paul D. Crichfield, Pompano Beach, Fla. (308 Wildermere Road, West Palm Beach, Fla. 33401)
Filed Apr. 4, 1967, Ser. No. 628,453
Int. Cl. A01g *19/00*
U.S. Cl. 56—328 **8 Claims**



A machine intended primarily for picking oranges including a picking head having stationary and oscillating finger elements for straddling tree branches and detaching the fruit therefrom by a snaping action. The finger elements direct the picked fruit into a receptacle of the picker head from which the fruit is periodically conveyed to a truck body on which the picker is mounted. A boom structure provides a substantially universally adjustable support for the picker head.

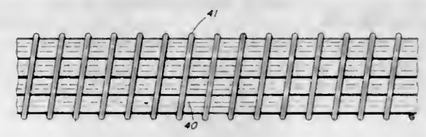
3,464,196
APPARATUS FOR FEEDING YARN TO BE TWISTED
John P. Baglino, Scranton, Nicholas F. Gubitose, Clarks Green, and Joseph R. Rappenglueck and Chester L. Loveland, Dalton, Pa., assignors to U.S. Textile Machine Company, Scranton, Pa., a corporation of Pennsylvania
Filed Mar. 18, 1968, Ser. No. 713,878
Int. Cl. D01b *13/02, 13/04*
U.S. Cl. 57—90 **11 Claims**

Apparatus for twisting yarn comprising a beam adapted to carry a plurality of yarn ends to define a cylindrical yarn package, a plurality of twisting stations arranged for the feeding thereto from the beam of the yarn ends and guide means for guiding the yarn ends from the beam to the twisting stations and permitting feedback



along the yarn ends of twist imparted thereto at the twisting stations.

3,464,197
COVERED YARN OF PLURAL ELASTOMERIC FILAMENTS SECURED IN DEFORMABLE PLANAR RELATIONSHIP
Emmett Virgil Martin, Kingsport, Tenn., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Continuation-in-part of application Ser. No. 311,475, Sept. 25, 1963. This application Nov. 28, 1966, Ser. No. 597,279
Int. Cl. D02g *3/36;* **D04h** *3/00*
U.S. Cl. 57—152 **10 Claims**

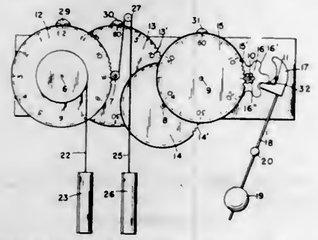


An improved, covered, elastomeric yarn having a helically wound cover over a core of from 3 to 5 substantially round elastomeric filaments securely adhered to one another in side-by-side relationship. When the core is in its most elongated or most relaxed state, the filaments define a curved configuration. The core has its greater circumference when it is in an intermediate state in which the covering is most relaxed and its smaller circumference when it is in the most elongated or most relaxed state so that a covering yarn applied in the elongatde state will be in tight, compressive relationship with the core both in its most elongated and also in its most relaxed state and in all stages therebetween.

3,464,198
PROCESS FOR THE MANUFACTURE OF SPINNING YARN CONTAINING ELASTIC FIBER
Kanji Matsubayashi and Takeshi Yasui, Kurashiki, and Shiro Sano, Toyonaka, Japan, assignors to Kurashiki Rayon Company Limited, Kurashiki, Japan, a corporation of Japan
No Drawing. Filed Nov. 2, 1964, Ser. No. 408,409
Claims priority, application Japan, Nov. 14, 1963, 38/61,101
Int. Cl. D02g *3/02*
U.S. Cl. 57—157 **5 Claims**

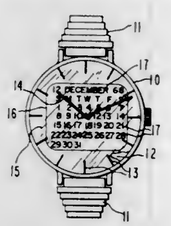
A mixed yarn is prepared form an elastic fiber, e.g. polyurethane elastomer, and a non-elastic fiber, e.g. polyvinyl alchol fiber. The elastic fiber is heated at a temperature above 50° C. but below the melting or decomposition temperature of the fiber to lower the elongation of the elastic fiber to below 100%. This heat set fiber is converted to a staple fiber, mixed with non-elastic staple fiber, and the mixed fibers are spun into yarn. The yarn is then heat treated at above 50° C. and below the melting or decomposition temperatures of the fibers to improve the elasticity of the yarn.

3,464,199
HANDLESS PENDULUM DRIVEN CLOCK
James Phillip Scherz, 1473 Carver St., Madison, Wis. 53713
Filed Apr. 27, 1967, Ser. No. 634,211
Int. Cl. G04b *45/00*
U.S. Cl. 58—2 3 Claims



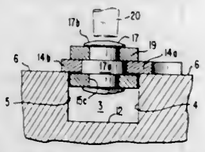
Clock comprising a gear train wherein the numeric indicia indicating time are displayed directly on the gears of the train and the indicia indicating any given time are displayed respectively at three laterally spaced apart positions.

3,464,200
WATCH WITH TRANSPARENT CALENDAR
Robert G. Merrick, 10377 Vista Knoll Blvd., Cupertino, Calif. 95014
Filed Dec. 30, 1968, Ser. No. 787,713
Int. Cl. G04b *19/24*
U.S. Cl. 58—58 3 Claims



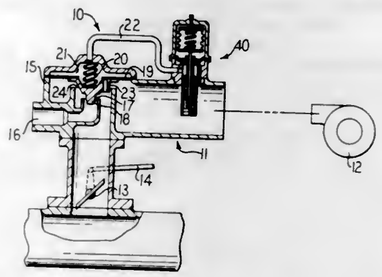
A combination of a timekeeping device, such as a wristwatch, and a substantially transparent sticker which adheres to the glass cover of the timekeeping device, the sticker having a calendar for one month printed on it, the printed characters taking up a minor proportion of the area of the sticker, whereby the user of the timekeeping device can observe the days and dates directly on the calendar-sticker, and/or the minutes and hours directly through the calendar-sticker.

3,464,201
METHOD OF REMOVING PIN MEANS FROM LINK CHAIN DEVICES
Jack W. Ehlen, Torrance, Calif., assignor to McCulloch Corporation, Los Angeles, Calif., a corporation of Wisconsin
Filed Dec. 12, 1966, Ser. No. 601,115
Int. Cl. B21l *9/06*; B23p *11/00, 19/00*
U.S. Cl. 59—7 4 Claims



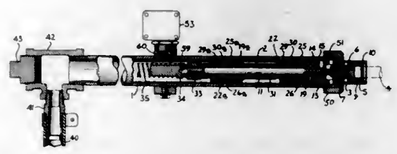
This application discloses using a support with a slot therein that has longitudinally converging side walls for gripping a link of a chain while removing a rivet therefrom.

3,464,202
DENSITY LIMITING TURBOCHARGER CONTROL SYSTEM
Harold H. Wagner, Peoria, Ill., assignor to Caterpillar Tractor Co., Peoria, Ill., a corporation of California
Filed Nov. 14, 1967, Ser. No. 682,902
Int. Cl. F02b *33/00*; F02m *7/00*
U.S. Cl. 60—13 8 Claims



A density limiting intake air control system for turbocharged, carburated, internal combustion engines, which prevents the engine from progressively increasing its power until unsafe operating conditions are reached, employs a regulator sensitive to pressures and temperature to control the throttling means operable to limit the flow of supercharged air from the turbocharger, so a maximum safe density is never exceeded in the cylinders of the engine.

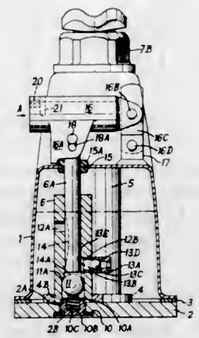
3,464,203
STOCK FEEDING APPARATUS
David Twersky, Morton Grove, Ill., assignor to Esterline Corporation, New York, N.Y., a corporation of Delaware
Filed Mar. 15, 1967, Ser. No. 623,408
Int. Cl. F15b *15/18*; F01b *25/00*
U.S. Cl. 60—52 6 Claims



Apparatus for feeding stock to a machine tool comprises a tube for receiving the stock, a piston assembly within the tube for maintaining pressure against the stock to feed it as required by the machine tool, a reversible pump, and a switch and signal means. The piston has cup-shaped plastic seals to prevent leakage of oil past the piston. Resilient O-rings are telescoped within the seals to urge them against the inside wall of the tube. To compensate for wear on the seals, mechanism is provided to expand the O-rings which thereby expand the seals.

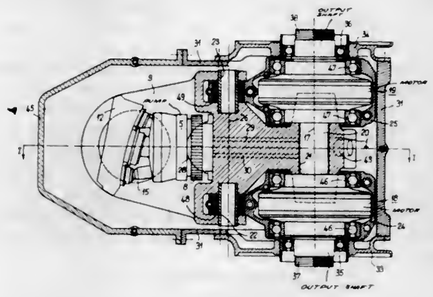
3,464,204
HYDRAULIC LIFTING JACK
Frank Rudkin, Pattiswick, near Braintree, England, assignor to Lake & Elliot Limited, Braintree, England, a British company
Filed Dec. 14, 1967, Ser. No. 690,565
Int. Cl. F15b *15/18*; F16h *41/00*; B66f *3/38*
U.S. Cl. 60—52 5 Claims

A lifting jack has a ram cylinder and an operating plunger housing upstanding on a base plate, and they are fixed on the base in spaced relation by a mounting plate fixed on the base and having two spaced bores, each receiving a respective one of the housing and the ram cylinder. A pressure fluid conduit between the plunger hous-



ing and the ram cylinder is constituted by the base plate and the mounting plate. Pressure release is obtained by axial rotation of an operating handle.

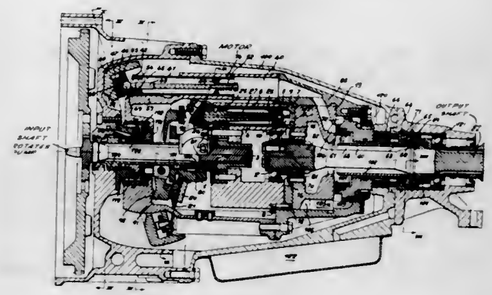
3,464,205
SELF-CONTAINED HYDRAULIC POWER TRANSMISSION UNITS
Edmond Henry-Biabaud, Paris, France, assignor to Societe Anonyme Andre Citroen, Paris, France
Filed May 29, 1967, Ser. No. 641,792
Claims priority, application France, June 16, 1966, 65,744
Int. Cl. F16d *31/06, 33/00*
U.S. Cl. 60—53 4 Claims



Power transmission unit comprising hydraulic pump and motors of the multicylindered rotary barrel type with distributor faces and means for varying the volumetric capacity of said hydraulic motors, characterised in that it comprises essentially two portions, namely a central main body forming an integral unit supporting the main stresses and a peripheral protection housing also acting as a fluid reservoir, both portions being an integral part of the self-contained unit.

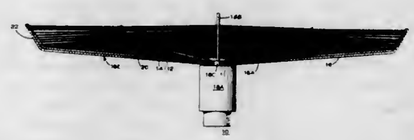
3,464,206
HYDRAULIC CHANGE SPEED GEAR
Giovanni Badalini, Rome, Italy, assignor to S.p.A. Cambi Idraulici Badalini, Rome, Italy
Filed June 14, 1967, Ser. No. 646,091
Claims priority, application Italy, June 15, 1966, 13,765/66
Int. Cl. F16h *41/18*; F04b *1/02*
U.S. Cl. 60—53 12 Claims

A hydraulic change speed gear for motor vehicles of the type including a hydraulic pump rigid with the motor shaft, a hydraulic motor rigid with the drive shaft and an apertured front type distribution member interposed therebetween, in which against the surface of the apertured distributor the cylinder body does not directly rest, but a ring rests, interposed between said distribution surface and the cylinder body, the cylinder body being perfectly adjusted and said ring (anyway rotated by the cylinder body) pushed against the surface of the distributor, free of lying thereon under the action of hydraulic forces



provided for the seal. The connection between the pump body or the hydraulic motor body with the associated swash plate, is obtained by means of a thrust bearing ring, interposed between the variable inclination swash plate and the ends of the connection rods carried either by the pump or by the pump or by the hydraulic motor. Said connection rods are provided with means to form a constant oil film on said thrust bearing ring, so as to cause the floating thereof.

3,464,207
QUASI-CORONA-AERODYNAMIC VEHICLE
Ernest C. Okress, Elizabeth, N.J., assignor to American Standard Inc., a corporation of Delaware
Filed Oct. 10, 1966, Ser. No. 585,661
Int. Cl. H05h *1/18*; H01j *1/05*
U.S. Cl. 60—202 33 Claims



This invention relates to electroaerodynamic systems for the propulsion of vehicles through a gaseous dielectric atmosphere. Pulses of sufficient energy are produced for ionizing gas molecules in the dielectric atmosphere. The pulses are of sufficiently short duration so as not to break down the medium electrically. The amplitude of the pulses should be as large as possible and their duration as short as possible so as to transfer a maximum amount of energy per pulse to the gas. One of the features of the invention is the employment of a periodic ionizing electric field.

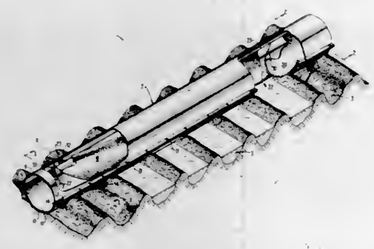
3,464,208
TRANSPIRATORY COOLING BY EXPENDABLE INSERTS
Charles H. Martens, Huntsville, Ala., assignor to the United States of America as represented by the Secretary of the Army
Filed Apr. 26, 1967, Ser. No. 634,811
Int. Cl. F02k *1/22*; B64d *33/04*
U.S. Cl. 60—265 1 Claim

A transpiratory cooling structure employing expendable

inserts, which inserts have been previously introduced in a cavity or cavities within the walls of the bodies to be cooled. The use of such inserts in rocket nozzles and rocket guide vanes is illustrated herein.



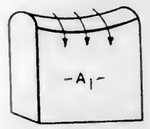
3,464,209
FLOW CONTROLLING IRRIGATION APPARATUS
William M. Redditt III, Honolulu, Hawaii, assignor to Hawaiian Sugar Planters' Association, Honolulu, Hawaii, a voluntary non-profit agricultural organization
Filed Feb. 6, 1968, Ser. No. 703,424
Int. Cl. E02b *13/00;* **F16j** *55/00*
U.S. Cl. 61—12 **10 Claims**



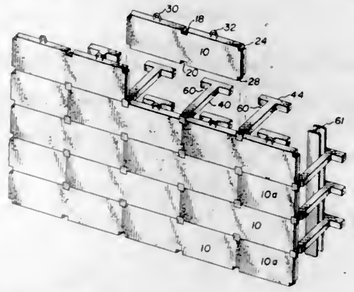
A flow controlling irrigation apparatus of the type including a water carrying conduit provided with a plurality of ports spaced therealong with a plurality of flexible diaphragms positioned in the condition to control the distribution of water from the ports in group of several ports at a time. At least one flexing means is provided for moving at least one of the diaphragm from a closed position overlying and closing the adjacent ports to an open position spaced away from the ports. The flexing means includes diaphragm contacting means secured to an upstream edge of the one diaphragm for holding the diaphragm in sealing relation against the lower interior portions of the conduit. Moving means connected to the diaphragm contacting means and movably mounted in the conduit, is adapted for application of force to the moving means to move at least a portion of the diaphragm contacting means away from the conduit to flex open the associated diaphragm. In one preferred embodiment the flexing means is provided with an over-center, spring action to assist in maintaining the diaphragm in each of its extreme open and closed positions.

3,464,210
WATERGATE WITH MEANS FOR PREVENTING OSCILLATIONS IN OVERFLOW
Yasuyoshi Nakajima, Ibaraki, Japan, assignor to Hitachi Shipbuilding and Engineering Co., Ltd., Osaka, Japan
Filed July 31, 1967, Ser. No. 657,307
Claims priority, application Japan, July 30, 1966, 41/50,259
Int. Cl. E02b *7/20, 7/26, 7/52*
U.S. Cl. 61—22 **6 Claims**

Method of and means for preventing untoward oscillations in overflow-type watergates wherein the shape of the top edge of the gate is varied, over the entire gate width, either in up-and-down or in front-and-rear direction, thereby altering the oscillation characteristics of the overflow water against the respective portions of the gate. The critical depth of the overflowing water is altered from one section of the top edge to the other, for example along a concave or convex profile, thereby producing a stabilizing force which keeps the water in equilibrium.

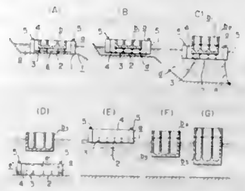


3,464,211
MODULAR STRUCTURE FOR RESTRAINING WALLS
Magne A. Andresen, 3314 Putty Hill Road, Baltimore, Md. 21234
Filed Mar. 8, 1967, Ser. No. 621,568
Int. Cl. E04b *1/04;* **E04c** *1/10, 1/30*
U.S. Cl. 61—35 **4 Claims**



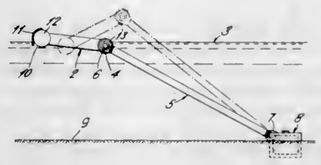
A modular reinforced concrete restraining wall formed of precast rectangular parallelepiped front panels and T-shaped headers. The wall is erected without mortar and is held in position by keystone shaped male keys on each header which fit within corresponding keyway notches formed within the front panel blocks. Reinforcing bar eyelets embedded within the tops of the front panels key with slots in the bottom of abutting panels to provide added shear load resistance as well as handling means.

3,464,212
METHOD OF BUILDING CONCRETE STRUCTURES IN WATER BOTTOMS
Kazumi Yamagata and Kazuo Kamisaka, Chuo-ku, Tokyo, Japan, assignors to Daiho Construction Company, Limited, Tokyo, Japan, a corporation of Japan
Filed Mar. 10, 1967, Ser. No. 622,192
Claims priority, application Japan, May 13, 1966, 41/30,432
Int. Cl. E02d *5/00;* **B63c** *1/06;* **B63b** *35/44*
U.S. Cl. 61—46 **7 Claims**



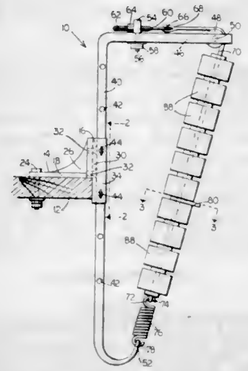
A method of building a concrete structure in one place and sitting it at another place in water wherein at least a base part of the structure is constructed in a floatable dock which is partially submerged and stably grounded on a water bed in shallow water by filling water into the dock so that the construction will be carried out under the same favorable stable conditions as would exist were the construction to be performed on land. The partially submerged dock is then refloated by pumping out the water and towed to deep water where it is again submerged by filling in water so that the dock sinks below and separates from the complete or incomplete concrete structure which remains floating. The latter is then sunk at the intended site by filling in water, and the dock is then refloated by pumping out the water and towed back to the original shallow water location for reuse.

3,464,213
BUOYANT FENDERS
Henry W. Stephenson, Kingsdown Old Rectory, near Milstead, Sittingbourne, Kent, England
Filed Nov. 27, 1967, Ser. No. 685,795
Claims priority, application Great Britain, Nov. 29, 1966, 53,276/66
Int. Cl. B63b *43/18*
U.S. Cl. 61—46 **11 Claims**



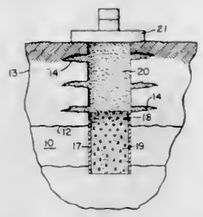
A generally rectangular buoyant framework having spaced parallel buoyant elements one of which is just buoyant and the other of which is highly buoyant. The framework is pivoted to a pivotally anchored means arranged so that impact forces on the free edge of the framework and reaction from the anchored means causes the framework to tilt and shift its center of buoyancy in a manner to set up a restoring couple by its buoyancy and weight.

3,464,214
WATERCRAFT MOORING DEVICE
John S. L. King, 186 Glenview Ave., Toronto 12, Ontario, Canada
Filed Jan. 23, 1967, Ser. No. 611,111
Int. Cl. E02b *3/22;* **B63b** *21/04;* **F16f** *9/54*
U.S. Cl. 61—48 **6 Claims**



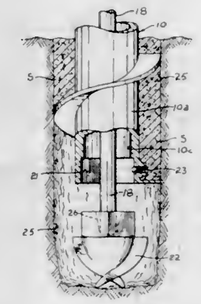
A boat mooring device which consists of a tensioned cable fixed at its upper end at a point above the water on which the boat is floating, the tension being provided by a spring or weight secured to its lower end. A mooring line for the boat is secured to a ring which is, in turn, secured to the tensioned cable.

3,464,215
FOUNDATION SYSTEMS
Milan Spanovich, Penn Hills Township, Allegheny County, Pa. (% Engineering Mechanics, Inc., 3 Gateway Center, Pittsburgh, Pa. 15220)
Filed Feb. 15, 1968, Ser. No. 705,652
Int. Cl. E02d *5/34*
U.S. Cl. 61—53.52 **5 Claims**



A method of forming a foundation system over a void including the steps of drilling a hole to the bottom of the void, inserting a casing to the base of the drilled hole extending through the void and into the roof of the void, filling the casing with high compressive strength concrete, pouring a lean cement grout into the remainder of the hole under pressure as required to fill any intermediate voids and installing footings over the area treated.

3,464,216
METHOD AND MEANS FOR FORMING CAST-IN-PLACE REINFORCED CONCRETE PILE
Lee A. Turzillo, Bath, Ohio (2078 Glengary Road, Akron, Ohio 44313)
Filed Jan. 8, 1968, Ser. No. 696,212
Int. Cl. E02d *5/36, 5/34*
U.S. Cl. 61—53.64 **6 Claims**

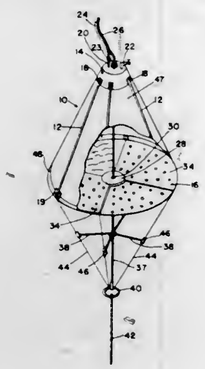


Hollow-shafted auger screwed to required depth of hole in situs then held stationary, while rigid rod is fed through auger shaft to release driving bit from lower end of auger into drilled hole. Rod retained centrally upright in hole by shaft, while auger progresively withdrawn and hydraulic cement mortar pumped through shaft to fill hole. Mortar initially anchors lower end of rod in upright position then progressively forms a pile body upwardly about rod.

3,464,217
PORTABLE DIVING APPLIANCE
Harry J. Streit, 113 W. Olney Ave., Philadelphia, Pa. 19120
Filed Jan. 31, 1968, Ser. No. 701,956
Int. Cl. B63c *11/36;* **B63g** *8/24;* **A45c** *7/00*
U.S. Cl. 61—69 **9 Claims**

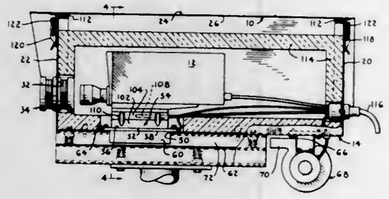
A simple type, diving bell comprising a plurality of metallic braces, attached to a top portion and a seat

and entrance portion, and forming a truncated cone shape when open. A nylon reinforced rubberized fabric



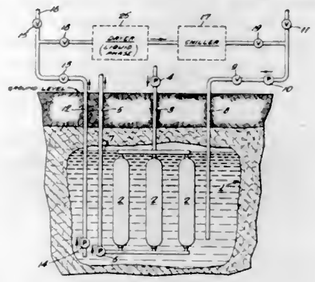
attached to the inner portion of the braces and to form the main body portion. The bell being collapsible for transporting to the work site.

3,464,218
HEAT EXCHANGE HOUSING FOR TELEVISION CAMERA AND THE LIKE
Thomas Olaf Buck, Lake County, Ind., assignor to Meade Electric Company of Indiana, Inc., Hammond, Ind., a corporation of Indiana
Filed Dec. 28, 1967, Ser. No. 694,207
Int. Cl. F25b *21/02*; H04n *5/00*
U.S. Cl. 62—3 **4 Claims**



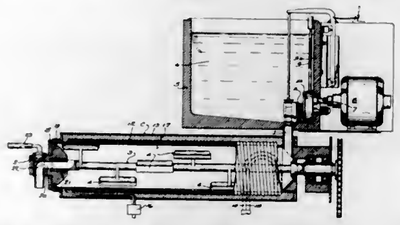
A heat exchange housing for protectively containing a heat generating device such as a television camera comprising a generally rectangular box like structure. Channel means depending from the base longitudinally thereof to provide a passage therebetween. An opening in the base communicating the housing interior and the channel passageway. A heat conduction block in the housing extending through the opening into the passageway. Means for establishing a temperature gradient through the block. An air blower is connected to the housing to blow air through the passageway to cool the portion of the block extending into the passageway. The conduction block is adapted to connect with the television camera or the like so that heat transmission is readily afforded by means of conduction. Sight means is provided in one of the end walls of the housing to permit observation from the interior to the exterior of said housing. Spaced rails are connected to the base of the housing by which means the housing may be adjustably moved on its support base and by which means it is spaced above its support base.

3,464,219
STORAGE OF NORMALLY GASEOUS MATERIAL IN SUBTERRANEAN CAVERNS
George M. Closs, Wynnewood, and Patrick F. Dougherty, Chester Heights, Pa., assignors to Sun Oil Company, Philadelphia, Pa., a corporation of New Jersey
Filed Apr. 17, 1968, Ser. No. 721,958
Int. Cl. B65g *5/00*; F17c *1/00*
U.S. Cl. 62—45 **7 Claims**



A normally gaseous material having a low critical temperature is stored in liquid phase in a subterranean cavern, by placing the material in a pressure-resistant receptacle located in the cavern, and surrounding this receptacle with a different material having a much higher critical temperature, this latter material being chilled to a temperature substantially below the critical temperature of the first material. The latter material may be a normally gaseous material which is stored in liquid phase in the cavern.

3,464,220
MACHINE FOR MAKING FROZEN CONFECTION
Louis A. M. Phelan, Roscoe, Ill. 61073
Filed Feb. 12, 1968, Ser. No. 704,788
Int. Cl. F25c *7/10*
U.S. Cl. 62—342 **2 Claims**

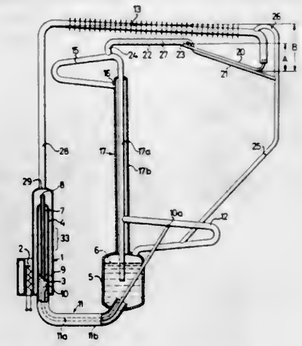


This invention relates generally to freezers for confection such as soft ice cream, custards, malteds, or the like, in which mix and air are fed into one end of a refrigerated cylinder through which it passes as it is brought down to proper temperature and is then drawn off from the other end of the cylinder by means of a serving valve. The freezer has a plurality of relatively small diameter evaporator coils connected in parallel to provide more intimate and complete contact with the cylinder.

3,464,221
ABSORPTION REFRIGERATION SYSTEM
Hans Stierlin, Schlieren, Zurich, and Nikolaus Eber, Zurich, Switzerland, assignors to Kuhlapparate G.m.b.H., Schlieren, Zurich, Switzerland
Filed Mar. 30, 1967, Ser. No. 627,118
Claims priority, application Switzerland, Mar. 31, 1966, 4,704/66
Int. Cl. F25b *15/10*
U.S. Cl. 62—476 **1 Claim**

An absorption refrigeration system employing evaporation of refrigerant fluid in the presence of an inert gas

or pressure equalizing agent wherein the connection between the condenser and the main evaporator comprises a heat exchanger and an auxiliary evaporator downstream of the heat exchanger. The latter serves to permit ex-



change of heat between liquid refrigerant which flows from the condenser and a partial stream of gaseous third component which flows through the auxiliary evaporator countercurrent to and is warmed up in response to partial evaporation of liquid refrigerant.

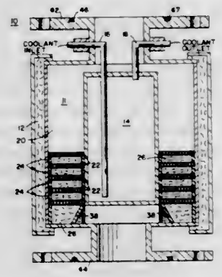
3,464,222
REFRIGERATION ARRANGEMENT
Harold E. Gramse, Chicago Heights, Ill., assignor to Pullman Incorporated, Chicago, Ill., a corporation of Delaware
Filed Dec. 28, 1967, Ser. No. 694,244
Int. Cl. F17c *7/02*; B60p *3/20*
U.S. Cl. 62—45 **6 Claims**



A refrigeration arrangement for a railroad refrigeration car including liquid nitrogen tanks mounted at one end of the car and provided with liquid nitrogen conduit means including a first conduit portion leading from the tanks to a heat exchanger and a second conduit portion leading to a nitrogen gas spray header conduit for spraying of nitrogen gas within the car for cooling, the second conduit portion having an orifice to reduce the cross sectional flow area to the heat exchanger, a heat exchanger for changing the liquid nitrogen to a gas for admitting the nitrogen gas under pressure of expansion to a nitrogen gas conduit, a pneumatic motor for driving an air intake fan coupled with the nitrogen gas conduit, an air inlet housing the fan and having a damper to introduce air into the car when the pneumatic motor is driven by the nitrogen gas, and temperature sensing means having mechanical trip to operate the nitrogen tank valve for introducing nitrogen into the liquid nitrogen conduit means when the temperature falls below a pre-determined value.

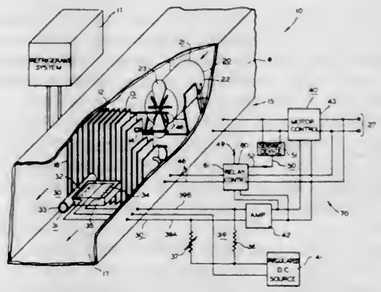
3,464,223
TRAP PUMP FOR VACUUM SYSTEM
Thomas G. Roberts and Thomas A. Barr, Jr., Huntsville, Ala., assignors to the United States of America as represented by the Secretary of the Army
Filed Dec. 28, 1967, Ser. No. 694,189
Int. Cl. B01d *5/00*
U.S. Cl. 62—55.5 **9 Claims**

A trap pump for lowering the pressure of a vacuum system, utilizing porous metallic plates, of copper, silver, etc. to eliminate the creep and backstreaming of diffusion pump fluids and vapors and to furnish a good thermal conductor so that molecular sieves, when used in the system, may be uniformly cooled. The pump includes a coolant reservoir enclosed by a heating jacket. The porous plates are mounted in a chamber interiorly of



the heating jacket. The trap is placed in the pumping line between the pumps, valves, other baffles and the space to be evacuated. Gases pumped through the trap, pass through the chamber and through the porous plates for evacuation of the space to be evacuated.

3,464,224
MEANS AND METHOD FOR CONTROLLING A REFRIGERATION SYSTEM
Sven V. Swanson, Niles, Mich., assignor to Clark Equipment Company, a corporation of Michigan
Filed Dec. 22, 1967, Ser. No. 692,868
Int. Cl. F25d *17/06, 21/02*
U.S. Cl. 62—80 **12 Claims**

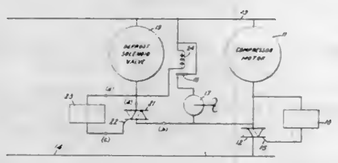


A refrigeration system comprises duct structure for carrying refrigerated air through cooling coils cooled by a refrigerant system. A motor driven fan is located within the duct to circulate air from a refrigeration storage portion of the refrigeration system through the refrigerating coils. The fan speed is controlled to maintain a minimum velocity through the cooling coils as frost builds up on the coils. When the coils become covered with frost to a degree that the maximum operable speed of the fan cannot maintain the required velocity through the coils, the system is defrosted.

3,464,225
ELECTRONIC TEMPERATURE REGULATION SYSTEM USING SOLID STATE DEVICES AND POINT CONTACT SENSORS
Donald Leland Watrous, Scotia, and John D. Harnden, Jr., Schenectady, N.Y., assignors to General Electric Company, a corporation of New York
Filed May 2, 1967, Ser. No. 635,577
Int. Cl. F25d *21/02, 17/06*; G05d *23/26*
U.S. Cl. 62—156 **21 Claims**

A temperature regulation system is described which includes at least one electrically operable apparatus for driv-

ing the temperature controlling mechanism of the temperature regulation system (such as the compressor motor of a refrigerator). At least one gate controlled, solid state semiconductor switching device (such as a triac) is connected in series circuit relationship with the electrically operable apparatus for controlling the supply of electric current thereto. Solid state, pilot contact and sensor means are provided for sensing the temperature of the space or device being regulated by the system. The solid state, pilot contact and sensor means is designed so as to exhibit a desired thermal hysteresis characteristic and is connected between a source of electric current and the control gate of the gate controlled, solid state semiconductor switching device for controlling turn-on of the same in response to the temperature being sensed. In preferred embodiments of the invention, the temperature regulation system comprises a solid state, electronic refrigeration control system wherein the electric motor is a compressor motor and the system further includes a circulating fan for the cool air spaces operatively coupled in parallel with the compressor motor so as to be controlled by the gate controlled, solid state semiconductor switching device in unison with the compressor motor. Additionally, defrost means for defrosting the evaporator coils at appropriate times, is provided, along with a second, gate controlled,



solid state semiconductor switching device which is connected in series circuit relationship with the defrost means for controlling its operation. Second pilot contact and sensor means are operatively coupled to the control gate of the second, gate controlled, solid state semiconductor switching device for controlling turn-on of the same in response to a need for defrost. The second pilot contact means is thermally coupled to the evaporator coils of the refrigeration system for sensing buildup of frost thereon and is designed to exhibit a desired thermal hysteresis characteristic. The system is completed by interlock means for interlocking operation of the compressor motor and the circulating fan with operation of the defrost means. In all embodiments of the invention, the solid state, sensor means is comprised by first order transition materials which provide an abrupt change in at least one of the properties thereof at predesigned transition temperatures in response to variations in temperature over a given range. Due to the hysteresis characteristics built into the sensors through the use of suitable first order transition materials, the transition temperature values will be different as the temperature increases from a lower to a higher temperature from the transition temperature value as the temperature decreases from a higher to a lower temperature.

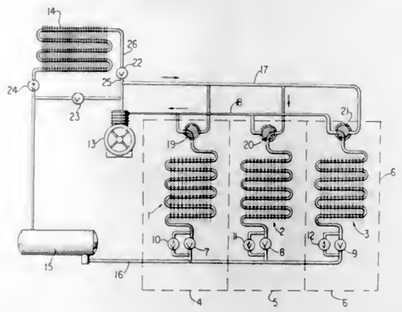
3,464,226

REGENERATIVE REFRIGERATION SYSTEM WITH MEANS FOR CONTROLLING COMPRESSOR DISCHARGE

Daniel E. Kramer, Yardley, Pa., assignor to Kramer Trenton Co., Trenton, N.J., a corporation of New Jersey

Filed Feb. 5, 1968, Ser. No. 702,903
Int. Cl. F25b *41/00, 47/00*
U.S. Cl. 62—196 **10 Claims**

A regenerative refrigeration system having, as usual, a single compressor and condenser with a plurality of evaporators, arranged for the defrosting of one evaporator at a time while the other or others is or are active, and the feeding of the condensate from the evaporator being defrosted into the refrigerant supply conduit leading to the thermostatic valve or valves of the other or others, the system including means for automatically temporarily in-



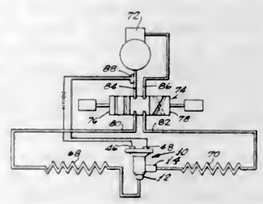
creasing the pressure of compressor discharge during defrosting to expedite the latter. In place of the single compressor there may be employed a condensing unit having a plurality of compressors constructed with a common suction conduit and a common discharge to a single condenser, e.g. U.S. Patent No. 3,140,041, dated July 7, 1964.

3,464,227

EXPANSION VALVE AND HEAT PUMP SYSTEM

Alan A. Matthies, Milwaukee, Wis., assignor to Controls Company of America, Melrose Park, Ill., a corporation of Delaware

Continuation of application Ser. No. 664,009, Aug. 29, 1967. This application July 22, 1968, Ser. No. 752,119
Int. Cl. F25b *29/00, 41/04;* **F16k** *31/02*
U.S. Cl. 62—225 **16 Claims**



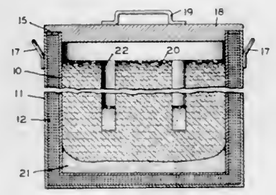
This disclosure relates to a heat motor actuated expansion valve for a refrigeration system wherein valve operation is achieved by a combination heater and bimetal, or other thermally responsive member, and wherein the movable valve element is preferably an elongated needle valve connected to the bimetal. The bimetal moves in accordance with heater energization and produces needle valve movement relative to a restricted orifice to thereby regulate refrigerant flow. One end of the needle valve is exposed to system pressure and the opposite end, which is connected to the bimetal, is exposed to the bimetal ambient. A bellows surrounds a portion of the needle valve and is positioned operationally between the flow passage, system pressure, and the bimetal. The bellows provides a hermetic seal between system flow and the bimetal while permitting free movement of the needle valve. The valve, with the bellows, is effective to accommodate refrigerant flow in opposite directions through the valve. A single valve of this type is thus adapted for connection in a heat pump system to control flow in either direction of heat pump operation. The heat motor operator of the valve is controlled on the basis of an electrical input and preferably this input is controlled through a circuit including a thermistor exposed to the condition of the system refrigerant.

3,464,228

WATER KEG ICER

Charles W. Hitchcock, Rte. 5, Box 110, Lake City, Fla. 32055

Filed May 6, 1968, Ser. No. 726,907
Int. Cl. F25c *5/10;* **B67d** *5/62;* **F25d** *19/02*
U.S. Cl. 62—352 **9 Claims**



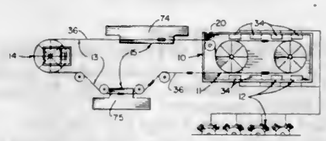
Apparatus and method for cooling water or other potable liquid for human consumption or for cooling or producing temperature change of any other substance for any other purpose utilizing one or more insulated kegs or containers and one or more refrigeration elements with water or other potable liquid until freezing has occurred or the desired temperature has been obtained, whereupon the temperature of each refrigeration element is raised sufficiently to free it from any accumulation of ice and allow its removal from the keg or container with the latter placed in any desired location for continued refrigeration of its contents, each refrigeration element being in the general form of an open bottom hollow wall cylinder with relatively smooth continuous inner and outer surfaces which produce the temperature change subject to suitable controls including the formation of ice around and within the coil in the bottom of the container and upwardly, interiorly and exteriorly of the coil.

3,464,229

CABLE OPERATED CONVEYOR AND FREEZING BOX STRUCTURE

Lloyd D. Riley, 1618 W. 8th Place, Kennewick, Wash. 99336

Filed Dec. 1, 1967, Ser. No. 687,280
Int. Cl. F25d *25/04;* **F65g** *17/12*
U.S. Cl. 62—381 **3 Claims**



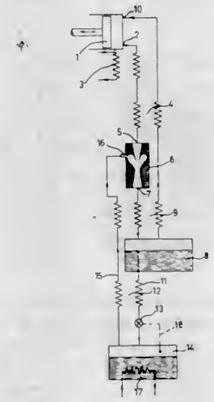
An airblast freezer providing product transit in plural courses through a freezing chamber by means of an endless cable carrying plural product containers. The cable course extends without the freezing enclosure for product imput, processing and removal. Adjustable tensioning means provide appropriate cable tension under varying physical environs. Product containers are releasable mounted to provide interchangeability.

3,464,230

SYSTEMS FOR PRODUCING COLD AND EJECTORS IN SUCH SYSTEMS

Johan Adriaan Rietdijk, Emmasingel, Eindhoven, Netherlands, assignor, by mesne assignments, to U.S. Philips Corporation, New York, N.Y., a corporation of Delaware

Filed June 28, 1967, Ser. No. 649,709
Claims priority, application Netherlands, July 1, 1966 6609174
Int. Cl. F25b *1/06, 19/00;* **F04f** *5/26*
U.S. Cl. 62—500 **8 Claims**



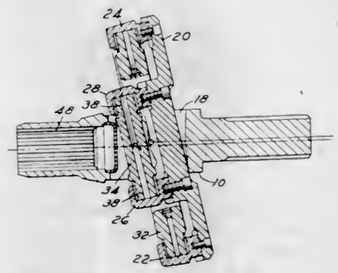
This invention relates to apparatus for producing cold wherein fluid medium from a high pressure source is: first cooled to its inversion temperature associated with that pressure, and then expanded in an ejector and discharged to first reservoir with vapor therefrom returning to said source; subsequently medium from the reservoir is further expanded in a throttling device, and discharged to a second reservoir with vapor therefrom being pumped in the suction inlet of the ejector. The ejector has jet pipe and diffuser portions through which the medium flows, and means for separating a boundary layer of the medium from the inner walls of the jet pipe portion where this layer tends to form, the separation means being a duct communicating to a zone of relatively lower pressure.

3,464,231

CASCADED UNIVERSAL JOINT

Erwin F'Geppert, Novi, and Arnold N. Lugoski, Detroit, Mich., assignors to the United States of America as represented by the Secretary of the Army

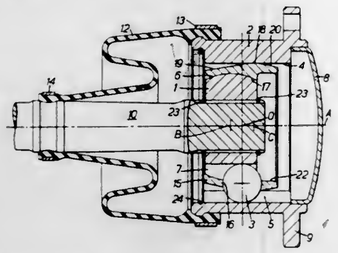
Filed Oct. 5, 1967, Ser. No. 673,225
Int. Cl. F16d *3/42*
U.S. Cl. 64—18 **4 Claims**



Apparatus for allowing transmission of rotary motion from one mechanical unit to another even when the center lines of the two units are not in line, not at the same angle and/or not at the same level, said apparatus

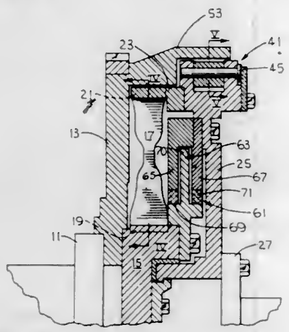
providing constant angular velocity, a minimum of length and a self-aligning bearing arrangement.

3,464,232
UNIVERSAL JOINTS
Philip Hutchinson, Birmingham, England, assignor to Birfield Engineering Limited, London, England
Filed Mar. 11, 1966, Ser. No. 533,634
Claims priority, application Great Britain, Mar. 24, 1965, 12,397/65
Int. Cl. F16d *3/33*
U.S. Cl. 64—21 **5 Claims**



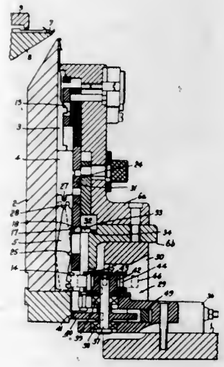
1. A constant velocity joint comprising a hollow outer member with a cylindrical bore formed with grooves extending lengthwise of the bore, an inner member having a part-spherical outer surface formed with grooves which cooperate with the grooves in the outer member to provide ball tracks, the inner member being free for both articulatory and axial movement within the outer member, balls which engage and move along the grooves during relative movement of said members and which transmit torque between the members, and a ball cage which acts to centre the inner member within the outer member and has apertures in which the balls are received, the cage having part-spherical inner and outer surfaces which respectively engage said outer surface of the inner member and said bore of the outer member and which have centres of curvature offset by an equal amount on opposite sides of the joint centre along the joint axis, and the cage also being formed with a counterbore at one end to facilitate assembly of the cage on the inner member.

3,464,233
LEAF SPRING COUPLING
Alexander P. Brouwers, La Grange Park, and Walter J. McCulla and Morris A. Swanson, Washington, Ill., assignors to Caterpillar Tractor Co., Peoria, Ill., a corporation of California
Filed Dec. 6, 1967, Ser. No. 688,385
Int. Cl. F16d *3/14*
U.S. Cl. 64—27 **6 Claims**



A leaf spring coupling for reducing the torsional vibration transmitted from an internal combustion engine to a driven member. The coupling may be fitted with damper means of coulomb, viscous, and/or rubber stop types. These dampers serve to absorb torque surges and torsional vibration beyond the capacity of the leaf springs.

3,464,234
KNITTING MACHINES
Frederick H. Carrotte, Leicester, England, assignor to A. Kirkland & Company Limited, Leicester, England, a British company
Filed July 12, 1967, Ser. No. 652,825
Claims priority, application Great Britain, July 15, 1966, 31,911/66
Int. Cl. D04b *9/06, 9/38*
U.S. Cl. 66—25 **6 Claims**



In a circular knitting machine capable of knitting patterned fabrics with increased repeat pattern areas not subject to spirality, having Nn needle tricks and pattern wheels each having the same number Np of elements plus element spaces cooperative with selectors on the machine cylinder, the number Nn divided by the number Np equals

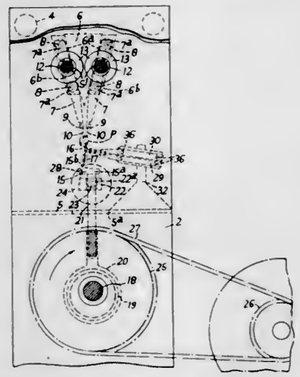
$$x+\frac{y}{z}$$

where x, y and z are integers, y is less than z and the fraction y/z is in its lowest terms. Each pattern wheel comprises z pattern wheel members each having Np elements plus element spaces and a different set of Np/z elements plus element spaces from each wheel member cooperates with selectors during each of z revolutions of the machine.

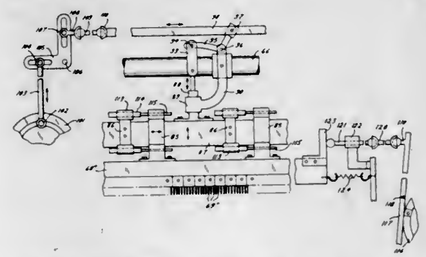
3,464,235
RASCHEL WARP KNITTING MACHINE
Keith Salway, Donnington, England, assignor to Clutsom & Kemp Limited, Highfields, Coalville, Leicestershire, England, a British company
Filed Dec. 5, 1967, Ser. No. 688,217
Claims priority, application Great Britain, Dec. 14, 1966, 55,954/66
Int. Cl. D04b *23/00*
U.S. Cl. 66—86 **6 Claims**

A raschel warp knitting machine in which the guide bars fitted with guides for individual warp threads are not swung backwards and forwards to move the guides between the latch needles, as heretofore, but are solely shogged laterally. To enable lapped warp threads to be taken and engaged by the latch needles in this loom the needle bar has imparted to it from eccentrics on a rotary

shaft a compound motion whereby the needle heads are caused to move in unidirectional endless and substantially elliptical paths disposed in planes perpendicular to the guide bars and located between the guides.

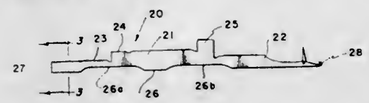


3,464,236
KNITTING MACHINE EMPLOYING COMPENSATING MOTION FOR KNITTING EFFECT THREAD
Rudolph G. Bassist, Bronx, N.Y., assignor of one-half to Travis Mills Corporation, a corporation of New York
Filed Jan. 31, 1968, Ser. No. 701,938
Int. Cl. D04b *23/00, 27/02*
U.S. Cl. 66—86 **4 Claims**



First and second yarn guides lead yarn for base fabric and effect threads, respectively, around knitting needles having hooked upper ends and pivoted latches. Yarn guides and needles move with respect to each other so that effect threads are positioned below latches and yarn positioned between latches and hooks. Guide bars may swing at different times when needles are in different vertical positions, or second guide bar may swing through arc below that of first guide bar, or second guide bar may be moved radially as it swings.

3,464,237
KNITTING MACHINE NEEDLE
Alfred O. Kohorn, % Kohorn Needles, Limited, 862 Wyckoff Ave., Brooklyn, N.Y. 11227
Filed Aug. 10, 1967, Ser. No. 659,768
Int. Cl. D04b *35/06*
U.S Cl. 66—121 **7 Claims**



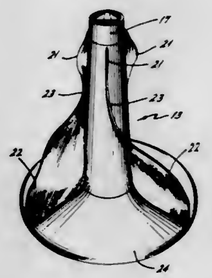
A knitting needle having integral shank and needle portion with cutouts on the back to reduce the needle weight and the needle contact area; cutouts may also be provided on the needle butt, and the needle is used in a circular knitting machine.

3,464,238
NONTORQUE KNITTED FABRIC
Carroll R. Anderson, Minneapolis, Minn., assignor to Munsingwear, Inc., Minneapolis, Minn., a corporation of Minnesota
Original application Dec. 1, 1965, Ser. No. 510,794, now Patent No. 3,415,081, dated Dec. 10, 1968. Divided and this application June 25, 1968, Ser. No. 739,763
Int. Cl. D04b *1/00, 21/00*
U.S. Cl. 66—169 **3 Claims**



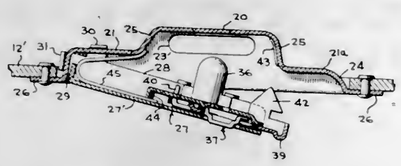
A plurality of single strand yarns each having a twist therein substantially equal in amount and direction knitted into a jersey fabric which is twisted about its longitudinal axis during knitting so that the wales are skewed relative to the longitudinal axis proportional to the amount and direction of twist in the individual yarns.

3,464,239
LAUNDRY APPARATUS
James R. Hubbard, Moorestown, N.J., and John B. Reid, Philadelphia, Pa., assignors to Philco-Ford Corporation, Philadelphia, Pa., a corporation of Delaware
Filed Sept. 25, 1967, Ser. No. 670,161
Int. Cl. D06f *13/02;* **B01f** *11/00*
U.S. Cl. 68—134 **4 Claims**



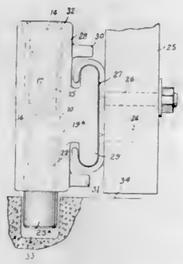
An oscillatable agitator for a vertical axis washing machine includes a central, vertically extending post provided with upper, vertically and radially extending vanes, and lower, vertically and radially extending vanes of greater radius than, and angularly spaced with respect to, the upper vanes. Helical, angularly spaced vane sections, interconnect, and are of lesser radius than, corresponding upper and lower vanes.

3,464,240
LUGGAGE LOCK
Leo L. Brody, Germantown, Tenn., and Wallace E. Atkinson, Petersburg, Va., assignors, by mesne assignments, to The Trojan Luggage Company, Memphis, Tenn., a corporation of Tennessee
Filed Mar. 21, 1968, Ser. No. 715,010
Int. Cl. E05b *65/52*; A45c *13/00*; E05c *1/14*
U.S. Cl. 70—71 11 Claims



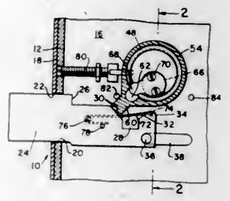
A latch and lock structure for luggage cases and containers having hinged sections, including a keeper for one of the case sections, and a latching unit for the other case section including a cup member defining an outwardly opening well. A hinged latch member having a tongue for interlocking with the keeper and a reciprocatively slidable manual actuator carried by the latch member having a hook latchable with the cup member are located within the well.

3,464,241
LOCKING PINS AND FITTINGS THEREFOR
John F. Wellekens, 51 E. 42nd St., New York, N.Y. 10017
Filed Oct. 3, 1967, Ser. No. 678,905
Int. Cl. E05b *65/00, 65/44, 9/04*
U.S. Cl. 70—91 5 Claims



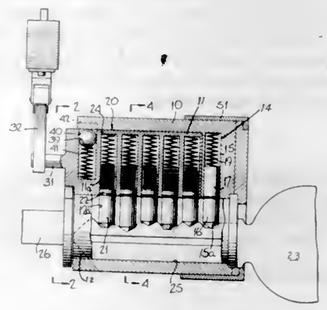
A locking pin for coupling together a plurality of elements, such as two doors, a single door and its frame, windows, sliding or moving drawers or trays and many other articles, such as those for example which are usually locked against opening by a padlock or other type of exposed locking means. The locking pin consists of a hollow tube containing a locking mechanism that includes a latch that engages a recess in the passage or opening through which the pin is inserted and which engagement between the latch and recess holds the pin against axial displacement or unauthorized removal. The pin may be extended through lugs or eyes or other parts and cannot be axially shifted or removed except by the use of a suitable key operative on the contained locking mechanism to shift the latch and disengage it from the recess. The locking mechanism contained within the tube may be of a type providing for an easy change of its key combination.

3,464,242
DEAD BOLT LOCK OPERATING MEANS
Sakuzo Torii, 3–16, Yokokawabashi, Sumida-ku, Tokyo, Japan
Filed May 8, 1967, Ser. No. 636,890
Int. Cl. E05b *65/06*
U.S. Cl. 70—134 3 Claims



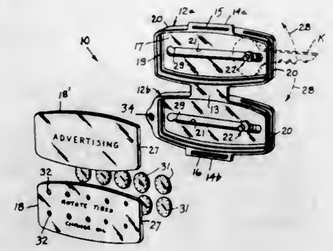
The invention includes a lock housing having a sliding bolt therein projectable through a suitable opening in an edge of the housing. Rearwardly of the bolt is an extension having a notch engageable by an operating means. The bolt operating means comprises a cup-shaped member rotatably mounted within the housing and having a projecting finger engageable in the notch to slide the bolt forward and back. A cylinder having key operated plug provided with a suitable cam finger is arranged so that the finger engages a notch in the cup-shaped member to rotate same upon rotation of the key and plug. The bottom of the cup-shaped member has a polygonal opening to be engaged by a suitable handle to operate the bolt from the inside, if desired. At either end of the movement of the bolt, the finger on the cup-shaped member is spring held in contact with a sloping surface, rendering the bolt jarproof and substantially jimmy-proof.

3,464,243
CYLINDER LOCK
Paul Maddison Hawkins, Brookville, N.Y., assignor to General Alarm Corporation, New York, N.Y., a corporation of Delaware
Filed June 28, 1967, Ser. No. 649,701
Int. Cl. E05b *27/08, 45/00, 15/14*
U.S. Cl. 70—364 19 Claims



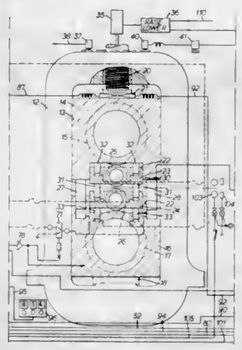
Key operable tamper-proof cylinder lock with means affording limited rotation of bolt controlling plug insufficient to retract bolt upon attempted unauthorized manipulation; and cooperating means actuating alarm upon such limited rotation.

3,464,244
AUTOMOBILE KEY CASE
John T. Hinkle and Charles E. Hinkle, both of P.O. Box 2002, Roswell, N. Mex. 88201
Filed Nov. 17, 1967, Ser. No. 684,007
Int. Cl. A45c *11/32*
U.S. Cl. 70—456 7 Claims



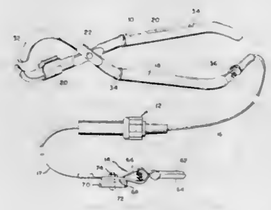
A case made of plastic material and including a pair of similar half-sections connected by a flexible web to facilitate opening and closing of the case. Each half-section has a key-receiving pocket with an entrance which may be spread apart for placing a key on a retaining pin member.The pin member is slidable for projecting and retracting the key through the entrance of the pocket. One of the half-sections has an inner side wall in which are mounted rotatable discs carrying indicia which are visible when the case is open, such indicia being used to record mileages pertinent to oil changes, rotation of tire, etc.

3,464,245
ROLLING MILL HAVING A CONTROLLED HYDRAULIC PRESTRESS RANGE AND OTHER GAP ADJUSTING MEANS FOR INITIAL OPERATION AND FOR ADJUSTMENT TO SAID RANGE
John Dowsing and Peter Richard Ashworth Briggs, Sheffield, and Clifford Sturdy, Chesterfield, England, assignors to Davy and United Engineering Company Limited, Sheffield, England, a British company
Filed May 2, 1966, Ser. No. 581,399
Claims priority, application Great Britain, May 3, 1965, 18,586/65
(Filed under Rule 47(a) and 35 U.S.C. 116)
Int. Cl. B21b *37/02, 31/20, 31/16*
U.S. Cl. 72—16 22 Claims



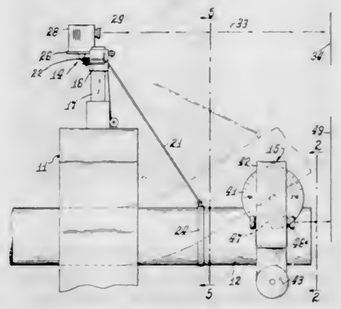
The invention is concerned with the automatic control of a prestressed rolling mill, in which a hydraulically produced prestressing force is applied to certain of the stand components and there are adjusting means independent of the hydraulic prestressing force for adjusting the roll gap setting. In the invention, uniform strip thickness is maintained by automatically controlling the prestressing force. If the prestressing force goes outside a given range, the roll gap adjusting means are operated to return the prestressing force to within range. Initially, the prestressing force is kept constant and control exerted by adjustment of the roll gap adjusting means; thereafter, automatic control is transferred to the prestressing force.

3,464,246
COMBINATION CRIMPING AND TESTING ASSEMBLY
John C. Abromavage, Jamison, and Harry J. Reichardt, Philadelphia, Pa., assignors to Arcoa, Incorporated, Portland, Oreg., a corporation of Oregon
Filed May 23, 1967, Ser. No. 640,715
Int. Cl. H01r *43/04*; B25b *7/22*
U.S. Cl. 72—31 4 Claims



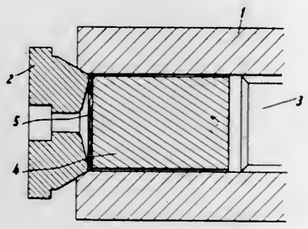
The present invention relates generally to a combination crimping and testing assembly, particularly designed for use with automobile tail light wiring.

3,464,247
VISUAL MEASURING DEVICE FOR BENDING MACHINE
George F. Beckwell, Aurora, Ill., assignor to Pines Engineering Co., Inc., Aurora, Ill., a corporation of Illinois
Filed May 18, 1967, Ser. No. 639,517
Int. Cl. B21d *7/14*; G01c *9/04, 5/26*
U.S. Cl. 72—37 11 Claims



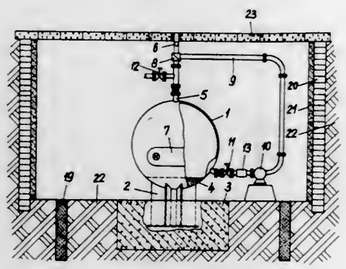
Apparatus for measuring the radius, plane and angle of a bend being performed in a piece of tubular stock which includes a pair of image projectors adapted to project enlarged images representative of the radius, plane and angle of a bend in the stock onto guide charts for visual observation.

3,464,248
METHOD AND APPARATUS FOR PRODUCING EXTRUSIONS
Kurt Gruber, Monchen-Gladbach, Germany, assignor to Mannesmann-Meer A.G., Monchen-Gladbach, Germany, a corporation of Germany
Filed Nov. 29, 1966, Ser. No. 597,705
Claims priority, application Germany, Aug. 19, 1966, M 70,638
Int. Cl. B21b 45/02
U.S. Cl. 72—42 5 Claims



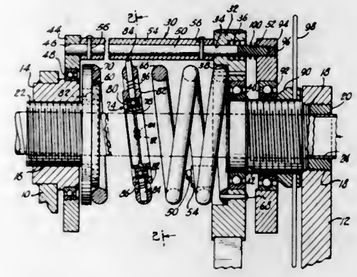
A method for producing extrusions provides for preheating a glass plate separate from and prior to the extrusion operation, and then inserting the heated glass plate with the hot billet into the extrusion press where the glass will act as the extrusion lubricant. The machine has heating means near the press for the preheating of the glass plate.

3,464,249
METHOD OF AND APPARATUS FOR EXPLOSIVE TREATMENT OF METALS
Winfried Klein, Essen, Germany, assignor to Beteiligungs- und Patentverwaltungsgesellschaft mit Beschrankter Haftung, Essen, Germany, a corporation of Germany
Filed Nov. 25, 1966, Ser. No. 597,126
Claims priority, application Germany, Nov. 30, 1965, B 84,762; May 7, 1966, B 87,031
Int. Cl. B21d 26/02; B21j 5/04; B23p 17/00
U.S. Cl. 72—56 18 Claims



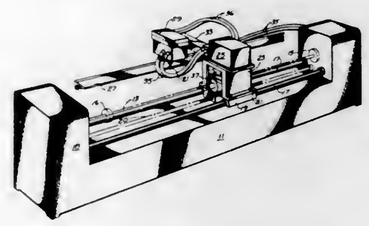
A method and apparatus of explosive-plating or -hardening of metals in a safety explosive chamber dampened to noise transmission comprising equipping a workpiece to be explosively treated with an explosive charge, coating the workpiece and the explosive charge together completely with an air-tight envelope, inserting the coated workpiece and explosive charge into a safety explosive chamber spaced from the walls thereof, subsequently subjecting the chamber with the coated workpiece and the explosive charge to vacuum, and igniting the explosive charge.

3,464,250
CORRUGATING APPARATUS
Daniel George Stetka, Hopewell Township, Mercer County, N.J., assignor to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York
Filed Mar. 2, 1965, Ser. No. 436,597
Int. Cl. B21b 13/20, 19/12
U.S. Cl. 72—77 12 Claims



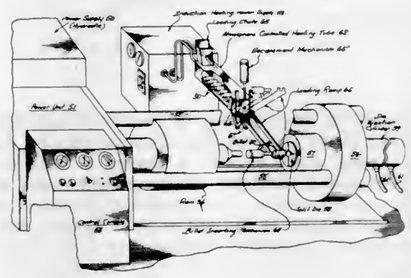
This disclosure is directed to apparatus for corrugating cylindrical tubes. Die elements for providing the corrugations are mounted on separate convolutions of a relatively stiff helical spring and are adjustable individually toward or away from the axis of the spring, which is substantially concentric with the axis of the cable sheath. The spring is mounted so that it can be compressed or extended to change the pitch and helix angles of the corrugations produced by the die means. All adjustments to the die position and angles can be made during corrugation, i.e., without interrupting the operation of the corrugating apparatus or, other equipment operating in association therewith.

3,464,251
TUBE TAPERING DEVICE WITH VARIABLE DIE ORIFICE
Roderick W. Johns, Simi, Calif., assignor to North American Rockwell Corporation
Filed Sept. 20, 1967, Ser. No. 674,047
Int. Cl. B21b 19/10; B21c 1/24, 3/12
U.S. Cl. 72—100 10 Claims



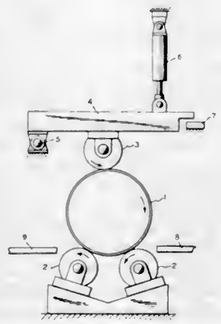
A tube tapering device incorporating a chuck mounting at least three angularly aligned and radially slidable jaws whose inner ends are formed with die peripheries. The die peripheries collectively constitute a die orifice that can be varied by simultaneously sliding the die peripheries toward or from the die orifice axis. The tube being tapered is rotated about its axis and is maintained in axial tension so that a tube-forming mandrel is not required.

3,464,252
METHOD AND APPARATUS FOR POWDERED METAL FORMING
Thomas E. Piper, La Jolla, and Wilson N. Pratt, Anaheim, Calif., assignors to General Dynamics Corporation, a corporation of Delaware
Original application Jan. 25, 1965, Ser. No. 427,665, now Patent No. 3,377,164. Divided and this application Mar. 7, 1967, Ser. No. 649,372
Int. Cl. B21c 33/00
U.S. Cl. 72—270 1 Claim



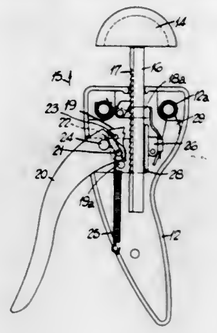
Broadly, the disclosure is directed to an apparatus for carrying out the method of forming articles from powdered metal and includes mechanism for heating a briquette of metal powders to the plastic condition of the metals, means for transferring and inserting the heated briquette in a die of a desired configuration, a high energy rate forming apparatus for forming the article by striking same once, and means for removing the formed article from the die.

3,464,253
METHOD FOR ROUNDING PIPE
John H. Beyer, Beverly, and Alfred Boyles, Burlington, N.J., assignors to United States Pipe and Foundry Company, Birmingham, Ala., a corporation of New Jersey
Filed June 29, 1967, Ser. No. 649,920
Int. Cl. B21d 31/00, 3/08
U.S. Cl. 72—364 5 Claims



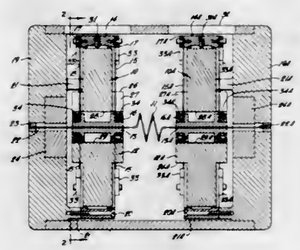
The invention provides a method and apparatus for bringing out-of-round pipe into truer circular shape which comprises slowly rotating hot pipe for a few revolutions while applying a load which deflects the pipe from its circular shape.

3,464,254
PIPE BENDING DEVICES
Leslie Arthur Le Breton, Overton, Mallings Lane, Bearsted, Kent, England
Filed July 24, 1967, Ser. No. 655,580
Claims priority, application Great Britain, Aug. 12, 1966, 36,123/66
Int. Cl. B21d 9/05, 31/00
U.S. Cl. 72—389 1 Claim



A pipe bending device comprising a body having a pair of spaced abutments between which is linearly movable an anvil, the latter being movable in one direction by a a manually operable ratchet mechanism to bend a pipe between the anvil and the abutments and there being a releasable latch mechanism for enabling the anvil to move in the opposite direction.

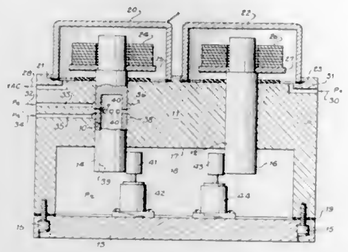
3,464,255
ACCELEROMETER AND METHOD FOR ITS CALIBRATION
Gareth M. Davidson, Bronx, and Charles T. Davenport, Manhasset, N.Y., assignors to AMBAC Industries, Incorporated, a corporation of New York
Filed Oct. 3, 1963, Ser. No. 313,705
Int. Cl. G01p 15/10
U.S. Cl. 73—1 11 Claims



1. Accelerometer apparatus comprising:
a suporting frame;
a vibrating-string element and a proof-mass element mounted from said frame so that the natural frequency of vibration of said vibrating-string element varies with acceleration of said frame to an extent dependent upon the magnitude of the mass of said proof-mass element;
said proof-mass element comprising a first part, a second part having a mass large compared with that of said first part, and means for mounting said second part on said first part; and

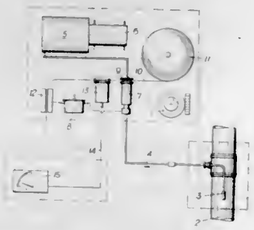
means for attaching said second part to said frame when separated from said first part, in a position permitting motion of said first part independently of said second part.

3,464,256
DOUBLE PISTON GAGE
Edward C. Lloyd, Potomac, Md., assignor to the United States of America as represented by the Secretary of Commerce
Filed Apr. 2, 1968, Ser. No. 718,060
Int. Cl. G01l *27/00, 7/16*
U.S. Cl. 73—4 **3 Claims**



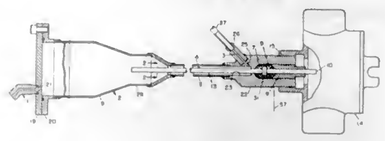
A pair of pistons are fitted in vertical cylinders. One of the pistons is loaded with a predetermined amount of weight, its upper side is connected to a vacuum pump, and its lower side is connected to a source of pressure that is adjusted to balance the piston, whereby the pressure is equal to the total load divided by the area of the piston. The pressure source is also connected to the lower side of the other piston, urging it upward. This piston is balanced by applying the pressure to be measured to the upper side of the piston and by loading the piston with weights, whereby the unknown pressure is equal to the predetermined pressure minus the pressure due to the total weight load acting on the area of this piston. The unknown pressure may vary from zero absolute pressure up to any desired pressure such as several atmospheres.

3,464,257
DEVICE FOR DETERMINING THE SOOT CONTENT OF FLUE GASES
Erich Schreiber and Othmar Skatsche, Graz, Austria, assignors to Hans List, Graz, Austria
Filed Feb. 14, 1967, Ser. No. 615,963
Claims priority, application Austria, Apr. 14, 1966, A 3,554/66
Int. Cl. G01n *1/22, 15/06, 21/20*
U.S. Cl. 73—28 **3 Claims**



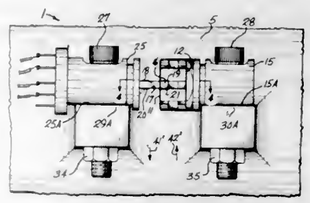
A device for determining the soot content of flue gases, in which the system includes a sampling pipe branching off the pipe carrying the flue gas current with a filter tap and step-by-step switch gear. A photoelectric measuring instrument measures the degree of blackening at certain places of the filter tape as are traversed by the flue gases.

3,464,258
MEASURING APPARATUS FOR LIQUID MIXTURES
Julius Lerner, Broomall, Pa., assignor to Sun Oil Company, Philadelphia, Pa., a corporation of New Jersey
Filed Apr. 19, 1967, Ser. No. 631,927
Int. Cl. G01n *11/00*
U.S. Cl. 73—61.1 **5 Claims**



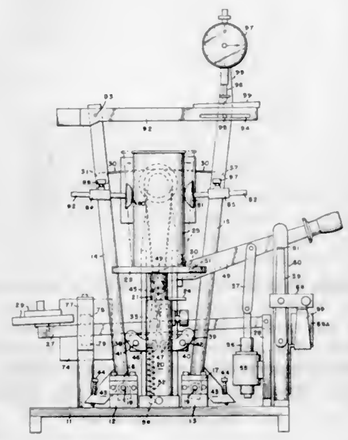
For measuring the proportion of one component liquid in a binary mixture of immiscible liquids of different densities, a sample of the mixture is allowed to stand in a vertically-elongated container of non-uniform cross section. The non-uniformity of the container provides a region of small volume at one end of the container, and a capacitive probe is mounted in this region. The electrical capacitance between this probe and the container is measured to provide an indication of the proportion of either the higher-density or the lower-density component, depending upon the relative orientation of the container at the time the measurement is made.

3,464,259
FLEXURE AND STRAIN GAUGE MOUNTING ASSEMBLY
Emory W. Farr, West Covina, Calif., assignor to Electro Development Corporation, Lynnwood, Wash., a corporation of Washington
Filed Dec. 15, 1967, Ser. No. 690,977
Int. Cl. G01l *9/04*
U.S. Cl. 73—88.5 **7 Claims**



This application discloses an improved flexure for mounting force-sensing devices such as strain gauges in a manner which renders the force-sensing devices essentially nonsensitive to forces occurring in one direction and yet extremely sensitive to forces applied in a second direction perpendicular to the first direction. A plurality of thin plate-like members are held in rigid parallel relationship with the plane of each parallel to said second direction. A transducer assembly such as a strain gauge beam is held by the plate members. The plate members are in turn held by a fixture is connectable to the surface of an object the displacement of which is to be measured. The arrangement is such that the plate-like members serve to transmit to the transducer esssentially all forces applied thereto in a direction parallel to the plane of the plates and hence act as rigid force-transmitting members in a direction parallel to their planes. The plate members are preferably made of thin material so that they flex relatively easily in a direction perpendicularly to their planes and thus the force-sensing assembly held by the plate members is essentially nonsensitive to forces occurring perpendicular to the planes of the plates. An improved technique for fabricating a flexure in accordance with the above concepts is also disclosed.

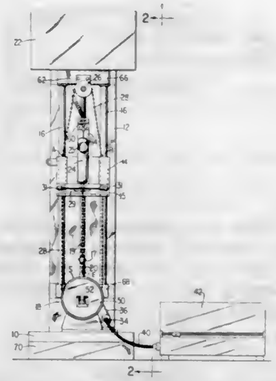
3,464,260
CRUSHABILITY TESTER
Albert A. Heyman, Baltimore, Md., assignor to Maryland Cup Corporation, Owings Mills, Md., a corporation of Maryland
Filed Apr. 17, 1967, Ser. No. 633,353
Int. Cl. G01n *3/08, 3/20*
U.S. Cl. 73—94 **10 Claims**



A device for testing the crushability of various products such as cups of paper, plastic, etc. is provided. The device comprises a pair of swinging arms between which the object to be tested is mounted on an elevationally adjustable platen. Adjustable abutments are provided on the arms for contacting the article to be tested. A weighted lever is connected to the arms for urging them together. Movable means comprising a force spring and a dash pot are provided for attenuating the forces acting on the arms through the weighted lever. Means are also provided for limiting the period during which a test is conducted for standardization purposes comprising a trip mechanism, a solenoid, a time switch and a brake. Measurements are made through a displacement gauge on one of the arms acting against a wedge on the other arm.

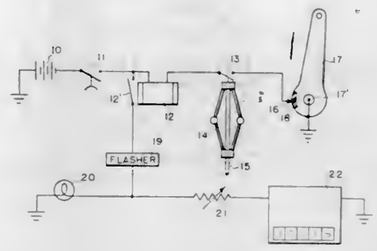
3,464,261
TENSION-COMPRESSION TESTER MACHINE
Thomas F. Helms, New Fairfield, Conn., assignor to Idex Corporation, a corporation of Connecticut
Filed Dec. 19, 1966, Ser. No. 602,814
Int. Cl. G01n *3/28*
U.S. Cl. 73—96 **10 Claims**

This invention provides apparatus for testing the separation force required to separate an elongated element from a body. The element may be progressively separated from the body along a predetermined path of separation by the application of force thereto. The apparatus comprises movable fixture means for holding the body, and a carriage movable along a path extending away from the fixture means. The movable carriage having mounted thereon force means which are connectable to the element for applying thereto sufficient force to effect the progressive separations of the element from the body along the predetermined path as the carriage moves away from



the fixture means. The fixture means being arranged to move toward the path of separation as the element is being separated from the body.

3,464,262
INTERNAL COMBUSTION ENGINE LUGGING RECORDER
Daniel Kashubara, R.D. 1, Canfield, Ohio 44406
Filed June 3, 1968, Ser. No. 734,081
Int. Cl. G01m *15/00;* **G01l** *3/26*
U.S. Cl. 73—117.3 **4 Claims**

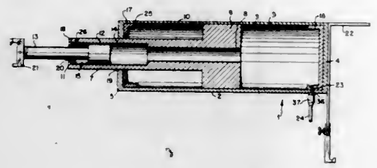


A device for indicating when an internal combustion engine is permitted to "lug," i.e., to strain when supplied with excessive amounts of fuel while operating at a low r.p.m., and for recording the duration of such lugging. A counter and warning lamp are operated by a pulsing circuit which is actuated when the engine r.p.m. drops below a predetermined value and the throttle is advanced beyond a predetermined position.

3,464,263
TESTING DEVICE FOR MECHANICAL BRAKES
Ismael C. Omandam, Sr., Aiea, Oahu, Hawaii (1659 Nahula St., Wahiawa, Hawaii 96786)
Filed Dec. 23, 1965, Ser. No. 515,925
Int. Cl. G01l *5/28*
U.S. Cl. 73—132 **3 Claims**

A testing device for mechanical brakes of a motor vehicle for use in adjusting the brakes through bleeding of air from the brake system which can be performed by

a single operator without having a helper inside the vehicle pumping the brake pedal. The device comprises a cylindrical housing, containing sliding pistons, to be positioned during use between the driver seat and the brake



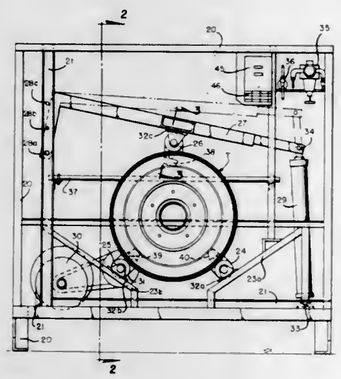
pedal of a vehicle and, additionally, a valve selector unit which may be remotely operated by the operator while working on the brake, the unit being connected to the cylindrical housing and, also, to a pressurized air supply tank by a flexible tubing.

3,464,264

PNEUMATIC TIRE RUN-IN MACHINE

Elby Edward French, Littleton, Colo., assignor to O.K. Tire and Rubber Co., Inc., Houston, Tex., a corporation of Delaware

Filed Apr. 24, 1967, Ser. No. 633,086
Int. Cl. B60c *19/10;* **G01m** *17/02*
U.S. Cl. 73—146 **11 Claims**



This disclosure relates to a pneumatic tire run-in machine which is designed to flex a pneumatic tire and thereby simulate the flexing and load conditions imposed on the tire during normal operation. The run-in apparatus comprises a plurality of rollers arranged around a circle within which the tire is suspended and rotated with at least one of the rollers driving the tire. At least one of the rollers is adapted to be moved into and out of engagement with the tire and to exert force against the tire.

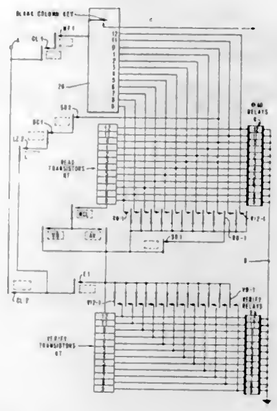
3,464,265

CARD VERIFIER

Thomas A. Hendrickson, Poughkeepsie, and Donald C. Croll, Pleasant Valley, N.Y., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York

Filed June 21, 1965, Ser. No. 465,528
Int. Cl. G01b *5/16;* **G06k** *5/00*
U.S. Cl. 73—156 **8 Claims**

A card verifier that is capable of automatic verification of left zeros and verification of blank columns under either program or keyboard control. Included is a register, a first circuit that causes the register to represent a zero column, and a second circuit that causes the register to represent a blank column. When in either verification mode, a left zero or blank column field is verified until the significant digit is reached, stopping the card in



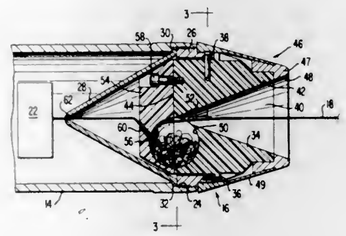
the column that the significant digit is punched. The remaining columns of that field may then be key verified. During left zero or blank column verification, the manual verification apparatus is rendered inoperative as is the error indication apparatus. Manual verification is only permitted when a significant digit in the field is sensed.

3,464,266

GUN BORE WIRE TAKEUP CONE

Warren P. Morrow, Silver Spring, Md., assignor to the United States of America as represented by the Secretary of the Army

Filed Oct. 24, 1967, Ser. No. 677,790
Int. Cl. G01l *5/14*
U.S. Cl. 73—167 **5 Claims**



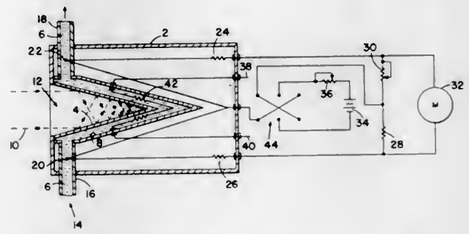
The takeup cone comprises a body mounted on the forward end of a projectile and having a conical recess opening through the forward end thereof. A spherical cavity is formed laterally adjacent the apex of the conical opening and an aperture through the conical wall of the body adjacent the apex of the conical opening opens into the spherical cavity. An antenna wire connected to an environmental sensing unit carried by the projectile extends outwardly from the spherical cavity through the aperture into the conical recess and coaxially along a gun barrel for connection with information readout instruments. When the projectile is fired, the wire passes through the aperture and collects in the spherical recess.

3,464,267

LASER POWERMETER

John J. Ehrlich, Guilford J. Hutcheson, Jr., Charles M. Rust, Thomas G. Roberts, and Charles M. Cason III, Huntsville, Ala., assignors to the United States of America as represented by the Secretary of the Army

Filed Sept. 14, 1966, Ser. No. 579,805
Int. Cl. G01k *17/00*
U.S. Cl. 73—190 **2 Claims**



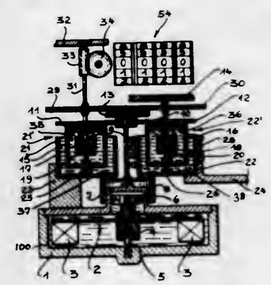
A laser beam is directed into a coneshaped member whose inner surface absorbs the beam, converting its energy into heat. A controlled flow of water is directed over the outside of the cone, the increased temperature of the water being related to the power of the laser beam.

3,464,268

METER FOR MEASURING AMOUNTS OF HEAT

Adam Wesp, Ober-Roden-Messenhausen, Germany, assignor to Techem Gesellschaft zur Auswertung Technisch-Chemischer Verfahren und Patente mit Beschrankter Haftung, Frankfurt am Main, Germany

Filed June 28, 1966, Ser. No. 561,099
Int. Cl. G01k *17/06*
U.S. Cl. 73—193 **25 Claims**



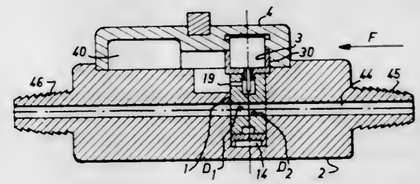
A vane wheel disposed in the inlet conduit or outlet conduit of a heat exchanger is rotated by the flowing heat conveying medium, and drives two rotary members which have heat transferring connections with the inlet conduit and outlet conduit, respectively. The rotary members are coupled by viscous liquids, which assume the temperatures of the inlet and outlet conduits, respectively, to driven members from which torques are transmitted to a control shaft driving a counter. The control shaft is rotated at a speed increasing or decreasing with the temperature difference between the viscous liquids. The temperature dependency of the viscosities of the viscous liquids is selected, and the parts of the apparatus are dimensioned so that no rotational movement is transmitted to the control shaft when the viscous liquids, and the medium in the inlet and outlet conduits have the same temperature, indicating no exchange of heat by the heat exchanger.

3,464,269

HOT-WIRE ANEMOMETERS

Claude Froger, Verneuil-en-Halatte, France, assignor to Charbonnages de France, Paris, France, a public institution of France

Filed Mar. 16, 1966, Ser. No. 534,897
Claims priority, application France, Mar. 19, 1965, 10,036, Patent 1,436,831
Int. Cl. G01f *1/00*
U.S. Cl. 73—204 **12 Claims**



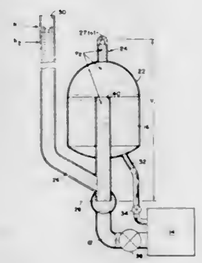
A hot-wire anemometer for measuring the speed of gaseous fluids utilizing a Wheatstone bridge with a detector filament as one arm of the bridge and said filament placed in a carrier block, with an electromagnet having a blade to strike a portion of the carrier block at intervals other than the testing time to remove dust and particles accumulating on the detector filament.

3,464,270

McLEOD GAGE

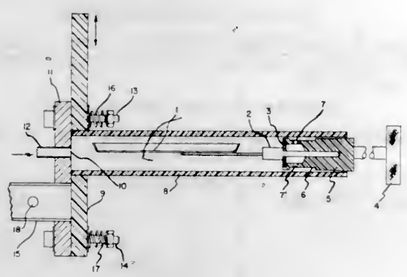
James R. Miller III, Huntsville, Ala., assignor to the United States of America as represented by the Secretary of the Army

Filed Oct. 17, 1967, Ser. No. 676,393
Int. Cl. G01l *21/04*
U.S. Cl. 73—400 **7 Claims**



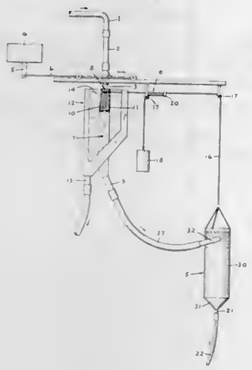
An improved McLeod gage provided with a closed end capillary has a small cylindrical chamber formed therein. The cylindrical chamber communicates into an upper portion of a lower chamber. The upper portion of the lower chamber is provided with a parabolic configuration so that the upper portion will more nearly conform to the shape of the meniscus of the mercury which is used in the gage for vacuum measurements.

3,464,271
SAMPLE PURGING DEVICE
Peter Ketelsen, Warrington, Pa., assignor to Manufacturers Engineering and Equipment Corporation, a corporation of Pennsylvania
Filed Sept. 22, 1967, Ser. No. 669,880
Int. Cl. G01n *1/00*
U.S. Cl. 73—421 1 Claim



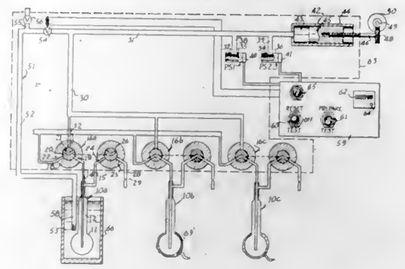
A chamber for treating a sample prior to analysis in an oven. In one position the chamber enclosing the sample is placed to receive dry air and in a second position the chamber is placed so that the sample may be transferred to the oven.

3,464,272
CONTINUOUS SLURRY SAMPLER AND DEAERATOR
William Alexander Griffith and Paul Eugene Link, Morenci, and Benny Ray Burns, Clifton, Ariz., assignors to Phelps Dodge Corporation, New York, N.Y., a corporation of New York
Filed May 13, 1968, Ser. No. 728,670
Int. Cl. G01n *1/00*
U.S. Cl. 73—423 10 Claims



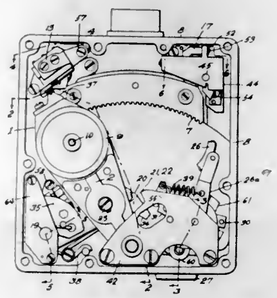
In a system for the analysis of various sample streams, an apparatus for cutting a sample from a fluid stream including an open ended conduit movable in a horizontal path and positioned above a stationary variable opening cutter during part of the path, a suspended deaerator tank through which the cut sample passes, a counterbalance for the deaerator and sample, and a linkage to open and close the cutter opening in response to vertical movement of the deaerator tank. A single sample analyzer incorporating one of the above apparatus for each stream to be analyzed wherein a manifold selects one stream at a time to be fed to the analyzer.

3,464,273
SURFACE AREA APPARATUS AND METHOD
Warren P. Hendrix, Lawrenceville, and Clyde Orr, Jr., Atlanta, Ga., assignors to Micromeritics Instrument Corporation, Norcross, Ga., a corporation of Georgia
Filed Apr. 8, 1968, Ser. No. 719,562
Int. Cl. G01f *15/14;* G01j *5/04;* G01k *1/08*
U.S. Cl. 73—432 11 Claims



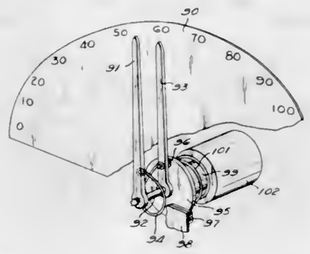
A method of measuring surface area by the adsorption of a gas in which a sample of material is placed in a container with an initial volume of gas at a predetermined first pressure and a predetermined first temperature above the adsorption temperature of the gas. The temperature of the gas is then reduced to the adsorption temperature of the gas and additional gas is added to the container to provide a predetermined second pressure which is the pressure the initial volume of gas would have in the absence of the adsorption of the gas. The gas added to the container is therefore equal to the gas adsorbed by the sample. An indicator responsive to the adding of gas to the container provides a direct indication of the surface area of the sample.

3,464,274
MECHANICAL, DOUBLE-INTEGRATING ACCELEROMETER
Harry M. Gallay, Orlando, Fla., and Albert F. Mainland, New York, Mota Teumim, Spring Valley, and William Yarina, Whitestone, N.Y., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Army
Filed Oct. 19, 1966, Ser. No. 588,674
Int. Cl. G01p *15/04*
U.S. Cl. 73—490 9 Claims



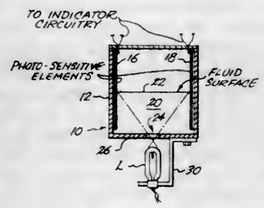
The accelerometer is carried on a larger vehicle, such as a rocket or missile. A flywheel is set into motion, via a stationary rack and suitable gearing, as a result of setback of a pendulum-like device. The speed of the flywheel is proportional to the vehicle velocity. The length of time required for the pendulum-like device to be set back a given distance is proportional to the elapsed time after the flywheel-pendulum was actuated. A switch, or switches, may be actuated as a result of the degree of pendulum setback, and a feedout from the switch or switches indicates the setback or vehicle travel. A brake may be used to decelerate the flywheel when it approaches its extreme position of setback.

3,464,275
SPEED INDICATOR ARRANGEMENT FOR VEHICLE SPEED GOVERNOR
Robert S. Mueller, Oak Park, Mich., assignor to Eaton Yale & Towne Inc., Cleveland, Ohio, a corporation of Ohio
Filed Aug. 26, 1966, Ser. No. 575,405
Int. Cl. G01p *15/04*
U.S. Cl. 73—491 16 Claims



A speedometer carries two indicators connected to each other by a flexible coupling. When a vehicle speed governor is set, one indicator is locked in place to indicate the speed at which the governor is set and the other indicator remains free to indicate vehicle speed.

3,464,276
INCLINOMETER OR ACCELEROMETER
Edward E. Leibert, 7803 60th Drive NE., Marysville, Wash. 98270
Filed June 1, 1965, Ser. No. 460,430
Int. Cl. G01p *15/08*
U.S. Cl. 73—516 8 Claims

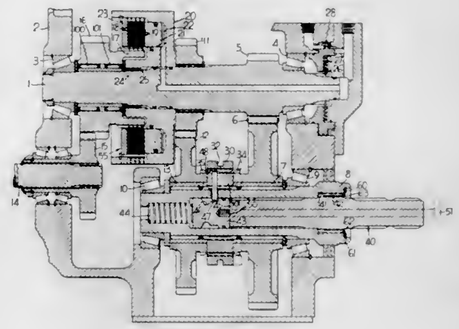


This invention relates to a simple reliable device for providing an electrical output proportional to either the acceleration, inclination or combinations of both. It does so by means of a novel arrangement of photosensitive elements, fluid and a light source arranged so that a very small change in inclination of the liquid surface creates a large difference in light level seen by the photosensitive elements.

ERRATUM

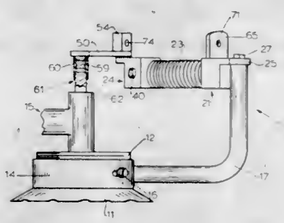
For Class 74—7 see:
Patent No. 3,465,353

3,464,277
TWO SPEED POWER TAKE-OFF
Donald W. Longshore, New Berlin, Wis., assignor to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.
Filed Mar. 28, 1968, Ser. No. 716,972
Int. Cl. F16h *37/02, 5/06;* G05g *5/10*
U.S. Cl. 74—15.4 10 Claims



A power take-off assembly with a reversible power take-off shaft providing a different shaft take-off speed for each end of the shaft.

3,464,278
SAFETY DEVICE FOR ACETYLENE CYLINDER
Frederick L. Parnell, 102 Stokely Road, Wilmington, N.C. 28401
Filed Oct. 25, 1967, Ser. No. 677,888
Int. Cl. F16k *17/14;* F16h *27/02*
U.S. Cl. 74—89.15 4 Claims

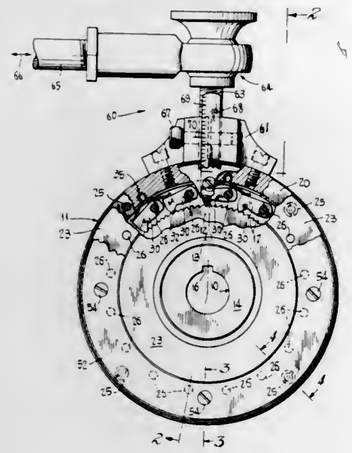


An attachment for shutting off an acetylene cylinder in the event of fire utilizes a spring loaded lever which mounts on the cylinder regulator and a heat destructible pin which melts under the influence of heat and allows the lever to rotate and close the regulator.

3,464,279
ROLL FEED CLUTCH
Richard O. Halverson, Cranston, R.I., assignor to Albert W. Scribner, Darien, Conn, and Halvar Associates, East Providence, R.I., a corporation of Rhode Island
Filed Sept. 29, 1967, Ser. No. 671,624
Int. Cl. F16h *27/02*
U.S. Cl. 74—126 5 Claims

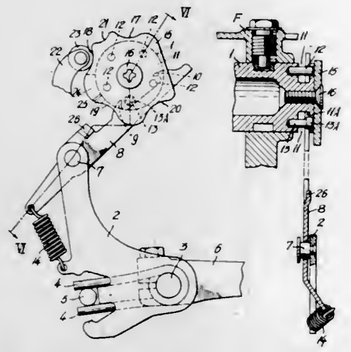
The instant ratchet type roll feed clutch has an oscillatably actuated housing unit that includes two circular sets of pivotally mounted pawls, the pawls being adapted to selectively drive a ratchet wheel unit that is rotatably mounted in said housing unit. The pawls are biased into

engagement with the ratchet wheel by leaf springs each of which has four cantilever type legs, and the otherwise exposed axial ends of the pins supporting said pawls



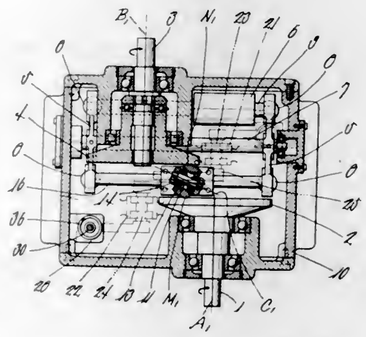
are covered and retained in the housing unit by a pair of rings that are removably secured to the opposed radial faces of said housing unit.

3,464,280
OPERATION APPARATUS FOR CHANGE SPEED MACHINE
Takanori Onda, Tokyo, Japan, assignor to Kabushiki Kaisha Honda Gijutsu Kenkyusho, Shimonikura, Oaza, Yamato-machi, Kitaadachi-gun, Saitama-ken, Japan
Filed Aug. 30, 1967, Ser. No. 664,555
Claims priority, application Japan, Aug. 30, 1966, 41/56,687
Int. Cl. F16h *27/02;* **G05g** *1/08, 3/00*
U.S. Cl. 74—142 **7 Claims**



A speed change machine is provided in which a speed change drum having pins thereon is angularly movable between first and second speed positions by engagement of the pins with claws on an arm movable in opposite directions. The arm and drum have respective projections which are engaged to positively lock the drum in a neutral angular position as the drum is moved from one of the speed positions to the other by the movement of the arm in one direction thereof, the drum having a cam for angularly displacing the arm as it is retracted in the opposite direction when the drum is locked so that subsequent movement of the arm in the original direction can be effected without engagement of the projections whereby the drum can be rotated to the other speed position.

3,464,281
FRICTION-TYPE AUTOMATIC VARIABLE SPEED MEANS
Hiroshi Azuma, 86, Marusu, Kishigawa-cho, Naga-gun, Wakayama Prefecture, Japan, and Hiroji Azuma, Hamaderahigashidanchi 105, 360, Nishi 3-cho, Funao-cho, Hamadera Sakai, Osaka Prefecture, Japan
Filed Oct. 3, 1966, Ser. No. 583,736
Claims priority, application Japan, Oct. 27, 1965, 40/66,260
Int. Cl. F16h *9/26*
U.S. Cl. 74—200 **19 Claims**

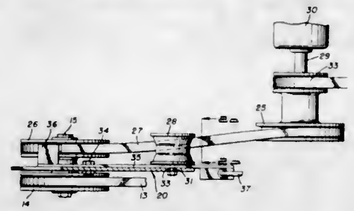


A friction-type automatically variable stepless speed change torque transmission means. A driving shaft and a driven shaft are journalled in a casing, the rotational axes of said shafts being spaced apart and parallel with each other, and a disc-shaped driving friction wheel and a disc-shaped driven friction wheel are secured to the inner ends of said driving and driven shafts respectively, said driving and driven friction wheels being arranged face to face and spaced apart. A roller-type idler wheel is disposed on a support shaft between said driving and driven friction wheels in drivable frictional engagement therewith. Movable support means is rockably mounted in said casing and carries said idler wheel support shaft so as to permit free shifting movement thereof in either direction along a common plane passing through the rotational axes of said disc-shaped wheels freely to change the speed ratio and also so as to permit free movement of said idler wheel for a small distance in either direction across the common plane from the neutral position thereof in the common plane. Resilient means is in pressure engagement with a part of said movable support means for supplying a resilient support force to the support shaft of said idler wheel in a direction perpendicular to the common plane.

3,464,282
V-BELT DRIVE HAVING SPECIAL GROOVED IDLER PULLEY
Ben T. Grobowski, Newark, Ohio, assignor to The E. T. Rugg Company, Newark, Ohio, a corporation of Ohio
Filed June 3, 1968, Ser. No. 734—129
Int. Cl. F16h *7/12*
U.S. Cl. 74—226 **5 Claims**

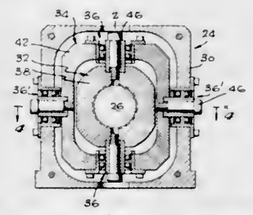
A V-belt drive including a grooved driving pulley and a grooved driven pulley supported on laterally spaced axes

and connected by an endless V-belt passing around the pulleys. The V-belt is also engaged by an idler pulley of



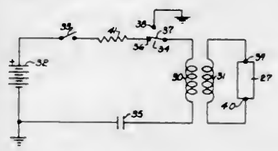
substantially hourglass cross-sectional form which may be used for obtaining a predetermined tension on the belt, or adjusting that tension.

3,464,283
GIMBALLING MEANS FOR A MOVABLE CARRIAGE
George P. Miller, Woodland Hills, and Benny J. Terracciano, Canoga Park, Calif., assignors to The Bunker-Ramo Corporation, Canoga Park, Calif., a corporation of Delaware
Filed Mar. 13, 1967, Ser. No. 622,565
Int. Cl. F16h *1/18, 1/20;* **B23b** *47/18*
U.S. Cl. 74—424.8 **7 Claims**



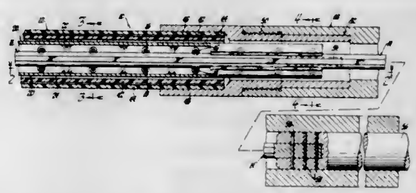
A gimbal apparatus for coupling a lead screw to a movable carriage incorporating a threaded member on the lead screw for supporting the carriage whereby the carriage has angular movement about first and second axes normal to the lead screw axis and further including ball bearing supports permitting freedom of rotation and translation about and along their axes.

3,464,284
CONTROL FOR VEHICLE STEERING COLUMN
Donald J. Fergle, St. Clair Shores, Mich., assignor to Eaton Yale & Towne Inc., Cleveland, Ohio, a corporation of Ohio
Filed July 11, 1967, Ser. No. 652,614
Int. Cl. B62d *1/18;* **F01b** *29/08*
U.S. Cl. 74—492 **10 Claims**



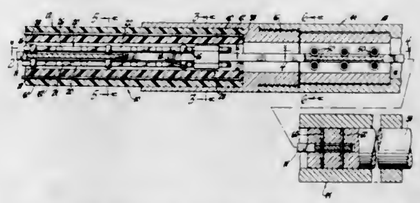
This control arrangement is used in association with a vehicle safety device, and more specifically with a collapsible steering column of a vehicle having an outer housing, which is stationary on the vehicle, a rotatable inner shaft attached to the steering wheel, and an electrically operated explosive charge for moving the inner shaft and the steering wheel longitudinally with respect to the outer housing. A control circuit for activating the explosive includes a capacitor which is charged from the vehicle battery through normally closed contacts of a collision sensing device and the primary winding of a transformer. The secondary winding of the transformer is connected across the explosive charge. The primary winding is mounted on the outer housing of the steering column. The secondary winding is mounted on the inner shaft of the steering column. When the vehicle is rapidly decelerated, such as in a collision, the sensing device disconnects the capacitor from the battery and discharges it to ground through the transformer primary winding, inducing a voltage across the secondary winding to fire the explosive charge.

3,464,285
REMOTE CONTROL ASSEMBLY
Harold E. McCabe, Mahopac Falls, N.Y., assignor to Teleflex Incorporated, North Wales, Pa., a corporation of Delaware
Filed Oct. 10, 1966, Ser. No. 585,634
Int. Cl. F16c *1/10, 33/36, 33/46*
U.S. Cl. 74—501 **22 Claims**



A motion transmitting remote control assembly comprising a conduit having a core element disposed therein and being axially movable in the conduit but separated from the walls thereof by a series of longitudinally extending members holding roller elements therein. Each of the roller elements includes a central portion which is only in rolling engagement with the core element and spindles extending laterally in opposite directions from the central portion thereby minimizing friction during the axial movement of the core element.

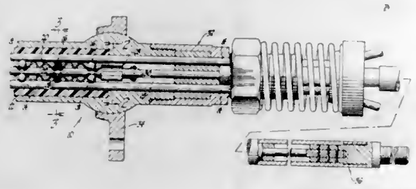
3,464,286
REMOTE CONTROL ASSEMBLY
Harold E. McCabe, Mahopac Falls, N.Y., assignor to Teleflex Incorporated, North Wales, Pa., a corporation of Delaware
Filed Oct. 10, 1966, Ser. No. 585,637
Int. Cl. F16c *1/20*
U.S. Cl. 74—501 **29 Claims**



A motion transmitting remote control assembly wherein a conduit therefor comprises an inner tubular member with a plurality of filaments helically wrapped therearound on a long lead and a casing disposed about the filaments and the inner tubular member. The core element is movably disposed within the conduit, and roller elements engage the core element for facilitating movement of the core element in the conduit. At least one flat strip, which is longitudinally flexible and spaced from the core ele-

ment, maintains the roller elements in proper orientation, and the flat strip further allows expansion and contraction of the strip for holding the roller elements spaced on bends.

3,464,287
REMOTE CONTROL ASSEMBLY
Harold E. McCabe, Mahopac Falls, N.Y., assignor to Teleflex Incorporated, North Wales, Pa., a corporation of Delaware
Filed Oct. 21, 1966, Ser. No. 588,597
Int. Cl. F16c *1/10, 33/36, 33/46*
U.S. Cl. 74—501 **13 Claims**



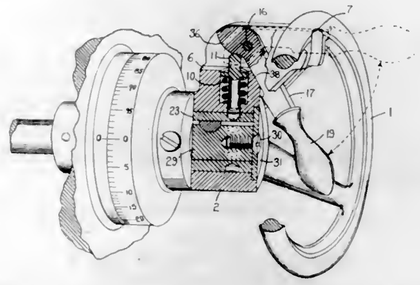
A motion transmitting remote control assembly utilizing roller elements in rolling engagement with a core element to facilitate movement of the core element translationally. A pair of tension bearing elements of circular cross section are provided which extend longitudinally of the motion transmitting remote control assembly to provide a track on which the roller elements move.

3,464,288
ADJUSTABLE TURN SIGNAL ACTUATOR
Leslie M. Sheridan, 1300 Chicago St., Butte, Mont. 59701
Filed May 1, 1968, Ser. No. 725,883
Int. Cl. G05g *1/04, 5/08*
U.S. Cl. 74—525 **8 Claims**



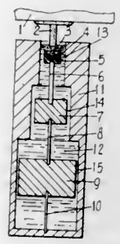
A turn signal actuator apparatus for an automobile is described, including an adjustable actuator arm which may be pivoted and varied in length to compensate for changes in position of an adjustable steering wheel. The actuator arm is formed by a pair of telescoping tubular members, one of which is pivotally attached to a base member which is fastened to the control for the turn signal light switch on the steering column. A spring biased ball detent mechanism is employed to provide the actuator arm with several predetermined pivot positions. This pivoting and telescoping of the actuator arm enables the actuator knob on such arm to be moved to a point adjacent the periphery of the steering wheel in all of the different positions of adjustment of such steering wheel.

3,464,289
AUTOMATIC RELEASABLE MACHINE CRANK HANDLE
William H. Urbach, Minetto, N.Y. (R.F.D. 5, Oswego, N.Y. 13126)
Filed July 28, 1967, Ser. No. 657,477
Int. Cl. G05g *1/12*
U.S. Cl. 74—547 **4 Claims**



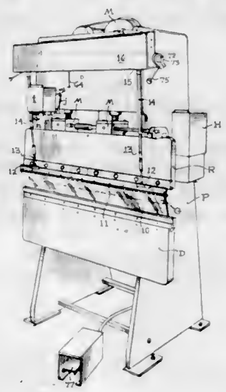
This invention relates to improvements in an automatic releasable crank device in connection with a machine adjustment spindle such as a shaft or screw used to operate and locate one machine member in relation to another, said device comprising in combination a crank body preferably of the wheel type, provided with an inner cylindrical wall formed to rotably slide over a portion of said spindle having means for retaining said crank, a crank detenting means characterized by a plurality of spaced apart detent shoulders circumferentially located over said spindle to engage an adjustable spring pressed lock member inserted into an apertured portion of the crank hub of which a portion is also provided with means to support a pivotally mounted lever handle that can swing from outer crank position to position adjacent the hub axis, a portion of the lever is formed to facilitate a cooperable connection with said lock member, so that when the lever handle is swung out to cranking position the leverage will overcome spring tension resistance and urge the lock member to engage said detent shoulders and lock the crank, and when cranking force is removed the spring tension will operate to automatically swing the handle adjacent the hub axis and release the crank idle in relation to the spindle.

3,464,290
VIBRATION DAMPERS
Jan van den Brink, Klarenburg, Netherlands, assignor to Reactor Centrum Nederland, The Hague, Netherlands, an institute organized under the laws of the Netherlands
Filed Aug. 14, 1967, Ser. No. 660,284
Claims priority, application Netherlands, Sept. 13, 1966, 6612858
Int. Cl. F16f *15/10;* **G01c** *19/20*
U.S. Cl. 74—574 **12 Claims**



A vibration damping assembly for the shaft of a rotating body comprises a bearing for the shaft and a series of liquid-immersed damping members having different damping characteristics disposed on the axis of the shaft in a liquid-filled container. At least one of the members is supported from the container by a resilient connection which opposes radial vibration of the members, and the members of the series are yieldingly coupled to each other.

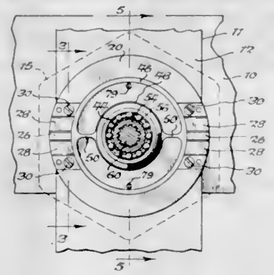
3,464,291
SAFETY MECHANISM FOR USE IN CONNECTION WITH PRESSES AND OTHER APPARATUSES SUCH AS CONVENTIONAL METAL BENDING AND FORMING APPARATUSES
Jonas Theodore Lindquist, 7654 Tripp Ave., Skokie, Ill. 60076, and Barry A. Stunkel, Deerfield, Ill.; said Stunkel assignor to said Lindquist
Filed Dec. 22, 1967, Ser. No. 692,945
Int. Cl. G05g *25/00;* **F16p** *3/08*
U.S. Cl. 74—613 **6 Claims**



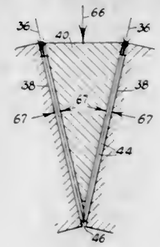
A safety mechanism having a guard plate for guarding the work area of a metal forming press to provide maximum protection against both accidental and unintentional press operation when the operator is feeding the workpiece into the work area and when the ram with its punch is in its downward work stroke. When the guard plate is in raised position, the press is rendered inoperative until the guard plate is dropped to guard position, in which position it cooperates with electrical components which render the press operative if the guard plate is in its proper down position; otherwise if the guard plate is not in its fully dropped position, the press cannot be operated.

3,464,292
INDEXING MECHANISM
Hubert J. Parsons and Henry L. Cunningham, Horseheads, N.Y., assignors to Hardinge Brothers, Inc., Elmira, N.Y.
Filed Mar. 23, 1967, Ser. No. 625,450
Int. Cl. B23b *29/30;* **B23q** *17/00*
U.S. Cl. 74—826 **9 Claims**

This invention relates to an indexing mechanism for use on turrets of lathes or other machines whereby a high degree of accuracy is obtained in positioning a part with relation to other parts of a machine. This is done by substituting for the large number of teeth heretofore employed and which required special and complex machining to grind these teeth, the means herein disclosed which produces this accurate positioning without requiring the special equipment heretofore necessary, and by providing a pair of teeth mounted to yield in one direction and held against yielding in the direction of movement of the part to be positioned, said teeth having tapered sides and fitting into slots or recesses in the part to be positioned.



3,464,293
STEEL RULE CUTTING DIE AND METHOD OF FABRICATION
Konrad S. Svendsen, 100 Wintonbury Ave., Bloomfield, Conn. 06002, and William J. Schnorr, Milwaukee, Wis. (1004 St. Clair St., Manitowoc, Wis. 54220)
Filed Aug. 1, 1967, Ser. No. 657,581
Int. Cl. B21k *5/20;* **B21d** *31/00, 25/00*
U.S. Cl. 76—107 **7 Claims**

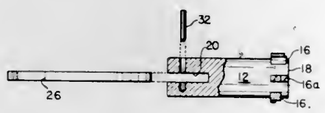


A cutter and method for producing a sharply defined corner when cutting paper or other material of similar nature, the cutter being made of a strip of steel rule having a cutting edge along its long side and being bent along a line normal to the cutting edge to form an angle, the still rounded tip formed by such bending being deformed in a direction toward the apex of the angle sufficiently to cause the cutting edges of the legs of the angle to meet at a sharp point of intersection.

3,464,294
METHOD OF FORMING A KEY FOR AN AXIAL TUMBLER TYPE LOCK
William J. Kerr, Glenview, Ill., assignor to Chicago, Lock Co., Chicago, Ill., a corporation of Illinois
Filed Dec. 9, 1966, Ser. No. 600,539
Int. Cl. B21k *7/00*
U.S. Cl. 76—110 **4 Claims**

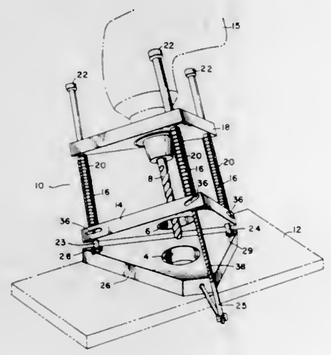
1. The method for making a key for an axial tumbler type lock, said key having a cylindrical shank the forward end of which is provided with a cylindrical socket for reception over a pilot post associated with the lock, the forward end region of the shank having a series of equiangularly disposed radial fins the forward edges of which constitute tumbler-depressing shoulders, the rear end region of the shank having a wing-type torque-applying handle thereon, said method comprising the steps of:

(1) producing an elongated, linearly straight, length of key shank stock having a generally cylindrical core from which there project radially outwardly a series of equiangularly spaced flutes which conform in number and disposition to the number and disposition of said fins, extend longitudinally of the core, and are coextensive therewith;



(2) severing a key shank blank from said key shank stock;
(3) removing the excess material of the flutes on said blank so as to produce said fins by leaving them intact on the core of the blank;
(4) drilling said cylindrical socket in the forward end of the core of the blank; and
(5) affixing a wing-type handle to the rear end of the core of said blank.

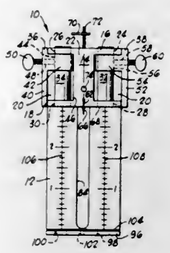
3,464,295
DRILLING DEVICE
Jacque K. Gallion, 1410 S. Oak Cliff Blvd., Dallas, Tex. 75208
Filed Aug. 29, 1966, Ser. No. 575,740
Int. Cl. B23b *47/28*
U.S. Cl. 77—55 **6 Claims**



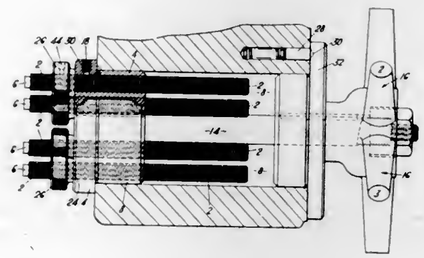
A drilling device for use with a hand drill including a base for resting on a workpiece, a drill holding member including bearings for supporting a drill for rotation about an axis perpendicular to the base, means supporting the drill holding member for movement perpendicular to the base and a plate member contiguous with the underside of the base and pivotally and extendably connected to the base such that the distance and angle between the plate member and the base can be varied.

3,464,296
ADJUSTABLE JIG FOR HOLE FORMING
James U. Harper, P.O. Box 1321, Enid, Okla. 73701
Filed Mar. 16, 1967, Ser. No. 623,752
Int. Cl. B23b *47/28, 49/00*
U.S. Cl. 77—62 **10 Claims**

An apparatus providing a guideway for a hole forming tool which consists of a guide block having aligning bores of predetermined size and spacing therethrough, the guide block being adjustably retained upon a clamping frame which serves to maintain the guide block in varied attitudes in coacting position with a workpiece.



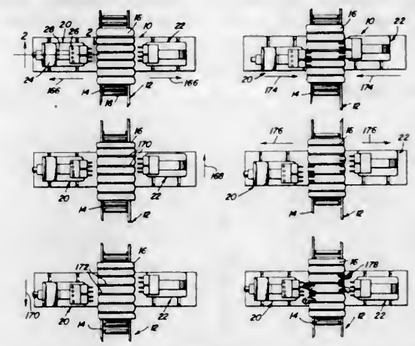
3,464,297
MACHINE TOOLS AND TOOL MOUNTINGS THEREFOR
William Owen McKenzie Jones, Tudor Cottage, 12 Malvern Road, Maidenhead, Berkshire, England
Filed Oct. 25, 1966, Ser. No. 589,270
Claims priority, application Great Britain, Oct. 25, 1965, 45,124/65
Int. Cl. B23b *3/36*
U.S. Cl. 82—34 **7 Claims**



A machine tool stop unit having adjustable collars locked at pre-set locations on stop members for engagement against a barrel holder to determine tool travel limits by the extent of stop member projections. A gauge member, remote from the barrel holder, holds each stop member for an exact adjustment of its collar. In an alternate embodiment, a single collar receives and holds all stop members, collectively, to provide rapid interchange by a sleeve coupling. The sleeve is locked in position by a screw threaded outer ring that forces a radial plunger against the barrel holder. An indicating scale around the sleeve indicates the axial movement corresponding to sleeve rotation for compensation of dimensional error.

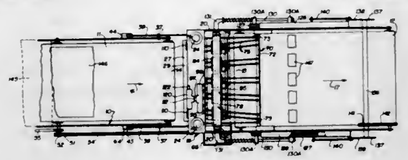
3,464,298
COTTON BALE SAMPLING MACHINE
Gay W. Roach, P.O. Box 128, Trumann, Ark. 72472
Filed Jan. 6, 1967, Ser. No. 607,762
Int. Cl. B26d *5/08*
U.S. Cl. 83—1 **9 Claims**

A machine operative to selectively make parallel cuts in one or both sides of a bale of cotton between adjacent baling straps extending about the bale whereby the portions of the bale disposed between each pair of parallel



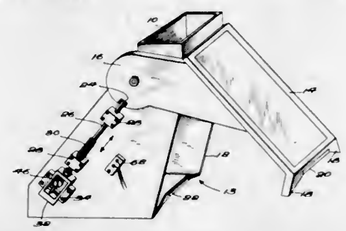
cuts may be pulled from the bale and retained as a sample of the cotton within the bale.

3,464,299
DOUGH CUTTING, TRANSPORTING AND DEPOSITING APPARATUS
Robert E. Gagnon, 1367 W. 50th Ave., Vancouver 14, British Columbia, Canada
Filed Apr. 4, 1967, Ser. No. 628,351
Int. Cl. B26d *5/08, 7/06*
U.S. Cl. 83—99 **24 Claims**



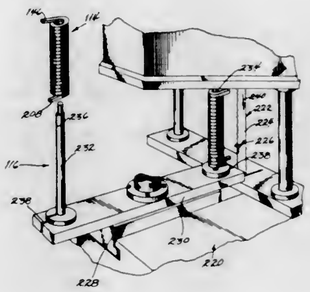
An apparatus for cutting closely spaced pieces of dough from a dough sheet supported on one surface and for transporting the dough pieces to a second surface for deposit thereon in relatively widely spaced relation. The cutters serve as the means to transport the cut dough pieces to the second surface.

3,464,300
STRAND CUTTING APPARATUS
Eldon L. Fletcher, Kingston, Ontario, Canada, assignor, by mesne assignments, to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Feb. 7, 1967, Ser. No. 614,434
Int. Cl. B26d *7/06, 5/08*
U.S. Cl. 83—100 **4 Claims**



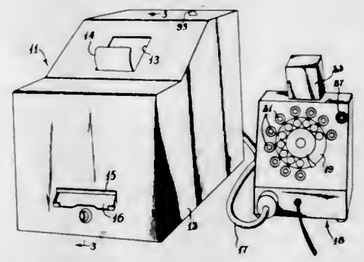
A strand is cut and/or diverted from its normal path of advance to a vacuum line by a swingable door on a housing. The door and housing have cooperable cutting elements. Door release and valving of the vacuum line are coordinated by a control mechanism with both manual and defect sensitive inputs.

3,464,301
APPARATUS FOR SPLITTING A BAR WOUND IN A HELIX
Chester C. Moore, Aurora, Ill., assignor to Stephens-Adamson Mfg. Co., a corporation of Illinois
Original application Sept. 22, 1965, Ser. No. 489,141, now Patent No. 3,373,472, dated Mar. 19, 1968. Divided and this application June 9, 1967, Ser. No. 661,152
Int. Cl. B26d *1/46*
U.S. Cl. 83—201 **2 Claims**



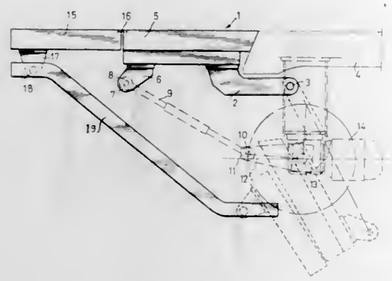
The disclosure has to do with a method of making a ball bearing assembly and apparatus for use in making a locking collar therefor. The ball bearing assembly is concerned with using a special inner race member that receives a shaft or the like to be journalled and has at least one end of same formed with a plurality of spaced slots extending longitudinally thereof, assembling an outer race and bearing balls in abutting relation therewith, and applying a C-shaped clamping collar to the inner race slotted end portion and clamping the collar against the inner race to lock the inner race to the shaft or the like. The apparatus for use in making the locking collar involves processing a helix that has been formed by coiling a length of bar stock in which the helix is applied over a vertical arbor that is vertically slotted, and moving the arbor toward a band saw blade pass with the arbor slot aligned with the blade to cut the helix into segments.

3,464,302
TICKET VENDING APPARATUS
Roger Hirsch, 2012 W. Fulton St., Chicago, Ill. 60612
Filed Sept. 3, 1965, Ser. No. 484,964
Int. Cl. B26d *5/20;* **B65h** *25/00, 17/26*
U.S. Cl. 83—203 **15 Claims**



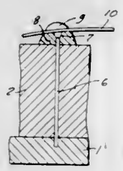
Ticket vending apparatus including a ticket vendor and a remote control selector, wherein a ticket is exposed for writing thereon upon opening of a gate, the closing of which advances the ticket to a cut-off station for dispensing same to the customer.

3,464,303
FOLDING WORK TABLE FOR PAPER CUTTING MACHINES
Rudolf Mohr, Hattersheimerstrasse, Hofheim, Taunus, Germany
Filed Oct. 19, 1966, Ser. No. 587,895
Claims priority, application Germany, Oct. 29, 1965, M 67,107
Int. Cl. B26d *7/20;* **A47b** *3/00*
U.S. Cl. 83—648 **5 Claims**



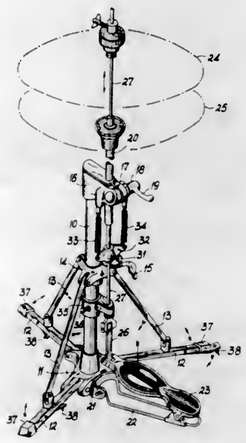
A folding table is connected to a work table of a paper cutting machine for displacement between a folded, inoperative position beneath the work table and an extended position in which the folding table provides an additional working surface area which is flush with that of the work table. The folding table includes a first part having one end connected by a hinge to the work table and an opposite end hingeably attached to a first end of a second part of the folding table. The opposite end of the second part supports a follower which is guided in a rail such that by acting on the first part, the table can be folded and displaced from its extended position to its unfolded position beneath the work table and vice versa.

3,464,304
STRINGED INSTRUMENT
Helmut Pfeiffer, Herderstrasse 12–14, Stuttgart, Germany
Filed July 5, 1967, Ser. No. 651,168
Int. Cl. G10c *3/04*
U.S. Cl. 84—215 **20 Claims**



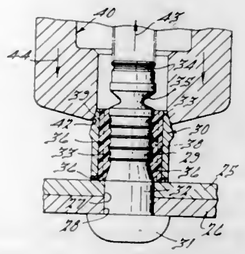
An elongated sounding board bridge is secured on a sounding board in surface-to-surface contact and has an exposed face. At least one taut string extends in predetermined direction across the exposed face. A pair of vibration-transmitting elements are provided spaced from one another in the predetermined direction of the string and each including a portion at least partly embedded in the material of the bridge, and a second portion projecting from the exposed face of the bridge and engaging an increment of the string maintaining the latter spaced from the exposed face. Deflecting means engages an increment of the string intermediate the respective second portions and deflects such additional increment toward the exposed face in the direction normal thereto.

3,464,305
STAND FOR SUPPORTING AND MOVING A PAIR OF CYMBAL PLATES
Remo Meazzi, Via Piatti 6, Franco Caldironi, Via Bolzano 24, and Attilio Olivieri, Via A. Sforza 81, all of Milan, Italy
Filed May 2, 1967, Ser. No. 635,473
Int. Cl. G10d *13/00*
U.S. Cl. 84—422 **7 Claims**



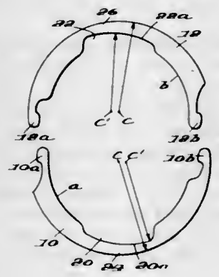
A stand for supporting and moving two superimposed coaxially arranged cymbal plates in axial direction relative to each other wherein one of the plates is supported in fixed position on the upper end of a guide tube connected to the upper end of an upright support member substantially parallel to and laterally displaced from the latter, whereas the other plate is fixed to the upper end of an operating rod slidably guided in the tube for movement in axial direction, and wherein tension springs are connected to the support member and the rod for yieldably holding the plates in spaced apart relationship while a foot pedal connected to the bottom end of the rod may be used for moving the plates in engagement with each other.

3,464,306
COMBINATION SEALANT RELIEF GROOVE IN COLLAR
Perry J. Reynolds, Detroit, and John F. Orloff, Mount Clemens, Mich., assignors to Huck Manufacturing Company, Detroit, Mich., a corporation of Michigan
Filed Dec. 14, 1967, Ser. No. 690,459
Int. Cl. F16b *19/12, 21/20*
U.S. Cl. 85—7 **3 Claims**



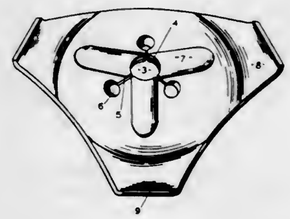
A swage type fastener of the pull type in which a collar is swaged into locking grooves of the pin and in which the collar has a smooth I.D. throughout its length and is provided with relief passages in one end of the collar and communicating longitudinal passages in the I.D. so that fluid sealant cannot be trapped in the locking grooves of the pin and reduce the strength of the fastener.

3,464,307
RETAINING RINGS
Hugo Wurzel, New York, N.Y., assignor to Waldes Kohinoor, Inc., Long Island City, N.Y., a corporation of New York
Filed Apr. 29, 1968, Ser. No. 725,122
Int. Cl. F16b *21/18, 43/00*
U.S. Cl. 85—8.8 **2 Claims**



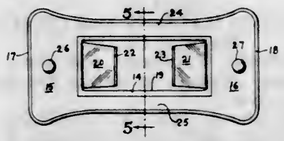
An interlocking retaining ring comprising ring halves of identical shape adapted to be assembled together, wherein each ring half includes an outwardly facing hook at one end and an inwardly facing hook at its other end. Each ring half also includes an inner edge recess defining a bridge portion connecting the ends thereof with the section height of the bridge portion decreasing progressively toward the end having the inwardly facing hook.

3,464,308
ROD ANCHORING MEANS
Hans O. Dohmeier, 30 Van der Merwe St., Hillbrow, Johannesburg, Transvaal, Republic of South Africa
Filed Mar. 5, 1968, Ser. No. 710,565
Claims priority, application Republic of South Africa, Mar. 8, 1967, 67/1,331
Int. Cl. F16b *37/00, 17/00, 39/22*
U.S. Cl. 85—32 **1 Claim**



The invention is concerned with a method and means of holding a rod under tension wherein a metal anchoring plate having a perforation therethrough is located around the rod against a rigid surface and the tension applied to the rod in a manner causing deformation of the plate to lock the walls of the perforation onto the rod and retain it under the applied tension.

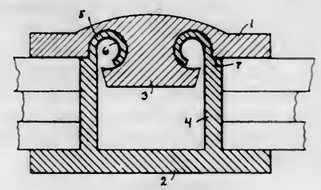
3,464,309
BRIDGE WASHER
Louis E. Kilmarx, Dickson, Tenn., assignor to Scovill Manufacturing Company, Waterbury, Conn., a corporation of Connecticut
Filed Oct. 2, 1967, Ser. No. 672,371
Int. Cl. F16b *17/00, 43/00;* **B60c** *23/10*
U.S. Cl. 85—36 **2 Claims**



A one-piece self-holding bridge washer for valves of tube-type tires is made of sheet metal with spring tongues having gripping edges adapted to lock into the threads in the outside of the stem when pushed in place over the valve stem.

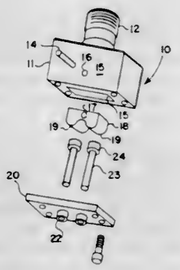
It is made dish-shaped so that arching wall portions between the bearing points reinforce the structure against bending stresses to provide the necessary strength even though the metal may be sufficiently thin to give the desired flexibility to the spring tongues.

3,464,310
INCURVATED FASTENER
Chandley W. Lambert, Box 56, Lake Dallas, Tex. 75065
Filed Mar. 20, 1968, Ser. No. 714,691
Int. Cl. F16b *19/08*
U.S. Cl. 85—39 **2 Claims**



A two-part fastener comprising a base member with a tubular shank and a cap with a central projection formed with an annular concave neck. When the base and cap are forced together the tubular shank is deformed into the concave neck whereby the base and cap are secured together.

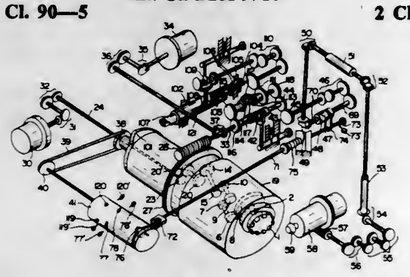
3,464,311
DUAL PUNCH ASSEMBLY FOR CONSOLIDATING DELAY AND FUSE COMBUSTIBLE MATERIAL
Boyd H. Smith, Marshall, Tex., assignor to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware
Filed Apr. 12, 1968, Ser. No. 721,027
Int. Cl. F42b *33/00, 33/02*
U.S. Cl. 86—1 **4 Claims**



A punch assembly adaptable to be driven by a punch press for consolidating combustible material in powder

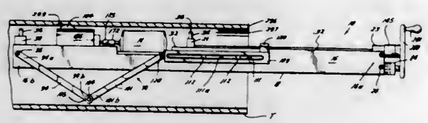
train delay fuses and the like is disclosed. The punch assembly includes a housing with a pivot bar swivelably mounted therein which contacts a pair of free floating punches. The punches thus transmit predetermined compacting, or consolidating loads to the material in the delay or fuse.

3,464,312
GEAR CUTTING MACHINE FOR GENERATING HYPOID GEARS
Ryosetsu Takahashi, Yokohama, and Toru Hanzawa, Urawa, Japan, assignors to Yutaka Seimitsu Kogyo, Ltd., Yono, Japan
Filed May 2, 1967, Ser. No. 635,543
Claims priority, application Japan, Aug. 5, 1966, 41/51,019
Int. Cl. B23f *9/10*
U.S. Cl. 90—5 **2 Claims**



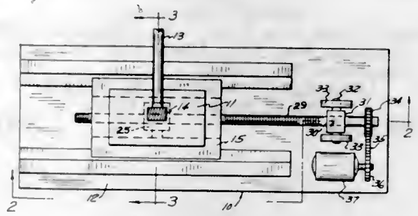
This invention relates to a gear cutting machine for generating hypoid gears having clutches for indexing a gear blank and a reversibly varying speed motor for rotating a cradle in a reciprocative manner, the backward strokes of which in conjunction with the rotation of the blank serve to widen the spaces between gear teeth which have been cut in the forward strokes of the cradle and at the same time to cut the surfaces of gear teeth having a different spiral angle from those which have been cut in the forward strokes.

3,464,313
CALIBRATED SLOTTING TOOL
Joseph P. Shay, 2423½ W. Main, Houston, Tex. 77006, and Roland R. Ross, Houston, Tex.; said Ross assignor to said Shay
Filed Jan. 29, 1968, Ser. No. 701,430
Int. Cl. B23c *1/20, 3/28*
U.S. Cl. 90—12 **7 Claims**



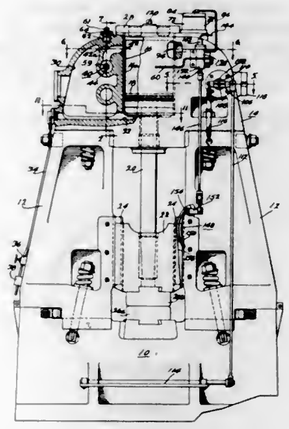
A lower platform member is positioned in guide slots of a pair of parallel upstanding side walls for movement of the lower platform member longitudinally relative to the side walls. An upper platform member is adjustably secured to the lower platform member to enable a cutting means positioned thereon to move upwardly and downwardly relative to the side walls for cutting a desired depth and longitudinal slot in pipe or other tubular members. A means for moving the upstanding side walls transverse to the pipe enables the upper platform and cutting means positioned thereon to be positioned immediately adjacent the pipe for minute calibrated adjustments by moving the lower platform in the guide slots and by adjusting the upper platform relative to the lower platform.

3,464,314
METHOD AND APPARATUS FOR MILLING LARGE RADIUS CURVES
Floyd R. Gladwin, Grosse Ile, Mich.
(14500 Eureka St., Southgage, Mich. 48195)
Filed July 6, 1967, Ser. No. 651,471
Int. Cl. B23c *9/00, 1/00, 3/00*
U.S. Cl. 90—21 **4 Claims**



A method and apparatus for milling large radius curves upon a workpiece, using a horizontal spindle milling machine, including first, accurately milling a pair of radius curved guide rails and two corresponding pairs of curved guide bushings by securing them upon the free end of a vertically pivoted, horizontally swingable beam of the desired radius and swinging the free end in the path of a vertical spindle milling machine cutter and, thereafter, mounting said rails upon the bed of a horizontal milling machine and said guide rails upon a horizontally movable table carrying the workpiece, then reciprocating the table in the curved path defined by the rails and bushings, beneath a horizontal spindle milling cutter for cutting a corresponding large radius curve upon the workpiece.

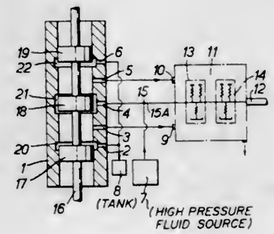
3,464,315
MECHANICAL PNEUMATIC SERVO CONTROL SYSTEM FOR HIGH-SPEED IMPACT DEVICES
Henry A. Weyer, Chambersburg, Pa., assignor to Chambersburg Engineering Company, Chambersburg, Pa.
Filed June 12, 1967, Ser. No. 645,127
Int. Cl. F01b *25/02;* **F01l** *25/02, 15/16*
U.S. Cl. 91—165 **15 Claims**

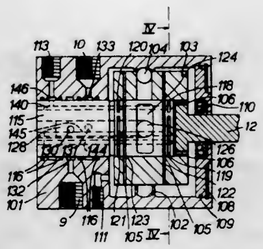


In a pneumatic driven impact device a pilot valve controls the operating air supply inlet and exhaust valves to a cylinder to drive a piston impelling the ram into impact. Ram position determines the position of the pilot valve, and therefore the sequence of valve operation. A manually controlled throttle valve is used to actuate and control the ram by controlling the air supply to the inlet valve. Preferably a regulated pressure supply of air is

provided to the cylinder on the opposite side of the ram from the operating pressure supply to withdraw the ram from impact when operating air is exhausted. Preferably the exhaust ducting associated with the exhaust valve has a sufficient surface area in common with a reservoir in which the regulated pressure air is stored to provide a heat transfer surface which employs heat generated in the surging flow of the reused regulated pressure air to warm the exhaust and prevent freezing of the exhaust valve.

3,464,316
FLUID SERVO MOTORS
George Orloff, London, England, assignor to Molins Machine Company Limited, London, England, a corporation of Great Britain
Continuation of application Ser. No. 633,583, Apr. 25, 1967. This application July 1, 1968, Ser. No. 745,075.
Claims priority, application Great Britain, May 6, 1966, 20,186/66
Int. Cl. F01b *13/06;* **F15b** *11/16, 13/06*
U.S. Cl. 91—176 **9 Claims**

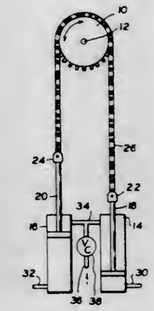




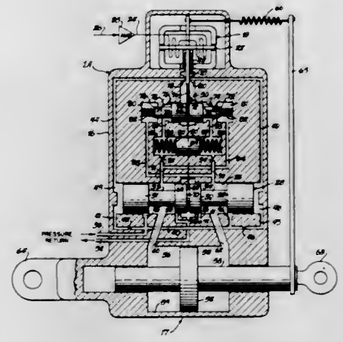
A hydraulic servo system comprises a high pressure fluid source connected to a T junction one arm of which communicates with a servo spool valve whose movement affects rotation of a servo ball motor rotor mounted on a pintle through fluid connections between valve and motor, the other arm of the T junction communicating with channels in the pintle providing hydrostatic bearings between rotor and pintle.

3,464,317
HYDRAULIC CIRCUIT FOR PLURAL CYLINDERS
Cyril H. T. Woodward, 160 Howard Ave., Rochelle Park, N.J. 07662
Filed July 28, 1967, Ser. No. 656,766
Int. Cl. F01b *1/00, 7/04, 9/04*
U.S. Cl. 91—186 **1 Claim**

A hydraulic circuit for plural working hydraulic cylinders or motors which are operatively connected to actuate an apparatus or mechanism. This actuation may be by arms, roller chain or cable to an arm or sprocket on a shaft. The cylinders are arranged so that their dead ends are flow-connected to each other by a hydraulic bypass line and this line is filled from a feed line with high pressurized fluid so that the dead ends of the cylinders and connecting line is filled with pressurized fluid. A check valve in the feed line prevents a reverse flow from the bypass line to the supply of the pressurized fluid.



3,464,318
SERVOMECHANISM PROVIDING STATIC LOAD ERROR WASHOUT
William J. Thayer, East Aurora, and Kenneth D. Garnjost, Buffalo, N.Y., assignors to Moog Inc., a corporation of New York
Continuation of application Ser. No. 324,976, Nov. 20, 1963. This application June 3, 1966, Ser. No. 555,205
Int. Cl. F15b *13/16, 9/09, 9/06*
U.S. Cl. 91—359 **39 Claims**

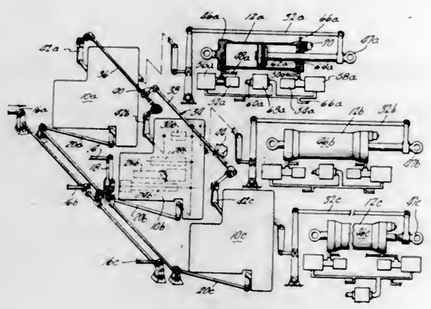


A construction of servomechanism is disclosed which makes adjustments not only for internal compliance but also external compliance of the supporting structure due to the static loading and therefore eliminates or washes out static load error.

3,464,319
REDUNDANT CONTROL MECHANISM
Robert Sherman and George M. Babic, West Hartford, Conn., and Hernan A. Posnansky, Huntsville, Ala., assignors to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware
Filed Nov. 29, 1967, Ser. No. 686,658
Int. Cl. F01b *25/26;* **F15b** *15/26, 9/02*
U.S. Cl. 91—411 **14 Claims**

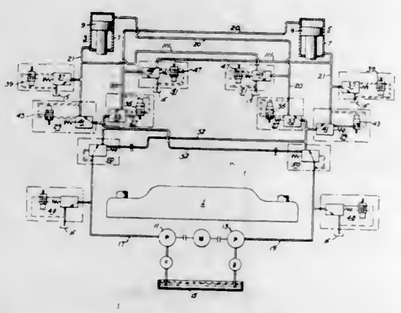
This invention relates to redundant servo actuators which may be ganged to operate a common control in

parallel with the control load shared among the actuators. Each actuator has provisions for failure detection. If an



actuator should fail, it may be rendered passive and the control mechanism stays operational with the remaining operative actuators.

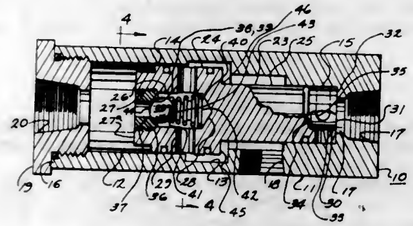
3,464,320
DECOMPRESSION SYSTEM FOR PRESS BRAKES OR THE LIKE
Rolland A. Richardson, Alameda, Calif., assignor to Pacific Press & Shear Corp., a corporation of Illinois
Filed May 16, 1967, Ser. No. 638,986
Int. Cl. F15b *11/16, 13/09*
U.S. Cl. 91—420 **6 Claims**



On the return stroke in a hydraulically actuated press brake, discharge from the upper ends of the hydraulic motors is throttled should movement of the pistons exceed the ability of the pumps to normally produce such movement.

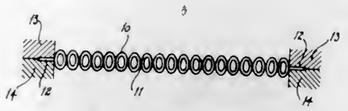
3,464,321
ONE-WAY DIRECTIONAL FLUID CONTROL VALVE AND SYSTEM
Bruno Piotrowski, Jr., 1612 N. Blair St., Royal Oak, Mich. 48067
Filed Nov. 29, 1966, Ser. No. 597,633
Int. Cl. F15b *11/08, 13/04*
U.S. Cl. 91—442 **3 Claims**

This invention relates to a valve for fluid control, having three openings, a power inlet opening, a power outlet opening, and an exhaust opening, the valve being arranged and adapted so that the passage of fluid from the power inlet to the power outlet is blocked and the exhaust opening is open when fluid is introduced into the valve under pressure from the power inlet, the passage of fluid from the power inlet opening through the power outlet opening is open and the exhaust opening is blocked when fluid is introduced into the valve under pressure through the power inlet, the valve further being arranged to block the flow of pressurized fluid from the direction of the



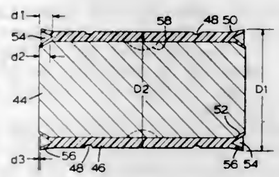
power inlet opening which has not first passed out and in said power outlet opening from first passing from said power inlet out said exhaust opening; the valve is also incorporated into a system for lubricating and cooling a fluid power work performing cylinder by causing one-way directional flow of fluid through the valve into the cylinder from a pressurized source of fluid.

3,464,322
DEFORMABLE DIAPHRAGM
Michel J. J. Pequignot, 19 Rue Poliveau, Paris 5eme, France
Filed Oct. 26, 1967, Ser. No. 678,409
Claims priority, application France, Dec. 19, 1966, 87,919
Int. Cl. F01b *19/04;* **F16j** *3/00;* **A61f** *1/22*
U.S. Cl. 92—91 **6 Claims**



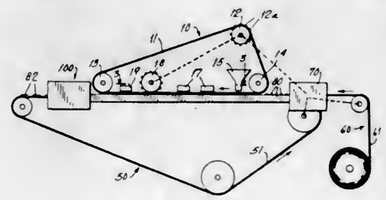
A deformable diaphragm intended to produce impulsing or pumping effects in a fluid, the diaphragm being formed by a tube of elliptical section wound in a spiral with adjacent turns welded together and the outer edge being gripped in a support, the tube being connected to a source of fluid under pressure, the admission of which causes deformation of the tube and consequent inflation of the diaphragm.

3,464,323
PISTON
John L. Saksun, 27 Blair Athol Crescent, Islington, Ontario, Canada
Filed Sept. 12, 1967, Ser. No. 667,274
Int. Cl. F16j *1/00, 9/00*
U.S. Cl. 92—243 **2 Claims**



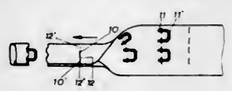
A piston having a metal core, and a tough, thick, resilient, oil-resilient urea-urethane sleeve bonded to the core along the entire length of the core, to provide a good seal and to eliminate seal flexure upon reversal of piston direction in a cylinder. The sleeve diameter at its ends is slightly greater than the cylinder diameter. The middle of the sleeve is preferably slightly less than the cylinder diameter and joins the sleeve ends by a smooth taper.

3,464,324
LOOSE GRANULAR FILTER MAKING MACHINE
Jesse R. Pinkham, Winston-Salem, N.C., assignor to R. J. Reynolds Tobacco Company, Winston-Salem, N.C., a corporation of New Jersey
Filed Sept. 11, 1967, Ser. No. 668,292
Int. Cl. A24c *5/50*
U.S. Cl. 93—1 **10 Claims**



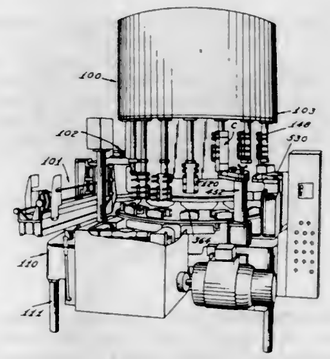
An apparatus and process for producing filter tips for cigarettes and the like, the filter tips being derived from rod-shaped assemblies defined by an alternating succession of plugs of filter material and chambers of granular material. The granular material is placed in the voids between the axially aligned row of spaced plugs by arrangement which utilizes a traveling web which is made to run for a considerable distance over the row of plugs. The granular material is continuously deposited through holes in the traveling web, the holes being in timed relationship with the voids.

3,464,325
MANUFACTURE OF PAPER AND LIKE BAGS WITH ATTACHED FLAT HANDLES
Jean Class, Strasbourg, France, assignor to Les Ateliers de Constructions Mecaniques C. & A. Holweg S.A.R.L., Strasbourg, France, a corporation of France
Filed Apr. 14, 1967, Ser. No. 630,951
Claims priority, application France, Feb. 10, 1967, 8,811
The portion of the term of the patent subsequent to Apr. 22, 1986, has been disclaimed
Int. Cl. B31b *1/14, 1/86, 49/04*
U.S. Cl. 93—35 **3 Claims**



A method for the continuous manufacture of bags of paper or similar material, having flat attached handles, and more particularly dividing a tube into sections with the handles, comprising the steps of unwinding a strip of continuous material, forming two pairs of slots at spaced intervals in the strip of material, the slots of each of the two pairs of slots spaced from each other at a distance corresponding to the two legs of a U-shaped handle to be inserted therein, the strip of material not cut between each of the two pairs of slots nor between the slots of each of the two pairs of slots, positioning a U-shaped handle with its two legs in each of the pairs of slots, and thereafter separating sections of the strip of material equipped with the handles at the spaced intervals by cuttinp on both sides of the two pairs of slots as well as between the slots of each of the two pairs of slots by a triple cutting device.

3,464,326
CONTINUOUS MOTION MACHINE FOR HEATING, FORMING, AND SEALING CONTAINER CLOSURES
Harry B. Egleston, Livonia, Mich., assignor to Ex-Cell-O Corporation
Filed May 16, 1967, Ser. No. 640,444
Int. Cl. B31b *1/06, 1/64*
U.S. Cl. 93—44.1 **31 Claims**

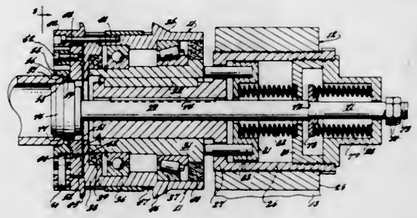


A container bottom forming apparatus having a reciprocating container carrier for receiving series of containers of different capacities wherein their bottom closures are at a uniform working level for treatment by the apparatus and transferring the containers from the apparatus with their top closures at a uniform working level. The containers are moved on the apparatus in continuous motion between aligned vertically spaced heating and pressure sealing units and a folding unit wherein the folding unit is operative on each container between the heating and sealing operations.

ERRATUM

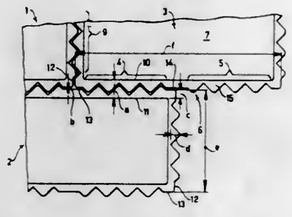
For Class 93—61 see:
Patent No. 3,465,354

3,464,327
APPARATUS FOR BURNISHING THE END OF A TUBE OR THE LIKE
Joseph T. Yovanovich, Rosemont, Pa., assignor of fifty percent to Milton Berger, Philadelphia, Pa.
Filed May 15, 1967, Ser. No. 638,499
Int. Cl. B31c *11/00;* **B31f** *7/00*
U.S. Cl. 93—83 **8 Claims**



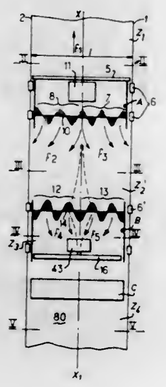
The instant invention is essentially concerned with apparatus for burnishing the end of a tube including a rotary head having jaws engageable with a tube end, wherein the frictional resistance imparted by the tube end to the jaws tends to close the latter for effective burnishing action.

3,464,328
INDENTED BRICK AND PAVEMENT COMPOSED OF SUCH BRICKS
Antonius Johannes van der Meijden, Boslaan 63, Son, Netherlands
Filed Dec. 18, 1967, Ser. No. 691,495
Claims priority, application Netherlands, Dec. 23, 1966, 6618091
Int. Cl. E01c *5/04*
U.S. Cl. 94—13 **6 Claims**



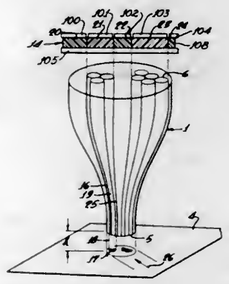
Generally rectangular brick has teeth formed in its side and end walls, teeth in each wall being offset from teeth in opposite wall. Ribs arranged at corners of brick, each tooth extending outwardly of ribs and each recess extending inwardly thereof. Side walls each provided with flat portion having a width about twice that of one side of a rib. Brick is beveled between its top face and each wall. In pavement, teeth of adjacent bricks mesh, and ribs of two adjacent bricks seat against flat portion of third overlapping brick.

3,464,329
CONCRETE ROAD SURFACING
Adolphe-Léon Naget, Rue de Grignan, Le Cannet-de-Cannes, Alpes Maritimes, France
Filed Jan. 16, 1967, Ser. No. 609,629
Claims priority, application France, Jan. 21, 1966, 46,852; June 21, 1966, 66,339; June 29, 1966, 67,523
Int. Cl. E01c *19/20, 19/41*
U.S. Cl. 94—44 **3 Claims**



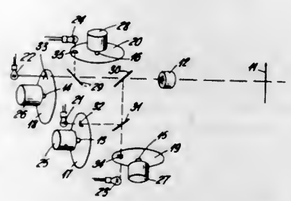
An equipment of at least two machines on rails for the preparation and continuous laying of a concrete road surface, the rolling tracks of the machine being finally incorporated in the road surface, and the stony bed being deposited dry between the rolling tracks without passing through a concrete mixer, a first machine effecting the homogeneous mixing of the stony bed and the binder, and a second machine effecting the vibration and ramming of the concrete.

3,464,330
OPTICAL WRITING DEVICE
Edward V. Lewis, Newport Beach, Calif., assignor to California Computer Products, Inc., Anaheim, Calif., a corporation of California
Filed Nov. 24, 1967, Ser. No. 685,344
Int. Cl. G01d *9/42*
U.S. Cl. 95—1 **13 Claims**



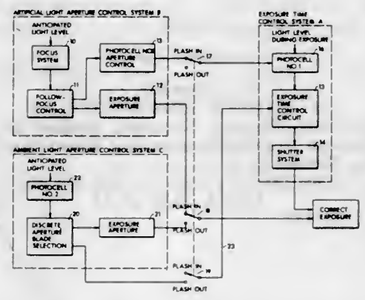
A tapered bundle of coated transparent fibers may be utilized to collimate monochromatic light from a distributed source into a narrow beam. The light source and bundle may be mounted on a recording apparatus for movement relative to a photosensitive medium in order to plot graphical information. By employing a plurality of bundles having different tapers in combination with light sources having separately energizable segments, a wide range of line widths and intensities may be made available.

3,464,331
APPARATUS FOR COMPOSING PRINT
Josef Maria Herbert Tiefenthal, Reigate, and Howard Raymond Baylis, East Grinstead, England, assignors to The Monotype Corporation Limited, London, England, a British company
Filed Jan. 11, 1967, Ser. No. 608,639
Claims priority, application Great Britain, Jan. 13, 1966, 1,732/66
Int. Cl. B41b *13/00, 17/00, 15/00*
U.S. Cl. 95—4.5 **7 Claims**



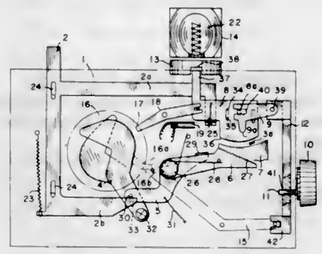
A photocomposing machine has master character transparencies mounted around the circumference of and distributed between several separately movable discs. Each disc is rotated by an associated stepping motor so that any master character on it may be moved to an exposure position. Whilst one master character on one disc is being exposed to the film those characters next required in the line of print from each of the other discs are being or already have been moved into an exposure position.

3,464,332
AUTOMATIC EXPOSURE CONTROL SYSTEM
Richard H. Davison, Sudbury, and Milton S. Dietz, Lexington, Mass., assignors to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware
Filed May 12, 1966, Ser. No. 549,594
Int. Cl. G01j *1/52*
U.S. Cl. 95—10 **12 Claims**



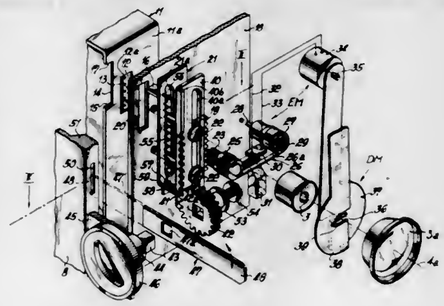
An exposure control system for use in photographic apparatus which provides for an adjustment of exposure aperture in accordance with anticipated scene light as by a follow-focus arrangement or the like. Following automatic selection of aperture in accordance with scene light, the system controls the time interval of exposure in accordance with scene illumination and with the previously selected aperture adjustment.

3,464,333
AUTOMATIC EXPOSURE CONTROL CAMERA FOR FLASH AND DAYLIGHT PHOTOGRAPHY
Koichi Aoki and Noboru Yamatani, Toyokawa, and Hideo Takeuchi, Gamagori, Japan, assignors to Minolta Camera Kabushiki Kaisha, Osaka, Japan, a corporation of Japan
Filed Aug. 8, 1966, Ser. No. 570,908
Claims priority, application Japan, Aug. 25, 1965, 40/69,731; Feb. 2, 1966, 41/6,051
Int. Cl. G03b *9/02*
U.S. Cl. 95—10 **3 Claims**



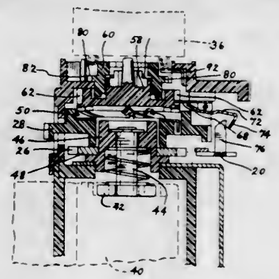
An automatic exposure control camera wherein the diaphragm aperture may be determined by locking the angular position of an ammeter pointer upon depressing the release button, the ammeter pointer being adapted to be locked by a pointer-locking means which is connected through a coil spring with the release button. A switch for igniting a lamp indicating that flash-photographing is necessary is closed when said locking means has been lowered by a predetermined stroke, said release button normally being engaged with a pointer-abutting lever the free end of which may be engaged, when said button is lowered to disengage said second arm from the lever and said pointer-abutting lever is angularly moved by means of another spring, with a flash-photographing diaphragm aperture setting member which is angularly moved by means of a distance of focus regulating member, said pointer locking member being adapted to serve as a stop for a flash cube socket and being mechanically linked with a shutter speed regulating member.

3,464,334
PHOTOGRAPHIC CAMERA WITH BUILT-IN EXPOSURE METER
Theo Wilharm, Endersbach, and Albert Stieringer, Calmbach, Germany, assignors to Eugen Bauer GmbH, Stuttgart-Unterturkeim, Germany
Continuation of application Ser. No. 476,944, Aug. 3, 1965. This application Aug. 5, 1968, Ser. No. 754,123
Claims priority, application Germany, Aug. 5, 1964, B 77,977
Int. Cl. G01j *1/00, 1/52;* **G03b** *19/04*
U.S. Cl. 95—10 **13 Claims**



A photographic camera wherein the door of the magazine chamber can be locked by a locking member which thereby effects movement of a sensing element into engagement with a marker provided on the magazine to indicate the sensitivity of film therein whereby the sensing element adjusts the exposure meter. The locking member can be moved between the locking position and an idle position, in which the sensing element is disengaged from the marker, and the locking member is free to dwell in each such position.

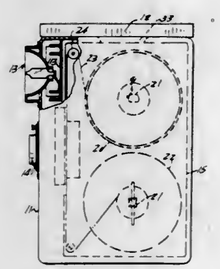
3,464,335
CAMERA WITH FLASHCUBE MECHANISM
George Irwin, 1747 Elmwood Drive, Highland Park, Ill. 60035
Filed July 5, 1966, Ser. No. 562,561
Int. Cl. G03b *19/00, 19/04*
U.S. Cl. 95—11 **4 Claims**



A camera construction consisting of a housing for holding a film cartridge and a flashlamp socket for holding a lamp of the type having a plurality of flashbulbs.

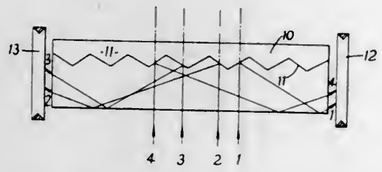
A drive mechanism is provided for moving the lamp socket in conjunction with the film advancing device. A spring element forms a drive coupling between the lamp socket and the film advancing device, and a locking member is provided for engaging the socket when a bulb has been moved to the proper position. Continued movement of the film advancing device overcomes the spring action whereby the lamp socket will not be moved along in conjunction with the film advancing device. The locking member for the socket is automatically released when the camera shutter is actuated so that movement of the socket to the next bulb position can be accomplished.

3,464,336
PHOTOGRAPHIC CAMERA USING MOTION PICTURE FILM FOR SINGLE FRAME EXPOSURE
Edward J. Rovsek, Elk Rapids, Mich. (423 W. 12th St., P.O. Box 243, Traverse City, Mich. 49684)
Filed Aug. 24, 1966, Ser. No. 580,846
Int. Cl. G03b *19/04, 21/32, 21/38*
U.S. Cl. 95—31 **19 Claims**



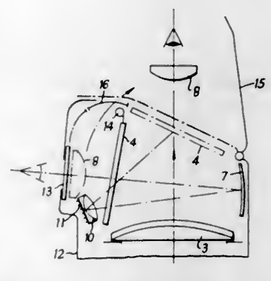
A camera for taking single pictures using motion picture film, which includes a removable cartridge having a housing with an aperture and with film supply and take-up reels. A film support and a film stripper plate to receive the film is also provided in the cartridge. A manually operable device, independent of the cartridge, is adapted to first actuate the camera shutter and includes a film advance lever with a mechanism to move operatively into engagement with the film and for feeding the film a distance equal to one frame.

3,464,337
MIRROR REFLEX CAMERA WITH INTERNAL PHOTOELECTRIC LIGHT METER
Werner Trankner, Dresden, Germany, assignor to VEB Pentacon Dresden Kamera- und Kinowerke, Dresden, Germany
Filed Apr. 15, 1966, Ser. No. 542,851
Int. Cl. G03b *19/12*
U.S. Cl. 95—42 **11 Claims**



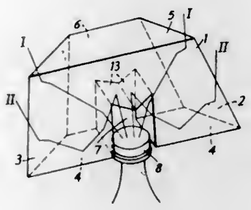
In a reflex camera with a built in photoelectric exposure meter system, a light-permeable plate is positioned between the reflex mirror and the viewfinder. In the plate a plurality of semireflecting oblique surfaces are provided which act to form a continuous prismatic line raster of reflectors. These semireflecting surfaces are arranged between planes parallel to the light entry surface of the plate. As a consequence of the location of these semireflecting surfaces the light which enters the camera is separated so that a portion is reflected away from the optical axis and is sensed by one or more photocells positioned on the outer edges of the plate. The remainder of the light is transmitted directly through the plate for displaying the image in the viewfinder.

3,464,338
REFLEX VIEWFINDER
Rolf Jurenz, Dresden, Germany, assignor to VEB Pentacon Dresden Kamera- und Kinowerke, Dresden, Germany
Filed Dec. 27, 1966, Ser. No. 605,065
Int. Cl. G03b *19/12*
U.S. Cl. 95—42 **7 Claims**



The photographic reflex camera is provided with a viewfinder system which has a first convergent lens receiving light from the reflex mirror for producing a first real image, on a second convergent lens via a pivotable mirror. The second convergent lens has a mirrored surface which reflects the image to a concave mirror from which the image is viewed through an eyepiece. The eyepiece can be pivoted to the optical axis of the second convergent lens by means of a pivotable cover formed as part of the viewfinder housing in which case the pivotable mirror is pivoted out of said optical axis.

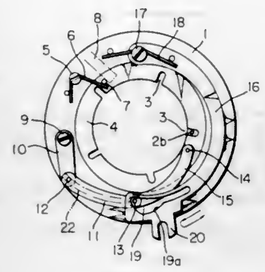
3,464,339
PHOTOGRAPHIC CAMERA
Werner Trankner, Dresden, Germany, assignor to VEB Pentacon Dresden Kamera- und Kinowerke, Dresden, Germany
Filed May 12, 1967, Ser. No. 638,018
Int. Cl. G03b *19/12*
U.S. Cl. 95—42 **10 Claims**



A light guide collector body of prismatic shape which receives light from the pentaprism of a reflex camera and transfers it to one or more photo-electric cells. This

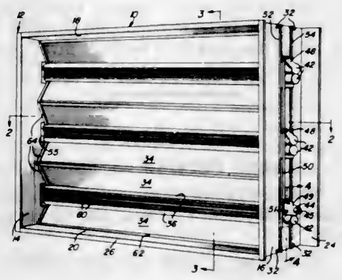
arrangement is designed to enable the bright and dark parts of the ground glass screen image, as well as their contrast range, to be measured both singly and jointly. The light collector body has a light entry surface and one or more light exit surfaces. The light entering the body is split into two beams and after multiple reflections can be sensed by the photo-electric cells to determine the correct exposure.

3,464,340
PRESET MECHANISM OF DIAPHRAGM FOR SINGLE LENS REFLEX CAMERA
Yoshihisa Maitani, Tokyo, Japan, assignor to Olympus Optical Co., Inc., Tokyo, Japan
Filed Mar. 1, 1966, Ser. No. 530,815
Claims priority, application Japan, Mar. 11, 1965, 40/19,243
Int. Cl. G03b *9/02*
U.S. Cl. 95—64 **4 Claims**



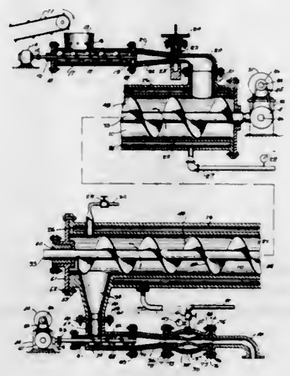
A preset mechanism for a single lens reflex camera having a blade diaphragm arrangement attached within the lens holder of the camera. The rotatably secured diaphragm blades are moved by a spring-loaded diaphragm drive ring so that upon rotation and release of the diaphragm drive ring the diaphragm blades can set themselves to the preselected aperture position.

3,464,341
DAMPER CONSTRUCTION FOR VENTILATOR DUCT
Russell L. Dobrin, Edison, N.J. (P.O. Box 144, Linden, N.J. 07036)
Filed Oct. 18, 1967, Ser. No. 676,242
Int. Cl. F24f *13/08;* **E05f** *17/00*
U.S. Cl. 98—110 **13 Claims**



A structure for variably closing a ventilation opening or a ventilation duct and including pairs of elongated and adjacent side by side flap members totaling either an even or odd number of flap members with the flap members of each pair of flap members pivotally supported at adjacent side edge portions for oscillation about axes paralleling the edge portions and each other, the flap members of each pair of flap members being interconnected for inverse oscillation and corresponding flap members of said pairs of flap members being interconnected for like and simultaneous oscillation.

3,464,342
APPARATUS FOR CONTINUOUS PRESSURE COOKING OF FIBROUS MATERIALS
Allen R. Kleinkauf, St. Petersburg, Fla. (Rte. 1, Box 169, Williston, Fla. 32696)
Filed Aug. 16, 1966, Ser. No. 572,828
Int. Cl. A23k *1/00;* **A23l** *3/22*
U.S. Cl. 99—235 **5 Claims**

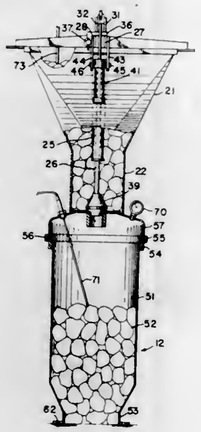


The instant disclosure consists in a device for treating chicken feathers and the like resulting in a product utilizable as a feed component for poultry and cattle. The material is supplied to a charging chamber wherefrom a screw conveyor forces it to a pressure cooker. A tapered restriction or reduction chamber between the charging chamber and the cooker affords a squeezing of the feathers to an extent such that a seal is formed against the inner walls of the restriction chamber. The exit from this chamber is controlled by a knife blade cut off valve for cutting through the material and blocking further exit from the restriction chamber, when desired. The cooker consists of a steam-jacketed pipe, interiorly receiving the material from the charging chamber and feeding it interiorly of the pipe, by means of a screw conveyor to a discharge controlled by a sphincter valve. This valve has flexible walls and its flexure is caused by compressed air. A third screw conveyor receives the material from the discharge from the cooker and feeds it to the sphincter valve.

3,464,343
CONTINUOUS DEAERATOR
Norman J. Wedekind and Daniel L. Orloff, Madison, Wis., assignors to Oscar Mayer & Co., Inc., Chicago, Ill., a corporation of Illinois
Filed June 2, 1967, Ser. No. 643,199
Int. Cl. B65b *31/00*
U.S. Cl. 99—272 **11 Claims**

A deaerator which permits continuous feeding of the product to be deaerated and, after deaeration, continuously feeds the product to a transfer pump or the like. A special valving arrangement permits continuous feeding from a supply hopper to the deaerating chamber without loss of vacuum in the deaerating chamber. Continuous feed to the supply hopper may be provided by a

conveyor which is controlled by timing and the level of the product in the hopper. The shape of the hopper cooperates with the valve to assure a sufficient level of product at all times to prevent loss of vacuum during valve



opening to admit product to the deaerating chamber, the valve opening occurring at timed intervals and automatically closing when the product reaches a predetermined level.

3,464,344

JUICE EXTRACTOR

Nathaniel F. Hawthorne, 855 Cedar St., Alameda, Calif. 94501

Filed Dec. 14, 1967, Ser. No. 690,604
Int. Cl. B30b *9/06, 15/08*
U.S. Cl. 100—102 **7 Claims**



A combination beverage stirrer and citrus fruit section squeezer operable with one hand of a human operator for rapid easy extraction of the section's juices directly into a beverage.

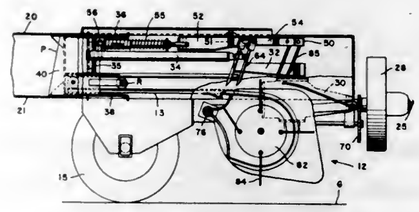
3,464,345

HAY BALER

Jack W. Crane and Edwin B. Nolt, New Holland, Pa., assignors to Sperry Rand Corporation, New Holland, Pa., a corporation of Delaware

Filed May 26, 1967, Ser. No. 641,553
Int. Cl. A01f *15/02;* **B30b** *1/06, 9/30*
U.S. Cl. 100—142 **10 Claims**

A hay baler having a bale case in which a plunger oscillates in an arc about a vertical axis and wherein the feeder which delivers material into the bale case also travels in an arc about a vertical axis and opposite to the



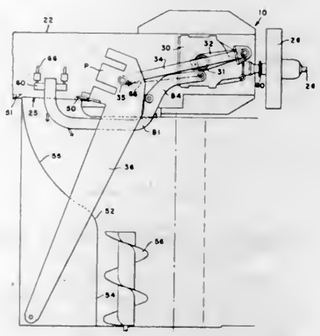
oscillations of the plunger, the drive to both the plunger and the feeder operating in a horizontal plane.

3,464,346

HAY BALER

Jack W. Crane and Edwin B. Nolt, New Holland, Pa., and William E. James, Dijon, France, assignors to Sperry Rand Corporation, New Holland, Pa., a corporation of Delaware

Filed May 26, 1967, Ser. No. 641,551
Int. Cl. A01f *15/02;* **B30b** *1/06, 9/50*
U.S. Cl. 100—142 **12 Claims**



A hay baler having a horizontally extending bale case in which a plunger is reciprocal, said plunger oscillating on an arc about the axis of a vertical pivot pin.

3,464,347

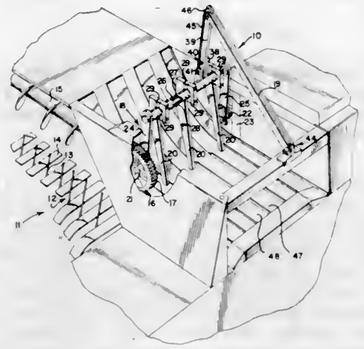
BALER FEEDER ASSEMBLY

Hugh W. Morris, Corinth, Miss., assignor to International Harvester Company, Chicago, Ill., a corporation of Delaware

Filed Aug. 2, 1967, Ser. No. 657,896
Int. Cl. B30b *15/20, 1/00*
U.S. Cl. 100—189 **5 Claims**

A feeder assembly for use in a hay baler, the feeder assembly comprising a four bar linkage having a crankshaft, a fixed crank, a connecting linkage, and a plurality

of detachable feeded fingers. The feeder fingers are adjustable to change the configuration of its leading edge,



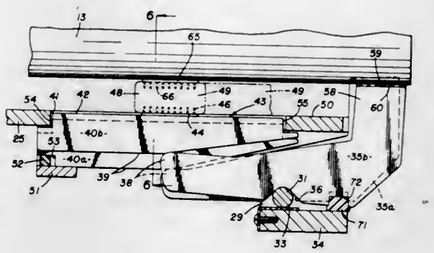
thereby changing the feeding characteristics of the feeder assembly.

3,464,348

APPARATUS FOR FABRICATING WOODEN STRUCTURES

Arthur E. McGlinchey, 1122 NE. 1st Ave., Fort Lauderdale, Fla. 33304

Filed June 2, 1967, Ser. No. 657,439
(Filed under Rule 47(b) and 35 U.S.C. 118)
Int. Cl. B30b *3/02, 1/02, 15/06*
U.S. Cl. 100—210 **10 Claims**



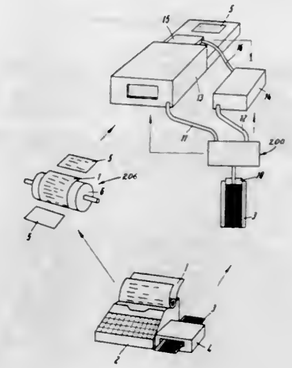
A reflect generator for use in a fabricating machine for setting the teeth of opposed connector plates into wooden structural members. A plurality of parallel, vertically slidable blocks with reaction faces are juxtaposed so that the composite of the reaction faces present an upwardly directed reaction pad on a supporting station in the fabricating machine. The joint of wooden members to be fastened by opposed connector plates, together with the opposed plates, are receivable upon the thus constituted reaction pad. A rocker arm for each blade is pivotally supported with a striker portion to engage an anvil portion on the corresponding blade. A key portion is also provided on each rocker arm. The key portion extends upwardly into the path of a gantry roller which is movable across and above the reaction pad so that as the roller contacts the key portion the rocker arm pivots to raise the blade toward the roller. The opposing roller and blades thus simultaneously drive the opposed connector plates into the wooden members being joined.

3,464,349

LINE PRINTING AND RECORDING METHOD AND APPARATUS

Gerhard Ritzerfeld, Franzensbader Strasse 21, Berlin-Grunewald, Germany

Filed July 14, 1967, Ser. No. 653,527
Claims priority, application Germany, July 22, 1966, R 43,750; Apr. 25, 1967, R 45,864
Int. Cl. B41j *5/32;* **B41l** *47/46*
U.S. Cl. 101—91 **14 Claims**



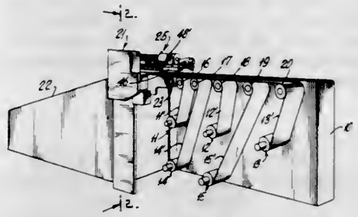
Information contained in data areas of the lines of a printing form is also contained in recording areas of corresponding lines of a record carrier. Selected lines of the printing form are printed on a copy sheet, and corresponding lines of recordings on the record carrier are sensed and recorded on the copy sheet.

3,464,350

BED AND PLATEN NUMBERING MACHINE FOR FEEDING, PRINTING AND SEVERING ASSOCIATED WEBS

Robert W. Shoup, Wyckoff, Roger F. White, Paramus, and Albert E. Weller, Glen Rock, N.J., assignors to Autographic Business Forms, Inc., a corporation of New Jersey

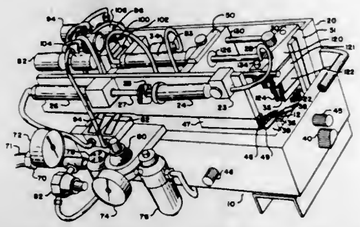
Filed Apr. 14, 1967, Ser. No. 630,991
Int. Cl. B41l *45/12;* **B41j** *1/38*
U.S. Cl. 101—78 **13 Claims**



The invention contemplates an intermittent-type printing mechanism transiently operative on continuously moving web material, which may be single-ply or a collated plurality of plies. Printing action takes place immediately before cut-off and is of a nature to apply dry magnetic-ink characters to the top ply (original), while assuring the same information content in the impressions made on lower plies. The printed characters reflect

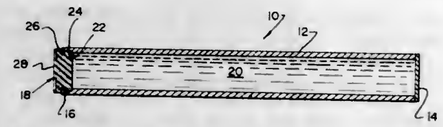
numerical sequencing, assuring coordinated serialization of all parts of each separate set. Reliance is placed on a slight degree of looseness in the synchronized retention of positioning control for the web, such looseness developing in the web substantially at or just prior to its reaching the locale of print action, such that transient print action (accompanied by localized transient arrest of web motion) is inoperative to impair the effectively uniform continuous flight of the web from the time of positive-feed engagement, through the printing region, and up to the point of cut-off.

3,464,351
CIRCUIT SCREENING MACHINE
Edward G. De Hart, 100 Memorial Drive, Cambridge, Mass. 02142, and Dieter K. O. Froehling, Burlington, Mass. 01803
Filed June 23, 1966, Ser. No. 559,975
Int. Cl. B41f *15/44*
U.S. Cl. 101—126 **14 Claims**



A semi-automatic machine for screening patterns of conducting ink on small ceramic substrate for the electronic industry is shown. Substrates **12** are placed one at a time into printing position by hand. A pivotally mounted printer **20** is then depressed to bring the screen **22** in printing register with the substrate. Lowering the printer initiates the automatic printing cycle. Vacuum is applied to hold the substrate in place; force is applied to a syringe piston **25** to dispense special inks or pastes between the wipers **152** of a double-edged squeegee blade **124**. Numerous adjustments are provided to afford accurate registry between substrates and screen and to adjust screen spacing and tilt, and the amount by which the squeegee depresses the screen. The two squeegee wipers only about ⅛ inch deep, separated by about ¼ inch, and both part of the same block of neoprene are clamped at the same height above the substrate and unlike windshield wipers, rock only imperceptibly as a pneumatic cylinder **34** drives the squeegee back and forth over the screen to print. To facilitate change of job, ink, syringe, ink hose **28**, squeegee-blade holder **122** and screens, all the parts in contact with ink are arranged to be quickly removed and replaced without tools. All of the automatic functions are pneumatic; none are electric.

3,464,352
SELF-INKING HAND STAMP
Nicholas J. Schilling, 10409 S. Maplewood, Chicago, Ill. 60655
Filed Aug. 25, 1967, Ser. No. 663,295
Int. Cl. B41k *1/38;* **B43m** *11/08*
U.S. Cl. 101—327 **2 Claims**

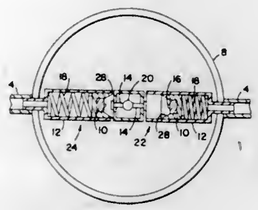


A marking stamp for applying a symbol or group of symbols to an object. The marking stamp is designed as a complete self-contained unit not requiring a separate ink pad. The subject marking stamp is provided with a reservoir to contain a substantial supply of a suitable marking substance for continuous feeding to a marker element removably secured to the marker stamp body.

3,464,353
METHOD FOR PRODUCING COPIES
Frederick O. Bach, Villa Park, and Richard E. Thomas, Chicago, Ill., assignors to A. B. Dick Company, Niles, Ill., a corporation of Illinois
Filed Sept. 9, 1964, Ser. No. 395,269
Int. Cl. B41m *5/20*
U.S. Cl. 101—470 **4 Claims**

1. A method for producing copy comprising the steps of providing a master sheet having an exposed surface, forming a tacky image on said surface, said image being formed from substances selected from the group consisting of thermoplastic waxes and resins, pressing a copy paper against said surface whereby at least part of the substance forming said tacky image will adhere to said copy paper, bringing toner particles into contact with the image on said copy paper whereby said particles will adhere to the image areas thereon, and fixing the adhered particles to said copy paper to form a visible image and repeating the steps beginning with pressing a copy paper against said imaged surface with additional sheets of copy paper to produce multiple copies from the tacky image on the master sheet.

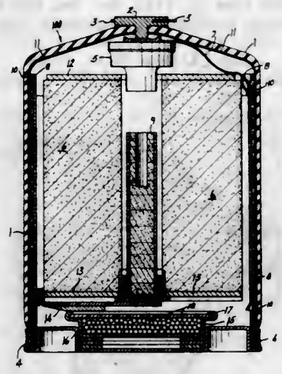
3,464,354
LAND MINE
Frank R. Skinner II, Atlanta, Ga., assignor to the United States of America as represented by the Secretary of the Army
Filed Nov. 29, 1966, Ser. No. 597,806
Int. Cl. F42b *23/12*
U.S. Cl. 102—8 **2 Claims**



An explosive device which detonates when a pressure system is ruptured. A cartridge disposed adjacent an explosive is detonated by a firing pin disposed on a spring biased piston. When armed, the piston is held away from the cartridge by the force of the pressure system. When unarmed, an annular flexible lip disposed about the firing pin maintains a safe spaced relation between the firing pin and the cartridge.

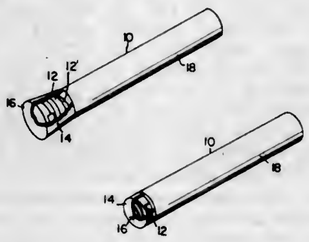
3,464,355
GAS GENERATOR
John J. Aclin, Herrin, and Joseph F. Junker, Marion, Ill., assignors to Olin Mathieson Chemical Corporation, a corporation of Virginia
Filed June 11, 1965, Ser. No. 463,213
Int. Cl. F42b *5/20, 9/18, 13/46*
U.S. Cl. 102—39 **9 Claims**

A gas generator including a cartridge case and a solid propellant composition within the case and a zeolite barrier positioned between the case and the propellant composition. The zeolite barrier may be a rubber sheet having powdered zeolite embedded therein or a perforated container of granular zeolite. The rubber sheet containing



the embedded zeolite may also contain embedded fibers which are capable of acting as a wick for water.

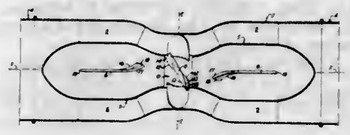
3,464,356
SELF-STABILIZING ROD PENETRATORS
Saul Wasserman, Rockaway, N.J., Robert Salzman, Arlington, Va., and Walter C. O'Keefe, Landing, N.J., assignors to the United States of America as represented by the Secretary of the Army
Filed Dec. 28, 1967, Ser. No. 694,188
Int. Cl. F42b *25/08*
U.S. Cl. 102—67 **3 Claims**



A rod for penetrating enemy target which includes a collapsible flared section on its rearward end, for permitting denser packing and aerodynamic stabilization.

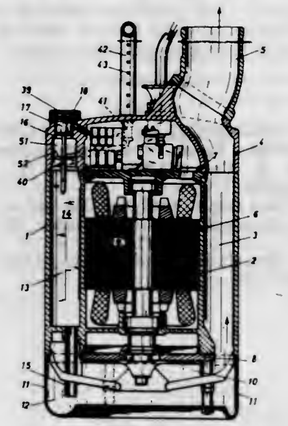
3,464,357
REVERSIBLE HYDRAULIC APPARATUS
Jacques P. Duport, Montbonnot, and Gilbert Martin, Grenoble, France, assignors to Societe Grenobloise d'Etudes et d'Applications Hydrauliques (Sogreah), Grenoble, France, a corporation of France
Division of application Ser. No. 577,089, Sept. 2, 1966, now Patent No. 3,406,632. Continuation of application Ser. No. 338,522, Jan. 17, 1964. This application May 28, 1968, Ser. No. 732,577
Claims priority, application France, Jan. 19, 1963, 4,526
Int. Cl. F04d *29/50, 3/02;* **F04b** *19/12*
U.S. Cl. 103—3 **10 Claims**

Reversible hydraulic apparatus composed of a duct having end portions capable of functioning either as inlets or outlets and having a hydraulic machine centrally located therein between two streamlined casings which form with the duct, annular flow passages on either side of the hydraulic machine. The casings are supported on the duct by two groups of vanes; the hydraulic machine, casings and vanes being symmetrically arranged relative to a plane perpendicular to and intersecting a point on the longitudinal central axis of the duct. The vanes in each group are inclined radially adjacent to the hydraulic machine and the inclined portions of one group of vanes being similar to the inclined portions of the other group



of vanes and such that the vanes in each group can without change operate alternately as upstream vanes for one direction of fluid flow and as downstream vanes for the other direction of fluid flow and can impart to the fluid flow when operating as upstream vanes a swirl varying in intensity across the duct passage.

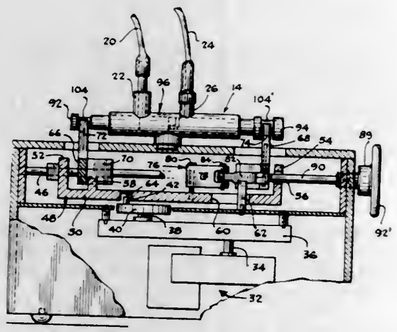
3,464,358
PUMP DRIVEN BY AN ELECTRIC MOTOR
Carl Eric Gottfrid Lind, Partille, Sweden, assignor to Aktiebolaget Svenska Precisionsverktyg, Planiavagen Nacka, Sweden, a corporation of Sweden
Filed Aug. 17, 1967, Ser. No. 661,411
Claims priority, application Sweden, Aug. 23, 1966, 11,336/66
Int. Cl. F04b *49/02;* **F04d** *15/00;* **E03b** *5/00*
U.S. Cl. 103—25 **10 Claims**



A pump housing has a motor disposed centrally within it, a flow chamber surrounding the motor, and an electrode chamber partitioned off from the flow chamber but communicating through a tube at its bottom with the flow chamber. An impeller mounted on the bottom end of the motor shaft drives liquid upwardly out of the flow chamber and through an outlet at the top of the housing. Mounted in the electrode chamber are electrodes. When the electrically conductive liquid being pumped reaches the electrodes a circuit is closed to start the motor. The electrode chamber is closed at its top so that air is trapped in the top of this chamber by the liquid therein. An air outlet valve maintains the liquid level in the electrode chamber when the pump is operating, but vents the electrode chamber when the liquid

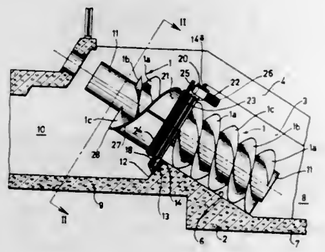
level in the flow chamber drops to a predetermined level. The air pocket provides space in which the electrodes are kept dry adjacent the terminals which connect them with the motor.

3,464,359
APPARATUS FOR MOVING FLUID FROM ONE SYSTEM TO A SECOND SYSTEM
Charles Lee King, Addison, and John A. Johnson, Evanston, Ill., assignors to The Medimeter Corporation, a corporation of Illinois
Filed Nov. 13, 1967, Ser. No. 682,474
Int. Cl. F04b *49/00, 3/00*
U.S. Cl. 103—38 **16 Claims**



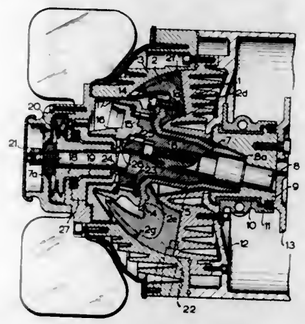
A fluid pump for moving fluid from one system to another under pressure having means to assert positive, precise control over the flow rate and to isolate the outlet of the pump from small quantities of air occurring therein, the pump including control means to shuttle the inlet and outlet pistons in regulated manner.

3,464,360
ARCHIMEDEAN SCREW PUMP
Anne Jellesma, Sneek, Netherlands, assignor to W. Hubert & Co. Machinefabriek N.V., Sneek, Netherlands
Filed Dec. 6, 1967, Ser. No. 688,453
Claims priority, application Netherlands, Dec. 12, 1966, 6617445
Int. Cl. F04d *3/02;* **B65g** *33/00*
U.S. Cl. 103—89 **8 Claims**



An Archimedean screw pump for conveying water or other liquid from a lower level to a higher level having a conveying screw arranged axially in an inclined channel, the upper part of said screw projecting beyond the inclined channel, a casing surrounding said upper part mounted freely rotatable about the screw in a bearing supported by the end face of said channel, the free edge of said casing opposite said bearing having a curved shape.

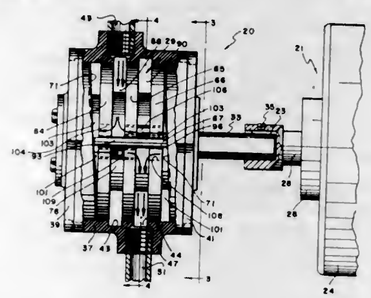
3,464,361
VOLUMETRIC MACHINE
Otto O. Voser, 52 Cite Vieusseux, Geneva, Switzerland
Filed June 14, 1967, Ser. No. 645,978
Claims priority, application Switzerland, June 14, 1966, 8,577/66
Int. Cl. F04c *1/16, 3/00*
U.S. Cl. 103—117 **10 Claims**



The volume spaces are defined on one hand by the opposite walls of at least two members in reciprocal contact of which one is angularly stationary and the other is in rotary motion with respect thereto. The members are held in a casing having a spherical shape. One of the members has a number of radially extending lines defining high spots or vertices corresponding to the number of volume spaces desired. These vertices are in continual sliding contact with the other part. Each of said vertices is formed by a conic sector of which the generating lines and axis all are directed towards a common point.

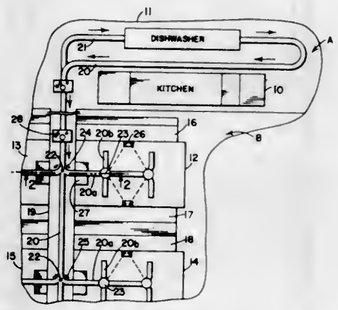
These lines form two and two each, equal trihedral angles with the axis of symmetry passing through said common point, second that the surface of the other part that is in contact with the vertices is formed by the envelope described by said vertices when the respective part is subjected to a precision with respect to the other part about an axis passing through the common point of the axes, third that the surface-portion of the first part defined by two adjacent vertices is so chosen that said relative rotary motion will be permitted, and finally that means are provided for subjecting one of said two parts to the precession about the axis of symmetry of the other part.

3,464,362
ROTARY POWER MEANS
Milburn M. Ross, 631 N. Bluff, Wichita, Kans. 67208
Filed Aug. 14, 1967, Ser. No. 660,287
Int. Cl. F04c *1/00, 3/00*
U.S. Cl. 103—139 **5 Claims**



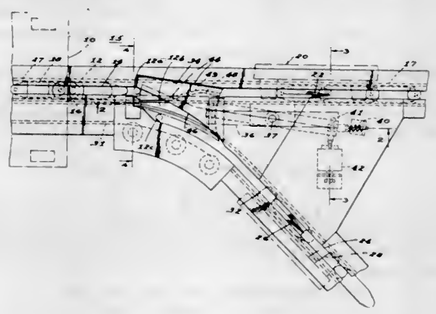
An axial vane type pump or motor having cam actuated axially movable vane members mounted for rotation in a rotor member. The device further includes fluid separating partition means upon the rotor and pressure actuated by-pass means.

3,464,363
AUTOMATIC FOOD DELIVERY AND RETURN SYSTEM
Randell J. Wishart, 303 Prospect Drive, Oak View, Calif. 93022
Filed Nov. 20, 1967, Ser. No. 684,249
Int. Cl. B61j *3/00;* **E04h** *3/04;* **B61b** *13/00*
U.S. Cl. 104—88 **4 Claims**



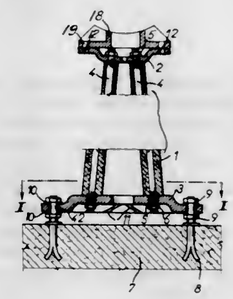
An automatic food delivery and return system is provided for delivering food from a kitchen area to an eating area and returning dishes from the eating area back to the kitchen area. The food is delivered on a powered tray guided from the kitchen area to a particular place at a table along guide means in the form of a track or elongated slot. A return track or slot structure is provided extending from the table back to the kitchen area. The guides may include branch guides so that a plurality of different tables may be served automatically by causing trays to switch from the main track or guide to selected ones of the various branches in accord with a given program. Programming of the system is effected by a person working in the kitchen area. The return of empty dishes on the tray is under control of the customer or waitress.

3,464,364
CONVEYOR SWITCH
Clarence A. Dehne, Orchard Lake, Mich., assignor to Jervis B. Webb Company, a corporation of Michigan
Filed Feb. 7, 1966, Ser. No. 525,604
Int. Cl. E01b *25/26;* **B61j** *3/04;* **B65g** *35/06*
U.S. Cl. 104—96 **15 Claims**



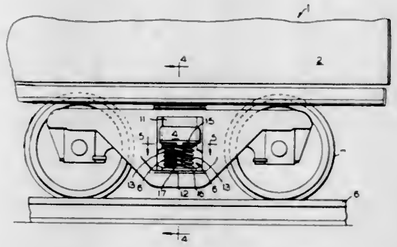
A switch for diverting a conveyor carrier propelled along one path by a forwarding pusher engaging a driving member on the carrier, in which a resetting member connected to the switch is engaged by the forwarding pusher after the carrier has been diverted to reset the switch to nondiverting position. The diverting surface of the switch defines part of the other path of travel when the switch is in nondiverting position so that resetting switch movement places the carrier driving member in position for engagement by a receiving pusher.

3,464,365
VEHICLE GUIDING TRACKS
Jean Henri Bertin, Neuilly-sur-Seine, France, assignor to Bertin & Cie, Plaisir, France, a French company
Filed Mar. 28, 1967, Ser. No. 626,509
Claims priority, application France, Mar. 30, 1966, 55,721
Int. Cl. E04h *12/16;* **E01b** *25/08*
U.S. Cl. 104—125 **7 Claims**



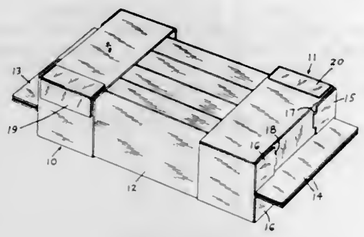
A track for a vehicle travelling with a ground effect including sections fitted endwise at a predetermined height above ground and secured to towers anchored in the ground by means adjusting the height and location of the head of the tower. The track is secured to the tower by pivoting means and its sections are interconnected by endpieces.

3,464,366
HYDRAULICALLY DAMPENED RAILWAY TRUCK BOLSTER
Orum E. Seay, Duncan, Okla., assignor to Halliburton Company, Duncan, Okla., a corporation of Delaware
Filed Sept. 29, 1966, Ser. No. 582,970
Int. Cl. B61f *5/06, 5/12*
U.S. Cl. 105—197 **5 Claims**



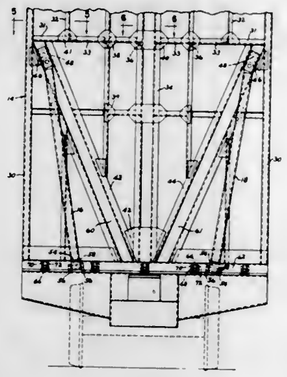
A shock-absorbing assembly interposed between the bolster and truck of a railway car and including a hydraulic shock-absorber freely nested between pocket defining shock-absorbing coil springs. Each end of the hydraulic shock absorber is disposed in disconnected stress-relieving engagement with either a truck or bolster portion.

3,464,367
APPARATUS AND PROCESS FOR SHORING PACKAGES IN SHIPPING COMPARTMENTS
Lionel E. Latter, Oakville, Ontario, Canada, assignor to Canadian International Paper Company, Montreal, Quebec, Canada, a corporation of Quebec
Filed Jan. 25, 1967, Ser. No. 611,666
Int. Cl. B61d *45/00;* **B65d** *5/58*
U.S. Cl. 105—369 **3 Claims**



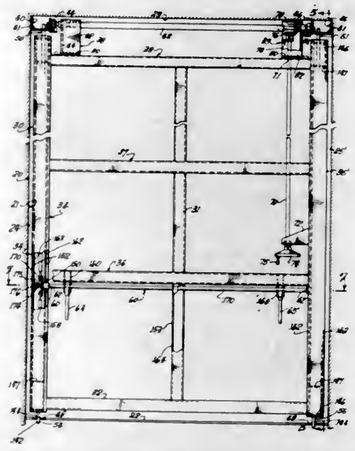
A dunnage or package shoring assembly for fitting between stacked shipping packages stored in a transportation vehicle, such as a freight car. One part of the assembly is a relatively long narrow cap or open-sided box of corrugated board with parallel protruding flaps along the closed side for insertion between two shipping packages. The other part is an accordion folded insertable pad also of corrugated board for fitting into the open side of the box. The insert is placed within the cap and between the cap and a car wall or between two caps associated with spaced stacks of packages.

3,464,368
FOLDABLE BULKHEAD FOR A RAILROAD FLATCAR
Eugene J. Cordani, Florissant, Mo., assignor to ACF Industries Incorporated, New York, N.Y., a corporation of New Jersey
Filed Nov. 8, 1967, Ser. No. 681,408
Int. Cl. B61d *45/00, 17/00*
U.S. Cl. 105—369 **2 Claims**



This invention relates to a foldable bulkhead which is particularly adapted for use on a container carrying car. The bulkhead when folded on the deck of the railway car projects a minimum distance from the deck to permit containers to be supported on corner pedestals. Removable struts are pivotally mounted to the bulkhead and are nested in recesses of the bulkhead when the bulkhead is folded onto the deck.

3,464,369
SUSPENSION AND LOCKING MECHANISM FOR LOAD DIVIDING GATE
John W. Erickson, Huntington Beach, Marlon G. Konrad, Hacienda Heights, and James McCloud, Torrance, Calif., assignors to Preco Incorporated, Los Angeles, Calif., a corporation of California
Filed July 25, 1966, Ser. No. 567,640
Int. Cl. B61d *17/00*
U.S. Cl. 105—376 **16 Claims**



The described supporting and locking structures for load dividing gates in freight carrying vehicles facilitate mounting the gate supporting shaft on plain bearings of synthetic polymerized materials by allowing free bearing movement to accommodate shaft deflection. Manual drive of the support shaft is coupled via bevel gears which are specially placed relative to the bearings to avoid gear damage due to shaft deflection.

The locking pins for locking the gate in operating position are driven by a manual shaft coupled to the pins by respective crank mechanisms. Pin engagement is insured by resilient means acting on the shaft to maintain it in fully locking position, which is at or near dead-center for the cranks. A spring may act directly on the shaft, preferably as a torsion spring inside a tubular shaft, or may act on one of the pin linkages, with mechanism for restoring that linkage to essentially dead-center position with respect to the crank.

Interference between the operating handles for closely adjacent gates is prevented by special placement of the handles.

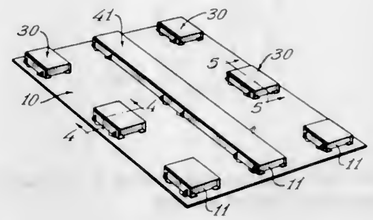
A coupling mechanism between the control shaft and locking pins permits shaft rotation through a small angle to produce pin movement corresponding generally to crank rotation through a larger angle.

Correct alinement of the locking pins with their locking recesses is facilitated by eccentric adjustment of the bearings for the gate-supporting shaft, and by relative rotational adjustment of the sprockets at the shaft ends.

3,464,370
PAPERBOARD PALLETS
Daryl T. Martin, St. Paul, Minn., assignor to Hoerner Waldorf Corporation, St. Paul, Minn., a corporation of Delaware
Filed May 8, 1968, Ser. No. 727,392
Int. Cl. B65d *19/34, 19/12, 19/16*
U.S. Cl. 108—56 **10 Claims**

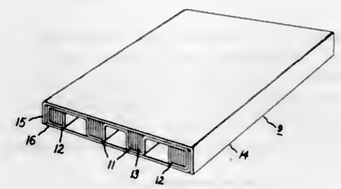
A pallet is disclosed which may be produced at low cost. It comprises a platform panel having pairs of leg-forming flaps hinged thereto, the flaps of each pair being hinged along parallel fold lines. The flaps of each pair

are folded into parallel spaced relation at right angles to the platform. A leg-forming blank is wrapped around the flaps. Each blank includes a bottom panel, side wall panels secured to opposite sides of said bottom panel, and bearing flanges hinged to the side wall panels. The bottom panel underlies the pair of flaps, the side walls extend



over the sides of the flaps and interlock therewith, and the bearing flanges are in face contact with the under surface of the platform panel and interlock the sides of said flaps. A plurality of leg-forming blanks may be combined if desired. The pallet may be impregnated with a stiffening material if desired.

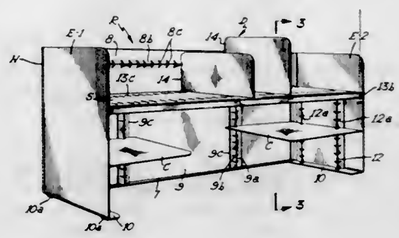
3,464,371
DISPOSABLE PALLET
Sheldon R. Gifford, Scotia, N.Y., assignor to General Electric Company, a corporation of New York
Filed Dec. 21, 1967, Ser. No. 692,569
Int. Cl. B65d *19/38, 19/00*
U.S. Cl. 108—57 **1 Claim**



A disposable fiberboard pallet has an inner generally planar structure with a plurality of integrally formed runners reinforced with fiberboard and a fiberboard envelope surrounding the inner structure.

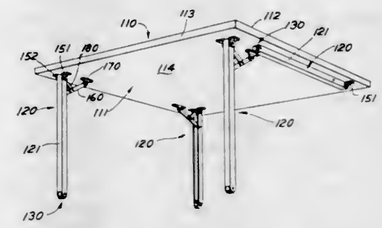
3,464,372
DESK TOP FILE WITH SELECTIVELY POSITIONABLE DIVIDERS AND CORNER SHELVES
Benjamin Fiterman and Leonard M. Paletz, Minneapolis, Minn., assignors to Fidelity File Box, Inc., Minneapolis, Minn., a corporation of Minnesota
Filed Nov. 1, 1967, Ser. No. 679,671
Int. Cl. A47b *57/10, 57/28*
U.S. Cl. 108—60 **4 Claims**

A desk top file for providing orderly divisions and compartments for various materials, and for also screening small appliances and materials, for privacy, upon a desk. This improved file is constructed from a plurality of upstanding walls, panels, shelves and vertical dividers of substantially rigid sheet material, and comprises a main rectangular back wall and two hingedly connected side walls, positioned perpendicularly and extending forwardly of the back wall when the device is set up. The main shelf and corner shelves (selectively disposed at variable heights below the main shelf) have secondary functions in rigidly interlocking the upstanding walls of the device for structural strength and simplicity. The main shelf has elongated, downturned elements rigidly interlocking with upturned attachment elements provided by the main rear wall and the side walls. A series of horizontal corner shelves are also selectively interlocked with



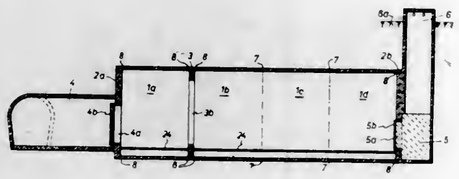
the back and side walls to further rigidify the overall structure. The structure may be very compactly collapsed, with the side walls being swung rearwardly flush against the rear wall and with the vertical dividers and corner shelves being compactly overlaid and disposed beneath the main horizontal shelf, to form a very shallow profile package for shipment, storage and sale.

3,464,373
FOLDING LEG ASSEMBLY
Charles O. Larson, Sterling, Ill., assignor to Chas. O. Larson Co., Sterling, Ill., a corporation of Illinois
Filed Feb. 28, 1967, Ser. No. 619,238
Int. Cl. A47b *3/087*
U.S. Cl. 108—125 **1 Claim**



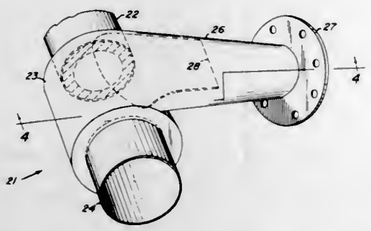
There is disclosed herein a folding leg assembly for supporting a table top or the like, comprising an elongated leg hingedly connected to the underside of the table top. The leg has a generally U-shaped cross-section and includes an elongated main wall and opposed spaced-apart side flanges on the longitudinal edges of the main wall. A brace including a pair of arms hingedly interconnects the legs to the underside of the table, the leg in the folded position thereof receiving and enclosing therein the brace. In one embodiment disclosed, the lower end of the leg is provided with a roller mounted on the side flanges at the lower end of the leg, the diameter of the roller being less than the lateral extent of one of the side flanges. In a second embodiment disclosed, the lower end of the leg is provided with a brace which is pivotal relative to the lower end of the leg so as to provide an enlarged support surface when the leg is in its support position. In the third embodiment disclosed the lower end of the leg is provided with an adjustable extension whereby the height of the table may be varied.

3,464,374
UNDERGROUND SHELTER
Ernst Basler, Sillerwies 17, Zurich, Switzerland, and Hans Frehner, Sonnenhaldenstrasse 64, Saint Gall, Switzerland
Filed July 5, 1966, Ser. No. 562,617
Claims priority, application Switzerland, July 8, 1965, 9,582/65
Int. Cl. E05g *3/00*
U.S. Cl. 109—1 **2 Claims**



An underground shelter for protection against the effects of a nuclear blast constituted by an assembly of a plurality of tubular elements in end-to-end arrangement with structural members at its ends for closing the shelter while furnishing access to the assembly. The tubular elements have relatively thin walls so as to be resilient and elastically and plastically deformable, the ends of said tubular elements being connected to one another and to the structural members so as to be relatively slidable in a transverse direction, thereby permitting the shelter to yield under the action of substantial force without structural failure.

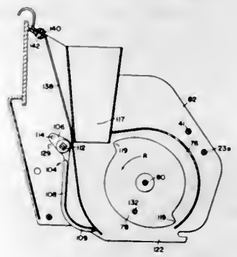
3,464,375
INCINERATOR WITH FLUID TURBULATOR
James Leon Tarbox, Edgewood, Md., assignor to the United States of America as represented by the Secretary of the Army
Filed July 11, 1967, Ser. No. 652,636
Int. Cl. F23l *17/16;* **F23b** *1/38*
U.S. Cl. 110—7 **2 Claims**



A fluid turbulator for an incinerator for combustible radioactive waste to provide efficient flue gas cooling and elimination of leakage.

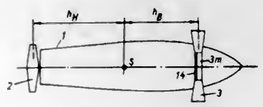
3,464,376
PLANTER
Leslie William Johnson, Moline, and Edwin William Reeder, Rock Island, Ill., assignors to Deere & Company, Moline, Ill., a corporation of Delaware
Filed May 3, 1966, Ser. No. 547,329
Int. Cl. A01c *7/18;* **G01f** *11/24*
U.S. Cl. 111—51 **1 Claim**

A seed boot for a planter which selects individual seeds. The boot is provided with a rotary valve which cooperates with a rubber and spring steel cutoff valve to group the individual seeds into hills. Structure is provided to hold



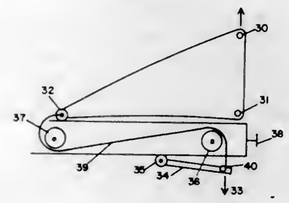
the rotary valve and the cutoff valve in inoperative positions to permit drilling of the seed.

3,464,377
AUTOMATICALLY STABILIZED HYDROFOIL BOAT
Hanns von Schertel, Hergiswil am See, Switzerland, assignor to Supramar A.G., Lucerne, Switzerland
Filed Feb. 7, 1967, Ser. No. 614,392
Claims priority, application Germany, Feb. 7, 1966, S 101,880
Int. Cl. B63b *1/26, 1/38*
U.S. Cl. 114—66.5 **11 Claims**



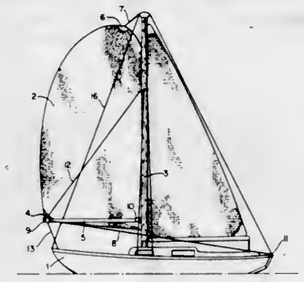
Displacement of a hydrofoil boat by rolling or pitching movements is compensated by righting torques produced by the automatic discharge of air from the hydrofoils under the control of means which automatically respond to the undesired displacement of the boat about its center of gravity to open control valves in the air ducts of the hydrofoils.

3,464,378
OUT-HAUL/DOWN-HAUL SAIL CONTROL DEVICE
Preston L. Veltman, 212 Old County Road, Severna Park, Md. 21146
Filed Jan. 26, 1968, Ser. No. 700,791
Int. Cl. B63h *9/04*
U.S. Cl. 114—102 **6 Claims**



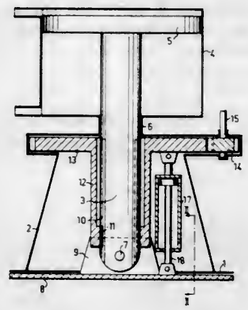
A device and method for adjusting the out-haul and down-haul tensions on a sail according to a predetermined ratio to obtain optimum sail configuration, wherein a single downward force applied to a variable force multiplier mounted on the boom is transmitted to the sail as out-haul and down-haul tensions, in accordance with a desired ratio.

3,464,379
SPINNAKER POLE
John B. Lawson, 368 New Meadow Road, Barrington, R.I. 02806
Filed Feb. 15, 1968, Ser. No. 705,784
Int. Cl. B63h *9/04*
U.S. Cl. 114—102 **8 Claims**



A sailing craft having a deck, mast and forestay is provided with a spinnaker pole which may be shortened telescopically or by folding. Mechanical and hydraulic devices control extension and contraction.

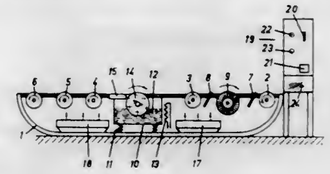
3,464,380
AUXILIARY PROPULSION DEVICE FOR SHIPS
Karl Gustaf Birger Thordén, Marklandsgatan 5, Goteborg, Sweden
Filed Apr. 11, 1968, Ser. No. 720,596
Claims priority, application Sweden, Apr. 19, 1967, 5,467/67
Int. Cl. B63h *1/30*
U.S. Cl. 115—29 **7 Claims**



An auxiliary propulsion device for maneuvering ships at low speed comprising a reciprocating rod having an oscillating plate pivotally connected to its end, said plate generating a driving force on the ship due to the flow of water created between said plate and the shell plating of the ship.

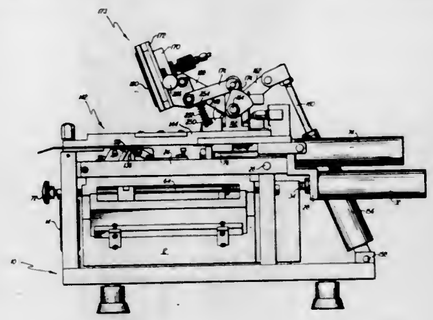
3,464,381
WAXING MACHINE FOR SKIS
Henri Rey, Hautes Roches, Crans-sur-Sierre, Switzerland
Filed Sept. 28, 1967, Ser. No. 671,299
Int. Cl. B05c *1/06*
U.S. Cl. 118—202 **4 Claims**

A waxing liquid coating device for skis which includes a rotating brush rotating partially in the waxing liquid, the improvement consisting in periodically rotating the brush at predetermined time intervals and durations be-



tween the coating operations of the ski to prevent the waxing liquid to harden on the brush.

3,464,382
MACHINE FOR APPLYING COATING MATERIAL TO A WORKPIECE
Allen C. Harriman, Brockton, and Charles A. Robinson, Waltham, Mass., assignors to Jacob S. Kamborian, West Newton, Mass.
Filed Mar. 13, 1967, Ser. No. 622,517
Int. Cl. B05c *1/02, 1/08;* **B41l** *13/02*
U.S. Cl. 118—406 **13 Claims**

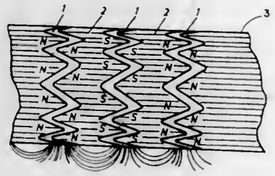


An apparatus for coating a portion of a workpiece with stiffening material. The workpiece is supported over a hole in a flexible mask. A resilient pad having an upwardly concave mount bears against the top of the workpiece and overlies a hole in the mask. A suction force applied through the mound causes the portion of the workpiece that is over the mask hole to bear against the mound. An applicator is caused to move along the bottom of the mask and across the mask hole in a work stroke. Coating material is forced from the applicator during the work stroke to enable the applicator to scrape the coating material into the mask hole and fill up the space within the mound with the coating material adhering to the workpiece. A roll is mounted to bear against the mask during the applicator movement to prevent buckling of the mask. A pumping mechanism is incorporated in the mechanism for forcing the coating material through the applicator during the work stroke.

3,464,383
POWDER DISPENSING CYLINDER FOR AN ELECTROSTATIC POWDER FIXING DEVICE
Wilhelm Knechtel, Paulinenstrasse 18, Rodheim-Bieber, Germany
Filed Jan. 16, 1967, Ser. No. 609,386
Claims priority, application Germany, Jan. 14, 1966, E 30,838
Int. Cl. B65d *83/06;* **G03g** *15/08;* **B05b** *5/02*
U.S. Cl. 118—637 **8 Claims**

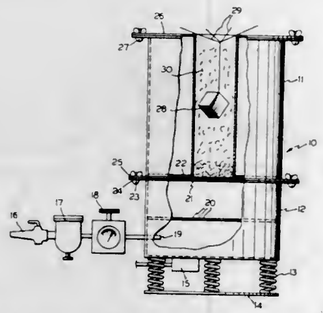
A magnetic cylinder for dispensing toner powder in an electrostatic powder image printing apparatus wherein the cylinder comprises circumferentially undulating al-

ternately spaced north and south pole magnetic elements on its peripheral surface. The undulations of the north



and south pole elements correspond so that a plurality of closely adjacent pairs of north and south poles are defined along the peripheral surface.

3,464,384
FLUIDIZED BED COATER
Harvey Miller, 715 S. Washington St. 22314, and Woodrow Thurston, 8906 Woodlawn Court 22309, both of Alexandria, Va.
Filed Aug. 28, 1967, Ser. No. 664,241
Int. Cl. B05c *3/04, 3/103*
U.S. Cl. 118—429 **2 Claims**



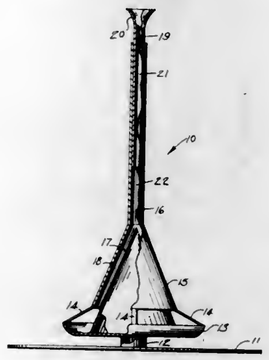
This invention relates to fluidized bed coaters and, more particularly, to the improvements of providing a filter paper means to act as a disposable porous disc for dispersing the air and furnishing a uniform bed for support to resin particles, and of providing a series of spool shaped coating chamber size adjusting inserts whereby a minimum amount of resin particles can be used to meet the requirements of coating differently sized specimens.

3,464,385
METHOD OF AND APPARATUS FOR ENHANCING SALMON SPAWNING
Warren C. Pellett, Sr., Box 394, Sitka, Alaska 99835
Filed Nov. 22, 1967, Ser. No. 684,990
Int. Cl. A01k *61/00;* **F04f** *7/02*
U.S. Cl. 119—3 **6 Claims**



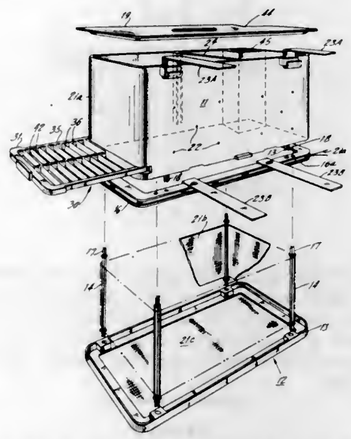
A method of rehabilitating salmon spawning streams by bubbling air up through the gravel of the stream bed from a plurality of points spaced throughout the treated area. Air under pressure is generated by a simple hydraulic ram utilizing the natural flow of the stream.

3,464,386
TROPICAL FISH FEEDING DEVICE
Glenn O. Baker, 1224 N. Home Road, R.D. 3, Mansfield, Ohio 44903
Filed Mar. 29, 1967, Ser. No. 626,889
Int. Cl. A01k *61/02*
U.S. Cl. 119—5 **1 Claim**



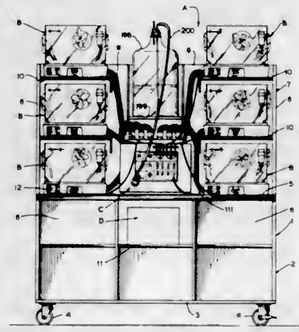
A fish feeder with telescoping sleeves to adjust for the height of an aquarium with an inner and outer cone which will spread the feed as it descends to the lower extremity of the feeder and a base which is held down by the gravel within the aquarium. The feeder allows the food to be evenly spread within the bowl of the lower extremity and prevents contamination of the aquarium by spoiled food.

3,464,387
FISH BREEDER
Arturo Martinez, Apartada Aereo 8897, Bogota, Colombia
Filed May 8, 1967, Ser. No. 636,847
Int. Cl. A01k *63/00, 64/00, 61/00*
U.S. Cl. 119—5 **6 Claims**



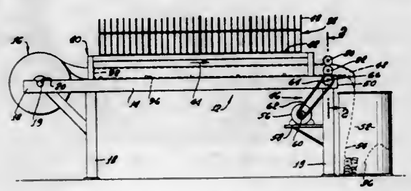
A fish breeder having a first chamber into which are placed fish about to give birth and a second chamber, disposed beneath the first chamber, into which the newborn fish are to pass; and a horizontal partition between the two chambers consisting of two elements in surface engagement; both of the elements are comprised of a number of parallel spaced apart slats; one of the elements is movable with respect to the other whereby the slats on the movable element can be moved into a position either to block the openings between the slats on the other element which prevents anything from passing through the partition, or to register with the slats on the other element, causing the openings in the two elements to register, thereby permitting the bypassage of baby fish through the partition into the second chamber; the openings through the partition are also adjustable to intermediate positions sufficiently close that baby fish can pass through the openings between them but adult fish cannot.

3,464,388
GNOTOBIOTIC SYSTEMS
Rodney W. Stout, 211 Cheney, Webster Groves, Mo. 63119
Filed Mar. 6, 1967, Ser. No. 620,843
Int. Cl. A01k *1/00, 31/00;* **B01d** *47/00*
U.S. Cl. 119—15 **40 Claims**



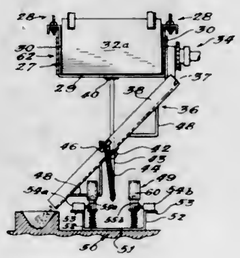
A gnotobiotic system which includes a plurality of animal incubators which can serve as isolators, and an atmosphere generator for delivering air of temperatures and humidity controlled conditions to the incubators. Each of the incubators has individual control systems and the generator includes a central control system operatively connected to the individual control systems. The incubator includes a double walled sleeve providing entry thereinto and a shiftable valve for removing excretia therefrom. The incubator is constructed for unitary removal of all electrical components for sterilization. An exhaust air removal system may be optionally provided.

3,464,389
APPARATUS FOR RECEIVING AND REMOVING DROPPINGS FROM CAGED ANIMALS
Maurice Seiderman, Hollywood, Calif., assignor to William Stone, Jr., Sherman Oaks, Calif.
Continuation-in-part of application Ser. No. 503,493, Oct. 23, 1965. This application Jan. 16, 1967, Ser. No. 609,459
Int. Cl. A01k *31/04*
U.S. Cl. 119—22 **13 Claims**



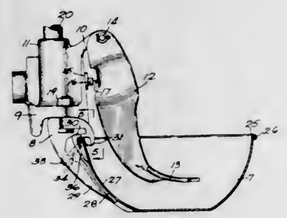
An apparatus utilizing a disposable traveling membrane of plastic material disposed under a row of cages and fed from a roll onto a fixed supporting structure; the membrane completely covering the top and sides of the supporting structure, and the supporting structure causing the membrane to assume an essentially catenary profile.

3,464,390
PROGRAM CONTROLLED SHUTTLE FEEDER
Robert G. Ferris, Harvard, and Allen K. Gillette, Belvidere, Ill., and Howard J. Ferris, Gulfport, Fla., assignors to Starline, Inc., a corporation of Delaware
Filed July 21, 1967, Ser. No. 655,223
Int. Cl. A01k *5/02;* **B65g** *47/34*
U.S. Cl. 119—56 **33 Claims**



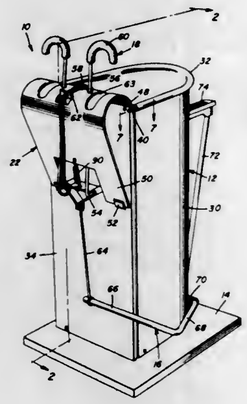
A shuttle type animal feeding apparatus including a trough that receives material thereon at a plurality of material carrying areas from a central supply source, with the trough being reciprocable back and forth over a plurality of animal feeding stations and beneath first and second sets of pivoted sweep members at opposite sides of the supply source which discharge material in the material carrying areas from opposite ends of the trough to the feeding stations. Means is provided for regulating and controlling the amount of material that is deposited in the material carrying areas, so that the amount of feed being discharged from each end of the trough into the animal feeding stations can be varied end controlled.

3,464,391
ANIMAL DRINKING FOUNTAIN
George D. Prentice, Milwaukee, Wis., assignor to A. F. Klinzing Co., Inc., Milwaukee, Wis., a corporation of Wisconsin
Filed Oct. 17, 1967, Ser. No. 675,870
Int. Cl. A01k *7/00;* **F16k** *31/62*
U.S. Cl. 119—75 **6 Claims**



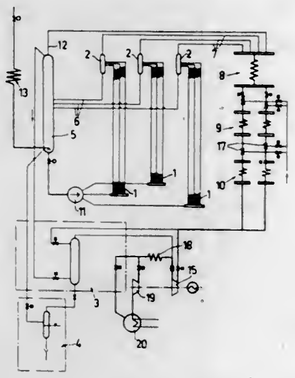
An animal drinking fountain having a water supply valve controllable by a nose operable lever to supply drinking water to a bowl which is secured in position against displacement by a clamp coacting with the rim and side wall of the bowl.

3,464,392
HOG CHUTE
Ernest G. Hoyme, Box 1327, and Clifford L. Hoyme, 8 Montcalm Ave., both of Camrose, Alberta, Canada
Filed Aug. 28, 1967, Ser. No. 663,649
Int. Cl. A61d *3/00*
U.S. Cl. 119—103 **12 Claims**



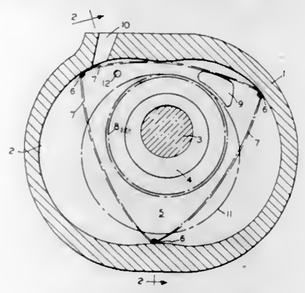
A device for holding and restraining small pigs when performing castration, doctoring and tattooing operations. The animal is inserted head first or tail end first into a vertical housing or chute from which an arcuate leg rest extends having recesses receiving the legs of the animals. By foot pedal action, leg clamps and a body restraining compression element are simultaneously engaged with the animal to immobilize it.

3,464,393
STEAM GENERATOR WITH FORCED CIRCULATION
Lars Axel A. Chambert, Kallhall, Sweden, assignor to AB Svenska Maskinverken, Kallhall, Sweden, a Swedish joint-stock company
Filed Oct. 27, 1967, Ser. No. 678,657
Claims priority, application Sweden, Oct. 28, 1966, 14,839/66
Int. Cl. F22b *37/62;* **F22g** *7/00*
U.S. Cl. 122—406 **2 Claims**



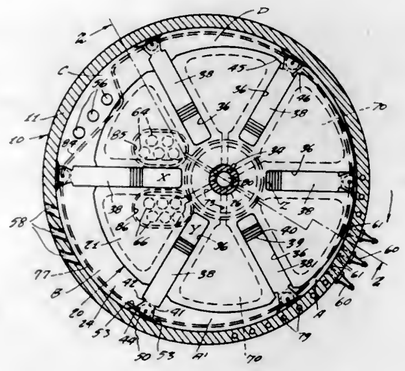
A steam generator with forced circulation having a preheater, an evaporator, a superheater, a plurality of steam separators, and a mixing vessel. The steam separators are connected directly between the steam generating tubes of the evaporator and the preheater and the steam separators have return tubes which, together with the output of the preheater, are connected to the mixing vessel. A means is also provided for maintaining a predetermined amount of the working medium in the mixing vessel.

3,464,394
ROTARY PISTON INTERNAL COMBUSTION ENGINE
Hideya Satoh, Hiroshima-shi, Japan, assignor to Toyo Kogyo Company Limited, Hiroshima-ken, Japan
Filed Nov. 8, 1967, Ser. No. 681,507
Claims priority, application Japan, Nov. 9, 1966, 41/103,335
Int. Cl. F02b *53/04, 55/14*
U.S. Cl. 123—8 **4 Claims**



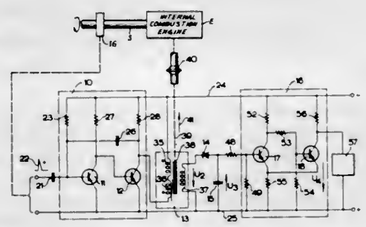
A rotary piston internal combustion engine having a fresh air pouring port opening to the working chamber under the exhaust stroke in the end wall of the housing for clarification of the exhausting burnt gases by oxidizing carbon monoxide and hydrocarbon contained in the exhausting gases.

3,464,395
MULTIPLE PISTON VANE ROTARY INTERNAL COMBUSTION ENGINE
Donald A. Kelly, 58—06 69th Place, Maspeth, N.Y. 11378
Filed Nov. 27, 1967, Ser. No. 685,792
Int. Cl. F02b *55/02, 55/10;* **F04b** *1/10*
U.S. Cl. 123—16 **10 Claims**



An internal combustion engine having a cylindrical casing with end closure plates and an eccentric rotor fitted therein secured to a drive shaft supported by bearing on the end closure plates. The rotor carries a plurality of angularly spaced radial piston vanes reciprocating each in an associated radial slot. Ball bearing mounted rollers either on the outer ends of the piston vanes rolling on the inside cylindrical wall of the cylinder casing or at the opposite end sides of the piston vanes and rolling in annular grooves in the end closure plates operate to impart the reciprocatory movement to the piston vanes as the rotor rotates. The chambers formed between the projecting portions of the piston vanes, cylinder wall and end closure plates form intake, compression, combustion and exhaust chambers. Similar chambers are formed between the inner ends of the piston vanes, the bottom wall of the slots and the end closure plates. Both types of chambers, from intake to exhaust, treat the gaseous fuel to effect a combined internal combustion engine of the rotary and reciprocating types. A cooling system is provided to cool by means of pressurized flow of a liquid coolant both the end closure plates and the interior of the rotor. Appropriate sealing members both metallic and non-metallic at the outer ends of the piston vanes serve to establish a complete seal against the flow of gases past the same.

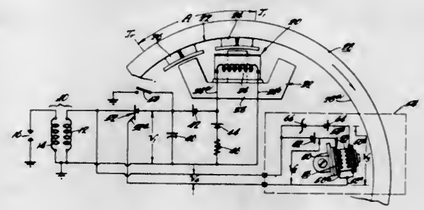
3,464,396
IMPULSE GENERATOR
Hermann Scholl, Stuttgart, Germany, assignor to Robert Bosch GmbH. Stuttgart, Germany, a limited-liability company of Germany
Filed Aug. 17, 1967, Ser. No. 661,339
Claims priority, application Germany, Aug. 31, 1966, B 88,710
Int. Cl. F02m *51/00;* **H03k** *3/295*
U.S. Cl. 123—32 **5 Claims**



A differential transformer has an adjustable core element connected to a vacuum chamber of an internal combustion engine; pulses, in synchronism with the speed of the engine, are applied to the differential transformer and a condenser interconnects the output thereof to a voltage-sensitive switch which will be triggered sequentially in dependence on the speed of the engine; trigger pulses having a time duration depending on the core position (and hence manifold vacuum of the engine) then control the fuel injection valve.

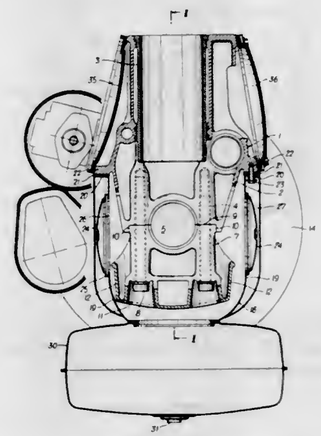
3,464,397
IGNITION SYSTEM FOR INTERNAL COMBUSTION ENGINES AND THE LIKE
Bob Orman Burson, East Longmeadow, Mass., assignor to AMBAC Industries, Incorporated, a corporation of New York
Filed Jan. 23, 1967, Ser. No. 614,385
Int. Cl. F02p *3/02, 7/00;* **H05b** *41/14*
U.S. Cl. 123—148 **26 Claims**

An ignition system for an engine with an ignition device is provided having flux generating means on a rotatable part of the engine. A first winding is supported by a non-rotatable structure and cooperable with the flux generating means for generating pulses. Charge storage means is provided and first rectifier means connects the charge storage means to the first winding. Switch means



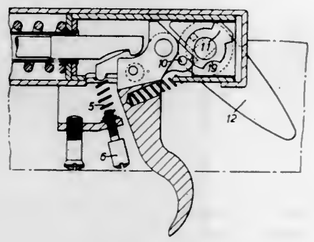
is responsive to a control signal for connecting the charge storage means to the ignition device. A second winding is supported on a non-rotatable structure and cooperable with the flux generating means to generate a control signal. Second rectifier means connects the second winding to the switching device for actuating the switching device.

3,464,398
SOUNDPROOFED INTERNAL COMBUSTION ENGINE
Andreas Scheiterlein, Othmar Skatsche, and Gerhard Thien, Graz, Austria, assignors to Hans List, Graz, Austria
Filed May 3, 1968, Ser. No. 726,422
Claims priority, application Austria, June 2, 1967, A 5,170/67
Int. Cl. F02b *77/00;* **F02f** *7/00*
U.S. Cl. 123—195 **4 Claims**



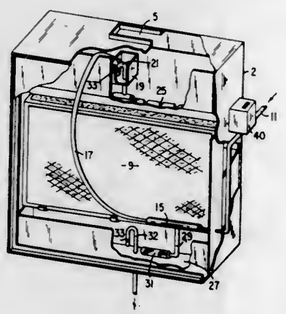
An internal combustion engine in which the crankcase has a sound absorbing layer in the form of a sheeting consisting of an oil pan and upright walls protruding up and above the crankshaft center, with the latter having bearing blocks on the crankcase and bearing brackets with a connecting bridge interconnecting the bearing brackets.

3,464,399
AIR GUN TRIGGER AND SAFETY DEVICE
Colin Hordley Fisher, Motherwell, Scotland, assignor to Millard Brothers Limited, London, England, a British company
Filed Apr. 4, 1966, Ser. No. 539,825
Claims priority, application Great Britain, July 12, 1965, 29,372/65
Int. Cl. F41c *19/06, 17/02*
U.S. Cl. 124—37 **4 Claims**



An air gun trigger action in which the trigger acts on a release sear through a lost-motion arrangement, and a safety catch immobilizes the trigger while still allowing cocking movement of the sear.

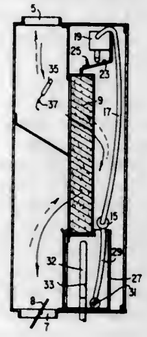
3,464,400
HUMIDIFIER
Donald C. Wellman, Marcellus, N.Y., assignor to Carrier Corporation, Syracuse, N.Y., a corporation of Delaware
Filed Nov. 15, 1967, Ser. No. 683,205
Int. Cl. B01f *3/04;* **F24h** *3/14*
U.S. Cl. 126—113 **4 Claims**



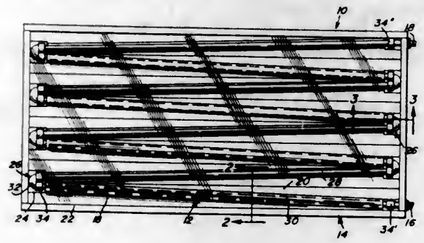
A humidifier adapted for use with a forced air furnace having a thermally operated water supply valve to regulate the flow of water to be evaporated.

3,464,401
METHOD AND APPARATUS FOR HUMIDIFICATION
William L. McGrath, Syracuse, N.Y., assignor to Carrier Corporation, Syracuse, N.Y., a corporation of Delaware
Filed Nov. 15, 1967, Ser. No. 683,206
Int. Cl. F24f *3/14*
U.S. Cl. 126—113 **2 Claims**

A humidifier adapted for use with a forced air furnace having a thermally operated water supply valve for operating the humidifier to provide a decreasing relative humidity in the conditioned area as exterior temperatures decrease.

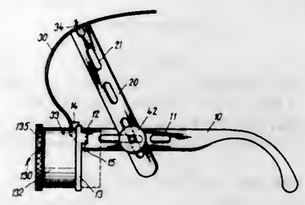


3,464,402
SOLAR HEAT EXCHANGER CONSTRUCTION
Frank Collura, 2121 Erna Drive, Tampa, Fla. 33603
Filed Sept. 21, 1967, Ser. No. 669,596
Int. Cl. F24j *3/02;* **F28f** *1/32*
U.S. Cl. 126—271 **10 Claims**



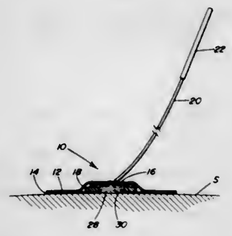
A solar heater assembly formed from a plurality of horizontal, abutting panels made of aluminum having inclined grooves receiving straight tube sections made from discarded fluorescent tubes with the terminal ends cut off. The grooves in adjacent panels open from opposite sides of the panel assembly and the tube sections are interconnected at opposite recessed ends of the panels by U-shaped couplings.

3,464,403
SENSING DEVICE FOR A PLETHYSMOGRAPH
Štěpán Figar, Prague, Czechoslovakia, assignor to Ceskoslovenska akademie ved, Prague, Czechoslovakia
Filed July 14, 1965, Ser. No. 471,844
Claims priority, application Czechoslovakia, July 24, 1964, 4,304/64
Int. Cl. A61b *5/02;* **A61m** *35/00*
U.S. Cl. 128—2.05 **9 Claims**



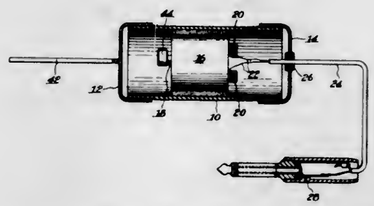
The capacitance measuring circuit of a plethysmograph which includes a spectacle frame on which one or more electrodes are mounted in spaced relationship to the bearer on the temple pieces and/or in the rims normally occupied by glasses. The familiar frame does not produce psychological reactions which would affect the results of the measurements.

3,464,404
BIO-MEDICAL INSTRUMENTATION ELECTRODE
Robert E. Mason, Baltimore, Md., assignor to The Johns Hopkins University, a corporation of Maryland
Filed June 17, 1966, Ser. No. 558,316
Int. Cl. A61b *5/04*
U.S. Cl. 128—2.06 **7 Claims**



A bio-medical instrumentation electrode having a paste immersed, plastic mounted metallic mesh as a flexible, ventilated electrode, providing constancy of contact by avoidance of pressure differences between the paste and the atmosphere.

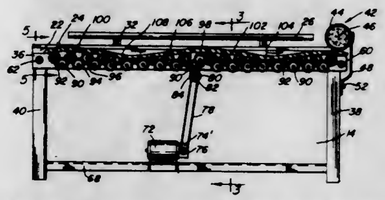
3,464,405
VIBRATOR-MASSAGE DEVICE
Samuel Kallus, 35—44 75th St., Jackson Heights, N.Y. 11372
Filed Mar. 7, 1966, Ser. No. 532,225
Int. Cl. A61h *1/00, 7/00, 23/00*
U.S Cl. 128—33 **4 Claims**



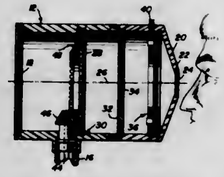
A vibrator-massage device using an electric motor powered by batteries. The motor shaft is connected to an eccentric weight. When the motor runs, vibrations are produced. These vibrations are transmitted to a wand. The motor, wand and other parts are imbedded in a foam rubber body whereby the vibrations are uniformly disposed and amplified in the body.

3,464,406
THERAPEUTIC COUCH
Thomas Kunce, 7946 Birchdale, Elmwood Park, Ill. 60635
Filed Aug. 2, 1967, Ser. No. 657,831
Int. Cl. A61h *15/00, 7/00*
U.S. Cl. 128—57 **6 Claims**

A therapeutic couch wherein, in one embodiment, a soft, flexible pad, adapted to receive a body in repose, is supported by a series of spaced, transverse, rotatable, elongated eccentric members which upon simultaneous rotation serially in opposite directions from a central drive member, impart an undulating, wave-like massaging action to the body. Other embodiments are disclosed including the use of double eccentric cams and an auxiliary leg rest also having rotating eccentric cams to undulate a pad.

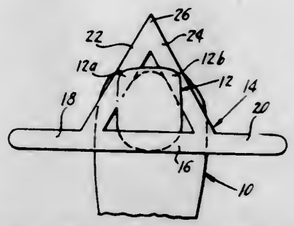


3,464,407
DIAGNOSTIC AND THERAPEUTIC INSTRUMENT FOR DISORDERS OF THE EYES
Dean W. Larson, 1000 E. Alosta, Citrus Gardens, Apt. 39, Azusa, Calif. 91702, and Josephine L. Rinaldi, New Orleans, La. (3030 Edenboro Ave., Apt. 106, Metairie, La. 70002)
Filed Jan. 21, 1966, Ser. No. 522,201
Int. Cl. A61h *5/00*
U.S. Cl. 128—76.5 **7 Claims**



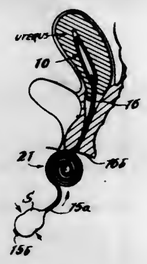
A monocular instrument for diagnosing and treating certain eye disorders by use of the rotating Haidinger brush phenomenon. A tubular housing fixed to a handle rotatably mounts a polarizing filter in axially spaced relation to a stationary blue-violet filter aligned with an adjustable iris and a viewing aperture at one closed end of the housing. The polarizing filter is rotated by a battery operated motor in the handle.

3,464,408
TRIANGULAR BANDAGE FOR RELIEVING INGROWN TOENAILS
Robert G. Hamlin, 2104 Surrey Roads, Sacramento, Calif. 95815
Filed Nov. 8, 1966, Ser. No. 592,882
Int. Cl. A61f *5/11, 7/02*
U.S. Cl. 128—81 **4 Claims**



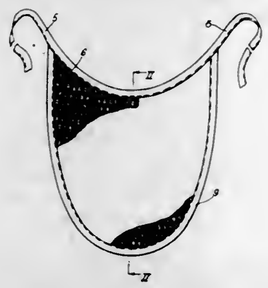
A triangular shaped bandage having an adhesive backed base member and a pair of converging medication carrying side strips is disclosed with the bandage being arranged to have the medicated side strips engage under the corners of the toenail with the nail projecting through a triangular open area centrally of the bandage. The tip of the converging side strips also is provided with adhesive to secure the point of the bandage under the toe.

3,464,409
BIRTH CONTROL MEANS
James Murphy, 50 E. 69th St., New York, N.Y. 10021
Filed Oct. 21, 1965, Ser. No. 499,223
Int. Cl. A61f *5/46;* **A61m** *31/00*
U.S. Cl. 128—129 **5 Claims**



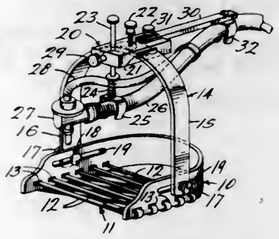
An intrauterine contraceptive device comprising a soft, resilient inflatable cylindrical tube, having special expandible pouches positioned axially about this tube. Attached to one end is a hose for introducing either air or water from outside the uterus into the device to inflate it to its working size and to prevent extrusion from the womb. Prior to insertion it is deflated and of such small diameter as to permit easy and comfortable insertion into the uterus. Once in place and inflated by air or water pressure, provision is made to seal the hose to prevent leakage and subsequent deflation. If, at any time subsequent to placement in the uterus, conception is desired, removal of the device is easily accomplished by merely breaking the seal, thus permitting the water or air to leak out and deflating the device to its original small diameter. Removal is then accomplished by pulling on the end of the hose which has been left in the vagina, coiled around the cervix.

3,464,410
RESPIRATORY PAD
William Buchanan, Glenwood, Gryffe Road, Bridge of Weir, Renfrewshire, Scotland
Filed Jan. 19, 1966, Ser. No. 521,612
Claims priority, application Great Britain, Jan. 26, 1965, 3,467/65
Int. Cl. A61f *13/00, 15/00;* **A61m** *15/00*
U.S. Cl. 128—140 **1 Claim**



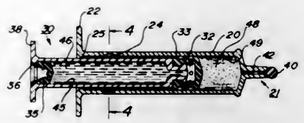
A respiratory pad for use over the respiratory neck opening in a laryngectomy, tracheotomy and similar cases. The pad includes a series of superposed sheets from front face to rear face in succession of mesh fabric, microporous heat insulating material and mesh fabric. The sheets are bound together at their edges.

3,464,411
RESPIRATOR HOLDER DEVICE
Angel V. Martinez, 1387 East Blvd., Cleveland, Ohio 44106
Filed Mar. 22, 1967, Ser. No. 625,079
Int. Cl. A62b *9/04*
U.S. Cl. 128—145.8 **8 Claims**



A device for positioning the mouthpiece of a respirator relative to the mouth of a patient lying in face-up position. The device includes a base to support the head of the patient and a rigid frame extending over the face of the patient when in such face-up position. A suspension member is adjustably positioned over the face of the patient to support a resiliently suspended mouthpiece and associated tubing at the position of the patient's mouth. The resilient suspension means permits movement of the mouthpiece as the head of the patient is turned. Part of the rigid frame can be swung to a remote position to facilitate access to the patient's head without removal of the head from the device.

3,464,412
INTERMIXING SYRINGE
Boris Schwartz, 400 Park Ave., Paterson, N.J. 07504
Filed June 12, 1967, Ser. No. 645,264
Int. Cl. A61m *5/00;* **A61j** *1/00;* **B67d** *5/42*
U.S. Cl. 128—218 **9 Claims**

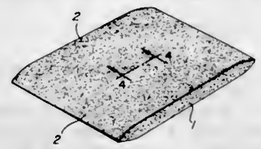


A syringe combination having an outer housing and a hollow plunger providing a pair of chambers of determined size. The plunger is provided with a piston having a plurality of spaced, ring-like sealing surfaces and with a fluid passageway from the interior of the plunger which is flow-connected to the outer piston surface and between ring-like sealing surfaces. The outer housing has one or more recesses of determined size formed in its inner surface with the recesses positioned near the open end of the housing and of a length so that the rearmost sealing surface of the plunger piston engages the housing between the recesses and the rear end of the housing when the flow-connection is brought into a fluid conducting position with the recess.

3,464,413
MEDICAL BANDAGES
Alvin Goldfarb, Franklin Lakes, and William A. Geiler, Metuchen, N.J., assignors to United Merchants and Manufacturers, Inc., New York, N.Y., a corporation of Delaware
Filed May 26, 1967, Ser. No. 641,647
Int. Cl. A61f *13/00;* **A61l** *15/03*
U.S. Cl. 128—268 **5 Claims**

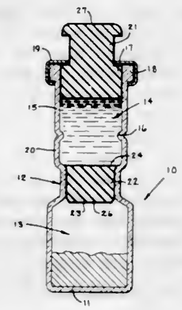
A medical dressing construction comprising a dressing substrate having adhered theron a multiplicity of micro-

scopic discrete rupturable capsules, each of the capsules comprising liquid droplets encapsulated within an outer



shell, and each of the droplets containing a medicament material capable of aiding in the healing of injuries.

3,464,414
MIXING VIAL CONSTRUCTION
Harry Sponnoble, Orange, Calif., assignor to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware
Continuation-in-part of application Ser. No. 752,907, Aug. 4, 1958. This application July 31, 1963, Ser. No. 299,039
Int. Cl. A61j *1/00;* **B65d** *1/04, 79/00*
U.S. Cl. 128—272 **1 Claim**



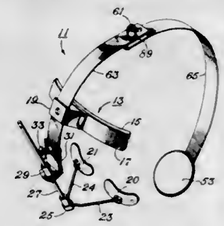
A plural compartmented mixing vial is disclosed which has upper and lower chambers separated from one another by a center sealing plug of butyl rubber coated with silicone fluid. The upper chamber is liquid filled while the lower chamber contains a desiccated pharmaceutical product. A piston located at the top of the upper liquid containing chamber when compressed, hydraulically discharges the center plug into the lower chamber allowing mixing of the contents just prior to use. The sealing plug prevents moisture from passing into lower chamber since butyl rubber prevents moisture transmission therethrough. The silicone fluid aids as a lubricant in easy displacement of the butyl plug when the piston is actuated.

3,464,415
SURGICAL SPONGE AND METHOD OF PRODUCING SAME
William G. Brownlee, 1795 Westhaven Road, San Marino, Calif. 91108
Filed Oct. 25, 1967, Ser. No. 677,922
Int. Cl. A61f *13/00;* **B32b** *7/08;* **C09j** *5/00*
U.S. Cl. 128—296 **6 Claims**



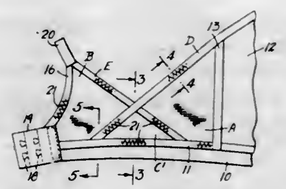
The invention pertains to surgical sponges of the type commonly known as neuro sponges, brain pattys and neurological sponges which are particularly applicable for use in surgical operations on the human brain and which embodies a thin narrow strip of cotton felt material commonly referred to as "spongue" to which is initially attached by conventional stitching a radiopaque thermoplastic cord extending longitudinally of the strip on one side and centrally thereof; the invention residing in the mode of permanently bonding the cord to said strip and to said stitching under the combined action of heat and pressure whereby the cord will be securely held against detachment from the strip.

3,464,416
SLEEP INDUCING METHOD AND HEADPIECE
Robert A. Williams, Fort Worth, Tex., assignor to Williams Instruments, Inc., Fort Worth, Tex.
Continuation-in-part of application Ser. No. 408,895, Nov. 4, 1964. This application Aug. 25, 1967, Ser. No. 668,280
Int. Cl. A61m *21/00;* **A61n** *1/02*
U.S. Cl. 128—410 **10 Claims**



A method and apparatus whereby electrical energy is transmitted through the head to induce sleep by placing electrodes on the infraorbital ridges and on the rear region of the head. The apparatus disclosed for positioning the electrodes against the infraorbital ridges includes an arcuate band extending fore and aft over the head to support a rear electrode and a forehead clamp. A shaft is slidably and adjustably mounted to the band to extend downward along the nose region of the face and a pair of rods are radially and rotatably mounted to the shaft for pivotally supporting the infraorbital electrodes. The electrodes have a yieldable plate, preferably foraminous, core to assume an infraorbital ridge facial contour, being covered with electrically conductive nonmetallic materials such as silicone rubber. An electric circuit connected across the infraorbital and rear electrodes provides pulsating current and voltage selected from range subsequently defined.

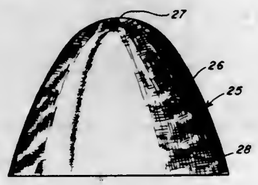
3,464,417
BRASSIERE WITH GARMENT SIDES INCLUDING CROSSED TAPES
Murray Zucker, Far Rockaway, N.Y., assignor, by mesne assignments, to Kops Bros., Inc., New York, N.Y., a corporation of New York
Filed June 5, 1967, Ser. No. 643,580
Int. Cl. A41c *3/00;* **A61f** *5/37*
U.S. Cl. 128—429 **1 Claim**



A brassiere with side garment parts each formed of a single fabric piece or a pair of pieces and wherein each side has crossed elastic or other tapes stitched to said piece or pieces and extending to an elastic or other body encircling strap; further, wherein, each side is formed of

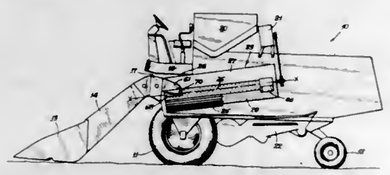
a single fabric piece folded to form substantially triangular sections, one section being of two-ply and joining the other sections in parts of said crossed straps.

3,464,418
MOLDED SEAMLESS BRASSIERE PADS
Abe Silverman, Chicago, Ill., assignor to Silveco Products, Inc., Chicago, Ill., a corporation of Illinois
Filed Jan. 3, 1967, Ser. No. 606,601
Int. Cl. A41c 3/10; B29c 5/00; A61f 13/14
U.S. Cl. 128—481 5 Claims



Molded seamless brassiere pads or cups are made from thermoplastic adhesive bonded non-woven fibrous batting without thining or weakening of the cross sectional area of the apex portion of the brassiere pad or cup relative to the cross sectional thickness of the remaining wall portions of the pad or cup. A molded seamless brassiere pad or cup is formed in which the cross sectional thickness of the apex portion of the pad or cup is not reduced relative to the cross sectional thickness of the remaining wall portions of the pad or cup and the apex portion of the pad or cup is not otherwise weakened.

3,464,419
END FEEDING ARRANGEMENT
William H. Knapp, Davenport, Iowa, and Caroll Q. Gochanour, Moline, and Richard A. De Pauw, East Moline, Ill., assignors to International Harvester Company, Chicago, Ill., a corporation of Delaware
Filed Oct. 31, 1966, Ser. No. 590,794
Int. Cl. A01f 12/10, 12/18
U.S. Cl. 130—27 13 Claims

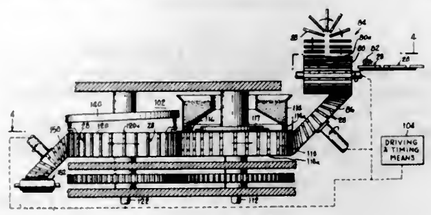


An apparatus for controlling the material as it is fed axially into the receiving end of the cylinder of an axial flow combine. A contoured cowling forming a throat having a bottom surface above the axis of the axial flow combine cylinder.

3,464,420
SMOKING TOBACCO COMPOSITION
George I. Klein, Larchmont, N.Y., assignor to Stauffer Chemical Company, New York, N.Y., a corporation of Delaware
No Drawing. Continuation-in-part of abandoned application Ser. No. 665,216, Sept. 5, 1967. This application Oct. 25, 1968, Ser. No. 770,808
Int. Cl. A24b 3/08, 13/02
U.S. Cl. 131—17 7 Claims

Smoking tobacco compositions are provided exhibiting improved filtration properties. The compositions of this invention comprise comminuted tobacco leaf and hydroxy apatite. In the preferred embodiments of this invention, the hydroxy apatite is used having an average particle size of from about 5μ to about 2,000μ in diameter and is present in the composition in amounts up to about 25% by weight based on the weight of the tobacco.

3,464,421
INTEGRAL INLINE GRANULAR FILTER CIGARETTE MACHINE
Jesse R. Pinkham and Joseph H. Sherrill, Winston-Salem, N.C., assignors to R. J. Reynolds Tobacco Company, Winston-Salem, N.C., a corporation of New Jersey
Filed Feb. 14, 1968, Ser. No. 705,450
Int. Cl. A24c 1/32, 5/50, 5/52
U.S. Cl. 131—61 11 Claims



An apparatus for producing filter tipped cigarettes and the like, the filter tips being composite types which include a chamber of granular material. The cigarettes are made from a continuous rod of wrapped tobacco sections, each interspersed with a mouthpiece portion, in the form of tipping paper, prior to the insertion of the granular material. Discrete tubular elements are then formed, consisting of a wrapped tobacco section and an extended hollow tube attached at one end thereto. These tubular elements are continuously processed such that the granular material completely fills the chamber or void from the other end of the tube; following this, the filled end of the tubular elements are capped.

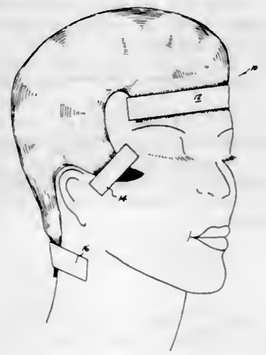
3,464,422
RECONSTITUTED TOBACCO MANUFACTURE
Herbert Julius Light, 58 Putter Drive, Springdale, Conn. 06907, and Robert Jarvis Osborne, 101 Central Ave., Andover, Mass. 01810
No Drawing. Continuation-in-part of abandoned application Ser. No. 355,954, Mar. 30, 1964. This application Aug. 14, 1967, Ser. No. 661,762
Int. Cl. A24f 3/12, 47/00
U.S. Cl. 131—140 14 Claims

An improved reconstituted tobacco sheet is formed by refining a slurry of tobacco stock material and water until the pulp reaches a critical value of pulp freeness of between 100 and 900 milliters value (inverted) on the Schopper-Riegler scale and then casting and drying the resultant slurry to sheet form. The reconstituted sheet formed by this technique manifests tensile strength greater than most prior art sheets and appears to be less porous and less mottled and generally exhibits lower orientation factors (longitudinal breaking strength divided by transverse breaking strength).

3,464,423
TOBACCO SMOKE FILTER
George I. Klein, Larchmont, N.Y., assignor to Stauffer Chemical Company, New York, N.Y., a corporation of Delaware
No Drawing. Continuation-in-part of abandoned application Ser. No. 665,215, Sept. 5, 1967. This application Oct. 25, 1968, Ser. No. 770,809
Int Cl. A24f 7/04, 13/06
U.S. Cl. 131—261 12 Claims

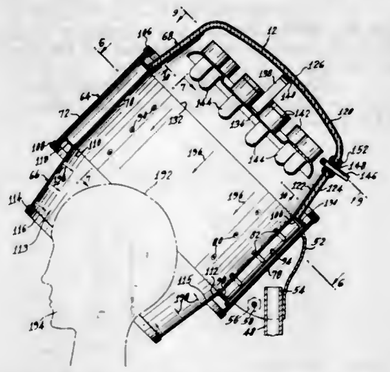
A novel unitary tobacco smoke filter is provided comprising a non-tobacco filter plug including granules of hydroxy apatite. This filtration component is used in amounts of from about 0.1 to about 80% by weight based on the weight of the tobacco and is desirably used in particle sizes of from about 5 to about 2,000μ. Also contemplated in this invention are filters utilizing auxiliary filters such as charcoal and fibrous cellulose materials.

3,464,424
METHOD FOR RETAINING HAIR
Frank D. Buzzelli, 28803 W. Nine Mile Road, Farmington, Mich. 48024
Continuation-in-part of application Ser. No. 437,038, Mar. 4, 1965. This application Oct. 23, 1965, Ser. No. 503,745
Int. Cl. A45d 7/00
U.S. Cl. 132—7 4 Claims



A method for setting hair which consists of manually arranging sections of hair and retaining them in place while drying by taping them to skin areas with an elongated tape of a continuously porous construction to allow air circulation therethrough and to thereby aid in the drying process.

3,464,425
HAIR PROCESSING APPARATUS
Michael Angelo Gagliano, 3934 S. Expressway, Jacksonville, Fla.
Filed Nov. 2, 1966, Ser. No. 591,558
Int. Cl. A45d 20/20, 20/26, 20/28
U.S. Cl. 132—9 2 Claims



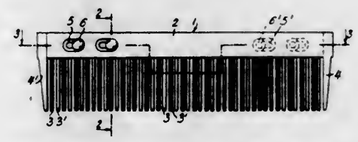
A hair treatment apparatus including a hood having a lower portion with an opening to receive the upper portion of the head of a person within the hollow of the hood and being larger than the head to permit the hood to be spaced from the head and hair at all points thereabout. The hood further includes an upper closed crown portion spaced upwardly from the normal position of the head within the hollow and a light energy source mounted to the upper crown portion within the hollow. The lower portion of the hood has a highly reflective inner surface which is inclined outwardly and upwardly from the opening to receive and reflect the light energy to the hair on the nape and hairline areas of the head.

3,464,426
RINGLET CURLER
Mildred H. Parker, 971 Spencer St., Honolulu, Hawaii 96822
Filed Dec. 6, 1965, Ser. No. 511,765
Int. Cl. A45d 24/10, 2/00
U.S. Cl. 132—123 1 Claim



A ringlet curler wherein a lock of hair, starting with hair nearest the scalp, is wound around a slotted perforated curler tube and between the teeth of a radially protracting comb. A piece of cloth is wrapped around the end portion of the curler tube and over the lock of hair to hold the loose end portion of the lock of hair to the curler. The ringlet curler may be used in end to end arrangement with other ringlet curlers if it is necessary to use more than one curler on a lock of hair because of its length.

3,464,427
DRESSING COMB MADE OF PLASTIC MATERIAL
Anton Abraham, Perchtoldsdorf, Austria, assignor to Wiener Kammfabrik Anton Abraham Komm. Ges. Wiener Neudorf, Austria, a corporation of Austria
Filed Apr. 11, 1968, Ser. No. 720,526
Claims priority, application Austria, June 16, 1967, A 5,620/67
Int. Cl. A45d 24/04
U.S. Cl. 132—136 2 Claims

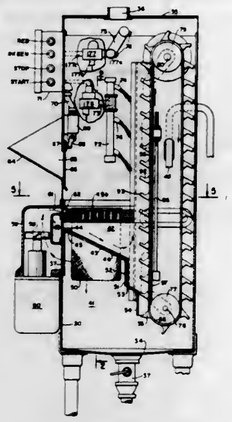


A plastic dressing comb comprising two superimposed comb plates movable relative each other to adjust the width of the gaps between the teeth. Each plate has an abutting back frame provided with separable connecting and guiding means for the relative longitudinal movement. Each comb plate includes a single enlarged terminal tooth at only one end, which tooth is wider than the back with the set of teeth and protrudes on one side from the inner side of the back.

3,464,428
MACHINE FOR CLEANING AND DRYING TABLE SILVER AND CONTROL MECHANISM THEREFOR
Robert W. Kraeft, 60 Commercial Ave., Moonachie, N.J. 07074
Original application Feb. 25, 1964, Ser. No. 347,226, now Patent No. 3,247,858, dated Apr. 26, 1966. Divided and this application June 14, 1965, Ser. No. 472,750
Int. Cl. C08b 3/00; C23g 3/00
U.S. Cl. 134—126 5 Claims

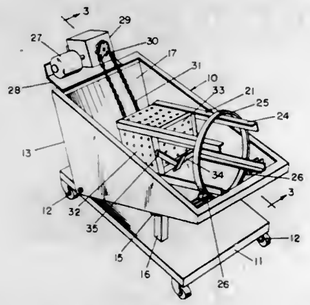
Apparatus in which elongated silver articles are cleansed, rinsed, and dried in a continuous automatic

operation by subjecting the articles to a vigorous cleansing action, to positioning in a common lengthwise orientation,



to moving away from the cleansing action, to rinsing and then to a drying fluid.

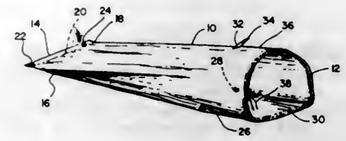
3,464,429
AUTOMATIC WASHER FOR SMALL MACHINE PARTS
Henry B. Ehrhardt, % Stanley J. Yaphe, 715 Fay Drive, Glendale, Calif. 91206
Filed Dec. 14, 1967, Ser. No. 690,671
Int. Cl. B08b *3/10, 3/00*
U.S. Cl. 134—140 **5 Claims**



A washer for small machine parts having a rotatable hollow cage which is adapted to receive one or more baskets in which said parts are placed. A tank containing a washing liquid wherein said cage is supported in an inclined position by a pin and hub arrangement at its lower or bottom end and by rollers mounted in the lateral walls of said tank at its upper or front end. A drive chain, connected between a sprocket on the outward lower end of said cage and a sprocket connected through a gear box to an electric motor supported on the upper end of said tank, serves to rotate said cage.

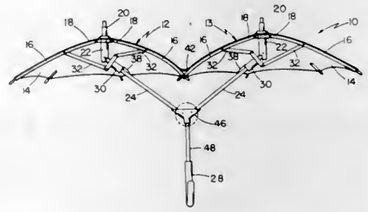
3,464,430
DISPOSABLE TENT
John B. McQuaid, 12018 W. New Mexico Ave., Denver, Colo. 80228
Filed Aug. 10, 1967, Ser. No. 659,789
Int. Cl. A45f *1/00*
U.S. Cl. 135—1 **8 Claims**

A disposable tent formed of tubular stock has one gusset-tucked in end which is sealed, and the other end is open and provided with a draw string for closing the same. The tent is staked to the ground across less than the diameter of the tube at the open end, and, also, at the sealed end providing a ground cloth portion and a



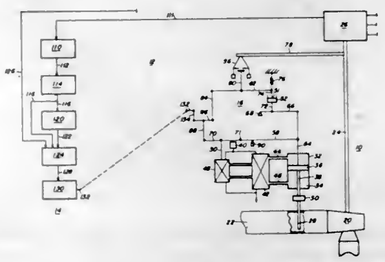
tent portion. A single line fastened to the top of the tube adjacent the open end holds the staked tent in erected position. In one form, the tent is made of light weight plastic film in tubular form.

3,464,431
UMBRELLA
Herbert H. Loeffler, Arlington, Mass., assignor to Ruth F. Nathans, Cambridge, Mass.
Filed Feb. 16, 1968, Ser. No. 705,961
Int. Cl. A45b *11/00, 23/00*
U.S. Cl. 135—20 **12 Claims**



A double umbrella comprising two substantially identical umbrella units pivotally secured to each other at their canopies and handles shafts. The handle shaft of each unit is pivotally connected at its upper end to a canopy support stem.

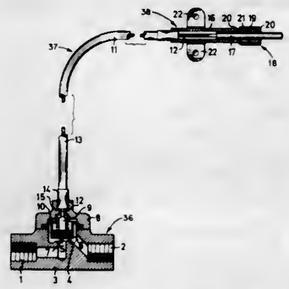
3,464,432
APPARATUS FOR STABILIZING SPEED CONTROL ACTION ON HYDRAULIC TURBINES
Ferber R. Schleif, Denver, Colo., assignor to the United States of America as represented by the Secretary of the Interior
Filed May 8, 1967, Ser. No. 637,884
Int. Cl. F01b *25/00;* **G05d** *13/00*
U.S. Cl. 137—26 **7 Claims**



A speed governing procedure and apparatus characterized by an arrangement for a hydroelectric turbine having speed stabilization circuitry including first and second

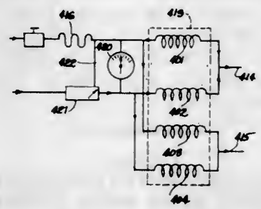
differentiators receiving as their respective inputs signals representing turbine generator frequency and acceleration produced from a turbine speed-sensing transducer and as an output from the first differentiator, respectively. A rate of change of acceleration signal derived from the second differentiator is supplied to a summation amplifier together with the first differentiator output signals, and other signals including those representing speed deviation from a reference speed and turbine load distribution. Signal output from the summation amplifier controls an electromechanical trandsucer providing a drive to a pilot-relay valve mechanism determining the position of a turbine speed control gate structure in the penstock conduit leading to the turbine runner.

3,464,433
FIRE VALVE FOR OIL BURNING INSTALLATIONS
Verner Michaelsen, Hedensted, Denmark, assignor to A/S Brdr. Michaelsen, Hedensted, Denmark, a corporation of Denmark
Filed Mar. 13, 1967, Ser. No. 622,523
Claims priority, application Great Britain, Mar. 16, 1966, 11,471/66
Int. Cl. F16k *17/38, 13/04;* **F23n** *5/24*
U.S. Cl. 137—77 **2 Claims**



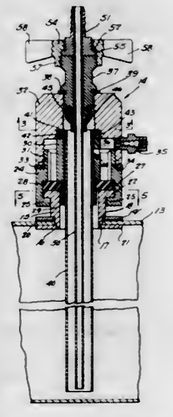
A fire valve for oil burners comprising a spring-biased valve connected with a fusible link through a Bowden cable, and sheathing and the inner wire of said Bowden cable being interconnected by the fusible link to hold said valve in its open position.

3,464,434
GAS-MIXING APPARATUS
B. Aagaard Nielsen, Hellerup, Denmark, assignor to Radiometer A/S, Copenhagen NV., Denmark
Filed Dec. 30, 1965, Ser. No. 517,566
Int. Cl. G05d *11/03;* **F16k** *40/00, 11/02*
U.S. Cl. 137—98 **9 Claims**



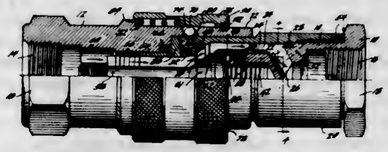
Apparatus and method for the continuous mixing of at least two gases including resistance tubes through which the gases pass before mixing in a common outlet. In one form, means are provided for measuring the pressure drop across the resistance tubes and the mixing ratio is controlled by adjusting pressures regulators. In another form, differential pressure regulator means are connected across lines feeding to the resistance tubes for eliminating pressure differences between the input ends of the resistance tubes whereby a gas mixture of fixed composition is obtained in the common outlet tube. More sets of resistance tubes, each set having a common outlet tube, can be connected to the regulated feed lines to obtain additional mixtures having other fixed compositions.

3,464,435
QUICK KEG TAP WITH SELF-SEALING CONNECTION
Kay R. Lamb, 1105 Ridge Ave., and Charles R. Mandeville, 1823 Latham St., both of Rockford, Ill. 61103
Filed May 19, 1967, Ser. No. 639,707
Int. Cl. F04f *1/00;* **B67d** *5/54;* **B65d** *83/14*
U.S. Cl. 137—212 **10 Claims**



A keg-tapping assembly consisting of a collar installed in an opening of a keg. A bushing assembly carrying a sleeve is fastened on the collar with the sleeve extending through the collar with clearance for gas to pass into the keg. A normally closed pressure-responsive gas-admission valve of the type used in pneumatic tires is provided on the bushing assembly. The bushing assembly also includes a normally collapsed live rubber axial conduit. A removable draft tube assembly can be mounted on the bushing assembly, the draft tube assembly including a rigid draft tube which is forced through the live rubber conduit and is contained coaxially in the sleeve, the draft tube extending into the keg to a considerable depth so that beverage can be forced out through the draft tube responsive to the admission of gas under pressure through the gas-admission valve. When the draft tube assembly is withdrawn, the live rubber conduit collapses, sealing off the assembly so that foreign material cannot enter the keg.

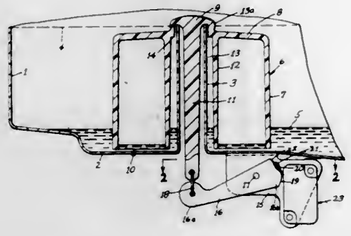
3,464,436
SELF-CLEANING FLUID COUPLING
Earl F. Bruning, P.O. Box 147, Lincoln, Nebr. 68501
Filed Sept. 5, 1967, Ser. No. 665,353
Int. Cl. F16k *3/36;* **F16l** *29/00*
U.S. Cl. 137—237 **8 Claims**



A coupling comprising male and female coupling elements each containing a valve. A bleed disc located in a

chamber communicating with the atmosphere and cooperating with a female piston to provide for the purging of contaminants from between the coupling elements. The contaminants are conducted to a chamber formed in the reduced tubular end in the male member which is provided with a bleed disc at the outer end thereof, normally spring urged to a closed position. The chamber serves as a volumetric displacement compensating cavity for overcoming static head pressure in the male and female members when they are coupled; and it is bled to the atmosphere through the junction of the tubular body and the nozzle of the male member for scavenging entrained air and contaminants.

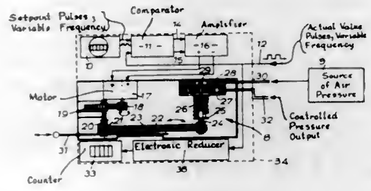
3,464,437
OVERFLOW PROTECTION DEVICE
Victor H. Zane, Fayette County, Ind., assignor to Design and Manufacturing Corporation, Connersville, Ind., a corporation of Indiana
Filed Oct. 12, 1967, Ser. No. 674,806
Int. Cl. D06f *39/08, 33/02*
U.S. Cl. 137—387 **14 Claims**



An overflow protection device for automatically controlled dishwashing or clothes washing machine of the type having electrically controlled valve means for the introduction of washing and rinsing fluids into the washing chamber and a fluid discharge means for the removal of washing and rinsing fluids from the washing chamber comprising a float mounted in the bottom of the washing chamber sump and encircling a stand pipe. The float has a central stem extending downwardly through the stand pipe and pivotally connected at its lowermost end to a lever having means in association therewith to close each of two or more switches sequentially as the float rises when the normal water level is exceeded. The first switch disconnects all electrical power to the washing machine; the second switch (or switches) actuates fluid discharge means, resulting in the discharge of fluid from the washing chamber.

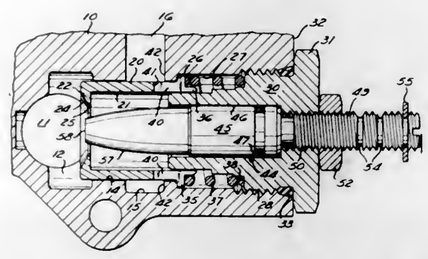
3,464,438
CONTROL DEVICE
Klemens Maurer, Solingen, Germany, assignor to Sunvic-Regler GmbH, Solingen-Wald, Germany
Filed Oct. 10, 1966, Ser. No. 585,445
Claims priority, application Austria, Oct. 12, 1965, A 9,206/65
Int. Cl. G05d *7/03;* **F16k** *31/04*
U.S. Cl. 137—487.5 **11 Claims**

A control device has a measuring sensor which produces an output of pulse sequence signals indicative of the value of the output value. The input or setpoint value is also represented by pulse sequence signals. A comparator receives these two signals and produces an output which is, figuratively speaking, plus or minus depending upon whether or not the measured signal is above or below the setpoint signal. The comparator output is amplified and drives a stepping motor. Through an interchangeable gear train the motor controls the angular position of a pivoted lever movable about an adjustable pivot point. An analogue value transmitter takes the form of pressure regulaor having a diaphragm loaded by a spring. The angular position of the lever controls the



loading on the spring. The transmitter gives a pressure output which, through a controller, adjusts a final control element in the form of a diaphragm valve.

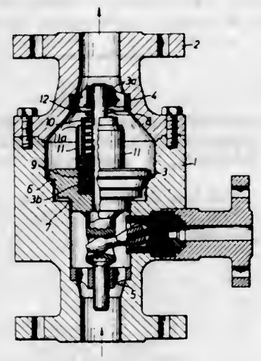
3,464,439
FLOW CONTROL VALVE
Tadeusz Budzich, Moreland Hills, Ohio, assignor to The Weatherhead Company, Cleveland, Ohio, a corporation of Ohio
Filed June 16, 1966, Ser. No. 558,132
Int. Cl. F16k *1/44*
U.S. Cl. 137—504 **8 Claims**



A flow control valve for regulating the flow of fluid in a system which includes a housing having a bore therein which communicates with inlet and outlet ports. A sleeve defining a metering orifice is slidably disposed in the bore. Throttling port means is provided between the metering orifice and the outlet port and is operable by movement of the sleeve to provide a decreasing throttling area as the sleeve moves in the bore away from the inlet. The sleeve is spring-biased toward the inlet port and a probe extends axially into the metering orifice. The probe has a tapered exterior shape of increasing diameter away from the inlet port and the metering orifice so that the probe reduces the effective area of the orifice over the entire range of movement of the sleeve as the sleeve moves away from the inlet port to provide the aforementioned decreasing throttling area.

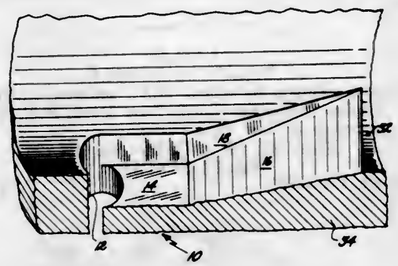
3,464,440
METHOD AND APPARATUS FOR PROTECTING A PUMP FROM FLOW RATE OVERLOADS
Günter Oskar Nordt, Hulsenbusch, Germany, assignor to H. Schroeder & Co., Elbach, Kalkkuhl, near Engelskirchen, Rhineland, Germany, a German firm
Filed Mar. 16, 1967, Ser. No. 623,725
Claims priority, application Germany, Mar. 18, 1966, Sch 38,692
Int. Cl. F16k *5/12;* **F04b** *49/02*
U.S. Cl. 137—529 **5 Claims**

A throttling valve is placed in the outlet conduit of a pump to automatically increase the resistance of the conduit to a very high value when the flow rate of fluid in the conduit exceeds a predetermined level. The throttling valve contains two springs which normally urge a valve cone away from its throttling position in opposition to fluid flow therethrough. One of the springs compresses more easily than the other and controls the position of the valve cone within the normal range of fluid flow



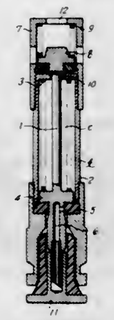
rates through the valve. The other spring, which is stronger than the first, is actuated when the fluid flow rate through the valve exceeds a predetermined level, and this spring allows the valve cone to approach its throttling position in such manner as to rapidly increase the resistance of the conduit to a very high level after the predetermined fluid flow rate has been exceeded.

3,464,441
OPTICAL PORT FOR USE IN HIGH VELOCITY STREAMS
Paul W. Mossey, Cincinnati, Ohio, assignor to the United States of America as represented by the Secretary of the Air Force
Filed Dec. 19, 1967, Ser. No. 691,889
Int. Cl. E03b *7/07;* **F16k** *37/00;* **F17d** *3/00*
U.S. Cl. 137—559 **5 Claims**



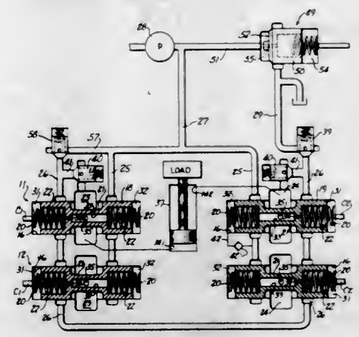
An optical port for use in high velocity, high temperature gas streams having a porthole in a wall adjacent the gas stream, a first channel directly adjacent the porthole and having a straight floor therein substantially parallel to the surface of the wall adjacent the gas stream and a second channel directly adjacent the first channel and having an upwardly sloping floor with diverging walls terminating at the surface of the wall adjacent the gas stream.

3,464,442
LIQUEFIED GAS LIGHTER
Tadamichi Hattori, Tokyo-to, Japan, assignor to Kabushiki Kaisha Crown Sangyo, Tokyo-to, Japan, a corporation of Japan
Filed Sept. 26, 1966, Ser. No. 582,034
Int. Cl. F17d *1/08;* **F23q** *2/06, 2/30*
U.S. Cl. 137—576 **8 Claims**



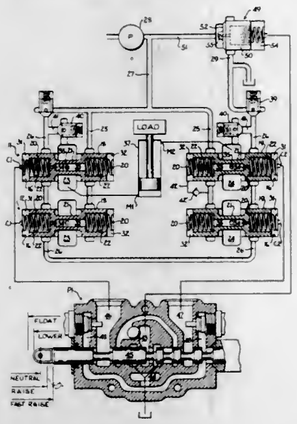
A pocket lighter using liquefied gas as fuel and including a fuel tank and a separate storage chamber arranged in the fuel tank and having a volume considerably smaller than the latter. The fuel tank and the storage chamber can both be filled with liquefied gas and the lighter includes means operable from the exterior of the lighter to permit flow of liquefied gas from the storage chamber into the fuel tank so that, when the gas filled into the tank is exhausted, the lighter may still be temporarily used before refilling the same.

3,464,443
PILOT CONTROLLABLE VALVE MECHANISM
Francis H. Tennis, Oconomowoc, Wis., assignor, by mesne assignments, to Koehring Company, Milwaukee, Wis., a corporation of Wisconsin
Filed Oct. 19, 1967, Ser. No. 676,547
Int. Cl. F16k *11/18, 31/43*
U.S. Cl. 137—596.12 **23 Claims**



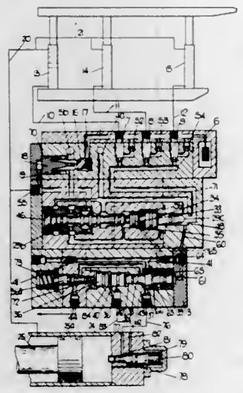
Each valve element of a control valve is pressure responsive and governs flow of pressure fluid to and from only one port of a fluid motor. Admittance of pressurized control fluid to a first pressure chamber associated with the vale element effects movement thereof to a feed position, while admittance of return pressure fluid from the controlled motor to a second pressure chamber associated with the valve element effects movement thereof to an exhaust position.

3,464,444
PILOT CONTROLLABLE VALVE MECHANISM
Francis H. Tennis, Oconomowoc, Wis., assignor to Koehring Company, Milwaukee, Wis., a corporation of Wisconsin
Original application Oct. 19, 1967, Ser. No. 676,547. Divided and this application Nov. 29, 1968, Ser. No. 780,028.
Int. Cl. F15b *13/02*
U.S. Cl. 137—596.12 **19 Claims**



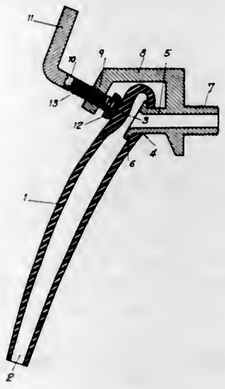
Admittance of pressurized control fluid to a first pressure chamber effects movement of a spool type valve element to a feed position at which it directs pump output fluid to a service passage for flow to a controlled motor; while admittance of return pressure fluid from the controlled motor to a second pressure chamber effects movement of the valve element to a vent position at which it directs return fluid from the motor to an exhaust outlet for flow to a reservoir.

3,464,445
FLUID VALVE MEANS FOR MINE ROOF SUPPORTS
Frank Town, Burton Joyce, England, assignor to W. E. & F. Dobson Limited
Filed Nov. 30, 1966, Ser. No. 598,079
Int. Cl. F16k *11/18*
U.S. Cl. 137—596.18 **10 Claims**



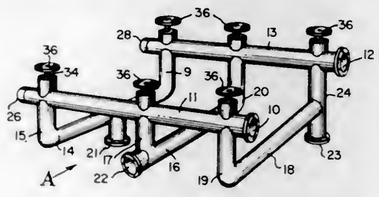
Control valve means, for required sequential control of mine roof supports with hydraulic props and advancing cylinders and rams, wherein a basic control valve block has feed and return connections to one end of the props and controlling non-return valves, a remote control valve block is secured to the basic control valve block and has connections to the other end of the props and to the advancing cylinder and ram, said remote control valve block having passages communicating with the basic control valve block and a two-part slide valve operable by fluid signals to control operation of the props and cylinder and ram, and there being inter-changeably connectable to the remote control valve block third valve blocks having a fluid operable valve, or a manually operable valve, or a solenoid operable valve.

3,464,446
FAUCET
Pierre Louis-Marie Jaffier, Avignon, France, assignor to Société Industrielle d'Etudes et de Realisations Scientifiques S.I.E.R.S., a corporation of France, Paris, France
Filed Jan. 5, 1966, Ser. No. 518,857
Int. Cl. F16k *7/06;* **F16l** *55/14*
U.S. Cl. 137—606 **5 Claims**



A faucet construction having a tube-like flexible member with spaced inlet and outlet openings. A pipe has a discharge end received into the inlet opening and provided with a valve seat. The pipe is connected to a support member which has actuating means for urging a portion of the flexible member against the valve seat to prevent the flow of a fluid through the discharge opening of the pipe.

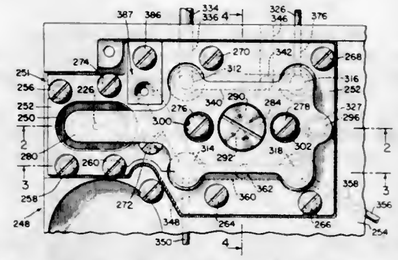
3,464,447
VALVE MANIFOLD
Norman Jones, Brooklyn, N.Y., assignor to Marine Engine Specialties Corp., New York, N.Y., a corporation of New York
Filed July 18, 1967, Ser. No. 654,121
Int. Cl. F17d *3/00*
U.S. Cl. 137—608 **3 Claims**



A valve manifold or fluid distribution system for controlling the flow of fluids (oil, gasoline, etc.) into and from storage such as may be used in ships, wherein

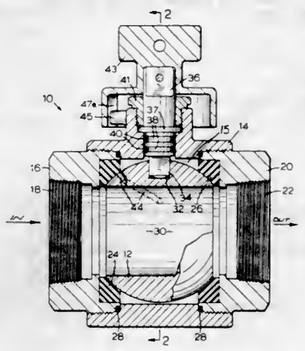
all passageways are circular in design and the closed end terminations of the main passageways are curved. The branch pipelines leading to the outlet ports communicate with the main passageways by the use of curved elbows. The main valve parts, except for the stems, are generally outside the main passageways and are seated in the openings for the branch lines.

3,464,448
DIAPHRAGM VALVE
Robert Schmitz, Hatboro, Pa., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware
Original application Oct. 11, 1965, Ser. No. 494,670, now Patent No. 3,390,697, dated July 2, 1968. Divided and this application Nov. 8, 1967, Ser. No. 698,081
Int. Cl. F16k *11/04, 31/145*
U.S. Cl. 137—625.18 **2 Claims**



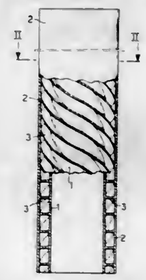
A flexible diaphragm valve to control the flow of fluid between different selected ports formed in a manifold plate by employing a spring biased lever to force separate solid spheres against associated dimpled shaped seat portions formed in the diaphragm so that these dimple portions can be brought into sealed self-centered fluid tight engagement with a pair of the ports while another pair of associated sphere and dimple portions in the diaphragm are released from sealed engagement with their associated ports to thereby allow fluid under pressure to be passed between these open ports.

3,464,449
BALL VALVE WITH DRAIN PASSAGE
John Morton, London, Ontario, Canada, assignor to Emco Limited, London, Ontario, Canada
Filed Apr. 17, 1968, Ser. No. 722,111
Claims priority, application Canada, July 4, 1967, 994,482
Int. Cl. F16k *5/20, 45/00;* **E03b** *7/08*
U.S. Cl. 137—625.24 **1 Claim**



This invention relates to the drainage of ball valves. In particular the invention relates to the provision of suitable drain passage means in a ball valve to permit drainage of the discharge line when the valve is in a closed position. Difficulty has been experienced in providing for the drainage of ball valves due to the fact that when the valve is in the closed position the ball is seated against the sealing ring of the discharge line and is not sealed against the input line. Because of this characteristic it has not been possible to use the simple drainage passage which is commonly employed with the tapered plug type valve. The present invention overcomes these difficulties by providing a first drainage passage formed in the casing and a second drainage passage formed in the ball valve and sealing means to provide a fluid seal between the two passages when they are in alignment and to prevent leakage from the valve when the passages are out of alignment. The first and second passages are arranged such that they will align with one another when the valve is in a closed position to provide a drainage passage opening outwardly of the valve from the discharge passage of the valve. When the valve is in the open position the drainage passages are out of alignment with one another such that no fluid can escape through the first drainage passage and thereby escape from the valve casing.

3,464,450
DOUBLE-WALLED TUBULAR BODY AND DEVICES FOR MAKING SAME
Francesco Steffenini, Via Pizzi 28/32, Milan, Italy
Filed Feb. 7, 1967, Ser. No. 614,449
Claims priority, application Italy, Feb. 7, 1966, 2,611/66
Int. Cl. F16l *9/18, 9/04*
U.S. Cl. 138—113 **4 Claims**

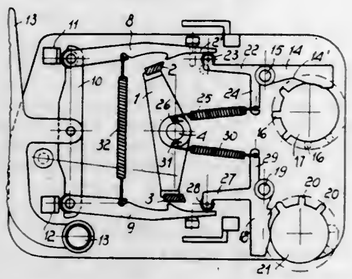


A tubular body, comprising two coaxially arranged cylindrical walls and at least a helical reinforcing rib inserted therebetween is disclosed as having a high resistance to mechanical stresses, more particularly to radial compression and axial load stresses.

3,464,451
LOOM DOBBY
Giovanni Piazzolla, Via Salieri 6, Milan, Italy, and Carlo Villa, Via Mazzini 43, Melzo, Milan, Italy
Filed Jan. 16, 1968, Ser. No. 698,274
Claims priority, application Italy, Jan. 21, 1967, 11,749/67
Int. Cl. D03c *1/06, 1/20*
U.S. Cl. 139—74 **10 Claims**

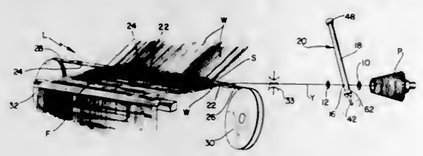
A dobby for textile looms comprises selector rockers which are independently movable between two end positions. The rockers are biassed to one of the positions. Selecting hooks each cooperate with a baulk lever and are movable between a first and a second position in which the associated baulk lever is respectively displaced in opposite directions. Each selecting hook has an end portion engaging one of the rockers and is maintained in

its first position by such engagement. Biasing means engages the hooks and urges them towards their second position but is unable to overcome the bias of the respective rockers towards their one end position. Draw knives are each associated with one of the hooks and movable between a withdrawn position and an engaged position



in which latter each draw knife displaces the associated hook towards the second position thereof. Each draw knife is further associated with one of the rockers and operable thereby for movement between its withdrawn and engaged positions. Programming means is operative for sequentially effecting movement of selected rockers between their rest and operated positions.

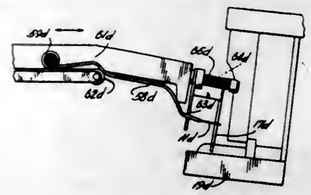
3,464,452
STORAGE APPARATUS
Charles W. Brouwer, East Greenwich, and Hans H. Richter, Cranston, R.I., assignors to Leesona Corporation, Warwick, R.I., a corporation of Massachusetts
Filed Nov. 30, 1967, Ser. No. 687,015
Int. Cl. D03d *47/34;* **D03j** *5/24;* **B65h** *59/00*
U.S. Cl. 139—122 **6 Claims**



Apparatus for continuously unwinding yarn from a supply and releasably storing the yarn. Yarn is threaded into and out of an elongated chamber and is slidably engaged by a piston movable in the chamber. Pressurized fluid urges the piston in one direction for storing the yarn, but when tension in the yarn is increased, the piston is drawn by the yarn in the opposite direction for releasing the stored yarn.

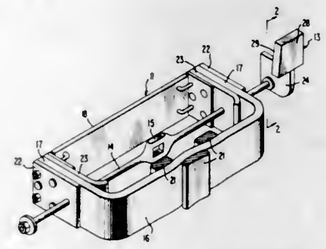
3,464,453
GRIPPING SHUTTLE LOOM
Fritz Schilde, Manfred Richter, and Dietrich Ambrosius, Grossenhain, Manfred Tille, Oederan, Ludwig Gunther, Gunter Loos, Heinrich Mzyk, and Siegfried Miersch, Karl-Marx-Stadt, Winfried Haupt, Grossenhain, Wolfgang Rossel, Zabeltitz, Gunter Beuchel and Gerhard Erler, Grossenhain, and Herbert Weder, Neugersdorf, Germany, assignors to VEB Webstuhlbau Grossenhain, Grossenhain, Saxony, Germany
Original application Sept. 16, 1965, Ser. No. 487,659. Divided and this application Aug. 24, 1967, Ser. No. 674,368
Int. Cl. D03d *41/00;* **D03j** *5/00*
U.S. Cl. 139—125 **10 Claims**

In a loom a second retaining device for the weft is equipped with a clamping device for receiving a portion of the weft. Said clamping device comprises a presser which is biased onto the weft portion to hold the weft temporarily in position. The presser is moved into and out of an activated position by means responding to the



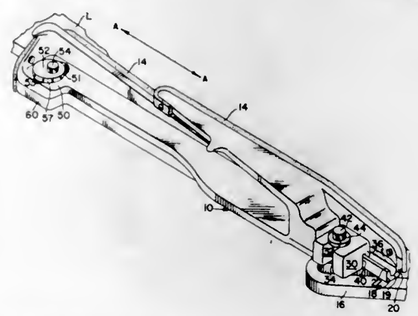
operation of the loom and is released from this position into a clamping position and moved out of the clamping position by means responding to actuation by the shuttle.

3,464,454
PICKER STICK CHECKING MEANS
James T. Blakely, Jr., and David R. Blakely, both of 3141 N. Pleasantburg Drive, Greenville, S.C. 29609
Filed July 23, 1968, Ser. No. 746,998
Int. Cl. D03d *49/40*
U.S. Cl. 139—165 **4 Claims**



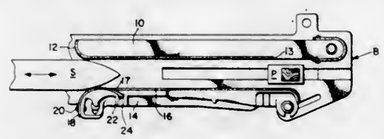
Auxiliary bumper elements are mounted directly on the check strap guide rods of the right and left hand picker stick checking units to arrest the movement of the picker stick at the end of the forward pick, thereby protecting the picker stick and eliminating excessive wear on the sliding check strap, and in general improving the operation and efficiency of the checking mechanism.

3,464,455
FRONT BOX PLATE
John R. Brandon, P.O. Box 46, Cramerton, N.C. 28032
Filed Feb. 15, 1967, Ser. No. 616,231
Int. Cl. D03d *49/52, 49/60*
U.S. Cl. 139—183 **5 Claims**



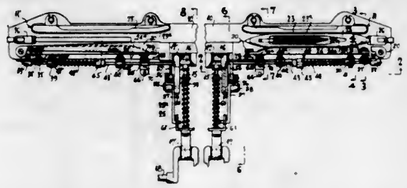
This invention is directed to front box plates for weaving looms, and more particularly to a longitudinally and transversely adjustable front box plate, whereby a single front box plate may be used on several looms having different dimensions between the mounting holes in the lay end plate for mounting the front box plates, rather than requiring a correspondingly sized front box plate for each size of lay end plate.

3,464,456
FRONT BOX PLATE FOR LOOMS
John R. Brandon, Box 46, Cramerton, N.C. 28032
Filed Feb. 15, 1967, Ser. No. 616,287
Int. Cl. D03d *49/52, 49/54*
U.S. Cl. 139—183 **4 Claims**



This invention concerns the use of a separable wear-resistant nosepiece in the area along the inside surface of the front box plate where the conventional leather lining was subject to deterioration from the impact of the shuttle.

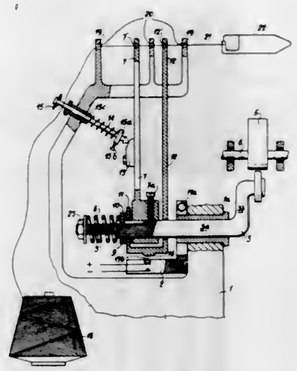
3,464,457
FLOATING BINDER MECHANISM FOR CONTROLLING LOOM SHUTTLES
Edward F. Bahan, Greenville, S.C., assignor to Bahan Textile Machinery Company, Inc., a corporation of South Carolina
Filed Feb. 16, 1967, Ser. No. 616,715
Int. Cl. D03d *49/56, 51/40*
U.S. Cl. 139—187 **8 Claims**



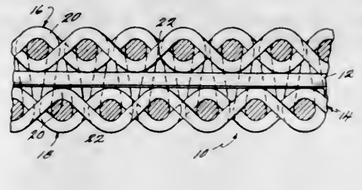
A shuttle control mechanism for a loom having a lay, a shuttle box at each end of the lay for receiving and releasing the shuttle, an elongated binder forming one wall of each of the boxes, and a shuttle checking pressure means alternately engageable with and disengageable from the binder, said binder being movable three-dimensionally in response to the combined opposing pressures of a box-receiving shuttle and an engaging pressure means, the binder being three-dimensionally floatable upon disengagement of the pressure means from the binder.

3,464,458
METHOD AND APPARATUS FOR TENSIONING A SLACK WEFT THREAD
Vladimir Svaty, No. 366, Kraluv Haj, Liberec, Czechoslovakia
Filed Mar. 18, 1968, Ser. No. 714,123
Claims priority, application Czechoslovakia, Mar. 17, 1967, 1,940/67
Int. Cl. D03d *41/00, 47/00*
U.S. Cl. 139—194 **10 Claims**

A positively driven first loop forming lever and a yieldable second loop forming lever form loops in an inserted slack weft thread so that the same is tensioned. The loop forming levers are frictionally connected so that the second loop forming lever is moved by the first loop forming lever to a breakage indicating position if the weft threads break.



3,464,459
WEBBINGS FOR SAFETY RESTRAINT SYSTEMS
Homer Lee Ballard, South Hill, Va., assignor to Burlington Industries, Inc., Greensboro, N.C., a corporation of Delaware
Filed Jan. 17, 1968, Ser. No. 698,494
Int. Cl. D03d *25/00, 23/00, 11/00*
U.S. Cl. 139—383 **6 Claims**

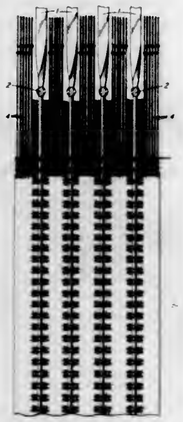


The webbing includes a core yarn of relatively great strength, relatively low and/or medium elongation and having relatively medium or slow elastic recovery, placed in the webbing with a minimum of weave take-up or crimp so it is available for immediate holding protection in the event of a crash. The core yarn is completely covered by outside yarns woven with relatively high wave take-up or crimp to provide, substantially brought into play, further strength and elongation. The cover yarns also protect the core yarns against ultraviolet degradation, abrasion, and other damage during pre-crash routine use.

3,464,460
ELASTIC FABRIC HAVING FOLDED THIN ELASTIC RIBBON WARP ENDS
John C. Harvey, Easthampton, Mass., assignor to J. P. Stevens & Co., Inc., New York, N.Y., a corporation of Delaware
Filed Dec. 29, 1967, Ser. No. 694,472
Int. Cl. D03d *15/08;* **D02g** *3/32, 3/06*
U.S. Cl. 139—422 **4 Claims**

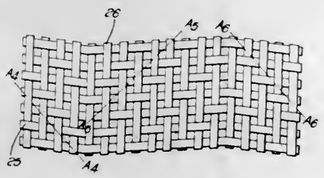
An elastic fabric is woven with a smaller number of elastic warp threads in the form of very thin ribbons which are folded over once, which form a hollow cylinder by passing through eyes as the warp ends are fed to

the shed. The ribbons are quite wide but very thin, and when folded once by passing through eyes and/or the eyes



of their respective heddles, they are immune to nicking or cutting by a needle when the fabric is sewn.

3,464,461
ENDLESS BELT FOR PAPER OR BOARD MAKING MACHINE AND A METHOD OF WEAVING CLOTH THEREFOR
Ian George Cumming, Granton, Edinburgh, Scotland, assignor to The United Wire Works Limited, Granton, Edinburgh, Great Britain, a British company
Filed Apr. 28, 1967, Ser. No. 634,602
Claims priority, application Great Britain, Apr. 30, 1966, 19,107/66
Int. Cl. D03d *15/02*; **D03c** *5/00*; **B21f** *27/02*
U.S. Cl. 139—425 **8 Claims**

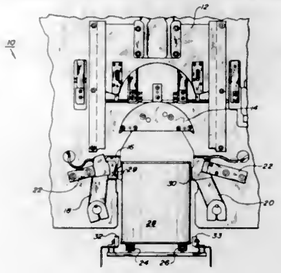


Woven cloth for an endless belt for a paper or board making machine is a twill woven cloth and the twill pattern is reversed at intervals of from two inches to four feet. Each warp of the cloth then forms throughout its length a series of substantially chevron-shaped formations transversely directed in the plane of the cloth.

A loom for weaving the cloth is provided with means for reversing the operation of the heddle frames of the loom at the required intervals so as to reverse the twill pattern.

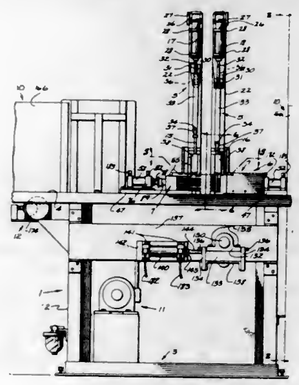
3,464,462
EAR INSPECTION AND DETECTION APPARATUS
Raymond A. Heisler, 657 Dakota Trail, Franklin Lakes, N.J. 07417
Filed Oct. 18, 1967, Ser. No. 676,226
Int. Cl. B21f *45/00*
U.S. Cl. 140—93 **4 Claims**

In an apparatus for forming and attaching wire bails to eared containers, an ear-detecting and position inspection apparatus adapted for actuation of the bail-applying apparatus by the engagement of an acceptably eared container. In the apparatus there is provided a pair of movable arms adapted to engage the ears of and stop the forward progress of an advancing eared container. Each of these arms is provided with a pneumatic discharge passage-



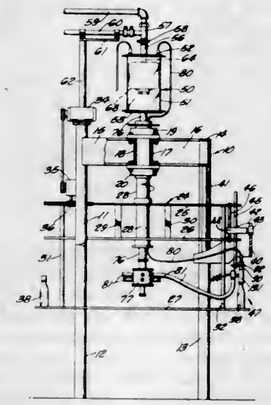
way whose port is precisely positioned so as to be closed by the forwardmost portion of an ear of an advancing container whereby an acceptably positioned ear is brought in the way of the pneumatic discharge port, the port is closed and a pneumatic actuation is provided to actuate a clutch of the bail-applying mechanism.

3,464,463
APPARATUS FOR FORMING WIRE STOCK
Thomas J. Dull, Fairfield, and Clifford Goldmeyer, Cincinnati, Ohio, assignors to The J. R. Greeno Company, Cincinnati, Ohio, a corporation of Ohio
Filed May 29, 1967, Ser. No. 642,076
Int. Cl. B21f *1/04*
U.S. Cl. 140—105 **13 Claims**



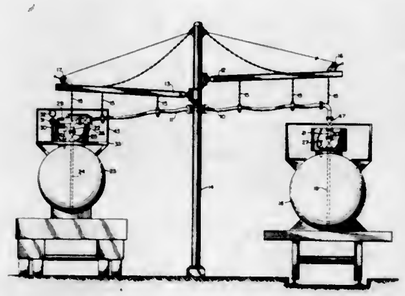
The invention is embodied in a machine having a pair of laterally spaced vertical forming plungers or mandrels which reciprocate alternately along their vertical axes and which also reciprocate alternately in a horizontal plane. The plungers coact with a shuttle which reciprocates in a horizontal plane relative to the plungers and which also oscillates or swings through an arc of approximately 180° at the end of each horizontal reciprocation in time with the compound movements of the plungers. The shuttle includes a series of parallel bores through which straight lengths of wire stock are advanced from a source of supply, such as a reel or reels located outwardly from the apparatus. The lateral spacing of the plungers or mandrels determines the amplitude, that is, the width of the formed sinuous wire.

3,464,464
BALANCED VACUUM FILLER
Herman Laub, 244 N. San Marino Ave., San Gabriel, Calif. 91775
Filed Oct. 23, 1965, Ser. No. 503,061
Int. Cl. B65b *31/02*
U.S. Cl. 141—59 **3 Claims**



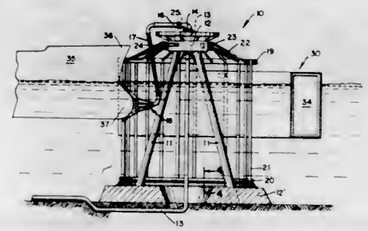
A receptacle filling apparatus including a container for holding a supply of product above receptacles, and filler valves for evacuating and filling receptacles. A vacuum source is coupled with the container for causing the same to be filled to a predetermined level with a product and a chamber of reduced pressure exists above the product level. This chamber is coupled with the filler valves for evacuating receptacles and for causing the product to be drawn into the receptacles from the container. Each filler valve includes a plurality of liquid outlet passageways which are inclined to provide a swirl-type feed of the product to the interior wall of a receptacle.

3,464,465
FLUID TRANSFER APPARATUS
Ray W. Daugherty, Oakland, Calif., assignor to Ethyl Corporation, New York, N.Y., a corporation of Virginia
Filed Feb. 3, 1966, Ser. No. 524,905
Int. Cl. B65b *3/10*
U.S. Cl. 141—59 **8 Claims**



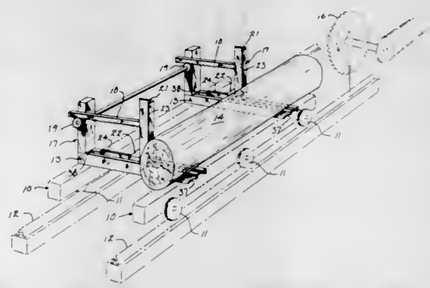
A self-filling vessel apparatus for combustible or toxic fluids utilizing an internal combustion engine to provide a vacuum within the vessel to be filled and to burn the toxic or combustible vapors produced in the filling operation. A preferred embodiment encompasses a self-filling tank truck for transferring combustible or toxic fluids from a railroad tank car.

3,464,466
MOORING SYSTEM FOR TANKER VESSELS
James F. Bryan, Somerset, N.J., assignor to Esso Research and Engineering Company, a corporation of Delaware
Filed Jan. 24, 1967, Ser. No. 611,329
Int. Cl. B63b *21/00*
U.S. Cl. 141—346 **9 Claims**



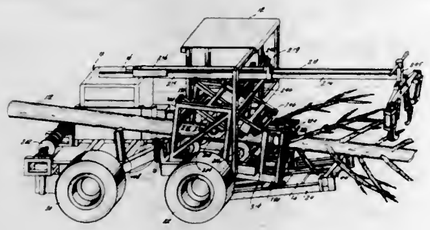
The disclosure shows a fixed mooring station having fluid coupling means which can be rotated, raised or lowered suitably to position the coupling means relative to corresponding means installed in the bulb bow portion of a tanker vessel. Means are provided for positive engagement of the bulb within a housing in the mooring.

3,464,467
HEADBLOCK AND KNEE ASSEMBLIES FOR SAWMILL CARRIAGES
Thomas F. Meis, P.O. Box 27, Mondovi, Wis. 54755
Filed May 16, 1967, Ser. No. 638,798
Int. Cl. B27b *29/08*
U.S. Cl. 143—120 **3 Claims**



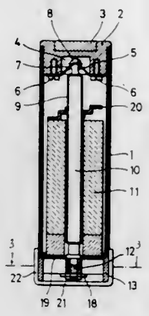
To provide a smoothly operable headblock and movable knee assembly for a sawmill carriage the invention includes a channel-shaped headblock within which there is movably carried a wheeled base member supporting an upright long-engaging knee, the wheeled design of said knee unit reducing friction and wear as said unit is shifted within said headblock to adjust the position of a log for succeeding longitudinal cuts, and which improved assembly includes means for preventing sawdust and wood chips from accumulating in said headblock and impeding the movement of said adjustable knee unit.

3,464,468
TREE SHEARING, TOPPING, AND DELIMBING APPARATUS
Max W. Thompson, Brandon, and Wilburn W. Dacus, Jackson, Miss., assignors to Future Products, Inc., Jackson, Miss., a corporation of Arkansas
Filed Jan. 31, 1968, Ser. No. 701,891
Int. Cl. B27c *9/00*
U.S. C. 144—3 **3 Claims**



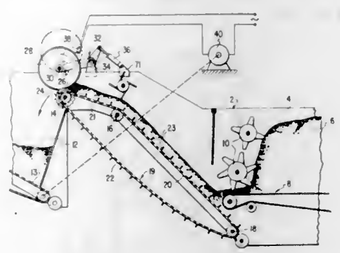
Apparatus for tree felling, topping and delimbing, particularly a combination tong, shear and rotating cutting knife device for felling and topping a tree trunk, grasping and axially advancing the trunk, and delimbing and bunching of delimbed trunks.

3,464,469
POCKET SOAP DISPENSER
August Belz, Mottelistrasse 1, Friedrichshafen, Germany
Filed Sept. 29, 1967, Ser. No. 671,787
Claims priority, application Germany, Sept. 29, 1966, B 89,129
Int. Cl. B67d *5/42;* **B02c** *18/10*
U.S. Cl. 146—61 **5 Claims**



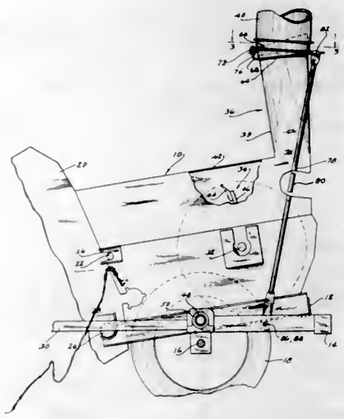
A pocket soap dispenser which comprises a housing of square cross-section, and a threaded spindle adapted to carry a square piece of soap. A nut is threadedly connected with the threaded spindle and loads the piece of soap. A manually rotatable rasp disc is provided on the end side of the piece of soap remote from the nut at the lower end of the housing. A square frame serves as a hand wheel and is mounted at the lower end of the housing and of the spindle and carries the rasp disc. An upwardly thickened conical head is formed at the upper end of the threaded spindle and a loop-shaped spring member has a cut-out and supports the conical head at the upper end of the housing, and the spring member pulls upwardly the spindle with the rasp.

3,464,470
STALK SEGMENTING APPARATUS
Elmer Richard Bolles, Honolulu, Hawaii, assignor to Hawaiian Sugar Planters Association, Honolulu, Hawaii, a voluntary nonprofit agricultural organization
Filed Feb. 17, 1967, Ser. No. 616,863
Int. Cl. A01d *55/18, 57/20*
U.S. Cl. 146—98 **11 Claims**



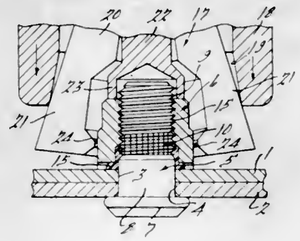
Cane stalks positioned transversely of a conveyor are fed towards a plurality of rotating knives spaced transversely of the conveyor. A plurality of rollers, transversely aligned with the knives, are provided with transversely extending channels for segregating canes and feeding them radially against the knives. Each roller includes a circumferential groove within which an edge portion of the adjacent knife extends to a greater radial depth than the channels so that canes are completely severed. The knives are positively rotated at the same peripheral speed as the rollers. The knives are yieldingly biased to their operating position and may be pushed outwardly by stones or the like traveling with the cane to reduce knife damage.

3,464,471
BLOWER SPOUT MECHANISM
Robert R. Todd, Davenport, Iowa, assignor to J. I. Case Company, Racine, Wis., a corporation of Wisconsin
Filed July 6, 1967, Ser. No. 651,620
Int. Cl. B02c *13/288;* **A01f** *17/04*
U.S. Cl. 146—107 **9 Claims**



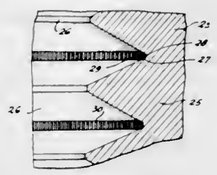
A compensating mechanism for maintaining the desirable position of a blower spout on a forage harvester. The blower spout includes a lower part fixed to the harvester and an upper part pivotally interconnected with the lower part. The mechanism has strut means connected with the upper spout and with the harvester frame to compensate for change in the attitude of the frame as it is tilted for low or high cutting or gathering of material by the front mounted attachment unit.

3,464,472
SWAGE TYPE FASTENERS HAVING SEALANT RELIEF PASSAGES IN COLLARS
Perry J. Reynolds, Detroit, Mich., assignor to Huck Manufacturing Company, Detroit, Mich., a corporation of Michigan
Filed Apr. 21, 1967, Ser. No. 632,726
Int. Cl. F16b *39/00, 19/00, 37/00*
U.S. Cl. 151—2 **3 Claims**



A two-piece fastener including a pin and a collar with the collar adapted to be at least partially swaged onto the pin and with the collar having a plurality of relief grooves on its end face whereby sealant material located between the pin and the collar can be exhausted.

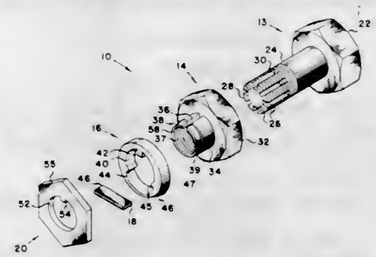
3,464,473
SCREW THREAD LOCK
James Carl Winslow, Sierra Madre, Calif., assignor to Omark-Winslow Aerospace Tool Co., Portland, Oreg., a corporation of Oregon
Filed Mar. 25, 1968, Ser. No. 715,865
Int. Cl. F16b *39/24, 39/28*
U.S. Cl. 151—7 **8 Claims**



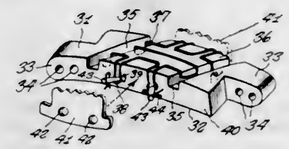
A screw thread lock using at the root of the thread in one mating element of a nut and bolt combination, a plastic element formed with flexible or resilient but stiff teeth which are engaged by the crest of the thread of the other element of the combination. The teeth are elastically bent in the direction of screwing together; and, in the bent condition strongly resist unscrewing.

3,464,474
FASTENER WITH SPRING BIASED LOCK
Harry B. Jansen, 1641 Fernbrook Place, Glendale, Calif. 91208
Filed Jan. 29, 1968, Ser. No. 701,407
Int. Cl. F16b *39/04, 39/00*
U.S. Cl. 151—24 **6 Claims**

A self-locking fastener is disclosed herein for preventing accidental disengagement from a workpiece. The fastener includes a bolt having a pin or key receiving means disposed upon its threaded shank which is adapted to threadably engage a collared nut. Locking means, carried by the collared nut, are urged, via biasing means, into engagement with the pin or key receiving means, thereby preventing rotation of the nut upon the bolt.

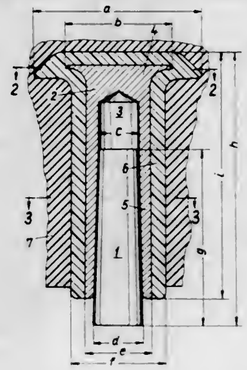


3,464,475
VEHICLE TUBES AND TIRES
Joseph A. Freed, 129 Ocean View Ave., Brooklyn, N.Y. 11235
Filed July 6, 1967, Ser. No. 651,942
Int. Cl. B60c *27/12, 17/04*
U.S. Cl. 152—167 **1 Claim**



A set of accessories for an automobile tube and tire including an attachable wire tread to prevent skidding on ice; a compartmented tube and safety wheel to prevent a punctured wheel from collapsing, as well as an armor plate to shield a tube from puncturing objects.

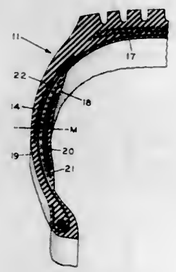
3,464,476
ANTI-SKID ELEMENT
Norbert Scheuba, Essen, and Georg Schlecker, Rubgarten, Germany, assignors to Beteiligungs-und Patentverwaltungsgesellschaft mit beschrankter Haftung, Essen, Germany
Filed Aug. 8, 1967, Ser. No. 659,069
Claims priority, application Germany, Sept. 21, 1966, B 89,004
Int. Cl. B60c *11/14, 27/20*
U.S. Cl. 152—210 **9 Claims**



An anti-skid element for tires, in the form of a pin made of wear-resistant material, a sleeve within which the pin

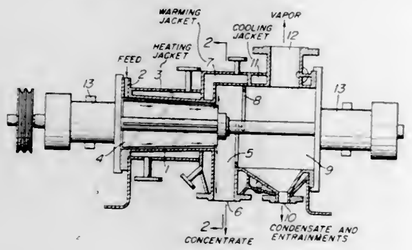
is arranged and from one end of which the pin projects, and a sheath surrounding the sleeve. The sleeve is made of a material which is a good heat conductor while the sheath is made of an elastic material which is a poor heat conductor.

3,464,477
PNEUMATIC TIRE
Henri Verdier, Beauregard-l'Eveque, France, assignor to Compagnie Generale des Etablissements Michelin, raison sociale Michelin & Cie, Clermont-Ferrand, Puy-de-Dome, France
Filed June 26, 1967, Ser. No. 648,864
Claims priority, application France, June 28, 1966, 67,347
Int. Cl. B60c *5/00, 9/24, 13/00*
U.S. Cl. 152—353 **7 Claims**



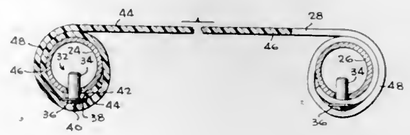
The invention is a pneumatic tire, particularly for off-highway use, having a radial carcass and a reinforced tread and containing a reinforcing layer of elastomer or a layer of elastomer containing elastic cords disposed in the sidewalls of the tire and inwardly of the carcass to reinforce the tire sidewalls against damage, the reinforcing layer having a maximum thickness at the midheight of the tire between about 1% and 3% of the maximum width of the tire and decreasing in thickness from its midportion toward the tread and the corresponding bead of the tire.

3,464,478
HORIZONTAL-TYPE HIGH VACUUM FILM EVAPORATOR FOR HIGHLY VISCOUS SOLUTIONS
Tomoharu Ueda, Nishinomiya-shi, Shinichiro Terao, Ashiya-shi, and Seizo Yabuta, Oita-shi, Japan, assignors to Sumitomo Chemical Company, Ltd., Osaka, Japan, a corporation of Japan
Filed July 3, 1967, Ser. No. 650,886
Claims priority, application Japan, July 5, 1966, 41/43,980
Int. Cl. B01d *1/22*
U.S. Cl. 159—6 **4 Claims**



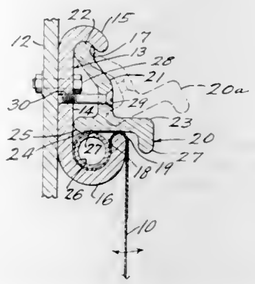
A horizontal-type centrifugal film evaporator adapted for processing highly viscous solutions and for high vacuum evaporation, in which the direction of flow of a highly viscous concentrate produced in an evaporation section is changed in a concentrate discharge section so as to prevent said concentrate from flowing into a vapor discharge section and thereby to discharge said concentrate from said concentrate discharge section, and the inner wall of said vapor discharge section is cooled to reduce the velocity of the vapor, providing for collection of that part of concentrate having been entrained into the vapor and also for condensation of the vapor on the cooled surface of said wall with no pressure loss.

3,464,479
WEBBED FURNITURE CONSTRUCTION
Bertrand M. Baker, % Tropitone Furniture Co., Commerce Blvd., Highway 301, Sarasota, Fla. 33580
Filed Nov. 22, 1967, Ser. No. 686,382
Int. Cl. A47c *5/06, 7/22*
U.S. Cl. 160—327 **9 Claims**



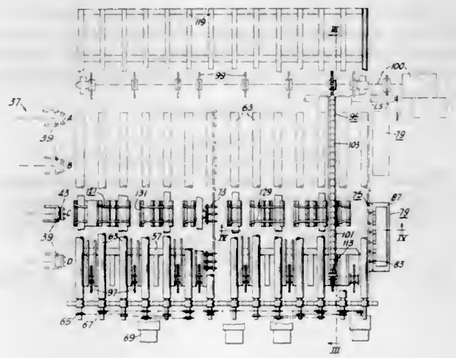
Lawn furniture having a connection between a web and metal frame consisting of a rivet-like member passing through a hole in the web and having an impaling means on its cap head for engaging a second convolution of the web extending about the rivet-like member so that tension in the web causes the impaling means to impale and retain the web in position.

3,464,480
ATTACHMENT DEVICE FOR FLEXIBLE SHEETS
Ralph L. Kuss, Findlay, Ohio, assignor to R. L. Kuss & Co., Inc., Findlay, Ohio, a corporation of Ohio
Continuation-in-part of application Ser. No. 603,598, Dec. 21, 1966. This application Aug. 23, 1968, Ser. No. 754,862
Int. Cl. E06b *9/08;* **A47h** *15/00*
U.S. Cl. 160—368 **2 Claims**



A device for attaching large flexible sheets to a rigid support member. The device includes an extruded support member adapted to be secured over the space where the flexible sheet will hang and which has opposed upper and lower channels. A rigid tube passing through a hem in the flexible sheet is positioned within the lower channel, with the sheet draped over a rounded lip on the lower channel. At least one locking lug is provided with a vertical web to be inserted in the upper channel and a horizontal locking portion, the end of which bears against the extruded support member to enclose the rigid tube and sheet hem in the lower channel. The locking lug is so dimensioned that an upward force on the rigid tube, caused by a downward force on the flexible sheet, will urge the locking lug inwardly against the extruded support to further lock the members in place.

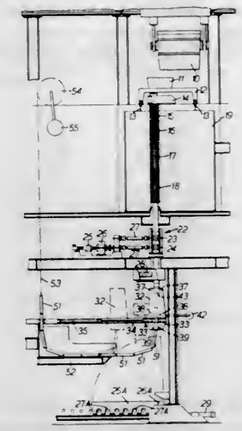
3,464,481
BILLET AND SLAB TRANSFER DEVICE
Harry F. Hartzell, Jr., Allison Park, Pa., assignor to Koppers Company, Inc., a corporation of Delaware
Filed Aug. 15, 1967, Ser. No. 660,813
Int. Cl. B22d *11/12, 11/14;* **B65g** *47/29*
U.S. Cl. 164—269 **11 Claims**



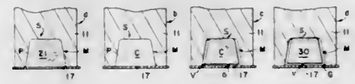
Billets and slabs that are cut from horizontally extending continuous cast strands move under control of automatically operated stops in sequence onto a transfer device including a plurality of spaced apart horizontally arranged powered rollers. Endless chains located between adjacent rollers have slab or billet engaging blocks mounted to individual links of the chain that form a long articulate wedge; the blocks progress upwardly in height incrementally from link to link over a finite length of chain. When the billets or slabs move onto the transfer device, they actuate limit switches and the wedge device mounted to the chains move at right angles to the direction of movement of the billets or slabs. The billets or slabs are both raised by the wedge shaped blocks and transferred by the chains to a gathering platform from which several billets or slabs are removed at one time.

3,464,482
CONTINUOUS CASTING
Joseph Irwin Greenberger, Pittsburgh, Pa., assignor to United Engineering and Foundry Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed July 22, 1966, Ser. No. 567,179
Claims priority, application Great Britain, July 23, 1965, 31,613/65
Int. Cl. B22d *11/08*
U.S. Cl. 164—274 **6 Claims**

This invention relates to a dummy bar for a continuous casting machine, and to a dummy bar mechanism including a dummy bar and handling apparatus therefor. The dummy bar mechanism comprises a transversable carriage designed to support and guide the dummy bar section vertically in the direction of the mold. The dummy bar section includes a coupling element, one portion of which is adapted to engage an abutment on the transverse movement of the carriage, which movement automatically disengages the dummy bar section from the cast article.



3,464,483
CASTING OF MOLTEN METAL
Daniel B. Cofer, Carrollton, Ga., and Thomas L. Bray, Birmingham, Ala., assignors to Southwire Company, Carrollton, Ga., a corporation of Georgia
Continuation-in-part of application Ser. No. 543,644, Apr. 9, 1968. This application Feb. 1, 1967, Ser. No. 613,334
Int. Cl. B22d *11/06, 11/12;* **B29c** *1/02*
U.S. Cl. 164—278 **11 Claims**

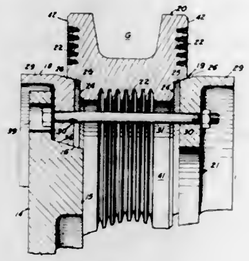


What is disclosed herein is a casting machine for the continuous casting of a non-ferrous molten metal in the annular mold of a casting wheel. The mold is formed of a metal having iron as the major constituent such as low carbon steel to provide a mold having a rate of heat transfer which is low relative to the rates provided by prior art molds and as a result a non-ferrous molten metal is solidified in the mold in a manner which substantially reduces the non-uniform cooling of the non-ferrous molten metal that is characteristic of prior art molds. In addition, the low carbon steel provides a mold with a rate of temperature propagation or transfer which is low relative to the rates provided by prior art molds and as a result, the thermal fatigue characteristic of prior art molds when used in continuous casting is substantially reduced. The reduction in thermal fatigue and the structural strength of low carbon steel result in the mold having a long useful life relative to prior art molds.

3,464,484
CASTING MACHINE WITH REMOVABLE CASTING RING
Thomas L. Bray, Birmingham, Ala., assignor to Southwire Company, Carrollton, Ga., a corporation of Georgia
Filed Apr. 27, 1967, Ser. No. 634,198
Int. Cl. B22d *11/06*
U.S. Cl. 164—278 **5 Claims**

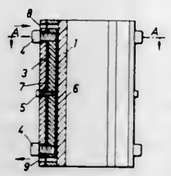
What is disclosed herein is a casting machine having a casting wheel with a casting ring which is easily and conveniently removed from the casting machine and which

is easily and conveniently disassembled from supporting structure for repair or replacement. Specifically, the casting wheel is disclosed as including a mounting plate by which the casting wheel is mounted for rotation and against which one of a plurality of flanges having an annular casting ring between them is positioned with a beveled support surface of the mounting plate engaging



a complementary beveled support surface of the flange. The casting ring is positioned between the flanges with a beveled support surface engaging a complementary beveled support surface of each flange and all of the beveled support surfaces are positioned so that the flanges, casting ring, and mounting plate tend to be urged apart to provide for ease of removal from the casting machine and of disassembly.

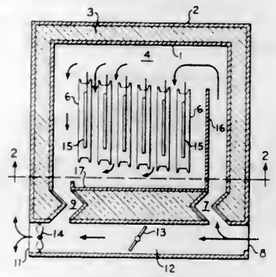
3,464,485
WATER-COOLED PLATE MOLD FOR CONTINUOUS CASTING
Helmut Landgraf, Rumeln, and Gerd Vogt, Krefeld, Germany, assignors to Mannesmann Aktiengesellschaft, Dusseldorf, Germany
Filed Apr. 26, 1967, Ser. No. 633,765
Claims priority, application Germany, May 10, 1966, M 69,438
Int. Cl. B22d *11/12*
U.S. Cl. 164—283 **6 Claims**



A water-cooled mold for continuous casting of metals which has ribs welded to the mold wall. The ribs are connected to the outer supporting frame of the mold by bolts. The ribs are interconnected by spacers. This assembly acts as supporting structure. The welded structure, in contrast to customary spot connections, averts distortion of the mold under the influence of heat.

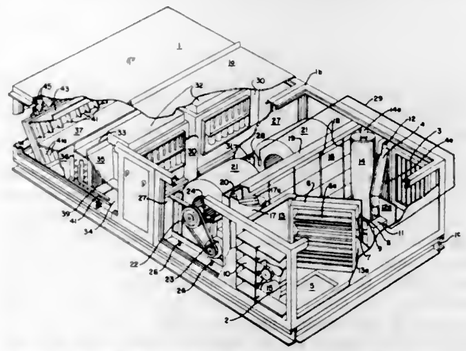
3,464,486
CONFIGURATION OF SEALED HEAT STORAGE MODULES
Richard E. Rice, Arlington, and William E. Whitney, Belmont, Mass., assignors, by mesne assignments, to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York
Filed Sept. 19, 1967, Ser. No. 668,785
Int. Cl. F24h *7/04, 3/04;* **F28f** *3/00*
U.S. Cl. 165—1 **11 Claims**

Several sealed modules containing a heat storage material comprising an alkali metal hydroxide composition are placed in an insulated chamber having an inlet and an outlet, ducts disposed within the insulated chamber to conduct a fluid to be heated either into an internal chamber housing the modules or straight through the chamber to the outlet. Heating means are disposed between the sealed modules or within the sealed modules. A valve means situated in the straight through duct is



responsive to a temperature sensing device placed in the outlet to regulate the amount of fluid passing into contact with the modules, which regulation results in a controlled temperature of the fluid drawn through the chamber housing.

3,464,487
AIR HANDLING UNIT
Harold E. Gold and Paul E. Hammann, Bettendorf, Iowa, assignors to American Air Filter Company, Inc., Louisville, Ky., a corporation of Delaware
Filed Nov. 2, 1967, Ser. No. 680,146
Int. Cl. F25b *29/00;* **F24f** *13/04, 13/08*
U.S. Cl. 165—16 **5 Claims**



An air inlet assembly for an air-conditioning unit which provides a damper arrangement to control both the quantity of air returned to the air conditioning unit from the space served by the unit and the quantity of fresh air supplied to the unit, and mix the two streams of air upstream of air-conditioning elements which can also be provided in the unit.

3,464,488
ARRANGEMENT IN TUBE HEAT EXCHANGERS WITH TUBES OF THE PLATE OR FLAT TYPE
Tore Gustav Fredrik Marmsater, Vallingby, Sweden, assignor to AB Rosenblads Patenter, Stockholm, Sweden, a corporation of Sweden
Filed Aug. 21, 1967, Ser. No. 661,941
Claims priority, application Sweden, Aug. 22, 1966, 11,281/66
Int. Cl. F28f *3/14*
U.S. Cl. 165—166 **1 Claim**

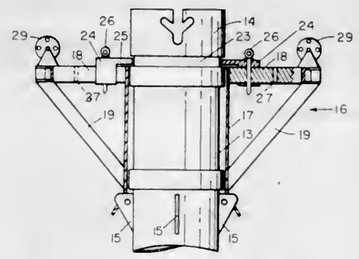
A heat exchanger particularly for high pressures, having a bundle of tubes comprising elongated plate-shaped

or flat heat transferring tubes of mainly rectangular cross-section, which also may be referred to as hollow lamellae, arranged side by side with open spaces between the tubes at the longitudinal edges thereof. The heat ex-



changers are assembled by joining opposing pairs of halves of successive tubes together by welding spacer elements between them, and then welding the edges of each of the halves to the edges of adjacent paired halves to form an assembly of spaced tubes.

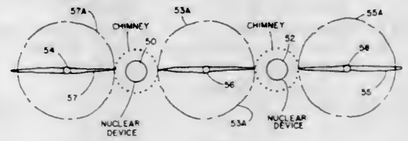
3,464,489
REMOVABLE SUBSEA DRILLING GUIDE ARM BASE
Roy P. Thomas, Lafayette, La., assignor to Pan American Petroleum Corporation, Tulsa, Okla., a corporation of Delaware
Filed Dec. 12, 1967, Ser. No. 689,824
Int. Cl. E21b *7/12, 43/01*
U.S. Cl. 166—.5 **4 Claims**



In drilling oil and gas wells or the like from a floating vessel in a marine location, it is ordinarily convenient to employ in the early stages of the drilling a set of guide cables, or lines, connecting the drilling vessel or floating platform with the top of the well, so that the drilling equipment may be lowered in such a way that it will index, or be located accurately to re-enter the well. In order to do this the drilling base (a very heavy plate-like member with a substantially central hole) is initially locked on the sea bottom. It frequently includes surface casing, or surface casing is very early placed through this drilling base and cemented in place, all is well known in this art. On this drilling base a guide arm base is then fastened, thus establishing the location of the guide cables for the subsequent manipulations of the drilling equipment.

It is desirable to remove the guide arm base. This invention utilizes a removable guide arm base which is easily attached initially to the surface casing or an equivalent projection from the drilling base. It is of adequate strength for all functional operations and at the time that the blowout preventers are removed, this guide arm base can be unlatched and retrieved. It may also be re-installed on temporarily abandoned marine well heads.

3,464,490
FORMATION NUCLEAR FRACTURING PROCESS
Daniel Silverman, Tulsa, Okla., assignor to Pan American Petroleum Corporation, Tulsa, Okla., a corporation of Delaware
Filed Aug. 30, 1965, Ser. No. 483,749
Int. Cl. E21b *43/26*
U.S. Cl. 166—245 **12 Claims**



A method of treating an underground formation to increase the yield of petroleum therefrom. A placement well is drilled to the formation to be treated. The location and size of the chimney wanted in the deposit is selected. A nuclear device is then selected so that its conventionally formed chimney will not ordinarily extend vertically as far as that desired. Before the nuclear device is detonated, the formation just above the anticipated chimney is preconditioned so that the chimney will be extended vertically beyond that which could otherwise be expected. A preferred form of preconditioning includes placing a series of horizontal fractures just above the top of where it is anticipated that the chimney will be formed. When the chimney is formed, support for the fractured rock is removed, thus causing the fractured rock above the nuclear formed chimney to fail. This increases the height of the chimney to the upper of the spaced horizontal fractures. Other embodiments of preconditioning a well to extend the effect of the detonation of the nuclear device are disclosed.

3,464,491
OIL RECOVERY FROM FORMATIONS CONTAINING CHANNELS
H R. Froning, Tulsa, Okla., assignor to Pan American Petroleum Corporation, Tulsa, Okla., a corporation of Delaware
No Drawing. Filed Dec. 18, 1967, Ser. No. 691,123
Int. Cl. E21b *43/24, 43/20, 33/13*
U.S. Cl. 166—261 **3 Claims**

In underground combustion operations for recovery of petroleum from oil-bearing earth formations, bypassing of oxygen-containing gas through very high permeability channels, such as fractures, is reduced by filling a substantial portion of the channel or fracture with a foaming agent solution. Then, wherever gas tends to flow in the channel, a foam is generated to block the flow. An oil-sensitive foaming agent is used, so any foam formed in the oil-filled rock matrix breaks quickly, while foam in the substantially oil-free channel does not break so readily. The process can be varied for use in steam and waterfloods.

3,464,492
METHOD FOR RECOVERY OF PETROLEUM OIL FROM CONFINING STRUCTURES
Robert H. Friedman, Houston, Tex., assignor to Getty Oil Company, Los Angeles, Calif., a corporation of Delaware
No Drawing. Filed Dec. 6, 1967, Ser. No. 688,324
Int. Cl. E21b *43/22, 43/24, 43/20*
U.S. Cl. 166—270 **12 Claims**

A method is provided for enhancing the movement of a heavy crude petroleum oil through a confining structure such as a reservoir. Ammonia is introduced into the petroleum oil while the oil is in the presence of water, to form ammonium soaps. The ammonium soaps cause the formation of an oil-in-water emulsion having a viscosity lower than that of the oil. A driving fluid is introduced to cause the emulsion and associated crude to move

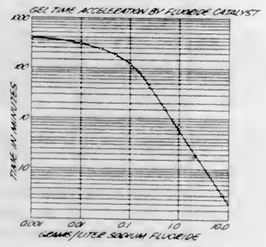
through the confining structure. In one embodiment, decomposition of the ammonium soaps and the formation of other soaps is accomplished by the introduction of thermal energy, so that the area of lowered viscosity is effectively increased.

3,464,493
PORT COLLAR FOR WELL CASINGS AND METHOD FOR PACKING WELL BORES
Forrest E. Chancellor and Robert O. Chancellor, both of P.O. Box 5578, Bakersfield, Calif. 93308
Filed Dec. 26, 1967, Ser. No. 693,661
Int. Cl. E21c *33/16, 33/13*
U.S. Cl. 166—285 **7 Claims**



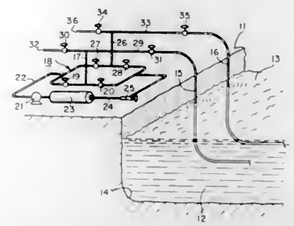
A port collar for a well casing string and method for discharging packing material under pressure into the well bore about the casing with the collar providing a cylindrical body disposed coaxially within the casing string which includes a valve mechanism to communicate the interior of the casing with the well bore, and valve actuating means insertable into the casing for gravitational descent and engagement with said valve means hydraulically successively to open and to block communication between the interior of the casing and the well bore without any mechanical connection between the collar and the surface of the well.

3,464,494
METHOD OF PLUGGING EARTH FORMATIONS WITH FLUORIDE CATALYZED SILICIC ACID CHEMICAL GROUT
Homer C. McLaughlin, Duncan, Okla., assignor to Halliburton Company, Duncan, Okla., a corporation of Delaware
Continuation-in-part of application Ser. No. 574,676, Aug. 24, 1966. This application July 7, 1967, Ser. No. 660,541
Int. Cl. E21b *33/13;* **C09j** *1/02*
U.S. Cl. 166—292 **10 Claims**



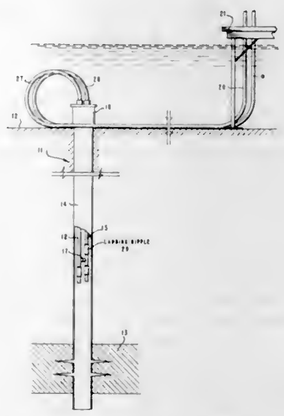
This patent describes the method and composition for plugging or sealing subterranean earth formations using a silicic acid solution having its gel time controlled by the fluoride ion concentration.

3,464,495
WASHING A WELL
Thomas W. Childers, Metairie, Edmond R. Genois, New Orleans, and Charles A. Brasier, Metairie, La., assignors to Esso Production Research Company
Filed Sept. 11, 1967, Ser. No. 666,623
Int. Cl. E21b *21/00, 33/12*
U.S. Cl. 166—312 **9 Claims**



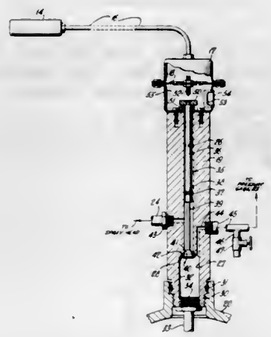
Sand is washed from a well provided with interconnected tubing strings arranged with their lower ends above perforations in a well casing covered by the sand by propelling a tubular member equipped with loose-fitting pistons by fluid pressure through one of the tubing strings to extend to the sand; the tubular member follows the diminishing level of sand as the sand is washed up the other string by fluid circulation part of which bypasses around the loose-fitting piston thus providing additional fluid for washing the sand up the other string.

3,464,496
RUNNING OF ELONGATED PIPE IN A WELL
Edmond R. Genois, New Orleans, La., and Thomas W. Childers, Woodland Hills, Calif., assignors to Esso Production Research Company
Continuation-in-part of application Ser. No. 607,713, Jan. 6, 1967. This application Sept. 30, 1968, Ser. No. 767,048
Int. Cl. E21b *23/04*
U.S. Cl. 166—315 **12 Claims**



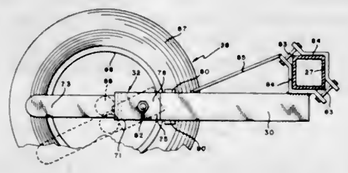
Elongated pipe is run into a well conduit, a portion of which is curved, by exerting fluid pressure against pump tools attached to the elongated pipe. The elongated pipe has sufficient rigidity and strength to support its weight and maintain its elongation. When the elongated pipe passes through the curved portion of the conduit it is deformed past its yield point, yet may be reused.

3,464,497
AUTOMATIC FIRE EXTINGUISHER
Irving Globerman, Westbury, and Robert S. Kaplan, Floral Park, N.Y., assignors to Ar-Kay Enterprises, Inc., Garden City, N.Y., a corporation of New York
Filed Jan. 23, 1968, Ser. No. 699,828
Int. Cl. A62c *35/12, 37/06, 35/44*
U.S. Cl. 169—2 **6 Claims**



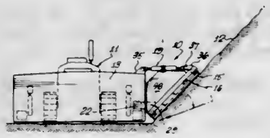
The invention contemplates an automatic release mechanism for fire-extinguisher materials, operative upon detection of a given temperature condition at a localized region, as in the vicinity of the carburetor, for the case of protection against damage from a carburetor fire. Valve mechanism fits a standard extinguisher tank, and the valve is actuated by a closed liquified-gas detection system. Heat-response and the charged extent and condition of the overall installation may be readily observed and checked as frequently as desired, without discharging the system; also, the system can be easily recharged without parts replacement.

3,464,498
SINGLE BAR BREAKER FOR EARTH CRUST
Michael C. Hornung, Spearville, Kans., assignor to American Products, Irc., Spearville, Kans.
Filed June 6, 1966, Ser. No. 555,574
Int. Cl. A01b *63/16, 19/02, 23/02*
U.S. Cl. 172—421 **4 Claims**



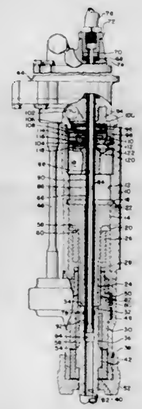
This invention is harrow-type earthworking implement including a single support beam to which is connected a plurality of spaced rows of tooth members and having the same adjustably supported on spaced wheel means. More particularly, this invention is a farm implement having spaced tooth members attachable to a support beam to provide substantial rigidity and reaction force with the entire implement supported upon wheel means rigidly connected to support bars and operable to be readily adjustable but maintaining the required rigidity in a given adjusted position.

3,464,499
ADJUSTABLE BLADE DEVICE
Samuel B. McKell, 1312 W. Orangethorpe, Fullerton, Calif. 92633
Filed Aug. 23, 1965, Ser. No. 481,565
Int. Cl. E02f *3/76*
U.S. Cl. 172—802 **11 Claims**



An adjustable slope board device for a bulldozer that includes a triangular beam arrangement having a generally horizontal beam alongside the side rail of a bulldozer, an upwardly and outwardly extending moldboard beam, and an inclined beam that extends downwardly and inwardly from the outer end of the moldboard beam to the rearward end of the horizontal beam. A blade is carried longitudinally by the moldboard beam, which at its upper end is secured to the bulldozer by an element of adjustable length. Spaced hinges connect the horizontal beam to the side rail of the bulldozer, the hinges including brackets attached to the upper surface of the side rail where the connection is made by removable pins which limit the pivotal movement of the slope board to that about an axis longitudinal of the side rail.

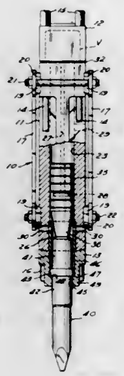
3,464,500
PERCUSSION TOOL CONTROL MEANS
Arthur W. Wallace, Denver, Colo., assignor to Gardner-Denver Company, a corporation of Delaware
Filed Nov. 16, 1967, Ser. No. 683,578
Int. Cl. B23q *5/06;* **E21c** *7/08;* **B25d** *17/14*
U.S. Cl. 173—15 **3 Claims**



A motor control valve for percussion tools, such as rock drills, operable to idle or shut down the percussion motor when the tool shank is not in position to be struck by the reciprocating hammer of the motor. One embodiment consists of a pneumatic actuator for the motor control valve which receives a pressure signal via a hole cleaning tube which telescopically fits in the tool shank. When the tool shank moves out of hammer striking position the pressure signal, normally communicated through the hole cleaning tube, is interrupted thereby permitting the actuator to close the motor control valve to throttle the supply of motive air to the motor. Should

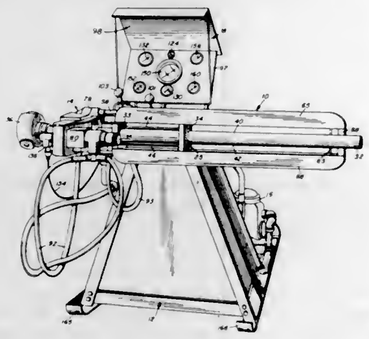
the cleaning medium be liquid, a mechanical actuator is employed consisting of a hole cleaning tube having a motor valve element connected at one end and being connected to the tool shank for closing the motor valve when the shank moves out of hammer striking position.

3,464,501
AUTOMATIC PNEUMATIC IMPACT HAMMER
Eugene T. Ward, Highland Heights, Ohio, assignor to Allied Steel & Tractor Products, Inc., a corporation of Ohio
Filed Oct. 5, 1967, Ser. No. 673,121
Int. Cl. B23q *5/06;* **E21c** *5/08*
U.S. Cl. 173—17 **2 Claims**



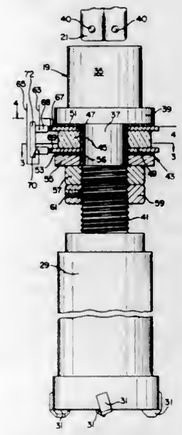
An automatic pneumatic hammer having disactivating ports located near the outer end of the cylinder block bore but inward past the point to which the tool shank can bounce back after being struck by the ram under no-load conditions, so that the tool shank cannot block these ports and permit a repeat stroke of the ram. Tool bounce is minimized by the novel configuration of a shoulder engaged by the tool in its outermost position after being struck by the ram.

3,464,502
HYDRAULIC-DRIVE DRILLING
Robert W. Ageton, Spokane, Wash., assignor to the United States of America as represented by the Secretary of the Interior
Filed Nov. 6, 1967, Ser. No. 680,616
Int. Cl. B23q *5/06;* **E21c** *11/00, 9/00*
U.S. Cl. 173—20 **5 Claims**



Drilling cores of hard, fractured quartzite is accomplished by separately applying sensitively controlled high pressure hydraulic forces to rotate and advance a drill. Applicable drilling apparatus includes a gear drive housing which is attached to a centrally supported torque guide tube, and supports a bit chuck for a rotational drive by a hydraulic motor and longitudinally displacement by hydraulically driven pistons affixed to the housing. Independently controlled hydraulic pressure circuits variably activate the pistons and produce high torque at low r.p.m.'s in the motor. A console adjacent the pressure controls contains instrumentation allowing concurrent observations of all important operational parameters during controlled drilling.

3,464,503
MEASURING DEVICE FOR IMPACT TOOL
Frederick D. Houck, Columbus, Ohio, assignor to The Black and Decker Manufacturing Company, Towson, Md., a corporation of Maryland
Filed June 25, 1968, Ser. No. 739,718
Int. Cl. E21b *9/35;* **E21c** *5/16;* **B23q** *5/00*
U.S. Cl. 173—20 **15 Claims**

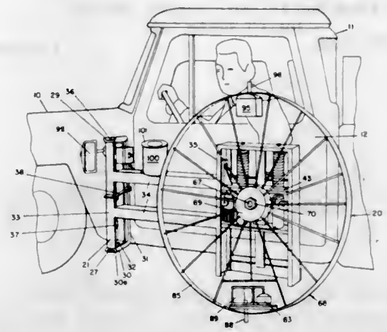


The device disclosed herein is a powered, portable, impact tool with an operating parameter measuring system integrated therewith. The system includes a piezoelectric crystal device carried by the tool between an impact mechanism and a tool bit and which is connected to a voltage sensitive device. The piezoelectric crystal device develops voltage pulses in response to the impact blows transmitted longitudinally to the tool bit, and feeds them to the voltage sensitive device which may translate them into readable data or use them to control the characteristics of the input to the tool.

3,464,504
VEHICLE MOUNTED SOIL SAMPLING DEVICE
Wilfred H. Stange, Rte. 2, Box 206, New Lisbon, Wis. 53950
Filed Sept. 26, 1968, Ser. No. 762,862
Int. Cl. E21c *11/02, 5/08*
U.S. Cl. 173—28 **10 Claims**

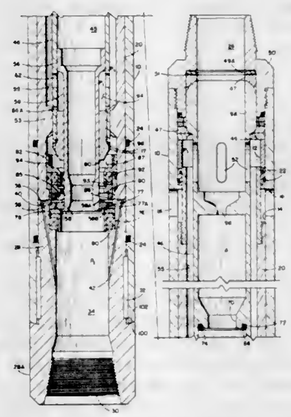
A soil sampling device having a frame for mounting on the chassis of a truck adjacent the cab thereof for pivotable movement to and from an operating position generally parallel to the path of travel of the truck. A vertically reciprocal carriage assembly is mounted in the frame and has an upper spring-supported carriage and a lower carriage supported from the upper carriage by a pair of hydraulic cylinders. The lower carriage has a large rotatable wheel mounted thereon which has at least one

radially extending tubular earth probe. The probe may be forced into the soil manually or with the hydraulic cylinders and a motor is provided for rotating the probe. The



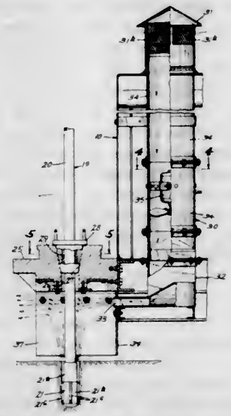
tubular earth probe is attached to a transparent container box removably mounted on the wheel for receiving the core sample from the probe.

3,464,505
DRILLING APPARATUS
Renic Price Vincent and Lawrence B. Wilder, Tulsa, Okla., assignors to Pan American Petroleum Corporation, Tulsa, Okla., a corporation of Delaware
Continuation-in-part of application Ser. No. 491,116, Sept. 29, 1965. This application Nov. 1, 1967, Ser. No. 691,082
Int. Cl. E21b *1/06*
U.S. Cl. 173—80 **23 Claims**



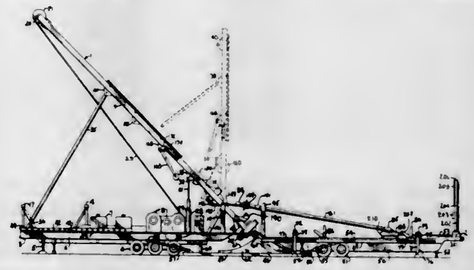
This invention relates to a liquid actuated percussion tool for applying repeated blows to a drill bit in the drilling of wells. The tool is connected to the lower end of the drill string just above the bit. The tool includes a hammer slideably fitted within a housing, an axially hollow anvil fitted within the housing and below the lower end of the hammer. The hammer is actuated between an upward position away from and a lower position contacting the anvil by a valve action on a fluid stream flowing in the axial hollow portion. The valve means includes an inner annular valve seat on the hammer which is positioned such that the lower surface of the annular seat contacts an upper surface of a valve element. The valve element moves slideably between an upper position and a lower position. Various combinations of differential areas and pressures result from the movement of the valve and the hammer to effect reciprocation of the hammer. Special valve stops are fixed to a valve guide means to prevent the valve from striking the valve seat located or the hammer. This improves valve life.

3,464,506
BLOWER SYSTEM FOR JET PIERCERS
Allan M. Moyer and William R. McCarthy, Babbitt, and Wilfred M. Petrell, Embarrass, Minn., assignors to Reserve Mining Company, Silver Bay, Minn., a corporation of Minnesota
Filed June 27, 1968, Ser. No. 740,684
Int. Cl. E21c *21/00*
U.S. Cl. 175—14 **8 Claims**



A jet piercing machine having a vertically suspended, rotating blowpipe assembly that produces a high velocity, high temperature flame for forming blast holes in an ore formation. Water is provided to cool the burner head and to form steam that aids in ejecting the disintegrated ore and other debris from the blast hole. A fan unit is mounted in an air duct system on the machine so as to discharge a high velocity curtain of air over the blast hole in a direction away from the machine to carry the steam, combustion products, disintegrated ore and other debris emerging from the blast hole away from the machine to minimize damage to the machine.

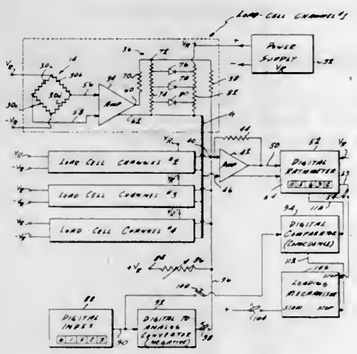
3,464,507
PORTABLE ROTARY DRILLING PIPE HANDLING SYSTEM
Emmett L. Alexander and Hugh D. Smith, Enid, Okla., assignors to Westinghouse Air Brake Company, Enid, Okla., a corporation of Pennsylvania
Filed July 3, 1967, Ser. No. 650,838
Int. Cl. E21b *19/00, 33/03;* **E21c** *5/00*
U.S. Cl. 175—85 **11 Claims**



A mobile support carrying drilling equipment including a mast pivotally mounted thereon and movable from a reclining transport position to a desired position at the

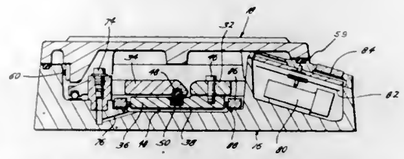
site of drilling operations which may be at any angle up to vertical. The mast has ways or guides for a traveling mechanism including a block movable up and down the mast through operation of cables reeved from the traveling block over crown block pulleys and to a draw works. A power drill drive is carried by the traveling block. An elevator for drill pipe is carried by arms swingably mounted relative to the power unit. Power tongs, slips, and slip bushings are supported adjacent the lower end of the mast and adapted to have a drill pipe extend therethrough from a drive bushing connected to the power drive whereby the drill pipe extends in the direction of the hole to be drilled. The apparatus includes drill pipe handling from storage to hole and has a mobile drill pipe storage for movably supporti: 3 drill pipe sections in substantially horizontal position with a transfer arm swingably mounted at the end thereof adjacent the mast and operable to raise the adjacent end of a pipe section to a position to be engaged by the elevator when the traveling block is at its lowered position and the elevator arms are swung to raise the elevator into engagement with said pipe section, whereby the pipe section is moved, in response to movement of the traveling block, up the mast. A stabbing arm is swingably mounted on the mast in a position for swinging into supporting engagement with a mid-portion of the drill section being moved to or from the storage. In moving the pipe from the storage the engagement by the stabbing arm is prior to the trailing end of the pipe leaving said storage, whereby the pipe section may then be supported by the elevator and stabbing arm until the trailing end is raised above the tongs and then by movement of the stabbing arm and elevator, the trailing end is aligned with an end of a drill pipe extending from the drilled hole and lowered and engaged therein and a connection made therebetween. The drill pipe and slips have engageable serrations or mating lugs for holding the drill string during making and breaking pipe joints.

3,464,508
FORCE TRANSDUCER OUTPUT MEASURING SYSTEM EMPLOYING RATIO TECHNIQUE
Charles E. Engle, Tustin, and James A. Nelson, Costa Mesa, Calif., assignors to Dana Laboratories, Inc., a corporation of California
Filed Oct. 21, 1966, Ser. No. 588,516
Int. Cl. G01g *23/14*
U.S. Cl. 177—164 **5 Claims**



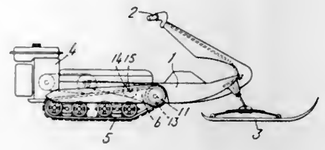
An electronic weight measuring system is disclosed wherein a voltmeter, load cells, and a tare weight potentiometer are all driven in a ratio by a single source of supply potential, thereby affording accurate operation (especially with multiple load cells) in spite of voltage fluctuations. Isolating diode networks are disclosed for each of the load cells to linearize outputs in accordance with amplitude.

3,464,509
WHEEL SCALE
Tommy L. Gray, Dallas, Tex., assignor to General Electrodynamics Corporation, Garland, Tex., a corporation of Texas
Filed Jan. 11, 1967, Ser. No. 608,526
Int. Cl. G01g *5/04*
U.S. Cl. 177—208 **11 Claims**



A portable scale for weighing wheeled vehicles by driving the wheeled vehicle onto the scale in which two longitudinally extending lever arms bear on a piston resting on a hydraulic diaphragm to exert pressure on a hydraulic fluid. One lever arm is rigidly attached to the piston and the other engages the piston through a frictionless bearing. The pressure of the hydraulic fluid is read to determine the load on the scale.

3,464,510
STEERING APPARATUS FOR AN ENDLESS TRACK VEHICLE
Yoshikazu Washizawa, Kita-Adachi-gun, Saitama-ken, and Hiroto Matsuzawa, Iruma-gun, Saitama-ken, Japan, assignors to Kabushiki Kaisha Honda Gijutsu Kenkyusho, Saitama-ken, Japan
Filed June 7, 1967, Ser. No. 644,316
Claims priority, application Japan, June 7, 1966, 41/52,879
Int. Cl. B62m *27/02;* **B62d** *11/12*
U.S. Cl. 180—5 **7 Claims**

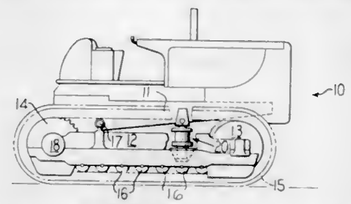


A steering apparatus in which a first pair of V pulleys is mounted on an input shaft and drives a second pair of V pulleys each on a respective output shaft coupled to an endless track wheel, one of the pairs of V pulleys having adjustable half portions, one of each of which is coupled together and operated by a steering handle such that the effective diameter of one pulley of said pair increases and the other decreases whereby the speed of one track wheel is increased and the other decreased thereby producing turning of the vehicle.

3,464,511
HYDROPNEUMATIC SUSPENSION SYSTEM
William C. Coats, Chillicothe, and Edward J. Moyer, Morton, Ill., assignors to Caterpillar Tractor Co., Peoria, Ill., a corporation of California
Filed Oct. 17, 1967, Ser. No. 675,871
Int. Cl. B62d *55/00, 55/30*
U.S. Cl. 180—9.54 **2 Claims**

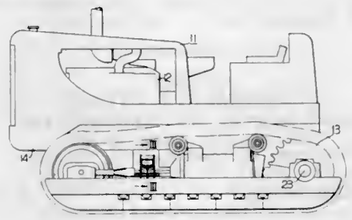
A hydropneumatic suspension system for track-type tractors wherein the forward end of the tractor is supported by a pair of hydraulic jacks in fluid communication with each other and a hydropneumatic accumulator in a system which includes means for providing a

dual rate action for the suspension, such jacks having a variable piston area which restricts oscillation when the



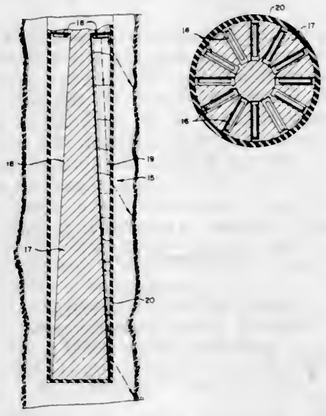
tractor is operating laterally across the side of a hill or incline.

3,464,512
CUSHIONED EQUALIZER BEAM FOR CRAWLER TRACTOR
Donald L. Schaffner, Springfield, Ill., assignor to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.
Filed May 29, 1968, Ser. No. 733,092
Int. Cl. B62d *55/00*
U.S. Cl. 180—9.54 **6 Claims**



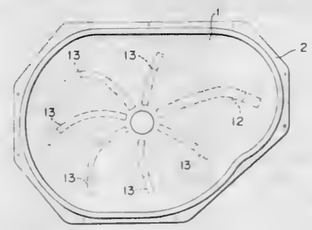
An equalizer mechanism for a crawler tractor having cushioning means between upper and lower parts thereof. The lower part serves as a rigid equalizer beam between the track frames and the upper part is pivotally connected by a longitudinal pivot pin to the tractor main body.

3,464,513
ACOUSTIC APPARATUS FOR MAPPING THE SURFACE CHARACTERISTICS OF A BOREHOLE
William L. Roever, New Orleans, La., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware
Filed Apr. 24, 1968, Ser. No. 723,789
Int. Cl. G01v *1/00*
U.S. Cl. 181—.5 **1 Claim**



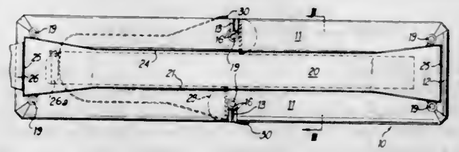
A method and apparatus for investigating subterranean formations adjacent a borehole containing a borehole fluid by transmitting a pulsed beam of ultrasonic radiation through the borehole fluid in an inclined path against the adjacent formations wherein the pulsed beam is guided through acoustic waveguides wherein the velocity is greater and the attenuation is less than in the borehole fluid.

3,464,514
LOUDSPEAKER
Yasunori Mochida, Ikuji Kurokawa, Kazukiyo Ishimura, and Hiromi Sotome, Hamamatsu, Shizuoka, Japan, assignors to Nippon Gakki Co., Ltd., Hamamatsu, Shizuoka, Japan
Filed Sept. 25, 1967, Ser. No. 670,045
Claims priority, application Japan, Nov. 2, 1966, 41/72,547
Int. Cl. G10k *13/00;* **H04r** *7/16*
U.S. Cl. 181—32 **8 Claims**



A loudspeaker which comprises a diaphragm of a substantially flat plate made of foamed resin having substantial surface area, which diaphragm is clamped to its periphery on a frame, so that the periphery is prevented from forward and backward reciprocating movement, and adapted to be driven by a driving means substantially at the center. Said diaphragm has an asymmetric shape in elevation and a conical shape in section around the driven area, said conical shape having a curved generatrix gradually increasing its inclination toward the center of said driven area. Radial ribs are formed on said diaphragm around said driven area and have curved form.

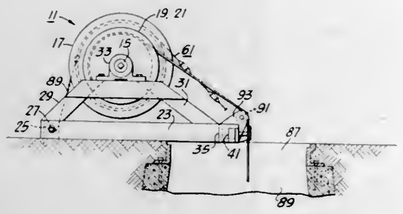
3,464,515
INFLATABLE ESCAPE CHUTES FOR AIRCRAFT
Frederick M. Evans, Wallasey, England, assignor to Frankenstein Group Limited, a British company
Filed Feb. 12, 1968, Ser. No. 704,875
Claims priority, application Great Britain, Feb. 14, 1967, 6,960/67
Int. Cl. A62b *1/20;* **B65g** *11/10;* **B63b** *7/08*
U.S. Cl. 182—20 **7 Claims**



A collapsible escape slide for extension from an aircraft doorway in emergency comprises a closed loop of flexible tubes adapted on inflation to produce an elongated rectangular frame with substantial rigidity in a direction perpendicular to the general plane thereof, a panel of flexible material attached along one side of said frame and releasably secured to the ends and other side

thereof to form a floor for said slide, whose side tubes are each adapted for articulation in the general plane aforesaid, a flexible thwart tube connecting the mid-points of said tubes and adapted, on inflation, to bow said side tubes outwardly, and a second flexible floor permanently united to said frame to constrain the latter to a substantially oval planform when laterally extended as aforesaid, the slide being thus converted into a liferaft. At each articulation point, the frame tubing may have one side thereof connected by an internal web to an inward fold at the other side, and during normal use of the slide undesired articulation at any such point can be prevented by temporarily fastening opposite sides of said inward fold together. After conversion of the slide into a liferaft, the latter may be equipped with a protective flexible canopy supported upon a separate inflatable superstructure comprising a ring tube with dependent strut tubes whose free ends are securable to the raft gunwale, such canopy and superstructure being initially stowed in a pouch at one end of the raft floor.

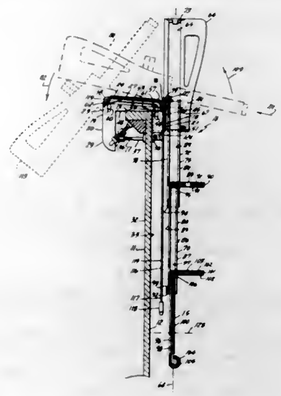
3,464,516
PORTABLE FLEXIBLE ACCESS LADDER AND SAFETY REELS ASSEMBLY
Sylvester J. Remele, Pittsburgh, Pa.
(418 Revere Drive, Monroeville, Pa. 15146)
Filed Mar. 22, 1968, Ser. No. 715,250
Int. Cl. A62b *1/06;* **E06c** *1/52*
U.S. Cl. 182—73 **10 Claims**



A portable flexible access ladder and safety reels assembly comprises a support frame, adapted to fit partially over an open access manhole, carrying a shaft on which is journaled three reels; the central reel holding a flexible access ladder and the two side reels each holding flexible safety lines. The reels can be engaged to or disengaged from the shaft, and a support member attached to the frame holds the ladder in a suspended position. The flexible ladder is made in sections that can be suspended individually from a truck or other vehicle if desired.

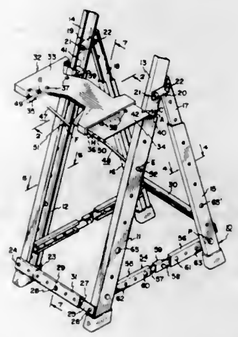
3,464,517
SMALL BOAT BOARDING APPARATUS
Andrey O. Akermanis, 3401 N. Westmoreland Drive, Orlando, Fla. 32804
Filed June 20, 1968, Ser. No. 738,516
Int. Cl. E06c *1/12, 1/22*
U.S. Cl. 182—97 **8 Claims**

A small boat boarding apparatus has a telescopic ladder which through a hanger is supported at the upper edge of the boat hull. The hanger includes a bracket support and a bracket which is movable between the opposite sides of the support. The ladder is inverted during movement of the bracket between the opposite sides of the support and a pin and slot arrangement is provided in the hanger to permit the inversion and movement of the bracket. The ladder is collapsed at the inboard side of of the hull and a device which is manipu'atable by a swimmer at the outboard side of the hull is provided for moving the ladder to its outboard boarding position. Also disclosed is a means for permanently mounting the support component in the boat hull structure and which



enables the bracket component of the hanger to be attached and detached at will to the boat hull.

3,464,518
SCAFFOLD STRUCTURE
Joseph J. Stelovich, 2366 Kensington Ave., Salt Lake City, Utah 84108
Filed June 10, 1968, Ser. No. 735,836
Int. Cl. E06c *7/16, 1/383;* **E04g** *1/18*
U.S. Cl. 182—120 **8 Claims**

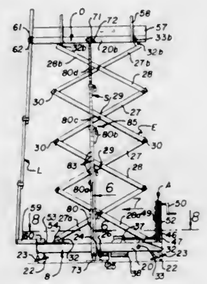


The present invention comprises a scaffolding structure which is extensible both sideways and vertically. Additionally, the scaffolding is provided with a platform that is extensible in accordance with the sideways extension of the support structure of the scaffold. An important feature resides in the platform support that is adjustable vertically to positions both on the forward legs of the scaffold and on the leg extensions thereof as well. The scaffold structure is easily disassembled, stored, and used for a variety of purposes as hereinafter pointed out.

3,464,519
ADJUSTABLE SCAFFOLD
Forrest B. Whisler, 1006 Corey St., Longmont, Colo. 80501
Filed Mar. 29, 1968, Ser. No. 717,102
Int. Cl. E04g *1/18;* **E06c** *7/16*
U.S. Cl. 182—141 **6 Claims**

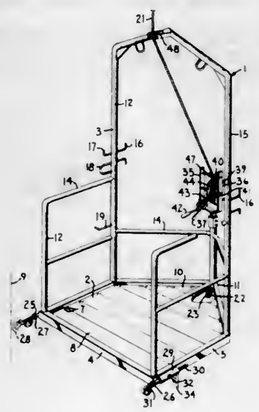
A mobile, adjustable scaffold which carries upon a wheel-mounted base a lazy-tong elevator supporting a scaffold deck. The elevator is operated by an actuator

mounted in the base. To complete the organization, a ladder is secured to the deck to provide easy access thereto and stabilizing struts are provided at each side of the deck to extend downwardly therefrom to connect with the base and to rest upon the ground surface. The stabilizing struts, incorporated in the organization to eliminate



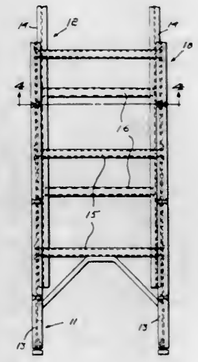
vertical movement and lateral instability of the elevator, are formed as telescopic members which are adapted to be extended as the elevator raises the deck and which include directional locking means adapted to permit the struts to be extended as the deck is raised, but to prevent retraction of the struts thereafter.

3,464,520
SELF-OPERATED ELEVATOR
Leonard A. Anderson, 301 W. 89th St., Kansas City, Mo. 64114
Filed Nov. 14, 1967, Ser. No. 682,947
Int. Cl. E04g *1/18, 3/10, 5/00*
U.S. Cl. 182—142 **8 Claims**



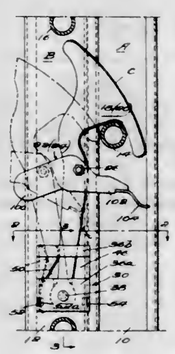
A one-man self-operated elevator and scaffold having a work platform with a cage extending upwardly therefrom. A winch is mounted on the cage and a cable extends upwardly from the winch to a cage support member for vetrical movement of the elevator. A swivel castor is mounted at the front of the platform and wheels are adjustably mounted at the rear of the platform. The adjustable wheels are adapted to engage a horizontal surface and a vertical surface and are adapted to be removable between and extended and a retracted position.

3,464,521
LADDERS
Vincent J. Popoli, 1021 Washington St., South Braintree, Mass. 02184
Filed Nov. 8, 1967, Ser. No. 681,331
Int. Cl. E06c *1/00, 7/08*
U.S. Cl. 182—207 **6 Claims**



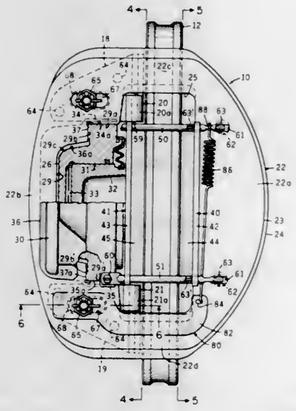
Ladders, especially extension ladders of the type having extruded side rails of such as aluminum, magnesium, and plastic extrusions providing channels whose bottoms provide the sides of the ladder, with flexible strips secured to the sides to reduce side sway and stiffen the rails.

3,464,522
EXTENSION LADDERS
Hyman Kramer, 2764 E. 16th St., Brooklyn, N.Y. 11235
Filed Aug. 25, 1967, Ser. No. 663,284
Int. Cl. E06c *7/06*
U.S. Cl. 182—211 **12 Claims**



Extension ladder hardware comprising (1) a stop-hook mounting fixture having the form of a channel-shaped stamping of sheet metal which is adapted, when affixed to the inner face of an extension ladder side rail with its channel extending vertically and closed by said rail face, to provide stop-hook supporting mounting and guiding surfaces which are spaced inwardly from said rail face and from one another; and (2) a sheet-metal stop-hook retracting lever so constructed that it can be used interchangeably with both right- and left-side stop hooks.

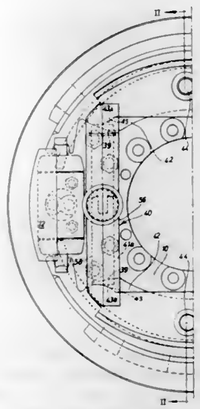
3,464,523
DISC BRAKE AND ANTIRATTLE MEANS THEREFOR
John A. Machek, Berkeley, Mo., assignor to Wagner Electric Corporation, Newark, N.J., a corporation of Delaware
Filed Mar. 8, 1968, Ser. No. 711,796
Int. Cl. F16d *55/224, 65/72*
U.S. Cl. 188—73 **19 Claims**



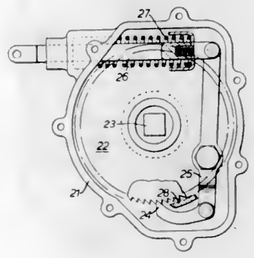
A disc brake is provided with a support member having a pair of anchor means thereon, and another member is movable on said support means for urging a pair of friction members into frictional engagement with the opposed sides of a disc. The brake includes resiliently urged means connected between the support member and the other member for normally urging said other member toward engagement with one of the anchor means. The brake also includes a hold-down device connected between the support member and the other member having a spacer press-fitted through a slot in said other means into slidable and displacement preventing engagement with said other member.

3,464,524
DRUM BRAKES FOR VEHICLES
Charles Newstead, Walsall, England, assignor to Girling Limited, Birmingham, Warwickshire, England, a British company
Filed July 7, 1967, Ser. No. 651,717
Claims priority, application Great Britain, July 9, 1966, 30,936/66
Int. Cl. F16d *51/00, 65/14*
U.S. Cl. 188—78 **11 Claims**

The invention concerns carrier-actuated drum brakes for vehicles, wherein the brake shoes carrying the brake linings of friction material are themselves mounted on carriers and the shoes are operable into a braking position by first actuator means and the carriers are acted on by second actuator means independent from the first actuator means, a force transmitting coupling being provided between each carrier and the brake shoe mounted thereon to transmit force to the shoe and move the latter into its braking position in response to appropriate movement of the carrier. The brake includes a fixed abutment for each brake shoe to take drag force therefrom during braking and adjustable abutment means for the carriers to adjust the rest position thereof to compensate for wear of the frictional material. Each brake shoe is mounted on its carrier by means of a pin coupling located substantially midway between the two ends of the shoe. This coupling permits relative angular displacement of each shoe and carrier about the coupling but when the second actuator means is operated, the coupling constrains the carriers to move in a translatory sense relative to said adjustable abutment means as each brake shoe is moved towards its fixed abutment. The invention is particularly applicable to drum brakes for the rear wheels of motor vehicles where it is desired to provide braking by means of two independent systems. In this case the first actuator means conveniently comprises a double acting hydraulic actuator and the second actuator means comprises a double acting mechanically operable actuator.

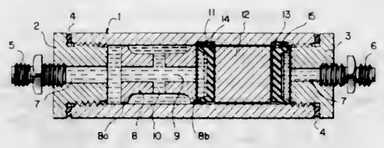


3,464,525
BRAKE ADJUSTER MECHANISMS
Charles Newstead, Tyseley, Birmingham, England, assignor to Girling Limited, Tyseley, Birmingham, England
Filed Sept. 5, 1967, Ser. No. 665,523
Int. Cl. F16d *51/68, 65/52*
U.S. Cl. 188—79.5 **8 Claims**



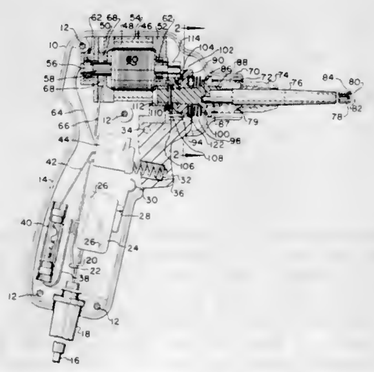
The invention relates to automatic adjusters for drum brakes of the type having a manually rotatable adjuster spindle. The adjuster has a pawl and ratchet drive of which the ratchet wheel is keyed to the adjuster spindle for rotation therewith in both directions. Means are provided for limiting adjustment during autoadjustment by disengaging the pawl and ratchet, and the same means or further means unload the pawl during manual adjustment in opposition to the pawl. The arrangements described are all capable of fitting to existing brakes so as to convert a manually adjustable brake to one having manual and autoadjustment.

3,464,526
HYDRAULIC BRAKE ADJUSTER
Wiley W. Brannen, Box 253, Statesboro, Ga. 30458
Filed July 23, 1968, Ser. No. 746,836
Int. Cl. B60t *11/24;* **F16d** *13/60*
U.S. Cl. 188—152 **2 Claims**



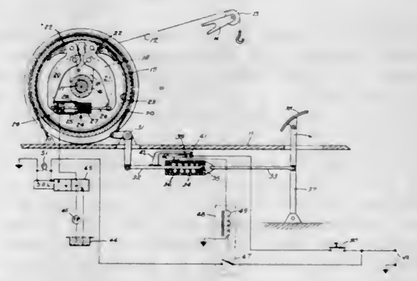
An auxiliary cylinder and its associated parts for use with the braking system of a vehicle. The braking fluid will be forced into the auxiliary cylinder through a line connected to the master cylinder and discharged from the auxiliary cylinder into the brake line. When the foot pedal is depressed, the piston of the master cylinder, which is similar to the piston of the auxiliary cylinder, will increase pressure of the fluid in the oil line through the auxiliary cylinder. The pressure is transmitted to the oil line by the piston of the auxiliary cylinder, and if the brakes are not worn no exchange of oil will occur between the master cylinder and the system beyond the auxiliary cylinder. Later, however, when the brake linings are worn, in order to compensate for such wear the piston in the auxiliary cylinder will be moved axially toward the discharge end of the auxiliary cylinder, whereupon with the piston unable to move further toward the discharge end of the auxiliary cylinder, fluid from the master cylinder will be forced around cup packings into the system until sufficient to compensate for the wear on the brake linings. Release of the brake pedal will permit the piston to return to its normal position, and in so doing, the cup packings will expand into contact with the inner wall of the auxiliary cylinder, confining the oil that has bypassed and consequently providing automatic brake adjustment.

3,464,527
CLUTCH AND INDEXING MECHANISM FOR TOOL SPINDLE
William J. Baker, Reed City, Mich., assignor to Gardner-Denver Company, a corporation of Delaware
Filed Dec. 13, 1967, Ser. No. 690,139
Int. Cl. F16d *67/02, 47/00;* **H02k** *7/10*
U.S. Cl. 192—.072 **3 Claims**



A slip clutch having friction drive members and being particularly suitable for use in motor-driven power tools of the type which incorporate means to arrest the tool operating mechanism at a predetermined position. The clutch includes a notched cam disk splined to the tool drive spindle and in frictional driving engagement with a coaxially aligned gear rotatably mounted on the spindle. The friction faces of the cam disk and the gear are held in engagement by a coil spring; and, the gear meshes with the tool motor pinion. Positive engagement of the cam disk notch by a tool operating lever arrests the tool spindle in a predetermined rotary position and results in slippage of the gear relative to the cam disk thereby allowing the motor to decelerate smoothly and providing variable stopping positions of the motor rotor.

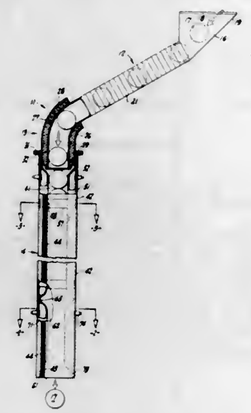
3,464,528
SAFETY CONTROL SYSTEM FOR A CABLE DRUM
George W. Mork, South Milwaukee, Vernon F. Waldron, Oak Creek, and Robert C. Walker, South Milwaukee, Wis., assignors to Bucyrus-Erie Company, South Milwaukee, Wis., a corporation of Delaware
Filed Aug. 2, 1967, Ser. No. 657,961
Int. Cl. F16d *67/02, 13/44, 25/00*
U.S. Cl. 192—17 **8 Claims**



A hoist cable drum is provided with a clutch of the internal expanding type which is spring biased to normally connect the drum to a power shaft and which is hydraulically actuated to disengage the drum from the power shaft. A brake band operates on a flange of the drum and is tightened for braking by rotation of a bell crank lever connected by a linkage to a foot pedal. The linkage includes a lost motion connection such that the foot pedal may be moved beyond a point at which the brake band is fully engaged with the drum, and such motion of the foot pedal closes normally open brake contacts to complete an electrical circuit to energize a solenoid controlled hydraulic valve. When the solenoid of the valve is energized, the valve is shifted to admit hydraulic fluid under pressure to the clutch to release the same. Thus, the clutch is not released until the brake is fully engaged. In one embodiment the closing of the brake contacts completes a circuit to a latching relay which causes the relay contacts to close and complete the circuit to energize the valve solenoid, and the latching relay will hold its relay contacts closed if the brake is released and until the normally open contacts are again closed after the brake is again fully engaged.

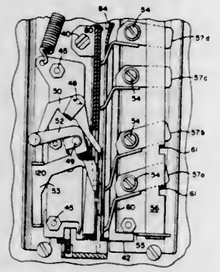
Thus, it is not possible to re-engage the clutch until the hoist cable and its drum have been brought to a stop. A second embodiment accomplishes the same function by employing normally open contacts of a push-push switch as the brake contacts, with the switch being closed after full engagement of the brake and remaining closed until after the brake is again fully engaged.

3,464,529
FRUIT HANDLING DEVICE
Theodore Horsky, Jr., Rte. 1, Box 44, Walnut Grove, Calif. 59690
Filed Mar. 4, 1968, Ser. No. 710,318
Int. Cl. B65g *11/20, 11/00*
U.S. Cl. 193—7 **4 Claims**



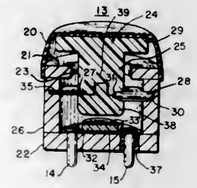
Pivotally mounted on the upper end of a substantially vertical conduit is an elbow connected to a hose terminating in a fruit receiving hopper. Fruits which are especially subject to handling damage, such as peaches and pears, are picked from the tree and placed in the hopper from which location they roll down the hose and pass through the elbow and the conduit to discharge at the lower end into a suitable receptacle or conveyor. Resilient cushions arranged on the inner walls of the conduit frictionally interfere with the fruit falling therethrough, the extent of interference being such as to decelerate the fruit so that the discharge velocity is sufficiently small as substantially to eliminate fruit damage.

3,464,530
COIN CONTROLLED VENDING MECHANISM UTILIZING A PLURALITY OF COINS OF DIFFERENT DENOMINATIONS
Karl Knickerbocker, 400 Baycrest Drive, Venice, Fla. 33595
Filed Nov. 14, 1967, Ser. No. 682,911
Int. Cl. G07f *5/06*
U.S. Cl. 194—71 **15 Claims**



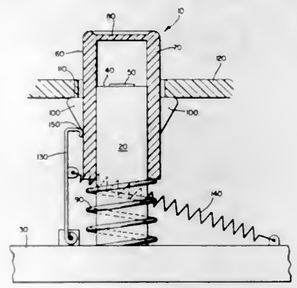
A vending apparatus which operates on the combined total diameter of coins and uniquely utilizes only one coin stacking channel for all coins, said channel having channel width adapters to avoid "shingling" of the thinner coins. An array of coin restrainers mounted on one bar permits easy presetting of coin totals to accommodate the periodic changing of the vending price, such as with the sale of daily and Sunday newspapers. There is also a channel opening structure which, when activated, completely opens to release all coins, whether bent, stuck or otherwise, to the coin return slot. And there is also structural provision for preventing accidental or intentional combinations of coins which, though totaling differently in value have approximately equal combined diameters.

3,464,531
MANUAL ELECTRONIC KEYBOARD
Edward R. Herr, Lakewood, and George E. Sumrall, Neptune, N.J., assignors to the United States of America as represented by the Secretary of the Army
Filed May 16, 1967, Ser. No. 640,442
Int. Cl. B41j *5/08, 5/16;* **H01v** *7/00*
U.S. Cl. 197—98 **2 Claims**



This manual keyboard has a plurality of electronic keys arranged thereon. Each key includes a plunger slidably mounted in an opening provided in a housing which contains a piezoelectric or piezoresistive electro-mechanical transducer therein. A pair of output terminals is connected to the transducer and extends from the housing. The plunger is designed to be depressed by the fingers of an operator to compress or bend the transducer so as to generate an electrical signal. The signal is then detected by a coder.

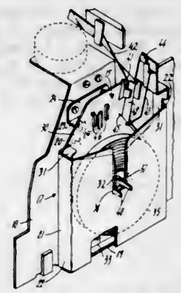
3,464,532
KEYBOARD PUSHBUTTON WITH CHARACTER VISIBLE IN DEPRESSED POSITION
Ernest L. Tibbetts, Bound Brook, N.J., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan
Filed Aug. 30, 1967, Ser. No. 664,534
Int. Cl. B41j *5/08, 5/16*
U.S. Cl. 197—98 **9 Claims**



The disclosure is of a pushbutton for displaying a character and for use in displaying a number in a calculating instrument. The pushbutton includes a fixed post having an upper end on which a character is printed or otherwise formed. A slidable sleeve member is slidably mounted on the post with its closed end parallel to and spaced above the end wall of the post. The sleeve member is made of a synthetic resinous material which is opaque when it is of a certain thickness, and is transparent when it is suitably thin. The side wall of the sleeve is sufficiently thick to be opaque, and the end wall is sufficiently thin so that, when it is depressed and it is placed close to the character, the character can be seen therethrough. When the sleeve is in its elevated position, the character on the fixed post cannot be seen.

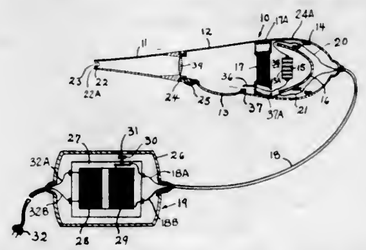
The disclosure is also of a pushbutton assembly in which the sleeve of the pushbutton is provided with a wedge-shaped locking tab which engages an upper horizontal plate when the sleeve is in its elevated position. The assembly also includes a pivotable plate positioned between the upper plate and base plate for engaging the locking tab and holding the sleeve in its lowered position.

3,464,533
CARBON RIBBON SUPPLY HANDLING FEATURES IN A TYPEWRITER
Reginald R. Gallant, Bristol, Conn., assignor to Olivetti Underwood Corporation, New York, N.Y., a corporation of Delaware
Filed Oct. 14, 1966, Ser. No. 586,704
Int. Cl. B41j *33/14, 35/00, 29/02*
U.S. Cl. 197—151 **3 Claims**



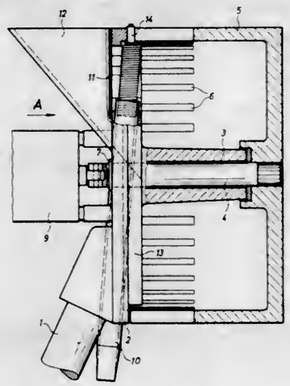
A carbon tape roll holder comprises a panel which has an arbor projecting from one of its flat sides to receive thereon a carbon tape roll. Such holder with a carbon tape roll placed thereon is graspable by an upper portion of said panel to lower it down into a socket structure which is provided at one of the outer sides of an inner framework of the machine. The holder incorporates a carbon tape guiding saddle and also an element which is yieldably displaceable and over which the carbon tape passes to avoid subjecting the tape to excessive sudden stresses.

3,464,534
LASER ERASER
Hrand M. Muncheryan, 7735 Morningside St., Orange, Calif. 92667
Filed Mar. 21, 1966, Ser. No. 536,030
Int. Cl. B41j *29/16;* **H04b** *9/00*
U.S. Cl. 197—181 **25 Claims**



A laser eraser for general use and application on a typewriter is described. The device comprises a laser generating unit having a fusiform housing that can be accommodated in the palm of one's hand and operated like a conventional eraser, or it can be mounted on a lever of a typewriter key mechanism for operation thereby. A miniature power supply unit with a cable means connected to said laser generating unit through a switch means energizes said laser generating unit. The power supply unit is provided with magnetic means for attachment thereof to a desk top or to the side of a typewriter. Said switch means is made to be incorporated in the wall of said fusiform housing for manual use thereon or to be mounted under said typewriter key for operation thereby upon depression of said key, whereupon said key lever moves said fusiform housing (eraser unit) to the printing point and thereafter said key actuates the switch means, thereby energizing the laser eraser to emit laser radiation which erases the printed error by vaporizing said print.

3,464,535
FEEDING APPARATUS FOR HEADED PINS, SPIKES, OR THE LIKE
Bernhard Albeck, Neustadt, and Heini Eissele, Stetten, Germany, assignors to Firma Oku-Automatik, Otto Kurz, Winterbach, Kreis Waiblingen, Germany
Filed Jan. 31, 1968, Ser. No. 701,882
Claims priority, application Germany, Feb. 14, 1967, O 12,299
Int. Cl. B65g *47/24, 47/82*
U.S. Cl. 198—33 **4 Claims**

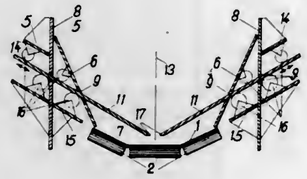


A feeding drum for headed pins, screws, spikes or the like which is rotatable about an inclined axis and provided with parallel slots in its peripheral wall into each of which, due to the tumbling movement of the spikes within the drum, the shank of at least one spike enters during each revolution of the drum and, because of the inclined position of the drum, this spike then slides to the lowest part of the slot into an arcuate gap between the inner wall of the drum and a stationary flange along which the head of this spike slides during the further rotation of the drum until it reaches the upper end of the flange when the spike will drop by gravity out of its slot into the open upper end of a delivery pipe.

3,464,536
CHARGING DEVICE AT CONVEYOR BANDS FOR A QUARRY
Adolf Thomas, Duisburg, Germany, assignor to Esch-Werke K.G., Duisburg, Germany
Filed June 30, 1967, Ser. No. 650,383
Claims priority, application Germany, Aug. 20, 1966, E 32,323
Int. Cl. B65g *47/18*
U.S. Cl. 198—52 **3 Claims**

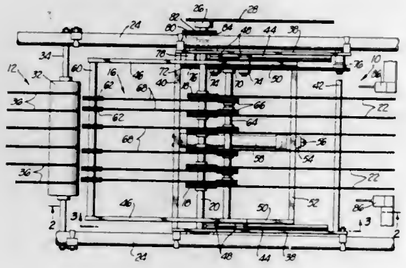
The present invention relates in general to a charging device at endless conveyor bands in the form of a trough

for protecting a rubber conveyor band against falling stones along a great height having a weight of two tons and more, having sharp edges by protecting plates arranged in the trough shortly above the band and means



for withdrawing the protecting plates under the stones, whereby the latter can glide slowly onto the band along a little height without effecting any impacts or injuries to or of the band, respectively.

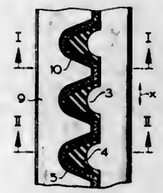
3,464,537
ANTIJAMMING DEVICE FOR PUBLICATION CONVEYOR
John F. Thull, Costa Mesa, Calif., assignor to Sta-Hi Corporation, Newport Beach, Calif., a corporation of California
Filed Oct. 17, 1967, Ser. No. 675,880
Int. Cl. B65g *15/12, 37/00*
U.S. Cl. 198—89 **12 Claims**



A dumping gap is provided in a conveyor used for conveying a continuous longitudinal stream of imbricated publications, said gap normally being bridged by a dumping conveyor section roller mounted for selective parallel movement relative to a preceding main conveyor section by a fluid cylinder out of and opening said dumping gap upon a jam in said imbricated publication stream being detected. Separate conveying belts on the dumping conveyor section move constantly regardless of the position of said dumping section, and said dumping section is movable back into said dumping gap faster than the speed of movement of said imbricated publication stream.

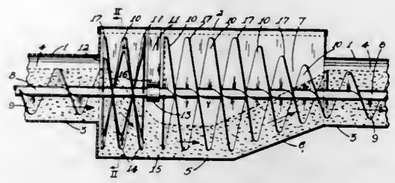
3,464,538
CONVEYOR BELT
Karl Hartmann, 3 Luisenstrasse, 4102 Homberg, Germany
Filed Aug. 8, 1967, Ser. No. 659,239
Claims priority, application Germany, Aug. 10, 1966, H 60,207
Int. Cl. B65g *15/40*
U.S. Cl. 198—201 **11 Claims**

A conveyor belt comprises an elongated bottom wall portion which has a surface, and at least one elongated side wall portion which extends along the bottom wall portion and projects from the surface inclined thereto. The side wall portion has a first face and an oppositely directed second face and is corrugated transversely of its elongation so as to define in both of these faces a plural-



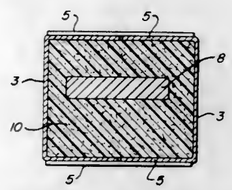
ity of longitudinally extending alternating waves and troughs. An elastically yieldable substance is provided and at least partly filled troughs of at least one of the faces of the side wall portion.

3,464,539
SCREW CONVEYORS
Frederick Christopher Kelly, Johannesburg, Transvaal, Republic of South Africa, assignor to Fred Kelly and Sons (Proprietary) Limited, Wolhuter, Johannesburg, Transvaal, Republic of South Africa, a company incorporated, Republic of South Africa
Filed Jan. 30, 1968, Ser. No. 701,740
Int. Cl. B65g *33/24*
U.S. Cl. 198—214 **9 Claims**



Screw conveyor apparatus having enlarged housing sections and enlarged screw flights in the enlarged housing sections to permit material being conveyed to pass beneath supports for the screw located in the enlarged housing sections. The size of the latter relative to the normal housing section and the position of a support for the screw in the enlarged housing section are selected to ensure that the material may pass beneath the support without contacting the latter.

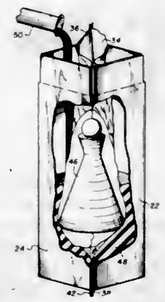
3,464,540
PROTECTIVE PACKAGING AND METHOD
Norman H. Stark, Mequon, Wis., assignor to Walker Manufacturing Company, Racine, Wis.
Original application Sept. 10, 1964, Ser. No. 395,591, which in turn is a continuation of application Ser. No. 638,703, Feb. 7, 1957. Divided and this application May 23, 1966, Ser. No. 551,909
Int. Cl. B65d *81/00*
U.S. Cl. 206—46 **8 Claims**



A protective package in which the article to be protected is embedded in a mass of open-cellular plastic foam containing particles of a surface-active sorbent

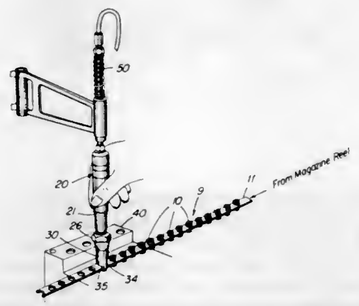
substance dispersed throughout the open-cell structure of the foam and exposed to environmental conditions to which the foam is exposed. A particulate, surface-active sorbent substance is incorporated in to a liquid foamable plastic reaction mixture which is foamed-in-place in an outer container to form an open-cellular plastic envelope-cushion surrounding the article within the package.

3,464,541
PACKAGE UTILIZING SHEET SEPARATORS IN PACKAGING ARTICLES WITH FOAMED RESIN WITHIN A CORRUGATED BOX
Paul Papendick, Flushing, N.Y., and Henry Curley, Hackensack, N.J., assignors to Diamond Shamrock Corporation, Newark, N.J., a corporation of Delaware
Filed Apr. 2, 1968, Ser. No. 718,109
Int. Cl. B65d *85/30, 5/56*
U.S. Cl. 206—46 **13 Claims**



A package utilizing sheet separators in packaging articles with foamed resin within a corrugated box thus forming an inner and outer container. Packaging material is placed in between the sealed inner and outer containers and access is obtainable to the inner container where the fragile article is stored by merely opening the outer container.

3,464,542
FEEDING STRIPS FOR FASTENER-ACCEPTING INSERTS AND METHOD
William D. Downing, Newtown, and Jean Remond, Danbury, Conn., assignors to Heli-Coil Corporation, Danbury, Conn., a corporation of Delaware
Filed Dec. 28, 1967, Ser. No. 694,178
Int. Cl. B65d *83/04;* **B23p** *19/04*
U.S. Cl. 206—56 **5 Claims**

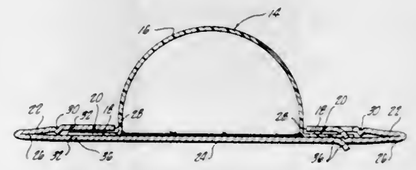


Flexible polymeric strips are provided for successive feeding of threaded inserts to installation tools. The inserts are held in place in the strips by an interference fit within aperture in the strip. The material for the strips has controlled physical properties which dissipate the distortions arising from the dislocation stresses of the interference fit. The controlled physical properties are tensile strength, elongation, and hardness. Also provided is a method for the orientation of the inserts by alignment means guiding the strips within the installation tools.

3,464,543
SHOCK-RESISTANT HIGH-TEMPERATURE RESISTANT-PRESSURE-SENSITIVE-ADHESIVE INSULATION
Philip Kwiatanowski, Jr., Somerville, N.J., and Theodore L. Shebs, Saratoga, Calif., assignors to Johns-Manville Corporation, New York, N.Y., a corporation of New York
No Drawing. Original application Feb. 1, 1961, Ser. No. 86,335, now Patent No. 3,249,579, dated May 3, 1966. Divided and this application Oct. 23, 1965, Ser. No. 513,890
Int. Cl. B65h *55/00, 75/02;* **B65d** *85/04, 85/66*
U.S. Cl. 206—59 **5 Claims**

A shock-resistant and high temperature-resistant adhesive insulation such as an asbestos sheet of cloth having coated thereon a thermoinsulating composition such as about 43% 2-chlorobutadiene polymer, about 42% clay, about 5% chlorinated hydrocarbon tackifier, about 8% carbon black, and the remainder aging and antioxidant compounds.

3,464,544
PACKAGE
Jack Franck, Whittier, Calif., assignor to Coast Carton Corporation, Montebello, Calif., a corporation of California
Filed Jan. 26, 1968, Ser. No. 700,862
Int. Cl. B65d *73/00, 77/00*
U.S. Cl. 206—78 **13 Claims**

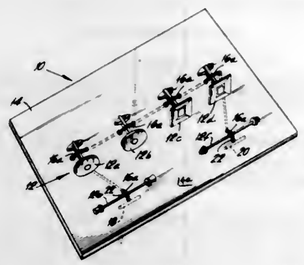


A package having a card defining elongated channels and a cover having flanges disposed in the channels. Portions of the card adjacent the channels are provided with a slit and the flanges have outwardly extending projections. Sections of the card defined by the slit are deformable so that the projections of the flanges are engaged by the deformed sections to limit relative movements between the cover and the card. This enables partial opening of the card so articles stored in the package can be removed one by one. The slits and the projections on the flanges can also be arranged to prevent relative movements between the cover and the card to lock articles in the package.

3,464,545
PRODUCT DISPLAY AND METHOD OF ASSEMBLY THEREOF
Irwin Bailey, Brooklyn, N.Y., assignor of one-half to Maurice Hedaya, New York, N.Y.
Filed Oct. 7, 1966, Ser. No. 585,100
Int. Cl. B65d *73/00;* **A47b** *7/02*
U.S. Cl. 206—80 **1 Claim**

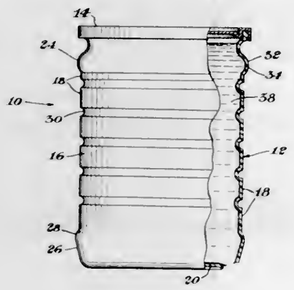
A display for a product wherein a product card has one or more slots and cooperating with each such slot is an elastic loop which is projected through said slot and

is engaged about a product positioned under the loop and across the slot. The position of the product therefore prevents the elastic loop from being withdrawn from



the slot and in functioning as such the product is held firmly in place against the product card by the elastic loop.

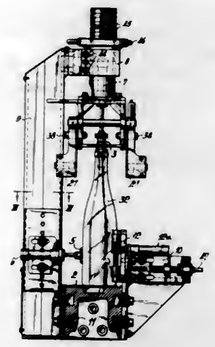
3,464,546
PACKAGING OF PAINTS AND THE LIKE
Laddie M. Thomka, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
Filed Dec. 14, 1967, Ser. No. 690,542
Int. Cl. B65d *81/00, 87/00, 7/00*
U.S. Cl. 206—84 **8 Claims**



A plastic container for latex and oil based paints and the like, the body of the container comprising multi-layers of different thermoplastic resins. The outer layer comprises a tough, high moisture barrier material such as found in a resin the major component of which is a polyolefin. The inner layer comprises a resin having high oxygen barrier characteristics such as found in resins containing saran or an unplasticised polyvinyl chloride.

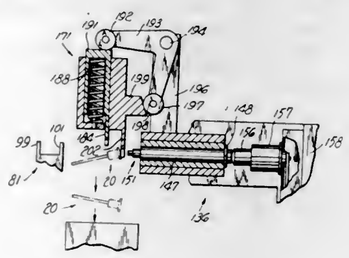
3,464,547
BOTTLE TESTING ARRANGEMENT
Kurt Becker, Obernkirchen, Germany, assignor to Hermann Heye, Obernkirchen, Germany
Filed Aug. 25, 1966, Ser. No. 574,999
Claims priority, application Germany, Aug. 25, 1965, H 56,967
Int. Cl. B07c *5/04, 1/10;* **B07b** *13/04*
U.S. Cl. 209—73 **11 Claims**

An arrangement for automatically testing bottles after manufacture and removing from the tested lot, defective bottles which are not within prescribed limits. The bottles to be tested are conveyed in sequence to a testing station. Through mechanical members and linkages each bottle is, in turn, firmly positioned in place beneath a testing head. A gage is lowered into the neck of the bottle after being positioned beneath the testing head. The gage is arranged so that if it will not be admitted into the neck of the bottle, the neck is designated to be too narrow and the bottle is removed from the process line as a reject. If, on the other hand, the gage enters the neck of the bottle too far in a downward direction, the opening of the bottle is



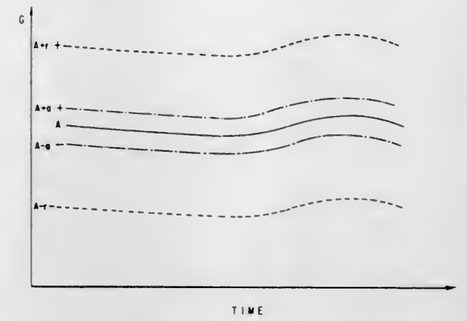
designated as being too wide and the bottle is again rejected. The sensing of the position of the gage is accomplished through photoelectric effects and a pre-programmed electronic control circuit generates signals for performing the testing sequence and actuating the mechanisms for handling the bottles, including its rejection, through the testing process.

3,464,548
GAUGING AND SORTING APPARATUS
Charles R. Fegley, Laureldale, and Lorenz Regneth, Wyomissing, Pa., assignors to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York
Filed Dec. 13, 1967, Ser. No. 690,129
Int. Cl. B07c *5/02*
U.S. Cl. 209—74 **12 Claims**



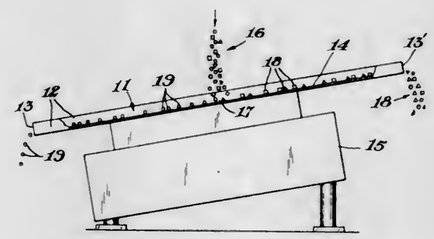
A sensing mandrel is advanced into a can and a tubulation of a diode casing which is held horizontally on a support. If the mandrel moves into the can and tubulation, a sorter plate positioned beneath the casing is retained in an aspect position. If the can is not concentric, or the tubulation is obstructed, the mandrel is blocked and a sorter plate is moved into a reject position. Upon withdrawal of the mandrel, an eject device which straddles the can pulls the casing from the support and then releases the casing to drop against the sorter plate which directs the casing into either an accept bin or a reject bin.

3,464,549
MONITORING AND SORTING ARRANGEMENT FOR MASS-PRODUCED ARTICLES
Jean-Claude Armbruster, les Marronniers, France, assignor to Societe des Accumulateurs Fixes et de Traction (Societe Anonyme), Romainville, Seine-Saint-Denis, France, a company of France
Filed Dec. 26, 1967, Ser. No. 693,198
Claims priority, application France, Dec. 28, 1966, 89,217
Int. Cl. B07c *5/344;* **G06f** *15/46*
U.S. Cl. 209—75 **11 Claims**



Monitoring and sorting arrangement for mass-produced articles, including a comparator device which receives information data measured on manufactured articles and compares this data with a computed mean value A, a positive adjustment path acting on A, a negative adjustment path acting on A and a rejection path, the paths operating in accord with informational data delivered by the comparator device to accept satisfactory articles and reject defective ones.

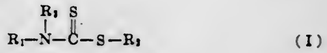
3,464,550
CONTINUOUS SOLID PARTICLE SHAPE CLASSIFIER
Barrie H. Bieler, Walnut Creek, Calif., and Robert P. Madison, Beaverton, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
Filed May 4, 1967, Ser. No. 636,190
Int. Cl. B07c *9/00;* **B07b** *13/10*
U.S. Cl. 209—112 **8 Claims**



An apparatus for separating a mixture of spherical and nonspherical particles on the basis of shape, the apparatus having an inclined plate with an unbroken surface and a means for vibrating the plate in the direction of its inclination, so that spherical particles roll downslope on the plate and nonspherical particles move upslope on the plate.

3,464,551
DIALKYL DITHIOCARBAMATES AS COLLECTORS IN FROTH FLOTATION
John Joseph Falvey, Noroton Heights, Conn., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine
No Drawing. Filed Nov. 1, 1967, Ser. No. 679,659
Int. Cl. B03b *1/04*
U.S. Cl. 209—166 **9 Claims**

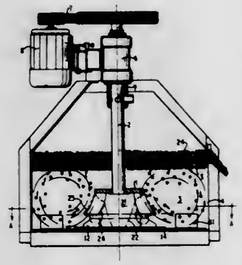
An ore flotation process employing a collector represented by Formula I:



(I)

wherein R_1 and R_2 can be lower-alkyl, allyl or methallyl and at least one of R_1 or R_2 is lower-alkyl, and R_3 can be hydrogen or lower-alkyl.

3,464,552
FROTH FLOTATION APPARATUS
Charles Harold Warman, Castlecrag, New South Wales, Australia, assignor to Research and Development Pty. Ltd., Perth, Western Australia, a corporation of Australia
Filed Dec. 18, 1967, Ser. No. 691,592
Int. Cl. B01d *1/14*
U.S. Cl. 209—170 **8 Claims**

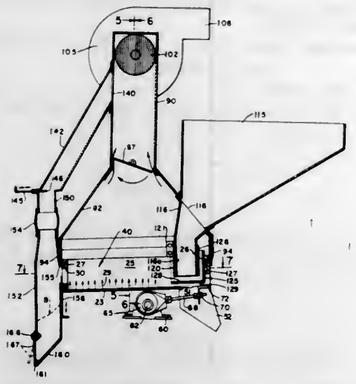


The specification discloses guide surfaces on the bottom of the cell for generating a separate secondary flow pattern of gas and suspension passing through and below the mixing zone supplementary to the principal flow from the mixing zone to the surface froth layer in froth flotation cells of the type in which a driven rotor supported on a vertical axis discharges suspension downwardly from an axially symmetrical annular mixing zone surrounding a submerged gas zone.

3,464,553
APPARATUS AND PROCESS FOR SEPARATING MATERIALS OF DIFFERENT SPECIFIC GRAVITIES
Garth S. Hancock, Courtland, Va. 23837
Filed Aug. 28, 1967, Ser. No. 663,697
Int. Cl. B07b *4/08, 3/04*
U.S. Cl. 209—467 **4 Claims**

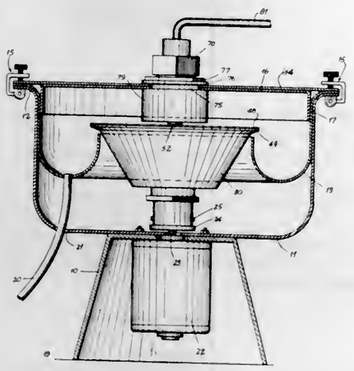
An improvement in apparatus and method for separating mixed materials of different specific gravities wherein the materials are fed to an inclined, reciprocating and perforate bed, a primary air stream is fed vertically through the bed and a secondary air stream is withdrawn from one side of the bed and directed across the bed to fluidize the lighter materials, the latter being discharged through the secondary air stream at the lower

end of the bed and the heavier materials being carried to a discharge point disposed at the upper end of the bed,



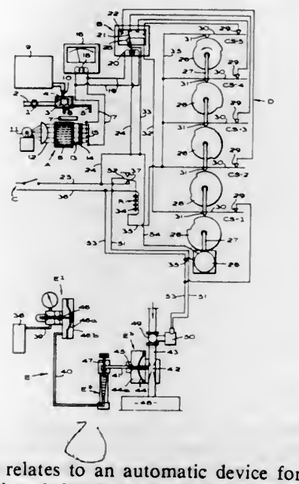
both primary and secondary air streams being produced through a common source of reduced pressure.

3,464,554
METHOD AND APPARATUS FOR CENTRIFUGAL SEPARATION
William Laut, 826 Pennsylvania Ave., St. Louis, Mo. 63130
Filed Apr. 11, 1968, Ser. No. 720,530
Int. Cl. B04b *3/00;* **B01d** *33/02*
U.S. Cl. 210—78 **10 Claims**



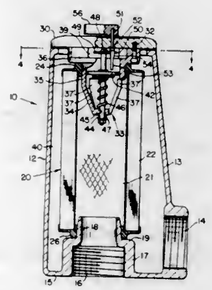
A centrifugal filter bowl or receptacle is rotated in a housing to expel fluid upwardly and out a peripheral filter passage formed between compressed finished peripheral surfaces of the receptacle and its top. A center post in the receptacle is tubular, opens through the top, and connects through a union mounted in the housing, with a source of fluid. The interior of the receptacle is sealed except for the filter passage. When the receptacle rotates, it centrifugally ejects fluid through the peripheral fluid passage, drawing new fluid by suction through the inlet to the bottom of the receptacle whence it flows with a scrubbing action up the wall of the receptacle to the filter passage.

3,464,555
AUTOMATIC CONTROL FOR CHLORINE FEED
John R. Schneider, Belvedere, Calif. (P.O. Box 426, Tiburon, Calif. 94920)
Continuation-in-part of application Ser. No. 528,720, Feb. 21, 1966. This application Oct. 6, 1967, Ser. No. 673,313
Int. Cl. B01d *35/06, 35/00*
U.S. Cl. 210—85 **3 Claims**



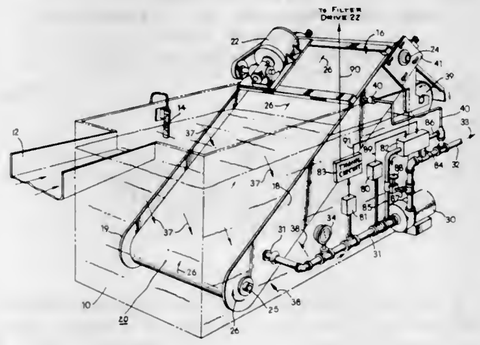
This invention relates to an automatic device for controlling the quantity of chlorine fed to a liquid process, or water supply, in direct proportion to the chlorine demand of the liquid process or water supply The invention has particular advantages when applied to a municipal water supply, an industrial water supply, a swimming pool, a water cooling tower, or any other water supply where bacteria is present.

3,464,556
FILTER WITH BY-PASS VALVE AND INDICATOR
Douglas H. Cullen, Ontario, N.Y., assignor to Dollinger Corporation, Rochester, N.Y., a corporation of New York
Filed Mar. 11, 1968, Ser. No. 712,125
Int. Cl. B01d *35/14, 27/10*
U.S. Cl. 210—90 **2 Claims**



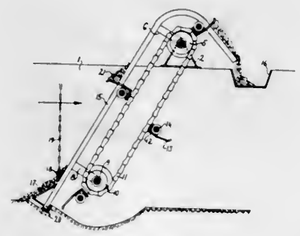
In this filter, the filter cartridge is seated at one end around the outlet of the filter housing and with its other end around a by-pass valve housing which projects into the bore of the filter cartridge. The valve housing has separate sets of by-pass ports in its inner and outer ends. Normally a spring-pressed piston, constituting the valve, prevents communication between the two sets of ports. When the filter element becomes clogged, however, the reduced pressure in the bore of the filter element permits the piston to be forced inwardly against the spring resistance by the pressure of the liquid flowing into the outer set of by-pass ports, thereby allowing the liquid to flow from the outer to the inner set of ports, and through the bore of the filter element to the outlet. A cam follower secured to the piston to reciprocate therewith pivots an indicator to indicate the relative cleanliness of the filter element.

3,464,557
MOVABLE FILTER AND MAGNETIC SEALING MEANS
Leslie L. Fowler, Cookeville, Tenn., assignor to Bowser, Inc., Cookeville, Tenn., a corporation of Indiana
Filed Dec. 12, 1966, Ser. No. 601,011
Int. Cl. B01d *33/02*
U.S. Cl. 210—97 **15 Claims**



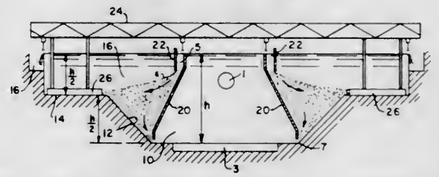
An endless filter belt is mounted for movement over a vacuum chamber in a tank. Magnetic means are associated with the edges of the belt and the chamber to reduce leakage between the belt and the chamber.

3,464,558
STRAINER
Adolf Harvánek and Václav Chalupník, Brno, Czechoslovakia, assignors to Chepos, Zavody chemickeho a potravinarskeho strojirenstvi, oborovy podnik, Brno, Czechoslovakia
Filed June 8, 1967, Ser. No. 644,633
Claims priority, application Czechoslovakia, June 23, 1966, 4,194/66
Int. Cl. E02b *5/08, 5/06*
U.S. Cl. 210—159 **5 Claims**



A strainer for removing floating debris from water running in a channel including a grating of inclined bars whose top ends are arcuately bent to form a downwardly concave bight of the grating, the grating having a frame mounted on a driven shaft centered in the bight and supported on the channel banks. Chains trained over sprockets on the driven shaft and on an idler shaft near the bottom end of the grating carry rakes whose teeth project through the gaps between the grating bars while the teeth move upward between the sprockets and about the drive shaft.

3,464,559
APPARATUS FOR THE BIOLOGICAL PURIFICATION OF WASTE WATER
Jacques Joseph Paul Bernard, Port-Marly, France, assignor to Degremont S.A., Suresnes, Hauts-de-Seine, France, a corporation of France
Filed Feb. 21, 1968, Ser. No. 707,069
Claims priority, application France, Feb. 23, 1967, 96,150
Int. Cl. C02c *1/06*
U.S. Cl. 210—195 **10 Claims**



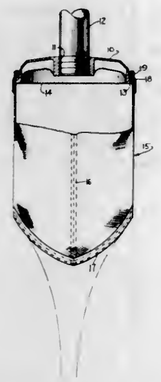
An apparatus is provided for treatment of sewage by the activated sludge method. The decantation zone surrounds the aeration zone, and presents a double slope at its bottom, i.e., from the aeration zone, a bottom slope of a sufficient amount for the sludge to fall back into the aeration zone is first provided, to which is added a horizontal or substantially horizontal bottom, the change of slope being situated approximately at the height of the horizontal line at which is established the separation between the sludge bed and the pure liquid.

3,464,560
CHROMATOGRAPHIC CHAMBER
Pierre L. Clement and Andre F. P. Lestienne, Vincennes, France, assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed June 28, 1968, Ser. No. 741,035
Claims priority, application France, Oct. 9, 1967, 123,693
Int. Cl. B01d *15/08*
U.S. Cl. 210—198 **7 Claims**



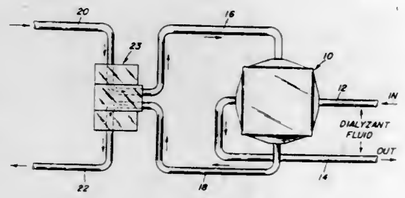
A compact chromatographic developing chamber comprising of a thin, elongated sleeve which is open at one end for introduction of a chromatographic sheet and closed at the other end and including a mass of absorbent material positioned within the sleeve at its closed end which serves to retain the chromatographic sheet in place and to hold an elution solvent which is released during the chromatographic development.

3,464,561
STRAINER BAG ATTACHMENT ARRANGEMENT
Arthur C. Wrotnowski, Greenwich, and Edward A. Smith, Glenville, Conn., assignors to American Felt Company, Glenville, Conn., a corporation of Massachusetts
Filed Nov. 15, 1966, Ser. No. 599,661
Int. Cl. B01d *35/02*
U.S. Cl. 210—232 2 Claims



A fluid strainer bag assembly including a bag holding plate and having a hemmed open ended strainer bag with a flexible hoop within the hem for engaging with the plate and suspending the bag therefrom.

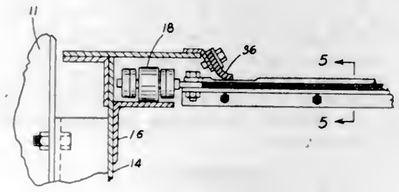
3,464,562
DIALYZING APPARATUS AND METHOD OF MAKING THE SAME
John J. Meyers, Lawrence R. Martin, and Jacob C. Rubin, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed Jan. 12, 1967, Ser. No. 608,784
Int. Cl. B01d *13/00*
U.S. Cl. 210—321 12 Claims



A dialyzing cartridge comprising an assembly of stacked dialyzing elements each comprising a molded frame having spaced membrane walls. The stacked elements are enclosed by a housing which has selected portions thereof sealed to selected portions of the stacked assembly to define inlet and outlet manifolds for dialyzant and fluid to be dialyzed.

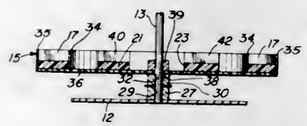
3,464,563
LIQUID FILTER APPARATUS
Francis E. Dahlem, Louisville, and Don J. Gonzalez, Valley Station, Ky., assignors to American Air Filter Company, Inc., Louisville, Ky., a corporation of Delaware
Filed Feb. 6, 1967, Ser. No. 614,167
Int. Cl. B01d *33/04*
U.S. Cl. 210—400 7 Claims

A liquid filter assembly disposable in a liquid tank comprising an endless filter screen mounted on a conveyor belt means disposed in a sealed liquid plenum, the endless filter screen being provided with an overlap expansion



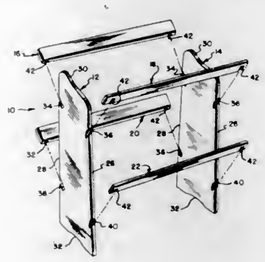
arrangement to permit expansion of the filter screen with expansion of the conveyor belt means.

3,464,564
LABORATORY SLIDE TRAY AND SORTING METHOD
Mary Albeus MacNalley, 2537 S. Prairie Ave., Chicago, Ill. 60616
Filed Mar. 1, 1967, Ser. No. 619,629
Int. Cl. B42f *17/08*; A47f *3/14, 5/02*
U.S. Cl. 211—10 1 Claim



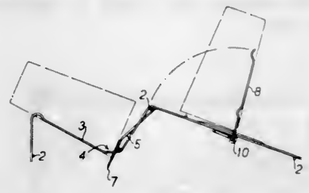
A tray for supporting normal and abnormal specimen slides includes a base, a vertical rod and an annular member rotatably mounted thereon and having a series of radial slots for receiving the slides and a pair of slide supports located within and spaced from its rim for receiving abnormal slides. Each slide and radial slot have corresponding identification numbers. When discovered, an abnormal slide is transferred from its radial slot to an abnormal slide support so that the vacant radial slot and its number indicates that its corresponding slide is abnormal and can be found in a slide support.

3,464,565
SUPPORT STRUCTURE
Bela B. Neval, Dobbs Ferry, N.Y., assignor to Nevco Wood Products Co., Inc., Yonkers, N.Y., a corporation of New York
Filed Nov. 4, 1966, Ser. No. 592,142
Int. Cl. A47b *65/00*; A47f *5/00, 5/10*
U.S. Cl. 211—42 10 Claims



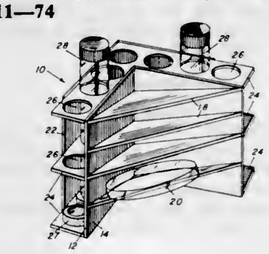
Support structure for one or more tiers of books which comprises a plurality of wooden members which may be readily and easily interengaged, without the use of tools or fasteners to provide a rigid, self-supporting structure.

3,464,566
RACKS FOR DRYING ARTICLES
Robert John Gilson, Naphill, England, assignor to Charles Colston Limited, High Wycombe, Buckinghamshire, England, a corporation of the United Kingdom
Filed Dec. 26, 1967, Ser. No. 693,462
Claims priority, application Great Britain, Jan. 6, 1967, 1,010/67
Int. Cl. A47g *29/00, 19/08*
U.S. Cl. 211—71 4 Claims



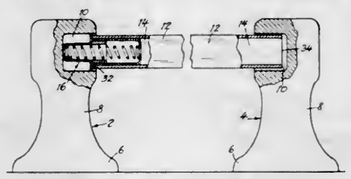
The invention resides in a rack intended primarily for use in dishwashing machines in which in order to eliminate drip marks on articles dried in the racks, the drip is transferred from the article to a part of the rack.

3,464,567
BACTERIOLOGY RACK
Eunice J. Gowdy, Pryor Star Rte., and Gary M. Hoppel, 1535 Wicks Lane, both of Billings, Mont. 59101
Filed July 14, 1967, Ser. No. 653,570
Int. Cl. A47b *73/00, 81/04*
U.S. Cl. 211—74 6 Claims



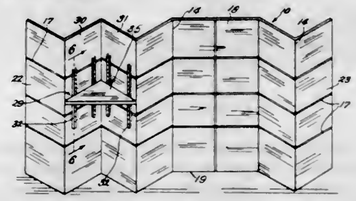
A bacteriology rack having a central L-shaped supporting wall which supports a plurality of parallel sloping plates on its inner surface for receiving petri dishes, a plurality of L-shaped parallel shelves on its outer surface for receiving and supporting culture tubes and a second L-shaped supporting wall parallel to the first having its inner surface secured to the outer edge of the shelves.

3,464,568
TOWEL BAR CONSTRUCTION
Peter K. Hexter, P.O. Box 260, Hopewell, N.J. 08525
Filed Aug. 22, 1967, Ser. No. 662,439
Int. Cl. A47h *1/08, 7/14, 1/10*
U.S. Cl. 211—105.6 6 Claims



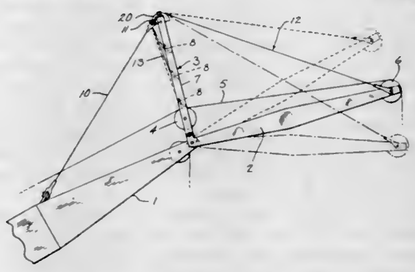
An assembly for use in replacing a towel bar in fixedly mounted supports wherein the replacement towel bar is provided with a compressible spring device located in a cavity in the end of the bar and including telescoping members enclosing a coiled spring element and combined into a unitary device which permits insertion of the towel bar into recesses in the supports and thereafter precludes removal or displacement of the towel bar relative to the supports.

3,464,569
FOLDABLE DISPLAY STAND
John G. Downing, c/o Downing Displays, 300 Gennessee St., Cincinnati, Ohio 45202
Filed Nov. 20, 1967, Ser. No. 684,167
Int. Cl. A47b *5/04, 96/02*
U.S. Cl. 211—135 5 Claims



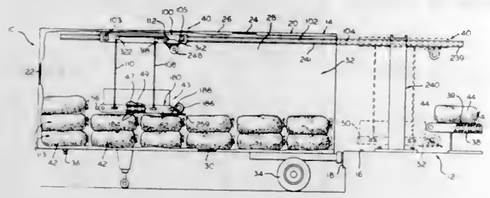
A rectangular blank of relatively stiff material having formed therein a set of longitudinally extending laterally spaced apart body weakening hinge lines and a set of laterally extending longitudinally spaced body weakening hinge lines, said blank being foldable widthwise or lengthwise on itself and stood in a variety of predetermined display configurations.

3,464,570
JIB SUSPENSION
George W. Mork, South Milwaukee, Wis., assignor to Bucyrus-Erie Company, South Milwaukee, Wis., a corporation of Delaware
Filed July 14, 1967, Ser. No. 653,412
Int. Cl. B66c *23/64*
U.S. Cl. 212—144 1 Claim



A boom, for example on a truck mounted crane, has a jib and a mast pivotally connected to its tip. A fixed suspension cable extends between the boom and the tip of the mast to hold the latter in a selected angular position. An adjustable suspension cable extends from the tip of the jib inwardly over the tip of the mast and is removably attached to the mast at one of several vertically spaced points on its rear surface, the particular point of attachment being chosen to give the jib one of several possible angular positions. The mast has vertical side rails and a plurality of vertically spaced, apertured crosspieces. The adjustable cable comprises parallel lines the inner ends of which are pivotally attached to the ends of a rigid equalizer bar. A clevis is fixed to and extends from the center of the bar and is adapted to receive the selected crosspiece, and a removable pin serves to pivotally attach the bar to the mast. The tip of the mast is provided with grooved arcuate guides for the adjustable cable lines, and holders extend across the grooves to prevent the lines from coming out of the grooves.

3,464,571
APPARATUS FOR LOADING BAGGED MAIL FROM A LOADING DOCK INTO A HIGHWAY VEHICLE
Joseph E. McWilliams, 1345 Canterbury Lane, Glenview, Ill. 60025
Continuation-in-part of application Ser. No. 694,151, Dec. 28, 1967. This application Jan. 31, 1968, Ser. No. 702,007
Int. Cl. B65g *65/00, 67/00*
U.S. Cl. 214—6 **7 Claims**



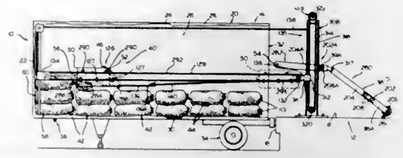
The invention relates to the loading of mail bags from a loading dock into an end loading highway vehicle, such as a truck or a trailer, to fully load the vehicle with stacks of mail bags in which the bags are compactly loaded into place in individual stack forming tiers without those performing the bag loading operation having to enter the vehicle. In practicing the invention, the loading dock at the post office or the like is provided with a conveyor on which out-going bags are placed and oriented in closely spaced tier form. Operating between the conveyor and the highway vehicle is an overhead, self-propelled carriage carrying a vertically movable load support that receives the tier load without disturbing the orientation of the bags and brings the tier load into the vehicle loading area for discharge of the stack forming tier unit, and effects placement of the tier as part of a stack in the vehicle, again without disturbing the orientation of the bags. The carriage then returns to the conveyor for another tier load.

The carriage movements are controlled so that the individual tier loads are formed into vertical stacks of mail bags that are disposed to position the bags of adjacent stacks in closely spaced relation, with the vehicle being thus filled with bags throughout its load receiving area so as to make maximum use of the available loading space within the vehicle to maximize the pay load. The operation of the carriage is mechanized so that workers do not have to go into the vehicle, and palleting of the bags in groups is avoided while still achieving uniform loading in tier form.

Several specific arrangements for practicing the invention are disclosed wherein the bags as loaded extend either longitudinally or transversely of the vehicle.

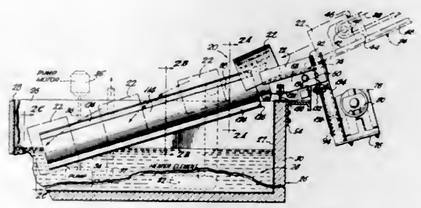
3,464,572
APPARATUS FOR LOADING BAGGED MAIL FROM A LOADING DOCK INTO A HIGHWAY VEHICLE
Joseph E. McWilliams, 1345 Canterbury Lane, Glenview, Ill. 60025
Continuation-in-part of application Ser. No. 694,151, Dec. 28, 1967. This application Mar. 12, 1968, Ser. No. 712,558
Int. Cl. B65g *65/00, 67/00*
U.S. Cl. 214—6 **7 Claims**

The invention relates to the loading of mail bags from a loading dock into an end loading highway vehicle, such as a truck or a trailer, to fully load the vehicle with stacks of mail bags in which the bags are compactly loaded into place in individual stack forming tiers without those performing the bag loading operation having to enter the vehicle. In practicing the invention, the loading dock at the post office or the like is provided with a conveyor on which out-going bags are placed and oriented in closely spaced tier form to form a stack forming tier unit. Operating between the conveyor and the highway vehicle is a carriage, in the form of a carrier suspended between vertically movable horizontally disposed conveyors that are temporarily suspended between the dock and the forward end of the vehicle, which carrier receives the tier load without disturbing the orientation of the bags and brings the tier load into the vehicle loading area for discharge of the stack forming tier unit, and effects placement of the tier as part of a stack in the vehicle, again without disturbing the orientation of the bags. The carriage then returns to the conveyor for another tier load.



The carriage movements are controlled so that the individual tier loads are formed into vertical stacks of mail bags that are disposed to position the bags of adjacent stacks in closely spaced relation, with the vehicle being thus filled with bags throughout its load receiving area so as to make maximum use of the available loading space within the vehicle to maximize the pay load. The operation of the carriage is mechanized so that workers do not have to go into the vehicle, the palleting of the bags in groups is avoided while still achieving uniform loading in tier form.

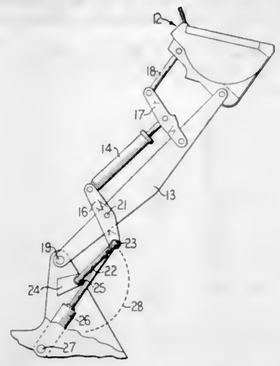
3,464,573
METAL CHARGING OF A MELTING CHAMBER
Joseph R. Riley, Catonsville, Md., assignor to The C. M. Kemp Manufacturing Company, Glen Burnie, Md., a corporation of Maryland
Filed Jan. 20, 1967, Ser. No. 610,621
Int. Cl. B65g *11/00*
U.S. Cl. 214—35 **14 Claims**



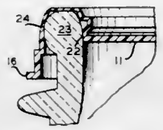
A device for charging pieces of metal into the molten metal of a melting chamber, the device having a rotatable chute for turning the metal pieces as they slide on it to effect their edge-entry into the molten metal.

3,464,574
LOADER LIFT LINKAGE
Trevor G. Campbell, Peoria County, Ill., assignor to Caterpillar Tractor Co., Peoria, Ill., a corporation of California
Filed Jan. 8, 1968, Ser. No. 696,345
Int. Cl. E02f *3/00*
U.S. Cl. 214—776 **3 Claims**

A loader lift linkage for a vehicle having a bucket supported by lift arms and tilt linkage comprising a bellcrank lever centrally connected to each lift arm. To increase lift capacity for a given jack without sacrificing maximum bucket height, each lift jack is connected between the vehicle and one end of one of the bellcrank members opposite its connection with a tilt jack.



3,464,575
CONTAINER CLOSURE
Vincent Arslanian and William J. Weber, Fulton, N.Y., assignors to Phillips Petroleum Company, a corporation of Delaware
Filed Jan. 26, 1967, Ser. No. 612,000
Int. Cl. B65d *39/00*
U.S. Cl. 215—41 **12 Claims**



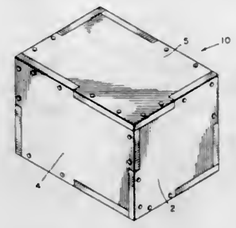
A resilient container closure having a thickened discoidal stopper portion, serving to reinforce sealing of the cap inside the container opening, and an enclosing cap portion which seals against the outer diameter of the container opening.

3,464,576
TAMPER-PROOF CONTAINER CLOSURE
Le Roy H. Rohde, Phoenixville, Pa., assignor to The West Company, Phoenixville, Pa., a corporation of Pennsylvania
Filed Dec. 30, 1966, Ser. No. 606,060
Int. Cl. B65d *41/34, 45/30*
U.S. Cl. 215—42 **9 Claims**



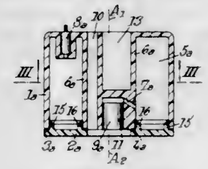
A tamper-proof ring for securing a closure over the open end of a container having a radial projection which lies closely adjacent the lower terminal edge of the closure when it is fully seated on the container in the closed position. The ring comprises a generally cylindrical sidewall, a radially inwardly projecting circumferentially extending upper flange engaging over a bead on the closure and a radially inwardly projecting circumferentially extending lower flange seating under the projection on the container and means defining at least one axial score line extending the entire width of the ring whereby upon movement of the closure in a direction to remove it from the container the ring fractures along said score line.

3,464,577
PILFER-RESISTANT CONTAINER
Samuel J. G. Kinnon, Rexdale, Ontario, Canada, assignor to Mallory Battery Company of Canada Ltd., Clarkson, Ontario, Canada, a private company of Canada
Filed Dec. 7, 1966, Ser. No. 599,840
Int. Cl. B65d *9/32, 55/02*
U.S. Cl. 217—65 **4 Claims**



A container having six sides, each side having edges with appropriately formed projections formed by cutting notches in the edges, the notches being cut to form the projections in a manner such that when the sides are assembled to form the container the projections are engaged with corresponding notches such that the sides can be pinned together in two directions, normal to each other.

3,464,578
PLASTIC MATERIAL LIGHTER TANKS FOR GASES UNDER PRESSURE AND METHODS OF MANUFACTURING SUCH TANKS
Marcel Quercia, Paris, France, assignor to Societe Flaminaire Marcel Quercia, Paris, France
Filed Mar. 20, 1967, Ser. No. 624,273
Claims priority, application France, Mar. 24, 1966, 54,894
Int. Cl. F17b *1/00*
U.S. Cl. 220—3 **6 Claims**

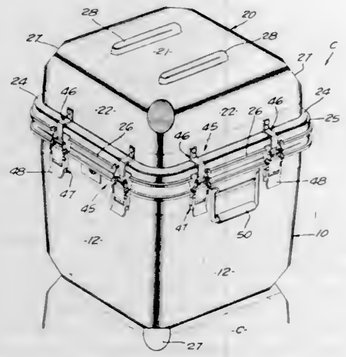


Two tank elements molded separately from a thermoplastic material are welded with each other by rotating them with respect to each other about their common axis while tightly applying them against each other in the direction of said axis, said elements having corresponding pairs of ridges circular about said axis adapted to cooperate together respectively, the two inner ridges belonging respectively to one of the elements and to the end of a bracing member integral with the other element.

3,464,579
WATER-TIGHT PLASTIC CONTAINER
Donald J. Asenbauer, Whittier, Calif., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware
Filed June 1, 1967, Ser. No. 642,903
Int. Cl. B65d *7/06, 53/02, 45/06*
U.S. Cl. 220—4 **8 Claims**

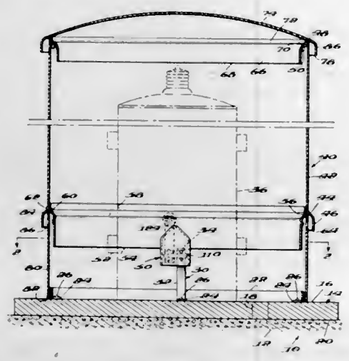
A container having upper and lower parts, each of which is integrally formed of thin-walled plastic material, one of the container parts having an extremity which is

curved through an angle of 180° to form a circumferentially extending male joint, the extremity of the other container part being first turned radially outward to form a shelf and then turned at the outer edge of the shelf to form a projecting flange serving as an extension of the container wall; a rigid metal band attached to the inner wall of the second container part adjacent the shelf, and extending beyond the shelf in parallel relationship



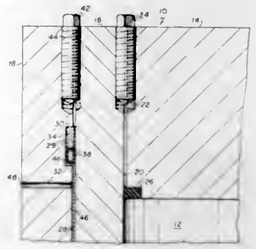
to the projecting flange; a resilient sealing ring located on the shelf and retained in place by both the flange and the rigid band; latch devices located in circumferentially spaced positions around the container and each including an upper plate secured to one of the container parts and a lower plate secured to the other container part; and rigid fastening means attached to the rigid band and extending through the associated container wall and attached to the corresponding latch plates.

3,464,580
SAFETY SHIELD FOR PAD MOUNTED ELECTRICAL TRANSFORMERS
Robert G. Jones, Sioux Falls, S. Dak., assignor to Shakstad Electric and Machine Works, Inc., Sioux Falls, S. Dak.
Filed Mar. 6, 1968, Ser. No. 711,098
Int. Cl. B65d *25/12, 25/10*
U.S. Cl. 220—18 **5 Claims**



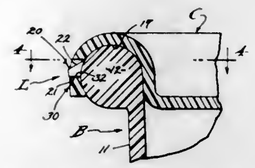
An enclosure for a ground supported electrical transformer including pad mounting means for the transformer, a shield extending around and over the transformer and supported on the pad, means releasably locking the shield on the pad, and means for venting the shield to the ambient atmosphere.

3,464,581
MULTI-LAYER PRESSURE VESSEL
John Polcer, Florham Park, N.J., assignor to Foster Wheeler Corporation, Livingston, N.J., a corporation of New York
Filed Mar. 7, 1968, Ser. No. 711,451
Int. Cl. B65d *53/02, 25/00*
U.S. Cl. 220—46 **13 Claims**



A multi-layer pressure vessel shear stud connected with filler metal between the layers retained by O-rings.

3,464,582
RELEASABLE CONTAINER LID LOCK
Morris Greitzer, 3057 Earlmar Drive, Los Angeles, Calif. 90064, and Simon Greitzer, 3500 W. Manchester Ave., Apt. 147, Inglewood, Calif. 90302
Filed Oct. 9, 1968, Ser. No. 766,225
Int. Cl. B65d *43/10, 41/22*
U.S. Cl. 220—60 **13 Claims**

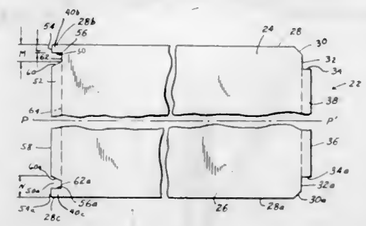


This invention relates to containers that are closed by a removable lid that is adapted to snap over and/or clinch onto the peripheral lip of the container vessel. Permanent deformation of the mating configurations is virtually eliminated while providing a reliable lid to vessel lock that is positive when installation is made. With the present invention at least one and preferably a plurality of cam-lug and lock means are incorporated in the vessel lip and lid perimeter, to either supplement or replace the usual frictional engagement of the mating lid to vessel engagement. Also, it is a sealed engagement that is maintained when the lid is locked to the vessel, the lip of the vessel being a bead or rolled edge that is embraced in a complementary channel in the mating lid. The channel is undercut so as to hook over the lip and have a snap-on action, and the cam-lug and lock means enhances the mating engagement of the lid and vessel by affording positive retention until the application of deliberate manual deflection of the lock means and which in the preferred form involves the use of resilient material in the formation of the lid so as to enable reuse.

3,464,583
CAN BODY BLANK AND CAN UNIT MADE THEREFROM
Arthur M. Koblish, Westchester, Ill., assignor to National Can Corporation, Chicago, Ill., a corporation of Delaware
Filed Sept. 7, 1967, Ser. No. 666,038
Int. Cl. B65d *7/04, 7/36;* **B21d** *51/26*
U.S. Cl. 220—77 **7 Claims**

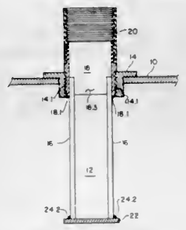
This invention is related to a can body and particularly to the body blank configuration from which such can

bodies are formed. The present can body blank is of conventional configuration on the overlap hook or notch side but includes in the other or incision side of the body blank two generally trapezoidal-shaped cut out areas. Cans formed from such body blank construction may be



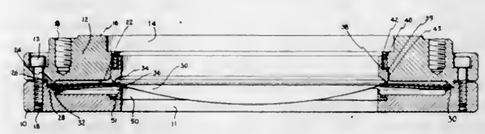
more accurately and easily flanged and accordingly present more desirable appearances. Such cans also present shorter lengths of raw metal edge exposed to the product contained therein and accordingly reduce "iron pick-up" which is often harmful to the flavor of canned beverages.

3,464,584
BAFFLE DEVICE
Norbert J. McNally, 151 Brayton Road, Boston, Mass. 02135
Filed May 1, 1967, Ser. No. 635,212
Int. Cl. B65d *3/00*
U.S. Cl. 220—86 **5 Claims**



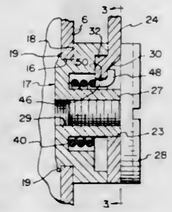
A baffle device, installed internally within a commercial or domestic oil storage tank, to divert the stream of incoming oil away from the bottom of the tank and instead towards the sides. This device deflects the incoming oil, yet does not slow or impede the flow of fuel into the tank nor does it develop any back pressure on the pump delivering to the fuel.

3,464,585
PRESSURE RELIEF VALVE
Stanley E. Summers, Woodland Hills, Calif., assignor to Ametek, Inc., New York, N.Y., a corporation of Delaware
Filed Feb. 8, 1968, Ser. No. 703,976
Int. Cl. B65d *45/00*
U.S. Cl. 220—89 **10 Claims**



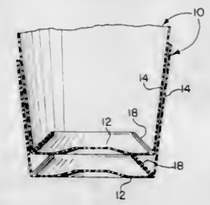
A pressure relief valve ideally suited for use in low pressure systems which employs a rupturable diaphragm supported opposite a diaphragm punch by a Belleville washer which is adapted, upon actuation, to snap over center and release the diaphragm into engagement with the punch and which also employs a second Belleville washer mounted upstream of the diaphragm and adapted, upon actuation, to thrust the diaphragm into the punch. The combination of a supporting Belleville and a rupture thrusting Belleville provides a relief valve with a snap action for systems having insufficient pressure to insure rupture of the diaphragm by utilizing the thrust release of the second Belleville to aid the rupture of the diaphragm.

3,464,586
BAIL HANDLE PIVOT MOUNT
Franklin C. Hitzeroth, Centerville, Iowa, assignor to McGraw-Edison Company, Elgin, Ill., a corporation of Delaware
Filed Nov. 12, 1968, Ser. No. 775,057
Int. Cl. B65d *25/28*
U.S. Cl. 220—94 **10 Claims**



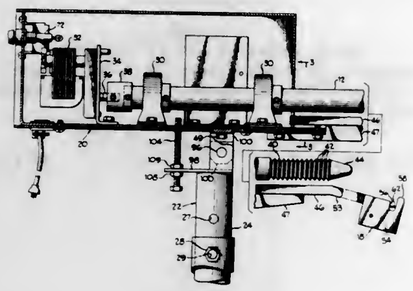
A bail handle pivot connection to a case, particularly an electric toaster case, where a spring normally biases the handle to an inoperative horizontally oriented position out of heat receiving alignment with the toaster slots but where the handle can be moved upon overcoming the bias of the spring to an operative vertically oriented carrying position over the toaster slots.

3,464,587
STACKABLE CONTAINER
Bryant Edwards, Clarendon Hills, Ill., assignor to Illinois Tool Works Inc., Chicago, Ill., a corporation of Delaware
Original application Aug. 9, 1967, Ser. No. 659,406. Divided and this application Jan. 2, 1969, Ser. No. 789,091
Int. Cl. B65d *21/02, 3/06*
U.S. Cl. 220—97 **4 Claims**



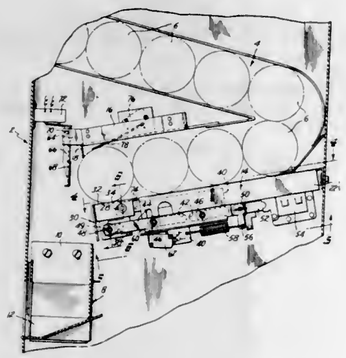
A one-piece nestable thin-walled plastic container of substantially uniform thickness having stacking pleat means of double wall thickness extending upwardly and inwardly from the juncture of the bottom and side wall of the container, the stacking pleat means cooperating with a circumferentially extending stacking surface of the container to positively limit telescoping and thereby prevent jamming between nested containers.

3,464,588
CLOTHES HANGER DISPENSER
Nicholas L. Strike, Richard G. Thun, and David L. Radford, Salt Lake City, Utah, assignors to McGraw-Edison Company, Elgin, Ill., a corporation of Delaware
Filed Nov. 2, 1967, Ser. No. 674,545
Int. Cl. B65h *1/26*
U.S. Cl. 221—75 2 Claims



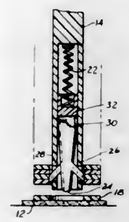
Mechanism including a threaded rotatable shaft and a method for dispensing hangers from a general storage area individually as needed to a hanger support station, whereat the presence of a hanger automatically stops the shaft and any subsequent dispensing of hangers to the station and whereat the absence of a hanger automatically rotates the shaft and dispenses a next hanger to the station.

3,464,589
SERPENTINE CAN VENDER MECHANISM
Kenneth W. Oden, Charles Town, W. Va., assignor to Dixie-Narco, Inc., Charles Town, W. Va., a corporation of West Virginia
Filed Mar. 22, 1968, Ser. No. 715,368
Int. Cl. B65h *3/30*; B65g *59/00*
U.S. Cl. 221—295 7 Claims



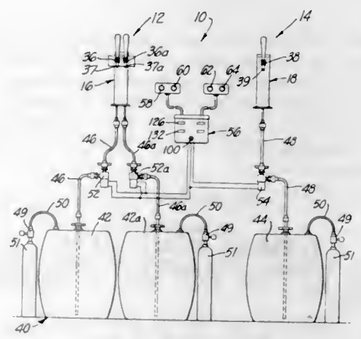
A plurality of adjacent vertically sinuous sloping tracks guide rows of cans to adjacent release ends where a depending fixed projection over each track engages the leading can or the like from a row of cans guided by vancement. Each leading can rests on a platform tiltable about a transverse axis rearwardly of the fixed projection but held against tilting by a solenoid-actuated slide. The solenoid withdraws the slide to tilt the platform and the leading can is thus lowered and rolls under the projection to a common delivery chute while the rear end of the platform restrains the remaining cans of the row. A common switch is actuated by any released can to reset the solenoids.

3,464,590
DISPENSER FOR DEPOSITING SINGLE DISCS, AS ON A GAME BOARD
Joseph D. Giannettino, 200 14th St., West Babylon, N.Y. 11704
Filed Mar. 1, 1968, Ser. No. 709,743
Int. Cl. B65g *59/06*
U.S. Cl. 221—297 7 Claims



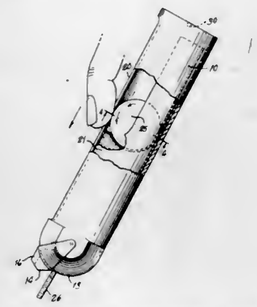
The present improvement is a dispenser for depositing single discs on a bingo card. The dispenser comprises a rod loaded with a stack of discs, and has detents at its lower end, with resilient means to spread the detents to retain the discs. Feeler means project downward from the lower end of the rod, and pushing the rod downward on the game card moves the detents inward to release the lowermost disc.

3,464,591
DUAL-TAP BEER DISPENSING APPARATUS
William H. Nicola, Garden Grove, Calif., assignor to Swingspout Measure Co., Los Angeles, Calif., a corporation of California
Continuation of application Ser. No. 599,876, Dec. 7, 1966. This application Mar. 20, 1968, Ser. No. 714,749
Int. Cl. B67d *5/24*, *5/52*, *5/60*
U.S. Cl. 222—30 5 Claims



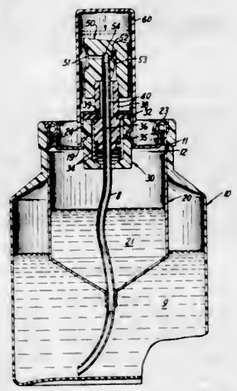
A beer dispensing apparatus having two serving taps in side-by-side relation and sufficiently close together to permit both to discharge into the same beer pitcher simultaneously, yet far enough apart to permit them to discharge into separate beer glasses. The serving taps are controlled by normally-closed solenoid valves which are energized simultaneously by either a glass timer or a pitcher timer. The glass timer energizes both solenoid valves for a length of time sufficient to cause each serving tap to dispense a glass of beer, and the pitcher timer energizes the solenoid valves long enough to cause each serving tap to dispense one-half of a pitcher of beer. The two timers are controlled by manually-operated glass and pitcher switches, respectively.

3,464,592
ROLL-BALL DISPENSER FOR PASTE PRODUCTS
John H. Stroop, New York, N.Y., assignor to Total Packaging Inc., New York, N.Y., a corporation of New York
Filed June 1, 1967, Ser. No. 642,936
Int. Cl. B67b *7/24*; B65d *47/00*
U.S. Cl. 222—82 2 Claims



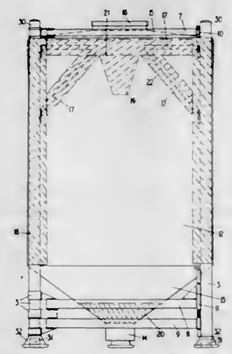
Instead of the usual tubes for tooth paste and the like, which have a screw top and rely on the user to squeeze the paste out of the tube from the bottom, this invention uses a solid tube dispenser with a slot extending almost the entire length. A sealed tube cartridge of very thin material, such as polyethylene, contains the paste material to be dispensed and fits into the dispenser. An extruder roll-ball is pushed into the rear end of the dispenser and is advanced gradually by the finger of the user operating through the slot. The other end of the dispenser has a narrow slit opening through which the paste material is pushed by the extruder roll-ball. The dispenser also has a closure mounted on the dispenser and adapted to open and close the opening, and on at least one side of the center has serrations to enable the closure to act as a cutter to initially cut off the top of the cartridge. The roll-ball fits so closely into the spherical shape of the bottom of the dispenser that the entire content of the tube cartridge is extruded.

3,464,593
PRODUCT SHUT-OFF
Robert Henry Abplanalp, 10 Hewitt Ave., Bronxville, N.Y. 10708
Filed Aug. 11, 1966, Ser. No. 571,883
Int. Cl. B67c *9/00*; B65d *83/14*
U.S. Cl. 222—182 6 Claims



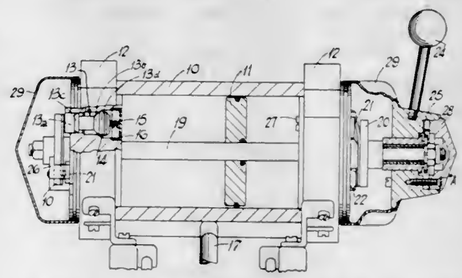
Enclosing the ejector of an aerosol dispenser having separate product and propellant containers within a hermetic chamber and providing the chamber with an environmental pressure in excess of the pressure within the product container provides a pneumatic product shut-off to prevent escape of product from the ejector discharge orifice.

3,464,594
FLEXIBLE CONTAINERS ATTACHED TO A COLLAPSIBLE SUPPORTING FRAME
Ronald Max Forman, Farnborough, England, assignor of one-half interest to Interfil Limited, London, England
Filed June 2, 1967, Ser. No. 643,150
Claims priority, application Great Britain, June 6, 1966, 25,144/66
Int. Cl. B67d *5/64*
U.S. Cl. 222—185 12 Claims



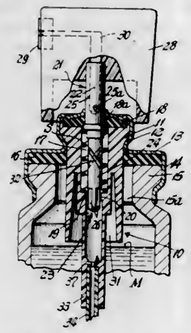
A bulk container which includes a flexible bag and an external framework for supporting the bag in an opened condition. The framework is arranged to be collapsed by folding portions of it together, the bag then being maintained also in a collapsed condition.

3,464,595
LIQUID DISPENSING DEVICE
Robert Loveland, Surrey, and George Downie, Sutton Coldfield, England, assignors to Gaskell & Chambers Limited, Shirley, Solihull, Warwickshire, England
Filed Feb. 19, 1968, Ser. No. 707,026
Int. Cl. G01f *11/04*
U.S. Cl. 222—249 4 Claims



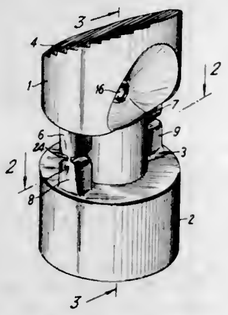
A liquid dispensing device incorporating a cylinder, a free piston mounted in the cylinder, an inlet valve and an outlet valve at each end of the cylinder and cam means disposed externally of the cylinder at each thereof, the cam means being engageable with the valves which extend through cylinder end assemblies and being actuable so that the inlet valve at one end of the cylinder and the outlet valve at the other end of the cylinder can be opened so as in use to permit pressurised liquid to enter said one end of the cylinder and drive the piston towards the other end of the cylinder to expel through the open outlet valve liquid in front of the piston.

3,464,596
AEROSOL METERING VALVE
Philip Meshberg, 15 Stoneleigh Road, Fairfield, Conn. 06430
Filed Nov. 13, 1967, Ser. No. 682,382
Int. Cl. B65d *83/14*
U.S. Cl. 222—402.2 **6 Claims**



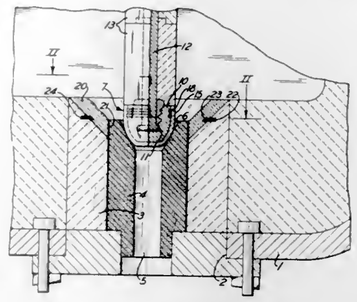
A metered valve having a tank or housing extending into the head space of a container having gas under pressure therein, the housing being made of plastic material having stiff walls forming a measuring chamber, the inner end of which is an apertured wall cooperating with a portion of the valve stem to seal off the chamber during dispensing, the wall of the housing surrounding the transverse wall being made more flexible than the remainder of the wall and flexing to maintain the transverse wall in sealing relation with the sealing portion of a reciprocating valve stem when in dispensing position under the influence of the gas under pressure in the head space. The stem, preferably of molded plastic material, has a guiding portion adjacent the sealing portion which is normally located in the aperture in the wall in non-dispensing position of the valve stem, said guiding portion being slightly smaller than the aperture to prevent binding of the stem on the apertured wall as would interfere with the movement of the stem and the applying of radial pressure to the apertured wall while preventing the stem from tilting in the housing.

3,464,597
TILTABLE SPRAY BUTTON
Louis F. Kutik, Fort Lauderdale, Fla., assignor to Precision Valve Corporation, Yonkers, N.Y., a corporation of New York
Filed Jan. 8, 1968, Ser. No. 696,337
Int. Cl. B67d *5/06*
U.S. Cl. 222—529 **6 Claims**



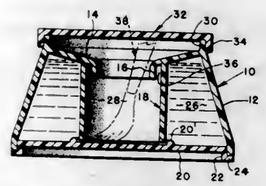
A valve actuating spray discharge button for a pressurized dispenser is configured to permit tilting about a horizontal axis to allow the user to direct the spray pattern while maintaining the container vertical.

3,464,598
LADLE VALVE
William J. Curry, Jr., East Liverpool, Ohio, assignor to Globe Refractories, Inc., Newell, W. Va., a corporation of West Virginia
Filed Apr. 26, 1968, Ser. No. 724,486
Int. Cl. B65d *47/00;* **B67d** *3/02*
U.S. Cl. 222—559 **10 Claims**



A ladle valve includes a fired clay block that has a concave recess in its top and a vertical opening extending down through the block containing a refractory nozzle, the upper end of which is engageable by a vertically movable stopper. An erosion resistant layer of material of zircon or zirconia or high alumina is applied to the block in its recess and to the outside of the fired clay body of the stopper plug, or to either of them.

3,464,599
SPILL-PROOF CONTAINER
Harry Meth, Cincinnati, Ohio, assignor to Rainbow Crafts, Inc., Cincinnati, Ohio, a corporation of Delaware
Continuation-in-part of application Ser. No. 398,225, Sept. 22, 1964. This application June 17, 1966, Ser. No. 558,363
Int. Cl. B43l *23/02*
U.S. Cl. 222—589 **29 Claims**

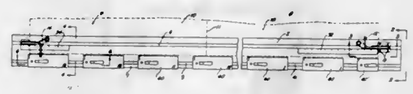


The present disclosure relates to a spill-proof container particularly a container for liquid such as poster paints, inks, etc. which are used by children and a container which if tilted or knocked over by the user will not spill the liquid contents due to novel construction of the container. The contents being removable from the interior of the container only by use of an exterior member such as a brush panel or the like.

3,464,600
PLEAT MARKING DEVICE
Eugene P. McClintock, P.O. Box 506, Anaheim, Calif. 91802, and Jesse H. Cox, R.R. 2, Carmel, Ind. 46032
Filed Jan. 17, 1968, Ser. No. 698,643
Int. Cl. D06j *1/00;* **A41h** *43/00;* **C01b** *3/10*
U.S. Cl. 223—28 **11 Claims**

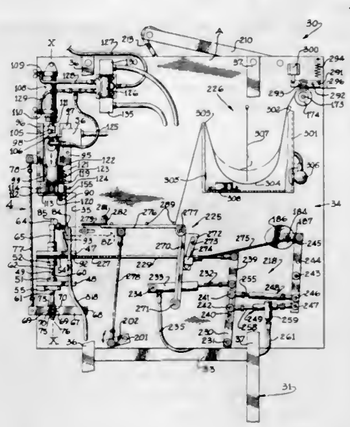
Apparatus for marking the location of the spaces and pleats on drapery material comprising a plurality of moveable plates connected together by a plurality of uniform

springs, each of the plates having spaced indicia thereon for indicating the locations of the spaces between adjacent pleats, the springs being operative to determine the width of the material in adjacent pleats, and a slide track member for supporting the plates for movement relative to each other. In addition, each plate contains a locking device for fixing the position thereof regardless of any



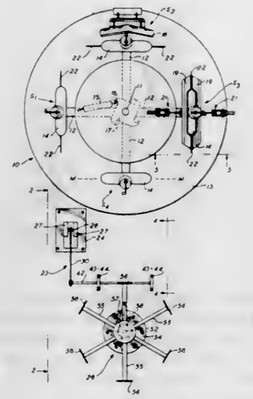
non-uniform spacing between the plates so that the amount of material in each pleat may be varied in order to adjust the position of the seams between the widths of material in the drapery. The slide track member also supports a fixed clamp for clamping one end of the drapery material and a slideable clamp for clamping the other end of the drapery material.

3,464,601
METHOD OF AND MACHINE FOR AUTOMATICALLY CONTINUOUSLY MAKING RIBBON BOWS
Ferdinand Christensen, North Whittier, Calif. (211 N. Puente Ave., City of Industry, Calif. 91744)
Filed Oct. 24, 1965, Ser. No. 504,322
Int. Cl. A41h *43/00;* **A41g** *1/02*
U.S. Cl. 223—46 **7 Claims**



(A) A rotatable bow forming mandrel having a plurality of axially parallel needles extending therefrom, (B) means for automatically repeating the following series of steps (1) impaling a continuous ribbon on said needles, (2) providing slack in said ribbon sufficient to form a loop of a bow, and (3) rotating said mandrel to form said slack ribbon into such a loop, (C) means for halting said repetition when a rosette bow of ribbon of a given size has been formed symmetrical with said mandrel, and (D) means functioning automatically upon the completion of each such bow to concurrently perform the following steps (4) withdraw said needles from said ribbon portions impaled thereon, (5) staple said portions together, (6) cut the bow thus formed from said ribbons, and (7) initiate a repetition of said sequence of steps whereby said ribbon is automatically converted into a series of individual separate bows.

3,464,602
SHIRT UNLOADER AND DELIVERY APPARATUS
John Romansky, Rochester, N.Y., assignor to McGraw-Edison Company, Elgin, Ill., a corporation of Delaware
Filed June 12, 1968, Ser. No. 736,330
Int. Cl. D06c *15/00;* **D06f** *71/00*
U.S. Cl. 223—57 **11 Claims**



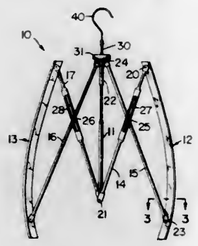
A shirt unloader stationed near a shirt pressing machine has a conveyor arm with grippers which lift the shirt from the pressing device and transport it to a delivery station in one overhead swinging movement. A turntable at the delivery station has a series of shirt hangers for receiving the shirts as they are released by the grippers. The unloader and turntable are operated in timed relation with a four turret shirt press.

3,464,603
HEADPIECE SUPPORT
Sally Hunter, P.O. Box 412, Alexandria, Va. 22313
Filed May 8, 1968, Ser. No. 727,403
Int. Cl. A47j *51/00*
U.S. Cl. 223—66 **10 Claims**



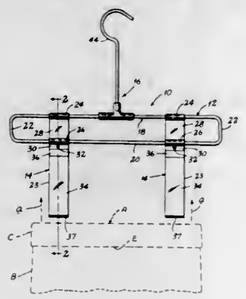
This is a headpice support which when portably attached to an existing lamp is useful in dressing and grooming headpieces such as wigs and/or forming headpieces such as ladies' hats and the like. It is an attachment useful principally in caring for wigs and chapeaux to preserve them against damage when stored temporarily.

3,464,604
GARMENT DRIER
Rogene E. Chezum, 851 N. Mariposa Ave., Apt. 3, Los Angeles, Calif. 90027
Filed Oct. 11, 1968, Ser. No. 766,895
Int. Cl. A41h *5/00;* **A47j** *51/10*
U.S. Cl. 223—69 **3 Claims**



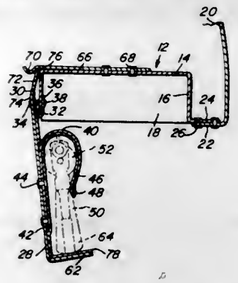
An expandable and adjustable drying form for girdles and similar garments. A pair of extendable shaped ribs are mounted on either side of a central staff. Each rib is mounted by a pair of lever arms, one pivotally connected near the bottom of the staff and the other pivotally connected to a collar slidably mounted near the top of the staff. The top end of the staff is threaded along a length to permit variable positioning of a threaded knob in order to adjust the position of the collar and the size of the extended form.

3,464,605
HANGER FOR TROUSERS
Ormond H. G. Apel, 3715 Hartford St., St. Louis, Mo. 63116
Filed Mar. 13, 1968, Ser. No. 712,721
Int. Cl. A47j *51/14*
U.S. Cl. 223—96 **1 Claim**



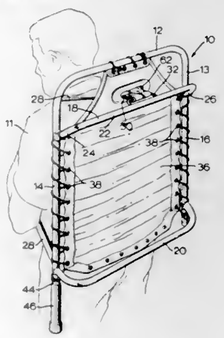
A simple device for hanging trousers from the cuff portions thereof. Includes means for the suspension of the device and the trousers hung thereon from the rod of a clothes closet, wardrobe and the like. The weight of the device tends to facilitate insertion and removal of a pair of trousers without the necessity of removing the device from such rods. A pair of resilient hanger members slidably mounted on a track comprised of a pair of vertically spaced guide rails serves to obviate crimped cuffs and to preserve creases therein and in the trouser legs. The device may also be incorporated in an ordinary coat hanger.

3,464,606
PISTOL SAFE
Melvin A. Nordeen, 2313 Tully, Modesto, Calif. 95350
Filed Oct. 4, 1967, Ser. No. 672,823
Int. Cl. F41b *13/04;* **B60w** *3/08;* **A67b** *67/02*
U.S. Cl. 224—2 **4 Claims**



A lockable case for housing a pistol which includes a cover plate of the case capable of swinging outwardly after being unlocked thereby exposing a weapon. The interior surface of the cover plate contains bracket means which releasably supports a pistol affording an authorized user of the weapon the opportunity to remove it quickly and easily after the case has been opened. Attachment means are provided for permanently installing the case.

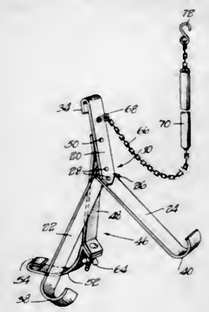
3,464,607
PACK HARNESS
Ernest Edward Grace, 175 Highway 11B N., and Myrle T. Woolman, 8 Dufferin St. N., both of Huntsville, Ontario, Canada
Filed Sept. 15, 1967, Ser. No. 668,079
Int. Cl. A45f *3/10*
U.S. Cl. 224—25 **1 Claim**



A pack harness having a U-shaped frame to which a flexible backing is lashed. The shoulder straps are connected at their lower ends to the frame and at their upper ends to a transverse member out of the plane defined by the frame on the opposite side of the frame as the bearer. A further feature is that coupling means are attached to the ends of the frame to enable connection of the frame to a second frame to form a bed or stretcher.

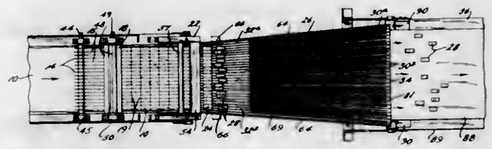
3,464,608
BUMPER CARRIERS FOR BICYCLE
Corsino Ruben Rodriguez, 2N 439 Elm Ave., Elmhurst, Ill. 60126
Filed Sept. 7, 1967, Ser. No. 666,148
Int. Cl. B60r *9/06;* **B60v** *11/00*
U.S. Cl. 224—42.03 **5 Claims**

Bicycle carriers are adapted to be detachably mounted in pairs on an automobile bumper to cradle the wheels and carry a bicycle. The bicycle support of each carrier is formed of three steel strips shaped generally in the form of the letter Y inverted and hooking over the upper edge of a bumper and curving over the side of the bumper to support adjacent the bumper in vertical positions two diverging wheel-cradling elements having outer ends reversely bent to cradle the tire of a bicycle wheel.



The three elements of the Y-shaped wheel support structure generally parallel individually the externally applied load on the respective elements, the Y-shaped structure being held against upward displacement by hold-down elements which engage the lower bumper edge and which are formed preferably of steel strip. A flexible tie-down element on each carrier holds a bicycle against dislodgment from the diverging wheel-cradling elements.

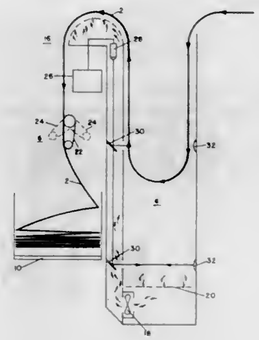
3,464,609
VIBRATORY CANDY BREAKER AND SEPARATOR
Robert Murphy, Robinson, Ill., assignor to L. S. Heath & Sons, Inc., Robinson, Ill., a corporation of Illinois
Filed May 19, 1967, Ser. No. 639,840
Int. Cl. B26f *3/00, 3/02;* **B65h** *35/00*
U.S. Cl. 225—96.5 **13 Claims**



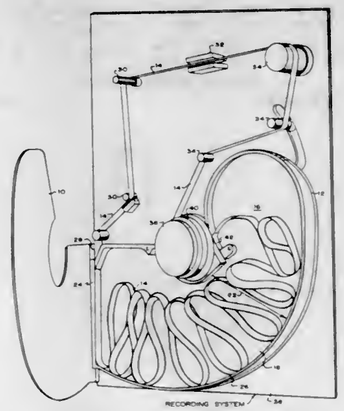
A unit for breaking a transversely and longitudinally scored sheet of candy into individual bars includes a plate having a plurality of slightly diverging rods welded to its upper surface. The spacing between rods is less than the width of the candy bars at the narrow end of the plate and greater at the wide end. Vibrator units shake the plate with an upward movement to break the candy along the transverse score lines and a quick-forward, slow-return movement to move the candy bars forward. The bars fall between the diverging rods and are delivered from the end of the plate spaced transversely from each other so that automatic equipment can coat and package them.

3,464,610
FAN-FOLDED PAPER STACKER
Menno G. Koning, Dover, Mass., assignor to Mohawk Data Sciences Corporation, East Herkimer, N.Y., a corporation of New York
Filed Nov. 17, 1966, Ser. No. 595,154
Int. Cl. B65h *25/32, 17/12, 17/50*
U.S. Cl. 226—43 **4 Claims**

A high speed stacker for a fan-folded, perforated web includes a pair of oscillating feed tractors having a frequency of oscillations dependent on the speed of stacking and the distance between folds. The tractors pull the web from a vacuum-column buffering chamber which receives the web from a supply source such as a line printer. The web feed path from the buffer to the stacker includes an air bearing which is pressurized with air from the vacuum chamber. When a predetermined maximum amount of web accumulates in the buffer a high speed stacking rate is used to reduce the accumulation to a predetermined minimum amount, whereupon stacking is arrested. When the amount increases beyond the minimum, low speed stacking is switched on.

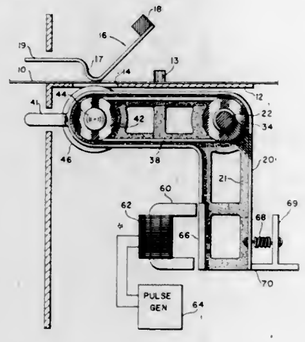


3,464,611
CONTINUOUS LOOP TAPE STORAGE AND SUPPLY UNIT
Michael A. Verdone, Hillsborough, Calif., assignor to Hewlett-Packard Company, Palo Alto, Calif., a corporation of California
Filed Oct. 23, 1967, Ser. No. 677,193
Int. Cl. B65h *17/42;* **G11b** *15/56*
U.S. Cl. 226—119 **3 Claims**



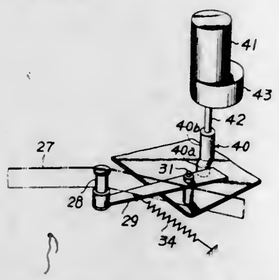
A tape drive feeds a continuous loop tape into a metal chamber having a first section in which loops of incoming tape are formed and having a second generally horn-shaped section along which these loops of tape are forced so that each loop is removed from the chamber when it has reached the end of the second section.

3,464,612
STRIP FEEDING DEVICE
John F. Dalton, Worcester, and Philip P. Sharples, Bryn Mawr, Pa., assignors to Mohawk Data Sciences Corporation, East Herkimer, N.Y., a corporation of New York
Filed Sept. 11, 1967, Ser. No. 666,767
Int. Cl. B65h *17/22*
U.S. Cl. 226—155 10 Claims



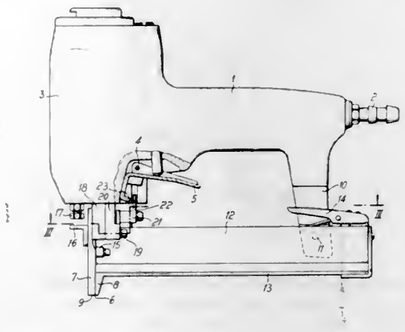
A continuously rotating drive capstan is mounted on the end of a pivotable bellcrank and is positioned beneath a strip to be fed along the surface of a bedplate. Upon energization of a solenoid actuator the bellcrank is pivoted to move the capstan through an opening in the bedplate to engage and feed the strip. A leaf spring positioned above the strip and spanning the opening in the bedplate biases the strip against the capstan for feeding and, when the capstan is lowered, biases the strip against the bedplate for braking. A friction material on the bedplate immediately beneath the leaf spring enhances the braking operation.

3,464,613
AUTOMATIC BELT TENSION CONTROL DEVICE
Junichi Ura, Yokohama, Japan, assignor to Victor Company of Japan, Limited, Yokohama, Japan
Filed May 29, 1967, Ser. No. 641,827
Claims priority, application Japan, June 3, 1966, 41/35,431
Int. Cl. B65h *17/44*
U.S. Cl. 226—178 4 Claims



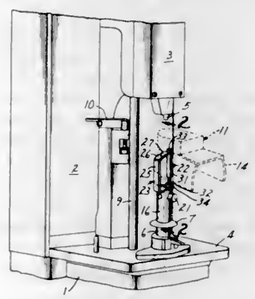
An automatic belt tension control device in a magnetic recording and reproducing apparatus having an oscillatably supported tension arm and a pressure contact member adapted to bear against a belt which is trained around a driving pulley and driven pulley for driving a capstan at one end of the tension arm. The tension arm is adapted to rest against a non-eccentric portion of a cam shaft in recording operation and against an eccentric portion of said cam shaft in reproducing operation.

3,464,614
HAND OPERATED PNEUMATIC FASTENER DRIVING DEVICE
Dieter Volkmann, Leinstrasse 49, Neustadt am Rubenberge, Germany
Filed Feb. 23, 1967, Ser. No. 618,052
Claims priority, application Germany, Feb. 26, 1966, H 58,663
Int. Cl. B25c *5/06, 1/04, 5/02*
U.S. Cl. 227—130 4 Claims



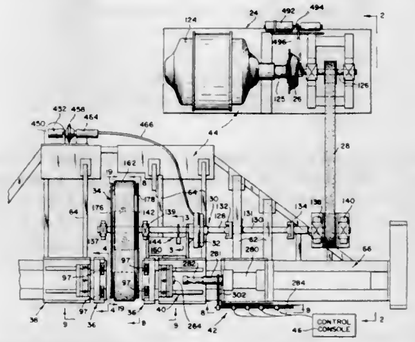
In hand operated pneumatic devices for driving staples, nails and other fastening means into a workpiece the trigger lever of the pneumatic air inlet valve is in the working position of the device released for actuating the driving stroke in that the magazine is at its front end provided with a locking lever for the trigger lever and is together with the casing of the ejection channel made to turn around an axle which is horizontally arranged at the rear end of the device in dependence of the movement of the device from its inoperative position into the working position by placing it on the workpiece.

3,464,615
ATTACHMENT FOR A SHOE NAILING MACHINE
Stanley F. Graff, 5252 Aldrich Ave. N., Minneapolis, Minn. 55430
Filed Sept. 12, 1967, Ser. No. 667,250
Int. Cl. A43d *69/00;* B25c *7/00*
U.S. Cl. 227—154 7 Claims



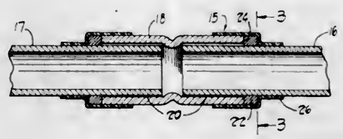
Apparatus for supporting the heel portion of a shoe in a shoe nailing machine having a nail driving mechanism and a horn supporting shank below the nail driving mechanism. Horn means adapted to be mounted on the shank, includes a pair of cooperating horn elements, one for support of the interior portion of an inverted shoe and the other for support of the exterior portion of the shoe. Means is provided for adjustment of the horn means in directions transversely of the axis of a nail being driven by the nail driving mechanism.

3,464,616
FRICTION WELDING MACHINE AND METHOD
Alex F. Stamm, Rochester, Mich., assignor to Rockwell-Standard Company, a corporation of Delaware
Filed Dec. 23, 1963, Ser. No. 332,365
Int. Cl. B23k *27/00*
U.S. Cl. 228—2 8 Claims



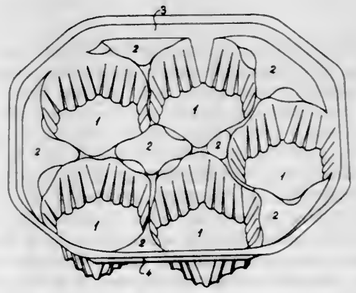
1. In a method of friction welding metal workpieces in which said workpieces are rotated at a constant speed relative to each other, are engaged under axial pressure, and are rubbed together until the metal has become plastic in the area of contact and thereafter stopping relative rotation between said workpieces, the improvement in which said workpieces:
(a) upon initial engagement are rotated under a first rapidly increasing pressure rate for a relatively short period of time; then
(b) under an increasing pressure, at a second and slower rate, for a relatively longer period of time until a predetermined pressure level is reached; and thereafter
(c) substantially further increasing engagement pressure after the metal has become plastic in the area of contact to a final forging pressure to complete the weld; and
(d) maintaining said final forging pressure for a predetermined interval after relative rotation between said workpieces has stopped.

3,464,617
SWEAT SOLDER FORM
Bertram C. Raynes, Pepper Pike, and Michael Pescatrice, Lakewood, Ohio, assignors to Rand Development Corporation, Cleveland, Ohio
Filed June 9, 1965, Ser. No. 462,673
Int. Cl. B23k *3/06, 35/14*
U.S. Cl. 228—56 12 Claims



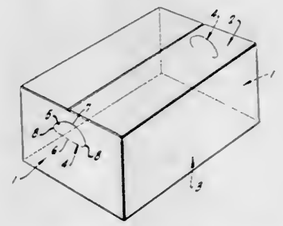
A length of adhesive coated tape and a length of solder, narower and shorter than the length of tape, secured to the tape by the adhesive. The tape and solder are used in sweat soldering a pipe and fitting together by wrapping the two about the pipe so as to form the solder into an encircling ring around the pipe, directly abutting the fitting. Portions of the tape extending beyond the solder are adhered by the adhesive to the pipe and fitting to hold the parts in assembled relationship.

3,464,618
REINFORCED-RIM POCKET PACK OF THIN PLASTIC MATERIAL, FOR FEW FRUITS OR LIKE ARTICLES
Guido Martelli, Piazza XX Settembre 5, Nerio Martelli, Via Cavaioni 6, and Francesco Martelli, Piazza XX Settembre 5, all of Bologna, Italy
Filed June 25, 1968, Ser. No. 739,728
Claims priority, application Italy, June 28, 1967, 7,113/67
Int. Cl. B65d *19/02*
U.S. Cl. 229—2.5 4 Claims



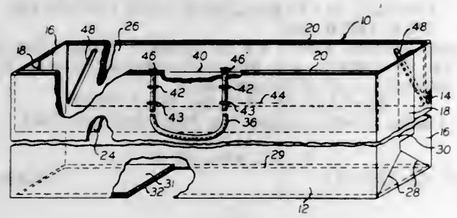
The invention relates to a packaging tray constructed of a synthetic resin material provided with a plurality of pockets, the upper portions of which are integrated into a shelf, the perimeter of which extends upwardly to form an area by which the tray may be readily grasped.

3,464,619
ARC TOP HANDHOLE CARTONS
Duane M. Nordstrom, Kelso, Wash., assignor to Longview Fibre Company, San Francisco, Calif., a corporation of Delaware
Filed Mar. 13, 1968, Ser. No. 712,730
Int. Cl. B65d *25/22, 25/28*
U.S. Cl. 229—52 7 Claims



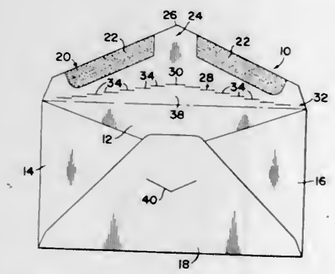
A carton side wall including a handhole cut to provide an arcuate linearly-extending upper edge spaced below the upper edge of said wall and intermediate the side edges of said wall and a closure flap integral and coplanar with said wall along the lower edge of said opening closing the handhole and swingable into the carton by the fingers of a carton lifting hand to enable said fingers to engage said arcuate edge for lifting the carton and its contents.

3,464,620
HANDLE CONSTRUCTION FOR CARRIER BOX BAG
Leonard E. Canno, New York, and William H. F. Grob, Babylon, N.Y., assignors to Equitable Paper Bag Co., Inc., Long Island City, N.Y., a corporation of New York
Filed Mar. 14, 1968, Ser. No. 713,149
Int. Cl. B65d *33/12*
U.S. Cl. 229—54 6 Claims



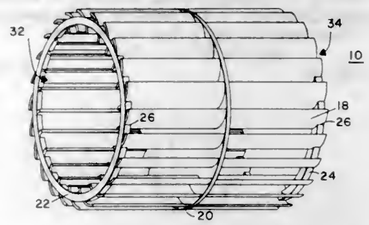
This specification discloses a type of bag having front and rear panels and side panels and having stiffening panels attached to the upper parts of the front and rear panels and extending down from the mouth of the bag a distance equal to the width of the side panels. The ends of the bag having the stiffening panels fold in over one another to form a box-like closure at the top of the bag. A cord handle is permanently attached to the panel that is to be folded in first, and there is an elongated opening in the other panel through which the cord is pulled. The opening is narrower than the handle so that the handle distorts the sides of the opening and is firmly gripped to hold the top panel down and the bag closed. The preferred embodiment has a loop of the handle extending longitudinally of the stiffening panels, but the end portions of the handle extend transversely of the stiffening panel to the edge of the mouth of the bag to facilitate the cutting of the cord for production on automatic machines.

3,464,621
SHEET MATERIAL SEPARATION DEVICE
Harold R. Day, 11694 Prospect Road, Strongsville, Ohio 44136
Filed Apr. 24, 1967, Ser. No. 633,089
Int. Cl. B65d *27/34, 5/54, 77/38*
U.S. Cl. 229—85 1 Claim



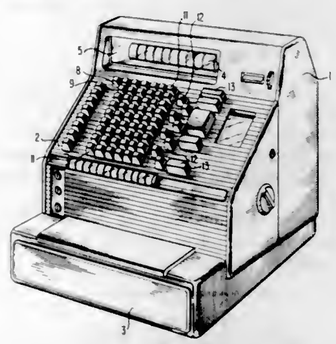
An easy opening envelope having a bidirectionally oriented zone of weakness extending across the flap between the glue line and the envelope edge to which the flap is fastened, and with a pull tab adjacent to the free edge of the flap. A succession of staggered scores provides controlled tear in the zone of weakness. The staggered score with integral flap is also applicable as a sheet material separation device.

3,464,622
BLOWER FAN
Donald I. Dennis, Cherokee County, Tex. (P.O. Box 418, Jacksonville, Tex. 75766)
Filed Jan. 25, 1968, Ser. No. 700,598
Int. Cl. F04d *29/22, 17/08*
U.S. Cl. 230—134 5 Claims



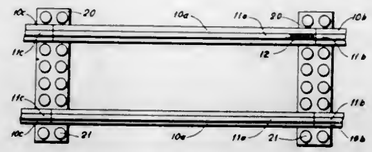
A squirrel cage type blower fan is described that comprises a central hub for mounting on a shaft, a corrugated disc carried about the axis thereof on the hub and perpendicular to the hub axis, and a plurality of fan blades or vanes supported from the disc adjacent the periphery thereof extending perpendicularly outward therefrom.

3,464,623
CONTROL MECHANISM FOR CALCULATING MACHINE
Richard E. Busch, La Puente, Calif., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Original application Aug. 11, 1964, Ser. No. 388,901, now Patent No. 3,348,769, dated Oct. 24, 1967. Divided and this application Oct. 22, 1965, Ser. No. 515,775
Int. Cl. G06c *25/00, 29/00*
U.S. Cl. 235—130 19 Claims



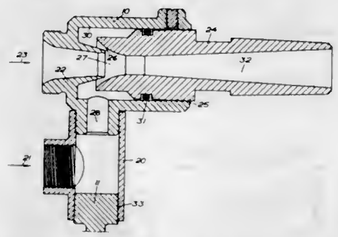
A keyboard control mechanism for controlling operation of a calculating machine wherein each column of amount, department and function keys has associated therewith a plurality of control slides for controlling certain routines of keyboard entry. A first group of these control slides controls the positioning of itemizing accumulators to selectively add or subtract amounts. A second group of these control slides permits or prevents initiating a machine cycle in accordance with the depressed condition of certain keys. The control slides in each group are functionally interrelated to latch depressed ones of the amount keys and to prevent depression of any further amount keys after a machine cycle is initiated by depression of a department or function key. Certain interrelated ones of the control slides prevent the depression of department keys if certain function keys are in depressed condition or the depression of function keys if any of the department keys are depressed.

3,464,624
BUILDING SET COMBINATION INCLUDING TOY RAILS, TIES AND SPECIAL TRACK SECTIONS
Godtfred Kirk Christiansen, Billund, Denmark, assignor to Interlego A.G., Zug, Switzerland
Filed Nov. 28, 1966, Ser. No. 597,390
Claims priority, application Denmark, Dec. 13, 1965, 6,378/65
Int. Cl. E01b *23/00, 7/00;* A63l *33/06*
U.S. Cl. 238—10 5 Claims



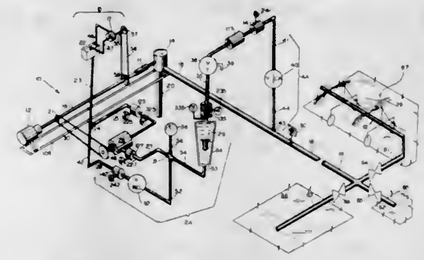
A toy building set comprising moulded plastic rail and crosstie elements. The tie elements have primary coupling studs protruding from one face thereof. The rail elements have a recess on the bottom face and coupling studs within the recess to engage the studs of the crossties. Other elements are track sections comprising rail switches and crossings. Some rail elements have an inclined face at the bottom for constructing tracks with a gradient. All the foregoing are adapted to cooperate in combination with a conventional set of blocks having similar stud and recess connecting means.

3,464,625
METHOD AND MEANS FOR MAKING SNOW
Osten Carlsson, Nacka, Sweden, assignor to Atlas Copco Aktiebolag, Nacka, Sweden, a corporation of Sweden
Filed Jan. 4, 1966, Ser. No. 518,705
Claims priority, application Sweden, Jan. 22, 1965, 841/65
Int. Cl. A01g *15/00;* E01h *13/00;* B05b *7/12*
U.S. Cl. 239—2 2 Claims



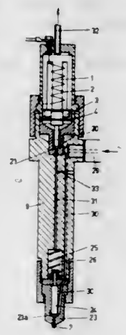
A means for making snow from atomized water into the ambient atmosphere having a freezing point lower than water, the means including a housing in which water and compressed air are directed, the housing including a tube containing an elongated conically widening expansion nozzle having a throat at its inner end. There is an annular gap provided in the tube around the throat for delivering compressed air thereto to create a jet of water particles for ejection from the nozzle under simultaneous expansion and cooling in the nozzle of the air creating and ejecting the particles. A pump is provided in the water conduit leading to the nozzle and means is provided for forcing water under pressure into the throat. A valve is provided in the water conduit for regulating pressure of the water to control the effective area of the gap offered to the compressed air in the housing, the intake tube having an internal taper converging toward the throat so that the throat acts as a water-driven suction jet pump preventing flooding of the air line when the air pressure therein is insufficient.

3,464,626
AGRICULTURAL CHEMICAL APPLICATION PROCESS AND APPARATUS THEREFOR
Otis C. Stamps and David W. Neikirk, Clovis, N. Mex., assignors to Inject-O-Meter Manufacturing Company, Inc., Clovis, N. Mex., a corporation of New Mexico
Continuation-in-part of application Ser. No. 632,081, Apr. 19, 1967, which was a continuation-in-part of application Ser. No. 546,443, Apr. 29, 1966. This application Apr. 1, 1968, Ser. No. 717,515
The portion of the term of the patent subsequent to June 20, 1984, has been disclaimed
Int. Cl. A01g *25/02;* B05b *15/00*
U.S. Cl. 239—10 10 Claims



A process of applying water insoluble herbicides and the like by a high energy pump system incorporating a high intensity dispersion step with an irrigating apparatus and effecting application of such materials to farm land at a substantially constant weight per unit area of land at any of several desired levels of intensity.

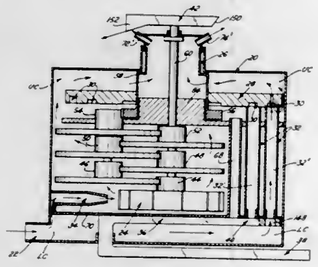
3,464,627
ELECTROMAGNETIC FUEL-INJECTION VALVE
Robert Huber, Zumikon, Switzerland, assignor to Societe des Procede Modernes d'Injection Sopromi, Seto, France
Filed June 12, 1967, Ser. No. 645,170
Claims priority, application Switzerland, June 21, 1966, 8,956/66
Int. Cl. F02m *41/16;* B05b *1/30;* F16k *31/12*
U.S. Cl. 239—96 4 Claims



A fuel-injection valve in which fuel pressure is utilized to hydraulically control the valve so that relatively high fuel pressures can be controlled with a small electromagnetic valve member. A first fluid conduit conducts fuel between a fuel inlet and a fuel outlet, and a hydraulically movable valve member controls the flow of fuel out of the fuel outlet. A second fluid conduit communicates between the fuel inlet and one end of the hydraulically movable valve member to apply a hydraulic pressure thereto, and a third fluid conduit communicates between

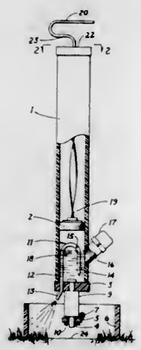
the same end of the hydraulically movable valve member and a second fuel outlet. A relatively small electromagnetically movable valve member controls the flow of fuel out of the second fuel outlet, thereby controlling the hydraulic pressure applied to the hydraulically movable valve member, and thus controlling the flow of fuel out of the first fuel outlet.

3,464,628
SELECTIVE PATTERN LAWN SPRINKLER
Ho Chow, River Edge, N.J., assignor to International Patent Research Corporation, Moonachie, N.J., a corporation of New York
Filed Sept. 8, 1967, Ser. No. 666,257
Int. Cl. B05b *3/02, 3/08*
U.S. Cl. 239—97 20 Claims



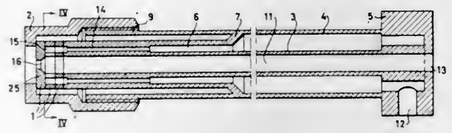
A selective pattern lawn sprinkler designed to selectively spray different lawn area patterns, and for each selected pattern to effect the uniform spraying of the water over the area. The construction is characterized by the provision of a water distribution head, a pattern selector cam and a deflector, each rotatable by the water motor or impeller of the sprinkler, and so interrelated as to enable any one of a plurality of different area patterns to be selectively sprayed, with uniform distribution of the water over the sprayed areas.

3,464,629
GRASS AND WEED ERADICATING SPRAY UNIT
Bryon M. Peters, 235 W. Briggs Ave., Lathrop, Calif. 95330
Filed Dec. 7, 1967, Ser. No. 688,764
Int. Cl. B05b *1/28;* A62c *11/04*
U.S. Cl. 239—104 9 Claims



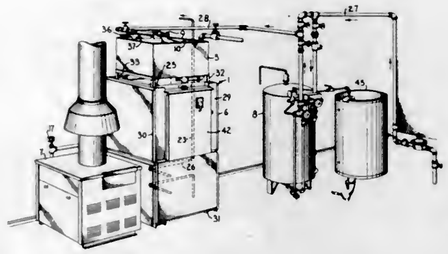
A portable, hand-operated apparatus for spraying a grass and weed killing solution onto a confined area of definite size about a flush-mounted, lawn sprinkler head.

3,464,630
PRESSURE ATOMIZING OIL BURNER
Knud Erik Bendixen, Horsholm, Denmark, assignor to Aktieselskabet Burmeister & Wain's Maskin-og Skibsbyggeri, Copenhagen, Denmark, a company of Denmark
Filed Feb. 5, 1968, Ser. No. 702,907
Claims priority, application Denmark, Feb. 9, 1967, 712/67
Int. Cl. B05b *15/06*
U.S. Cl. 239—124 3 Claims



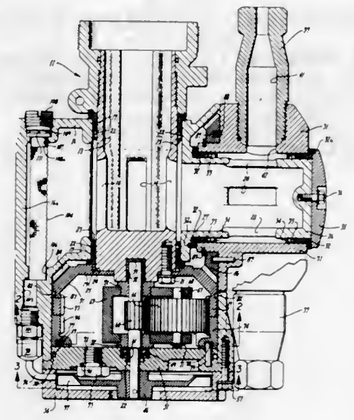
An oil burner lance comprising a pair of co-axial pipes with a built-up atomizer on each free end clamped against the end of the inner pipe by means of a union nut screwed on to the outer pipe, the said co-axial pipes being without fixed mutual connection for such a distance reckoned from the atomizer towards the root of the burner lance that the elastic elongation and compression of the outer and inner pipe, respectively, when tensioned by the union nut together exceed—preferably several times—the elongation of the union nut itself due to radiant heat from the combustion chamber.

3,464,631
APPARATUS FOR TREATING VEHICLE WASH WATER
Gordon V. Lieffring and Kenneth P. Begey, Kansas City, Mo., and James E. Widner, Prairie Village, Kans., assignors to Robo-Wash, Inc., Kansas City, Mo., a corporation of Missouri
Filed Oct. 23, 1967, Ser. No. 677,319
Int. Cl. B04b *1/24;* B60s *3/00*
U.S. Cl. 239—135 11 Claims



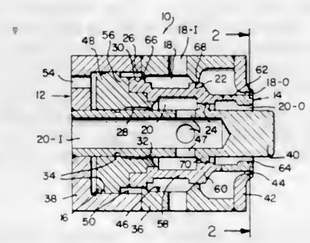
Apparatus for treating vehicle wash water including a first source of clean water connected to a water softener and a second source of water connected to a heated water storage tank. A water heater and a recirculating pump cooperate to heat water pumped from the storge tank and maintain a selected water temperature in the heated water storage tank. Water from the water softener is stored in a softened water storage tank positioned directly above the heated water storage tank and used for rinse water in vehicle washing equipment and for make-up water in the heated water storage tank. The rinse water and the heated water are piped to a line which is connected to the vehicle washing equipment.

3,464,632
HYDRAULIC TANK CLEANING APPARATUS
Barney C. Bristow, San Mateo, Calif., assignor, by mesne assignments, to L.N.B. Company, San Mateo, Calif.
Continuation-in-part of application Ser. No. 619,858, Mar. 1, 1967. This application Nov. 16, 1967, Ser. No. 683,700
Int. Cl. B05b *3/04*
U.S. Cl. 239—227 14 Claims



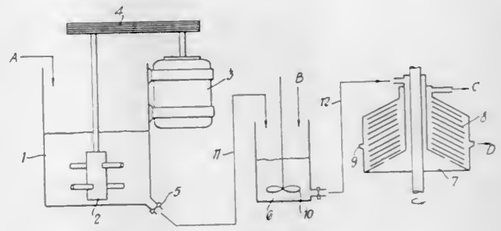
Hydraulic tank cleaning apparatus having a rotatable housing and a rotatable nozzle housing. A propeller is utilized for driving both housings through a planetary gear train. In one embodiment, the propeller is mounted out of the main stream of cleaning fluid.

3,464,633
MULTIPLE FLUID CONTROLLING SHEAR VALVE
Antone Potocnik, Redondo Beach, Calif., assignor to TRW Inc., Redondo Beach, Calif., a corporation of Ohio
Filed Nov. 16, 1967, Ser. No. 683,711
Int. Cl. B05b *7/00;* F16k *17/14, 17/40*
U.S. Cl. 239—425 13 Claims



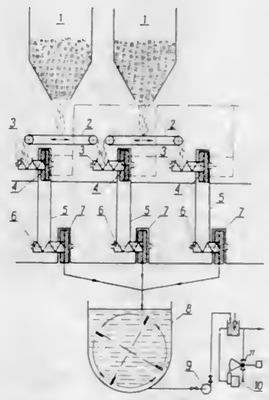
A shear valve having a body member, an obturator member, and operating means for exerting opposing forces on the members in a direction to effect relative movement thereof between valve closed and valve open positions, the members defining one or more fluid passages and leakage paths closed by primary and secondary shear seals, respectively, which are sheared simultaneously upon actuation of the valve operating means to open the valve, thereby to permit fluid flow through each valve passage.

3,464,634
TREATMENT OF CLAY
Ronald Eric Brociner, St. Austell, England, assignor to English Clays Lovering Pochin & Company Limited, St. Austell, Cornwall, England, a British company
Filed Feb. 27, 1968, Ser. No. 708,659
Claims priority, application Great Britain, Feb. 28, 1967, 9,574/67
Int. Cl. B02c *13/00;* B04b *15/00;* C04b *33/04*
U.S. Cl. 241—4 3 Claims



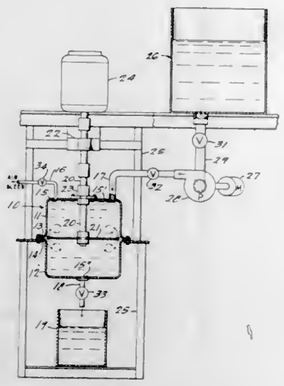
A process for removing montmorillonite from a kaolinitic clay, which process comprises deflocculating an aqueous suspension of a kaolinitic clay containing montmorillonite as impurity, applying shearing forces to the deflocculated suspension of the kaolinitic clay at a solids content in the range of from 40 to 80% by weight, and centrifuging the resulting material, after dilution to a solids content in the range 10 to 20% by weight, to separate a montmorillonite-rich fraction from the kaolinite.

3,464,635
METHOD OF CONTINUOUS BEATING OF RAG MASS IN DISK-TYPE MILLS
Zbigniew Krzewinski, Eugeniusz Franciszczak, Jerzy Jerzykiewicz, and Janusz Kostrzewski, Cieplice, Poland, assignors to Fabryka Maszn Papierniczych, Cieplice, Poland
Filed Nov. 7, 1966, Ser. No. 592,390
Claims priority, application Poland, Nov. 10, 1965, P 111,550
Int. Cl. B02c *7/08, 23/02;* B03b *7/00*
U.S. Cl. 241—21 1 Claim



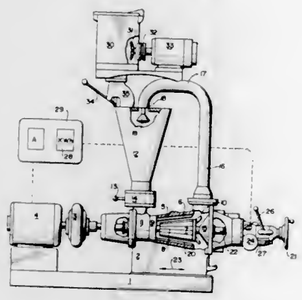
A method and apparatus for treating raw rags comprising first milling in first and second zones in an air-dry state and a wet state respectively hydrating the milled mass, and second milling the mass.

3,464,636
GRINDING AND MIXING APPARATUS AND METHOD
Robert C. Byers, 4700 S. Otter Creek Road, La Salle, Mich. 48145
Filed Dec. 14, 1966, Ser. No. 601,793
Int. Cl. B02c *11/08, 7/08, 7/14*
U.S. Cl. 241—21 **12 Claims**



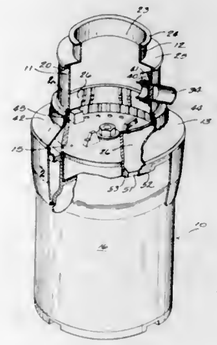
A method of simultaneously grinding and admixing particulate matter in fluid in an air free environment, and apparatus utilized in such method.

3,464,637
LABORATORY APPARATUS FOR DETERMINING THE INDUSTRIAL BEATING BEHAVIOUR OF CELLULOSE OR PAPER PULP
Hans Wolfgang Siewert, Amorbach, lower Franconia, Germany, assignor to Escher Wyss G.m.b.H., Ravensburg, Germany, a corporation of Germany
Filed July 1, 1965, Ser. No. 468,791
Claims priority, application Germany, July 3, 1964, E 27,333
Int. Cl. B02c *13/26, 23/02*; **G01f** *15/14*
U.S. Cl. 241—37 **6 Claims**



Laboratory apparatus for determining beating behavior of cellulose or paper pulp. The apparatus includes a refiner driven by an electric motor and having a rotary element equipped with a pumping device, a circulation vessel, a pulp disintegrator having a bottom discharge opening into the vessel, and flow connections leading from the bottom of the vessel to the refiner inlet, and from the refiner outlet to a conical distributor in the top of the vessel. The width of the beating gap of the refiner is adjusted manually or automatically; the automatic control including a servomotor connected with the gap-adjusting device through a clutch and serving to maintain constant the power consumed by the drive motor. As the clutch is coupled and uncoupled, respectively, a net consumption meter in the power supply circuit of the drive motor is automatically switched on and off.

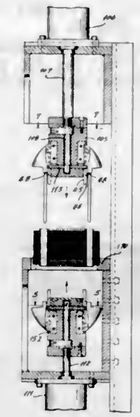
3,464,638
COMMINUTING CHAMBER FOR A WASTE DISPOSAL
James H. Enright and Charles A. Wicke, Racine, Wis., assignors, by mesne assignments, to Emerson Electric Co., St. Louis, Mo., a corporation of Missouri
Filed Dec. 19, 1966, Ser. No. 602,727
Int. Cl. B02b *7/02*; **B02c** *19/00, 23/00*
U.S. Cl. 241—100.5 **17 Claims**



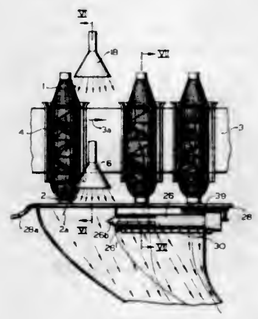
A comminuting chamber for a waste disposer consisting of a container body and a cap formed from corrosion resistant strip material such as stainless steel. Flat strip for the container body is desirably formed into a cylinder around a mandrel and the mating edges welded to form a seam. The cylinder wall is expanded and flanged at both ends to increase wall strength. The cap is made from a flat strip, drawn, and formed in a conventional manner and is crimped over the flange at one end of the cylinder and provides an inlet throat and a perpendicular shoulder to form a stepped cylinder which is inherently strong. In some embodiments the chamber has a dishwasher inlet tube with anti-swirl vanes that projects into the chamber to minimize swirl. In some embodiments the comminuting chamber is resiliently mounted at both ends to damp noise level. In some embodiments there is an enclosure for electrical wires running to a stopper actuated switch.

3,464,639
AUTOMATIC WINDING FORM ASSEMBLY AND MACHINE
Robert G. Harelson, Florissant, and Kenneth L. Flynn, Hazelwood, Mo., assignors to Emerson Electric Co., St. Louis, Mo., a corporation of Missouri
Filed Mar. 3, 1967, Ser. No. 620,299
Int. Cl. B65h *81/06*
U.S. Cl. 242—1.1 **13 Claims**

Upper and lower winding forms one of which has spaced legs with a guarded ratchet tooth latching section on them, the other of which forms has a ratchet tooth engaging pawl plate to effect positive locking of the forms. A machine with upper and lower heads for holding the forms and moving them axially into and out of a stator and with a cam plate and cam for automatically camming the pawl plate out of locking engagement with the teeth. The cam plate acts to fix the forms against axial movement when the forms are held by the head and to release the forms for axial movement from and to mounting position on the heads.

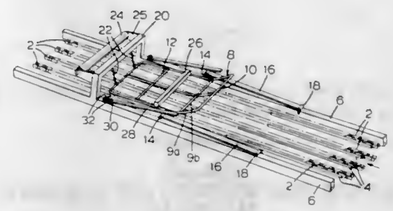


3,464,640
DEVICE FOR PNEUMATICALLY REMOVING THE TIP OR FOOT BUNCH FROM SUPPLY COILS
Wilhelm Kupper, Rickelrath, Kreis Erkelenz, Germany, assignor to Walter Reiners, Monchen-Gladbach, Germany
Filed Nov. 30, 1966, Ser. No. 598,062
Claims priority, application Germany, Dec. 2, 1965, R 42,100
Int. Cl. B65h *54/86*
U.S. Cl. 242—35.6 **9 Claims**



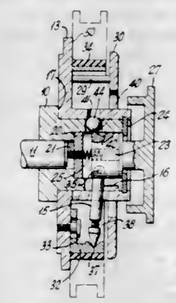
Device for pneumatically removing the tip or foot bunch from supply coils comprising means for placing the end of a supply coil wound with a bunch, that is to be removed, within an air current so that a thread end in the bunch is exposed, and mechanical removing mechanism for slidingly seizing the thread end and drawing it off in the flow direction of the air current. The mechanical removing mechanism comprises two rotary members having peripheral surfaces at least nearly in engagement with one another.

3,464,641
SOD ROLLING APPARATUS
Gerardus Johannes Brouwer, R.R. 1, Keswick, Ontario, Canada
Filed June 19, 1967, Ser. No. 646,873
Claims priority, application Canada, May 13, 1967, 990,435
Int. Cl. B65h *75/02, 17/02*
U.S. Cl. 242—55 **12 Claims**



Apparatus for rolling up a sod strip travelling along a conveyor, wherein a tray having an up-curved front end is mounted just above the conveyor, for movement upwardly away from and downwardly towards the conveyor. When the front of a sod strip strikes the curved end of the tray, a turn forms in the sod. The turned end of the sod then moves under the tray, rolling as it progresses, and forcing the tray upwardly. After the rolled end emerges from the tray, the rolling is completed by a powered elevator, or by the sod rolling downhill against a roller.

3,464,642
HUB ASSEMBLY
Joseph A. Kobel, Floral Park, N.Y., assignor to Potter Instrument Company, Inc., Plainview, N.Y., a corporation of New York
Filed Nov. 21, 1967, Ser. No. 684,698
Int. Cl. B65h *17/02*
U.S. Cl. 242—68.3 **4 Claims**

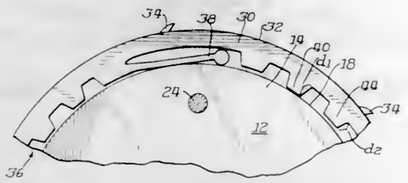


A self-locking hub for a magnetic tape reel on a transport in which a movable flanged housing carries a friction element. A central spring loaded button has an over-center lever which expands a friction element carried by the housing so as to retain the reel. A tumbler means locks the housing in place.

3,464,643
FILM REEL END FASTENER
Jaroslav Cherniavskyj, Skokie, Ill., assignor to Bell & Howell Company, Chicago, Ill., a corporation of Illinois
Filed Apr. 29, 1968, Ser. No. 724,887
Int. Cl. B65 *75/28*
U.S. Cl. 242—74 **4 Claims**

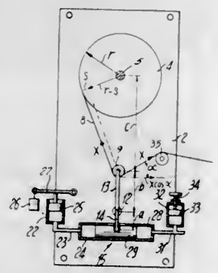
A slipping band take-up reel is provided with a hub about which a yieldable, unitary slippable tooth band is

positioned. The internal surface of the band includes spring members and locators, the latter engaging the hub



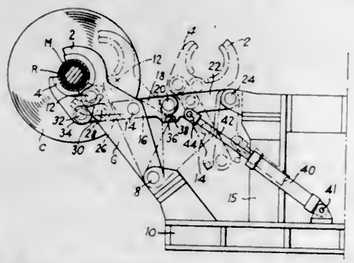
only under load conditions to resist deformation of the band by convolutions of film.

3,464,644
DEVICE FOR WINDING OFF FLEXIBLE MATERIAL
Jean Karamata and Stevan Celebonovic, Geneva, Switzerland, assignors to Rolpa S.a.r.l., Carouge-Geneva, Switzerland, a corporation of Switzerland
Filed May 12, 1967, Ser. No. 638,092
Int. Cl. B65h *25/22*
U.S. Cl. 242—75.43 **8 Claims**



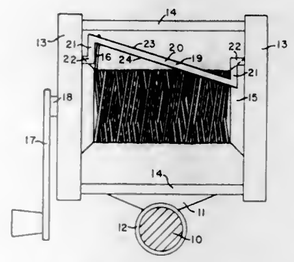
A device for unwinding flexible material rolled on a rotary support, said material acting on a movable member operatively connected to a brake acting on the support, wherein an arm is located at such a point that it is subjected to a force varying in relation with the radius of the winding of the material on said support, said variable force controlling the braking action of said brake.

3,464,645
COILER OR UNCOILER FOR STRIP MATERIAL
William J. Pearson, Poole, England, assignor to Loewy Robertson Engineering Company Limited, Bournemouth, England, a corporation of Great Britain
Filed Jan. 12, 1968, Ser. No. 697,370
Claims priority, application Great Britain, Jan. 19, 1967, 2,973/67
Int. Cl. B65h *57/14, 75/02*
U.S. Cl. 242—78.1 **9 Claims**



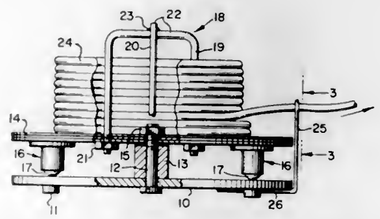
A coiler or uncoiler for a mandrel mounted on a shaft and a retractable outboard bearing for the said shaft supported on two segment shaped parts in the form of jaws which, when in their "out" position are located at some distance from the mandrel.

3,464,646
LEVEL WINDING MECHANISM FOR FISHING REELS
George H. Odom, 208 Tuna, Galveston, Tex. 77550
Filed June 19, 1967, Ser. No. 646,976
Int. Cl. A01k *89/04, 89/00;* **B65h** *57/02*
U.S. Cl. 242—84.41 **6 Claims**



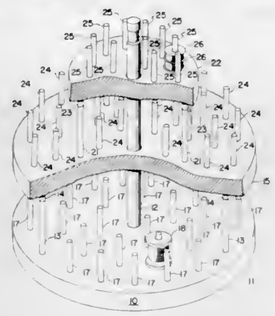
A level winding mechanism and a fishing reel having the level winding mechanism as a part thereof, the level winding mechanism comprising a shaft called a traversing element disposed in front of the reel spool and rotationally responsive thereto. The traversing element has two substantially parallel surfaces in diagonal relationship to the axis of rotation of the traversing element, the diagonally opposite ends of the surfaces being substantially equidistant from the axis of rotation.

3,464,647
PORTABLE CABLE REEL
Charles G. Jacobi, 223 Overpeck Ave., Ridgefield Park, N.J. 07660
Filed Apr. 2, 1968, Ser. No. 718,054
Int. Cl. B65h *49/36, 75/00*
U.S. Cl. 242—129 **4 Claims**



A horizontal cable reel device whose axis is vertical, consisting of a base adapted to be set on a floor or other substantially or approximately horizontal support; a single parallel disc or sheave rotatably mounted above the base and having casters riding on the base; an upstanding reel core on the sheave adapted to have a cable wound thereon with the cable resting on the sheave; and an eyelet upstanding from the base adjacent the circumferential edge of the sheave, through which the cable is adapted to be led. The horizontal turns of the cable can be unwound from the reel without danger of undue bending or kinking.

3,464,648
SPOOL HOLDER ASSEMBLY
Harold W. Fuhriman, 829 Powerline Road, Nampa, Idaho 83651
Filed May 28, 1968, Ser. No. 732,725
Int. Cl. B65h *49/18;* **A47b** *11/00*
U.S. Cl. 242—139 **5 Claims**



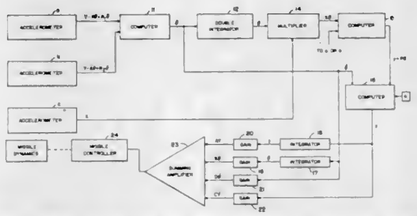
A stackable lazy-Susan tray storage means having rotatable trays disposed thereon. The apparatus includes a base pedestal having a vertically disclosed center post and a plurality of vertically mounted bearing support posts equally spaced circumferentially on the base pedestal. The storage means is provided with a multiplicity of storage trays journaled on the center post of the base pedestal and carried by the bearing support posts. Each of the trays may also be provided with a plurality of bearing support posts to provide means by which successive trays may be carried thereby. Therefore, any number of trays may be stacked one upon the other to provide storage means.

ERRATA

For Class 242—191 see:
Patent No. 3,465,356

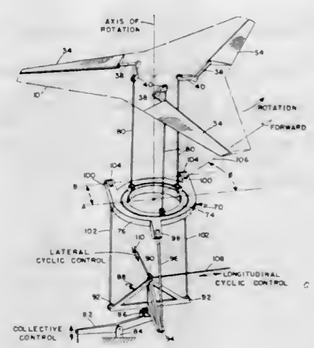
For Class 242—191 see:
Patent No. 3,465,357

3,464,649
MISSILE SYSTEM WITH HEADING PLUS DRIFT CONTROL
Charles W. Schreiner, Jr., Burkville, Ala., assignor to the United States of America as represented by the Secretary of the Army
Filed Dec. 20, 1967, Ser. No. 692,057
Int. Cl. F41j *9/10;* **B64d** *3/00*
U.S. Cl. 244—3.2 **4 Claims**



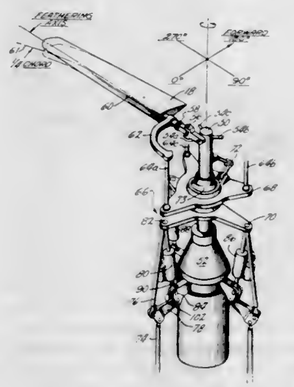
The trajectory of an artillery type missile is affected by a novel system for closely controlling the velocity vector during the missile's boost acceleration phase. This is accomplished by employing sensing means to measure transverse accelerations, attitude angular acceleration, and the forward acceleration of the missile; and utilizing computer means to derive steering signals representative of the first and second derivatives of the missile attitude angle, the missile transverse velocity and the missile transverse acceleration.

3,464,650
AIRCRAFT WITH FLAPPED ROTOR/WING
Peter F. Girard, La Mesa, Calif., assignor to The Ryan Aeronautical Co., San Diego, Calif.
Filed Oct. 18, 1967, Ser. No. 676,113
Int. Cl. B64c *27/24*
U.S. Cl. 244—7 **4 Claims**



The aircraft has a multiple armed wing which is driven in rotation to provide lift for vertical and low speed flight and is stopped in fixed wing position for forward flight, the basic rotor/wing providing the aerodynamic lift for the aircraft in all stages of flight. Portions of the trailing edges of the wing arms are hinged as flaps and provide effective pitch control of the arms; the flaps being controlled cyclically and collectively in the manner of a helicopter, but with a novel control action which avoids control reversal during transition between vertical and horizontal flight. Pressurized gases are blown over the flaps for boundary layer control and lift generation, and the gas flow can be utilized as power to rotate the wing.

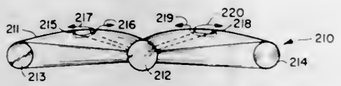
3,464,651
ROTOR LOAD PROPORTIONER FOR A COMPOUND HELICOPTER
Ralph B. Lightfoot, Stratford, Conn., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware
Filed May 2, 1967, Ser. No. 635,411
Int. Cl. B64c *11/06, 11/40*
U.S. Cl. 244—17.13 **15 Claims**



This invention relates to a control system for proportioning the total thrust of an aircraft between a sustaining rotor and a second lift-producing device such as a fixed wing or a thrust-producing device. The augmentation

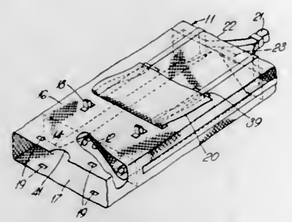
provided by the second device is varied as a function of a stall condition detected at the rotor. By transferring a portion of the load between the rotor and the second device, stall conditions are avoided and the rotor can operate efficiently at its designed performance level.

3,464,652
CONTROL DEVICES FOR FLEXIBLE WING AIRCRAFT
Francis M. Rogallo, 17 Milford Road, Newport News, Va. 23601
Original application Jan. 17, 1964, Ser. No. 338,537, now Patent No. 3,396,921, dated Aug. 13, 1968. Divided and this application Sept. 1, 1967, Ser. No. 670,008
Int. Cl. B64c *3/54, 9/00, 3/02*
U.S. Cl. 244—43 **4 Claims**



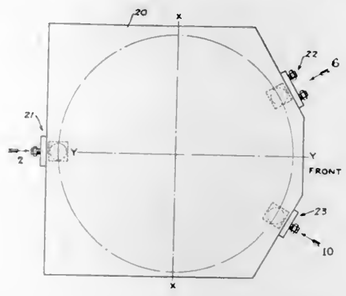
This invention is a control for a flexible wing aircraft, the flexible wing aircraft has the generally triangularly shaped superstructure including a centrally disposed keel and angularly disposed leading edge members connected to the apex of the keel. A flexible membrane-like material is fixed to the keel and leading edge members to form wing panels and a lift surface. Mechanism is placed in the leading edge members, the keel, or in the membrane-like material intermediate the leading edge members and keel to take in or gather up a portion of the wing membrane and thereby change the wing planform providing control of vehicle. Mechanism is provided to operate the take-up mechanism.

3,464,653
MULTIPLE COMPARTMENT PARACHUTE ASSEMBLY
James Thomas Basnett, Woking, England, assignor to G.Q. Parachute Company Limited, Woking, England, a British company
Filed Jan. 4, 1968, Ser. No. 695,726
Claims priority, application Great Britain, Jan. 21, 1967, 3,257/67
Int. Cl. B64d *17/50, 17/76*
U.S. Cl. 244—148 **5 Claims**



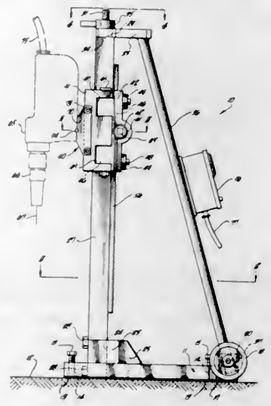
To prevent the rigging lines from the canopies of a parachute cluster becoming tangled during deployment, the canopies are each stowed in a separate sleeve, the rigging lines of the canopy are stowed on the outer side of the sleeve, and all the sleeves of the canopies forming the cluster are stowed in separate compartments of a bag which houses the canopies and their rigging lines, the bag being openable at one end to allow the canopies to deploy and having an aperture at the other end through which the static line is attached to the bag, the sleeves, and through breaking ties, to the apices of the canopies.

3,464,654
LEVELING CONSTRUCTION FOR HEAVY MACHINERY AND INSTRUMENTS
Daniel J. Kolesar, Warren, Mich., assignor to The Babcock & Wilcox Company, New York, N.Y., a corporation of New Jersey
Filed Mar. 24, 1967, Ser. No. 625,653
Int. Cl. F16m *11/04*
U.S. Cl. 248—13 **32 Claims**



The leveling construction described herein comprises three leveling assemblies at circumferentially spaced points on the base of the machinery or instrument, one of the leveling assemblies being utilized for adjusting for height, the other leveling assembly being utilized for adjusting for horizontal or azimuth position, and the third leveling assembly being utilized for a combined height and horizontal adjustment. Each of the leveling assemblies incorporates complementary surfaces which have pressure pads or pockets therein through which fluid under pressure is directed to flow between the surfaces and thereby hold the surfaces out of contact during the leveling process. In one form of the invention, motors are provided for adjusting each of the leveling assemblies. Schematic diagrams are shown for providing for automatic control of the level by utilizing level and azimuth sensors or by utilizing a gyroscopic or similar polar angle sensor.

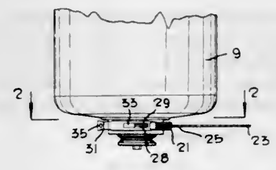
3,464,655
CONCRETE CORE DRILL
Albert Schuman, 19223 Alisal St., Covina, Calif. 91722
Filed Oct. 11, 1968, Ser. No. 766,734
Int. Cl. F16m *11/00;* **E21c** *5/00;* **B23q** *5/00*
U.S. Cl. 248—13 **10 Claims**



A concrete coring drill in which a drill motor, and a drill chuck connected to the motor, are moved linearly

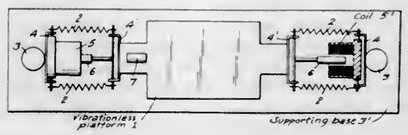
along a guide column supported at one end to a base and stayed at its other end to the base. A carriage is connected between the column and the motor for guiding the motor along the column and is readily openable relative to the column for rapid disconnection of the motor laterally from the column rather than over the end of the column following disconnection of the column stays.

3,464,656
HUBRING
Donald W. Boden, Ferguson, and Julius F. Kruger, Berkeley, Mo., assignors to Emerson Electric Co., St. Louis County, Mo., a corporation of Missouri
Filed Jan. 31, 1968, Ser. No. 702,102
Int. Cl. F16m *1/00;* **F16f** *15/04*
U.S. Cl. 248—15 **6 Claims**



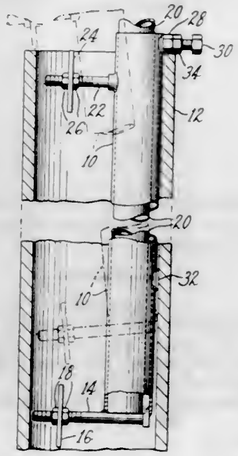
A motor mounting hubring consisting of a rubber inner ring and an annular metal outer ring bonded to the inner ring. The outer ring is split. From the split, the ring is cut back circumferentially from the split along spaced cuts and the axially outboard fingers thus defined are bent outward to form radially extending ears. The hubring, which is mounted on a support structure, is turned to a position at which the ears straddle the adjacent support structure, and the hubring is clamped to the support structure.

3,464,657
VIBRATION DAMPED PLATFORM
Richard W. Bullard, El Paso, Tex., assignor to the United States of America as represented by the Secretary of the Army
Filed Aug. 30, 1967, Ser. No. 665,206
Int. Cl. F16f *15/04;* **F16m** *11/00;* **F16d** *63/00*
U.S. Cl. 248—20 **5 Claims**



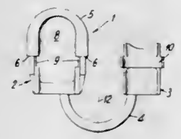
Seismic vibrations, or vibrations from other sources, tend to cause a supporting framework to vibrate. Springs tend to reduce vibration of the platform. However, when the supporting framework begins to move to the left, for example, the posts, springs, etc. start to move the framework and accelerometer in the same direction. A low voltage, produced by an accelerometer, is fed into an amplifier and to a coil. This exerts a force on the core in a direction opposing the original movement (to the right) to balance the original force and thereby minimize movement of the framework.

3,464,658
ANTENNA MOUNTS
Noel E. Perkins, Saville Road, Gloucester, Mass. 01930
Filed May 15, 1967, Ser. No. 638,449
Int. Cl. H01q *1/12*
U.S. Cl. 248—43 **4 Claims**



An antenna mount for securement inside a pipe such as a vent pipe projecting through a roof including a vertical hollow member in which the base of the antenna mast is received and which is in turn secured inside the vent pipe.

3,464,659
STRAIN RELIEF BUSHING
Ferdinand Klumpp, Jr., Mountainside, and William Jemison, Summit, N.J., assignors to Heyman Manufacturing Company, Kenilworth, N.J., a corporation of New Jersey
Filed Nov. 30, 1967, Ser. No. 686,896
Int. Cl. F16l *5/00;* **B65d** *7/48, 11/26*
U.S. Cl. 248—56 **9 Claims**

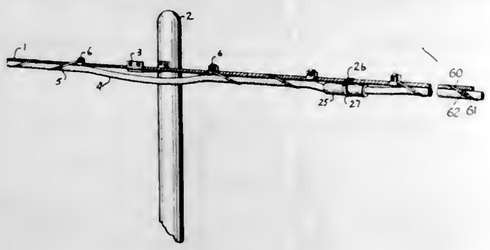


A one-piece strain relief bushing having two parts connected by a resilient strap, with the strap joining the two parts at their extremities and holding one of the parts away from the central axis of the other, the bending axis of the strap is substantially parallel to the aforementioned central axis, the strap generally defining a U-shape with the strap, when the bushing is in closed position adapted to support the conductor inserted therein.

3,464,660
TAPE SPLICING AND ANCHORING APPARATUS
Dory J. Neale, Sr., 3710 Shore Acres Blvd., St. Petersburg, Fla. 33703
Filed Apr. 10, 1967, Ser. No. 629,544
Int. Cl. F16l *3/00;* **E21f** *17/02*
U.S. Cl. 248—61 **5 Claims**

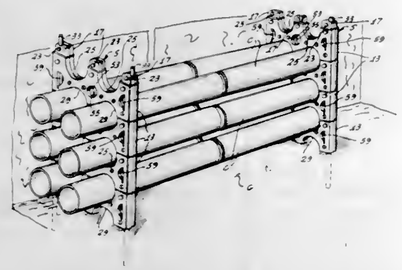
A cable messenger support structure using a plastic tape with anchors or fasteners with tape engaging and

clamping parts arranged in cooperative relation to bends and bights of the tape to assure positive securing, certain



of the members having slots through which the tape is reeved with reverse bends and clamping ears bent into tape damping position.

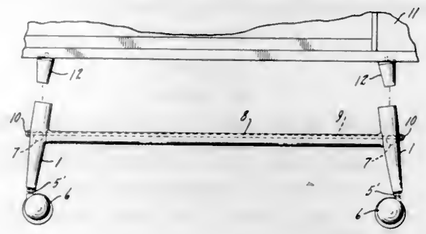
3,464,661
CONDUIT SPACER APPARATUS
John Alesi, Jr., West Los Angeles, Calif., assignor to Formex Manufacturing, Inc., Santa Monica, Calif., a corporation of California
Filed Aug. 15, 1967, Ser. No. 660,636
Int. Cl. F16l *3/22*
U.S. Cl. 248—68 **5 Claims**



Conduit spacer apparatus including a hollow lower spacer, having an upwardly-facing depression for receiving the lower half of a conduit and a pair of upwardly extending tongues, one tongue being disposed on either side of the depression. Each of the tongues includes a button, the bottom side of which forms a downwardly facing latching surface. A hollow upper spacer is formed with a downwardly-facing depression for confronting the depression in the lower spacer and receiving the upper half of the conduit. The upper spacer includes a pair of receptacles complementally shaped to receive the respective tongues and each receptacle includes an upwardly facing latching surface for being engaged under the latching surface formed by the respective buttons. The walls forming the receptacles are sufficiently resilient to be bowed outwardly to clear the respective buttons when the tongues are inserted, and to spring inwardly to move the latching surfaces in the receptacles into latching engagement below the respective buttons.

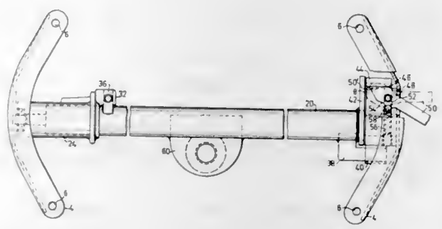
3,464,662
MOBILE TV STAND
Walter P. Myers, River Forest, Ill.
(2958 W. Carroll St., Chicago, Ill. 60212)
Filed Aug. 4, 1967, Ser. No. 658,563
Int. Cl. F16m *11/16, 11/20*
U.S. Cl. 248—188 **1 Claim**

A base for cabinets in which the relatively spaced tubular legs thereof are outwardly inclined and are relatively fixedly interconnected by end and side members, the latter being tubular and receiving connecting rods therethrough, the extended ends of which are engaged through adjacent legs and secured thereto; the lower ends of each



of the inclined legs fixedly receiving bushings therein having longitudinally substantially central bores disposed substantially perpendicularly to a horizontal receiving surface and receiving the pintles of casters, and the upper ends of the legs receiving tapered cabinet attached feet.

3,464,663
TILTING CHAIR
Karl Georg Blomborg, Nassjo, Sweden, assignor to Aktiebolaget Blomborgs Mekaniska, Nassjo, Sweden, a corporation of Sweden
Filed Dec. 1, 1967, Ser. No. 687,180
Claims priority, application Sweden, Feb. 3, 1967, 1,577/67
Int. Cl. A47c *1/02*
U.S. Cl. 248—373 **5 Claims**

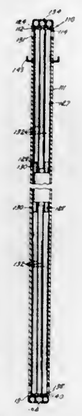


A tilting chair supported by a post has two brackets secured to the underside of the chair seat and a tube which is rotatably connected to one of the brackets and houses an axially extending torsion spring rigidly connected to the one bracket. The other end of the spring is connected with a sleeve rotatably mounted in the other bracket. Members are provided for adjusting the relative angular position of the sleeve and the tube.

3,464,664
RETRACTABLE CLOTHING POLE
Elizabeth M. Nugent, 240 E. 79th St., New York, N.Y. 10021
Filed Feb. 23, 1968, Ser. No. 707,567
Int. Cl. F16m *11/38;* **A47f** *5/12, 5/10*
U.S. Cl. 248—435 **5 Claims**

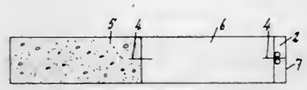
A retractable clothing pole, including a hollow tubular main body element, selectively projectable legs extending from one end of said body element for supporting said body element in a vertical orientation with respect to a horizontally disposed supporting surface, selectively projectable arms extending from an opposite end of said

body element to lie in a horizontal position for supporting clothing and other articles therefrom. Means is pro-



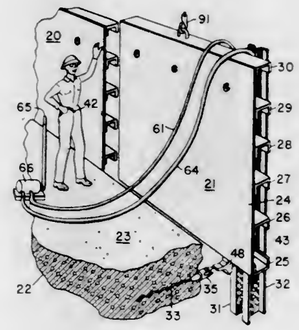
vided for maintaining said arms and legs in retracted position when the device is not in use.

3,464,665
A TEMPLATE ADAPTED FOR USE IN PRODUCING A CONCRETE WALL
Louis Christiaan Schoewert, Amsterdam, Netherlands, assignor to N.V. tot Aanneming van Werken voorheen H. J. Nederhorst, Gouda, Netherlands, a Dutch company
Filed Nov. 10, 1965, Ser. No. 507,119
Claims priority, application Netherlands, Nov. 11, 1964, 6413141
Int. Cl. E04b *2/00*
U.S. Cl. 249—10 **16 Claims**



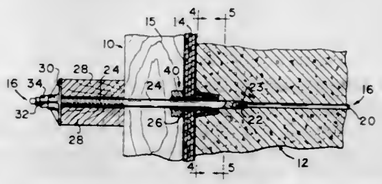
A concrete wall formed by a plurality of wall sections is produced by digging a first slot in the ground and positioning a template in said first slot near one of the end walls thereof, said template supporting, in a detachable manner, a first plate member made of a material impervious to water such that the plate member protrudes from said template over approximately half its width into the slot whereafter a first wall section is cast in said first slot and the part of said first plate member protruding from said template becomes incorporated in the first wall section. Thereafter a second slot is dug in the ground near the template for a second wall section and the first plate member is disconnected from the template and the latter lifted out of said first slot, while said first plate member remains in place, and positioned in the second slot with a second plate secured in the template whereupon the procedure of casting and moving the template is repeated until the desired number of sections have been obtained. The template is constituted by a housing having a substantially continuous vertical slot in which a plate member is detachably secured by means of expansible members in the housing.

3,464,666
MECHANISM FOR SECURING FORMS FROM A POSITION OF SAFETY
Chester I. Williams, 347 Greenbriar SE., Grand Rapids, Mich. 49506
Filed June 5, 1967, Ser. No. 643,453
Int. Cl. E04b *1/16;* **E04g** *11/22*
U.S. Cl. 249—10 **9 Claims**



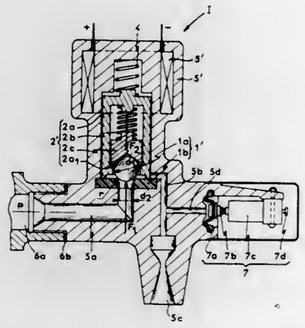
A mechanism for securing forms in position to develop a concrete structure in successive pours, including an anchor embedded in the previous pour, and a coupling unit on the form, the coupling unit being extendable to a position for engagement with means fixed with respect to the anchor when the form is set back from the formed face of the concrete, the coupling unit being retractable by a device controllable from the face side of said form to draw the form into engagement with the formed face; and the method of securing a form from the face side.

3,464,667
CONCRETE WALL FORM PANEL ATTACHMENT FOR THE PRODUCTION OF A DECORATIVE WALL SURFACE EFFECT
Edward F. Sledz, Park Ridge, Ill., assignor to Superior Concrete Accessories, Inc., Franklin Park, Ill., a corporation of Delaware
Filed Sept. 7, 1967, Ser. No. 666,179
Int. Cl. E04g *9/10, 17/08*
U.S. Cl. 249—190 **5 Claims**



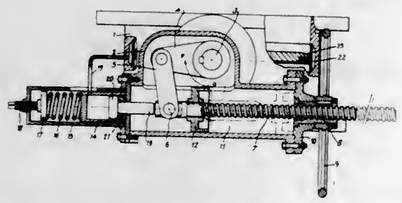
A separable concrete wall form panel attachment which, in conjunction with similar attachments and when applied to a concrete wall form panel, leaves a decorative design in the wall surface after the poured concrete has hardened and the panel is removed. The attachment may be left on the panel for the future production of a similar decorative effect, or it may be moved for reuse on another panel for producing a different decorative effect.

3,464,668
HIGHLY FLUID-TIGHT VALVE AND CORRESPONDING ELECTRO-VALVES
Henri Jacob, Paris, France, assignor to Nord-Aviation Societe Nationale de Constructions Aeronautiques, Paris, France, a joint-stock company of France
Filed Oct. 14, 1966, Ser. No. 586,726
Claims priority, application France, Dec. 17, 1965, 42,865
Int. Cl. F16k *31/06, 25/00*
U.S. Cl. 251—129 7 Claims



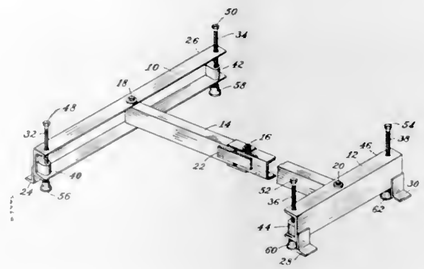
A highly fluid-tight valve utilizing a ball seated on an opening of a cylinder with double spring pressure opposing fluid pressure and solenoid operation opposing the spring pressure, one spring acting on a piston in direct contact with the ball and the other exerting pressure on the body attracted by the solenoid coil.

3,464,669
CONTROL SYSTEM FOR BUTTERFLY VALVES
Marie Charles Emile Henrion, 11 Rue Hermite, Nancy, France
Continuation-in-part of application Ser. No. 504,365, Oct. 24, 1965. This application Apr. 22, 1968, Ser. No. 722,938
Claims priority, application France, Dec. 4, 1964, 997,416
Int. Cl. F16k *25/02, 1/22*
U.S. Cl. 251—173 1 Claim



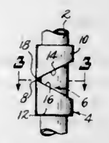
An arrangement for inflating an annular oil-filled deformable chamber fitted between an inwardly cylindrical valve casing and a throttle valve to ensure fluid-tightness of the latter, wherein the closing of the throttle valve is associated with a hydraulic system maintaining constancy of the oil pressure in the deformable chamber and including a closed liquid-filled cylinder connected permanently and unobstructedly with said chamber. Said cylinder encloses a piston the rod of which is driven by the mechanism acting on the throttle valve so as to deliver oil into said chamber. The leaks and variations of pressure on the oil body are compensated by a relative shifting of the cylinder with reference to the piston as provided by a spring controlling the position of the slidingly carried cylinder.

3,464,670
TELEPHONE BOOTH INSTALLATION TOOL
Kenneth L. Rasmussen, 221 Pestana Ave., Santa Cruz, Calif. 95060
Filed July 19, 1967, Ser. No. 654,518
Int. Cl. B66f *7/14*
U.S. Cl. 254—92 9 Claims



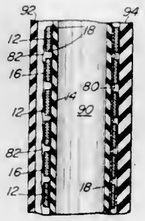
A telephone booth installation tool which enables one man to raise the walls of a telephone booth to a desired spacing between the bottom of the walls and the ground. The tool comprises a pair of arms, one long and one short, arranged in spaced parallel relationship and connected together by a hinged cross arm. The four ends of the two spaced arms contain raising feet which are adapted to be slid under the walls of the telephone booth. Each raising foot has associated with it a leveling bolt so that each corner of the telephone booth can be selectively raised to a desired height. The right arm of the tool is shorter than the left arm so as not to be interfered with by the telephone booth door when it is in its open position. In operation, the hinged cross arm of the tool is opened so that the tool may be placed on the ground inside the telephone booth. The cross arm is then snapped into its extended position so that the four raising feet slide under the walls of the telephone booth. The walls of the booth are then raised to their desired height by the leveling bolts and secured in place.

3,464,671
ELECTRIC FENCE WIRE HOLDER
Lewis C. Thomas, 3204 NW. 61st St. Terrace, Oklahoma City, Okla. 73112
Filed Apr. 16, 1968, Ser. No. 721,868
Int. Cl. A01k *3/00*; H05c *1/00*
U.S. Cl. 256—10 2 Claims



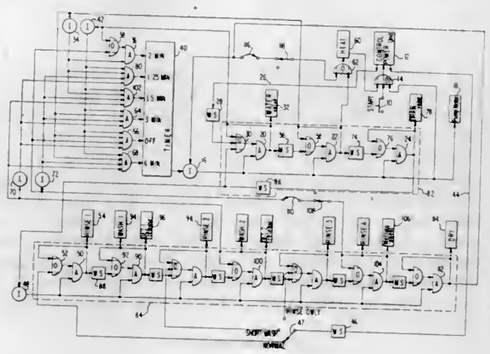
A resilient plastic tubular insulator frictionally embraces an insulating fence post and has a portion overlying a conductor wire to hold the same in position against the post. In one form the insulator has a notch extending nearly therethrough and the wire is confined in the base of the notch. In another form the wire is held by an integral finger on one end of the insulator which is turned inwardly under the wire and enters a hole in the post.

3,464,672
SONIC PROCESSING TRANSDUCER
Frank Massa, Cohasset, Mass., assignor to Massa Division, Dynamics Corporation of America, Hingham, Mass.
Filed Oct. 26, 1966, Ser. No. 589,665
Int. Cl. B01f *11/02*; B28c *5/08*
U.S. Cl. 259—1 22 Claims



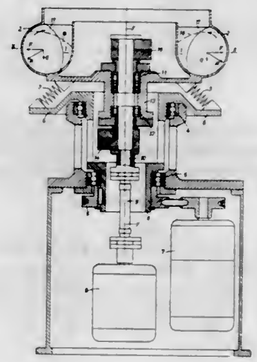
The invention provides a sonic processing system having several embodiments. An especially useful feature common to all embodiments is the use of one or more cylindrical piezoelectric transducers bonded to the inside or outside of a pliable tubular housing. This way, the flexibility of the pliable housing compensates for any manufacturing variations, thus eliminating the need for final machining to size and allowing for the use of wide manufacturing tolerances. The various embodiments feature discrete containers for batch processing and tubular containers for continuous processing.

3,464,673
SOLID STATE CONTROL SYSTEM FOR CYCLICALLY OPERATED APPLIANCES
Kenneth F. Cargo, Coloma, and Duane C. Nichols, St. Joseph, Mich., assignors to Whirlpool Corporation, Benton Harbor, Mich., a corporation of Delaware
Filed Apr. 20, 1967, Ser. No. 632,374
Int. Cl. B01f *3/00*; B28c *7/00*
U.S. Cl. 259—1 12 Claims



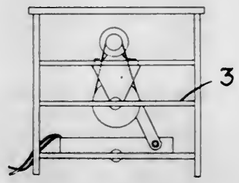
A solid state control circuit for a dishwasher or other cyclically operated appliance including an RC Timer having a number of selective delays, a three stage ring counter for controlling the water flow, heat and recirculate, and drain functions of each cycle, and a sequential stepping switch for controlling the advance from one cycle to the next. Both the counter and the stepping switch select the appropriate delay in the Timer for each function. The Timer advances the counter after each delay and the counter advances the stepping switch after each cycle.

3,464,674
VIBRATOR
Helmut Pick, Wuppertal-Barmen, Germany, assignor to Carl Kurt Walther, a company
Filed Jan. 19, 1968, Ser. No. 699,112
Claims priority, application Germany, Jan. 26, 1967, G 49,095/67
Int. Cl. B01f *13/08, 9/10*
U.S. Cl. 259—72 6 Claims



A vibrator has an annular material receptacle that is resiliently supported in a substantially horizontal position and rotated about a substantially vertical axis, and an out-of-balance shaft that extends through the receptacle.

3,464,675
PAINT SHAKING DEVICE
Romayne Fabrize, 21 Taylor Ave., Waterloo, N.Y. 13165
Filed Nov. 28, 1966, Ser. No. 597,396
Int. Cl. B01f *11/00*
U.S. Cl. 259—75 1 Claim

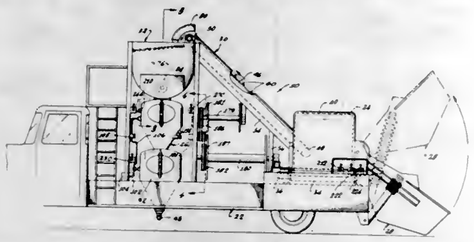


A paint shaker having a platform upon which the paint, to be shaken, is secured, said platform being mounted on a rocker shaft located inwardly from the sides of said platform, and having a driving means for imparting up and down motion to said platform, including a connecting rod, connected eccentrically to a driving wheel.

3,464,676
MIXER-DISTRIBUTOR FOR DRY CEMENTITOUS MATERIAL
Lewis Cox, 11654 Sheldon St., Sun Valley, Calif. 91352
Filed Oct. 9, 1967, Ser. No. 673,730
Int. Cl. B28c *1/00, 5/18*
U.S. Cl. 259—153 15 Claims

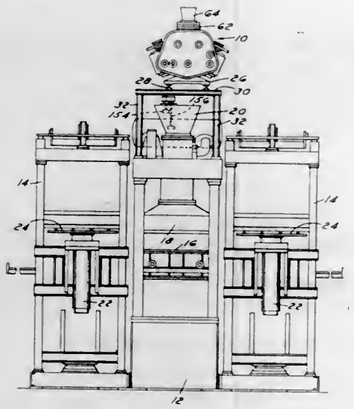
An improved dry cementitious material mixer-distributor having a horizontally, rotatably supported mixing drum, a skip for dumping materials to be mixed into the drum in through a feed opening in the rear, and a conveyor assembly which passes into the drum through a for-

ward discharge opening in the drum. The conveyor assembly transfers the mixed materials from the drum at an upward angle and discharges them into a feed hopper.



Feed means in the hopper discharges material therefrom into a double chamber pneumatic pump, which, in turn, pumps the mixed materials to the desired location.

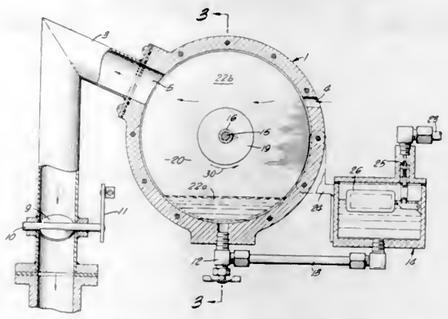
3,464,677
FOUNDRY SAND MIXER SYSTEM
Raymond H. Sutter, Fenton, Mich., assignor to Sutter Products Company, a corporation of Michigan
Filed Aug. 30, 1967, Ser. No. 664,551
Int. Cl. B28c *7/10*
U.S. Cl. 259—154 **15 Claims**



A sand-resin-catalyst mixer for individual foundry core making machine installation employing separate sand-resin and sand-catalyst screw feed mixing tubes discharging into a common sand-resin-catalyst screw feed final mixing tube discharging into an individual machine hopper having sand level sensing controls adapted to automatically start and stop mixing in response to low and high levels together with individually adjustable resin and catalyst proportioning pumping systems actuated simultaneously with demand responsive sand infeed.

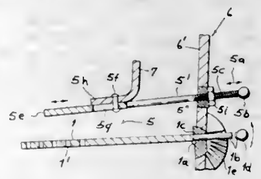
3,464,678
CHANGING FLAMMABLE LIQUID VOLATILE FUELS INTO FLAMMABLE GASES
Lorin Allen Meyer, 2640 Ave. Thirty-one W., Los Angeles, Calif. 90065
Filed Apr. 29, 1965, Ser. No. 451,930
Int. Cl. F02m *17/00*
U.S. Cl. 261—60 **3 Claims**

An apparatus for changing certain volatile liquids into a combustible gaseous state for use in engines and turbines of the type using volatile hydrocarbons for fuel. An assembly of circular, spaced apart thin plates is rotated at predetermined speeds with the outer peripheral region of each plate being immersed in the volatile liquid. Air inlet and gaseous mixture outlet ports are provided, the air entering the apparatus and passing between the wetted plates as they rotate with the result that vapors of the volatile liquid are mixed with the incoming air to form a combustible gaseous mixture. Operational con-



trol of the apparatus is achieved by varying the speed of the rotating plate assembly and by opening or closing a butterfly-type valve in the outlet passageway to increase or decrease the rate of mixture flow.

3,464,679
RECTIFICATION-COLUMN ASSEMBLY
Rudolf Becker, Munich-Solln, Germany, assignor to Linde Aktiengesellschaft, Wiesbaden, Germany, a corporation of Germany
Filed Jan. 24, 1966, Ser. No. 522,570
Claims priority, application Germany, Jan. 22, 1965, G 42,643
Int. Cl. B01d *3/24*
U.S. Cl. 261—114 **4 Claims**

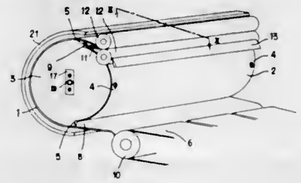


A rectification column for intimately contacting an ascending vapor phase with a descending liquid phase, including a tower which houses a stack of spaced-apart perforated rectification plates inclined downwardly in alternately opposite directions and respective nozzles along the major part (at least) of the width of each plate for delivering the liquid phase thereto with a flow velocity of at least 1 m./sec., the inclination of the plates and the cross-section of the nozzles being adjustable from the exterior of the column, each plate having an upstanding weir partly damming the flow along the respective plates to maintain a predetermined liquid-layer thickness thereon.

3,464,680
HEATING APPARATUS FOR SHEET-LIKE MATERIAL
Ken Nakamura, Toshio Shibata, and Yasuyuki Shimazu, Tokyo, Japan, assignors to Konishiroku Photo Industry Co., Ltd., a corporation
Filed Dec. 27, 1967, Ser. No. 693,915
Claims priority, application Japan, Dec. 30, 1966, 41/85,882
Int. Cl. F27b *9/28*
U.S. Cl. 263—3 **16 Claims**

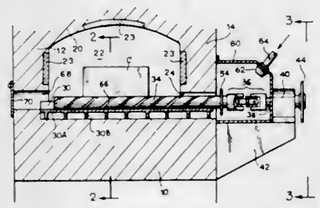
An apparatus for heating a sheet material comprises a guide member, a heat reflecting member, a heating source, and means for keeping the material as it moves

through the apparatus spaced above a predetermined distance from the heat source. The guide member has a smooth, curved surface formed of heat conductive material. The heat reflecting member is arranged in spaced and opposing relationship with respect to the curved surface of the guide member. Peripheral ends of the curved surface of the guide member are closely spaced apart from corresponding ends of the heat reflecting member to define air gaps therebetween. The air gaps constitute an



inlet and an outlet opening for the material, respectively. The heat source is disposed between the curved surface of the guide member and heat reflecting member. The curved surface of the guide member is concave with respect to the heat source. The material is introduced through the inlet opening, moved along the concave surface in contact therewith by the resilience of the material while being subject to heat from the heat source, and delivered at the outlet opening.

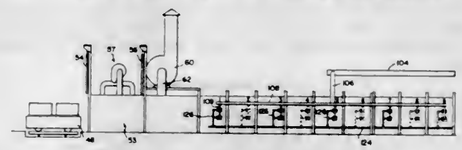
3,464,681
CHARGE CONVEYING DEVICE FOR HIGH TEMPERATURE INDUSTRIAL OVENS
Vanfrido Olivotto, 85 Via Carlo Capelli, Turin, Italy
Filed Apr. 16, 1968, Ser. No. 721,639
Claims priority, application Italy, Mar. 5, 1968, 50,785/68
Int. Cl. F27b *9/20*
U.S. Cl. 263—6 **7 Claims**



A metal block or a solid charge-carrier is conveyed in an oven by means of rolls rotatable in troughs extending throughout the effective length of the rolls, the rolls and possibly the troughs being made of a heat-refractory ferrous alloy containing at least 6 wt. percent chrome. Helical grooves are advantageously formed in the rolls to wipe-off from the troughs any deposits of foreign matter.

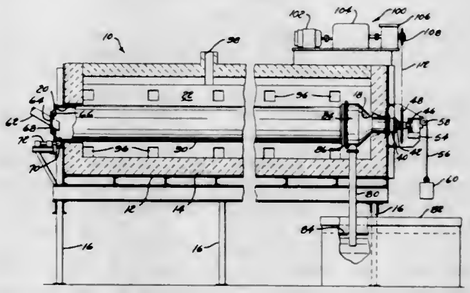
3,464,682
CONTINUOUS KILN FIRING SYSTEM
George Bickley Remmey, Jenkintown, Pa., assignor to Bickley Furnaces Incorporated, Bensalem Township, Bucks County, Pa., a corporation of Pennsylvania
Filed Nov. 29, 1967, Ser. No. 686,540
Int. Cl. F27b *9/36;* **F27d** *3/12*
U.S. Cl. 263—28 **15 Claims**

A firing system for a continuous kiln in which the heating and cooling gases are introduced into the kiln at locations throughout the length of the kiln in the form of high velocity gas streams. The high velocity gas streams are directed transversely into the kiln along fire lanes formed between the ware settings to cause the gases with-



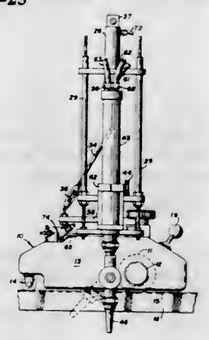
in the kiln to flow in a desired circulating type of pattern across the fire lanes at high velocities.

3,464,683
ROTARY RETORT FURNACE
Albert T. Enk, Toledo, Ohio, assignor to Midland-Ross Corporation, Toledo, Ohio, a corporation of Ohio
Filed Jan. 13, 1967, Ser. No. 609,078
Int. Cl. F27b *7/08*
U.S. Cl. 263—34 **9 Claims**



This invention relates to a rotary retort furnace, and more particularly, to a rotary retort for processing small parts that utilizes direct fired burners without having the work come in contact with flue gases. Use of direct fired burners is accomplished by providing a rotary retort with a seal between the burners and the openings through which the work is discharged. The seal of this invention makes it possible for the retort not only to rotate, but also to move relative to the axis of the furnace without losing contact between the sealing surfaces.

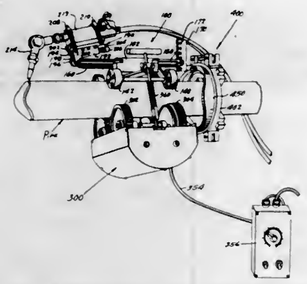
3,464,684
TORCH CUTTING MACHINE
Alan W. Wilson, 2808 Simondale, Fort Worth, Tex. 76109
Filed Oct. 21, 1965, Ser. No. 499,256
Int. Cl. B23k *7/10;* **B23q** *9/00*
U.S. Cl. 266—23 **3 Claims**



The combination with a conventional self-propelled cutting torch carriage and a portable track therefor, of a

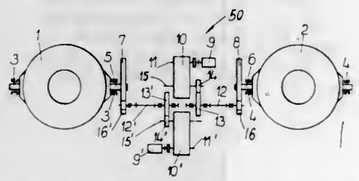
vertical fluid pressure cylinder on one side of and supported by the carriage, a piston rod extending beneath the cylinder and a swivel type cutting torch on the lower end of the rod whereby a single setting of the track on a workpiece provides for both vertical and horizontal cuts.

3,464,685
PIPE CUTTING MACHINE
Carl G. Schreib, High St., P.O. Box 174, Mauricetown, N.J. 08329
Filed Jan. 15, 1968, Ser. No. 697,941
Int. Cl. B23k *5/08, 7/04, 37/02*
U.S. Cl. 266—23 **8 Claims**



A pipe cutting machine which includes a rollably mounted carriage and a rollable drive assembly connected to the carriage for rotating the carriage about the pipe to be cut, a reciprocal slidable bar on the carriage with means for mounting a cutting or welding torch on one end and a cam follower on the other end, and a crown cam secured to the pipe for causing the bar and the torch to reciprocate as the carriage rotates about the pipe for cutting the end of the pipe in a desired configuration or for welding the pipe in such configuration is disclosed.

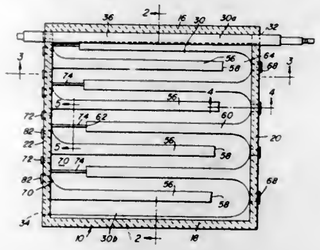
3,464,686
CONVERTER TILT DRIVE
Leopold Walzel, Duisburg, Germany, assignor to Demag A.G., Duisburg, Germany
Filed Aug. 1, 1967, Ser. No. 657,585
Claims priority, application Germany, Aug. 26, 1966, D 50,956
Int. Cl. C21c *5/50;* **F16h** *37/06*
U.S. Cl. 266—36 **6 Claims**



A steel mill converter tilt drive includes two separate driving motors which are arranged between two converters in a manner such that each may be selectively connected to drive one or the other converter.

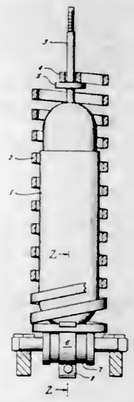
3,464,687
APPARATUS FOR CONTINUOUS STEEL REFINING
Chung-Wie Chang, 10 1st Chian Sen St., Kaohsiung, Taiwan
Filed Dec. 1, 1966, Ser. No. 598,403
Int. Cl. C21c *5/48;* **F27b** *3/10*
U.S. Cl. 266—37 **6 Claims**

A hearth with enclosing walls forming a furnace with a series of zigzag inclined channels therein receiving molten unpurified iron at one end and discharging molten purified steel at the other. The juncture areas between the channels have pools, certain of them have means for



discharging slag and certain of them have means for introducing scraps and oxygen lances overlie the channels for discharging oxygen onto the molten iron.

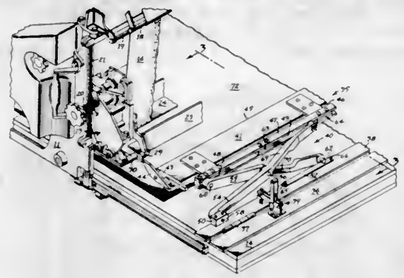
3,464,688
TENSION AND EQUALIZER SPRING FOR VEHICLES
Robert D. Papousek, 3233 E. 3rd St., Tucson, Ariz. 85716
Filed Apr. 3, 1967, Ser. No. 627,892
Int. Cl. B60g *11/58;* **F16f** *13/00*
U.S. Cl. 267—34 **2 Claims**



An overload coil spring employed and installed in combination with a shock absorber on the front suspension system of a motor vehicle carrying a heavy rear load, said coil spring being firmly fastened at the top and bottom portions thereof to the frame and the wheel support respectively of the vehicle and to the plunger and the bottom support respectively of the shock absorber so the coil spring operates in tension as well as in compression.

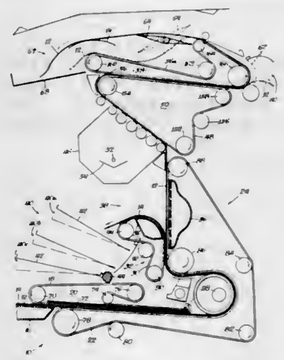
3,464,689
CATCHER MECHANISM FOR CLOTH SPREADING MACHINE
Asa Scobey Rogers, Jr., Nashville, Tenn., assignor to Cutters Machine Company, Inc., Nashville, Tenn., a corporation of Tennessee
Filed Nov. 15, 1967, Ser. No. 683,379
Int. Cl. B65h *29/46, 45/20*
U.S. Cl. 270—31 **8 Claims**

A catcher mechanism including a catcher bar adapted to cooperate with the spreader unit of a cloth spreading machine reciprocably movable toward and away from the catcher mechanism, in which the catcher bar is supported by a scissors-type linkage mechanism to constrain the catcher bar to vertical reciprocable movement so that



the catcher bar is always maintained in a horizontal position.

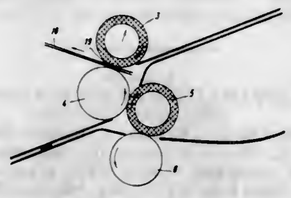
3,464,690
DIAZO REPRODUCING MACHINE
Frederick G. Wilde and L. Gordon Booth, Rochester, N.Y., assignors to Addressograph-Multigraph Corporation, Charles Bruning Division, Mount Prospect, Ill., a corporation of Delaware
Original application Dec. 2, 1964, Ser. No. 415,540, now Patent No. 3,362,314, dated Jan. 9, 1968. Divided and this application Sept. 18, 1967, Ser. No. 683,421
Int. Cl. B65h *17/28*
U.S. Cl. 271—45 **2 Claims**



An ammonia-type diazo copying machine including vacuum conveying means for transporting documents, comprising a plurality of spaced apart, apertured, flexible belts mounted for movement along an apertured surface of a vacuum tank. The surface of the tank includes a plurality of apertured, spaced apart raised portions between which the belts move; the outer surface of the belts and raised portions being coextensive to prevent a loss of the vacuum holding the documents to the belts, and ripples in the documents transported thereover.

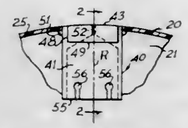
3,464,691
ROLL BEARING ARRANGEMENTS FOR USE IN PAPER-PROCESSING MACHINES, IN PARTICULAR FOLDING MACHINES
Erwin Porth, St. Georgen, Black Forest, Germany, assignor to Mathias Bauerle Gesellschaft mit beschrankter Haftung, St. Georgen, Black Forest, Germany, a German company
Filed Apr. 3, 1967, Ser. No. 628,055
Claims priority, application Germany, May 2, 1966, 86,929
Int. Cl. B65h *5/06, 17/20;* **F16c** *27/04*
U.S. Cl. 271—51 **9 Claims**

A roll arrangement for use in paper folding machines including two metal surfaced drive rolls, at least one rubber surfaced driven roll, and at least one folding pocket. The drive rolls have a fixed mounting and the driven roll has a resilient mounting to allow for radial movement of the driven roll relative to each of the drive rolls so that the driven roll can be radially displaced to



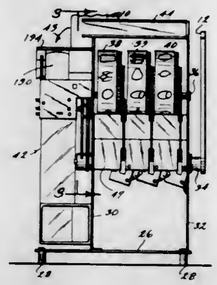
accommodate paper of one thickness passing between the driven roll and one of the drive rolls to the folding pocket, and at the same time, accommodate paper of another thickness passing between the driven roll and the other of the drive rolls.

3,464,692
COMBINATION RESILIENT SHELL FILLED WITH SOLIDIFIED DENSE MATERIAL AND SEALING PLUG
Clayton J. Ammondson, Reidsville, N.C., and Eldridge H. Cockrell, Auburn, and Ira J. Silberman and Forrest H. James, Jr., Opelika, Ala., assignors to Diversified Products Corporation, Opelika, Ala., a corporation of Alabama
Continuation-in-part of application Ser. No. 395,693, Sept. 11, 1964. This application July 22, 1965, Ser. No. 474,019
Int. Cl. A63b *21/00, 37/04, 11/00*
U.S. Cl. 272—84 **5 Claims**



A hollow plastic body filled with solidified dense material, the plastic body having a filling hole through which the dense material was initially inserted, and a plug projecting through the hole and into the dense material whereby the dense material anchors the plug in place in the shell.

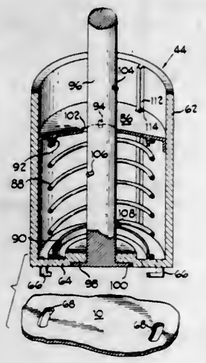
3,464,693
TOY BANK
Richard B. Bailey, 9333 Sophia St., Sepulveda, Calif. 91343
Filed Mar. 16, 1966, Ser. No. 534,856
Int. Cl. A63f *9/00;* **A63b** *67/00*
U.S. Cl. 273—1 **7 Claims**



A toy bank incorporating spinning reels operative in cooperation with coin-handling apparatus and a handle-actuated mechanism for propelling the reels and halting

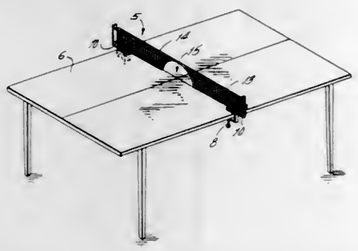
them in combinations, some of which result in coin returns. Operation of the handle-actuated apparatus is conditional upon deposit of a coin to perform a cycle of motion which sets the reels in motion then affords positive control whereby to attempt to stop the reels sequentially to accomplish a winning combination, by skillful manipulation of the handle, while observing the spinning reels.

3,464,694
GAME APPARATUS HAVING PLAYING PIECE EJECTING MEANS
Henry Stan, Chicago, Gordon A. Barlow, Evanston, and Burton C. Meyer, Chicago, Ill., assignors to Marvin Glass & Associates, Chicago, Ill., a partnership
Filed Feb. 8, 1967, Ser. No. 614,616
Int. Cl. A63f *3/04*
U.S. Cl. 273—1 **6 Claims**



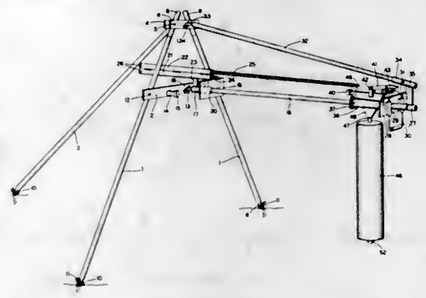
Game apparatus for a race type of game in which the players compete to accomplish a result, and which includes a game board, a container on the board for receiving a plurality of playing pieces, and a simulated miniature broom for use by each player in sweeping pieces from the board. The container has a spring biased, movable bottom which is releasable to eject pieces on to the board.

3,464,695
TABLE TENNIS NET
Barbara M. Chock, 64 Club Drive, Roslyn Heights, N.Y. 11577
Filed Feb. 20, 1967, Ser. No. 617,162
Int. Cl. A63b *61/00, 67/04*
U.S. Cl. 273—30 **6 Claims**



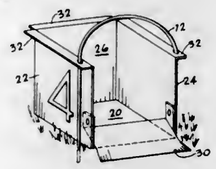
A table tennis net having an opening at the lower center portion. The periphery of the opening is provided with a wire frame having its ends extending a short distance along the lower edge of the net from each side of the opening. Persons who do not have the height or strength to swing the paddle and hit the ball over the net can play by hitting the ball through it.

3,464,696
FOOTBALL TACKLING DUMMY APPARATUS
Verne A. Hooker, R.D. 1, Dennison, Ohio 44621
Filed Mar. 8, 1967, Ser. No. 621,617
Int. Cl. A63b *69/34*
U.S. Cl. 273—55 **8 Claims**



A football tackling dummy apparatus having a track pivotally mounted at one end to a point overhead, with a carriage slidable upon the track and a tackling dummy suspended from the carriage. Means for urging the carriage toward the pivoted end of the track, and means for latching the carriage to the free end of the track. The tackling dummy is adapted to swing laterally but not longitudinally relative to the track, and the tackling dummy being rotatable upon its axis.

3,464,697
EQUIPMENT FOR CROQUET TYPE GAMES
Arthur Robillard, Jr., 1 Linden St., South Glens Falls, N.Y. 12804
Filed Jan. 3, 1967, Ser. No. 606,638
Int. Cl. A63b *67/00*
U.S. Cl. 273—56 **3 Claims**

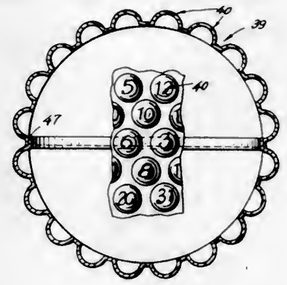


Equipment for croquet type games utilizing mallets, balls and special ball pockets. Each pocket is provided with a flat rectangular horizontal base and three vertical walls joined in such a manner as to leave a rectangular opening located adjacent to one wall and between the remaining two walls. The opening is spanned by a flat apron member, pivotally secured at each of its ends to a corresponding free vertical wall edge. The apron is constructed and connected in a manner as to allow a ball to roll upward onto the plate and to thereafter be trapped into the pocket.

3,464,698
NUMBERS GAME BALL
Joseph Bosco, 31 Summer St., Everett, Mass. 02149
Filed July 18, 1966, Ser. No. 566,188
Int. Cl. A63f *3/06, 9/00*
U.S. Cl. 273—58 **2 Claims**

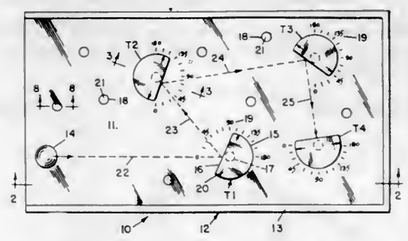
The present invention relates to a numbers game, and more particularly it relates to a means to dispense with the caller's chart commonly used by such games as Bingo, Lotto, Blitz and Beano. The present invention mainly will provide a spherical ball-shapped hollow ball which upon its outer surface will carry a plurality of convex dome-shaped protrusions upon which the numbers of the caller's chart are being imprinted.

To accomplish the above purpose the spherical ball-shaped hollow ball will be made of transparent plastic which upon its outer circumference or surface will be beset with a plurality (75) of dome-like arcuate members or convex bodies with numbers from 1 to 75 being imprinted upon each body.



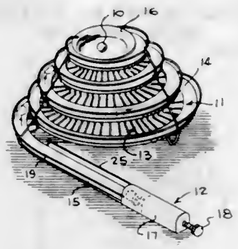
With each number called, the numbers upon the dome-shaped members will be depressed by means of a device or by hand. At the conclusion of the game the ball will be checked by the caller and the depressed numbers will be noted. Then the ball (which is made of two sections held together) will be opened and the depressed dome-shaped members will be pushed outwardly (by finger) to assume their original pregame position.

3,464,699
ADJUSTABLE AND REMOVABLE TARGETS ON A GAME BOARD
Melvin L. Dollar, Silver Spring, Md., assignor of one-half to Delores A. Dollar, Silver Spring, Md.
Filed Mar. 22, 1967, Ser. No. 625,208
Int. Cl. A63f *7/00;* **A63d** *3/00, 13/00*
U.S. Cl. 273—118 **5 Claims**



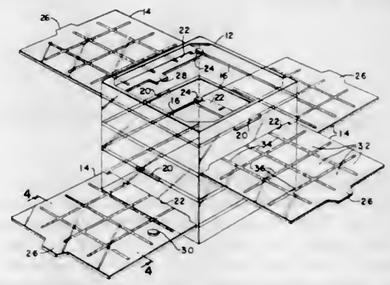
A plurality of target members adjustably positioned on a playing surface so that when a projectile is propelled along the surface to impact one of the target members, it may rebound to impact the other target members in a predetermined succession. Means are provided for retaining the target members in an adjusted position, and for indicating the opsition to which they have been adjusted, each relative to another. The means to hold the targets in their adjusted position may be a frictional fit of the target support with the playing surface or a magnetic attraction between the support and playing surface. The position indicating device may be indicia, as in a protractor, on the playing surface or a compass in the adjustable target. There are also filler plugs that can be removably placed flush in the target support sockets when the targets are removed.

3,464,700
SPIRAL PATH WITH OBJECT RECEIVING MEANS
Ronald D. Clatterbuck, 320 Huntington Blvd., Roanoke, Va. 24012
Filed June 17, 1966, Ser. No. 558,357
Int. Cl. A63d *13/00;* **A63f** *7/10*
U.S. Cl. 273—119 **10 Claims**



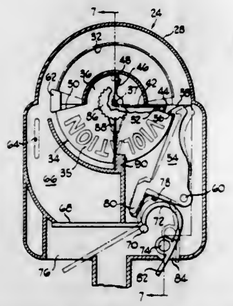
A game board with an ascending spiral path having wire elements placed there along to receive projected spherical objects. These wire elements are spaced apart less than the diameter of the spherical objects to receive the objects once they lose their momentum and velocity. Another embodiment provides for both ascending and descending spiral paths with propelling devices and spherical object receiving pockets. The paths may be interconnected at their upper or lower ends to provide a continuous path. In addition, two propelling devices may be employed to propel objects along the same path by different players.

3,464,701
GAME APPARATUS FOR PLAYING THREE-DIMENSIONAL CHESS AND TIC-TAC-TOE
Michael Mahoney, Beltsville, Md., assignor to SCH Corporation, Greenbelt, Md., a corporation of Maryland
Filed Dec. 6, 1966, Ser. No. 599,448
Int. Cl. A63f *3/02, 3/00*
U.S. Cl. 273—131 **4 Claims**



A game apparatus made of transparent material in the form of a rectangular four sided frame having four play boards mounted in vertically spaced relation therein, each play board being slidable from a normally retracted position in said frame to an extended position on a different side of the frame. Each play board is marked off by lines or ridges into sixteen substantially square game piece receiving areas for receiving game pieces of different players in selected areas in the course of a game to produce a desired arrangement of the game pieces on all the play boards when they are placed in a predetermined relation to each other. For playing tic-tac-toe each player has four game pieces, and for playing chess game pieces having chess symbols thereon are provided.

3,464,702
GAME APPARATUS FOR SIMULATING AN AUTOMOBILE TRIP AND COMPRISING A COIN ACTUATED SIMULATED PARKING METER
Henry Stan and Marvin I. Glass, Chicago, Ill., assignors to Marvin Glass & Associates, Chicago, Ill., a partnership
Filed Mar. 15, 1967, Ser. No. 623,378
Int. Cl. A63f *3/04*
U.S. Cl. 273—134 **1 Claim**



A game apparatus having a playing board on which the players move their playing pieces various distances on a path simulating an auto trip, according to the indications on cards held in their hands. There are several free parking spaces on said path, but the other spaces require the deposit of simulated coins in a simulated parking meter. Accumulation of simulated coins having a predetermined total weight in the meter will cause it to trip, actuating a means indicating a violation.

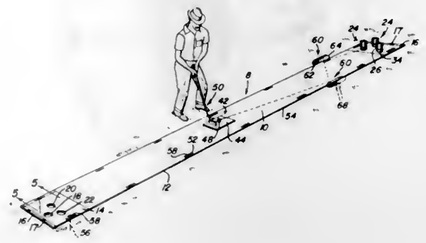
3,464,703
GOLF COURSE
Theodore L. Vallas, 3202 Vista Way, Oceanside, Calif. 92054
Continuation-in-part of application Ser. No. 502,895, Oct. 23, 1965. This application June 14, 1967, Ser. No. 646,025
Int. Cl. A63b *67/02*
U.S. Cl. 273—176 **4 Claims**



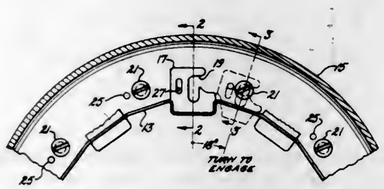
An outdoor golfing fairway extends from an enclosed covered area which contains putting, sand trap, and driving areas. The inside of the enclosed covered area is insulated from the outdoor fairway by an "air screen" through which golf balls may be driven into the fairway from the driving and sand trap areas. Simulated golf green water targets are positioned on the fairway at various distances from the enclosed covered area so that a game of golf may be played from and within the enclosed covered area without a golfer leaving same. Luminescent means are provided for marking boundaries, hazards and the like.

3,464,704
GOLF GAME WITH UPSTANDING CUPS
Martin L. Nelson, 4206 McKinley St., Hollywood, Fla. 33021
Filed Feb. 6, 1968, Ser. No. 703,359
Int. Cl. A63b *67/02, 57/00, 69/36*
U.S. Cl. 273—176 **9 Claims**

An elongated urethane foam mat has openings at each end thereof. Cups having a ball inlet slot in their side walls are rotatably retained in the mat openings so that the position of the ball entry slot may be varied relative to a golfer putting on said surface, in order to vary the difficulty of putting a golf ball into a cup. A small protective panel including a dimple for supporting a golf ball is positionable on the foam mat to form a tee area. Rebound blocks having ground penetrable anchoring prongs are positionable along the side edges of the foam mat. Anchoring pins are provided for securing both the cups and mats to a ground surface. The mat is lightweight and may be rolled up when not in use.

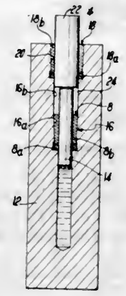


3,464,705
JET ENGINE EXHAUST DUCT SEAL
Edward W. Ryan, Mason, Ohio, assignor to the United States of America as represented by the Secretary of the Air Force
Continuation-in-part of application Ser. No. 550,584, May 12, 1966. This application July 5, 1968, Ser. No. 748,112
Int. Cl. F16j *15/02, 15/00*
U.S. Cl. 277—26 **4 Claims**



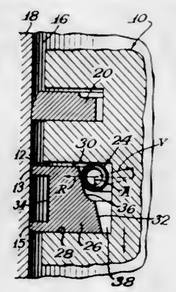
A jet engine exhaust duct sealing means including an annular ring for contact with the downstream end of the exhaust duct liner and is attached by utilizing a series of bayonet slots around the periphery which cooperates with a corresponding series of pin members fixedly attached to the exhaust duct when the sealing means is rotated relative to the duct. Locking means including a plurality of locking pins inserted through drilled openings in the exhaust duct and into the sealing means after rotation thereof to prevent counterrotation and release of the seal.

3,464,706
HIGH-PRESSURE SEALING SYSTEM
Paul Antoine Alexandre Cogez, Montrouge, Madeleine Marcelle Conte, Conde, and Jacques Georges Robert Sabatier, Paris, France, assignors to Commissariat a l'Energie Atomique, Paris, France
Filed Sept. 20, 1966, Ser. No. 580,706
Claims priority, application France, Oct. 15, 1965, 35,205
Int. Cl. F16j *15/40, 15/44;* **B65d** *53/00*
U.S. Cl. 277—59 **4 Claims**



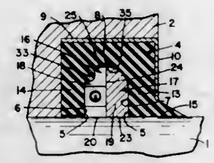
A seal between a component passing through a second component includes a recess in one of the components around the other component. A powder in the recess is compressed by a bushing. A second recess forms an extension of the first recess and contains a powder also compressed by a bushing. A compressible fluid fills the two recesses.

3,464,707
PISTON OIL CONTROL RING ASSEMBLY
Norman M. Packard, Des Plaines, Leonard O. Squinto, Berwyn, and William Lenzi, Western Springs, Ill., assignors to International Harvester Company, Chicago, Ill., a corporation of Delaware
Filed Sept. 29, 1966, Ser. No. 582,810
Int. Cl. F16j *9/06, 9/26*
U.S. Cl. 277—143 **5 Claims**



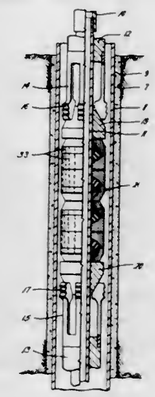
Piston oil control ring assembly received by the piston oil control ring groove in a reciprocating engine. The assembly comprises a metal piston ring for effecting sealed engagement with a cylinder wall, and an expander and seal therebehind, i.e., inside the ring, forcing the ring to exert the required radial pressure against the cylinder wall, and to be sealed to the groove at both sides of the ring. The seal is an elastomeric sleeve and the expander is a coil compression spring surrounded by and coextensive for the full circular length of the sleeve.

3,464,708
SEAL
Roy C. Hamilton, Santa Rosa, Calif., assignor to Rodpak Manufacturing Co., Reno, Nev., a corporation of Nevada
Filed Aug. 27, 1965, Ser. No. 483,114
Int. Cl. F16j *15/02*
U.S. Cl. 277—151 **2 Claims**



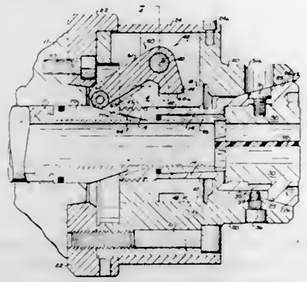
An annular seal for positioning between complementary cylindrical surfaces such as in a bearing around a shaft or in a piston within a cylinder, that includes segments of a pair of coaxial rings in face-to-face engagement and coil springs extend circumferentially of and within said rings for yieldably holding the latter in sealing engagement with such shaft or cylinder. The segments of one ring of a pair are staggered relative to those of the other pair and the springs include means at their ends automatically engaging the adjacent end portions of adjacent segments of each ring against dislodgment.

3,464,709
LAMINATED PACKER
Carl M. Furgason and Carl J. Eckenrod, Houston, Tex., assignors, by mesne assignments, to U.S. Industries, Inc., a corporation of Delaware
Filed May 20, 1966, Ser. No. 551,738
Int. Cl. F16j *15/32, 15/56*
U.S. Cl. 277—213 **6 Claims**



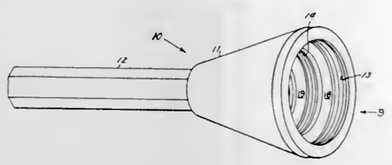
This high temperature-high pressure resistant packer is constructed of laminations of flexible asbestos sheeting which is exceptionally durable to high temperature and high pressure conditions, with intervening binder material. Internal means is provided to enforce radial expansion of the packer body upon axial compression thereof and the outer peripheries of the laminations are crimped to permit such radial expansion without undue stretching of the material of the lamination.

3,464,710
CHUCK MECHANISM
Roger O. Schultz, Malvern, and Joseph L. Horvath, Berwyn, Pa., assignors to The Warner & Swasey Company, Cleveland, Ohio, a corporation of Ohio
Filed Mar. 3, 1967, Ser. No. 620,504
Int. Cl. B23b *31/30, 31/10, 5/32*
U.S. Cl. 279—4 **8 Claims**



A rotatable spindle carries on its outer end a collet chuck mechanism. The collet chuck mechanism grips a workpiece and is movable between gripping and non-gripping positions upon movement of a pusher tube located within the spindle member. A mechanical lever arrangement transmits the force from the pusher tube to the collet mechanism. The lever arrangement is constructed to multiply the force applied thereto by the pusher tube and supply a greater force to the collet mechanism.

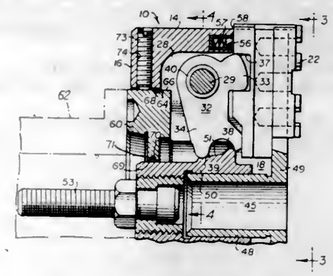
3,464,711
COMPOUND PIPE CHUCK
Wallace G. Franke, 803 S. Story St., Appleton, Wis. 54911
Filed June 2, 1966, Ser. No. 554,910
Int. Cl. B23b *31/00;* **B25g** *3/22*
U.S. Cl. 279—7 **2 Claims**



A tool for holding the threaded ends of various diameter pipes having a series of progressively stepped down counterbores terminating at annular shoulders and the counterbores having threads extending to the annular shoulders.

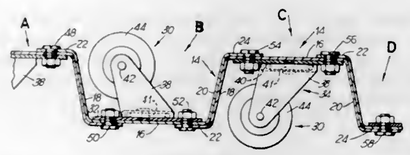
3,464,712
CHUCK
Merritt B. Sampson, Shaker Heights, and Alan H. Young, Bedford, Ohio, assignors to The S-P Manufacturing Corporation
Filed Sept. 17, 1965, Ser. No. 488,061
Int. Cl. B23b *31/16, 5/22, 5/34*
U.S. Cl. 279—120 **5 Claims**

A machine tool chuck having lever actuated jaws. Each jaw lever is fixed directly in a bore in the chuck body. Spacers on the lever pin interposed between the lever and chuck body maintain the lever in alignment during movement about the pin. Internal portions of the chuck are



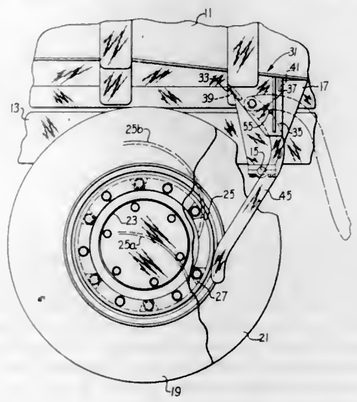
closed by seals that effectively seal the internal working parts from contaminants.

3,464,713
LOW PROFILE DOLLY
Robert W. Davidson, York, Pa., assignor to American Machine & Foundry Company, a corporation of New Jersey
Filed Aug. 26, 1968, Ser. No. 755,249
Int. Cl. B60b *33/00;* **B62b** *11/00*
U.S. Cl. 280—79.1 **7 Claims**



A dolly comprising a corrugated platform, a row of casters mounted to each of the high portions of the under surface of the platform for engaging the ground and a row of casters mounted to each of the low portions of the upper surface of the platform for engaging a load. Restraint means for the load are mounted adjacent the corners of the platform.

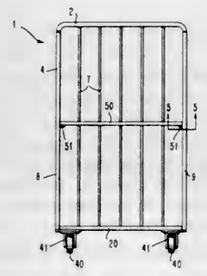
3,464,714
ROCK EJECTOR FOR DUAL WHEEL VEHICLE
Peter F. M. Prillinger, Decatur, Ill., assignor to Caterpillar Tractor Co., Peoria, Ill., a corporation of California
Filed Dec. 13, 1967, Ser. No. 690,199
Int. Cl. B60s *1/68, 1/62*
U.S. Cl. 280—158 **12 Claims**



A rock ejector suspended from a bracket anchored beneath the body of a vehicle at a location between the

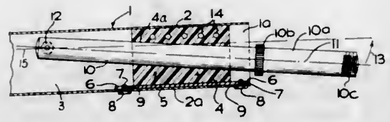
wheels of a dual wheel assembly and behind the axis of the wheels, and of a curved shape, thereby allowing oscillation of the bar to match the vehicle suspension characteristics.

3,464,715
COLLAPSIBLE HANDCART
Arne H. Anderson, St. Paul, Minn., assignor to John Wood Company, East Orange, N.J., a corporation of Delaware
Filed Sept. 9, 1968, Ser. No. 758,383
Int. Cl. B62b *3/00;* **B60b** *33/00*
U.S. Cl. 280—36 **4 Claims**



A collapsible handcart suitable for warehousing, trucking transportation, and the like, which is provided with rollers for maneuverablity, and with hinged two sides and a bottom member which may be folded substantially parallel against the back member, so that when folded flat it may occupy in nonuse, or in storage, a minimal amount of space.

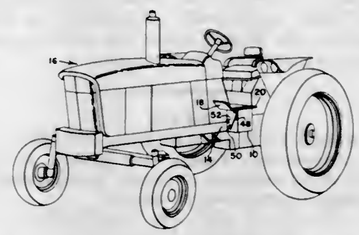
3,464,716
VEHICLE SUSPENSION SYSTEM
Robert Butler, North Sway Cottage, Sway, Hampshire, England
Filed Dec. 21, 1967, Ser. No. 692,468
Int. Cl. B60g *3/00, 25/00*
U.S. Cl. 280—124 **10 Claims**



A resilient suspension for suspending wheels from a frame and comprising a tubular member fixed to the frame, a resilient bushing mounted in the tubular member, and an axle arm passing through a bore in the bushing and extending beyond the tubular member. The axle arm is secured to the tubular member by a pivot pin and the outer end of the arm is adapted for mounting a wheel thereon.

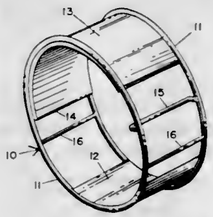
3,464,717
VEHICLE ACCESSORY BOX AND DETACHABLE COVER PLATE
Lewis K. Davis, Waterloo, and Richard D. Obadal, Cedar Falls, Iowa, assignors to Deere & Company, Moline, Ill., a corporation of Delaware
Filed Oct. 4, 1967, Ser. No. 672,856
Int. Cl. B60r *11/00, 27/00*
U.S. Cl. 280—164 **10 Claims**

An accessory box or receptacle having a removable cover held securely in place by a spring force when latched on opposite sides by longitudinally extending, interlocking members, one or more of these accessory boxes or receptacles being mounted alongside the body of a tractor



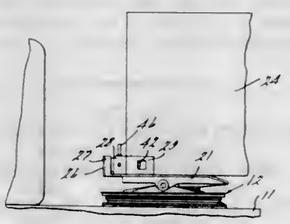
or like vehicle so that the cover or covers provide one or more footrests or extended platform areas on which an operator can safely stand.

3,464,718
SOMERSAULT VEHICLE
Peter F. Fisher, 10391 SW. 64th Ave., Miami, Fla. 33156
Filed Sept. 18, 1967, Ser. No. 668,398
Int. Cl. F16c *17/00;* **A63g** *29/00*
U.S. Cl. 280—206 **1 Claim**



A somersault device consisting of a pair of hoops joined together by a platform, a cushioned back support, a handrail and a plurality of cross braces whereby a person using the device places his feet, one before the other on the platform, grasps the handrail and then by virtue of moving his weight about the center of the hoops and exerting a force on the appropriate foot creates an imbalance and causes the somersault device to rotate in either a forward or backward direction.

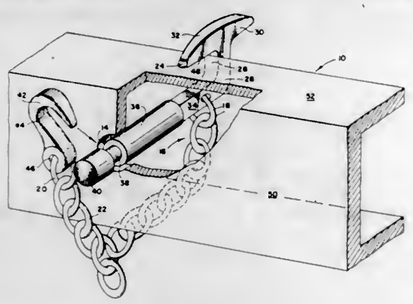
3,464,719
BOLSTER LOCKING HEAD FOR SECURING SEMI-TRAILER TO TRACTOR FIFTH WHEEL
Keith W. Tantlinger, Grosse Pointe Shores, Mich., assignor to Fruehauf Corporation, a corporation of Michigan
Filed July 13, 1967, Ser. No. 653,164
Int. Cl. B62d *53/06, 53/08*
U.S. Cl. 280—438 **6 Claims**



The fifth wheel of the present invention has a ball bearing base for rotation about a vertical axis. A skid plate is mounted on the base for tilting movement about a horizontal axis. A bolster is mounted on the forward end of

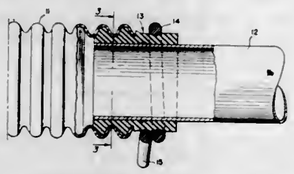
the skid plate of a length substantially equal to the width of the trailer. A locking pin is mounted on each end of the bolster which projects into apertures in sockets at the forward bottom corners of the trailer which when rotated locks the bolster to the trailer. The bolster on the fifth wheel stabilizes the forward end of the trailer in all angular positions of the tractor relative thereto.

3,464,720
SAFETY CHAIN LOCKING CLASP
John C. Abromavage, Tempe, and Edward A. Frader, Phoenix, Ariz., assignors to Arcoa, Incorporated, Portland, Oreg., a corporation of Oregon
Filed Oct. 9, 1967, Ser. No. 673,898
Int. Cl. B60d *1/12, 1/14*
U.S. Cl. 280—457 **3 Claims**



Automobile safety or towing chain locking devices, particularly a safety chain clasp adapted for positive securement to a towing vehicle frame.

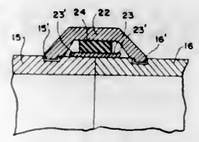
3,464,721
TUBE COUPLING
Walter E. Surko, Jr., Kensington, Conn., assignor to Emhart Corporation, Bloomfield, Conn., a corporation of Connecticut
Filed Nov. 2, 1967, Ser. No. 680,150
Int. Cl. F16l *55/00, 31/00, 21/00*
U.S. Cl. 285—174 **3 Claims**



A tube coupling which includes a corrugated tube section and a noncorrugated tube section joined by a resilient seal-connector wherein no adhesives or other sealing compounds are required to make a tight connection. The seal connector includes an undulating rib and groove portion which is adaptable to said corrugated tubing and a smooth portion which is adaptable to said conventional tubing.

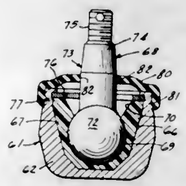
3,464,722
PIPE COUPLING HAVING SEGMENTED CLAMPING MEANS
Sam Larkin, 254 Beach 140th St., Belle Harbor, N.Y. 10013
Filed Apr. 19, 1968, Ser. No. 722,765
Int. Cl. F16l *21/02, 21/06*
U.S. Cl. 285—367 **8 Claims**

A coupling for abutting lengths of pipe, which is a clamping ring structure consisting of two or more successive arcuate segments totalling nearly 360 degrees; the juncture of adjacent ends of which is effected by hooks on the end of one segment engaging aligned trunnions on a bar extending from the end of the segment next to it, with provision to connect the ends of the end segments to close the ring and contract it to tightly embrace the pipes. The segments are made of lengths cut from rolled channel stock, bent for instance by hydraulic pressure means. The trunnions are engaged by the hooks in rotatable fitted re-



lation and lie tangent to the outer peripheral surface of the segment they are respectively hooked onto. Each bar carrying trunnions fits slidably between hooks to maintain the segments in circumferential alignment. A rubber ring on a soft lead sleeve, having flared ends to facilitate its mounting to overlap the pipes, is positioned within the channeled ring structure, to be compressed upon the contraction of the coupling about the pipes it joins. These couplings may be assembled at the site of laying the piping.

3,464,723
PRELOADED JOINT ASSEMBLY
Edward J. Herbenar, Detroit, Mich., assignor to TRW Inc., Cleveland, Ohio, a corporation of Ohio
Application Mar. 8, 1967, Ser. No. 621,561, now Patent No. 3,395,442, dated Aug. 6, 1968, which is a continuation-in-part of application Ser. No. 503,709, Oct. 23, 1965, now Patent No. 3,395,441, dated Aug. 6, 1968. Divided and this application Feb. 29, 1968, Ser. No. 709,353
Int. Cl. F16c *11/06;* **F16b** *7/00*
U.S. Cl. 287—87 **3 Claims**

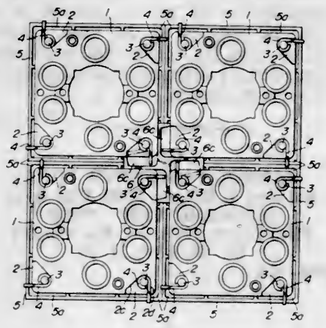


A preloaded assembly of components in a housing, such as joint components in a socket wherein a closure plate or retainer is held in position by locally displaced radially inwardly deformed socket material. The socket is spin swedged radially inwardly around the retainer into tight gripping relation with the periphery of the retainer and then both faces of the retainer are overlapped with socket metal. The level of the retainer in the housing may be at any depth for maintaining the desired preload.

3,464,724
DEVICE FOR INTEGRALLY SECURING A PLURALITY OF CONTROLLING APPARATUS CASINGS TOGETHER AS A UNIT
Teizo Fujita, 34 Tezukayama-Naka-3-chome, Sumiyoshi-ku, Osaka, Japan
Filed Feb. 26, 1968, Ser. No. 708,007
Claims priority, application Japan, Aug. 4, 1967, 42/50,090
Int. Cl. F16b *5/00*
U.S. Cl. 287—189.36 **2 Claims**

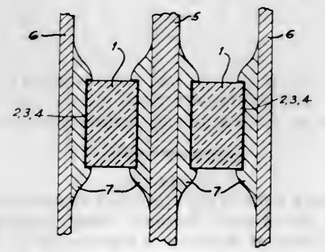
A device for integrally securing a plurality of controlling apparatus casings having substantially polygon-shaped cross section to a support structure together as a

unit, said device comprising a connecting member which has one end thereof so shaped as to engage outwardly extending and depending flanges of the casings at the corners adjacent to the center of assembly of these casings by extending into recesses behind the depending portions



of the flanges of the adjacent casings and clamping members operably mounted on each casing and engageable with the other end of the connecting member to force the connecting member against the end faces of the flanges of the casings.

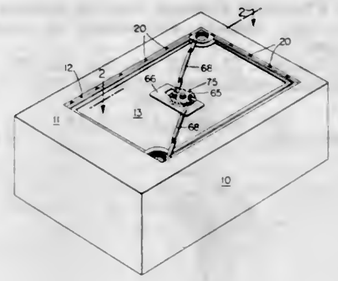
3,464,725
HERMETIC ELECTRICAL LEAD-IN ASSEMBLY
Robert L. Bronnes, Irvington, Richard C. Sweet, North Tarrytown, and Ray C. Hughes, Ossining, N.Y., assignors to U.S. Philips Corporation, New York, N.Y., a corporation of Delaware
Original application Nov. 26, 1965, Ser. No. 510,017. Divided and this application Nov. 7, 1967, Ser. No. 681,962
Int. Cl. F16b *11/00;* **C03c** *27/04*
U.S. Cl. 287—189.365 **3 Claims**



A hermetic electrical lead-in assembly consisting of a metal-to-ceramic seal using a triple bonding layer of titanium, platinum and steel.

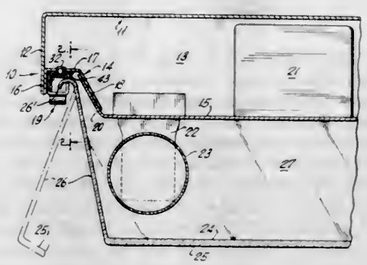
3,464,726
QUICK OPENING LATCH MECHANISM
Walter B. Dean, Narberth, Pa., assignor to The Budd Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed Oct. 30, 1967, Ser. No. 678,806
Int. Cl. E05c *9/12, 1/06;* **B65d** *45/00*
U.S. Cl. 292—39 **5 Claims**

This invention relates to a quick opening latch mechanism for a door of an atmospheric container such as a pressure cell. By translatory motion of camming strips, rollers at the door and door frame are forced apart there-



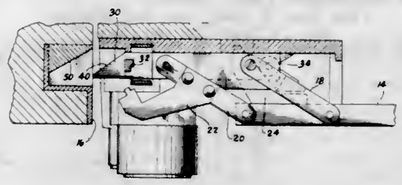
by providing forces which compress seals as well as overcome the internal pressure on the door.

3,464,727
LATCHING MEANS FOR CLOSURES
Ernest Pascucci, Meriden, Conn., assignor to The Miller Company, Meriden, Conn., a corporation of Connecticut
Filed Oct. 18, 1967, Ser. No. 676,249
Int. Cl. F21v *17/06;* **E05b** *65/06;* **E05c** *19/00*
U.S. Cl. 292—67 **9 Claims**



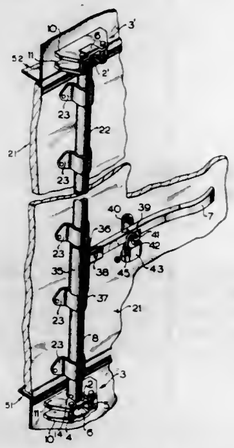
Latching means for closures such as light transmitting closures for lighting fixtures and the like which are mounted on opposed edges of the fixture to function either as a hinge or a latch.

3,464,728
JAM RESISTANT DOOR LOCK
Frank G. Ruckel, Floral Park, and David Fox, Bayside, N.Y., assignors to Alarm Lock Corporation, Roslyn Heights, N.Y.
Filed July 21, 1967, Ser. No. 655,086
Int. Cl. E05c *15/02;* **E05b** *15/02*
U.S. Cl. 292—92 **9 Claims**



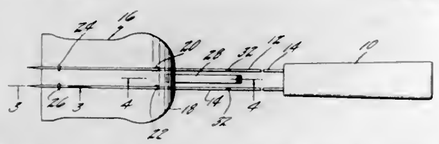
A door lock and bolt for emergency use in which the bolt face and the keeper plate face are disposed at angles in relation to the plane of the door.

3,464,729
DEVICE FOR CLOSING AND LOCKING A DOOR, IN PARTICULAR FOR VEHICLES AND CONTAINERS
Michael B. Chambers, Cobham, England, assignor to Blair Products SA., Geneva, Switzerland, a company of Switzerland
Filed Mar. 21, 1968, Ser. No. 715,008
Claims priority, application Switzerland, Mar. 22, 1967, 4,097/67
Int. Cl. E05c *3/04, 3/14*
U.S. Cl. 292—218 **13 Claims**



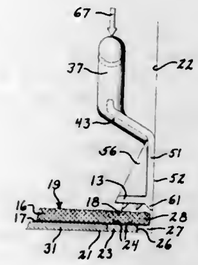
Device for closing and locking of a door, particularly for utility vehicles and containers, having a rotatable locking unit rigidly connected to the door and includes two spaced identical cams; a seat unit for each cam each identical to one another, fixed to the frame of the door; each cam being oval-shaped (**2** and **2'**) and fixed to the outer ends of two rotatable rods (**8** and **22**) which extend parallel to one side of the door (**21**) and which are connected by a sleeve (**35**); said cams (**2** and **2'**) are each provided with two corners (**19** and **19'**) and two projections (**17** and **17'**) situated outside a radius of closure (R), and also having two bosses (**15** and **15'**) situated within the radius of closure; the two seat units (**3**, **3'**) are two identical seating units, each seating unit (**3**) for example, has two parallel supporting plates (**10** and **11**), between which the oval cam (**2**) can be accommodated, the inner plate (**11**) having a slot (**14**) to receive the rotatable rod (**8**), the plates being connected by a base plate (**47**) and two pins (**4**, **5**) and fixed to the frame of the door (**51**, **52**); rotation of the cam (**2**) by rod (**8**) locks it within the seat behind the pins (**4** and **5**).

3,464,730
SPATULA-FORK
Anthony J. Gagliardi, 29 Berkley Ave., and Joseph Anthony Tellerico, Jr., Mount Vernon Road, both of Southington, Conn. 06489
Filed Dec. 5, 1967, Ser. No. 688,036
Int. Cl. A47j *43/18, 43/28*
U.S. Cl. 294—2 **3 Claims**



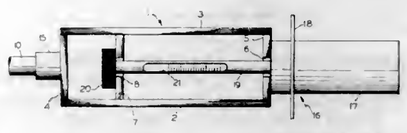
A utensil, which may function as either a spatula or fork, comprising a fork having a pair of tines each of which has a pair of aligned notches formed therein. A plate or spatula member having an upwardly curved rear portion is provided with a pair of guides adjacent its forward end and a pair of holes through the upwardly curved rearward portion, each of the tines of the fork passing through a hole and guide whereby the spatula member may slide along the tines with the major portion thereof disposed below the tine. The spatula portion may be locked in any of many positions by engagement of the upwardly curved portion thereof at the holes therein with the notches in the tines, release of the spatula portion from the notches and movement thereof being facilitated by a rearwardly extending lifting member affixed to the spatula portion.

3,464,731
CARPET FASTENING TOOL
Anthony J. Eramo, 5900 17th Ave., Sacramento, Calif. 95820
Filed Jan. 8, 1968, Ser. No. 696,200
Int. Cl. E04g *21/20*
U.S. Cl. 294—8.6 **3 Claims**



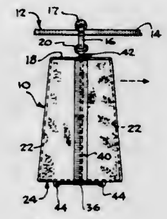
A hand tool includes a horizontal foot plate for depressing the edge of a wall-to-wall carpet stretched so that the edge portion of the carpet overlies a floor-mounted tack strip, the carpet thereby engaging the upstanding pins on the tack strip. The hand tool is also provided with an inner marginal bead on the foot plate to tuck a small overhanging portion of the carpet into a space between the tack strip and the adjacent wall as the tool is urged downwardly against the portion of the carpet overlying the tack strip. A vertical guide plate above the bead slides against the wall and assists in locating and directing the movement of the tool, the tool also including a hand grip outwardly offset from the plane of the wall engaging guide plate to afford a safe and convenient hand hold.

3,464,732
HOLDER FOR SOIL TESTING INSTRUMENT
Hyrum J. Woodward, Portland, Oreg., assignor to the United States of America as represented by the Secretary of Agriculture
Filed Feb. 9, 1968, Ser. No. 704,404
Int. Cl. A47f *13/06;* **A01d** *9/06*
U.S. Cl. 294—19 **1 Claim**



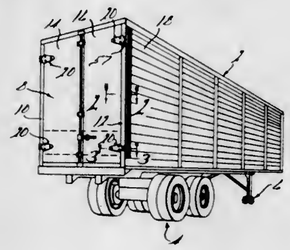
A commonly used, hand operated instrument for determining the volume of moisture in a soil profile can conveniently take samples only near the surface. To take samples at greater depths, a slotted box-like holder, connected to an extensible handle, is provided by this invention. The sample-taking instrument fits between two slotted walls and is secured by tightening a threaded member on the instrument.

3,464,733
CONTAINER FOR TRANSPORTING ARTICLES AND FOR SELECTIVE RELEASE OF SAME
Robert W. Shaw, Chicago, Ill., assignor to Tingue, Brown & Company, Chicago, Ill., a corporation of Delaware
Filed Sept. 25, 1967, Ser. No. 670,216
Int. Cl. B65d *33/30, 33/36*
U.S. Cl. 294—71 **9 Claims**



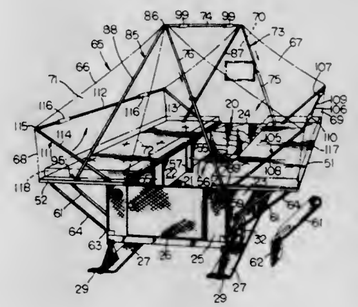
A container for transporting small articles, having a selectively openable bottom closure member with a telescoping chute which, when opened, extends to permit the articles to discharge from the container, the chute adapted to automatically retract after discharge of the articles.

3,464,734
SEMI-TRAILER DOOR AND CORNER POST CONSTRUCTION
George Chieger, Birmingham, Mich., assignor to Fruehauf Corporation, Detroit, Mich.
Filed Aug. 19, 1966, Ser. No. 573,629
Int. Cl. B62d *25/04*
U.S. Cl. 296—50 **11 Claims**



A door and corner post construction for use on containers, semi-trailers, trucks and the like, comprising: (a) a generally rectangular door frame having (b) a vertical metal door corner post, said post including (c) a metal hinge mounting flange generally extending the length of the corner post, said mounting flange having at least (d) two vertically spaced door hinges secured to said mounting flange, and (e) a compressible seal located within (f) a first recess defined by said mounting flange in conjunction with the corner post (g) a door mounted on said hinges for rotation relative to said door frame whereby said door when in closed position contacts and compresses said seal, (h) a second recess disposed on said corner post and generally extending the length thereof parallel to said first recess, said second recess being located on the same side of the corner post relative to the hinge mounting flange and spaced therefrom, and said second recess being adapted to hold in position a board which prevents forces from inside of the door structure and directed toward said door from making any contact therewith.

3,464,735
SNOWMOBILE CAMPER
Kenneth L. Smith, Corunna, Ind., assignor to Dolphin-Kamper, Inc., Corunna, Ind., a corporation of Indiana
Filed Aug. 28, 1968, Ser. No. 756,011
Int. Cl. B60p *3/34;* **B62b** *19/00*
U.S. Cl. 296—23 **13 Claims**

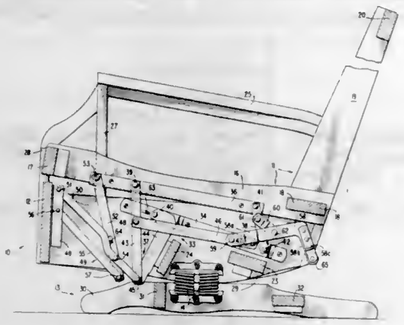


A vehicle, preferably on ski-runners, comprising a body having upstanding side and end walls surrounding a floor, with a hinged leaf at each side of the body, said leaves being respectively swingable about separate longitudinal axes, between in-folded and laterally extended, substantially horizontal positions, removable brace means for supporting said leaves in their extended positions, a hip-type tent having the lower edges of its side panels secured to the free edges of said leaves, respectively, two major U-shaped frames removably associated with the vehicle for supporting the apex of the tent and two minor U-shaped frames removably associated with the vehicle for supporting the respective hips of the tent to retain the tent in extended, use condition; all four frames being collapsible for storage in the body of the vehicle and the tent being foldable about the leaves, when collapsed, and when the leaves are in-turned, to establish a travel condition, a removable tarpaulin preferably being provided for securement to the vehicle to overlie and protect the folded tent. In the preferred form, the runners are provided with readily-removable wear bars and improved support means mounts the vehicle body on the runners and a draft tongue is connected in a novel manner to the runners.

3,464,736
RECLINING ROCKING CHAIR FIXTURE
Ned W. Mizelle, High Point, N.C., assignor to General Steel Products, Inc., High Point, N.C., a corporation of North Carolina
Filed Aug. 21, 1967, Ser. No. 662,101
Int. Cl. A47c *3/02*
U.S. Cl. 297—84 **13 Claims**

A combined rocking and three position reclining chair having an integral seat-back unit with an extendible leg rest, constrained compound linkage means for swinging the seat-back unit from an upright chair position to an intermediate position with a motion that is principally

translatory, the linkage reaching a dead center position at the intermediate chair position and thereafter swinging the seat-back unit to a reclining position with a motion which is principally rotary; the linkage means extending



the leg rest between upright and intermediate positions and keeping it extended in reclining position; and there being means actuated by the linkage for automatically locking the chair against rocking both in intermediate and reclining positions.

ERRATA

For Class 297—216 see:
Patent No. 3,464,751

For Class 297—231 see:
Patent No. 3,464,752

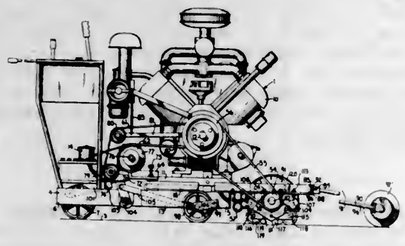
For Class 297—232 see:
Patent No. 3,464,753

For Class 297—282 see:
Patent No. 3,464,754

For Class 298—22 see:
Patent No. 3,464,755

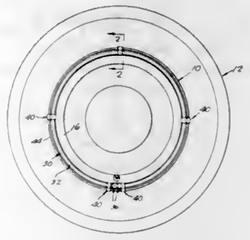
For Class 299—19 see:
Patent No. 3,464,756

3,464,737
ROAD GROOVING APPARATUS
Victor H. Haase and John R. Harclerode, Kansas City, Mo., assignors to Robert G. Evans Company, Kansas City, Mo., a corporation of Missouri
Filed Sept. 11, 1967, Ser. No. 666,761
Int. Cl. E01c *19/00;* **E02f** *3/76;* **E21c** *47/00*
U.S. Cl. 299—39 **6 Claims**



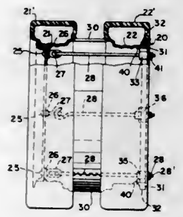
Apparatus for cutting multiple shallow grooves in the surface of pavement or the like includes parallel rotary cutting blades mounted on a shaft and spaced apart with spacer collars having axially directed drive pins extending into the blades, the blades and collars being positioned between forwardly projecting structural members on a rigid frame, the blades being supported above the ground for groove cutting by four wheels with a pivotal connection between pairs of wheels, reducing the effects of abrupt surface variations. A header pipe with spaced nozzles directs cooling fluid between the blades and a reversing pulley system permits easy conversion from a standard concrete saw. A reversible guide member projecting forwardly of the apparatus permits accurate alignment and cutting of grooves from either direction.

3,464,738
DYNAMIC WHEEL BALANCING MEANS
Comer C. Pierce, 1100 Universal Marion Bldg., 21 W. Church St., Jacksonville, Fla. 32202
Filed Mar. 11, 1968, Ser. No. 712,249
Int. Cl. B60b *1/00, 27/00;* **G05g** *1/00*
U.S. Cl. 301—5 **8 Claims**



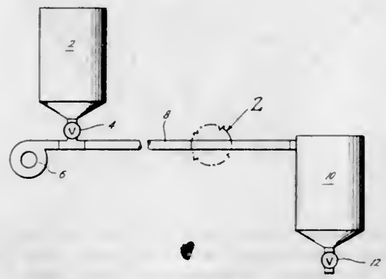
An attachment for vehicle or other wheels having an imbalanced condition and comprising an elongated length of a hollow conduit having a pair of opposed open ends, the conduit having an arcuate configuration conforming to the peripheral marginal edge of the wheel to which the attachment is to be secured; an aggregate disposed within said conduit and partially filling the same; individual means for closing each respective end of said conduit; and, means for connecting the aggregate carrying conduit to the aforementioned marginal edge of said wheel.

3,464,739
DUAL TRACTOR TIRE ATTACHMENT
Melvin O. Johnson, 604 11th Ave. N., East Grand Forks, Minn. 56721
Filed May 8, 1967, Ser. No. 636,805
Int. Cl. B60c *17/00*
U.S. Cl. 301—39 **2 Claims**



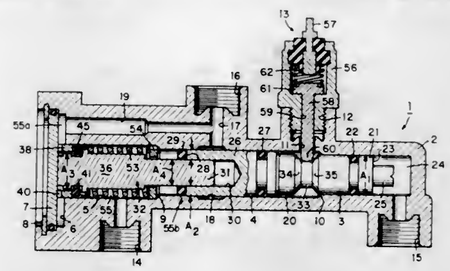
The invention comprises a dual tractor tire attachment for a tractor having an inner and outer wheel with a spacer therebetween, an annular rod fitted into the annular ridge in the outer wheel, a plurality of rod attachment plates adjacent the inner edge of said annular rod with each plate having a C-shaped center portion and outwardly diverging end flange portions diverging outwardly from the C-shaped portion with portions of the outwardly diverging end flanges fixed to the inner edge of the annular rod and portions of the end flanges extending over the annular inner wall of the outer wheel and adjacent thereto, connecting rod means attached at their one ends to the inner wheel and extending through said C-shaped portions at their other ends and tightened thereto.

3,464,740
AXIAL GROOVE CONVEYING TUBE
Stanley R. Scruby and Donald J. McIver, Houston, Tex., assignors, by mesne assignments, to Keystone Valve Corp., Houston, Tex.
Continuation of application Ser. No. 725,959, May 1, 1968, which is a continuation of application Ser. No. 613,882, Feb. 3, 1967. This application Nov. 25, 1968, Ser. No. 778,865
Int. Cl. B65g *53/34*
U.S. Cl. 302—64 **5 Claims**



A low pressure pneumatic conveyor conduit with longitudinally serrated interior surface.

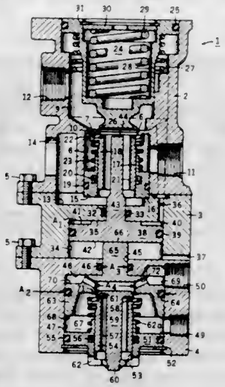
3,464,741
CONTROL VALVE
Edward J. Falk, St. Louis, Mo., assignor to Wagner Electric Corporation, Newark, N.J., a corporation of Delaware
Filed Feb. 12, 1968, Ser. No. 704,732
Int. Cl. B60t *13/12*
U.S. Cl. 303—6 **23 Claims**



A control valve including a proportioning portion for effecting a metered application through said control valve of fluid pressure supplied thereto, a control portion movable from a normally centered position toward opposed translated positions in response to a predetermined differential between said supplied fluid pressure and another fluid pressure separately supplied to said control valve, and by-pass passage means for the first named supplied fluid pressure and subjected thereto upon movement of said control portion to one of its opposed translated positions to obviate the metering function of said proportioning means.

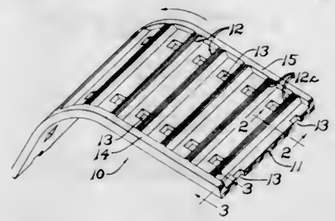
3,464,742
CONTROL VALVE
Oliver B. Cruse, Florissant, Mo., assignor to Wagner Electric Corporation, Newark, N.J., a corporation of Delaware
Filed Mar. 29, 1968, Ser. No. 717,300
Int. Cl. B60t *17/02, 15/06, 15/12*
U.S. Cl. 303—13 **12 Claims**

A control valve having application means movable therein to establish service fluid pressure for normally effecting service energization of the vehicle brakes, other application means normally applying emergency fluid pressure to spring set brake cylinders to maintain the spring-driven member thereof disabled and operable by the first named application means upon the failure of the service fluid pressure to effect the actuation of the



spring-driven member, and operating means responsive to the established service fluid pressure for moving said other application means to a position exhausting the emergency fluid pressure from the spring set brake cylinders to permit actuation of the spring-driven member thereof for effecting mechanical actuation of the vehicle brakes.

3,464,743
TRACTION DEVICE
Allan D. Hallaman, Akron, Ohio, assignor to The B. F. Goodrich Company, New York, N.Y., a corporation of New York
Continuation of application Ser. No. 590,755, Oct. 31, 1966. This application Aug. 12, 1968, Ser. No. 754,101
Int. Cl. B62d *55/24*
U.S. Cl. 305—35 **9 Claims**

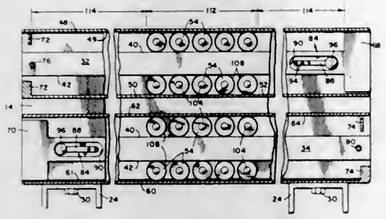


An endless traction belt of resilient elastomer reinforced with textile material and having spaced holes for receiving the teeth of one or more driving sprockets. The traction surface of the belt comprises peripherally spaced, transverse ribs of trapezoidal cross section with one side face of each rib extending at an acute angle to the surface of the belt and the opposite side face disposed at an angle of 90° to the belt surface. The radially outer face of the ribs may have an anti-skid pattern.

3,464,744
HEAVY-DUTY CHASSIS TRACK
Herbert S. Fall, 6248 E. Iona St., Indianapolis, Ind. 46203
Filed Apr. 19, 1967, Ser. No. 632,073
Int. Cl. F16c *35/02, 29/00, 21/00*
U.S. Cl. 308—3.8 **10 Claims**

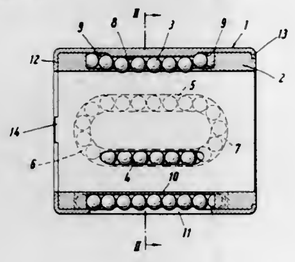
A chassis track comprising a main track unit having upper and lower track units mounted thereon for longitudinal, relative reciprocation therealong, the upper track

unit telescopically receiving the upper edge portion of said main track unit and the lower track unit telescopically receiving the lower edge portion of said main track unit. Anti-friction means are carried between the track surfaces of the upper track unit and main track unit and additional anti-friction means are carried between track surfaces of the lower track unit and the main track unit, the track



surfaces and anti-friction means being arranged so that any vertical load applied to the chassis track results in vertical compressive loads only on the track units. In preferred embodiments, the anti-friction means are cylindrically-shaped rollers, each of which has a resilient annulus disposed circumferentially thereabout, the annulus being effective resiliently to engage the surfaces on which and under which the roller is carried.

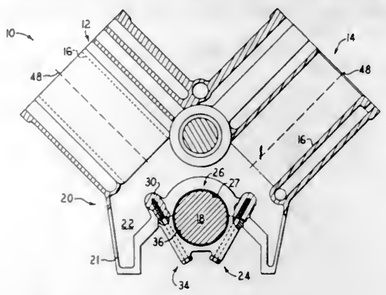
3,464,745
BALL BEARING FOR LONGITUDINAL MOVING SHAFTS
Georg Schaeffler, Herzogenaurach, Germany, assignor to Industriewerk Schaeffler OHG, Herzogenaurach, Germany, a corporation of Germany
Filed Nov. 14, 1967, Ser. No. 682,887
Claims priority, application Germany, Nov. 15, 1966, J 32,242
Int. Cl. F16c *29/06, 19/04*
U.S. Cl. 308—6 **3 Claims**



A ball bearing for the mounting of shafts having longitudinal motion consisting of a thin-walled cylindrical sheet metal race and a guide sleeve arranged in concentric relation thereto and which has a plurality of ball guides distributed about its circumference, the ball guides consisting of two linear guiding zones running parallel to the bearing axis and two semi-circular guiding zones connecting the linear guiding zones.

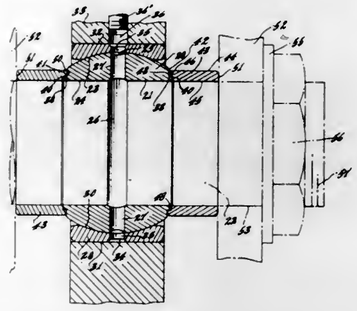
3,464,746
CRANKSHAFT MOUNTING ASSEMBLY
Robert L. Weber, Lacon, Ill., assignor to Caterpillar Tractor Co., Peoria, Ill., a corporation of California
Filed June 16, 1967, Ser. No. 646,597
Int. Cl. F16c *9/00, 3/06;* **F02f** *7/00*
U.S. Cl. 308—23 **3 Claims**

A mounting assembly for the crankshaft of a V-type engine. The invention provides a bearing saddle and a bearing cap, which cooperate to provide a cylindrical bearing surface for the engine crankshaft. The bearing saddle and bearing cap have respective abutting surfaces of interengagement, and are secured together at such surfaces by two bolts. Each of the bolts extends obliquely with respect to the surfaces of the inter-engagement.



Each bolt thus provides a load at such surfaces, which load has both a vertical and a horizontal component of force. The vertical component of force tends to resist separation of the cap from the saddle. The horizontal component of force tends to resist sliding movement of the cap with respect to the saddle.

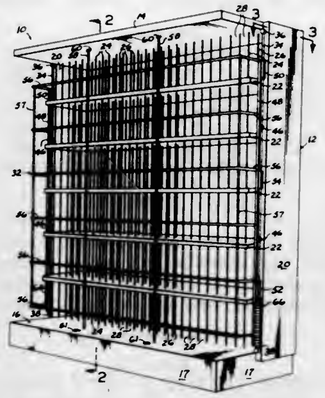
3,464,747
SELF-ALIGNING PLAIN BEARING
Heinrich K. Schmidt, Levittown, Pa., assignor to Roller Bearing Company of America, West Trenton, N.J., a corporation of New Jersey
Filed Mar. 12, 1968, Ser. No. 716,268
Int. Cl. F16c *9/06, 23/00, 25/00*
U.S. Cl. 308—72 **2 Claims**



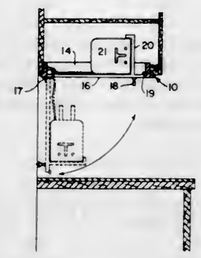
The invention relates to an improved self-aligning plain bearing of the type which has a spherical inner race cooperating with a spherical outer race, the spherical inner race or ball having at one or both ends an annular interlock which can be engaged by a cooperating interlock on a tubular extension. To provide sufficient compliance to engage and disengage the interlock on the extension, the extension is split at a point around the circumference and is resiliently deflectable.

3,464,748
TAPE DISPLAY CASE
Jerry D. Gregory, 8109 NW. 28th, Bethany, Okla. 73127
Filed Sept. 5, 1968, Ser. No. 757,553
Int. Cl. E05b *65/46*
U.S. Cl. 312—216 **9 Claims**

An upright cabinet having an open front permitting access to horizontal shelves is provided with dividers extending vertically between the shelves to define a plurality of tape container receiving slots extending horizontally inward of the cabinet from the open front. Vertically movable, normally locked gate means, supported by the cabinet, permits limited horizontal movement of the tape containers outwardly of their respective shelf slot and removal of the containers from the cabinet only when unlocked.



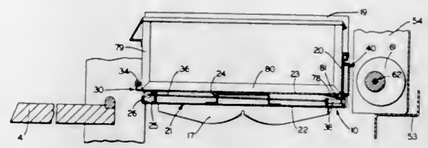
3,464,749
FOLD-AWAY KITCHEN APPLIANCE SUPPORT
Bruce L. Bishop, 1501 Main St., Cross Plains, Wis. 53528
Filed Nov. 3, 1967, Ser. No. 680,378
Int. Cl. A47b *46/00, 67/02;* **H05k** *5/02*
U.S. Cl. 312—248 **4 Claims**



A fold-away kitchen appliance support having a rectangular frame mounted in an opening in the bottom of a kitchen cupboard. A panel is hingedly connected at the rear of the frame for swinging movement between a horizontal closed positioned wherein it extends across the opening in the bottom of the cupboard and a vertical open position below the opening. The panel has a shelf, arms, or the like thereon for supporting an appliance in working position below the cupboard when the panel is open.

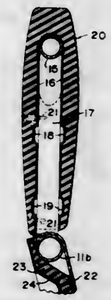
3,464,750
TRAY-RETAINER CONSTRUCTION FOR POWER FILES
Walter G. Anders, Canton, Ohio, assignor to Diebold, Incorporated, Canton, Ohio, a corporation of Ohio
Filed Nov. 13, 1967, Ser. No. 682,111
Int. Cl. A47f *3/08, 5/00;* **A47b** *49/00*
U.S. Cl. 312—268 **16 Claims**

A movable tray-retaining lip construction on each of the pans of an endless conveyor power file wherein the pans move in a continuous orbit of travel and any selected pan is stopped at a work station. The pan lip is lowered on arrival of the selected pan at the station so that any of a number of trays, normally safely held against dislodgment on the pan, may be rolled out of the pan to



a work position without special suspension means for each tray on the pan. The trays seek their own storage position when moved back onto the pan and the conveyor power drive is interlocked so that the conveyor cannot be moved when any lip is out of tray-retaining position.

3,464,751
SAFETY SEAT STRUCTURE
Chester J. Barecki, Grand Rapids, and Richard A. Morse, Wyoming, Mich., assignors to American Seating Company, Grand Rapids, Mich., a corporation of Delaware
Filed Nov. 17, 1967, Ser. No. 683,976
Int. Cl. B60r *21/10*
U.S. Cl. 297—216 **4 Claims**

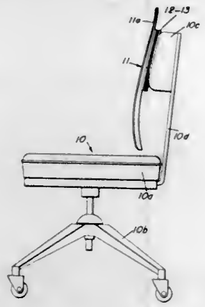


A vehicle seat back is provided with a frame extension at its top carrying a malleable energy-absorbing metal web with a resilient covering or cushion about it, the metal serving as an energy-absorbing barrier in the case of a collision or sudden deceleration of the vehicle and protecting the head of the seat occupants. The seat back is provided with a molded glass fiber body provided with padding interposed between panels.

3,464,752
BACK SUPPORT
Edward Froelich, 5408 Eastview Park, Chicago, Ill. 60615
Filed May 22, 1967, Ser. No. 640,228
Int. Cl. A47c *7/42, 7/46*
U.S. Cl. 297—231 **1 Claim**

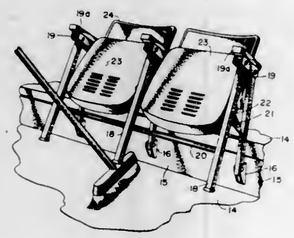
A support for the back of an occupant of a chair, a bench, an automobile seat, or the like, which support comprises a rigid and contoured orthopedic back-supporting element, together with magnetic means secured thereto and cooperating with other magnetic means se-

cured to the back of the said seat of the chair, the bench, the automobile seat, or the like, for adjustably positioning



the orthopedic back-supporting element to suit the needs of the particular occupant.

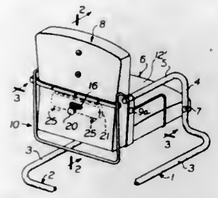
3,464,753
FOLDING CHAIR SEATING
Arthur L. Van Ryn, Grand Rapids, Mich., assignor to American Seating Company, Grand Rapids, Mich., a corporation of Delaware
Filed Aug. 30, 1967, Ser. No. 664,507
Int. Cl. A47c *15/00, 4/00;* **E04h** *3/12*
U.S. Cl. 297—232 **4 Claims**



In a sectional telescoping platform structure, uprights carry chair platforms with risers supported at the rear of each platform. Brackets are mounted at elevated positions on the risers and folding chairs have their rear legs pivotally mounted on the brackets, the front legs of the chairs being connected at their tops by cross arms to the rear legs and having their lower free end portions swingable outwardly to engage the platforms and thus support the chairs in use position. The chairs may be swung upwardly to render the platforms unobstructed throughout for sweeping or cleaning, and each chair may be folded upon itself and swung downwardly against the platform below to provide a compact structure occupying little space.

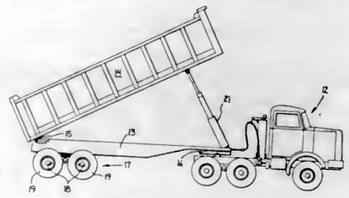
3,464,754
ORTHOPEDIC CHAIR
Louis Gottfried and Jacob Berger, New York, N.Y., assignors, by mesne assignments, to Rex-Stroll-O-Chair Company, New York, N.Y., a partnership
Filed Jan. 17, 1967, Ser. No. 609,942
Int. Cl. A47c *7/46*
U.S. Cl. 297—284 **11 Claims**

The present disclosure relates to an orthopedic chair the seat and/or back of which comprises a rigid member which has at least one opening therein. An elastomer layer engages the rigid member and a front layer engages the elastomer layer. A rigid positioning member is disposed between the elastomer layer and the rigid member and the rear face of the rigid positioning member is disposed opposite the opening in the rigid member. A bolt extends through the opening of the rigid member for moving the positioning member, thereby causing the elastomer layer likewise to be moved and producing a curvature in the front layer. Finally, resilient means are provided for



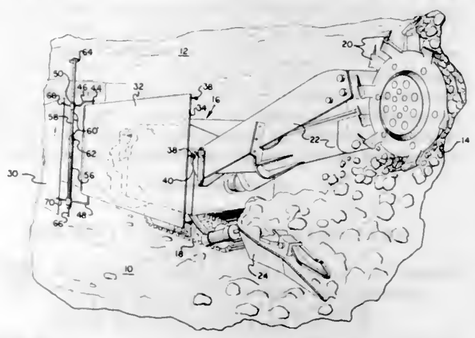
continuously urging the rear face of the positioning member against the movable bolt means. Advantageously, means for securing the front face of the positioning member to the elastomer layer can also be provided.

3,464,755
DUMP TRAILER SAFETY DEVICE
Edward Brown, 4544 Edmonson St., Indianapolis, Ind. 46226
Filed July 24, 1967, Ser. No. 655,362
Int. Cl. B60p *1/30*
U.S. Cl. 298—22 **10 Claims**



A dump trailer safety device having a tilt switch for mounting on the frame or an axle of a dump trailer, a solenoid valve operated by the tilt switch, and a pneumatic cylinder and piston operated by the solenoid valve to override manual control of the dump trailer to permit dumping of the dump trailer only when the dump trailer is substantially horizontal.

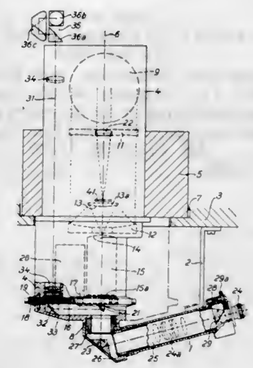
3,464,756
VENTILATION CONTROL SYSTEM
James V. Burgess, Jr., Box 385, Madison, W. Va. 25130
Filed Nov. 15, 1967, Ser. No. 683,199
Int. Cl. E21f *1/00, 3/00;* **E21c** *29/22*
U.S. Cl. 299—19 **6 Claims**



A ventilation control system consisting of an extensible and retractable air current directing curtain attachable

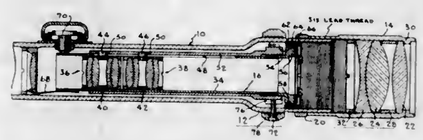
to an underground mining machine to direct the flow of air over the cutting bits of the machine and as close to the working face of the mine as possible to render harmless any gas emissions, and to provide a current of air to sweep away dust that has become suspended by the cutting action of the machine.

3,464,757
DAY-NIGHT OPTICAL VIEWING DEVICE
Horst Schmidt, Nauborn, Kreis Wetzlar, and Hellmut Böhmer, Hasselborn, Kreis Wetzlar, Germany, assignors to Ernst Leitz G.m.b.H., Wetzlar Optische Werke, Wetzlar, Germany
Filed Oct. 22, 1965, Ser. No. 501,766
Claims priority, application Germany, Feb. 24, 1965, L 50,053
Int. Cl. G02b *13/14*
U.S. Cl. 350—1 **14 Claims**



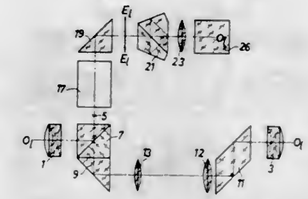
A sighting device for both daytime and nighttime viewing in which a dual optical system having the same beam path is arranged with a mirror objective assembly for night viewing and a lens system in the central portion of the mirror objective for day viewing. A fixed ocular assembly is provided in the beam path and two optical systems are provided one for night viewing including an image converter and one for day viewing including the intermediate optical system. Means are provided for selectively moving either the intermediate optical system or the movable night viewing system into the beam path for selective day or night viewing.

3,464,758
RIFLESCOPE WITH O-RING SUPPORT AND MULTIPLE LEAD FINE THREADED EYEPIECE
Harry L. Glwosky, Milwaukee, Wis., assignor to Realist, Inc., Menomonee Falls, Wis., a corporation of Delaware
Filed Nov. 18, 1964, Ser. No. 412,038
Int. Cl. G02b *27/36*
U.S. Cl. 350—10 **2 Claims**



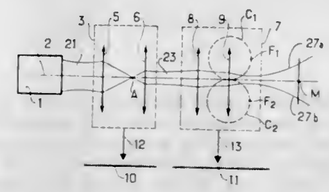
The reticle is adjustably mounted on the optical axis of the erector lens tube which is supported in an O ring allowing windage and elevation adjustment of the tube inside the scope tube. The eyepiece is mounted on fine six-lead threads assuring rapid focus before the eye can accommodate a nearly focused condition.

3,464,759
STEREOSCOPIC OBSERVATION DEVICES
Horst Schöler and Klaus Herda, Jena, Germany, assignors to VEB Carl Zeiss Jena, Jena, Germany
Filed Dec. 2, 1965, Ser. No. 545,778
Int. Cl. G02b *21/22*
U.S. Cl. 350—36 **4 Claims**



A stereomicroscope, particularly for photogrammetry, comprises two pairs of eyepieces and two objectives. Between the one objective and one eyepiece of the one pair is located a beam splitter for the beam from the said one objective, and between the other objective and one eyepiece of the other pair is located a beam splitter for the beam from the said other objective. The remaining two eyepieces of the two pairs respectively receive the split-off parts of the two beams so that stereoscopic observation and measurement is possible for two observers at one and the same time.

3,464,760
OPTICAL SYSTEM WITH VARIABLE FOCAL LENGTH
Pierre Laures, Chatenay-Malabry, France, assignor to Compagnie Generale d'Electricite, a corporation of France
Filed Mar. 6, 1968, Ser. No. 710,880
Claims priority, application France, Mar. 6, 1967, 97,615
Int. Cl. G02b *15/00, 7/04*
U.S. Cl. 350—40 **6 Claims**

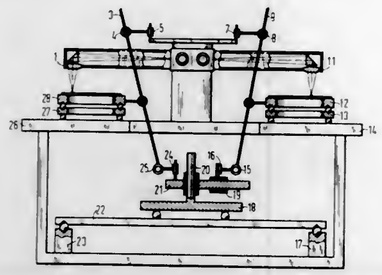


A system suitable for the exit of a laser comprising, disposed on the axis of the laser beam, a first afocal system of magnification g and a second optical system formed by a first convergent lens of focal length f_1 and a convergent optical element of which the optical centre is positioned at the image focus of the first lens and of focal length f_2 close to f_1.

3,464,761
PHOTOGRAMMETRIC AFFINE PLOTTERS
Hermann Alfred Otto Hofmann, 4 am Hain, Munich, Germany
Filed Apr. 6, 1964, Ser. No. 357,469
Claims priority, application Germany, Apr. 8, 1963, H 48,790
Int. Cl. G02b *27/22*
U.S. Cl. 350—136 **10 Claims**

An affine plotter has stationary binocular optical systems whose objective axes are parallel and intersect the supporting surfaces of respective image carriers in a

common plane. The carriers move perpendicularly to the associated optical axis only while their supporting surfaces remain perpendicular to the optical axis and at a fixed distance from the entrance member of the associated optical system. The carriers are linked to a base



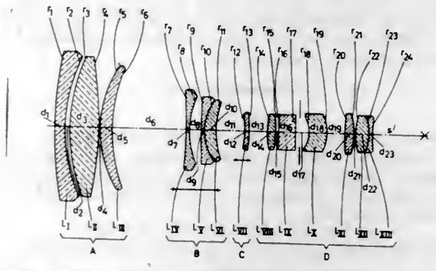
carriage in such a manner that the relationships of points on photograms taken at oblique angles and supported on the carriers are converted to the corresponding relationships of photograms taken vertically when the base carriage is moved during plotting in the usual manner.

3,464,762
OPTICAL WAVE MODULATOR
Dawon Kahng, Somerville, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Dec. 16, 1965, Ser. No. 514,340
Int. Cl. G02f *1/26*
U.S. Cl. 350—150 **6 Claims**

A semiconductor optical modulator in which an optical wave path of electro-optical material is bounded by thin layers of low-loss insulating material. This eliminates the metal electrodes from the immediate vicinity of the optical wave energy and, thereby reduces the losses in the modulator. It also results in a substantial reduction in the amplitude of the modulating electrical field required to produce a significant degree of modulation.

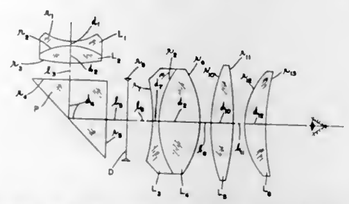
3,464,763
PHOTOGRAPHIC OBJECTIVE HAVING A CONTINUOUSLY VARIABLE FOCAL LENGTH
Johannes Berger, Heidenheim (Brenz), Germany, assignor to Carl Zeiss-Stiftung, doing business as Carl Zeiss, Heidenheim (Brenz), Wurttemberg, Germany, a corporation of Germany
Filed Mar. 30, 1966, Ser. No. 538,673
Claims priority, application Germany, Apr. 3, 1965, Z 11,452
Int. Cl. G02b *1/00, 9/00*
U.S. Cl. 350—176 **1 Claim**

A photographic objective having a continuously variable focal length and comprising four axially aligned lens groups of which the first lens group is collective, the second lens group is dispersive, the third lens group is dispersive and the fourth lens group is collective, and in which the change in the focal length is effected by axially adjusting the two dispersive lens groups relatively to each



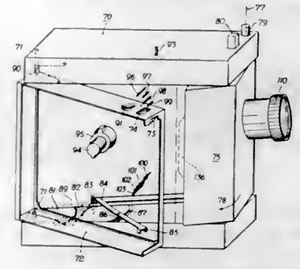
other and relatively to the two collective lens groups along the optical axis of the objective.

3,464,764
WIDE ANGLE EYEPIECE WITH LARGE EYE RELIEF
Wright H. Scidmore, Langhorne, and Robert J. Wolfe, Philadelphia, Pa., assignors to the United States of America as represented by the Secretary of the Army
Filed Apr. 22, 1968, Ser. No. 722,924
Int. Cl. G02b *17/00*
U.S. Cl. 350—202 **1 Claim**



A compact wide angle eyepiece having large relief is provided. The eyepiece includes, proceeding towards the observer's eye, a cemented doublet negative field lens, a 90° prism, a diaphragm followed by another cemented doublet field lens, a center lens and an eyelens.

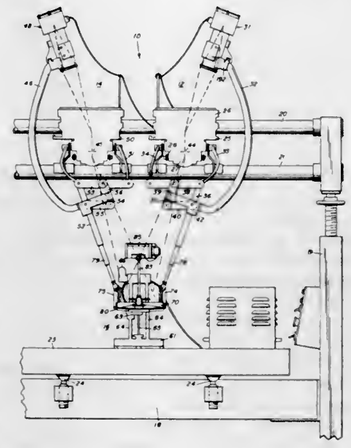
3,464,765
CARTRIDGE FOR STRIPLIKE RECORD CARRIER AND APPARATUS FOR HANDLING STRIPLIKE RECORD CARRIER
Heinz Wilhelm Broeckl, Boblingen, Germany, and Otto Freudenschuss, Vienna, Austria, assignors to Karl Vockenhuber and Raimund Hauser, both of Vienna, Austria
Filed Aug. 2, 1966, Ser. No. 569,629
Claims priority, application Austria, Aug. 3, 1965, A 7,184/65; Sept. 7, 1965, A 8,196/65
Int. Cl. G03b *23/02*
U.S. Cl. 352—72 **23 Claims**



A cartridge type motion picture projector has a cartridge holder which is pivotally attached to the projector

housing. The cartridge for use in the projector has an arm which is pivotally attached to the cartridge at one end and carries film guide rollers at the opposite end. If the cartridge holder is pivoted away from the projector the cartridge can be placed in the holder. Then when the holder is pivoted to its closed position the guide arm on the cartridge is automatically pivoted away from the cartridge to form a guide path for the film.

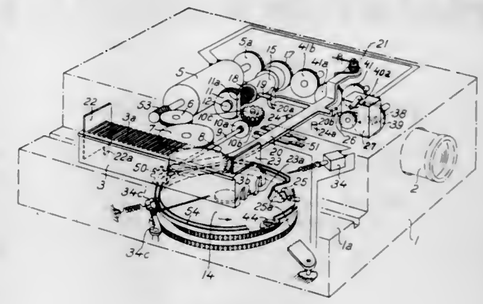
3,464,766
STEREO-IMAGE ALTERNATOR SYSTEM
Jack William Knauf, Falls Church, Va., assignor to the United States of America as represented by the Secretary of the Interior
Filed Oct. 28, 1966, Ser. No. 591,057
Int. Cl. G03b *21/14*
U.S. Cl. 353—6 **11 Claims**



A stereoscopic plotting apparatus has an optical system comprising a pair of image projecting mechanisms for projecting a right eye view and a left eye view upon the same area of a viewing plane. Each projecting mechanism has a shutter and the shutters are synchronized such that the left eye view and the right eye view are alternately projected onto the viewing plane. A viewing apparatus has a shutter mechanism which is synchronized with the shutters of the projecting mechanisms and provides for alternate viewing of the left and right views. An alternate embodiment of a viewing apparatus consists of a pair of glasses on which is mounted a motor driven belt having alternating transparent and opaque areas for alternately blocking the left and right eye views.

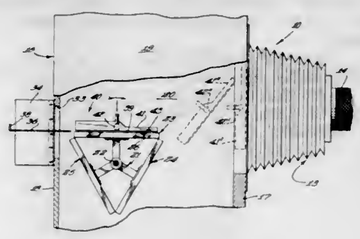
3,464,767
AUTOMATIC SLIDE PROJECTOR WITH BUILT IN TIMER AND AUTOMATIC MAGAZINE RETURNING MECHANISM
Hans Mulch, Wetzlar, Germany, assignor to Ernst Leitz GmbH, Optische Werke, Wetzlar, Germany
Filed Mar. 20, 1967, Ser. No. 624,415
Claims priority, application Germany, Mar. 30, 1966, L 41,825
Int. Cl. G03b *21/00;* **G09f** *11/30*
U.S. Cl. 353—116 **6 Claims**

A slide projector for automatically changing the exhibited slides is provided having a timer for controlling the projection time of the slides. The slide magazine is automatically returned to its starting position immediately following the retransfer of the last slide into the magazine. In order to render the timer and consequently the automatic changing mechanism ineffective during the



period of magazine return, a gear and lever mechanism is incorporated into the projector.

3,464,768
MULTI-SIZE SHEET FILM FEEDING MAGAZINE FOR PHOTOGRAPHIC APPARATUS
Leonard S. Florsheim, Jr., Lake Forest, and Frederick W. Hacker, Clarendon Hills, Ill., assignors to Robertson Photo-Mechanix, Inc., Des Plaines, Ill., a corporation of Illinois
Filed Sept. 30, 1966, Ser. No. 583,394
Int. Cl. G03b *27/60*
U.S. Cl. 355—73 **14 Claims**

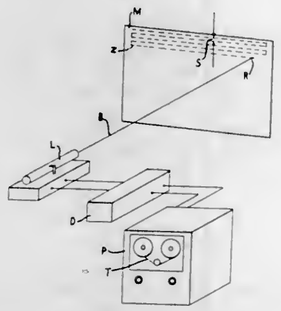


A photographic apparatus including multi-sided or multi-tray sheet-carrying cassettes. A vacuum back is sequentially movable relative to the cassettes for feeding sheets of different sizes in successive photographic operations from a particular cassette to a camera assembly.

3,464,769
CIRCUIT BOARD AND METHOD OF MANUFACTURE
Allen C. Bradham III, Menomonee Falls, Wis., assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware
Filed Dec. 5, 1966, Ser. No. 599,114
Int. Cl. G03b *27/10*
U.S. Cl. 355—84 **3 Claims**

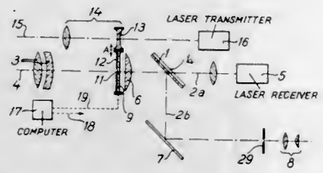
A master circuit board is prepared, comprising an insulating layer on opposite sides of which are attached conductive grids which are staggered relative to one another in one direction across the plane of the layer. These grids present openings on opposite sides of the layer. In the layer are zigzag conductive ribbons which expose lines of conductive areas on opposite faces of the layer in said openings. These areas, with portions of the grids,

form pockets for containment of meltable conductive slugs. Exposed conductive surfaces are covered with photosensitive material. To convert a master board into a circuit board, there is provided scanning means in the form of a laser beam which is under control of programming tape or the like for scanning and intensity of



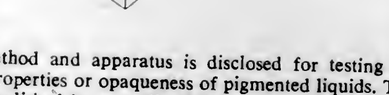
excitation. The beam while scanning is excited to one degree for intermittently exposing photosensitive material on a grid which is subsequently developed and the grid etched to form desired circuitry. The beam is excited intermittently to another degree to melt the slugs and form interconnections between the grids and the ribbons.

3,464,770
COMBINED SIGHTING MECHANISM AND LASER RANGE FINDER
Horst Schmidt, Nauborn, Kreis, Wetzlar, Germany, assignor to Ernst Leitz GmbH, Optische Werke, Wetzlar, Germany
Filed Oct. 21, 1965, Ser. No. 499,346
Claims priority, application Germany, Nov. 7, 1964, L 49,230; Sept. 3, 1965, L 51,552
Int. Cl. G01c *3/08;* **F41g** *3/06;* **G02b** *23/10*
U.S. Cl. 356—4 **9 Claims**



Arrangement combining a laser range finder, including transmitter and receiver, with a sighting mechanism, including an ocular, for determining the distance of a target and for adjusting the angle of elevation required to fire a projectile at the target. The laser range finder and the sighting mechanism have partially coextensive beam paths. A divider mirror in the beam path of the sighting mechanism directs received rays to the laser receiver and sighting mechanism ocular. A reticle plate arranged in front of the mirror is connected to an element of an optical system provided in front of the laser transmitter. The reticle plate and such element are displaceable transversely to the optical axis of such optical system. Means provided in the beam path to the laser receiver block the rays reflected from the target to which the laser receiver is sensitive, except for rays, which correspond to the transmitted beam in divergence and direction and which are within the visible portion of the spectrum; the former being passed to the laser receiver and the latter to the ocular of the sighting mechanism via the divider mirror. Means are also coupled between the laser receiver and the reticle plate for displacing the reticle plate and such element in response to signals from the laser receiver. By this arrangement, adjustments can be made in the elevation angle required for a projectile to reach the target.

3,464,771
PHOTOELASTIC METHOD FOR DETERMINING ACCURATE VALUES OF STRESS CONCENTRATION FACTORS
Paul D. Flynn and Arthur A. Roll, Philadelphia, Pa., assignors to the United States of America as represented by the Secretary of the Army
Filed Sept. 14, 1966, Ser. No. 580,151
Int. Cl. G01b *11/16;* **G01n** *3/00*
U.S. Cl. 356—32 **5 Claims**

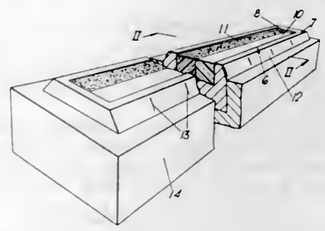


A new photoelastic method for determining stress concentration factors that provides higher accuracy than heretofore attainable by experimental means. Models are tested with a known source of stress concentration, k_1, in series with one unknown source, k_2, which is calculated from the equation:

$$k_2 = k_1 \cdot \frac{\Delta(n_{max.})_2}{\Delta(n_{max.})_1} \cdot \frac{w_2}{w_1}$$

where the stress concentration factor $k=\sigma_{max}/\sigma_{nom}$ based on the net section, $\Delta(n_{max})$ is the increment in the maximum fringe order at the stress concentration corresponding to the increment in applied load, and w is the net width of the bar. The high accuracy of this method lies in the use of the ratio $\Delta(n_{max})_2/\Delta(n_{max})_1$ so that errors due to extrapolation, time-edge effects, and other disturbances tend to cancel.

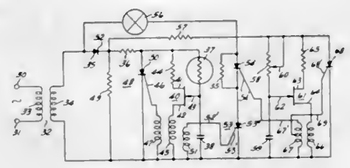
3,464,772
METHOD AND APPARATUS FOR TESTING THE VISUAL PROPERTIES OF PIGMENTED LIQUIDS
Ian H. Day, Southall, England, assignor to Polymark Limited
Filed Aug. 4, 1966, Ser. No. 570,247
Claims priority, application Great Britain, Aug. 9, 1965 33,947/65, Patent 1,085,595
Int. Cl. G01n *21/06*
U.S. Cl. 356—208 **5 Claims**



A method and apparatus is disclosed for testing the visual properties or opaqueness of pigmented liquids. This is accomplished by spreading a liquid sample in an open inclined channel of progressively decreasing depth, the

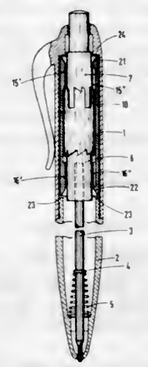
channel having zones of contrasting appearance disposed lengthwise in the bottom thereof. Upon inspection of the sample in the channel without any contact with the exposed surface of the sample in the channel; and under reference illumination conditions a point along the channel will be observed where the contrasting zones become insignificant, this point representing specific visual properties.

3,464,773
PHOTOMETER APPARATUS EMPLOYING MATCHED CIRCUITS
Edward Waz, Hilton, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed Oct. 22, 1965, Ser. No. 501,416
Int. Cl. G01j *1/44*
U.S. Cl. 356—215 **6 Claims**



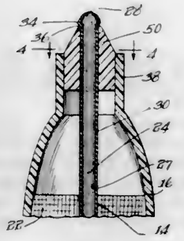
Two circuits cooperate to actuate an indicator when their respective outputs are coincidental. The first circuit includes a photoreceptive element; and the second circuit employs a tunable element. By so setting the tunable element that the indicator gets actuated, a measure is made of the light intensity reaching the photoreceptive element.

3,464,774
WRITING IMPLEMENT, ESPECIALLY BALL-TYPE PEN
Ernst Vetter, 9 Auf der Beune, 6101 Brensbach, Odenwald, Germany
Filed Aug. 22, 1967, Ser. No. 662,407
Claims priority, application Germany, Feb. 24, 1967, V 33,063
Int. Cl. B43k *7/12, 24/08*
U.S. Cl. 401—110 **6 Claims**



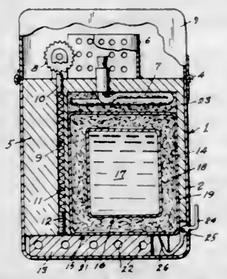
A writing implement with a control mechanism for axial displacement of a writing member within a housing in which said mechanism comprises an actuating member with two spaced apart toothed portions on its outside, the one of said portions which is remote from the nib of the writing member having teeth of alternatively varying length, and another structural member being located against axial movement and concentrically about the actuating member and having spaced projections adapted to engage recesses between adjacent teeth on the tooth portions.

3,464,775
MARKING ELEMENT AND METHOD OF MAKING SAME
Keith F. Beal, Chicago Heights, Ill., assignor to Sanford Research Company, Bellwood, Ill., a corporation of Illinois
Filed Sept. 6, 1967, Ser. No. 681,303
Int. Cl. B43k *5/18;* **B43m** *11/06*
U.S. Cl. 401—199 **7 Claims**



There is disclosed a marking device including a marking element comprising a bundle of thermoplastic fibers. The outermost fibers are thermally joined together to provide an imperforate self-sustaining shell and an end of the element is heat formed to provide a reduced outlet opening for an enlarged relatively rigid self-supporting end portion.

3,464,776
DRY CHARGE CIGARETTE LIGHTER
Peter B. Ferrara, 1206 Vermont Road, Bel Air, Md. 21014
Filed Sept. 1, 1967, Ser. No. 665,691
Int. Cl. F23q *2/42, 2/06;* **F23d** *3/18*
U.S. Cl. 431—124 **5 Claims**



A dry charge cigarette lighter adapted for use with survival kits and like purposes in which an ampule containing a liquid fuel, completely padded in absorbent material, is inserted in the reservoir area of a conventional lighter. In use, the ampule is pierced or crushed to permit the fuel to become absorbed in the absorbent material and also the wick of the lighter.

ERRATUM

For Class 431—126 see:
Patent No. 3,465,355

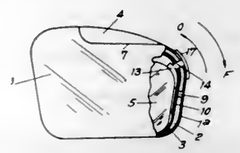
3,464,777

LIGHTER CASING FASTENER

Stanley Herbert Newman, New York, N.Y., assignor to Societe Franco-Hispano-Americaine Francispam

Filed Oct. 20, 1967, Ser. No. 676,886
Claims priority, application France, Nov. 9, 1966, 83,135; Mar. 8, 1967, 97,925
Int. Cl. F23q 2/18
U.S. Cl. 431—142 5 Claims

The invention resides in a slotted band-like frame means for mounting a gaseous fuel reservoir provided with a conventional sparking means, within a two piece casing member. Said frame member being provided with a slidable latching member for selectively retaining the casing members in assembled relation with said frame member and for releasing the casing members from engagement with the frame member for separation of the casing members and replacement of the exhausted gaseous fuel reservoir.



CHEMICAL

3,464,778

PROCESS FOR IMPROVING THE DYEING OF LIVING HUMAN HAIR WITH ANIONIC DIRECT DYES

Peter Berth, Dusseldorf-Benrath, Günter Reese, Dusseldorf, and Karl-Josef Boosen, Dusseldorf-Holthausen, Germany, assignors to Therachemie chemisch therapeutische Gesellschaft m.b.H., Dusseldorf, Germany

No Drawing. Filed Aug. 26, 1965, Ser. No. 482,923
Claims priority, application Germany, Sept. 2, 1964, T 26,923
Int. Cl. A61k 7/12; D06p 1/68; C09b 67/00
U.S. Cl. 8—10.1 18 Claims

This invention relates to a process for improving the dyeing of living human hair with anionic direct dyestuffs. The compounds which cause the improvement are ketones having 5 to 10 carbon atoms, esters of aliphatic alcohols (1 to 8 carbon atoms) and saturated carboxylic acids (2 to 8 carbon atoms); pyridine derivatives; carbonic and sulfurous acid esters of alkylene glycols (2 to 4 carbon atoms); dithiohydantoin; tetrahydrothiophene dioxide; thionaphthene and piperazine hydrate.

3,464,779

METHODS FOR DYEING PILE FABRICS AND COLORED FABRICS OBTAINED THEREBY

Louis Collez, Saint-Die, France, assignor to Societe Anonyme Peltex, Saint-Die, Vosges, France

No Drawing. Filed Mar. 7, 1966, Ser. No. 532,075
Claims priority, application France, Mar. 10, 1965, 8,682
Int. Cl. D06p 5/02, 5/12
U.S. Cl. 8—14 11 Claims

Pile fabrics such as imitation fur, having synthetic polymer fibers as the pile, are dyed by applying dyestuff to only the free ends of the pile fibers, and then heating the fabric within the thermofixing range for the dyestuff to cause the dystuff to migrate along the fibers to obtain a shaded coloration.

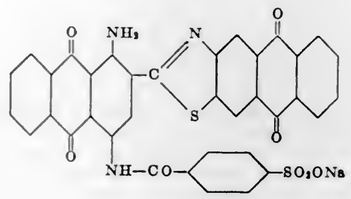
3,464,780

VAT DYEING WITH SULFONATED BENZOYLIMINO-DIANTHRAQUINONE VAT DYES OR VAT DYES WITH FIVE-FUSED RINGS

Kurt Weber, Max Staeuble, and Paul Ulrich, Basel, and Walter Kern, Sissach, Switzerland, assignors to Ciba Limited, Basel, Switzerland, a Swiss company

No Drawing. Continuation-in-part of application Ser. No. 155,479, Nov. 28, 1961. This application Apr. 30, 1965, Ser. No. 452,356
Claims priority, application Switzerland, Nov. 29, 1960, 13,357/60, 13,358/60
Int. Cl. D06p 1/24; C09b 9/02
U.S. Cl. 8—34 8 Claims

Vat dyeing polyhydroxylated textile materials such as cellulosic or polyvinyl alcohol fibrous materials with vat dyes having two anthraquinone groups or 5 fused rings, each of said dyes having a sulfonated benzoylamino group thereon. In an example, the vat dye is



3,464,781

PARTIAL CELLULOSE ETHERS WITH STRONG ANION EXCHANGE PROPERTIES

Ralph J. Berni, Ruth R. Benerito, and John B. McKelvey, New Orleans, La., assignors to the United States of America as represented by the Secretary of Agriculture

Filed May 2, 1967, Ser. No. 635,986
Int. Cl. D06m 13/34; C08b 11/20
U.S. Cl. 8—116.2 3 Claims

This invention relates to the production of partial cellulose ethers with strong anion exchange properties and improved crease recovery. More particularly, this invention relates to the reaction of cellulose pretreated with sodium hydroxide solution with the reaction products of epichlorohydrin and triethyl or triethanol amine to produce a cellulose ether with strong anion exchange properties and improved wet and dry crease resistance.

3,464,782

WOOD PRESERVATION PROCESS

Jacques L. Ricard and Robert D. Graham, Corvallis, and John S. Mothershead, Albany, Oreg., assignors to Research Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed June 29, 1967, Ser. No. 649,796
Int. Cl. A01r 11/00; B27k 5/00; A61l 1/00
U.S. Cl. 21—7 7 Claims

A method for controlling fungus-induced deterioration of wood wherein the wood to be protected is treated with ammonia and a halogen-containing fumigant.

3,464,783

PROCESS FOR WORKING UP ORES WHICH CONTAIN TUNGSTEN

Gyözö Patzauer, Budapest, Hungary, assignor to Egyesult Izzolampa es Villamossagi Reszvenytarsasag, Budapest, Hungary

No Drawing. Filed Dec. 11, 1964, Ser. No. 417,771
Claims priority, application Hungary, Dec. 20, 1963, EE 1,061
Int. Cl. C22b 57/00
U.S. Cl. 23—18 8 Claims

A process for recovering tungsten compounds having a purity of at least 99.999 percent from tungsten-containing ores. The ore is preoxidized with hydrogen peroxide. This is followed by decomposition in a rotary drum during constant grinding with alkali hydroxide, and simultaneous electrolysis. The resulting alkali tungstate solution is transformed directly into calcium tungstate and then, in the presence of hydrochloric acid and a metallic catalyst, into tungstic acid. This acid is then transformed, in the presence of ammonium hydroxide or gaseous ammonia, into ammonium paratungstate, which is dried and transformed into ammonium paratungstate crystals.

3,464,784

EXTRACTION OF TETRAVALENT VANADIUM VALUES FROM THEIR AQUEOUS SOLUTIONS USING HYDROXAMIC ACIDS

Ronald R. Swanson, New Hope, Minn., assignor to General Mills, Inc., a corporation of Delaware

No Drawing. Filed June 1, 1967, Ser. No. 642,688
Int. Cl. C01g 31/00; C22b 55/00
U.S. Cl. 23—22 9 Claims

Tetravalent vanadium values are extracted from aqueous solutions by contacting such solutions with a liquid organic phase comprising a water-immiscible organic solvent and a hydroxamic acid containing at least about eight carbon atoms.

3,464,785

PROCESS FOR PRODUCING ORDERED COMPLEX PEROVSKITE-TYPE CRYSTALS WITH HIGH DIELECTRIC CONSTANTS

Salvatore F. Galasso, Manchester, Conn., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware

Filed Dec. 14, 1965, Ser. No. 513,735
Int. Cl. C01g 35/00; B01d 9/00; H01b 3/02
U.S. Cl. 23—51 3 Claims

Perovskite-type single crystals of the formula

$$A(B'_{0.33}Ta_{0.67})O_3$$

wherein A is barium or strontium and B′ is magnesium, calcium, zinc, nickel or cobalt are prepared by mixing powders of a compound yielding the oxide of A with Ta_2O_5 and the B′ metal oxide and then mixing the powders with a flux of the formula AF_2, wherein A is as defined above. The resulting mixture is heated to a temperature above the melting point of the flux and after holding for at least 0.5 hours is gradually cooled to effect crystal formation.

3,464,786

PROCESS FOR STABILIZING DICALCIUM PHOSPHATE DIHYDRATE

Heinz Harnisch, Lovenich, near Cologne, Joseph Cremer, Hermulheim, near Cologne, and Friedrich Schulte, Hurth, near Cologne, Germany, assignors to Knapsack Aktiengesellschaft, Knapsack, near Cologne, Germany, a corporation of Germany

No Drawing. Filed May 18, 1966, Ser. No. 551,058
Claims priority, application Germany, June 16, 1965, K 56,393
Int. Cl. C01b 25/32
U.S. Cl. 23—108 8 Claims

A process for stabilizing dicalcium phosphate dihydrate wherein less than a stabilizing amount of a stabilizing agent consisting of alkali metal phosphate or alkaline earth metal phosphate is added to the dihydrate in situ during preparation thereof from calcium salts and phosphoric acid; the remainder of said stabilizing agent being added after recovery of the dicalcium phosphate dihydrate and the stabilizing agent and dihydrate jointly ground; and preparations utilizing the specially treated dihydrate.

3,464,787

PURIFICATION OF HYDROGEN CHLORIDE

Samuel Corbett Carson, Runcorn, England, assignor to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

No Drawing. Filed Oct. 26, 1966, Ser. No. 589,492
Claims priority, application Great Britain, Nov. 4, 1965, 46,795/65
Int. Cl. C01b 7/08
U.S. Cl. 23—154 10 Claims

Purification of hydrogen chloride gas containing fluorohydrocarbons and fluorochlorohydrocarbons as impurities by contacting the impure gas with a catalyst such as activated alumina, aluminum fluoride, silica-alumina, and chromium oxide at an elevated temperature.

3,464,788

PROCESS AND APPARATUS FOR PRODUCTION OF NITRIC ACID

Henry N. La Croix, East Orange, N.J., assignor to Foster Wheeler Corporation, New York, N.Y., a corporation of New York

Filed Dec. 15, 1965, Ser. No. 513,937
Int. Cl. C01b 21/38
U.S. Cl. 23—162 6 Claims

A process for production of nitric acid with the steps of: reacting ammonia and air to produce an effluent of essentially water, nitric oxide and other oxides of nitrogen and unreacted air; cooling the effluent in an initial cooling step only to a temperature in the range of 140° F. to 170° F.; separating a liquid phase and a gaseous phase from the effluent; charging the gaseous phase immediately within the bottom of a vertical multiple tray pressurized absorption tower at said range of 140° F. to 170° F. for countercurrent flow with water introduced at the top of the tower at a temperature of about 68° F. to 100° F.; further cooling the liquid phase to about 100° F; charging the liquid phase to about said 100° F. temperature within the central portion of said tower wherein said tower is at an elevated pressure and acid strength matching the strength of the liquid phase and recycling a substantially increased amount of water to the top trays of the tower, withdrawing approximately the same increased amount of water several trays further down of the vertical tower and passing said recycled water through a stripper where the oxides of nitrogen are stripped.

3,464,789

PROCESS OF ISOTOPIC ENRICHMENT BY BITHERMAL EXCHANGE NH_3-H_2

Pierre Courvoisier, Orsay, and Irma Lambert, née Pacht, Antony, France, assignors to Commissariat à l'Energie Atomique, Paris, France, a French establishment

No Drawing. Filed June 28, 1966, Ser. No. 561,009
Claims priority, application France, June 30, 1965, 22,924
Int. Cl. C01c 1/00; C01b 1/00
U.S. Cl. 23—193 11 Claims

The present invention relates to an improved process of isotopic enrichment by bithermal exchange of ammonia and hydrogen. The present disclosure is directed to the discovery that the speed of exchange between the gaseous hydrogen and liquid ammonia may advantageously be increased when an ether soluble in said solution is added to the ammoniacal solution of alkali amide. The ether is preferably an acyclic ether or a cyclic ether.

The choice of the ether is solely limited by the solubility of said ether in the mixture.

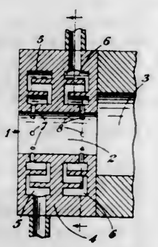
3,464,790
PROCESS FOR MAKING SYNTHETIC SINTERED MAGNESIA
Richard Schrader, Wilfried Grünwoldt, Hubert Hennek, and Götz Kneschke, Freiberg, and Helmut Reinhardt, Saxony, Aken (Elbe), Germany, assignors to Veb Magnesit-Werke Aken, Aken (Elbe), Germany
No Drawing. Filed Oct. 21, 1965, Ser. No. 500,188
Claims priority, application Germany, June 11, 1965, V 28,659
Int. Cl. C01f *5/02*
U.S. Cl. 23—201 **8 Claims**

Process for producing sinter-active magnesium oxide, in which magnesium oxide obtained from solutions of magnesium salts in a comparatively sinter-inactive form is activated by various treatments, all of which bring about a rearrangement of the crystal lattic in the MgO crystal. Such treatments are hydration, ultrasonic treatment and neutron bombardment, also a combination of such treatments. The resulting MgO is then readily sinterable at temperatures below 1800° C. yielding MgO of a density in excess of 3.0 g./cm.^{3}.

3,464,791
PROCESS FOR THE PRODUCTION OF PIGMENTARY TiO_2
Walter Twist, Hartlepool, England, assignor to British Titan Products Company Limited, Billingham, England, a corporation of Great Britain
No Drawing. Filed June 16, 1967, Ser. No. 646,457
Claims priority, application Great Britain, Aug. 26, 1966, 38,299/66
Int. Cl. C01g *23/04;* **C09c** *1/36*
U.S. Cl. 23—202 **14 Claims**

A process for the production of pigmentary titanium dioxide comprising preparing an aqueous titanium sulphate solution, nucleating this solution and subjecting it to thermal hydrolysis to precipitate hydrous titanium dioxide wherein the conditions of hydrolysis are controlled to provide a substantially constant rate of precipitation of hydrous titanium dioxide for at least 60% of the hydrolysis while maintaining the rate of precipitation throughout the process below 1.2% per minute.

3,464,792
METHOD FOR THE PRODUCTION OF METAL OXIDE PARTICLES BY VAPOR PHASE OXIDATION
John Dennis Herriman, Great Ayton, and Alan Lawrence Hare, Norton, Stockton-on-Tees, England, assignors to British Titan Products Company Limited, Billingham, England, a corporation of Great Britain
Filed Mar. 11, 1966, Ser. No. 533,527
Claims priority, application Great Britain, Mar. 18, 1965, 11,356/65
Int. Cl. C01b *13/14;* **C01g** *23/04;* **B01j** *1/14*
U.S. Cl. 23—202 **10 Claims**

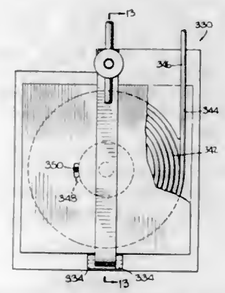


By special design of an injection device and by a particular method of employing such injection device, it is possible to utilize metal injection devices under extremely high temperature conditions to produce metal oxide particles. It had previously been necessary to use refractory ceramic materials for injection devices in this oxidation process.

3,464,793
PROCESS FOR MAKING CARBON BLACK FROM CO
Merrill E. Jordan, Walpole, and William G. Burbine, Whitman, Mass., assignors to Cabot Corporation, Boston, Mass., a corporation of Delaware
Filed Dec. 27, 1966, Ser. No. 604,779
Int. Cl. C09c *1/48*
U.S. Cl. 23—209.3 **3 Claims**

The use of a reaction zone comprising a gas excited to form a thermal plasma in a process for preparing carbon black from carbon monoxide.

3,464,794
VARIABLE VOLUME CONDUIT
Jack Isreeli, Mamaroneck, N.Y., and Leonard T. Skeggs, Kirtland, Ohio, assignors to Technicon Instruments Corporation, Chauncey, N.Y., a corporation of New York
Filed Feb. 23, 1966, Ser. No. 529,366
Int. Cl. G01n *31/00, 21/02*
U.S. Cl. 23—230 **15 Claims**



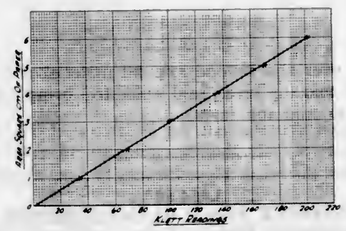
Apparatus and process for effecting a plurality of analytical tests on successive liquid samples. Each liquid sample is broken up into fractional portions, or quotients, each of which is treated with an appropriate reagent at a treatment stage to provide a color reaction indicative of the concentration of a particular constituent under test. Each treatment stage is connected along a flexible, resilient conduit means having a normal cross-sectional area to a corresponding flow cell in a colorimeter. To insure that portions of each fraction portion have a maximum optical density during read-out, means are provided for continuously varying the cross-sectional area of the conduit means to sequentially phase the arrival time of each fractional portion at its corresponding flow cell.

3,464,795
COPPER WIRE SEGMENTS AS ACCELERATOR FOR INDUCTION FURNACE COMBUSTION OF FERROUS METAL
Howard J. Schmitt, Benton Harbor, and William C. Rohn, St. Joseph, Mich., assignors to Laboratory Equipment Corporation, St. Joseph, Mich., a corporation of Michigan
Filed Mar. 23, 1966, Ser. No. 536,867
Int. Cl. G01n *31/12, 33/20*
U.S. Cl. 23—230 **5 Claims**



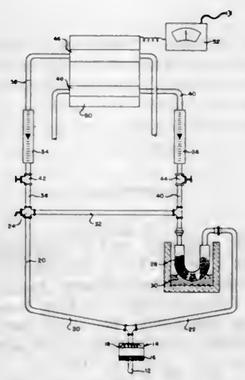
An accelerator for the combustion of ferrous metal samples in an induction furnace which comprises short lengths of tinned or untinned copper wire. It is preferred that the lengths be approximately equal to the diameter of said wire.

3,464,796
METHOD OF DETERMINING AREA
Saul Friedlander, 1127 45th St., Sacramento, Calif. 95819
Filed Oct. 31, 1966, Ser. No. 590,810
Int. Cl. G01n *31/08*
U.S. Cl. 23—230 **7 Claims**



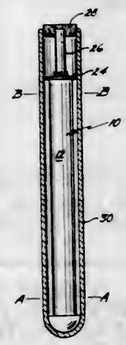
In order to determine an unknown area delineated on a piece of thin base material, such as paper, the paper is previously treated with a predetermined chemical capable of being uniformly eluted by a standardized solution. After delineation of the unknown area on the treated paper, the unknown area portion of the paper is cut out and the chemical eluted therefrom by the standardized solution. This is followed by comparing the amount of chemical yielded by the cut-out portion of the paper with the amount of chemical eluted by the standardized solution from a known area of treated paper.

3,464,797
INSTRUMENT FOR DETERMINING OZONE
Erivan Hagopian, Newton, Mass., assignor to Cabot Corporation, Boston, Mass., a corporation of Delaware
Filed Oct. 26, 1966, Ser. No. 589,616
Int. Cl. G01n *31/10*
U.S. Cl. 23—232 **5 Claims**



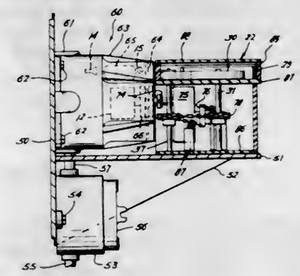
A process for measuring the quantity of ozone in a gas stream which entails catalytically decomposing ozone to oxygen, dissipating heat of reaction and measuring a difference in thermal conductivities, and an apparatus suitable for carrying out said process.

3,464,798
ION-EXCHANGE OR CHEMICAL INTERACTION PLASTIC FORM
Gustave Frederick Kilthau, 3250 Lasses Blvd., San Antonio, Tex. 78223
Filed Nov. 16, 1965, Ser. No. 508,174
Int. Cl. G01n *31/04*
U.S. Cl. 23—253 **5 Claims**



A nonabsorbent, molded, cellular ion-exchanger or chemical reaction member proportioned with respect to a container to displace a small amount of liquid in said container around the member to accelerate ion-exchange or chemical interaction.

3,464,799
GAS DETECTOR
Charles L. Kimbell, P.O. Box 19035, Houston, Tex. 77055
Filed June 14, 1965, Ser. No. 463,678
Int. Cl. G01n *27/62, 29/02*
U.S. Cl. 23—254 **8 Claims**

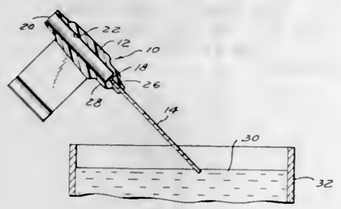


A gas detector which moves an indicator strip at a constant rate for continuously exposing a new portion of the strip to a gas while simultaneously measuring or sensing light reflected by the exposed portion of the strip. Such detector has a portion thereof subject to cause an explosion, such as an electric motor, in an explosion-proof housing while the strip is in a separate sealed container and has a portion thereof passing through a slot for exposing to the gas to be detected.

3,464,800
PIPETTE ASSEMBLY HAVING PRECISE QUANTITY OF DRY STABILIZED REAGENT AND METHOD OF PREPARING SAME
Horace W. Gerarde, 40 Knoll Road, Tenafly, N.J. 07670
Filed Oct. 27, 1966, Ser. No. 590,076
Int. Cl. B01l *3/02, 9/00*
U.S. Cl. 23—259 **2 Claims**

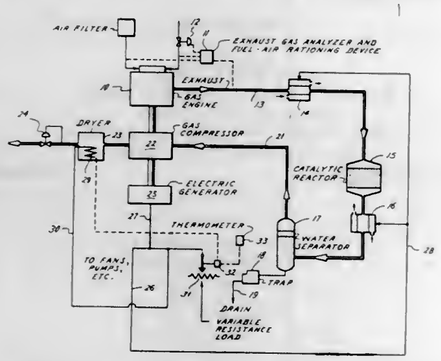
Method of storing a precise measurement of dry reagent within a micro pipette assembly having an internal

chamber within a molded body and an accurately calibrated capillary tube mounted on the body in communication with the chamber. A precise measurement of a



mixture is drawn into the calibrated bore of said micro pipette assembly, then transferred to the inner chamber where the carrier fluid is evaporated, leaving the dry reagent.

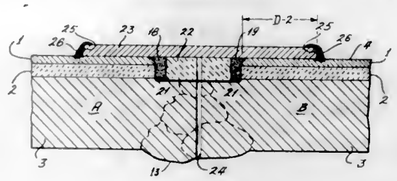
3,464,801
CATALYTIC SYSTEM FOR INERT GAS GENERATION
William F. Barstow, Houston, Tex., assignor to The Tenex Corporation, Houston, Tex., a corporation of Texas
Filed Sept. 28, 1964, Ser. No. 399,804
Int. Cl. B01j *7/00, 9/16*
U.S. Cl. 23—288 **4 Claims**



This patent discloses an inert gas generating system in which exhaust gases from an internal combustion engine are reacted over a catalyst, cooled, separated from water and compressed in a compressor driven by the engine. The engine also drives a power absorption means such as an electrical generator for generating power for any desired purpose. The gas is compressed against a back pressure.

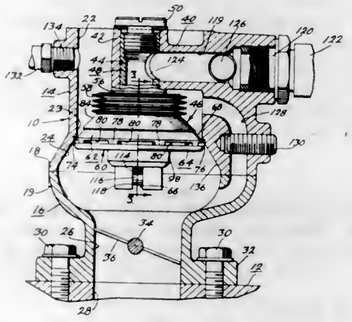
3,464,802
JOINT FOR JOINING CLAD MATERIALS
John J. Meyer, Rock Hill, Mo., assignor to Nooter Corporation, St. Louis, Mo., a corporation of Missouri
Original application Aug. 3, 1966, Ser. No. 574,880. Divided and this application Jan. 22, 1969, Ser. No. 793,127
Int. Cl. B23k *33/00*
U.S. Cl. 29—183.5 **9 Claims**

A joint for joining pieces of clad material in edgewise abutting relation along a vertical edge, said clad material having a top layer of superior corrosion resistant material and an intermediate layer of high heat conducting material and a base metal, the base metal portions joined together by a conventional weld, said top layers and intermediate layers of opposite pieces being cut back to form a gap therebetween, said gap having fill material therein beyond said vertical edges and a weld strip



extending over and beyond said fill material and over a portion of said top layer, said weld strip being welded at its edges to said top layer.

3,464,803
VARIABLE VENTURI CARBURETOR
John A. Kimberley, Granby, Conn., assignor to AMBAC Industries, Incorporated, a corporation of New York
Filed Mar. 30, 1966, Ser. No. 538,808
Int. Cl. F02m *9/14*
U.S. Cl. 48—180 **11 Claims**

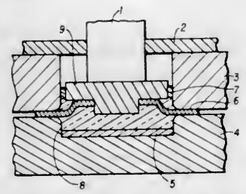


A variable venturi carburetor with a gaseous fuel distribution means which allows for the uniform distribution of a fuel into an annular region of high velocity laminar air flow, located around the periphery of the venturi just below the venturi throat, with means to prevent backfire damage to the carburetor.

3,464,804
METHOD OF CHEMICALLY BONDING CARBON-TITANIUM ALLOY TO A DIAMOND SURFACE
Tatsuo Kuratomi, Chigasaki-shi, Japan, assignor to Takeo Kagitani, Tokyo, Japan
No Drawing. Filed Apr. 11, 1967, Ser. No. 629,892
Claims priority, application Japan, Jan. 31, 1967, 42/5,758
Int. Cl. B24d *3/02, 3/00*
U.S. Cl. 51—293 **2 Claims**

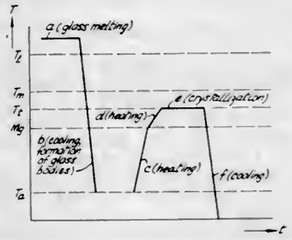
This invention is to obtain a chemically bonded diamond structure by making the surface skin of a diamond powder react with metallic titanium so as to be chemically synthesized into a carbon titanium alloy whereby the chemically atomically bonded carbon titanium alloy may strongly bond the diamond powder in the surface skin of the enclosed diamond after the reaction.

3,464,805
METHOD FOR MAKING A COMPOSITE GLASS-TO-METAL SEAL WITH ONE TRANSITORY METAL
Rafael Landron, Jr., Richardson, Tex., assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware
Filed Dec. 31, 1964, Ser. No. 422,801
Int. Cl. C03c *27/02*
U.S. Cl. 65—23 **9 Claims**



Disclosed is a method for the selective dissolution of copper from an iron-nickel-cobalt glass-sealing alloy by exposing the copper and the alloy to HNO_3 solution.

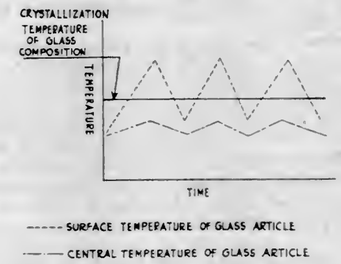
3,464,806
METHOD OF PRODUCING METALLIZED CERAMIC BODIES BY SURFACE COATING OF GLASS DURING DEVITRIFICATION HEAT TREATMENT
Shigeru Seki and Hiroshi Utsumi, Nagoya-shi, Aichi-ken, Japan, assignors to Ishizuka Garasu Kabushiki Kaisha, Aichi-ken, Japan
Continuation-in-part of application Ser. No. 346,124, Feb. 20, 1964. This application June 7, 1967, Ser. No. 644,294
Claims priority, application Japan, Feb. 27, 1963, 38/9,823
Int. Cl. C03c *21/00*
U.S. Cl. 65—32 **3 Claims**



A basic glass composition including definite amounts of a nucleating agent and a metal oxide selected from the group of silver oxide, cuprous oxide and mixtures thereof, is formed into glass bodies of desired configuration by the use of a conventional vitrification process. The bodies are then devitrified by heating in a reducing atmosphere under closely controlled conditions of temperature increase to the final devitrification temperature, to cause freely migrating metal ions released by the oxide to diffuse to the surface of the bodies and to form thereat an adherent metallized coating of desired thickness by reduction of the surface ions by said atmosphere.

3,464,807
METHOD FOR PRODUCING SURFACE COMPRESSION IN CERTAIN GLASSES BY PROMOTING RANDOM SURFACE CRYSTALLIZATION
Jean P. Pressau, Evans City, Pa., assignor to PPG Industries, Inc., a corporation of Pennsylvania
Continuation-in-part of application Ser. No. 376,544, June 19, 1964. This application Mar. 8, 1968, Ser. No. 712,335
Int. Cl. C03b *27/00*
U.S. Cl. 65—33 **10 Claims**

This invention relates to the manufacture of strengthened glass articles. Strength improvement is realized through heat treatments which develop crystal nuclei throughout the glass article and then promote crystalline growth at and near the surface of the glass article. More particularly, this invention relates to a method of producing a strengthened glass article which comprises heating a crystallizable glass containing an internal nucleating

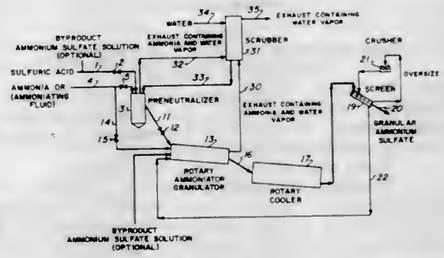


agent to develop nucleation sites throughout the glass article, then increasing the temperature of the glass article in selected portions only to promote crystalline growth in only the selected portions. The invention especially relates to the development of randomly-oriented silica-O crystals in and near the surface portions only of the glass article.

3,464,808
MANUFACTURE OF AMMONIUM POLYPHOSPHATE FROM WET PROCESS PHOSPHORIC ACID
Tommy Carter Kearns, Homewood, Ill., assignor to Swift & Company, Chicago, Ill., a corporation of Illinois
No Drawing. Filed Aug. 18, 1965, Ser. No. 480,788
Int. Cl. C05b *9/00*
U.S. Cl. 71—34 **7 Claims**

Phosphoric acid having P_2O_5 content of between about 55%–65% is reacted with ammonia under conditions that simultaneously neutralize and molecularly dehydrate the acid whereby at least 20% of the orthophosphate is converted to non-orthophosphate (polyphosphate) and the resulting ammonium polyphosphate possesses self-sequestering properties.

3,464,809
PROCESS FOR PRODUCTION OF GRANULAR AMMONIUM SULFATE
Gordon C. Hicks, Sheffield, Ala., assignor to Tennessee Valley Authority, a corporation of the United States
Filed July 14, 1966, Ser. No. 565,212
Int. Cl. C05b *3/00;* **C01c** *1/24*
U.S. Cl. 71—61 **3 Claims**



A two-step process for the production of granular ammonium sulfate consists of (1) partial ammoniation of sulfuric acid in an open tank to prepare a hot (300° F.) solution of ammonium acid sulfate, and (2) completion of the ammoniation with concurrent granulation in a rotating drum or pugmill. Undersize particles are recycled to control granulation in the second step.

3,464,810
PROCESS FOR PRODUCING FLAKED SODIUM METABORATE COMPOSITIONS

John T. Young, Long Beach, and Paul F. Jacobs, Orange, Calif., assignors to United States Borax & Chemical Corporation, Los Angeles, Calif., a corporation of Nevada

No Drawing. Continuation-in-part of application Ser. No. 304,612, Aug. 26, 1963. This application Oct. 22, 1965, Ser. No. 502,504
The portion of the term of the patent subsequent to Apr. 21, 1981, has been disclaimed
Int. Cl. A01n *9/22*; C01b *35/00*
U.S. Cl. 71—82 19 Claims

Solid flakes of sodium metaborate having at least about 3.5 moles of water of hydration are prepared by combining sodium tetraborate and sodium hydroxide in the presence of added free water sufficient to provide a product having at least about 3.5 moles of water of hydration, heating the combination at an elevated temperature of about 75° to about 105° C. to form a fluid plastic-like mass and then feeding this mass to a cooled drum flaker. Optionally, sodium chlorate and/or an organic herbicide can be included in the composition and forms a flaked product of sodium metaborate cocrystallized with sodium chlorate and/or organic herbicide.

3,464,811
HERBICIDAL AMINOHYDRINS

Stanley J. Brois, Cranford, N.J., assignor to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 517,972, Jan. 3, 1966. This application Jan. 24, 1968, Ser. No. 700,009
Int. Cl. A01n *9/22*
U.S. Cl. 71—88 11 Claims

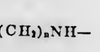
Agricultural compositions or formulations comprising: (1) aminohydrins of the formula



where Y represents



or



groups and (2) an inert diluent or carrier; and the use of such compositions or formulations as pesticides.

3,464,812
PROCESS FOR MAKING SOLIDS AND PRODUCTS THEREOF

Harvey P. Utech, Washington, D.C., and Merton C. Flemings, Lexington, Mass.; said Flemings assignor to Massachusetts Institute of Technology, Cambridge, Mass., a corporation of Massachusetts

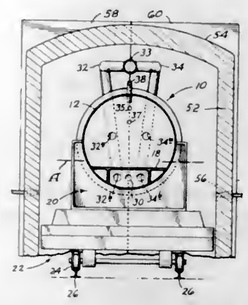
Filed Mar. 29, 1966, Ser. No. 538,261
Int. Cl. C22b *9/02*; B01j *17/02, 17/36*
U.S. Cl. 75—65 3 Claims

A solidification process in which a unidirectional stationary magnetic field is applied to the molten zone of the material in the region where the transition to the solid state is occurring. The material has some electrical conductivity in the liquid state and the field is of sufficient magnitude to increase substantially the effective viscosity of the molten zone and thus damp thermally induced laminar and turbulent flow to produce more uniform solidification products.

3,464,813
REDUCTION AND PURIFICATION OF REACTIVE METALS

Stephen M. Shelton and Henry Gordon Poole, Albany, Oreg., assignors to Oregon Metallurgical Corporation, Albany, Oreg., a corporation of Oregon

Filed Oct. 20, 1965, Ser. No. 498,500
Int. Cl. C22b *53/00, 5/04*
U.S. Cl. 75—84.4 9 Claims



A method of producing a reactive metal by reducing in a retort a halide of the reactive metal with a reducing metal to form the reactive metal distributed as a bed within the retort with such bed containing reducing metal and reducing metal halide as impurities. Such impurities are removed by heating the metal to a temperature which is below the boiling point of the impurities, and sweeping the retort with an inert gas whereby the impurities in vaporous form are carried from the retort. The impurities are then condensed to form particles and removed from the inert gas.

3,464,814
LEACHING ZINC PLANT PURIFICATION RESIDUE

Meryl A. Jackson and James L. Owings, Great Falls, Mont., assignors to The Anaconda Company, New York, N.Y., a corporation of Montana

No Drawing. Filed Feb. 24, 1966, Ser. No. 529,659
Int. Cl. C22b *19/22*
U.S. Cl. 75—101 7 Claims

Metal values from a purification residue produced during the processing of zinc ores for prospective electrolytic recovery of zinc metal are recovered by leaching the zinc purification residue with a dilute solution of sulfuric acid while simultaneously bubbling air through the suspension of the residue in the acid solution.

3,464,815
NON-MAGNETIC IRON-NICKEL-CHROMIUM-MOLYBDENUM ALLOY, AND WATCH SPRINGS OBTAINED WITH THIS ALLOY

Xavier Wache, Sauvigny-les-Bois, Nievre, France, assignor to Société Metallurgique d'Imphy, Paris, France, a French company

No Drawing. Filed June 22, 1967, Ser. No. 647,956
Claims priority, application France, July 12, 1966, 69,163
Int. Cl. C22c *39/20, 39/50*
U.S. Cl. 75—124 3 Claims

A non-magnetic alloy having a thermo-elastic coefficient of zero or approximately zero, and having the following composition by weight: 36.5 to 39.5% of nickel, 1.5 to 4.5% of chromium, 1.5 to 3% of molybdenum, 0.75 to 1.25% of aluminium and 2 to 3% of titanium, the remainder being iron, together with very small quantities of carbon, silicon, manganese, sulphur and phosphorus. Watch springs are made of this alloy.

3,464,816
ALUMINUM MASTER ALLOYS

Richard Hampton Biddulph, Surrey, England, assignor to United States Borax & Chemical Corporation, Los Angeles, Calif.

No Drawing. Filed Feb. 25, 1966, Ser. No. 529,941
Claims priority, application Great Britain, Mar. 4, 1965, 9,279/65
Int. Cl. C22c *21/00*
U.S. Cl. 75—135 9 Claims

Aluminum master alloys, containing finely divided transition metal boride dispersed throughout the aluminum, are prepared by forming a molten mixture of aluminum, a transition metal boride and a flux and cooling the molten mixture. The flux is an inorganic fluoride which assists in the wetting of the boride with the aluminum.

3,464,817
ALLOY COMPOSITION AND METHOD OF FORMING THE SAME

Emil S. Griffiths, Albany, N.Y., assignor to CMP Industries, Inc., Albany, N.Y., a corporation of New York

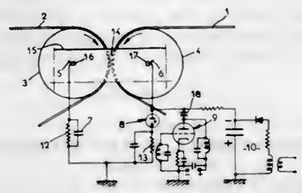
No Drawing. Filed Mar. 17, 1966, Ser. No. 535,027
Int. Cl. C22c *19/00*
U.S. Cl. 75—171 15 Claims

An alloy suitable for use in forming dentures and other dental prostheses contains, in weight percent, about 10% to 28% chromium, about 5% to 12% molybdenum, about 3% to 7% manganese, about 0.2% to 2% beryllium, about 2% to 6% aluminum, up to about 22% cobalt and the balance essentially nickel. This alloy is characterized by high strength, toughness, good ductility, good fluidity in the molten state, and controlled shrinkage when cast. These properties cause the alloy to abrade readily for ease of polishing, permit deformation by bending without fracture when necessary to mechanically adjust parts formed of the alloy in dental prostheses, and allow the casting of thin or attenuated sections and other pieces within close tolerances. The alloy preferably is formed by melting the alloying elements in a preferred sequence and maintaining selected alloying elements beneath the surface of the molten pool to prevent oxidation.

3,464,818
METHOD OF PHOTOELECTRIC COPYING

Moustapha Waly, Neuilly-sur-Seine, France, assignor to Anicet Anstalt, Vaduz, Principality of Liechtenstein, a company of Liechtenstein

Filed June 22, 1967, Ser. No. 648,057
Claims priority, application France, May 24, 1967, 107,717
Int. Cl. G03g *13/22*; H01j *37/26*
U.S. Cl. 96—1.3 8 Claims



The method of the invention consists in forming an electrostatic image upon a photoconductive surface, in uniformly charging the insulating surface of a nonphotosensitive and nonphotoconductive paper sheet, in bringing said photoconductive surface in the presence of said insulating surface at a distance thereof comprised between 0.01 and 120 microns by subjecting said surface to an electric field comprising a high frequency alternative current component and a direct current component and in developing and fixing the electrostatic image so transferred on said insulating surface. The frequency of the alternative current component is comprised between 1.2 kilohertz and 3000 megahertz.

3,464,819
ELECTROPHOTOGRAPHIC MATERIAL

Akira Inami, Hirakata-shi, Kazuhisa Morimoto, Osaka, and Eisuke Ishida, Moriguchi-shi, Japan, assignors to Matsushita Electric Industrial Co., Ltd., Kadoma-shi, Japan, a corporation of Japan

Filed May 26, 1965, Ser. No. 458,872
Claims priority, application Japan, May 30, 1964, 39/30,810; Dec. 19, 1964, 39/73,712
Int. Cl. G03g *7/00*; C08f *7/02*
U.S. Cl. 96—1.5 6 Claims

An improved highly sensitive photosensitive material for use in electrophotography is composed of a linear polyvinyl anthracene in which anthracene units are included in the chain.

3,464,820
ELECTROPHOTOGRAPHIC ENGRAVING PLATE

Michael Michalchik, Setauket, N.Y., assignor to Fairchild Camera and Instrument Corporation, Syosset, N.Y., a corporation of Delaware

No Drawing. Continuation-in-part of abandoned application Ser. No. 451,629, Apr. 28, 1965. This application June 3, 1968, Ser. No. 733,801
Int. Cl. G03g *7/00*; C09f *9/00*
U.S. Cl. 96—1.8 9 Claims

An anchor coat for use in the preparation of recording elements such as are used in the preparation of lithographic plates. The anchor coat is a mixture of a Werner complex and a drying agent which is a cobalt, zinc, lead, manganese, iron or calcium salt of naphthenic, octoic or tallic acid.

3,464,821
COLLOID TRANSFER ACTIVATOR CONTAINING A FORMALDEHYDE GENERATING COMPOUND

Joseph Thomas Leone and James Francis McKague, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Continuation-in-part of application Ser. No. 505,024, Oct. 24, 1965, which is a continuation-in-part of application Ser. No. 285,570, June 5, 1963. This application June 28, 1967, Ser. No. 649,493
Int. Cl. G03c *11/12, 1/30*
U.S. Cl. 96—28 6 Claims

An alkaline activator solution for use in developing a substantially unhardened silver halide emulsion in the presence of a tanning developing agent, which activator solution contains free formaldehyde or also a formaldehyde donor and which also may contain a hydrolysis product of the formaldehyde donor.

3,464,822
PROCESS FOR MAKING ELECTRICALLY CONDUCTIVE IMAGES

Ralph Kingsley Blake, Westfield, N.J., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Sept. 13, 1965, Ser. No. 487,031
Int. Cl. G03c *5/54*; C23b *5/48*
U.S. Cl. 96—38.4 9 Claims

A process which comprises

(a) Forming a latent developable silver halide image in a photographic element having a water-permeable, macromolecular organic colloid-silver halide emulsion layer, by imagewise exposure of said layer to actinic radiation,

(b) Forming by silver transfer development by means of a developer solution containing a silver halide developing agent, a silver halide solvent and a silver nucleating agent, an electrically conductive silver surface image having a resistance not more than 5.0 ohms per square in the unexposed areas of an outer water-permeable organic colloid layer of said photograhic film element, and a difference in resistivity of at least 1×10^2 times between the conductive coating and the exposed regions, and

(c) Passing an electrical current or impulse through the said electrically conductive silver surface image for utilization.

3,464,823

DIAZOTYPE MATERIALS

Bernard I. Halperin, Glen Aubrey, N.Y., and James O. Thompson, Los Gatos, Calif., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York

No Drawing. Filed Dec. 28, 1965, Ser. No. 517,092

Int. Cl. G03c *1/60, 1/54*

U.S. Cl. 96—49 **4 Claims**

A method for producing diazotype images comprising image-wise exposing a light-sensitive diazonium salt and and a lignin material containing a member from the group consisting of a coniferyl aldehyde derivative of lignin and a syringaldehyde derivative of lignin and developing in an alkaline medium to produce an azo dye image.

A diazo type material comprising a substrate having a light sensitive coating comprising a light sensitive layer comprising a light sensitive diazonium salt and a lignin material containing a member selected from the group consisting of a coniferyl aldehyde derivative of lignin and a syringaldehyde derivative of lignin.

3,464,824

PROCESS OF PRODUCING A GRANULAR FEED

Charles C. Jensen, Downers Grove, and Frank X. Doody, Chicago, Ill., assignors to Darling & Company, Chicago, Ill., a corporation of Illinois

Filed Sept. 8, 1964, Ser. No. 394,828

Int. Cl. A23k *1/16*

U.S. Cl. 99—2 **4 Claims**

Preparation of an animal feed in granular form by mixing a water insoluble animal feed supplement material with a water soluble material selected from the group consisting of sodium chloride and sodium phosphate and while mixing adding steam and water to moisten and agglomerate and subsequently drying said agglomerates.

3,464,825

KERATIN PROTEIN PRODUCT AND PROCESS OF PREPARING SAME

Charles A. Anker, Minneapolis, Minn., assignor to General Mills, Inc., a corporation of Delaware

No Drawing. Filed Feb. 28, 1967, Ser. No. 619,194

Int. Cl. A23j *1/10*

U.S. Cl. 99—18 **12 Claims**

Keratin protein prepared by extracting natural sources, such as feathers, using an aqueous solution of an alkali metal sulfide and subsequent acid precipitation is dispersed using aqueous solutions of alkali metal hydroxides and then the pH is reduced to near the neutral point by the addition of a water soluble oxidizing agent such as hydrogen peroxide.

3,464,826

PROCESS FOR MAKING BREAKFAST CEREAL

William L. McKown, Minneapolis, Philip K. Zietlow, Northfield, and Murray E. Ball, Rockford, Minn., assignors to General Mills, Inc., a corporation of Delaware

Filed Apr. 20, 1965, Ser. No. 449,514

Int. Cl. A23l *1/18*

U.S. Cl. 99—81 **3 Claims**

A process for making a hollow, cone-shaped breakfast cereal. Two ribbons of cooked dough having a prescribed width and thickness, are joined together and formed into cone-shaped pieces. The pieces when dried and subjected to intense heat, expand to form an edible food product.

3,464,827

PROCESS OF PREPARING PUFFED CEREAL PRODUCT

Takuzo Tsuchiya and Harold V. Perttula, Minneapolis, Minn., assignors to General Mills, Inc., a corporation of Delaware

No Drawing. Filed Jan. 10, 1966, Ser. No. 519,453

Int. Cl. A23l *1/18*

U.S. Cl. 99—82 **13 Claims**

Preparing edible cereal products by coating cereal pullets with monoglycerides or alkali metal salts of saturated fatty acids of about 14 to 22 carbon atoms and puffing said pellets by sudden release from a confined area to an area of larger volume and lower pressure.

3,464,828

METHOD OF PREPARING PUFFED CEREAL PRODUCT

Patricia D. Cummisford, Minneapolis, Minn., assignor to General Mills, Inc., a corporation of Delaware

No Drawing. Filed Jan. 10, 1966, Ser. No. 519,463

Int. Cl. A23l *1/18*

U.S. Cl. 99—82 **10 Claims**

Producing a puffed edible cereal product consisting of at least 10% dried corn particles, water and monoglycerides or alkali metal salts of saturated fatty acids of about 14 to 22 carbon atoms, by cooking cereal dough, forming the cooked dough into pellets, drying the pellets to a moisture content suitable for puffing and puffing the dried pellets.

3,464,829

BREAD SOFTENERS AND DOUGH IMPROVERS

John J. Geminder, Bayside, and Carl P. Hetzel, Bellerose, N.Y., assignors to Chas. Pfizer & Co., Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Jan. 25, 1967, Ser. No. 611,552

Int. Cl. A21d *2/08*

U.S. Cl. 99—91 **8 Claims**

Combinations of at least one of the sodium, potassium-calcium and magnesium salts of monostearyl acid fumarate in microcrystalline form with finely-divided stearic acid at a level of from about 15% to about 50% by weight of the fumarate salt afford an improved shelf-life for bread and other finished bakery goods when incorporated into the dough of such goods prior to baking.

3,464,830

STORAGE STABLE, READY-TO-SPREAD FROSTINGS

Isaac J. Wahba, Minneapolis, Minn., assignor to General Mills, Inc., a corporation of Delaware

No Drawing. Filed Nov. 3, 1966, Ser. No. 591,692

Int. Cl. A23g *3/00*

U.S. Cl. 99—139 **9 Claims**

Storage stable, ready-to-spread frostings comprising 40 to 80% by weight sugar, 7 to 21% by weight water and 10 to 20% by weight shortening of improved color retention properties due to the inclusion therein of small amounts of an alkali metal pyrophosphate.

3,464,831

LIQUID PEPPER

John A. Ziegler, Scarborough, Ontario, Canada, assignor to The Griffith Laboratories, Incorporated, Chicago, Ill.

No Drawing. Filed July 6, 1965, Ser. No. 469,875

Int. Cl. A23l *1/26*

U.S. Cl. 99—140 **6 Claims**

Oleoresin of black pepper is subjected to physical force to separate a piperine fraction containing most of the piperine content of the oleoresin from a liquid fraction containing fixed and volatile oils and dissolved piperine, which liquid fraction is homogeneous and stable in storage at low temperatures.

3,464,832

FOOD PACKAGING

Charles D. Mullinix, 465 Golden Road, Fallbrook, Calif. 92028

Filed Nov. 22, 1965, Ser. No. 509,129

Int. Cl. B65b *25/06*

U.S. Cl. 99—171 **3 Claims**

A food package comprises a tray part having a flat peripheral shoulder, and a cover structure snap locked to the tray and which is composed of a flat light-transmitting membrane weakly adhered to an opaque flat cover panel to enable the panel to be peeled from the membrane. The membrane is heat sealed to the shoulder; and the cover panel has a pull tab projecting from one edge. A score line hinge connection is provided along its opposite edge.

In assembling the package, the tray is supported on a ring, the cover panel and membrane are snap locked to the tray while thus supported, and bonding of the membrane to the seating shoulder is effected while the tray is supported on the seating shoulder.

3,464,833

FROZEN FOOD PACKAGE AND METHOD OF PACKAGING FROZEN FOOD

Fletcher Mayo, Bulls Cove, Newfoundland, Canada, assignor to Fishery Products Limited, St. John's, Newfoundland, Canada

Filed Aug. 23, 1965, Ser. No. 481,793

Claims priority, application Canada, Jan. 23, 1965, 921,488

Int. Cl. B65b *25/06*

U.S. Cl. 99—174 **1 Claim**

This invention relates to a paperboard frozen food package of the type that is commonly packed with an unfrozen food of a wet and irregular nature, compressed and then frozen. Fish is normally packed in this way. Difficulty is often encountered in evacuating air from between the separate pieces of food product being packed because the package interior seals to the fish or other product as it is compressed thereagainst and the air cannot escape as it is forced from the food product. This invention contemplates the formation of the interior of the paperboard package with a plurality of depressions whereby the surface is made irregular. The depressions are spaced apart to prevent the surface from sealing against the product on contact therewith so that the interior surface of the paperboard carton is an air escape path in use as the product is compressed.

3,464,834

FREEZE-DRYING ICE MILK CONFECTIONS

Maurie Laskin, Milwaukee, Wis., assignor to W. R. Grace & Co., New York, N.Y., a corporation of Connecticut

No Drawing. Continuation-in-part of application Ser. No. 324,240, Nov. 18, 1963. This application June 17, 1965, Ser. No. 464,832

Int. Cl. A23g *5/00*

U.S. Cl. 99—199 **8 Claims**

Freeze-dried, rehydratable, frozen ice milk confections, such as ice cream, in which the cellular character of the originally frozen confection is preserved in the dehydrated product; articles of manufacture comprising monolithic forms of these dehydrated products coated with an edible, moisture-protective coating, especially candy articles in which the edible coating is a candy coating such as chlocolate and/or caramel; and a method for preparing these dehydrated products comprising first cooling a monolithic form of the already frozen ice milk confection to a hard-frozen solid and then dehydrating by heating under a reduced pressure of less than about 1.5 millimeters of mercury (absolute) while maintaining the rate of heating so as to maintain the hard-frozen solid portion of the monolithic form essentially in the hard-frozen solid state until completion of the dehydration.

3,464,835

PROCESS FOR PASTEURIZING LIQUID PRODUCTS IN A CONTINUOUS LINE OF PLASTIC SACHETS

Peregrino Mario del Pilar Castro, Marconi and Blanco Encalada, San Isidro, Buenos Aires, Argentina

Continuation-in-part of application Ser. No. 391,580, Aug. 24, 1964. This application May 29, 1968, Ser. No. 733,055

Int. Cl. A23c *9/00;* **B65b** *55/00*

U.S. Cl. 99—212 **9 Claims**

A process for pasteurizing a liquid product in which the liquid product is partially filled in a succession of sachets of flexible material in an uninterrupted line and the line is passed along an undulating path, under traction, in successive treatment zones wherein the liquid product is pasteurized.

3,464,836

CERAMIC FILAMENT, ELECTRICAL APPARATUS MADE THEREWITH AND METHOD OF MAKING SAME

Wesley W. Pendleton and George W. Ostrander, Muskegon, Mich., assignors to Anaconda Wire and Cable Company, a corporation of Delaware

Filed Nov. 2, 1964, Ser. No. 408,125

Int. Cl. C04b *35/00;* **C03c** *3/04*

U.S. Cl. 106—39 **8 Claims**

In the manufacture of magnet wire with glass-fiber insulation the fibers are drawn from a crystallizable composition which is subsequently heat-treated to form ceramic fibers in situ, said ceramic fibers having at least fifteen weight percent BaO and at least fifty weight percent of crystals of either spodumene, jadeite, or benitoite.

3,464,837

DENTAL MATERIALS

John Walford McLean, London, and Thomas Henry Hughes, Letchworth, England, assignors to National Research Development Corporation, London, England, a corporation of Great Britain

Filed Oct. 1, 1964, Ser. No. 400,771

Claims priority, application Great Britain, Oct. 8, 1963, 39,706/63

Int. Cl. B28b *7/34;* **C08h** *17/24*

U.S. Cl. 106—35 **18 Claims**

Dental material is provided made up of 40–70% of refractory oxide having a particle size between 200μ and

about 10μ and consisting of alumina, titania, or mixtures thereof mixed with feldspar, borosilicate glass or dental porcelain which is fired at 980° C.–1400° C.

3,464,838
METHOD OF CASTING METALLIC ARTICLES
Philip H. Santmyer, Plainview, Tex., assignor to Harvest Queen Mill & Elevator Company, Dallas, Tex., a corporation of Texas
No Drawing. Continuation of application Ser. No. 655,698, May 22, 1967, which is a division of application Ser. No. 420,133, Dec. 21, 1964, which is in turn a continuation-in-part of application Ser. No. 374,019, Feb. 24, 1964. This application Aug. 14, 1968, Ser. No. 754,108
Int. Cl. B22c *1/26, 1/18*
U.S. Cl. 106—38.5 **10 Claims**

A molding composition is prepared by premixing a foundry binder comprising major proportions of iron oxide and starch. The foundry binder is thereafter mixed with sand and water to form a molding composition, with the foundry binder being present in quantities sufficient to provide at least about 1½% iron oxide in the resulting composition, based on the total weight of the composition. The molding composition is formed into a desired mold shape and then heated at a temperature to bond the molding composition.

3,464,839
COATING COMPOSITION
Elton S. Gamble, Trumbull, Conn., assignor to Olin Mathieson Chemical Corporation, a corporation of Virginia
No Drawing. Filed Mar. 24, 1966, Ser. No. 536,980
Int. Cl. C04b *35/48*
U.S. Cl. 106—57 **11 Claims**

A composition, which may be used, for example, as a coating on articles to be placed in molten metals such as aluminum and copper, is provided comprising a non-basic refractory such as calcium phosphate, a finely divided material which may be either aluminum or aluminum oxide or mixtures thereof, and a bonding agent such as aluminum phosphate or zirconium phosphate. The composition is used as an aqueous suspension and it may also contain a suspending agent such as kaolin and a gelling agent such as silicon.

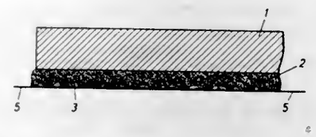
3,464,840
CELLULOSE-SULFUR COMPOSITION WHICH RESISTS CHAIN SHORTENING
Donald M. MacDonald, Hawesbury, Ontario, Canada, assignor to Canadian International Paper Company, Montreal, Quebec, Canada, a corporation of Canada
No Drawing. Filed Jan. 4, 1965, Ser. No. 423,317
Int. Cl. C08b *27/64*
U.S. Cl. 106—162 **3 Claims**

A stable composition comprising a cellulosic material, alkali, and sulfur in an amount of from about 0.1% to 2.0% by weight of the cellulosic material.

3,464,841
METHOD OF PREPARING SECURITY PAPER CONTAINING AN ULTRAVIOLET INHIBITOR
Bruce D. Skofronick, Appleton, Wis., assignor, by mesne assignments, to Customark Corporation, Appleton, Wis., a corporation of Wisconsin
No Drawing. Filed Oct. 23, 1965, Ser. No. 504,115
Int. Cl. B41m *3/14*
U.S. Cl. 117—1 **2 Claims**

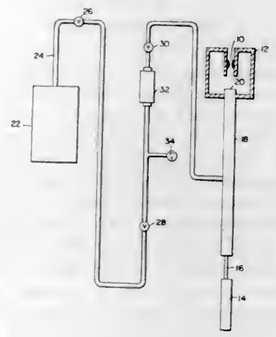
A paper product with a security impression and the method of preparation therefor. A selected area of the paper is treated with a liquid composition having an inhibitor chemical comprising an ultraviolet absorbing organic chemical in an amount so that the treated area is invisible in the dry state and visually detectable after wetting the paper.

3,464,842
SELF-SEALING FOIL HAVING PLURAL ADHESIVE LAYERS
Werner Jackstadt, Wuppertal-Sonnborn, Germany, assignor to Firma Wilhelm Jackstadt & Co., Wuppertal-Elberfeld, Germany, a corporation of Germany
Filed Mar. 26, 1963, Ser. No. 268,195
Claims priority, application Germany, Jan. 4, 1963, J 22,959
Int. Cl. B05c *3/20;* **B44d** *1/12*
U.S. Cl. 117—44 **3 Claims**



A self-sealing foil which comprises a backing carrying two superimposed self-sealing films including an outer lowermost reversible self-sealing film and an intermediate irreversible self-sealing film. The outer lowermost self-sealing film has the character of a reversibly adherent, self-sealing layer, capable of being removably applied to an object upon subjecting the same to slight pressure, and the intermediate irreversible self-sealing layer has the character of an irreversibly adherent self-sealing layer, capable of being immovably applied to an object upon subjecting the same to heavy pressure. One of the layers contains exclusively polymer softeners, resins and viscid makers, and the reversible film is operatively thin relative the irreversible film so that upon application of sufficient pressure the irreversible film is pressed through to the surface of the reversible film.

3,464,843
PYROLYTIC GRAPHITE ALLOYS AND METHOD OF MAKING THE SAME
Malcolm Basche, Newtonville, Mass., assignor, by mesne assignments, to Union Carbide Corporation, a corporation of New York
Continuation-in-part of application Ser. No. 124,440, July 17, 1961. This application Mar. 21, 1962, Ser. No. 181,313
Int. Cl. C23c *9/06*
U.S. Cl. 117—46 **8 Claims**

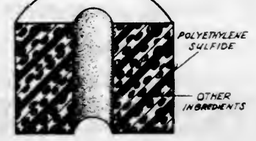


1. The process of coating a substrate at a temperature between about 1500° C. and 2300° C. and a pressure below about 20 mm. of mercury with a gaseous hydrocarbon and a volatile halide of an element selected from the group consisting of silicon, aluminum, titanium, zirconium, hafnium, thorium, vanadium, niobium, tantalum, molybdenum, tungsten and uranium thereby depositing pyrolytic graphite and an element in the form of an alloy on said substrate.

3,464,844
ALUMINUM PLATING OF SURFACES
Billy J. Williams, Ponca City, Okla., assignor to Continental Oil Company, Ponca City, Okla., a corporation of Delaware
No Drawing. Continuation-in-part of application Ser. No. 444,392, Mar. 31, 1965. This application Mar. 2, 1967, Ser. No. 619,947
Int. Cl. B44d *1/34;* **C23c** *7/00*
U.S. Cl. 117—46 **18 Claims**

Where an object is to be plated with aluminum alkyl decomposition in liquid phase aluminum by heating said object to a temperature above the decomposition temperature of the aluminum alkyl and thereafter contacting the heated article with a solution of aluminum alkyl, the article to be plated is first coated with a heavy hydrocarbon to protect the article from oxidation.

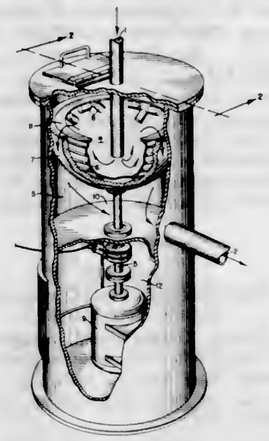
3,464,845
ANTIFRICTION BEARINGS
Stephen W. Osborn, Yardley, and Riad H. Gobran, Levittown, Pa., assignors to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware
Filed Sept. 14, 1965, Ser. No. 487,130
Int. Cl. B44d *1/34;* **F16c** *33/20*
U.S. Cl. 117—49 **13 Claims**



An antifriction bearing is provided in which the composition of at least those portions and surfaces of a bearing subject to wear contains from about 40% to about 90% by volume of a polyethylene sulfide resin having a melting point of between 200° C. and 215° C. and a melt index at 215° C. below about 1.5 grams per minute admixed with at least one other solid bearing composition ingredient, preferably polytetrafluoroethylene. Other usual bearing composition ingredients may also be present in the composition.

3,464,846
METHOD AND APPARATUS FOR CENTRIFUGALLY PLATING
George W. Mattson, Baton Rouge, La., assignor to Ethyl Corporation, New York, N.Y., a corporation of Virginia
Filed Dec. 8, 1965, Ser. No. 512,478
Int. Cl. C23c *13/02, 17/00*
U.S. Cl. 117—107.1 **5 Claims**

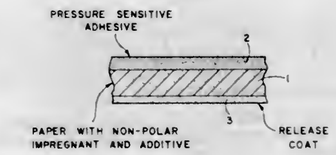
A method and apparatus for depositing a metal coating upon parts-to-be-coated by depositing the parts in the bottom of a bowl-shaped container, rotating the container and thereby gently spreading the parts up the sides of said container, directing a vapor plating compound into the container and upon the parts, pyrolytically decomposing the vapor plating compound when in contact with the parts so as to deposit a metal coating thereon, and ceasing rotation of the container, thereby allowing the parts to gently return to the bottom thereof.



3,464,847
TREATMENT OF FABRICS WITH ANTHRANILIC ACID AND SILVER NITRATE SOLUTIONS
Frederic H. Megson, Martinsville, and Michael T. Beachem, Somerset, N.J., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Army
No Drawing. Filed Oct. 25, 1966, Ser. No. 589,473
Int. Cl. C08j *1/38*
U.S. Cl. 117—121 **7 Claims**

A method for imparting antivesicant properties to air permeable fabrics, comprising treating the fabrics with a solution of anthranilic acid and silver nitrate.

3,464,848
PRESSURE SENSITIVE TAPE HAVING IMPROVED BACKING
John F. Hechtman and Stephan R. Bornslaeger, Munising, Mich., assignors to Kimberly-Clark Corporation, Neenah, Wis., a corporation of Delaware
Filed Apr. 11, 1966, Ser. No. 541,768
Int. Cl. C09j *7/00*
U.S. Cl. 117—122 **2 Claims**



A pressure sensitive tape having an impregnated fibrous base sheet in which the strengthening impregnant of the base sheet is a styrene butadiene polymer. The sheet carries on one face an adhesive coat and on the second face a release coat. The impregnant of the base sheet includes a solubilizing agent capable of migration from the strengthening impregnant to the adhesive coating to serve the purpose of improving the adhesive life of the adhesive coating.

3,464,849

COATING PROCESS

Raymond J. Ehrig, Barrington, Ill., and Tien-Sung Lin, Philadelphia, Pa., assignors to W. R. Grace & Co., New York, N.Y., a corporation of Connecticut

No Drawing. Filed Mar. 21, 1967, Ser. No. 624,709

Int. Cl. B44d *1/36*

U.S. Cl. 117—132 4 Claims

A process for coating an iron-containing surface comprising contacting said surface with an aqueous acidic solution of an N-3-oxohydrocarbon-substituted acrylamide in the presence of an aqueous soluble hydroperoxide under ambient conditions to form an N-3-oxohydrocarbon-substituted acrylamide polymer coating on said surface.

3,464,850

FIBROUS ORGANIC MATERIAL BONDED WITH A BLOCK COPOLYMER

Walter R. Haefele, Orinda, Calif., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Apr. 25, 1966, Ser. No. 544,689

Int. Cl. C03c *13/00*; C09d *3/48*

U.S. Cl. 117—135.5 3 Claims

New articles of manufacture are disclosed comprising a fibrous organic material bearing a minor amount of (1) a block copolymer having the general configuration A—B—A wherein each A is a polymer block of a monovinyl arene and B is a polymer block of a conjugated diene, or (2) hydrogenated derivatives of said block copolymer. The new products have improved properties, e.g., abrasion resistance. The block copolymer is applied either from solution or as a melt.

3,464,851

STABILIZED POLYURETHANES

John W. Cahill, Somerset, Mass., assignor to Globe Manufacturing Company, Fall River, Mass., a corporation of Massachusetts

No Drawing. Continuation-in-part of application Ser. No. 621,453, Mar. 8, 1967. This application Feb. 19, 1968, Ser. No. 706,609

Int. Cl. B44d *1/22*; C08j *1/40*

U.S. Cl. 117—138.8 8 Claims

Polyurethanes made from toluene diisocyanate and a polyester or polyether are stabilized by the use of an allyl substituted thiourea, preferably cyclohexane bis (methyl monoallylthiourea), or xylyl bis (allylthiourea).

This application is a continuation-in-part of application Ser. No. 621,453 filed Mar. 8, 1967, and now abandoned.

3,464,852

POLYESTER ARTICLE COATED WITH A CURED, CROSS-LINKED POLYESTER DERIVED FROM (a) AT LEAST ONE POLYHYDRIC ALCOHOL (b) AT LEAST ONE DICARBOXYLIC COMPOUND AND (c) A POLY(OXYETHYLENE) ALCOHOL

John R. Caldwell and Russell Gilkey, Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Continuation of application Ser. No. 350,539, Mar. 9, 1964. This application Oct. 16, 1968, Ser. No. 769,475

Int. Cl. C08d *13/24*; C09d *3/64*

U.S. Cl. 117—138.8 14 Claims

A polyester article is provided with a hydrophilic surface by treating said article with an unsaturated polyester derived from (A) at least one polyhydric alcohol, (B) at least one dicraboxylic compound, and (C) a poly(oxyethylene) alcohol.

3,464,853

PROCESS FOR TREATING WOOD AND ORGANIC MAT MATERIALS

Lawrence E. La May, 714 Huron Hill, Madison, Wis. 53711

No Drawing. Continuation-in-part of application Ser. No. 532,104, Mar. 7, 1966. This application Nov. 21, 1966, Ser. No. 595,637

Int. Cl. B44d *1/28, 1/06*

U.S. Cl. 117—148 6 Claims

A process for treating wood and other cellular or fibrous material by impregnating such material with a solution of resin, oil and alcohol, and subjecting the impregnated material to a temperature and for a period of time sufficient to drive a substantial portion of the alcohol and moisture in the material out of the material, and to harden the resin and oil within the material. The process may be repeated as many times as the treated material continues to take up additional amounts of the solution during the impregnating step.

3,464,854

METHOD OF COATING AND COMPOSITION THEREFOR

Justin C. Bolger, Needham, Mass., assignor to Amicon Corporation, Lexington, Mass., a corporation of Massachusetts

No Drawing. Continuation of application Ser. No. 317,807, Oct. 21, 1963. This application May 29, 1967, Ser. No. 642,241

Int. Cl. B44d *1/38, 1/46*

U.S. Cl. 117—160 6 Claims

A coating composition, and method of using such composition, which consists of a non-alkaline filler, a water-inert amine catalyst and an epoxy resin binder, all of the foregoing being slurried in sufficient water to obtain surprisingly good distribution of the binder on the filler and consequently achieving extraordinarily beneficial properties.

3,464,855

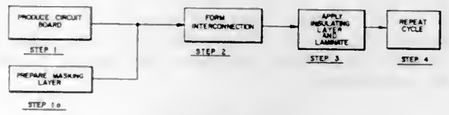
PROCESS FOR FORMING INTERCONNECTIONS IN A MULTILAYER CIRCUIT BOARD

Joseph M. Shaheen, La Habra, and Leo J. Quintana, Orange, Calif., assignors to North American Rockwell Corporation, a corporation of Delaware

Filed Sept. 6, 1966, Ser. No. 577,438

Int. Cl. B44d *1/18*; H01b *1/00*

U.S. Cl. 117—212 2 Claims



Electronic interconnections are formed between a plurality of layers of multilayer board by first applying a removable and reuseable dielectric mask over the surface of a circuit pattern formed on an insulating layer. The mask includes a pattern of openings which define locations for forming interconnecting members between portions of said circuit pattern and a subsequently formed circuit pattern. After the openings have been filled, the removable mask is replaced by a permanent insulating layer. The process of applying the mask and filling the openings is repeated to produce a multilayer board having a plurality of layers.

3,464,856

PROCESS FOR REMOVING STARCH FROM SWEET SORGHUM JUICES

Burns A. Smith, Weslaco, Tex., assignor to the United States of America as represented by the Secretary of Agriculture

No Drawing. Continuation-in-part of application Ser. No. 592,685, Nov. 4, 1966. This application Jan. 22, 1968, Ser. No. 699,383

Int. Cl. C13d *3/02*

U.S. Cl. 127—50 1 Claim

Process for removing starch from sorghum juices in which the juices are adjusted to a density of 12–16° Brix, and pH of 7.5–7.8, and are treated with 3–5 p.p.m. of a flocculating agent, such as a high molecular weight polyacrylamide, while at a temperature below 60° C. The resultant juice is concentrated to a density of 30–40° Brix, adjusted to a pH of 7.3–7.7, and treated with 1–2 p.p.m. of a flocculant.

3,464,857

METHOD OF PREPARING PREGELATINIZED STARCH COMPOSITIONS

Nicholas G. Marotta, Green Brook, and Harvey Bell, North Plainfield, N.J., assignors to National Starch and Chemical Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed May 29, 1967, Ser. No. 642,217

Int. Cl. C13l *1/08*; A23l *1/14*

U.S. Cl. 127—71 6 Claims

Coarsely ground, water dispersible starch compositions prepared by pregelatinizing a starch base while in the presence of, and in intimate admixture with, a sugar component. The resulting instant starch compositions may be utilized in the preparation of a wide variety of food products.

3,464,858

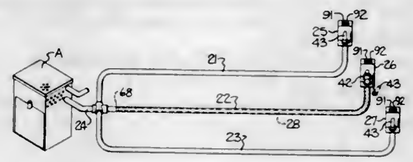
VACUUM CLEANING METHOD

James C. Hamrick, Matthews, N.C., assignor, by mesne assignments, to J L Products Incorporated, Matthews, N.C., a corporation of North Carolina

Continuation-in-part of application Ser. No. 458,178, May 24, 1965. This application Aug. 19, 1966, Ser. No. 573,694

Int. Cl. B08b *5/04*

U.S. Cl. 134—21 7 Claims



A method of cleaning, utilizing a cleaning system having a plurality of outlets and conduits extending therefrom to a common source of suction and wherein a cleaning hose is normally retractably stored in one of the conduits and is extended outwardly thereform for cleaning an area adjacent the conduit, and after cleaning the hose is removed from the conduit and utilized at another conduit location and retractably stored in the conduit at the last point of use.

3,464,859

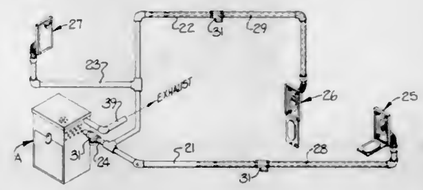
METHOD AND APPARATUS FOR VACUUM CLEANING

James C. Hamrick, Matthews, N.C., assignor, by mesne assignments, to J L Products Incorporated, Matthews, N.C., a corporation of North Carolina

Continuation-in-part of application Ser. No. 458,178, May 24, 1965. This application Aug. 19, 1966, Ser. No. 573,707

Int. Cl. B08b *5/04*

U.S. Cl. 134—21 18 Claims



A vacuum cleaning system having a cleaning hose which is retractably stored within a conduit communicating with a suction blower and wherein the suction blower is utilized to extend the hose outwardly of the conduit by creating a pressure in the conduit above atmospheric pressure. Also, the suction blower serves for withdrawing the cleaning hose into the conduit into retractably stored position.

3,464,860

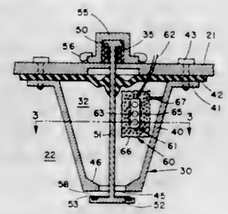
RECOMBINATION SYSTEMS FOR SEALED SECONDARY BATTERIES AND BATTERIES INCORPORATING THEM

James H. B. George and Albert E. Dennard, Cambridge, and Ekkehard L. Kreidl, Wayland, Mass., assignors to Arthur D. Little, Inc., Cambridge, Mass., a corporation of Massachusetts

Filed Dec. 30, 1966, Ser. No. 606,419

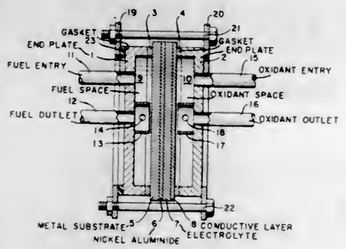
Int. Cl. H01m *1/08, 47/00, 45/04*

U.S. Cl. 136—6 13 Claims



This invention relates to sealed batteries, and more particularly to sealed secondary or rechargeable batteries which evolve hydrogen and/or oxygen gases especially during the time when they are being charged. A recombination system is incorporated into the battery which effects a reaction between the hydrogen and oxygen and returns the product water to the electrolyte.

3,464,861
FUEL CELLS WITH SOLID STATE ELECTROLYTES
Keith R. Williams, Little Sutton, Wirral, and John G. Smith, Ellesmere Port, Wirral, England, assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware
Filed Aug. 20, 1964, Ser. No. 390,807
Int. Cl. H01m *27/10*
U.S. Cl. 136—86 **8 Claims**



A fuel cell comprising a porous metal substrate separated from a metal-coated calcium oxide or yttria-stabilized zirconia electrolyte by a layer of nickel aluminide.

3,464,862
METHOD OF MAKING FUEL CELL ELECTRODE AND FUEL CELL INCORPORATING THE ELECTRODE
John Perry, Jr., New Shrewsbury, N.J., assignor to the United States of America as represented by the Secretary of the Army
No Drawing. Filed Apr. 28, 1967, Ser. No. 635,964
Int. Cl. H01m *27/08, 27/30*
U.S. Cl. 136—86 **2 Claims**

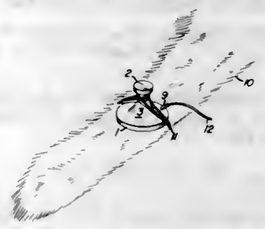
A fuel cell electrode is made particularly for use in a hydrazine-air fuel cell system by reducing ferrous chloride in aqueous solution with sodium borohydride to produce fine particles of iron on a porous sintered nickel substrate.

3,464,863
DEFERRED ACTION TYPE BATTERY
Morton A. Barron, Silver Spring, Md., assignor to the United States of America as represented by the Secretary of the Army
Filed Oct. 17, 1967, Ser. No. 676,390
Int. Cl. H01m *21/08*
U.S. Cl. 136—114 **3 Claims**

A deferred action type battery for use in a projectile, comprising a stack of electrode plates with separators disposed therebetween to form a plurality of battery cells. The electrolyte is placed in an ampule inserted within the stack and is forced into the battery cells by centrifugal force after the projectile is fired and the ampule is shattered. To prevent leakage, the separators are coated with heat sealing adhesive, and when the assembled stack is heated and put under pressure, the adhesive seals the joints of the stack so as to prevent electrolyte leakage.

3,464,864
BUTTON FOR HOLDING THERMOCOUPLES TO THE SKIN SURFACE OF SUBJECTS
John C. Rentz, Abingdon, Md., assignor to the United States of America as represented by the Secretary of the Army
Filed June 4, 1968, Ser. No. 734,283
Int. Cl. H01v *1/02*
U.S. Cl. 136—221 **7 Claims**

A thermocouple support having a disc-shaped head and base at opposite sides of a unitary structure. The thermocouple is positioned at the bottom of the base. An elastic band encircles the body to be measured and both ends of



the band are hooked over the head of the support, pressing the support and thermocouple against the body.

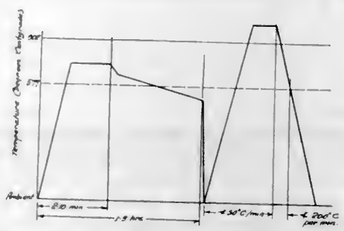
3,464,865
PROCESS FOR TREATING COPPER BASE ALLOYS
George H. Eichelman, Jr., Cheshire, Conn., assignor to Olin Mathieson Chemical Corporation, a corporation of Virginia
No Drawing. Filed Apr. 11, 1967, Ser. No. 629,927
Int. Cl. C21d *7/14*
U.S. Cl. 148—11.5 **8 Claims**

The instant disclosure teaches an improved practice for treating copper base alloys known as aluminum-bronze alloys to enable substantial increases in the cold rollability thereof, characterized by annealing, slowly cooling and cold rolling.

3,464,866
PROCESS FOR OBTAINING ALUMINUM ALLOY CONDUCTORS
Michael J. Pryor, Woodbridge, Conn., assignor to Olin Mathieson Chemical Corporation, a corporation of Virginia
No Drawing. Continuation-in-part of application Ser. No. 496,148, Oct. 14, 1965. This application July 1, 1968, Ser. No. 741,280
Int. Cl. H01b *1/02;* **C21d** *9/52*
U.S. Cl. 148—12.7 **12 Claims**

An improved process for the preparation of aluminum base alloy conductors wherein the alloy contains magnesium and silicon, which process includes the steps of holding the alloy at an elevated temperature, hot rolling to redraw rod with a specified cooling rate, cooling the redraw rod to room temperature, holding at an elevated temperature and cooling to room temperature at a specified rate.

3,464,867
LOW VOLTAGE AVALANCHE PROCESS
Henry Mack Queen, Manhattan Beach, Calif., assignor to TRW Semiconductors, Inc., Lawndale, Calif., a corporation of Delaware
Filed May 16, 1967, Ser. No. 638,938
Int. Cl. H01l *7/34*
U.S. Cl. 148—181 **7 Claims**



The method of manufacturing an alloyed semiconductor diode whereby field emission conduction phenomena

are reduced at low reverse voltages including the steps of alloying an active impurity into a semiconductor body at a temperature above the impurity-semiconductor eutectic, cooling the semiconductor body to a temperature below the impurity-semiconductor eutectic, reheating the alloyed semiconductor body to a temperature above 900° C., followed by a rapid cooling to a temperature below the impurity-semiconductor eutectic.

3,464,868
METHOD OF ENHANCING TRANSISTOR SWITCHING CHARACTERISTICS
Roger Edwards, Gillette, N.J., and Paul P. Perron, Jr., Hanover Township, Lehigh County, Pa., assignors to Bell Telephone Laboratories, Incorporated, Murray Hill and Berkeley Heights, N.J., a corporation of New York
Filed Jan. 13, 1967, Ser. No. 609,210
Int. Cl. H01l *7/44*
U.S. Cl. 148—186 **3 Claims**

Silicon transistors containing both conductivity type zones produced by diffusion, and diffused gold to control minority carrier lifetime, are subjected to a very brief, high temperature, terminal heat treatment. Typically this heat treatment is at a temperature of from 1000 to 1100 degrees centigrade for a period of up to about 30 seconds. This treatment distributes previously introduced gold to more effective locations within the device without deleteriously affecting diffused PN junctions. Subsequent processing involves only lower temperatures, less than about 600 degrees centigrade.

3,464,869
PYROTECHNIC COMPOSITIONS CONTAINING METAL FUEL, INORGANIC OXIDIZER SALT, AND A VINYL POLYMER IN A SOLVENT
Vernon Paul Wystrach, Noroton Heights, and Richard Vincent O'Lenick, Stamford, Conn., and Michael Albert Murray, White Plains, N.Y., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine
No Drawing. Filed Dec. 13, 1967, Ser. No. 690,094
Int. Cl. C06d *1/10;* **C06b** *11/00, 1/00*
U.S. Cl. 149—42 **4 Claims**

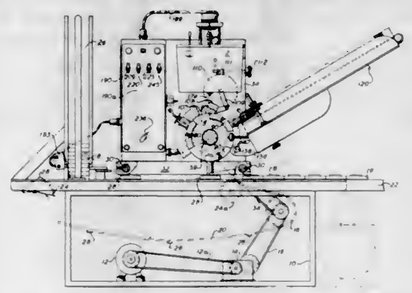
Plastic pyrotechnic compostions comprising (1) a fuel, (2) an oxidizer and (3) a polymer dissolved in an ignitable, volatile solvent to such an extent that the polymer is tacky, are disclosed.

3,464,870
ALUMINUM POLISHING PROCESS
Gerald R. Formsma and Louis G. Gaspar, Cooper Township, Kalamazoo, Mich., assignors to North American Aluminum Corporation, Parchment, Mich., a corporation of Michigan
No Drawing. Filed June 25, 1965, Ser. No. 467,132
Int. Cl. C23f *3/04*
U.S. Cl. 156—21 **5 Claims**

The polishing of decorative and architectural aluminum alloy extrusions in an etchant solution results in removal of an extremely limited amount of material, of the order of .0005 in. to .001 in., for example. Hence the polishing process has been and is herein referred to as "etching."

3,464,871
LABELING METHOD AND APPARATUS
Ruslon John Smith, Scranton, Pa., assignor to Eureka-Carlisle Company, a corporation of Delaware
Filed Mar. 31, 1964, Ser. No. 356,306
Int. Cl. B65c *9/40;* **B32b** *31/00*
U.S. Cl. 156—60 **38 Claims**

Apparatus mounting an article carrying conveyor which receives articles from a magazine and a glued label, or the like, from a vacuum wheel disposed for rotation about a horizontal axis. The vacuum wheel mounts a plurality of nozzles each adapted to withdraw a label using a first magnitude of pressure from a stack of labels disposed in a label magazine, and to convey same under a lesser magnitude of pressure passed a glue dispenser, which drops a spot of hot melt glue thereon, and into engagement with the article to be labeled as the pressure is completely relieved. A drive motor and



vacuum system are disposed beneath the conveyor. A sensing finger is disposed proximate the article magazine to synchronize label pick-up, and a vacuum operated label senser detects the presence of labels on the vacuum wheel to control release of the glue. The magazine is formed with vibration pads actuated by cams carried by the vacuum wheel to insure proper label feed.

3,464,872
RESILIENT MATERIALS
Lilian F. Everett, Biddenham, Bedford, England, assignor to Texfoam International Limited, London, England
Continuation of application Ser. No. 314,137, Oct. 7, 1963. This application Apr. 4, 1968, Ser. No. 718,958
Claims priority, application Great Britain, Oct. 18, 1962, 39,442/62
Int. Cl. B32b *5/18, 31/00*
U.S. Cl. 156—79 **5 Claims**

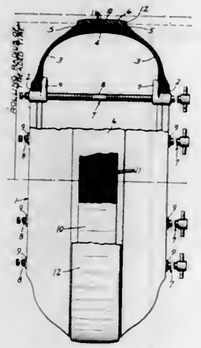


1. A method of making a resilient body of an open cellular material of given shape and dimension which comprises the steps of providing an open cellular, set, resilient, polyurethane foam body of the same shape and dimensions as the resilient body to be made, extending and expanding a foamable rubber latex liquid composition through the interstices of said polyurethane foam body until the rubber latex foam extends continuously throughout the entire said polyurethane foam body so as to be coextensive therewith and conjointly occupy therewith a space in common, setting said rubber latex foam by gelling and vulcanizing said set rubber latex foam.

3,464,873
METHOD OF TREADING PNEUMATIC TIRE CASINGS
Raymond P. Hawkinson, Minneapolis, Minn., assignor to Paul E. Hawkinson Company, Minneapolis, Minn., a corporation of Minnesota
Filed Mar. 23, 1966, Ser. No. 536,707
Int. Cl. B29h *5/04, 17/37*
U.S. Cl. 156—96 **6 Claims**

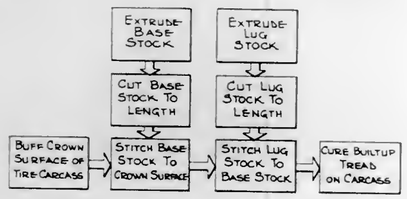
A method for treading a tire to provide a tire with the long wearing and easy handling qualities of a radial ply

tire and the softer cushioning properties of a diagonal ply tire. The side wall portions of the tire are spread laterally to contract the crown portion to approximately the



rolling radius and an annular flexible longitudinally substantially non-elastic reinforcing band is then applied over the crown. Tread material is applied over the band and crown and then cured.

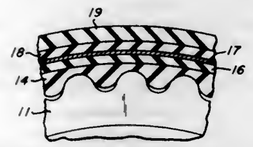
3,464,874
METHOD OF BUILDING A LUGGED TREAD ON A HEAVY DUTY TIRE
Bradley E. Ragan, Spruce Pine, N.C., assignor to Brad Ragan Inc., Spruce Pine, N.C., a corporation of North Carolina
Continuation-in-part of abandoned application Ser. No. 569,863, Aug. 3, 1966. This application Dec. 20, 1966, Ser. No. 603,340
Int. Cl. B29h *17/37, 17/02*
U.S. Cl. 156—96 **6 Claims**



Renewed heavy-duty tires having lugged treads thereon are formed, in preparation for reuse by heavy off-the-road equipment, by buffing the worn tread face of a tire, extruding a length of base stock, promptly stitching a band severed from the base stock to the buffed tread face, extruding a length of lug stock, severing lug portions from the lug stock, stitching the lug portions to the band encircling the buffed tread face and curing the tire with build-up tread in an open steam vessel.

3,464,875
METHOD OF MAKING ENDLESS V-TYPE TRANSMISSION BELTS HAVING INWARDLY DISPOSED TRANSVERSE TEETH
Alden W. Brooks, Clinton L. Bishop, and James R. Thomas, Springfield, and Kenneth D. Richmond, Nixa, Mo., assignors to Dayco Corporation, Dayton, Ohio, a corporation of Delaware
Filed Aug. 26, 1966, Ser. No. 575,280
Int. Cl. F16g *5/04, 1/06;* **B29h** *7/22*
U.S. Cl. 156—138 **6 Claims**

A method of manufacturing cog or toothed type belts without using preformed cog pads. The material forming the compression section is wrapped around a corrugated mandrel and the strength cord is wound under high ten-



sion to partially force the material into the grooves and partially form the teeth.

3,464,876
METHOD OF FORMING A FUSIBLE INTERLINING MATERIAL
Wolfgang Gerson Barb, Gerrards Cross, England, assignor to Staflex International Limited, London, England, a British company
Filed Nov. 15, 1965, Ser. No. 507,846
Claims priority, application Great Britain, Nov. 16, 1964, 46,659/64; Mar. 2, 1965, 8,956/65
Int. Cl. B32b *31/20;* **C09j** *5/00*
U.S. Cl. 156—155 **4 Claims**



A fusible interlining material is produced by adhering to a base fabric a heat softenable thermoplastic net of a type which has localised areas of greater thickness and then breaking the strands connecting such thickened localised areas by the application of heat so that the melted material retracts into the thickened localised areas leaving a pattern of spaced dots of thermoplastic on the surface of the base fabric.

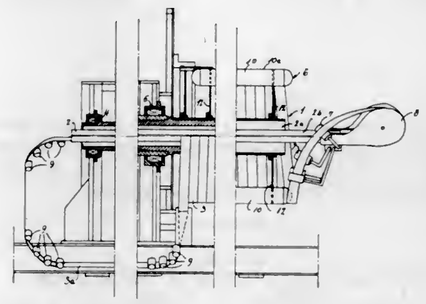
3,464,877
SUGARCANE PROCESSING
Robert B. Miller, 12540 126th Ave., Edmonton, Alberta, Canada, and Stephen M. Creighton and Taras W. Raczuk, Edmonton, Alberta, Canada; said Creighton and said Raczuk assignors to said Miller
Filed July 22, 1964, Ser. No. 384,462
Int. Cl. B32b *31/02*
U.S. Cl. 156—259 **5 Claims**

A process for treating sugarcane to obtain unitized strips of laterally interconnected fibers of sugarcane rind by removing the pith from one side of the rind and the epidermis material from the other side of the rind without disturbing the rind fibers. The rind fiber strips are subjected to forming pressure and unitized in a desired configuration.

3,464,878
PROCESS OF BONDING RUBBER TO POLYESTER TIRE CORD AND COMPOSITION
Eckhard Christian August Schwarz, Grifton, N.C., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed Nov. 23, 1965, Ser. No. 509,436
Int. Cl. C09j *5/00*
U.S. Cl. 156—330 **13 Claims**

Improved adhesion of rubber to polyester tire cord or other polyester shaped structures is obtained by precoating the polyester with a composition containing 2-pyrrolidone, a polyepoxide and an alkaline catalyst. Bonds obtained with conventional resorcinol-formaldehyde-latex (RFL) type adhesive are comparable to nylon-rubber bonds with RFL adhesive. RFL adhesive can be included in the pyrrolidone composition.

3,464,879
DRIVEN MANDREL ROTATABLE ABOUT ITS LONGITUDINAL AXIS FOR CONTINUOUS PRODUCTION OF TUBING IN RUNNING LENGTHS, PREFERABLY GLASS FIBRE REINFORCED PLASTIC TUBING
Peder Ulrik Poulsen, 4 Mollevej, 2800 Lyngby, Denmark
Filed Aug. 28, 1968, Ser. No. 756,052
Claims priority, application Denmark, Sept. 1, 1967, 4,407/67
Int. Cl. B65h *81/08;* **B29d** *23/12*
U.S. Cl. 156—425 **1 Claim**



A driven mandrel rotatable about its longitudinal axis for continuous production of tubing in running lengths, preferably glass fibre reinforced plastic tubing, the mandrel having a plurality of endless ball belts supporting the outer mandrel wall along its periphery.

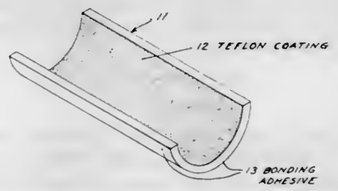
3,464,880
SURFACE CRYSTALLIZED GLASS AND METHOD OF PRODUCING
Dale W. Rinehart, Natrona Heights, Pa., assignor to PPG Industries, Inc., a corporation of Pennsylvania
No Drawing. Continuation of application Ser. No. 325,496, Nov. 21, 1963. This application May 6, 1968, Ser. No. 727,088
Int. Cl. B44f *1/00;* **C03c** *17/00;* **B44d** *1/20*
U.S. Cl. 161—1 **6 Claims**

Surface crystallization of a lithia-alumina-silica glass by a surface nucleating agent during heat treatment whereby a compressive crystalline layer is formed thereon.

3,464,881
SUGARCANE BOARD PRODUCT AND PROCESS OF MAKING THE SAME
Robert B. Miller, 12540 126th Ave., Edmonton, Alberta, Canada, and Taras W. Raczuk, Edmonton, Alberta, Canada; said Raczuk assignor to said Miller
No Drawing. Filed July 1, 1965, Ser. No. 468,984
Int. Cl. B32b *5/12*
U.S. Cl. 161—60 **6 Claims**

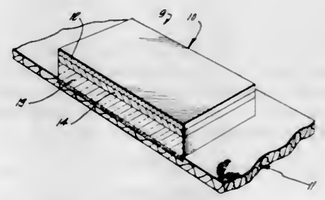
A structural building product manufactured from substantially uncrushed and pith-free sugarcane rind fiber bundles, said product formed by applying heat and pressure to the fiber bundles to bond and shape the bundles.

3,464,882
ANTIFRICTION BEARING ELEMENT
Henry C. Morton, Branford, Conn., assignor to The Russell Manufacturing Company, Middletown, Conn., a corporation of Connecticut
Filed Jan. 21, 1965, Ser. No. 427,073
Int. Cl. D04h *1/58;* **B32b** *27/04, 5/28*
U.S. Cl. 161—151 **2 Claims**



A bearing formed by impregnating fibers with a thermosetting resin, partially curing the resin into the "B" state, comminuting the impregnated fibers, cold molding the comminuted fibers to form a self-supporting, rigid bearing preform, providing at least a surface coating of polytetrafluoroethylene and curing the preform to the rigid heat set state.

3,464,883
SELF-CONTAINED, SOLVENT-RETAINING, PRESSURE-SENSITIVE ADHESIVE PRODUCT
Norman L. Moline, Duarte, and John R. Strand, Whittier, Calif., assignors to Avery Products Corporation, San Marino, Calif., a corporation of California
Filed Dec. 20, 1965, Ser. No. 515,051
Int. Cl. C09j *7/04;* **B32b** *27/24*
U.S. Cl. 161—167 **7 Claims**



A self-adhesive product in which a layer of pressure-sensitive adhesive is disposed between a face layer and a release liner and is preferentially adhered to the face layer, and in which the adhesive has dispersed and retained therein a quantity of solvent for the adhesive in an amount which approaches but is less than that required to render the adhesive flowable laterally of the face layer and which is sufficient to maintain the adhesive in a tacky and substantially wet state.

3,464,884

POLYALLYL ESTER MODIFIED MELAMINE MOLDING

Herman V. Boenig, Lexington, Ky., and James A. Waters, Jr., Bay Village, Ohio, assignors to Brookpark-Royalon, Inc., Sebring, Ohio, a corporation of Ohio

No Drawing. Continuation-in-part of abandoned application Ser. No. 184,659, Apr. 3, 1962. This application June 30, 1966, Ser. No. 561,693

Int. Cl. B32b *27/42*

U.S. Cl. 161—248 5 Claims

1. A molded article consisting essentially of a base layer of a polymerized aminoplast resin containing between about 20% and about 60% by weight of a filler material, and a surface layer integral therewith consisting essentially of a polymerized allyl ester prepolymer containing substantially no filler material, the proportion of said allyl ester being between about 5% and about 35% by weight of the total.

3,464,885

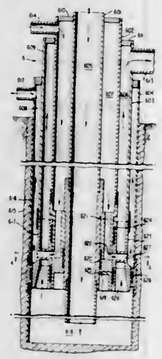
METHODS FOR EFFECTING CONTINUOUS SUBTERRANEAN REACTIONS

John R. Land and Paul A. Moore, Duncan, Okla., assignors to Halliburton Company, Duncan Okla., a corporation of Delaware

Filed Apr. 5, 1966, Ser. No. 540,339

Int. Cl. D21c *3/24*

U.S. Cl. 162—17 10 Claims



A method of effecting subterranean reactions, and particularly the digestion of wood chips. The method involves the flowing of material through countercurrent coaxial flow paths within a well bore while flowing heated fluid coaxially of the material flow paths.

3,464,886

DAS-TRIAZINE BRIGHTENERS AND PAPER MADE THEREWITH

Albert Peter Paul, Teaneck, N.J., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed Apr. 29, 1966, Ser. No. 546,166

Int. Cl. D21h *3/80*

U.S. Cl. 162—162 8 Claims

New non-yellowing brighteners derived from 4,4′-bis (triazinylamino)-stilbene-2,2′-disulfonic acid and which contain as a substituent of the s-triazine ring at least one bis(2-carbamoylethyl) amino moiety are valuable for whitening paper made from cellulosic fibers.

3,464,887

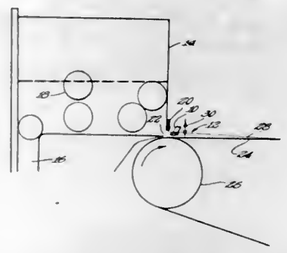
SENSING DEVICE FOR SLICE DELIVERY TO FOURDRINIER WIRE

Salomon M. Salomon, Madison, Wis., assignor to Beloit Corporation, Beloit, Wis., a corporation of Wisconsin

Filed Sept. 27, 1965, Ser. No. 490,389

Int. Cl. D21f *1/06;* G01p *5/02*

U.S. Cl. 162—263 9 Claims



A transducer producing an electrical signal as a function of flow stream velocity for positioning in the slice flow stream of a headbox and being movable both vertically and horizontally relative to the slice stream.

3,464,888

NUCLEAR REACTOR AND METHOD OF OPERATING SAME

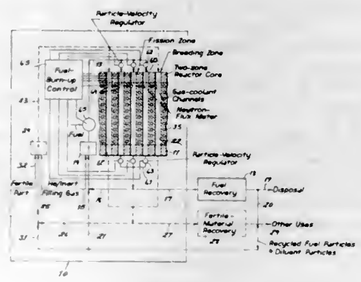
Alfred Boettcher, Aachen, Germany, assignor to Kernforschungsanlage des Landes Nordrhein-Westfalen-e.V., Julich, Germany, a corporation of Germany

Continuation-in-part of application Ser. No. 518,298, Jan. 3, 1966. This application May 25, 1967, Ser. No. 641,350

Claims priority, application Germany, Jan. 21, 1965, K 55,062

Int. Cl. G21c *3/26, 15/02*

U.S. Cl. 176—32 6 Claims



Method of operating a heterogeneous nuclear reactor in which carbide- or carbon-coated particles (particle size=several hundred microns) of a nuclear-fuel and/or fertile substance are passed substantially continuously downwardly through vertical channels in a graphite reactor core at a rate of 2 to 20 mm./hr. and controlled by the rate of withdrawal of the particles from the base of the channels, the channels having cross-sectional dimensions substantially in excess of the dimensions of the particles, namely, 0.2 to 2 mm., a coolant being passed through ducts in the reactor core independent of the channels while helium fills the channels to serve as a heat-transfer promoter between the particles in the channels and the channel walls across which thermal transfer to the coolant is effected. The fuel particles are fed to the channels selectively in accordance with the degree of burnup.

3,464,889

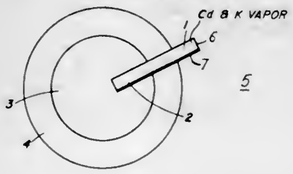
HEAT ACTUATED CONTROL ROD UTILIZING A CADMIUM-POTASSIUM MIXTURE

George F. Erickson, Los Alamos, N. Mex., assignor to the United States of America as represented by the United States Atomic Energy Commission

Filed Nov. 1, 1967, Ser. No. 679,828

Int. Cl. G21c *7/10*

U.S. Cl. 176—86 1 Claim



An enclosed nuclear reactor control rod for a two-region reactor, the inside of the enclosure having a capillary path, two different condensable vapors inside the enclosure (e.g., potassium and cadmium), one of the materials having a higher vapor pressure than the other above the desired temperature of operation of the reactor and a lower vapor pressure than the other below said temperature, one of said materials having a high neutron absorption cross section at thermal energies, the device positioned so that an increase in temperature will preferentially send the high cross section material to the thermal region thereby slowing down the fission rate (and lowering the temperature) of the reactor is described.

3,464,890

METHOD OF SEPARATING WHOLE BLOOD

Theodore E. Weichselbaum, St. Louis, Mo., assignor, by mesne assignments, to Brunswick Corporation, Chicago, Ill., a corporation of Delaware

No Drawing. Filed Mar. 1, 1965, Ser. No. 436,300

Int. Cl. C12d *13/02;* C12k *1/10*

U.S. Cl. 195—66 2 Claims

A solid granular material, e.g. polystyrene beads, having a coating of anti-coagulant, e.g., heparin, and having a specific gravity intermediate that of plasma and blood which can be used by adding to blood in vitro to separate plasma from the remainder of the blood. When the beads are added to whole blood, a separation occurs by which the plasma portion of the blood forms, by virtue of the presence of the anti-coagulant, in the resulting layer above the beads while the remaining portions of the blood form in a layer below the beads so that the plasma can easily be separated. In a preferred form, the material used to coat the beads also includes a wetting agent.

3,464,891

PROCESS FOR OBTAINING ANTIBIOTIC PRODUCTS BY CULTIVATING *HELMINTHOSPORIUM DEMATIOIDEUM*

Geoffrey Lightfoot Floyd Norris, Roy Neville Speake, and William Brian Turner, Macclesfield, England, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

Filed Feb. 1, 1965, Ser. No. 429,615

Claims priority, application Great Britain, Feb. 14, 1964, 6,269/64

Int. Cl. C12k *1/00*

U.S. Cl. 195—81 10 Claims

The disclosure relates to two antibiotic products of molecular formula $C_{29}H_{35}NO_5$ and $C_{29}H_{37}NO_5$, respectively, and to a process for the manufacture of these products by cultivation of an active strain of *Helminthosporium dematioideum* followed by isolation of the products from the culture filtrate.

3,464,892

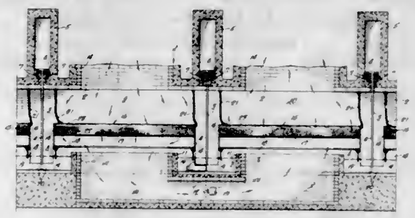
TUNNEL OVEN WITH A SERIES OF MOVING BARGES AND SEPARATE COMPARTMENTS

John D. Bennett, Richardson, Tex., assignor to Sun Oil Company, Philadelphia, Pa., a corporation of New Jersey

Filed May 23, 1967, Ser. No. 640,752

Int. Cl. C10b *53/06, 7/14, 1/00*

U.S. Cl. 202—98 6 Claims



A tunnel oven for gaseous treatment of solid material is separated by gas-tight partitions into a number of compartments in each of which a separate treatment step may be carried out. A series of barges, which carry the solid material and which float on liquid in the tunnel, are moved step-by-step from one compartment to another. Inlet and outlet ducts, which open into the tops and bottoms of each compartment, convey the treating gases through the compartments. The ducts are sealed to the barges, so that the gases are made to pass through the solid material. The tunnel oven may be used for the retorting of oil shales, and a process using the oven is disclosed, this process including as a step the burning of the carbonaceous residue remaining on the shale after the same has been retorted.

3,464,893

RECTIFIER HAVING SIEVE RIM AND TAPERED DISC DISTRIBUTING MEANS

Igor Yakovlevich Gorodetsky, Leningradskoe shasse 112, korpus 3, kv. 663, Moscow, U.S.S.R.

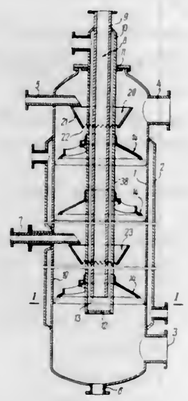
Filed Jan. 27, 1967, Ser. No. 612,252

Int. Cl. B01d *3/28, 3/10*

U.S. Cl. 202—158 1 Claim

A rectifier in which vapor condensed on a heat ex-

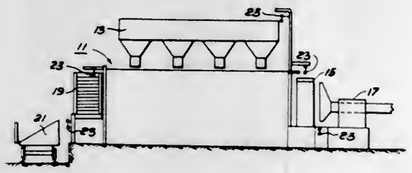
changer is led to the inner wall of a surrounding and heated shell by a conical disk having a peripheral mesh rim.



3,464,894
METHOD AND APPARATUS FOR SPOTTING COKE OVEN MACHINERY

Benjamin F. Tatterson, Pittsburgh, Pa., assignor to Koppers Company, Inc., a corporation of Delaware

Filed July 26, 1967, Ser. No. 656,232
Int. Cl. C10b *41/04*
U.S. Cl. 202—262 **6 Claims**



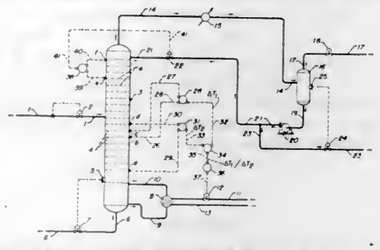
A segmented electrical conductor rail is mounted to a coke oven battery and spaced apart collector shoes in contact with the rail segment are mounted to a unit of servicing machinery associated with the coke oven battery. Electronic controls receive signals from the collector shoes and transmit coordinated movement signals to the power drive of the equipment unit to achieve accurate spotting of the unit at selected locations for servicing the coke oven battery.

3,464,895
METHOD OF OPTIMIZING HEAT INPUT TO A FRACTIONATION COLUMN

David M. Boyd, Clarendon Hills, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

Filed Apr. 8, 1968, Ser. No. 719,556
Int. Cl. B01d *3/42*
U.S. Cl. 203—2 **9 Claims**

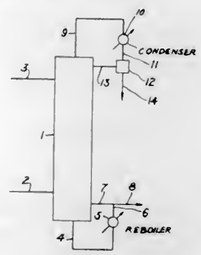
A method of controlling and optimizing heat input to a fractionation column using controlling and regulating means dependent upon a variable which is a function of temperature within the column, while the column is operating at different quantities and qualities of feed and held at a constant product quality by a separate conventional control means.



3,464,896
SEPARATION OF WATER FROM A SINGLE ALKANOL BY EXTRACTIVE DISTILLATION WITH ETHYLENE GLYCOL

Thomas A. Washall, Wilmington, Del., assignor to Atlantic Richfield Company, Philadelphia, Pa., a corporation of Pennsylvania

Filed Feb. 2, 1968, Ser. No. 702,549
Int. Cl. B01d *3/40;* **C07c** *29/30*
U.S. Cl. 203—18 **4 Claims**



Method for the separation of water from C_3 to C_7 monohydric alcohols by extractive distillation with diols.

3,464,897
SEPARATION OF PROPYLENE OXIDE FROM OTHER HYDROCARBONS

John C. Jubin, Jr., Wallingford, Pa., assignor to Atlantic Richfield Company, Philadelphia, Pa., a corporation of Pennsylvania

No Drawing. Filed June 2, 1967, Ser. No. 643,063
Int. Cl. B01d *3/34*
U.S. Cl. 203—52 **7 Claims**

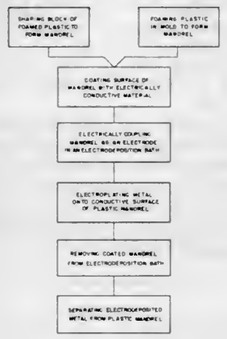
This invention relates to an improvement in the separation of propylene oxide from other hydrocarbon compounds which upon distillation exhibit boiling points equal to or near that of propylene oxide. The improvement comprises distilling the mixture in the presence of an open chain or cyclic paraffin containing from 8 to 12 carbon atoms. The amount of paraffin normally ranges from about 0.1 to 20 parts by weight per one part propylene oxide.

3,464,898
PLASTIC FOAM MANDREL FOR ELECTROFORMING

Richard J. Norris, Falls Church, Va., assignor to the United States of America as represented by the Secretary of the Army

Filed May 16, 1966, Ser. No. 550,228
Int. Cl. C23b *7/02*
U.S. Cl. 204—9 **8 Claims**

An electroforming process for forming complex hollow metal articles which comprise depositing a conductive material onto the surface of a fine porosity foamed plastic mandrel, electrodepositing a layer of metal onto the conductive material and thereafter separating the mandrel from the metal article.



3,464,899
CHROMIUM PLATING PROCESS

Hyman Chessin, Warren, Edgar J. Seyb, Jr., Oak Park, and Philip J. Smith, Jr., Royal Oak, Mich., assignors to M & T Chemicals Inc., New York, N.Y., a corporation of Delaware

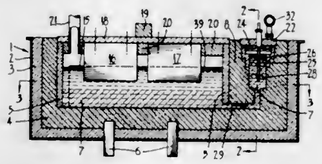
No Drawing. Filed Apr. 24, 1964, Ser. No. 362,457
Int. Cl. C23b *5/50, 5/06;* **C23f** *17/00*
U.S. Cl. 204—29 **17 Claims**

In accordance with certain of its aspects, the method of this invention for electrodepositing a corrosion-resistant chromium plate on the surface of a metal may comprise forming on the surface of said metal an adherent thin film of a preferably organic, hydrogen-acceptor, film-forming composition, and electroplating a chromium plate onto said metal bearing said film.

3,464,900
PRODUCTION OF ALUMINUM AND ALUMINUM ALLOYS FROM ALUMINUM CHLORIDE

Ernest Foley, East Burwood, Victoria, and George L. Herwig, East Brighton, Victoria, Australia, assignors to Conzinc Riotinto of Australia Limited, and Commonwealth Scientific and Industrial Research Organization, both of Melbourne, Victoria, Australia, both corporations of Australia

Filed Dec. 30, 1965, Ser. No. 517,769
Claims priority, application Australia, Dec. 30, 1964, 53,446/64
Int. Cl. C22d *3/12*
U.S. Cl. 204—67 **9 Claims**

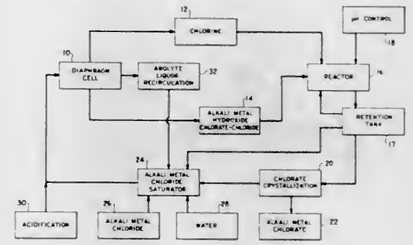


In the electrolytic production of aluminum from alchlor, a nascent metallic reductant (e.g., magnesium) is dissolved in a molten metal (aluminum) or alloy thereof serving as the cathode of the electrolytic cell and the resulting solution is contacted with alchlor out of contact with the fused salt electrolyte in which the metallic reductant was formed from its chloride.

3,464,901
PRODUCTION OF CHLORATES

Morris P. Grotheer and Edward H. Cook, Jr., Lewiston, N.Y., assignors to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York

Filed Nov. 30, 1965, Ser. No. 510,592
Int. Cl. C22d *1/02;* **C01b** *11/26;* **B01k** *3/10*
U.S. Cl. 204—95 **10 Claims**

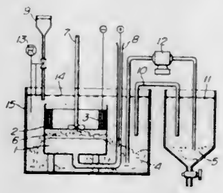


An alkali metal chlorate may be produced by the electrochemical decomposition of an alkali metal chloride in a diaphragm type chlor-alkali cell to produce chlorine and caustic which products are inter-reacted chemically at a pH of about 6 to 8 to produce hypochlorite and subsequently chlorate. A portion of the chlorate containing reaction mixture is made up with alkali metal chloride, acidified and fed to the anode compartment of the cell to afford an anolyte pH of about 1 to 5.

3,464,902
PROCESS FOR PREPARING MERCURIC OXIDE

Yasuji Amano, Hirakata-shi, Hiroshi Kumano, Daito-shi, and Atsushi Nishino, Neyagawa-shi, Japan, assignors to Matsushita Electric Industrial Co., Ltd., Osaka, Japan, a corporation of Japan

Filed July 1, 1966, Ser. No. 562,175
Claims priority, application Japan, July 9, 1965, 40/42,215, 40/42,216
Int. Cl. C01b *13/14;* **C22d** *1/04;* **B01k** *1/00*
U.S. Cl. 204—96 **4 Claims**



A process for preparing mercuric oxide characterized by carrying out electro-oxidation in a system which comprises an insoluble metal cathode, a metal mercury anode, and an electrolytic solution containing at least one ionic component selected from the group consisting of carbnate in and hydroxyl ion, if required, added with chloride ion.

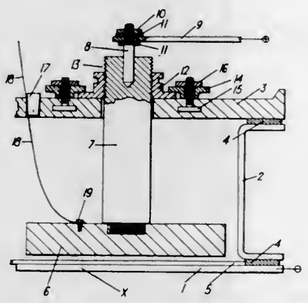
3,464,903
METHOD OF ADJUSTING INDIVIDUAL ANODES IN A MERCURY CATHODE CELL

John Peter Hodson Shaw, Weston Point, Runcorn, England, assignor to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

Filed July 19, 1965, Ser. No. 472,907
Claims priority, application Great Britain, Aug. 12, 1964, 32,849/64
Int. Cl. C22d *1/04;* **B01k** *3/00*
U.S. Cl. 204—99 **4 Claims**

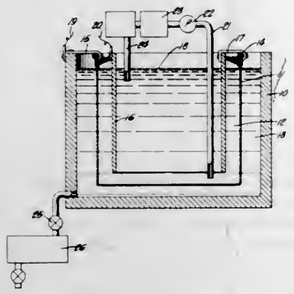
There is provided a method of accurately adjusting the gap between the anode and cathode of a mercury

cell useful for producing chlorine by electrolysis of alkali metal chloride solutions. The electrical conductance across the electrolyte gap between the anode and cathode is measured and the gap adjusted until the conductance is brought to a predetermined value, e.g. 5000–18,000 mho/m.² of cathode surface. Each anode-cathode gap in the cell is individually adjusted, preferably by use



of a probe attached to the anode plate which measures the voltage drop across the electrolyte gap, and from which measured voltage drop is substrated the reversible cell potential and chlorine overvoltage. The so corrected voltage is then related to the current flowing to the anode to obtain a conductance across the electrolyte gap in terms of mho/m.² of cathode surface.

3,464,904
METHOD FOR TREATING METALLIC SULFIDE COMPOUNDS
Eldred C. Brace, Tucson, Ariz., assignor to Banner Mining Company, Tucson, Ariz., a corporation of Nevada
Filed Dec. 21, 1964, Ser. No. 419,967
Int. Cl. C22d *1/22, 1/16;* **C23b** *3/10*
U.S. Cl. 204—105 **1 Claim**



A method of treating metallic sulfide compounds including copper and zinc sulfides to recover the metals therefrom which includes subjecting the compounds to electrolysis, utilizing a graphite anode which forms a tank or cell for the electrolyte, and a porous diaphragm between the anode and the cathode of a material selected from the group consisting of Dynel, polyvinyl chloride, polyethylene, polypropylene chloride and Teflon, removing the catholyte from the catholyte side of the diaphragm, reducing the ferric iron therein to ferrous iron and returning the catholyte to the catholyte side of the diaphragm.

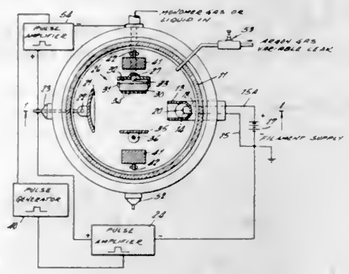
3,464,905
SILENT DISCHARGE NITROSATION OF HYDROCARBONS
Robert Fuhrmann, Morris Plains, Stylianos Sifniades, Parsippany, and Emery C. Lazar, Morristown, N.J., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York
No Drawing. Filed Feb. 14, 1967, Ser. No. 615,908
Int. Cl. C07c *3/24;* **B01k** *1/00*
U.S. Cl. 204—168 **5 Claims**

Nitrosation of alkyl and cycloalkyl hydrocarbons by nonaqueous nitrosating agents such as nitric oxide, nitrosyl chloride, nitric oxide and chlorine, and mixtures of nitric oxide and nitrosyl chloride is catalyzed by silent electric discharges. In the presence of excess gaseous hydrogen chloride the reaction product is the alkyl or cycloalkyl oxime hydrochloride.

3,464,906
ELECTRODEPOSITION OF ZINC PARTICLES
Maurice Alexander Ridley, Durham, and Peter John Robinson, Gateshead, England, assignors to Durham Chemicals Limited, Birtley, England, a British company
No Drawing. Filed Mar. 8, 1967, Ser. No. 621,456
Claims priority, application Great Britain, Mar. 9, 1966, 10,417/66
Int. Cl. C23b *13/00;* **B01k** *5/02*
U.S. Cl. 204—181 **20 Claims**

Zinc paint can be deposited electrophoretically provided the zinc pigment is in the form of flakes of particle size below 60 microns, preferably of specific surface 0.5–3.3 m.²/g., and carrying a largely non-polar coating, e.g. of stearic acid. Aluminium flake similarly coated and of particle size below 150 microns may also be present, as may an extending high resistance pigment, preferably coated rutile. The coated substrate may be given a further coating of zinc or another metal electrolytically, or of a higher resistance pigment (in a binder) electrophoretically.

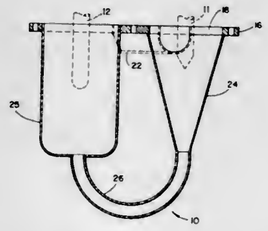
3,464,907
TRIODE SPUTTERING APPARATUS AND METHOD USING SYNCHRONIZED PULSATING CURRENT
John G. Froemel, Verona, and Meyer Sapoff, West Orange, N.J., assignors to Victory Engineering Corporation, Springfield, N.J., a corporation of Delaware
Filed Feb. 23, 1967, Ser. No. 617,998
Int. Cl. C23c *15/00*
U.S. Cl. 204—192 **13 Claims**



A device and method for depositing molecules of a desired material on a substrate or base is described. Deposition is accomplished in a rarified atmosphere containing a noble gas. The initial discharge is created between an anode and a cathode which creates electrons and gas ions. An auxiliary target of the material to be deposited is biased with respect to the anode and attracts the gas ions which ions cause emission of the

desired molecules. A substrate is mounted parallel to the target and the molecules are deposited on it. Both the main discharge between the anode and cathode and the auxiliary discharge between the anode and the target are pulsed by the application of high voltage.

3,464,908
APPARATUS FOR MEASURING HYDROGEN ION CONCENTRATION OF A SLURRY
Thomas Alexander Donaldson, Newark, Del., assignor to J. M. Huber Corporation, Locust, N.J., a corporation of New Jersey
Filed Mar. 15, 1966, Ser. No. 534,444
Int. Cl. B01k *3/04*
U.S. Cl. 204—195 **1 Claim**



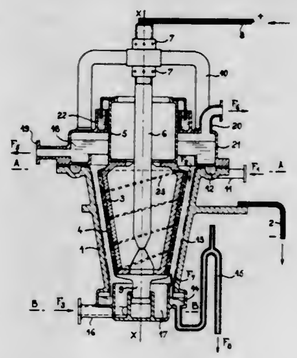
Apparatus for measuring the hydrogen ion concentration of a slurry containing abrasive solids in which a spiral flow is provided so that the heavier particles are prevented from coming in contact with the electrode while the slower moving fine particles of the slurry scrub undesired coating from the electrode is disclosed.

3,464,909
ALUMINUM ALLOY GALVANIC ANODES
Kiyomi Yanagida and Ikuo Hatano, Nagoya-shi, and Kawai Masazumi, Osaka, Japan, assignors to Sumitomo Chemical Company, Ltd., Osaka, Japan, a corporation of Japan
No Drawing. Filed May 19, 1967, Ser. No. 639,605
Claims priority, application Japan, May 21, 1966, 41/32,621
Int. Cl. C23f *13/00;* **B01k** *3/06*
U.S. Cl. 204—197 **6 Claims**

Aluminum base alloy galvanic anodes for the cathodic protection of metal structure having a lower anodic potential and a higher current efficiency and substantially free of pitting or crevice formation due to selective corrosion during their useful life as consumable anodes to protect the metal structures containing 0.01–0.2% by weight of mercury, 0.01–10% by weight of zinc and 0.01–2% by weight of lead.

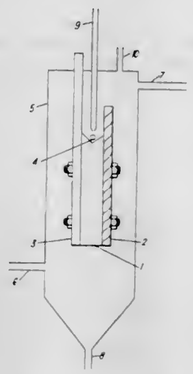
3,464,910
AQUEOUS ELECTROLYSIS CELL FOR SALINE SOLUTIONS, ESPECIALLY OF ALKALI CHLORIDES
Edouard Charles Krebs, 1 Rue Perronet, Neuilly-sur-Seine, France, and Paul Henri Staib, 37 Rue Decamps, Paris, France
Filed June 14, 1965, Ser. No. 463,642
Claims priority, application France, June 15, 1964, 978,330
Int. Cl. B01k *3/04*
U.S. Cl. 204—219 **13 Claims**

A device in an installation for electrolysis of saline solutions utilizing a film of mercury introduced tangentially and flowing over the cathode where cathode and anode are coaxially located to each other forming a slanting frustoconical form and a brine solution is introduced



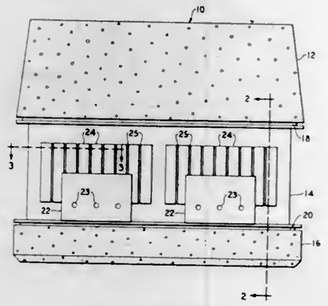
with a tangential speed rotating in the same direction as the mercury.

3,464,911
ELECTROCHEMICAL APPARATUS
Ronald Geoffrey Cottam, Runcorn, England, and Alan Roger Topham, Shawinigan, Quebec, Canada, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain
Filed July 7, 1965, Ser. No. 470,061
Claims priority, application Great Britain, July 29, 1964, 30,121/64
Int. Cl. C22d *1/04;* **C01d** *1/06;* **C01b** *13/04*
U.S. Cl. 204—220 **10 Claims**



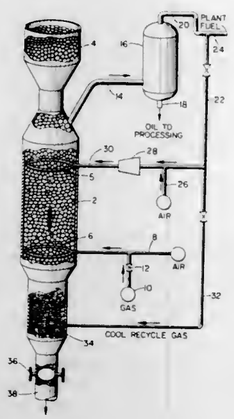
There is provided an apparatus for decomposing amalgam withdrawn from a mercury cathode eletrolysis cell by contacting with an aqueous solution and an amalgam decomposition material, and wherein the improvement comprising an assembly for flowing the amalgam over a large surface area and in contact with an amalgam decomposition material. The assembly comprises at least one first layer of an amalgam decomposition material and at least one second layer of an intersticed metal, the said first and second layers being in physical and electrical contact. The assembly is disposed in a generally vertical plane in a suitable vessel for holding the aqueous solution and the upper surface of the said first layer has a generally horizontal trough therein for distributing and overflowing the amalgam onto the said second layer. The said second layer is so intersticed that the amalgam flows down the second layer largely as a film and through the interstices.

3,464,912
CATHODE ASSEMBLY FOR ELECTROLYTIC CELL
Alvin T. Emery, North Tonawanda, and Walter W. Ruthel, Niagara Falls, N.Y., assignors to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York
Filed May 16, 1966, Ser. No. 550,429
Int. Cl. C22d *1/02;* **B01k** *3/04*
U.S. Cl. 204—286 **8 Claims**



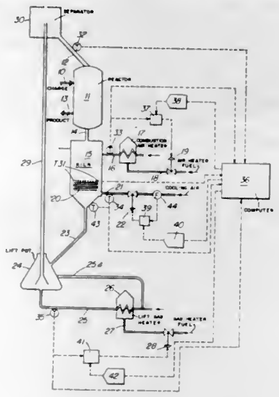
A cathode structure for an electrolytic cell presenting a lead-in bus bar, plural vertically disposed bus bar strips and a walled enclosure having side walls, to which plural internally reinforced foraminous screen cathode fingers, extending substantially across the interior of said enclosure, are attached. The internal reinforcing device for the screen cathode extensions are directly attached to said side enclosure at a position opposite to the vertically positioned bus bar strips, to provide direct electrical contact between the bus bars and the cathode screen.

3,464,913
OIL SHALE RETORTING METHOD
Kay L. Berry, Tulsa, Okla., assignor to Pan American Petroleum Corporation, Tulsa, Okla., a corporation of Delaware
Filed Nov. 24, 1965, Ser. No. 509,539
Int. Cl. C10b *49/06, 53/06*
U.S. Cl. 208—11 **5 Claims**



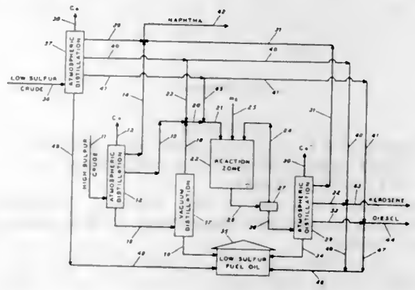
A portion of the heat for retorting oil shale is supplied by injecting externally-generated hot flue gas at about 800° to 1200° F.; the remainder of the retorting heat is supplied by combustion in the spent shale bed. The purpose is to minimize overheating the shale, which causes carbonate decomposition and excessive cracking. In the proposed method a portion of the shale is retorted before heat from the combustion zone reaches it.

3,464,914
REGULATION OF CATALYST SEAL LEG TEMPERATURE
Vern W. Weekman, Jr., Cherry Hill, N.J., assignor to Mobil Oil Corporation, a corporation of New York
Filed July 27, 1967, Ser. No. 656,549
Int. Cl. C10g *13/14*
U.S. Cl. 208—174 **9 Claims**



The computer regulation of the temperature of the catalyst in a catalytic hydrocarbon cracking reactor is carried out by manipulation of kiln cooling air rate, the temperature of kiln combustion air and the temperature of the catalyst lift air. This control method and apparatus maintain a desired seal leg temperature of the catalyst entering the reactor and reduce disturbances which arise from variations in hydrocarbon feed quality and ambient conditions. The control scheme employs a feedforward and feedback control system in which the catalyst lift air and combustion air temperature are responsive to the kiln temperature at a point above the cooling coils. In addition the entire control system responds to the actual temperature of the catalyst in the seal leg, in an adaptive and a feedback loop.

3,464,915
DESULFURIZATION AND BLENDING OF HEAVY FUEL OIL
Norman J. Paterson, San Rafael, and Ronald R. Roselius, Point Richmond, Calif., assignors to Chevron Research Company, San Francisco, Calif., a corporation of Delaware
Filed Mar. 10, 1967, Ser. No. 622,289
Int. Cl. C10g *31/14*
U.S. Cl. 208—218 **3 Claims**

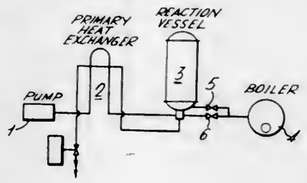


When low sulfur content heavy fuel oil is produced from high sulfur content petroleum residua by separating the residuum boiling above 650° F. into an asphaltic fraction and a nonasphaltic fraction, desulfurizing the nonasphaltic fraction, and blending the desulfurized nonasphaltic fraction with the asphaltic fraction, the low sulfur content heavy fuel oil blend has a lower pour point when the desulfurization of the nonasphaltic fraction is done catalytically in admixture with distillates boiling between 300° F. and 700° F., the presence of the distillate inhibiting hydrocracking of the nonasphaltic fraction during the hydrodesulfurization.

3,464,916
METHOD FOR IMPROVING DISTILLATION EFFICIENCY OF ORGANIC LIQUIDS
Walter R. Privette, La Grange, Ill., assignor to Nalco Chemical Company, Chicago, Ill., a corporation of Delaware
No Drawing. Filed Apr. 10, 1967, Ser. No. 629,379
Int. Cl. B01d *3/36;* **C10g** *31/06*
U.S. Cl. 208—348 **7 Claims**

This invention relates to a method for increasing distillation efficiency of fractionation equipment used to separate organic liquids by the use of certain fluorosilicone polymers.

3,464,917
TREATMENT OF SEWAGE AND OTHER ORGANIC SLUDGES
Ian K. Porteous, London, England, assignor to Norstel and Templewood Hawksley Ltd., Slough, England
Filed May 19, 1967, Ser. No. 639,775
Claims priority, application Great Britain, May 24, 1966, 23,202/66
Int. Cl. C02c *1/00;* **B01d** *25/00*
U.S. Cl. 210—1 **8 Claims**

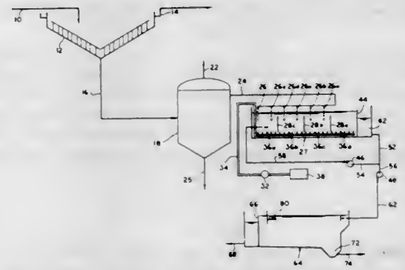


A method for the treatment of organic sludge wherein the sludge is subjected to a conditioning treatment at an elevated temperature in a reaction vessel and wherein the treated sludge is subjected to heat exchange with incoming sludge. The method includes the preliminary step of introducing steam directly into the lower part of the reaction vessel so that the steam contacts and heats the sludge held therein.

3,464,918
METHOD AND APPARATUS FOR TREATING DIGESTION TANK SUPER-NATANT LIQUOR
Nye Grant, 120 Croswell Road, Columbus, Ohio 43214
Filed Feb. 12, 1968, Ser. No. 704,654
Int. Cl. C02c *1/14, 1/02, 5/10*
U.S. Cl. 210—8 **13 Claims**

A waste water purification process and apparatus are disclosed showing an apparatus consisting of (1) an anaerobic bacterial sludge digestion tank which receives solids from settling tanks for primary, secondary, and/or tertiary waste water treatments, the products of the digestion tank being gas, digested sludge and supernatant liquor, (2) an aeration tank for stabilizing and purifying the supernatant liquor in an aerobic bacterial mixed liquor kept aerated and mixed by compressed air or mechanical aerators, (3) a recirculation system and apparatus for directly recirculating the acclimated aerobic bacterial mixed liquor floc of the supernatant aeration tank, and (4) a settling tank for the mixed liquor from the supernatant aeration tank, where solids separate from the liquid, the solids to be sent to the sludge disposal facilities and the clarified liquid to be returned to the waste water treatment facilities.

The method disclosed comprises the subjecting of the supernatant liquor formed in the anaerobic digestion step to a recycling aeration step in the presence of aerobic bacteria and the separation of the solids from the stabilized supernatant liquor in a settling tank.



Alternatively there is disclosed a plurality of settling tanks and aeration tanks where the raw sewage is treated prior to the anaerobic digestion thereof. These previously known prior treatments may vary and may include an activated sludge treatment, trickling filters, chemical precipitation and other processes.

3,464,919
METHOD OF CONCENTRATION OF ORGANIC SLUDGES
Jiri Barta, Prague, Jan. Fechtner, Susice, Jiri Hanzlicek and Miroslav Verner, Prague, and Dobromil Vesley, Usti nad Labem, Czechoslovakia, assignors to Ceskoslovenska Academie ved, Prague, Czechoslovakia
No Drawing. Filed Apr. 13, 1967, Ser. No. 630,541
Int. Cl. C02c *1/14, 1/02*
U.S. Cl. 210—11 **6 Claims**

A method of concentration of organic sludges without material waste of organic matter and nitrogen comprising fermenting the aqueous organic nitrogenous matter containing sludge with non-pathogenic microoragnisms capable of causing at least a partial cleavage of the cell walls, adding a nitrogenous ions-furnishing compound to the sludge, addition of said compound enabling said added non-pathogenic microorganisms in the sludge to cause said partial cleavage of the cell wall, permitting the fermentation of the sludge to proceed for a time and at a temperature sufficient to effect said cleavage and fermentation of polysaccharadic non-nitrogenous substances in the cell walls and to cause the evolution of gases predominantly consisting of carbon dioxide and methane and being substantially free of nitrogen and thus to cause the flotation of part of the sludge, discontinuing the fermentation as soon as said cleavage and flotation has occurred and before any evolution of nitrogen gas occurs, and separating the biological dry matter in the flotated part of the sludge from the aqueous phase of the flotated part of the sludge.

3,464,920
METHOD OF REMOVING OIL FROM THE SURFACE OF WATER USING OLEOPHILIC, HYDROPHOBIC COMMINUTED ORGANIC MATERIALS
Ewald Pirson, Michael Roth, and Siegfried Nitzsche, Burghausen, Upper Bavaria, Germany, assignors to Wacker-Chemie G.m.b.H., Munich, Germany
No Drawing. Filed July 20, 1967, Ser. No. 654,704
Int. Cl. B01d *15/00*
U.S. Cl. 210—29 **4 Claims**

Natural and synthetic oils floating on and contaminating the surface of bodies of water can be removed by

absorption on a comminuted organic solid which has been rendered water repellent but remains oil absorptive after treatment with organosilanes.

3,464,921

FIRE EXTINGUISHING PROCESS AND METHOD

Werner G. Erler, Bielfeldstr. 5, Hamburg-Altona, Germany, and Siegfried Gerber, Schillingskoppel 5f, Hamburg-Sasel, Germany

No Drawing. Filed June 13, 1966, Ser. No. 556,922

Int. Cl. A62d *1/00*

U.S. Cl. 252—2 **13 Claims**

The use of lignin sulfonates as a fire combatting ingredient in dry fire extinguishing powders. The powders contain a lignin sulfonate, e.g. calcium lignin sulfonate, adjuvants for dry fire extinguishing powders, such as ingredients to make the powder water repellent and free flowing.

3,464,922

TRIMETHYLOLALKANE ESTERS AND METHOD OF TREATING TEXTILE FILAMENTS THEREWITH

William F. Bernholz, Wayne, and Thomas C. Cox, Boonton, N.J., assignors to Drew Chemical Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Dec. 10, 1965, Ser. No. 513,070

Int. Cl. D06m *13/20*

U.S. Cl. 252—8.6 **20 Claims**

This disclosure is directed to trimethylolalkane esters, to textile finishes therefrom, and to the method of applying these finishes to synthetic linear organic polymer filaments. For example, the trimethylolalkane mixed triester of capric, lauric, myristic, and palmitic acids in an aqueous emulsion may be used as a finish for polyamide yarns.

3,464,923

LUBRICANT

Henri Roche, Neuilly-sur-Seine, and Alain Billot de Goldlin, Paris, France, assignors to Societe Anonyme Antar Petroles de l'Atlantique, Paris, France, a French corporation

No Drawing. Filed Mar. 13, 1967, Ser. No. 622,448

Claims priority, application France, Mar. 22, 1966, 54,564

Int. Cl. C10m *1/38, 1/24*

U.S. Cl. 252—33.2 **18 Claims**

A process for producing a lubricating oil in which a stable, alkaline earth metal salt is incorporated.

3,464,924

POLARIZABLE FERROELECTRIC CERAMIC COMPOSITION

Hisao Banno, Chita-gun, Shoji Maeda, Nagoya, Tsutomu Tsunooka, Kariya, and Masao Sakai, Tajimi, Japan, assignors to NGK Spark Plug Co., Ltd., Nagoya, Japan

Filed May 22, 1967, Ser. No. 639,973

Claims priority, application Japan, June 4, 1966, 41/35,687

Int. Cl. C04b *35/00*

U.S. Cl. 252—62.9 **9 Claims**

A novel and useful polarizable ferroelectric ceramic composition for use in piezoelectric and electrostrictive ceramic article consisting essentially of $Pb(Zr\text{-}Sn\text{-}Ti)O_3$ wherein a part of the lead is replaceable by elements selected from Group II of the Periodic Table and containing at least one element selected from the group of Nb, Ta, Bi and rare earth element, and further containing Mn.

3,464,925

HYDRAULIC FLUIDS CONTAINING AMINOTRIOLS AND DERIVATIVES THEREOF

Odile Benoit and Francois Giolito, Lyon, France, assignors to Progil, Paris, France, a corporation of France

No Drawing. Filed Sept. 30, 1966, Ser. No. 583,426

Claims priority, application France, Oct. 15, 1965, 46,484

Int. Cl. C10m *1/32;* **C09k** *3/00*

U.S. Cl. 252—77 **2 Claims**

The use of aminotriols of the formula

$$N\begin{cases}(C_3H_6O)(C_3H_6O)_xH\\(C_3H_6O)(C_3H_6O)_yH\\(C_3H_6O)(C_3H_6O)_zH\end{cases}$$

wherein $x+y+z$ is from 9–57, as hydraulic fluids or as essential ingredients therein.

3,464,926

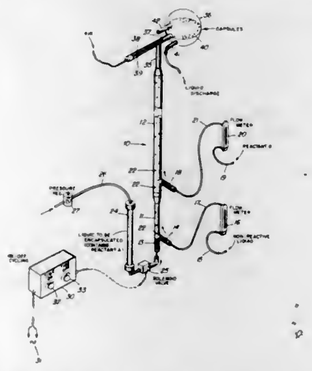
PROCESS FOR ENCAPSULATION

Jan E. Vandegaer, Wayne, and Frank G. Meier, Bloomfield, N.J., assignors to Pennwalt Corporation, a corporation of Pennsylvania

Filed Apr. 26, 1965, Ser. No. 450,812

Int. Cl. B01j *13/00;* **B44d** *1/092*

U.S. Cl. 252—316 **11 Claims**



In procedure for encapsulation by interfacial polycondensation between coacting intermediates respectively in immiscible liquids, droplets of one liquid which is to be encapsulated and which contains one intermediate are formed and released by injection in submerged relation at one end of a column of the second of the liquids. Such injection is effected in a portion of the second liquid which does not contain the other intermediate. The droplets advance along the column to a further portion of the second liquid, containing the second intermediate, where reaction of intermediates occurs to produce a skin of polycondensate around the droplets, the resulting capsules being collected and removed at the remote end of the column. Continuous operation involves continuing feed of the second liquid and of the second intermediate, for maintaining the described situation of the liquid portions, with corresponding continuous removal of liquid from the column.

3,464,927

GASEOUS MIXTURE

Jean Chameroy, Guyancourt, France, assignor to Societe Anonyme Groupement Atomique Alsacienne Atlantique (G.A.A.A.), a corporation of France

No Drawing. Filed July 6, 1966, Ser. No. 563,093

Claims priority, application France, July 9, 1965, 24,098

Int. Cl. C09k *3/00;* **G01t** *3/00*

U.S. Cl. 252—372 **2 Claims**

A gaseous mixture having a response to γ rays equivalent to that of organic tissues particularly those the

energy of which is between about 10 kev. and 10 mev., and also to neutron fluxes of all energies and radiation detectors having said gas for energy absorption.

3,464,928

PROCESS FOR FORMING REFRACTORY-OXIDE-CONTAINING GEL BEADS

Hans Mathies, Amsterdam, Netherlands, assignor to Koninklijke Zwavelsuurfabrieken Voorheen Ketjen N.V., Amsterdam, Netherlands, a limited-liability company of the Netherlands

Filed July 12, 1966, Ser. No. 564,635

Claims priority, application Netherlands, July 13, 1965, 6508991

Int. Cl. B01j *11/44, 11/16;* **C10g** *35/04*

U.S. Cl. 252—441 **15 Claims**

In the process for producing hydrogel beads by forming drops of a gelable hydrosol of an inorganic oxide in air above a body of water-immiscible liquid through which the drops pass so as to be formed into spheroidal globules before passing into an underlying body of an aqueous coagulating medium where the sol globules are coagulated to firm hydrogel beads and which may contain a surfactant to reduce the surface tension of the interface between the water-immiscible liquid and the aqueous coagulating medium, a water-immiscible liquid, such as, kerosene, benzene, carbon tetrachloride, vaporizing oil or mixtures thereof, is dispersed in the hydrosol with the aid of a substantially water-insoluble emulsifier consisting of an ethoxylated organic compound containing a number of polyoxy ethylene groups equal to ½ to ⅙ the number of carbon atoms in the chain of such organic compound, whereby to obtain relatively low-density hydrogel beads with a very uniform distribution of pores therein and with a relatively high crushing strength.

The process can be modified to include catalytic agents in the beads. For example, finely divided molybdenum oxide can be added to the hydrosol along with the water-immiscible liquid and emulsifier and the firm hydrogel impregnated with cobalt salt to form a disulphurizing catalyst. Also, the firm hydrogel can be subjected to acid extraction followed by impregnation with platinum and a halogen to form a reforming catalyst.

3,464,929

HYDROCARBON CONVERSION CATALYST COMPRISING A HALOGEN COMPONENT COMBINED WITH A SUPPORT CONTAINING ALUMINA AND FINELY DIVIDED CRYSTALLINE ALUMINOSILICATE PARTICLES

Roy T. Mitsche, Island Lake, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 517,845, Dec. 30, 1965. This application May 9, 1968, Ser. No. 728,070

Int. Cl. B01j *11/12, 11/44*

U.S. Cl. 252—442 **16 Claims**

A novel hydrocarbon conversion catalyst, a method of manufacture thereof, and a process using the catalyst are disclosed. Catalyst comprises a halogen component combined with a support containing alumina and finely divided crystalline aluminosilicate particles. Key feature of this invention involves the preparation of the catalyst from an aluminum hydroxyl halide sol to which finely divided particles of crystalline aluminosilicate are added, thereby effecting some basic enhancement of the ability of the resultant catalyst to accelerate hydrocarbon conversion reactions that depend on carbonium ion intermediates: that is, the acidity level of the resultant composite is markedly increased. Principal utility of the resultant catalyst is in the area of acid catalyzed hydrocarbon conversion reactions such as cracking, alkylation, polymerization, etc. In addition, the catalyst can be combined with a Group VI or Group VIII metallic component and utilized to accelerate a wide variety of reactions of the type which have heretofore utilized dual-function catalysts such as hydrocracking, reforming, isomerization, etc.

3,464,930

OXIDATION CATALYST CONTAINING VANADIUM AND TITANIUM

Wilhelm Friedrichsen, Ludwigshafen (Rhine), and Otto Goehre, Wilhelmsfeld, Germany, assignors to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany

No Drawing. Filed May 9, 1966, Ser. No. 548,404

Claims priority, application Germany, May 18, 1965, B 81,979, P 14 42 590.2

Int. Cl. B01j *11/06, 11/32*

U.S. Cl. 252—469 **11 Claims**

A catalyst for the gas phase oxidation of aromatic hydrocarbons or unsaturated aliphatic hydrocarbons into carboxylc acids which consists essentially of an inert nonporous carrier coated to a thickness of about 0.02 to 2 mm. with a composition of 1 to 15% by weight of vanadium pentoxide and 85 to 99% by weight of titanium dioxide, the catalyst having a content of vanadium pentoxide of 0.05 to 3% by weight. The catalyst is particularly useful for the oxidation of o-xylene to phthalic acid and permits high yields at high space velocities in contact with a catalyst in which the vanadium content is quite small.

3,464,931

OXIDATION CATALYSTS

Giancarlo Aglietti, Pietro Baratella, Cesare Reni, and Luigi Lugo, Milan, Italy, assignors to Societá Italiana Resine S.p.A., Milan, Italy

No Drawing. Filed Jan. 18, 1967, Ser. No. 610,022

Claims priority, application Italy, July 12, 1966, Patent 773,211

Int. Cl. B01j *11/32;* **C07c** *45/16;* **C01g** *39/00*

U.S. Cl. 252—470 **6 Claims**

A process of preparing an unsupported catalyst for conversion of alcohols to aldehydes comprising mixing a precipitate of cobalt or nickel molybdate with 15 to 35 times by weight of a complex iron molybdate precipitates and subsequently performing at least one operation selected from the group consisting of drying, mechanical molding or calcining.

3,464,932

X-RAY ABSORBING GLASS COMPOSITIONS

John H. Connelly, Horseheads, and George B. Hares, Corning, N.Y., assignors to Corning Glass Works, Corning, N.Y., a corporation of New York

Filed Sept. 6, 1968, Ser. No. 758,027

Int. Cl. C03c *3/10, 3/04*

U.S. Cl. 252—478 **4 Claims**

This invention relates to the production of alkali metal silicate glasses especially suitable for face panels of television picture tubes operating at extremely high voltages in that these glasses exhibit a high absorption of X-radiation within the range of wavelengths of 0.33–0.77 A., thereby inhibiting the penetration of X-rays therethrough into the surrounding environment. Such glasses contain up to about 20% by weight SrO.

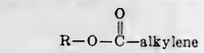
3,464,933

NOVEL C-N BACKBONE POLYMERS

Alan J. Levy and Morton H. Litt, Morristown, N.J., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed May 12, 1967, Ser. No. 637,923
Int. Cl. C08g *33/06*
U.S. Cl. 260—2 7 Claims

This invention relates to novel polymers of oxazolines having substituents on the 2-position of the formula



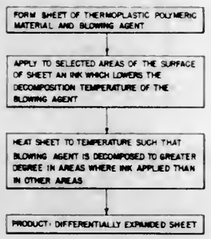
where R is a hydrocarbon radical.

3,464,934

SELECTIVELY EXPANDED PLASTIC ARTICLES, THEIR PROCESS OF MANUFACTURE AND AN INK COMPOSITION USED IN THEIR MANUFACTURE

Gordon Birkett, Costock, and Donald John Cram, Loughborough, England, assignors to Fisons Industrial Chemicals Limited, Loughborough, England

Filed June 7, 1966, Ser. No. 555,668
Claims priority, application Great Britain, June 12, 1965, 24,906/65; Oct. 1, 1965, 41,858/65
Int. Cl. B32b *3/02*; B41c *1/08*; B29d *7/22*
U.S. Cl. 260—2.5 23 Claims



Selective expansion of a thermoplastic polymeric material which is achieved by forming into a sheet an expandable mix containing a polymeric material and a blowing agent; applying to selected areas of the surface of the sheet a composition containing a material which lowers the decomposition temperature of the blowing agent; and heating the sheet to a temperature and for a time that in the aforementioned selected areas of the sheet, the blowing agent is decomposed to a greater degree than in the remaining areas and the sheet is thereby differentially expanded.

3,464,935

RIGID, NON-ELASTOMERIC, NON-CELLULAR, FIBER REINFORCED POLYETHER-URETHANE COMPOSITIONS

Joseph J. Sepkoski, Geddes, Robert F. Trepa, Salina, and Edward R. Degginger, Syracuse, N.Y., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed Apr. 5, 1966, Ser. No. 540,224
Int. Cl. C08g *51/10, 22/14*
U.S. Cl. 260—9 12 Claims

Invention relates to rigid, non-elastomeric, non-cellular, fiber reinforced urethane compositions and methods for preparing them; said composition characterized by high flexural strength and prepared by impregnating a fibrous reinforced material with a polyether urethane prepared by admixing a blend of polyethers having an average functionality of from 4.0 to about 7.5 and an average hydroxyl number of from 300 to about 600, with an organic polyisocyanate and curing said impregnated fibrous material.

3,464,936

ANTI-SMUDGING PRINTING COMPOSITION CONTAINING A POLYSACCHARIDE - FLUOROCARBON DERIVATIVE COMBINATION

Guy J. Mathelin, 17 Ave. Danielle Casanova, Saint Gratien, Val-d'Oise, France

No Drawing. Filed May 31, 1966, Ser. No. 553,653
Claims priority, application France, Aug. 2, 1965, 26,863
Int. Cl. C09d *11/10, 11/06, 11/14*
U.S. Cl. 260—9 5 Claims

A printing ink with anti-smearing characteristics comprising a printing ink, and an anti-smudging combination of a polysaccharide and a fluorocarbon derivative.

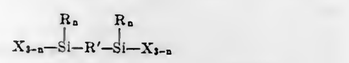
3,464,937

POLYSILOXANE RESINOUS COMPOSITIONS CONTAINING BIS(SILYL) AROMATIC OR AROMATIC ETHER LINKAGES

William Randall Bamford, West Kilbride, and James Caithness Cuthill, Ardrossan, Scotland, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

No Drawing. Filed Aug. 1, 1966, Ser. No. 569,100
Claims priority, application Great Britain, Aug. 6, 1965, 33,735/65
Int. Cl. C08g *31/32*
U.S. Cl. 260—18 19 Claims

There is provided a new resinous composition which may be cured into an infusible state, which compositions have the structure of the reaction product of a compound of the general formula



wherein R is a monovalent hydrocarbon group, R′ is a phenylene, diphenylene or diphenylene oxide, X is a hydroxy or alkoxy group and *n* is 1 or 2 and a silane of the general formula R_mSiY_{4-m} wherein R″ is a monovalent hydrocarbyl or substituted hydrocarbyl groups, Y is an alkoxy, aryloxy or hydroxy group except when the X groups are alkoxy groups in which case Y must be hydroxy or acyloxy groups and *m* is 0, 1 or 2.

3,464,938

MODIFIED CARBAMATE ESTER CONTAINING POLYMERS

John David Nordstrom, Bloomington, Minn., assignor to Ashland Oil & Refining Company, Ashland, Ky., a corporation of Kentucky

No Drawing. Filed Nov. 18, 1966, Ser. No. 595,327
Int. Cl. C08f *45/72*; C08g *51/84, 41/00*
U.S. Cl. 260—21 9 Claims

Modified carbamate ester aminotriazine polymer compositions, which are the reaction products of:

(a) a carbamate ester containing polymer which is the reaction product of urea and a polymer having at least three free hydroxyl groups, and

(b) an aminotriazine, such as melamine, having at least two reactive amino groups, and

(c) an aliphatic monoaldehyde, such as formaldehyde, can be used to cross-link polyesters and acrylic polymers, with which they exhibit excellent compatability.

3,464,939

PROCESS FOR PREPARING WATER-SOLUBLE EPOXY RESIN ESTERS

William J. van Westrenen, Delft, Netherlands, assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Feb. 20, 1967, Ser. No. 617,068
Claims priority, application Netherlands, Feb. 22, 1966, 6602242
Int. Cl. C08g *30/04*
U.S. Cl. 260—22 10 Claims

Water-soluble epoxy resin esters which are useful as binders and primers are prepared (1) by reacting an epoxy resin with an alpha-branched, saturated, aliphatic, monocarboxylic acid, (2) esterifying this intermediate with ethylenically unsaturated fatty acids, (3) reacting this ester with an ethylenically unsaturated polycarboxylic acid or anhydride such as maleic anhydride, and (4) neutralizing the resulting product with a nitrogen-containing base.

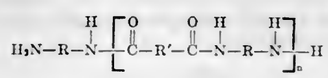
3,464,940

ADHESIVE BLENDS COMPRISING POLYAMIDE AND CHLORINATED ETHYLENE-VINYL ACETATE COPOLYMER

Oliver A. Barton, Florham Park, and Tibor G. Pusztai, Verona, N.J., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed Jan. 7, 1966, Ser. No. 519,294
Int. Cl. C09j *3/14, 3/16*
U.S. Cl. 260—23 6 Claims

A polymer containing adhesive composition wherein said polymer consists of a mixture of from about 25 to about 85% by weight of chlorinated ethylene-vinyl acetate copolymer having a molecular weight of up to 40,000, a vinyl acetate content of up to 30% and a chlorine content of up to 40% and correspondingly from about 75 to about 15% by weight of a polyamide, having an amine number of at least 20, of the formula



wherein R and R′ are divalent aliphatic hydrocarbon radicals and wherein *n* is 1 to 6, is exceedingly effective at bonding inert plastics such as polyethylene, polyfluorocarbons and polyesters.

3,464,941

STRESS CRACK RESISTANT COMPOSITIONS COMPRISING POLYETHYLENE AND A FATTY ACID SALT OF A DIAMINE

Domas Adomaitis, Chicago, Ill., assignor to Continental Can Company, Inc., New York, N.Y., a corporation of New York

No Drawing. Filed June 28, 1967, Ser. No. 654,305
Int. Cl. C08f *29/04, 37/00*
U.S. Cl. 260—23 6 Claims

Stress crack resistant polyethylene compositions are prepared by incorporating in the polymer a fatty acid salt of an N-alkyl diaminoalkane. The stress crack resistant polyethylene compositions find useful application in containers for packaging surface active agents, such as soaps and detergents. Such containers are extremely resistant to cracking and rupturing when subjected to external stress conditions.

3,464,942

SIZING COMPOSITIONS FOR GLASS FIBERS

Gopadi S. Hathwar, Nashville, Tenn., assignor to Ferro Corporation, Cleveland, Ohio, a corporation of Ohio

No Drawing. Continuation-in-part of application Ser. No. 430,487, Feb. 4, 1965. This application Sept. 18, 1967, Ser. No. 668,674
Int. Cl. C03c *25/02*; C08g *39/00*
U.S. Cl. 260—22 3 Claims

In a fiberglass sizing composition consisting of a lubricant, film former, emulsifier, coupling agent and water, the improvement in combination therewith of a rigid diallyl phthalate modified polyester resin.

3,464,943

STABILIZING POLYOLEFINS WITH CERTAIN NICKEL AND HYDROXYBENZOTRIAZOLE COMPOUNDS

Gordon C. Newland, Kingsport, Tenn., and John W. Tamblyn, Jonas Ridge, N.C., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Sept. 28, 1967, Ser. No. 671,204
Int. Cl. C08f *45/56, 45/60*
U.S. Cl. 260—23 4 Claims

The stabilization of polyolefins by admixing therewith certain hydroxybenzotriazoles and certain nickel compounds such as salts, hydroxide, oxide, and halides of nickel. The stabilized polyolefins are useful in fabricating various plastic articles such as films, coatings, fibers, and the like.

3,464,944

PROCESS FOR PREPARING LIQUID RESINS CAPABLE OF BEING RENDERED SOLUBLE IN WATER IN THE FORM OF A GEL OF THIXOTROPIC CHARACTER

René Jacquier, Lyon, France, assignor to Plastugil, Lyon, Rhone, France, a French body corporate

No Drawing. Filed Sept. 21, 1965, Ser. No. 489,046
Claims priority, application France, Oct. 6, 1964, 990,463
Int. Cl. C09d *3/64, 3/20*
U.S. Cl. 260—23.5 15 Claims

Liquid resins, which may be dissolved in water in the form of a thixotropic gel by neutralization with a nitrogenated base, are prepared by heating first above 220° C. a mixture of drying oil and neutral allyl ester and then heating above 150° C. the resulting product with an unsaturated aliphatic dicarboxylic acid, anhydride or ester thereof. These resins are useful in the manufacture of paints and coatings.

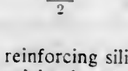
3,464,945

POLYDIORGANOSILOXANE CONTAINING SILICA FILLER AND STRUCTURE CONTROL AGENT

Arthur C. Martellock, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York

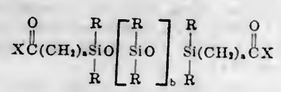
No Drawing. Filed Nov. 10, 1966, Ser. No. 593,290
Int. Cl. C08g *47/06, 51/04*
U.S. Cl. 260—29.1 10 Claims

A silicone rubber compound of improved structure and crepe-aging characteristics comprising (A) a polydiorganosiloxane convertible to the solid, cured, elastic state and having the formula:



(B) a structure-inducing reinforcing silica filler, and (C) from 1 to 10 parts by weight, based on the weight of

said polydiorganosiloxane, of a structure control additive having the formula:



where R is a member selected from the class consisting of methyl and phenyl, provided that at least 50% of the R groups are methyl, X is a member selected from the class consisting of —OH, —NH_2, and —OR', R' is a member selected from the class consisting of methyl and ethyl, Y is a member selected from the class consisting of monovalent hydrocarbon radicals and halogenated monovalent hydrocarbon radicals, *a* is a whole number equal to from 2 to 4, inclusive, *b* has a value of from 0 to 10, inclusive, and *n* has a value of from 1.98 to 2.01, inclusive.

3,464,946

ALKYLATED AMINO RESIN TRANS-ETHERIFIED WITH HYDROXY CARBOXYLIC ACID

Brian York Downing, Kingswinford, England, assignor to British Industrial Plastics Limited, Manchester, England

No Drawing. Filed May 16, 1966, Ser. No. 550,107
Claims priority, application Great Britain, May 20, 1965, 21,388/65
Int. Cl. C08g *27/24;* **C09d** *3/50*
U.S. Cl. 260—29.4 **17 Claims**

Alkylated amino resins of the urea formaldehyde or substituted triazine type are transetherified with a hydroxy carboxylic acid selected from the group consisting of dimethylol propionic acid, gallic acid, glycollic acid, lactic acid or an ethylene glycol-maleic acid condensation product. The resins may be used in solvent based or aqueous based coatings.

3,464,947

SYNTHETIC POLYESTER SIZING COMPOSITION FOR YARNS

Michael Mundie Robertson and Geoffrey Alan Horsfall, Harrogate, England, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

No Drawing. Filed Apr. 28, 1966, Ser. No. 545,831
Claims priority, application Great Britain, Apr. 30, 1965, 18,328/65
Int. Cl. D06m *15/14, 15/48, 15/40*
U.S. Cl. 260—29.6 **7 Claims**

There is provided a film forming sizing composition for polyethylene terephthalate filaments and yarns thereof which comprises an aqueous dispersion or mixture of at least one component selected from vinyl polymers and copolymers containing carboxylic acid units and wherein the acid units are in the form of their ammonium salts or in the presence of a nucleophilic organic solvent. Also in the composition is a second component of a crystallisable polymeric compound having crystallisable segments of repeat units substantially the same as the repeat units forming the crystallisable portions of the polyethylene terephthalate filaments.

3,464,948

SYSTEM FOR OBTAINING FILLED VINYL ACETATE-EPOXY RESINS

Donald H. Russell, Cherry Hill, N.J., assignor to Atlantic Richfield Company, Philadelphia, Pa., a corporation of New York

No Drawing. Filed Oct. 28, 1966, Ser. No. 590,208
Int. Cl. C08g *45/04;* **C08f** *29/30*
U.S. Cl. 260—30.4 **10 Claims**

Filled vinyl-epoxy compositions of high impact strength and controlled porosity which do not deform prior to curing are prepared by first preparing a dry mixture of a vinyl acetate polymer and filler, adding a volatile organic solvent to the dry mixture, separately preparing a mixture of an epoxy resin, plasticizer and curing agent and then mixing the separately prepared mixture with the solvent containing dry mixture and then controlling the rate of solvent removal in the resultant admixture prior to and during the cure.

3,464,949

ETHYLENE-ACRYLIC ACID COPOLYMERS PLASTICIZED WITH ADDUCTS OF ALKYLENE OXIDES AND AMINES

Lloyd H. Wartman, Westport, Conn., and Clarence E. Roth, Jr., Orange, Tex., assignors to Union Carbide Corporation, a corporation of New York

No Drawing. Original application Oct. 22, 1965, Ser. No. 502,569, now Patent No. 3,361,702, dated Jan. 2, 1968. Divided and this application Oct. 31, 1967, Ser. No. 679,559
Int. Cl. C08f *45/44*
U.S. Cl. 260—32.6 **13 Claims**

Copolymers of ethylene-acrylic acid, ethylene methacrylic acid and their respective ionomers are plasticized with alkylene oxide-amine adducts represented by the general formula:



wherein R' is selected from the group consisting of hydrogen and alkyl radical having 1 to 10 carbon atoms and said amine is selected from the group of amines consisting of primary amine with the formula R''—NH_2 where R'' is selected from the group consisting of alkyl groups containing 1 to 18 carbon atoms, aryl, alkaryl and aralkyl: secondary amines represented by the formula:



wherein R''' and R'''' are selected from the group consisting of alkyl radical containing 1 to 12 carbon atoms, aryl, alkaryl and aralkyl; alkylene diamines conforming to the general formula:

$$H_2NC_nH_{2n}NH_2$$

and alkylene polyamines represented by the gerenal formula:

$$H_2N(C_AH_{2A}NH)_BH$$

wherein *n* is an integer from 1 to 8, A is an integer from 1 to 8 and B is an integer from 2 to 6.

3,464,950

SILOXANE ELASTOMERS

Karl-Heinrich Wegehaupt, Manfred Wick, and Siegfried Nitzsche, Burghausen, Bavaria, Germany, assignors to Wacker-Chemie G.m.b.H., Munich, Germany

No Drawing. Filed Dec. 24, 1964, Ser. No. 446,464
Claims priority, application Germany, Dec. 31, 1963, W 35,895
(Filed under Rule 47(a) and 35 U.S.C. 116)
Int. Cl. C08g *51/04, 31/09*
U.S. Cl. 260—37 **31 Claims**

This invention relates to a method for preparing organosiloxane rubber. This organosiloxane rubber is prepared employing a filler which is pretreated or treated in situ by reacting the filler with one or more organosilicon compounds in the presence of a phosphoronitrillic chloride catalyst. This product exhibits significantly improved tear strength without sacrifice of other physical properties.

3,464,951

ROOM TEMPERATURE VULCANIZING SILICONE RUBBER STOCK

Paul Hittmair, Siegfried Nitzsche, Manfred Wick, and Ernst Wohlfarth, Burghausen, Upper Bavaria, Germany, assignors to Wacker-Chemie G.m.b.H., Munich, Germany

No Drawing. Filed Feb. 13, 1967, Ser. No. 615,350
Claims priority, application Germany, Feb. 11, 1966, W 40,924
Int. Cl. C08g *31/14, 31/10, 31/40*
U.S. Cl. 260—37 **10 Claims**

A new composition of matter based on dimethylsiloxane polymers having reactive endblocks and capable of vulcanizing and curing at temperatures below 100° C. wherein the cross-linking agent is the amino substituted silicon reaction product of a halosilane and a monocycloalkylamine, for example, the amino substituted silicon reaction product obtained by reacting at a temperature of from —10° C. to 10° C. and normal pressure a silane of the general formula $RSiX_3$ wherein each R is a monovalent radical selected from the group consisting of hydrocarbon radicals, hydrocarbonoxy radicals, halogenohydrocarbon radicals and cyanoalkyl radicals and X is a halogen atom with a monocycloalkylamine.

3,464,952

POLYETHYLENE STABILIZED BY TREATMENT WITH SULFUR DIOXIDE IN THE PRESENCE OF FREE RADICALS

Donald W. Larsen, Ashton, Md., assignor to W. R. Grace & Co., New York, N.Y., a corporation of Connecticut

No Drawing. Filed Jan. 23, 1967, Ser. No. 610,807
Int. Cl. C08f *27/06, 45/56*
U.S. Cl. 260—45.7 **8 Claims**

Polyethylene in solid particulate form is reacted with sulfur dioxide in the presence of a free radical generator to produce a stabilized polymer.

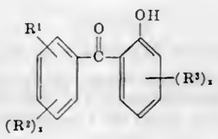
3,464,953

STABILIZED POLYOLEFINS

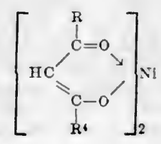
Gordon C. Newland, Kingsport, Tenn., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New York

No Drawing. Filed Feb. 14, 1967, Ser. No. 615,886
Int. Cl. C08f *45/58, 45/62*
U.S. Cl. 260—45.75 **2 Claims**

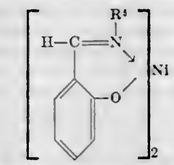
There is disclosed a light stabilized plastic composition consisting essentially of (1) a normally solid polymer of an α-olefin having 2–10 carbon atoms and (2) effective stabilizing amounts of the stabilizers (a) a 2-hydroxybenzophenone of the formula



wherein R^1 is H or hydroxy, and R^2 and R^3 are H, hydrocarbyl, hydrocarbyloxy, or acyloxy, and *x* is 1 or 2, combined with one or more of (b) a nickel chelate of a β-diketone of the formula



wherein R and R^4 are alkyl, and (c) a nickel chelate of an N-salicylideneamine of the formula



where R^5 is hydrocarbyl, methods of preparing such compositions, and articles manufactured therefrom.

3,464,954

STABILIZED POLYOLEFIN COMPOSITIONS

Clarence E. Tholstrup, Kingsport, Tenn., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Application Jan. 4, 1960, Ser. No. 54. Divided and this application Apr. 5, 1968, Ser. No. 719,226
Int. Cl. C08f *45/58*
U.S. Cl. 260—45.85 **3 Claims**

Polyolefins containing a stabilizer combination comprising a dialkyl ester of thiodipropionic acid and a substituted phenol.

3,464,955

CARBALKOXYALKYL-CONTAINING ORGANOPOLYSILOXANES

Ben A. Bluestein, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York

No Drawing. Continuation-in-part of application Ser. No. 647,220, Mar. 20, 1957. This application Sept. 10, 1962, Ser. No. 222,659
Int. Cl. C08g *31/12;* **C08f** *7/18*
U.S. Cl. 260—46.5 **1 Claim**

Carbomethoxyethylsiloxanes; said siloxanes being used as plasticizers and lubricants.

3,464,956

AMMONIUM BIBORATE AND AMMONIUM PENTABORATE CATALYZED AND CO-REACTED PHENOL FORMALDEHYDE RESINS

Kenneth C. Petersen, Scotia, N.Y., assignor to Schenectady Chemicals, Inc., Schenectady, N.Y., a corporation of New York

No Drawing. Filed Jan. 15, 1968, Ser. No. 697,640
Int. Cl. C08g *5/10*
U.S. Cl. 260—57 **9 Claims**

Thermoplastic novolak resins are prepared from phenol or cresol and formaldehyde using ammonium biborate or ammonium pentaborate as a catalyst.

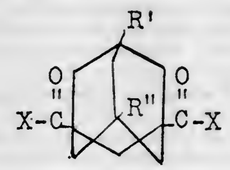
3,464,957

NOVEL POLYAMIDES OF ADAMANTANE

Gary L. Driscoll, Boothwyn, Pa., assignor to Sun Oil Company, Philadelphia, Pa., a corporation of New Jersey

No Drawing. Continuation-in-part of application Ser. No. 609,286, Jan. 16, 1967. This application Oct. 30, 1967, Ser. No. 679,199
Int. Cl. C08g *20/20*
U.S. Cl. 260—78 **11 Claims**

Polyamides are prepared by the condensation of an adamantane of the structure



and an organic diamine of the structure $H_2N—R—NH_2$ where R′ and R″ are hydrogen or hydrocarbon radicals and R is a bivalent organic radical and X is —OH, —Cl or —Br. For example, 1,3-dimethyladamantane-5, 7-diacyl chloride and hexamethylene diamine are reacted to produce a polyamide of inherent viscosity of 1.49. The polyamides of the invention are useful for forming films and sheets which can be used generally as pervious polymer films and sheets, i.e., for wrapping, display and structural and architectural design. The polyamides can also be drawn into fibers which can be employed for textiles, carpeting and tire cord.

3,464,958

PRODUCTION OF POLYETHER ESTER COPOLYMERS OF TETRAHYDROFURAN AND CYCLIC ACID ANHYDRIDE

Kazuo Matsuura and Teiji Tsuruta, Kyoto-shi, Japan, assignors to Nippon Oil Co., Ltd., Tokyo, Japan

No Drawing. Continuation-in-part of application Ser. No. 407,872, Oct. 30, 1964. This application July 17, 1967, Ser. No. 653,623

Claims priority, application Japan, Nov. 2, 1963, 38/59,035

Int. Cl. C08g *17/003*

U.S. Cl. 260—78.4 **11 Claims**

A process for producing a copolymer of tetrahydrofuran and a cyclic acid hydride selected from the group consisting of maleic anhydride, citraconic anhydride, succinic anhydride, phthalic anhydride, dihydrophthalic anhydride, tetrahydrophthalic anhydride, hexahydrophthalic anhydride and endomethylene tetrahydrophthalic anhydride by means of a ternary catalyst system, of which the first component is an organometallic compound of lithium, zinc or aluminum, the second component is water and the third component is selected from the group consisting of propylene oxide, epichlorohydrin, acetyl chloride, β-propiolactone and α-chlorodimethyl ether.

3,464,959

OLEFINIC AMORPHOUS CURABLE TERPOLYMERS OF ALPHA-OLEFINS AND POLYCYCLIC ORTHOCONDENSED POLYENES HAVING ONE OR MORE CONJUGATED ALKYLIDENE SUBSTITUENTS AND PROCESS FOR THE PRODUCTION THEREOF

Walter Marconi, Sebastiano Cesca, and Arnaldo Roggero, San Donato Milanese, Italy, assignors to Snam S.p.A., Milan, Italy, a company of Italy

No Drawing. Filed Aug. 10, 1965, Ser. No. 478,755

Claims priority, application Italy, Sept. 30, 1964, 51,807/64

Int. Cl. C08f *1/34, 1/08, 3/16*

U.S. Cl. 260—79.5 **11 Claims**

A vulcanizable amorphous terpolymer is produced by blowing a gaseous mixture of ethylene and propylene into a solvent, such as n-heptane, then charging the reactor with an orthocondensed polycyclic polyene, such as 1-isopropylidene-4, 7, 7a, 3a-tetrahydroindene, containing an alkylidene substituent conjugated with a double bond which is part of the cyclic ring, the reaction being effected in the presence of a catalytic system consisting of a derivative of a transition metal of the IV or V Group of the Periodic Table and of an aluminum compound having the general formula Al—R—X—Y, where R is an alkyl radical of from 1 to 12 carbon atoms or a hydrogen atom, and X and Y can be hydrogen, an alkyl radical of from 1 to 12 carbon atoms, a halogen, or a residue of a secondary amine.

3,464,960

MIXTURE FOR RAPID POLYMERIZATION

James F. Sobieski and Michael C. Zerner, Eatontown, N.J., assignors to the United States of America as represented by the Secretary of the Army

No Drawing. Filed Dec. 15, 1967, Ser. No. 691,069

Int. Cl. C08f *1/70, 1/72, 1/00*

U.S. Cl. 260—80.3 **7 Claims**

A mixture is provided that can be rapidly polymerized upon the application of an electric potential across an anode and a cathode contained in the mixture. The mixture is also stable in the absence of an electric current. The mixture is comprised of a suitable solvent, at least one monomer dispersed or dissolved in the solvent, the monomer dispersion or solution also including a soluble zinc salt.

3,464,961

ISOPRENE-STYRENE COPOLYMERS AND METHOD OF MAKING SAME

Frederick C. Foster, Verona, N.J., assignor to The Firestone Tire & Rubber Company, Akron, Ohio, a corporation of Ohio

No Drawing. Continuation of application Ser. No. 229,971, Oct. 11, 1962, which is a continuation-in-part of application Ser. No. 544,353, Nov. 1, 1955. This application Apr. 13, 1966, Ser. No. 542,188

Int. Cl. C08d *3/04, 1/20, 1/32*

U.S. Cl. 260—83.7 **3 Claims**

The disclosure generally describes a process for preparing rubbery copolymers of isoprene and styrene in which the isoprene portion of the molecules has a cis-1,4 structure of at least about 70% by weight. The process comprises copolymerizing isoprene and styrene monomers, preferably at 0° to 150° C. in the presence of metallic lithium, a hydrocarbon lithium compound, or a mixture of these in an amount such that there is present at the initiation of copolymerization about 0.00001 to about 1.0 part by weight of active catalyst expressed as lithium element per 100 parts by weight of monomer feed. It is essential that the polymerization system be maintained substantially free from foreign materials reactive with lithium and preferable that the isoprene in the feed have a purity of at least 95 mole percent.

3,464,962

COPOLYMERS OF BUTENE-1 AND PROPYLENE

Cyril Geacintov, Scotch Plains, Raymond Eichenbaum, Spotswood, and William C. L. Wu, East Brunswick, N.J., assignors to Mobil Oil Corporation, a corporation of New York

Continuation-in-part of application Ser. No. 461,717, June 7, 1965. This application Nov. 18, 1965, Ser. No. 508,419

Int. Cl. C08f *15/04, 1/32*

U.S. Cl. 260—88.2 **7 Claims**

A copolymer of butene-1 and propylene (10–18 mole percent of the polymer) rapidly forms the stable Form I upon cooling from the melt. It is produced by copolymerizing a mixture of 91–95 mole percent butene-1 and 9–5 mole percent propylene, using a catalyst system containing titanium trichloride, diethylaluminum chloride, and diethylaluminum iodide in specified molar proportions.

3,464,963

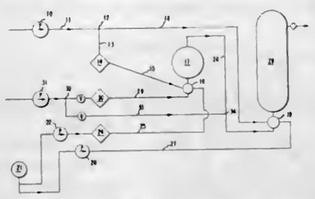
PROCESS FOR POLYMERIZING VINYL FLUORIDE

James Lee Hecht, Williamsville, and Charles T. Hughes, Grand Island, N.Y., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Filed Aug. 26, 1964, Ser. No. 392,145

Int. Cl. C08f *1/06, 3/22*

U.S. Cl. 260—92.1 **1 Claim**



A process is provided for polymerizing vinyl fluoride in an aqueous reaction medium of vinyl fluoride, water and a water-soluble, free radical generating initator wherein a portion of the aqueous reaction medium is nucleated in a first reaction zone until no more than 1% solids are formed and the nucleated portion of the aqueous reaction medium is then combined with the remaining portion thereof followed by subjecting the modified reaction medium to polymerization in a second reaction zone.

3,464,964

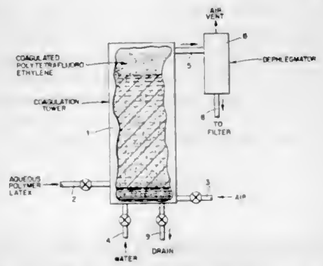
COAGULATION OF POLYTETRAFLUOROETHYLENE LATEX

Matthew B. Black III, Ridley Park, Pa., assignor to Pennsalt Chemicals Corporation, Philadelphia, Pa., a corporation of Pennsylvania

Filed June 13, 1966, Ser. No. 557,207

Int. Cl. C08f *1/92*

U.S. Cl. 260—92.1 **4 Claims**



Polytetrafluoroethylene latex is coagulated without the use of mechanically induced shear by passing inert gas in an upwardly flowing direction through the aqueous polymer latex to cause the polymer particles to coalesce and coagulate to permit their ready separation from the aqueous phase.

3,464,965

PROCESS FOR PRODUCING POLYBUTADIENES HAVING REDUCED COLD FLOW TENDENCY

Hidetoshi Yasunaga, Tatsuo Ichikawa, Hiroaki Yamato, and Mitsuru Ikeda, Yokkaichi, Nobuo Ozawa, Tokyo, and Kenichi Ueda, Yokkaichi, Japan, assignors to Japan Synthetic Rubber Co., Ltd., Tokyo, Japan, a corporation of Japan

No Drawing. Filed Sept. 29, 1966, Ser. No. 583,112

Claims priority, application Japan, Oct. 8, 1965, 40/61,503

Int. Cl. C08d *1/14, 3/08*

U.S. Cl. 260—94.3 **5 Claims**

A high cis-1,4 polybutadiene having a reduced cold flow tendency or substantially no cold flow tendency is prepared by a process which comprises mixing (A) at least one organonickel compound selected from the group consisting of nickel carboxylates and organic complexes of nickel, (B) at least one boron compound selected from the group consisting of boron trifluoride and the organic complexes thereof, and (C) at least one organoaluminum compound, said mixing being effected in a hydrocarbon solvent in the presence of 0.5–50 moles of a conjugated diolefin per one mole of said nickel compound, followed by ageing said mixture for at least 16 minutes at a temperature ranging between −20° and 120° C. to prepare a catalyst, and thereafter contacting said catalyst with butadiene in a hydrocarbon solvent under an atmosphere of an inert gas at a temperature ranging between −20° and 150° C.

3,464,966

CHLORINATED POLYMERS

Norman Leonard Watson, Runcorn, Cheshire, England, assignor to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

No Drawing. Filed Nov. 30, 1966, Ser. No. 597,893

Claims priority, application Great Britain, Dec. 24, 1965, 54,842/65

Int. Cl. C08f *47/00, 29/14;* **C08d** *13/00*

U.S. Cl. 260—94.7 **6 Claims**

Chlorinated polymers selected from rubber, polyisoprene and polyethylene are separated from a solution thereof in carbon tetrachloride by precipitation in an agitated mixture of one part of carbon tetrachloride and 0.65 to 3 parts of methanol while adding methanol to maintain these critical limits.

3,464,967

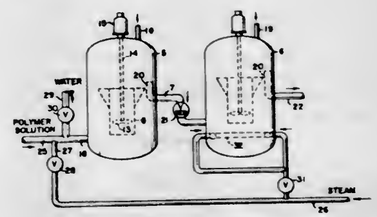
CIRCULATING SOLIDS DISPERSED IN A LIQUID

Robert H. Overcashier and Charles E. Sanborn, Walnut Creek, Calif., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware

Division of application Ser. No. 159,379, Dec. 14, 1961. Continuation of application Ser. No. 407,124, Oct. 28, 1964. This application Jan. 19, 1967, Ser. No. 610,456

Int. Cl. C08f *1/88, 1/98*

U.S. Cl. 260—94.7 **1 Claim**



A method of circulating polymer crumb solids in a liquid which method requires considerably less power comprising (1) moving the slurry downward through a first circulating zone (2) moving the slurry upward through a second vertical circulation zone at a slower rate than that of the first zone and (3) accelerating the slurry through a third zone which is horizontal and connects the first and second zone. Baffle arrangements are the preferred method of forming the zones.

3,464,968
THREE-COMPONENT CATALYST FOR THE POLYMERIZATION OF OLEFINS

Helmut Hoegl, Geneva, Switzerland, Götz Rotta, Mannheim-Lindenhof, Germany, and Alfred Columberg, Geneva, Switzerland, assignors to Solvay & Cie, Brussels, Belgium

No Drawing. Filed Dec. 10, 1965, Ser. No. 513,074
Claims priority, application France, Dec. 24, 1964, 999,982
Int. Cl. C08f *1/34*
U.S. Cl. 260—94.9 **27 Claims**

A minute proportion of a compound of a transition element is all that is required in combination with a quinone/phenolic complex and an organometallic compound to produce a highly active and effective catalyst system for all olefins.

3,464,969
SULFUR-CONTAINING POLYAMINES

Hans H. Stockmann, Plainfield, and Joseph Fertig, Elizabeth, N.J., assignors to National Starch and Chemical Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Apr. 18, 1968, Ser. No. 722,143
Int. Cl. C08g *33/06*
U.S. Cl. 260—79 **10 Claims**

High molecular weight polysulfur amidoamines comprising the products resulting from the reaction of polyalkylene polyamines with a sulfur-containing reagent as well as the chain extended products resulting from the reaction of the thus prepared amidoamines with an epihalohydrin. The chain extended and non-chain extended products are both applicable for use as pigment retention additives in paper, flocculants, antistatic agents and adhesion promoters.

3,464,970
PROCESS FOR PREPARING OVER-BASED SULFURIZED CALCIUM PHENATES

Yoshinori Sakai and Takashi Hori, Wakayama-ken, Japan, assignors to Maruzen Oil Company, Limited, Osaka, Japan, a corporation of Japan

No Drawing. Filed Mar. 13, 1967, Ser. No. 622,432
Int. Cl. C07f *3/04;* **C07g** *17/00;* **C07c** *161/00*
U.S. Cl. 260—137 **7 Claims**

Over-based sulfurized calcium phenate (Ca=200–600% or more times of theoretical value) which is useful as a detergent for lubricating oils as well as a stabilizer for fuel oils, such as diesel engine oils. In a process for preparing the phenate by heating a mixture of phenolic compounds, dihydric alcohol, elementary sulfur and calcium compounds, such as calcium hydroxide or oxide, removing the unreacted dihydric alcohol and formed water from the reaction product, and treating the residue with CO_2; higher alcohol (C_9–C_{18}) is added to the mixture to be heated and a temperature below 150° C. is used for the removing.

3,464,971
MONOAZO COMPOUNDS CONTAINING A PIPERAZINE TYPE RING SUBSTITUTED BY AN ORGANO SULFONYL GROUP

Max A. Weaver and David J. Wallace, Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Oct. 22, 1965, Ser. No. 502,432
Int. Cl. C09b *29/36, 29/08*
U.S. Cl. 260—154 **10 Claims**

Phenyl-azo-aniline compounds in which the aniline nitrogen atom is a member of a heterocyclic ring containing a second nitrogen atom which is substituted with certain alkyl- and aryl-sulfonyl groups are useful as dyes for hydrophobic textile materials.

3,464,972
METHOD OF EXTRACTING SAPONINS

Yves Rocher, 41 Ave. Foch, Paris, France

No Drawing. Filed Feb. 10, 1965, Ser. No. 431,710
Claims priority, application Great Britain, Apr. 23, 1964, 16,864/64
Int. Cl. B01d *11/00;* **C07b** *29/00*
U.S. Cl. 260—210.5 **7 Claims**

This invention relates to a process for producing pure saponins from the root of *Ficaria ranunculus* by a series of solvent extraction steps, whereby the impurities contained in the source material are eliminated.

3,464,973
PROCESS FOR SELECTIVE PHOSPHORYLATION OF NUCLEOSIDE

Shunji Ouchi, Tuneo Sowa, Kozo Tunoda, and Saburo Senoo, Nobeoka, Miyazaki, Japan, assignors to Asahi Kasei Kabushiki, Kaisha, Osaka, Japan

No Drawing. Filed July 6, 1967, Ser. No. 651,383
Claims priority, application Japan, July 14, 1966, 41/45,613
Int. Cl. C07d *51/50*
U.S. Cl. 260—211.5 **10 Claims**

Process for preparing nucleotide which comprises reacting nucleoside with a mixture of phosphorus oxyhalogenide, carboxylic acid or an aqueous carboxylic acid, and organic base in a polar organic solvent, and mixing the resultant reaction mixture with water thereby adding phosphate group to primary alcohol on nucleoside.

3,464,974
STARCH DERIVATIVES

Robert E. Gramera, Hinsdale, and David H. Le Roy, North Riverside, Ill., assignors to Corn Products Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Mar. 13, 1967, Ser. No. 622,387
Int. Cl. C08b *19/04;* **D21h** *3/28*
U.S. Cl. 260—233.3 **10 Claims**

Covers starch derivatives comprising starch having substituted thereon an ethyleniminyl radical, and particularly where such radical is a terminal ring group substituted on starch. Also covers method of making said compounds under specified conditions by reaction of ethylenimine with a carbonyl starch such as a keto starch, or aldehyde starch or an unsubstituted starch material.

3,464,975
METHOD OF PRODUCING AN ALKALOID FROM *NUPHAR LUTEUM*

Tamara Nikolaevna Ilinskaya, P.O. Vilar 9, kv. 4, Moskovskaya obl., U.S.S.R.; Alexandr Dmitrievich Kuzovkov, Ul. Grimau 5/1, korp. 2, kv. 31, Moscow, U.S.S.R.; Serafima Alexandrovna Vichkanova, Ramensky raion, pos. Udelnaya, Voenny gorodok 17, kv. 4, Moskovskaya obl., U.S.S.R.; Mira Abramovna Rubinchik, Kutuzovsky prospekt 1, kv. 46, Moscow, U.S.S.R.; Ljudmila Petrovna Tolstykh, P.O. Rastorguevo, sovkhoz Izmailovo 17, kv. 3, Moskovskaya obl., U.S.S.R.; and Yanina Adolfovna Aleshkina, 2 Kvesiskaya ul. 9, kv. 13, Moscow, U.S.S.R.

No Drawing. Filed Aug. 4, 1967, Ser. No. 658,335
Int. Cl. C07g *5/00;* **A61k** *27/00*
U.S. Cl. 260—236 **2 Claims**

A preparation containing a protistostatic alkaloid of the formula $C_{30}H_{42}O_4N_2S$ is prepared by extracting the rootstocks of *Nuphar luteum* with dichloroethane in the presence of NH_4OH, treating the extract with 10–15% H_2SO_4, alkalinizing the acidic solution to form a precipitate, filtering the precipitate and extracting same with ether, followed by concentrating the ether extract and precipitating inert substances with petroleum ether.

3,464,976
CITRUS OIL RECOVERY FROM EMULSIONS

Peter L. Douglas, Glendora, Calif., assignor to Brown Citrus Machinery Corporation, Whittier, Calif., a corporation of California

No Drawing. Filed Oct. 6, 1966, Ser. No. 584,675
Int. Cl. C11b *9/00*
U.S. Cl. 260—236.6 **8 Claims**

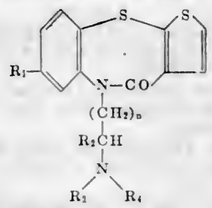
A process for the recovery of citrus oils from the emulsions thereof which comprises adding an elcetrolyte salt to a citrus oil-water emulsion containing a wetting agent to break out the oil from the emulsion.

3,464,977
5-(AMINO-LOWERALKYL)-4,5-DIHYDROTHIENO-[2,3-b]BENZOTHIAZEPIN-4-ONES

Jany Renz, Basel, Jean Pierre Bourquin, Magden, Hans Winkler, Basel, and Pierre Gagnaux and Gustav Schwarb, Allschwil, Switzerland, assignors to Sandoz Ltd. (also known as Sandoz A.G.), Basel, Switzerland

No Drawing. Filed Dec. 21, 1966, Ser. No. 603,455
Claims priority, application Switzerland, Dec. 23, 1965, 17,750/65; June 7, 1966, 8,222/66; Oct. 27, 1966, 15,596/66, 15,597/66
Int. Cl. C07d *41/06*
U.S. Cl. 260—239.3 **17 Claims**

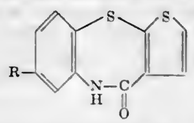
Heterocyclic compounds of the general formula



in which R_1 is hydrogen, chlorine, bromine or iodine, and either

n is 1 to 2, R_2 is hydrogen, and each of R_3 and R_4 is alkyl of 1 to 4 carbon atoms, or R_3 and R_4 together with the nitrogen are piperazinyl-4, which may optionally be substituted in the 1-position by alkyl of 1 to 4 carbon atoms, or

n is 2, and R_4 is alkyl of 1 to 4 carbon atoms, and R_3 together with R_2 are trimethylene of tetramethylene, and the pharmaceutically acceptable acid addition salts thereof. Also the compound of the general formula:



in which R is hydrogen, chlorine, bromine or iodine, alkyl, alkoxy, alkylthio, alkylsulphonyl or alkylsulphinyl of 1 to 4 carbon atoms, trifluoromethyl or cyano. These compounds are useful in the treatment of psychic depression conditions and psychosomatic illnesses. They may also be used as antihistamines.

3,464,978
1-SUBSTITUTED UREA ALKYL 1,2-DIHYDRO-1,4-BENZODIAZEPINES AND BENZODIAZEPIN-2-ONES

James Valentine Earley, Cedar Grove, Rodney Ian Fryer, North Caldwell, and Leo Henryk Sternbach, Upper Montclair, N.J., assignors to Hoffmann-La Roche Inc., Nutley, N.J., a corporation of New Jersey

No Drawing. Continuation-in-part of application Ser. No. 632,529, Apr. 21, 1967. This application Oct. 23, 1967, Ser. No. 677,092
Int. Cl. C07d *53/06, 57/00;* **A61k** *27/00*
U.S. Cl. 260—239.3 **23 Claims**

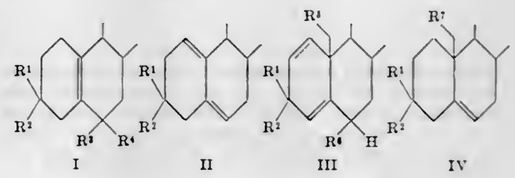
1,2-dihydro-1,4-benzodiazepines and benzodiazepin-2-ones which have an aminoalkyl or alkyl cyanamide or substituted alkyl urea at the 1-position useful as hypnotics, psychosedatives, anticonvulsants, sedatives and muscle relaxants and a process for preparing these compounds.

3,464,979
PRO-OESTROGENIC STEROIDS NON-AROMATIC IN RING A

Derek Harold Richard Barton, London, England, assignor to Research Institute for Medicine and Chemistry, Inc., Cambridge, Mass., a corporation of Massachusetts

No Drawing. Filed Apr. 1, 1965, Ser. No. 444,834
Claims priority, application Great Britain, Apr. 7, 1964, 14,317/64; Nov. 10, 1964, 45,811/64
Int. Cl. C07c *173/00, 169/10;* **A61k** *17/00*
U.S. Cl. 260—239.55 **9 Claims**

Pro-oestrogenic steroids having one of the partial structures:



I II III IV

wherein R^1 is hydroxy or acyloxy and R^2 is hydrogen or R^1 and R^2 together are keto; R^3 is hydrogen, β-hydroxy, β-acyloxy, α-halogen or β-halogen and R^4 is hydrogen or R^3 and R^4 together are keto; R^5 is hydrogen, hydroxy or acyloxy and R^6 is hydrogen or R^5 and R^6 together form an oxide or lactone bridge; the broken line indicates a carbon-carbon bond which may be present, there being no oxido bridge when there is a 1(2) double bond and a 17-keto substituent; and R^7 is hydroxy, acyloxy or keto.

3,464,980
16α,17α,21-CYCLIC ORTHOESTERS OF STEROIDS

Robert Bruce Brownfield, Nanuet, N.Y., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed Dec. 14, 1966, Ser. No. 601,565
Int. Cl. C07c *169/34, 173/00*
U.S. Cl. 260—239.55 **6 Claims**

This invention describes novel cyclic orthoesters of steroids of the pregnane series. These esters are formed from 16α,17α,21-trihydroxy-20-keto pregnanes. The products are useful as intermediates for the preparation of other steroids wherein it is desirable to block the 16α,17α, 21-positions. The present compounds also have anti-inflammatory activity.

3,464,981
SEPARATION PROCESS

John Edward Colchester, John Hubert Entwisle, and Maurice Berkeley Green, Runcorn, England, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

No Drawing. Filed Mar. 31, 1966, Ser. No. 538,958
Claims priority, application Great Britain, Apr. 6, 1965, 14,577/65
Int. Cl. C07d *31/22*
U.S. Cl. 260—240 **11 Claims**

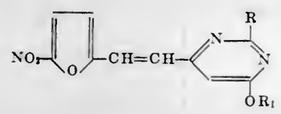
There is provided a process for the separation of a 4:4′-bipyridylium salt from a mixture or solution containing it, which comprises treating a solution containing the said salt with amsonic acid, whereby the 4:4′-bipyridylium salt is precipitated as an insoluble derivative and the precipitate is separated from the solution.

3,464,982
[2 - (5 - NITRO - 2 - FURYL) - VINYL] - PYRIMIDINE DERIVATIVE AND PROCESS FOR THE PREPARATION THEREOF

Shinsaku Minami, Yamato Kouriyama-shi, Akio Fujita, Ibaragi-shi, Masanao Shimizu, Kobe, and Yoshiyuki Takase, Amagasaki-shi, Japan, assignors to Dainippon Pharmaceutical Co., Ltd., Higashi-ku, Osaka, Japan

No Drawing. Filed Aug. 22, 1966, Ser. No. 573,877
Claims priority, application Japan, Sept. 1, 1965, 40/53,497
Int. Cl. C09b *23/04;* **A61k** *27/00;* **C07d** *51/42*
U.S. Cl. 260—240 **5 Claims**

Novel 2-(5-nitro-2-furyl)-vinyl pyrimidine derivatives having the formula



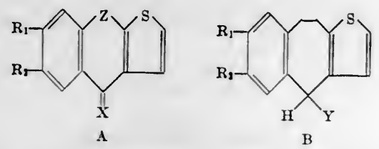
wherein R stands for a member selected from the group consisting of alkylthio, amino, alkylamino, dialkylamino and alkanoylamino, said alkyl and alkanoyl each having 1–4 carbon atoms, and R_1 represents a member selected from a hydrogen atom and an alkyl group having 1–4 carbon atoms.

3,464,983
4H-BENZO[4,5]CYCLOHEPTA[1,2-b]THIOPHENES

Ernst Jucker, Ettingen, Anton Ebnother, Reinach, Basel-Land, Jean-Michel Bastian, Birsfelden, Erwin Rissi, Basel, and André Stoll, Birsfelden, Switzerland, assignors to Sandoz Ltd. (also known as Sandoz A.G.), Basel, Switzerland

No Drawing. Continuation-in-part of applications Ser. No. 428,197, Jan. 26, 1965, Ser. No. 441,348, Mar. 19, 1965, Ser. No. 476,169 and Ser. No. 476,197, July 30, 1965, and Ser. No. 487,030, Sept. 13, 1965. This application May 31, 1967, Ser. No. 642,295
Claims priority, application Switzerland, Feb. 4, 1964, 1,275/64; Apr. 2, 1964, 4,264/64; Aug. 11, 1964, 10,467/64, 10,468/64; Oct. 13, 1964, 13,246/64; Jan. 21, 1965, 875/65; June 9, 1965, 8,061/65, 8,062/65, 8,063/65, 8,064/65
The portion of the term of the patent subsequent to Sept. 13, 1983, has been disclaimed
Int. Cl. C07d *63/18, 99/06;* **A61k** *27/00*
U.S. Cl. 260—240 **42 Claims**

New compounds which contain the 4H-benzo[4,5]cycloheptа[1,2-b]thiophene nucleus, of Formulas A and B:



wherein Z stands for —CH=CH— or —CH_2—CH_2— and X and Y stand for a nitrogen-containing substituent, are prepared.

The compounds are anti-depressants and are useful to produce a potentiation of the effect of noradrenalin and certain sedative and anti-cholinergic effects. The compounds are of low toxicity and are suitable for the treatment of neurotic and psychotic disorders and also for the therapeutic treatment of phychosomatic disorders, The compounds are suitable for administration in the form of their physiologically acceptable, water-soluble salts.

3,464,984
THIOMORPHOLINE DERIVATIVES CONTAINING A 5-NITROTHIAZOLYL-(2) RADICAL IN 4-POSITION

Atso Ilvespaa, Neu-Allschwil, Switzerland, assignor to Ciba Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed June 28, 1966, Ser. No. 561,050
Claims priority, application Switzerland, July 23, 1965, 10,360/65; May 31, 1966, 7,841/66
Int. Cl. C07d *93/10;* **A61k** *27/00*
U.S. Cl. 260—243 **4 Claims**

New thiomorpholines that carry a 5-nitrothiazolyl-(2) radical on the nitrogen atom are disclosed. The thiomorpholine and thiazole rings of the new compounds may be further substituted, for example, the thiomorpholine ring by alkyl radicals and/or the 4-position of the thiazole ring, for example, by lower hydrocarbon radicals of aliphatic character or by aryl radicals which latter may themselves be substituted, for example, by halogen atoms, such as chlorine or bromine, by the pseudohalogen trifluoromethyl, by lower alkyls, such as methyl or ethyl, by lower alkoxy groups, such as methoxy, ethoxy or methylenedioxy groups and/or by nitro groups. The compounds are particularly effective against amoebae.

3,464,985
7 - [D - α - AMINO - (ACETAMIDOPHENYLACETAMIDO)]-CEPHALOSPORANIC ACIDS AND DERIVATIVES THEREOF

Charles Truman Holdrege, Camillus, N.Y., assignor to Bristol-Myers Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Aug. 18, 1967, Ser. No. 661,520
Int. Cl. C07d *99/24;* **A61k** *21/00*
U.S. Cl. 260—243 **8 Claims**

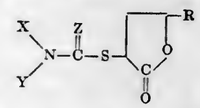
7 - [D - α - amino - (acetamidophenylacetamido)]-cephalosporanic acids and 7-[2,2-dimethyl - 5 - oxo - 4-acetamidophenyl - 1 - imidazolidinyl] - 3 - acetoxymethyl - 8 - oxo - 5 - thia-1-azabicyclo-[4·2·0]oct-2-ene-2-oic acids and the pharmaceutically acceptable nontoxic salts thereof are useful as antibacterial agents in animals, including man. An example of the process for their preparation is the treatment of D-α-t-butoxycarboxamido-4-acetamidophenylacetic acid with trichloroacetyl chloride to produce the mixed anhydride which in turn is treated with 7-aminocephalosporanic acid to produce 7-[D-α-amino - (4' - acetamidophenylacetamido)] - cephalosporanic acid, said compound being further treated with acetone to produce 7-[2,2-dimethyl-5-oxo-4-(4'-acetamidophenyl) - 1 - imidazolidinyl] - 3 - acetoxymethyl - 8 - oxo - 5 - thia - 1 - azabicyclo - [4·2·0]oct-2-ene-2-oic acid.

3,464,986
THIO-CARBAMYL-γ-LACTONES

Ranajit Ghosh and Nigel Douglas Bishop, Bracknell, England, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

No Drawing. Filed Feb. 10, 1966, Ser. No. 526,380
Claims priority, application Great Britain, Feb. 18, 1965, 7,076/65
Int. Cl. C07d *87/46, 5/06;* **A01n** *9/20*
U.S. Cl. 260—247.1 **7 Claims**

Lactone-carbamyl compounds having the formula:



wherein R stands for hydrogen or lower alkyl, Z stands for oxygen or sulphur, X and Y each stand for hydrogen, or alkyl or together represent a heterocyclic group including the adjacent N atom or X stands for hydrogen

and Y stands for alkylene, halo-substituted aryl, aralkyl, aryl, heterocyclic, heterocyclic-alkyl, dialkylamino, alkoxy-carbonyl alkyl or lactone-carbamyl-alkyl. These compounds possess fungicidal activity and are useful for the control of blast on rice (*Piricutaria oryzae*), rust on wheat (*Puccinia triticina*) and sore skin on cotton (*Rhizoctonia solani*).

3,464,987
1,2-DIHYDRO-1-HYDROXY-2-IMINO-6-(LOWER ALKYL)PYRIMIDINES

Joseph J. Ursprung, Portage, and William C. Anthony, Kalamazoo, Mich., assignors to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware

No Drawing. Filed Feb. 21, 1966, Ser. No. 528,790
The portion of the term of the patent subsequent to May 7, 1985, has been disclaimed
Int. Cl. C07d *99/02, 57/00;* **A61k** *27/00*
U.S. Cl. 260—247.5 **17 Claims**

1,2-dihydro-1-hydroxy-2-imino-6-(lower alkyl)pyrimidines, the corresponding acid addition salts, and the carboxylates are disclosed. These compounds are useful in the treatment of hypertension and shock.

3,464,988
3-HYDRAZINOBENZO[h]CINNOLINES AND 3 - HYDRAZINOBENZOCYCLOHEPTA-[5,6-c]PYRIDAZINES

Henry Michael Holava, Jr., and Richard Anthony Partyka, Liverpool, N.Y., assignors to Bristol-Myers Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Jan. 11, 1968, Ser. No. 697,013
Int. Cl. C07d *51/10, 51/04;* **A61k** *27/00*
U.S. Cl. 260—250 **8 Claims**

5,6-dihydro-3-hydrazinobenzo[h]cinnolines and 3-hydrazinobenzocyclohepta[5,6-c]pyridazines are a class of compounds useful in the treatment of hypertension in animals, including man. In particular, 5,6-dihydro-3-hydrazinobenzo[h]cinnoline hydrochloride is a most effective hypotensive agent.

3,464,989
3-ALKYLENEIMINOQUINAZOLINE-4-IMINO-2-ONES

Don L. Hunter, Long Beach, Calif., assignor to United States Borax & Chemical Corporation, Los Angeles, Calif., a corporation of Nevada

No Drawing. Filed June 7, 1967, Ser. No. 644,114
Int. Cl. C07d *51/48, 57/00;* **A01n** *9/22*
U.S. Cl. 260—256.4 **5 Claims**

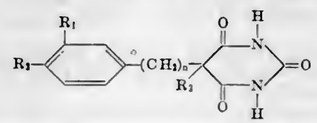
3 - alkyleneiminoquinazoline-4-imino-2-one compounds having 4–7 carbon atoms in the alkyleneimino ring are provided. The compounds are especially useful as herbicides and can be formulated to provide herbicidal compositions.

3,464,990
BARBITURIC ACID DERIVATIVES SUBSTITUTED IN THE FIVE POSITION

Arnold Brossi, Verona, Antonino Focella, Clifton, Albert Israel Rachlin, Verona, and Sidney Teitel, Clifton, N.J., assignors to Hoffmann-La Roche Inc., Nutley, N.J., a corporation of New Jersey

No Drawing. Filed Feb. 27, 1967, Ser. No. 619,030
Int. Cl. C07d *51/20, 51/22;* **A61k** *27/00*
U.S. Cl. 260—257 **22 Claims**

Barbituric acid derivatives of the formula



wherein R_1 and R_2 are hydroxy, lower alkoxy or aralkoxy; R_3 is hydrogen, lower alkyl, lower alkenyl or lower alkynyl; and *n* is an integer from 0 to 2, are prepared, from the correspondingly substituted diethyl(phenyl) malonates. The products are useful as tranquilizers.

3,464,991
11-AMINOALKYL-5,11-DIHYDRO-10H-DIBENZO[a,d]CYCLOHEPTEN-10-ONE

Walter Schindler and Hans Blattner, Riehen, and Armin Züst, Basel-Land, Switzerland, assignors to Geigy Chemical Corporation, Greenburgh, N.Y., a corporation of Delaware

No Drawing. Filed Nov. 21, 1966, Ser. No. 595,644
Claims priority, application Switzerland, Nov. 26, 1965, 16,346/65
Int. Cl. C07d *29/10;* **A61k** *27/00*
U.S. Cl. 260—268 **11 Claims**

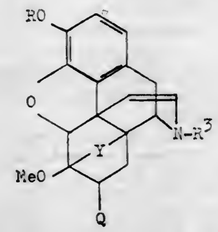
Substituted 11 - aminoalkyl-5,11-dihydro-10H-dibenzo[a,d]cyclohepten-10-ones such as 11-(3-methylaminopropyl) - 5,11-dihydro-10H-dibenzo[a,d]cyclohepten-10-one, and their salts have antidepressant properties.

3,464,992
15 - DEHYDRO - 6,14 - ENDOETHENO AND ENDOETHANO NORTHEBAINES AND NORORIPAVINES

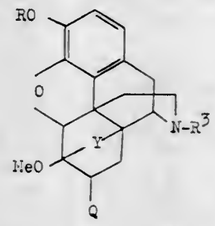
Philip Arthur Mayor and David Ian Haddlesey, Hull, John William Lewis, Cottingham, and Kenneth Walter Bentley, Willerby, England, assignors to Reckitt & Sons Limited, Hull, England, a British company

No Drawing. Filed Mar. 25, 1968, Ser. No. 715,497
Claims priority, application Great Britain, Mar. 31, 1967, 14,755/67
Int. Cl. C07d *43/28;* **A61k** *27/00*
U.S. Cl. 260—285 **8 Claims**

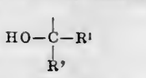
The invention relates to novel derivatives of thebaine and oripavine of the formula:



and salts of the compounds of the said formula, wherein Y, Q, R and R^3 are hereinafter specified radicals, are prepared by the dehydrogenation of compounds of the formula:



The novel derivatives of the invention in which Q is



wherein R^1 and R^2 are each hereinafter specified radicals, and their salts with pharmaceutically acceptable acids are therapeutically useful. The invention also includes phar-

maceutical compositions comprising the novel compound or a pharmaceutically acceptable salt thereof, and a carrier, therefor, which may be in unit dosage form.

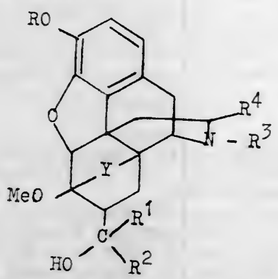
3,464,993

6,14-ENDOETHENO NORTHEBAINES AND NORORIPAVINES

Philip Arthur Mayor and David Ian Haddlesey, Hull, John William Lewis, Cottingham, and Kenneth Walter Bentley, Willerby, England, assignors to Reckitt & Sons Limited, Hull, England, a British company

No Drawing. Filed Mar. 25, 1968, Ser. No. 715,498
Claims priority, application Great Britain, Mar. 31, 1967, 14,948/67
Int. Cl. C07d *43/28, 35/28*
U.S. Cl. 260—285 **7 Claims**

The invention relates to novel thebaine and oripavine derivatives of the formula



wherein Y, R, R^1, R^2, R^3 and R^4 are hereinafter specified radicals, and pharmaceutically acceptable salts thereof.

The compounds of the invention are therapeutically useful. The invention also includes pharmaceutical compositions comprising a novel compound or a pharmaceutically acceptable salt thereof and a carrier therefor, which may be in unit dosage form.

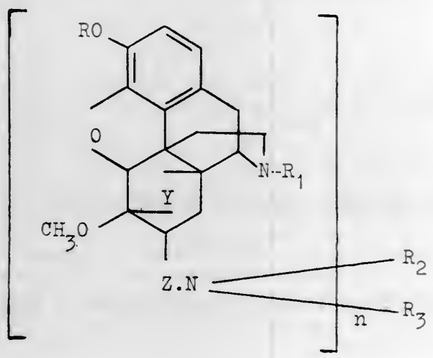
3,464,994

THEBAINE AND DRIPAVINE DERIVATIVES AND PHARMACEUTICALLY ACCEPTABLE SALTS THEREOF

Kenneth Walter Bentley, Willerby, England, Denis Geoffrey Hardy, Aberdeen, Scotland, and Alan Charles Brandon Smith, Hull, England, assignors to Reckitt & Sons Limited, Hull England, a British company

No Drawing. Continuation-in-part of application Ser. No. 571,386, Aug. 10, 1966. This application May 16, 1968, Ser. No. 729,505
Claims priority, application Great Britain, Aug. 13, 1965, 34,840/65
Int. Cl. C07d *43/28;* **A61k** *27/00*
U.S. Cl. 260—285 **4 Claims**

Novel derivatives of thebaine and dripavine of the formula:



wherein:

n is the integer 1 or 2;
Y is etheno (—CH=CH—) or ethano

(—CH_2—CH_2—)

Z is carbonyl or methylene;
R_1 is alkyl, alkenyl or alkynyl of up to 5 carbon atoms or cycloalkyl methyl of 4 to 6 carbon atoms;
R_2 is hydrogen, cycloalkyl of 5 or 6 carbon atoms, phenyl, tolyl, naphthyl, monochlorophenyl, dichlorophenyl, alkyl of 1 to 6 carbon atoms, alkyl of 1 to 3 carbon atoms monosubstituted by phenyl, hydroxy, furyl, dimethylamino or diethylamino;
R_3 is, when $n=1$, any one of the substituents set out for R_2, and R_2 and R_3 when taken together with the nitrogen atom to which R_2 and R_3 are attached is morpholino, piperidino, pyrrolidino, piperazino or N-methyl piperazino; and when Z is carbonyl either R_2 or R_3 is amino when the other group R_2 or R_3 is hydrogen;
R_3 is, when $n=2$, the divalent group —$(CH_2)_2$—; and
R is methyl when Z is carbonyl and hydrogen or methyl when Z is methylene and non-toxic pharmaceutically acceptable salts are useful as analgesics.

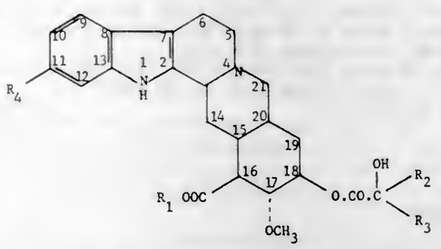
3,464,995

18-HYDROXY-YOHIMBANE-CARBOXYLIC ACID DIESTERS

Alfred Popelak, Mannheim, Gustav Lettenbauer, Lampertheim, Hesse, Wolfgang Schaumann, Mannheim-Waldhof, and Annemarie Ribbentrop, Mannheim, Germany, assignors to C. F. Boehringer & Soehne G.m.b.H., Mannheim-Waldhof, Germany

No Drawing. Filed Jan. 4, 1966, Ser. No. 518,556
Claims priority, application Germany, Feb. 4, 1965, B 80,374
Int. Cl. C07d *57/10;* **A61k** *27/00*
U.S. Cl. 260—287 **6 Claims**

Novel 18-hydroxy-yohimbane-carboxylic acid diesters constituting blood pressure reducing agents, corresponding to the formula:



wherein R_1 is lower alkyl, R_2 and R_3 are each hydrogen, alkyl or aryl and R_4 is hydrogen or methoxy and the salts thereof with inorganic or organic acids.

3,464,996

6H - DIBENZO[c,g][1,2,5]THIADIAZOCINE - 5,5-DIOXIDES AND METHOD FOR THEIR PRODUCTION

John B. Wright, Kalamazoo, Mich., assignor to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware

No Drawing. Filed May 16, 1967, Ser. No. 638,768
Int. Cl. C07d *93/44;* **A61k** *27/00;* **C09k** *3/00*
U.S. Cl. 260—293.4 **17 Claims**

6H - dibenzo[c,g][1,2,5]thiadiazocine - 5,5 - dioxides and a method of preparation which involves the condensation of a 2 - benzoylbenzenesulfonyl halide with an o - phenylene diamine and the subsequent cyclodehydration of the condensation product is disclosed.

These compounds are useful as starting materials for the preparation of bleaching agents, antiseptics, disinfectants, mothproofing agents, and/or herbicides; they are also useful as antidiabetic agents, antiallergic agents, central nervous system stimulants, coccidiostats, and ultraviolet light filters.

3,464,997

SYNTHESIS OF 3-QUINUCLIDINOL

Herbert S. Aaron, Baltimore, Omer O. Owens, Abingdon, and Jacob I. Miller, Baltimore, Md., assignors to the United States of America as represented by the Secretary of the Army

No Drawing. Filed Mar. 17, 1966, Ser. No. 536,583
Int. Cl. C07d *39/06*
U.S. Cl. 260—294.7 **6 Claims**

This invention relates to azabicyclic alcohols and to the process of preparing them. More particularly, it relates to the synthesis of 3-quinuclidinol, by the cyclodehydration of (4-piperidyl)-1,2-ethanediol.

3,464,998

ADAMANTYL ESTERS AND AMIDES OF PYRIDINECARBOXYLIC ACIDS

Carl Peter Krimmel, Wauconda, Ill., assignor to G. D. Searle & Co., Chicago, Ill., a corporation of Delaware

No Drawing. Filed Mar. 4, 1968, Ser. No. 709,865
Int. Cl. C07d *31/36;* **A61k** *27/00;* **A01n** *9/22*
U.S. Cl. 260—295.5 **5 Claims**

Adamantyl and adamantylalkyl esters and amides of pyridinecarboxylic acids are described herein. They possess antiulcer, antibradykinin, antifungal, antibacterial, and antiprotozoal activity. The compounds are prepared from the appropriate pyridinecarbonyl chloride and the appropriate adamantane alcohol or amine.

3,464,999

THIADIAZOLYLISOTHIAZOLES

Raymond Urgel Lemieux and Rintje Raap, Edmonton, Alberta, Canada, assignors to R & L Molecular Research Ltd., Edmonton, Alberta, Canada, a corporation of Canada

No Drawing. Filed July 27, 1967, Ser. No. 656,351
Int. Cl. C07d *91/54*
U.S. Cl. 260—302 **3 Claims**

Various substituted carboxylic acids such as 5-isothiazolylacetic acid are valuable intermediates in the preparation of new and novel antibacterial agents. A new process for the preparation of these acids has been devised, a typical example of which is the reaction of the product from the reaction of isothiazole with butyl lithium with acetic anhydride to produce 5-acetylisothiazole. The 5-acetylisothiazole is reacted with carbethoxyhydrazine to produce the corresponding hydrazone. The resultant hydrazone is treated with thionyl chloride to produce 4-(5'-isothiazolyl)-1,2,3-thiadiazole, which in turn is converted to 1-methylthio-2-(5'-isothiazolyl)-ethyne by treatment first with butyl lithium and then dimethylsulfate. Hydrolysis of this product produces 5-isothiazolylacetic acid. Condensation of this acid with 6-aminopenicillanic acid (6-APA) or 7-aminocephalosporanic acid (7-ACA) produces the corresponding 6-(5'-isothiazolylacetamido) derivatives of penicillanic and cephalosporanic acids.

3,465,000

BASIC ESTERS OF CERTAIN SUBSTITUTED ISOXAZOLE-4-CARBOXYLIC ACIDS

Ronald George Micetich, Sherwood Park, Alberta, and Raymond Urgel Lemieux, Edmonton, Alberta, Canada, assignors to R & L Molecular Research Ltd., Edmonton, Alberta, Canada. a corporation of Canada

No Drawing. Filed Dec. 28, 1966, Ser. No. 605,155
Int. Cl. C07d *85/22*
U.S. Cl. 260—307 **14 Claims**

This invention relates to the provision of a new class of compounds. It relates further to new compositions of matter which are useful in the control of trichomoniasis. It relates further to the use of such compositions in the treatment of trichomoniasis. More specifically, it relates to the provision of esters of 3-(or 5)-(5'-nitrofur-2'-yl)-5-(or 3)-(lower)alkyl-isoxazol-4-yl carboxylates characterized by trichomonocidal activity.

3,465,001

MALEIMIDO ARYLOXY ALKANOIC ACIDS, ALKYL ESTERS AND AMIDES THEREOF

William A. Bolhofer, Frederick, and John J. Baldwin, Lansdale, Pa., assignors to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey

No Drawing. Filed Mar. 31, 1966, Ser. No. 538,957
Int. Cl. C07d *27/28;* **A61k** *27/00*
U.S. Cl. 260—326.3 **10 Claims**

(Maleamidoraryloxy) alkonic acid products wherein the maleamido nucleus may be substituted by from one to two halogen, alkyl, aryl or substituted aryl moieties or by a divalent hydrocarbylene chain and the salts, esters and amide derivatives thereof. The said products are diuretic and saluretic agents which are useful in the treatment of conditions associated with edema.

3,465,002

(SUCCINIMIDOARYLOXY)ALKANOIC ACIDS, ESTERS AND AMIDES THEREOF

William A. Bolhofer, Frederick, and John J. Baldwin, Lansdale, Pa., assignors to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey

No Drawing. Filed Apr. 8, 1966, Ser. No. 541,116
Int. Cl. C07d *27/10;* **A01n** *9/20*
U.S. Cl. 260—326.3 **6 Claims**

(Succinimidoaryloxy) alkanoic acid products wherein the succinimido moiety may be substituted by halogen or by alkylidene and wherein the benzene ring may be substituted by from one to four alkyl, alkoxy or halogen radicals or by a divalent hydrocarbylene chain and the salts, esters and amide derivatives thereof. The said products are diuretic and saluretic agents which are useful in the treatment of edema and hypertension.

The products may be prepared by three routes: (1) via the reaction of an N-(carboxyalkoxyaryl)succinamic acid with a base; or, when the nuclear halogenated products are desired, (2) by the reaction of an N-(carboxyalkoxyaryl)-maleamic acid with a reagent capable of effecting halogenation and ring closure, or (3) by treating the appropriate (maleimiboaryloxy) alkanoic acid with a halogenating agent.

3,465,003

4H-BENZO[4,5]CYCLOHEPTA[1,2-b]THIOPHENE DERIVATIVES

Ernst Jucker, Ettingen, Anton Ebnother, Reinach, Basel-Land, Jean-Michel Bastian, Birsfelden, Erwin Rissi, Basel, and André Stoll, Birsfelden, Switzerland, assignors to Sandoz Ltd. (also known as Sandoz A.G.), Basel, Switzerland

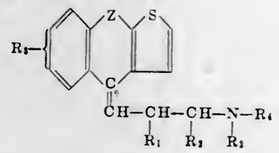
No Drawing. Continuation-in-part of applications Ser. No. 385,072, July 24, 1964, Ser. No. 418,562 and Ser. No. 418,564, Dec. 15, 1964, and Ser. No. 459,458, May 27, 1965. This application Sept. 15, 1967, Ser. No. 668,212

Claims priority, application Switzerland, July 29, 1963, 9,418/63; Dec. 20, 1963, 15,707/63, 15,711/63, 15,712/63; May 22, 1964, 6,699/64; May 26, 1964, 6,858/64; June 17, 1964, 7,895/64; Oct. 12, 1964, 13,202/64

Int. Cl. C07d *63/18;* **A61k** *27/00*

U.S. Cl. 260—329 **6 Claims**

A compound of the formula:



wherein

Either each of R_1 and R_2 are hydrogen or alkyl of 1 to 4 carbon atoms, each of R_3 and R_4 are alkyl of 1 to 4 carbon atoms or R_3 and R_4 are together tetramethylene or pentamethylene, or R_1 is hydrogen, R_2 and R_3 are together trimethylene or tetramethylene and R_4 is alkyl of 1 to 4 carbon atoms, or R_1 together with R_3 is dimethylene or trimethylene, R_2 is hydrogen and R_4 is alkyl of 1 to 4 carbon atoms, R_5 is hydrogen, and Z is

$$—CH_2—CH_2—$$

Or each of R_1, R_2 and R_5 are hydrogen, each of R_3 and R_4 are alkyl of 1 to 4 carbon atoms, or R_1 is hydrogen, R_2 and R_4 are together trimethylene or tetramethylene and R_3 is alkyl of 1 to 4 carbon atoms, and Z is —CH=CH—;

Or each of R_1 and R_2 are hydrogen or methyl, each of R_3 and R_4 are alkyl of 1 to 4 carbon atoms or R_3, R_4 and the nitrogen atom are together pyrrolidine, piperidine piperazine, 4-methyl-piperazine or 4-hydroxyalkyl(2 to 3 carbon atoms)-piperazine, or R_1 and R_3 are together dimethylene or trimethylene, R_2 is hydrogen and R_4 is alkyl of 1 to 4 carbon atoms, or R_1 is hydrogen, R_2 and R_3 are together trimethylene or tetramethylene and R_4 is alkyl of 1 to 4 carbon atoms, R_5 is chlorine, bromine or alkoxy of 1 to 4 carbon atoms, and Z is $—CH_2CH_2—$ or

$$—CH=CH—$$

Or each of R_1, R_2 and R_5 are hydrogen, and R_3, R_4 and the nitrogen atoms are together morpholine, piperazine, 4-hydroxy-piperidine, 4-alkyl(1 to 3 carbon atoms)-piperazine or 4-hydroxy-alkyl(2 to 3 carbon atoms)-piperazine, and Z is $—CH_2—CH_2—$ or —CH=CH—, and a pharmaceutically acceptable acid addition salt thereof.

The compounds have sedative and neuroleptic properties, and are indicated for use in the treatment of psychic illnesses.

3,465,004

ALUMINUM CHLORIDE CATALYZED REACTION OF ALIPHATIC DIBASIC ACID ANHYDRIDES WITH HETEROCYCLIC COMPOUNDS

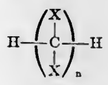
Jack E. Crawford, East Brunswick, Harold M. Foster, Middlesex, and Thomas W. Higgins, Piscataway Township, Middlesex County, N.J., assignors to Mobil Oil Corporation, a corporation of New York

No Drawing. Filed Sept. 3, 1964, Ser. No. 394,324

Int. Cl. C07d *63/12, 5/16, 27/22*

U.S. Cl. 260—332.2 **14 Claims**

1. A method for effecting the reaction of a dibasic acid anhydride with a heterocyclic compound, that comprises prereacting anhydrous aluminum chloride with an aliphatic dibasic acid anhydride selected from the group consisting of succinic acid anhydride, glutaric acid anhydride, methylsuccinic acid anhydride, dimethylsuccinic acid anhydride, butenylsuccinic acid anhydride, citraconic acid anhydride, itaconic acid anhydride, glutaconic acid anhydride, chlorosuccinic acid anhydride, maleic acid anhydride, butylmaleic acid anhydride, bromomaleic acid anhydride, propenylsuccinic acid anhydride, ethylglutaric acid anhydride, and propylsuccinic acid anhydride, thereby obtaining a complex of said anhydride and anhydrous aluminum chloride; and reacting a heterocyclic compound reactant selected from the group consisting of thiophene; 2-bromothiophene; 2-chlorothiophene; 2,3-dimethylthiophene; 2,4-dimethylthiophene; 3-ethylthiophene, 3-butylthiophene; furan; 3-bromofuran; 3-iodofuran; 3-methylfuran; pyrrole; 1-ethylpyrrole; 3-propylpyrrole; pyrazole; benzofuran; benzothiophene; indole; 3-methylindole; pyran; and benzopyran with said complex in a solvent selected from the group consisting of dibromomethane, dichloromethane, bromochloromethane, and normally liquid halogenated paraffins that are inert to aluminum chloride and have the formula:



wherein n is an integer from 2 to 4, X is selected from the group consisting of Cl, Br, and H, the total number of halogens is from 2 to 4, and at least two carbon atoms have halogen attached thereto.

3,465,005

TETRACYCLINE SALTS OF 4-METHYL-AESCULETIN-MONOETHANOIC ACID

Pierre-André Raymond Delaby, Neuilly-sur-Seine, France, assignor to Les Laboratoires Dausse, Paris, France, a French body corporate

No Drawing. Filed Nov. 2, 196[illegible], Ser. No. 680,034

Claims priority, application France, Nov. 7, 1966, 82,727; June 23, 1967, 111,642

Int. Cl. C07d *21/00;* **C07c** *103/19;* **A61k** *21/00*

U.S. Cl. 260—343.2 **5 Claims**

Salts of tetracycline with 4-methyl-aesculetin-monoethanoic acid have a wider antibacterial spectrum than the parent antibiotic.

3,465,006

POLYHALO - SUBSTITUTED POLYHYDROMETHANONAPHTHALENEDICARBOXYLIC ACIDS OR ANHYDRIDES THEREOF

Louis Schmerling, Riverside, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 408,650, Nov. 3, 1964. This application Nov. 8, 1968, Ser. No. 774,496

Int. Cl. C07d *5/38, 5/32*

U.S. Cl. 260—346.6 **7 Claims**

Polyhalo-substituted polyhydromethanonaphthalenedicarboxylic acids or anhydrides thereof, as exemplified by 1,4,5,6,7,8,9,9-octachloro - 1,2,3,4,4a,5,8,8a - octahydro-5,8-methano-2,3-naphthalenedicarboxylic acid, are prepared by condensing furan with maleic acid, further condensing the resultant 3,6-epoxy-1,2,3,6-tetrahydrophthalic acid with a halo-substituted cyclopentadiene, and treating the resulting compound with hydrogen halide to attach halogens to each of the carbon atoms which originally held the epoxy oxygen. These compounds are useful as components of plastics or resins whereby flame retardant or flame resistant properties are added thereto.

3,465,007

INSECTICIDAL ESTERS OF CHRYSANTHEMIC AND PYRETHRIC ACIDS

Michael Elliott, Harpenden, England, assignor to National Research Development Corporation, London, England, a British corporation

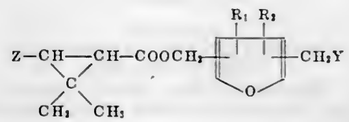
No Drawing. Filed Dec. 5, 1966, Ser. No. 598,923

Claims priority, application Great Britain, Dec. 9, 1965, 52,406/65

Int. Cl. C07d *5/16;* **A01n** *9/28*

U.S. Cl. 260—347.4 **16 Claims**

Esters of formula



in which Z represents an isobutenyl or the 2-carbomethoxy-prop-1-enyl group, R_1 and R_2 are hydrogen or alkyl and Y is hydrogen or alkyl or alkenyl or alkadienyl or phenyl or a furyl group or a phenyl substituted by alkyl, alkenyl. alkadienyl, alkoxy or chlorine, have insecticidal activity. Particularly active are the compounds in which the CH_2Y group is in the 5-position and Y is phenyl. The (+)-trans chrysanthemate ester of this alcohol is fifty times more active against houseflies than allethrin. Novel intermediates, substituted 3-furoic acids and furyl methanols are described.

3,465,008

POLYMERIC PRODUCTS

Maurice Robert Mills, Sevenoaks, Kent, England, assignor to Lever Brothers Company, New York, N.Y., a corporation of Maine

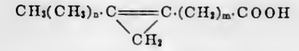
No Drawing. Filed Dec. 31, 1964, Ser. No. 422,534

Claims priority, application Great Britain, Jan. 10, 1964, 1,172/64

Int. Cl. C07c *51/00, 61/16*

U.S. Cl. 260—396 **8 Claims**

The specification is concerned with certain polymers of an acid having the formula



wherein m and n are whole numbers and $n+m$ is not greater than 14. The specification is also concerned with synthetic resins prepared from these polymers.

3,465,009

NOVEL INTERMEDIATES IN THE PREPARATION OF 13 - POLYCARBONALKYL - 17α - HYDROXY-18,19 - DINORPREGN - 4 - EN - 3,20 - DIONES AND ACYLATES THEREOF

Daniel M. Teller, King of Prussia, George H. Douglas, Paoli, and Herchel Smith, Wayne, Pa., assignors to American Home Products Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Oct. 13, 1967, Ser. No. 675,027

Int. Cl. C07c *169/36;* **A61k** *17/06*

U.S. Cl. 260—397.4 **5 Claims**

The present invention is concerned with *dl*-3-alkoxy-13-polycarbonalkyl-18,19-dinorpregna - 3,5 - dien-20-ones and *dl*-3-alkoxy-17α-hydroperoxy-13-polycarbonalkyl - 18,19-dinorpregna-3,5-dien-20-ones which are useful intermediates in the synthesis of *dl*-17-hydroxy-13-polycarbonalkyl-18,19-dinorpregn-4-ene-3,20-dione, acylates which are pharmacologically useful progestational agents.

3,465,010

17 - (UNSATURATED HYDROCARBON - SUBSTITUTED) 11,13β - DIALKYLGON - 4 - ENE - 3,17β-DIOLS AND ESTERS THEREOF

John S. Baran, Morton Grove, Ill., assignor to G. D. Searle & Co., Chicago, Ill., a corporation of Delaware

No Drawing. Filed Nov. 22, 1966, Ser. No. 596,090

Int. Cl. C07c *169/08, 169/12;* **A61k** *17/00*

U.S. Cl. 260—397.5 **8 Claims**

17-(unsaturated hydrocarbon-substituted) 11,-13β-dialkylgon-4-ene-3,17β-diols manufactured by reaction of the corresponding 3-keto starting materials with a suitable reducing agent and the esters of those diols display useful pharmacological properties, e.g., progestational and deciduogenic.

3,465,011

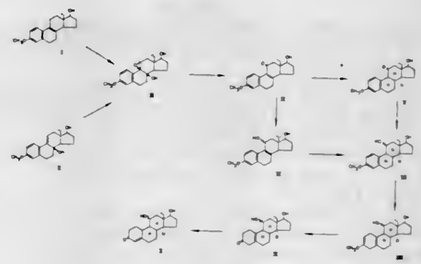
11-OXYGENATED-8-ISO STEROIDS

Reinhardt P. Stein, Conshohocken, George C. Buzby, Jr., Philadelphia, Robert C. Smith, Jr., King of Prussia, and Herchel Smith, Wayne, Pa., assignors to American Home Products Corporation, New York, N.Y., a corporation of Delaware

Filed Nov. 9, 1966, Ser. No. 593,059

Int. Cl. C07c *167/08, 169/08, 167/16*

U.S. Cl. 260—397.45 **17 Claims**



Treatment of 13-alkylgona-1,3,5(10),8-tetraenes or 13-alkylgona-1,3,5(10),9(11)-tetraen-8-ols with organic peracid results in the formation of corresponding 9,11-epoxy-13-alkylgona-1,3,5(10)-trien-8-ols. Treatment of the epoxides with acid affords gona-1,3,5(10),8-tetraen-11-ones, which on hydrogenation afford 8-isogona-1,3,5(10)-trien-11-ones. These products exert hormonal effects and are also useful as intermediates in the synthesis of other steroids having hormonal properties.

3,465,012

PROCESS FOR ALKYLATING, ALKENYLATING AND ARYLATING LEAD COMPOUNDS

Richard Muller, Radebeul, Sigrid Reichel, Dresden, and Christian Dathe, Radebeul, Germany, assignors to Institut für Silikon- und Fluorkarbon Chemie, Radebeul, Germany

No Drawing. Filed July 27, 1967, Ser. No. 656,368

Int. Cl. C07f *7/24*

U.S. Cl. 260—437 **4 Claims**

Process of producing metalorganic compounds of heavy metals by means of organofluorosilicic acids, more particularly starting from a lead salt or a lead oxide and converting them into organolead compounds.

3,465,013

PROCESS FOR THE PURIFICATION AND RECOVERY OF COBALT SALT OF ALIPHATIC MONOCARBOXYLIC ACID OF 2–4 CARBON ATOMS

Yataro Ichikawa, Gentaro Yamashita, and Kazumi Iwata, Iwakuni-shi, Japan, assignors to Teijin Limited, Osaka, Japan, a corporation of Japan

No Drawing. Filed Feb. 27, 1967, Ser. No. 619,054
Claims priority, application Japan, Mar. 4, 1966, 41/13,497
Int. Cl. C07c *51/42;* **C07f** *15/06*
U.S. Cl. 260—439 **7 Claims**

A process for the purification and recovery of a cobaltous salt of an aliphatic monocarboxylic acid from the reaction liquid obtained by the oxidation process of a dialkylbenzene with molecular oxygen in a monocarboxylic acid in the presence of a cobalt salt of an aliphatic monocarboxylic acid, which comprises reducing the cobalt salt contained in said reaction liquid to convert it to the corresponding cobaltous salt, and if necessary, before, after or simultaneously with said reduction, subjecting said reaction liquid to concentration and/or dehydration treatment to meet the following conditions:

(a) that the ratio of cobalt atom to the monocarboxylic acid in the filtrate should be within the range of one atom of the former to 5–150 mols of the latter, and

(b) that the water content of the filtrate should be no more than 1.5 mols per atom of cobalt.

3,465,014

METAL CHELATES HAVING A PHOSPHATE ESTER GROUP CONTAINING A PERFLUOROALIPHATIC RADICAL

Frank J. Pavlik, St. Paul, Minn., assignor to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware

No Drawing. Filed Aug. 21, 1967, Ser. No. 661,836
Int. Cl. C07f *5/06;* **C23c** *7/00*
U.S. Cl. 260—448 **7 Claims**

This invention relates to a new class of phosphorus and fluorine containing compounds especially useful for coating metal and other surfaces, in particular to a new class of metal chelates having a phosphate ester group containing a perfluoroaliphatic radical, the phosphorus of said phosphate ester being bonded to a polyvalent metal atom chelated to a beta-dicarbonyl compound.

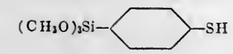
3,465,015

NOVEL MERCAPTOARYL SILICON COMPOUNDS

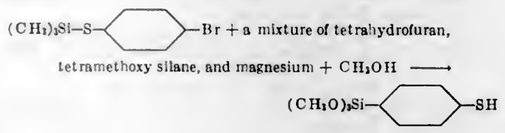
John L. Speier, Midland, Mich., assignor to Dow Corning Corporation, Midland, Mich., a corporation of Michigan

No Drawing. Filed Dec. 16, 1966, Ser. No. 602,190
Int. Cl. C07f *7/02;* **C07d** *1/00;* **C03c** *17/30*
U.S. Cl. 260—448.2 **8 Claims**

The compositions are of the class of mercaptoaryl silicon compounds possessing both a silicon bonded functional group and a thiol radical, useful as coupling agents that impart heat stability at severe temperatures. Illustrative of a member of the class is the compound



The mercaptoaryl silicon compounds are prepared by contacting in the presence of an organic solvent, a compound of the general formula $R_3—Si—S—R'—Z$ with a compound of the general formula $X'_y—Si—R_{4-y}$, with a metal and thereafter contacting the mixture in the presence of an alcohol to recover the mercaptoaryl silicon compound. Illustrative of the preparation is the following:



3,465,016

PRODUCTION OF MACROCYCLIC POLYSILOXANES

James F Hampton, Midland. Mich., assignor to Dow Corning Corporation, Midland, Mich., a corporation of Michigan

No Drawing. Filed Apr. 19, 1967, Ser. No. 631,911
Int. Cl. C08g *31/09;* **C07f** *7/02*
U.S. Cl. 260—448.2 **6 Claims**

Cyclicsiloxanes having more than 3 silicon atoms are prepared in high yield by polymerizing cyclotrisiloxanes in halosilane solvent in the presence of a hydrogen halide. For example, a mixture of hexamethylcyclotrisiloxane in the presence of dimethyldichlorosilane and a trace of hydrogen chloride at the room temperature produces a mixture of dimethylsiloxane cyclics having from 6 to 54 and above silicon atoms per molecule. Most of the cyclics in the mixture contain multiples of three silicon atoms, i.e., 6, 9, 12, 18, 39, etc. The compounds are useful as lubricants and hydraulic fluids.

3,465,017

PREPARATION OF TRIPHENYL (BIPHENYLYL) SILANES

Robert W. Coutant, Gahanna, Ohio, assignor to the United States of America as represented by the Secretary of the Air Force

No Drawing. Filed Apr. 24, 1967, Ser. No. 634,063
Int. Cl. C07f *7/08*
U.S. Cl. 260—448.2 **3 Claims**

A method for preparing triphenyl (biphenylyl) silane which involves the step of effecting a reaction by heating a mixture of benzil and tetraphenyl silane within an appropriate reaction vessel at a temperature and for a period of time sufficient to effect the reaction.

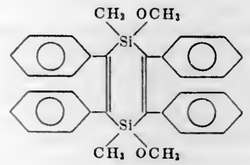
3,465,018

DISILACYCLOHEXADIENES

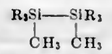
William H. Atwell, Midland, Mich., assignor to Dow Corning Corporation, Midland, Mich., a corporation of Michigan

No Drawing. Continuation-in-part of application Ser. No. 609,363, Jan. 16, 1967. This application July 19, 1967, Ser. No. 654,346
Int. Cl. C07f *7/18;* **C07d** *103/02*
U.S. Cl. 260—448.2 **16 Claims**

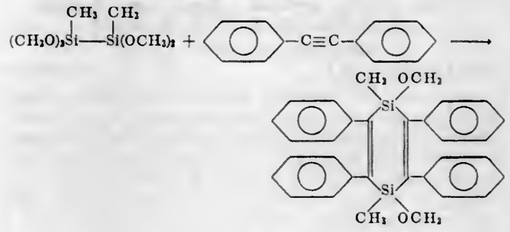
The compositions are of the class of disilacyclohexadienes which contain a functional group attached to the silicon atom, useful for the preparation of polymers which possesses excellent thermal stability. Illustrative of a member of the class is the compound



The disilacyclohexadiene compounds are prepared by heating to a temperature of at least 175° C. a mixture of a compound of th formula



with a compound of the formula R'C≡CR', and thereafter recovering the novel disilacyclohexadiene. Illustrative of the preparation is the following:



3,465,019

METHOD FOR MAKING ORGANOFUNCTIONAL-ALKYLSILICONHYDRIDES

Abe Berger, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York

No Drawing. Filed Dec. 20, 1967, Ser. No. 691,930
Int. Cl. C07f *7/08*
U.S. Cl. 260—448.2 **11 Claims**

A method is provided for redistributing hydrogen atoms attached to silicon and halogen atoms attached to silicon, utilizing a tertiary amine catalyst at elevated temperatures. An organosilane having three hydrogen atoms attached to silicon is used in combination with an organofunctional-halosilane, to provide for the production of an organofunctional-alkylsiliconhydride of the formula,

$$QSiY(Y')H$$

where Q is an organofunctional radical, such as an aliphatically unsaturated monovalent hydrocarbon radical, or a radical selected from haloalkyl, cyanoalkyl, isocyanatoalkyl, organothio, organosulfonyl, etc., Y is a halogen radical, and Y' is a member selected from Y and monovalent hydrocarbon radicals.

3,465,020

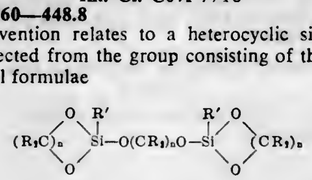
HETEROCYCLIC SILICON COMPOUNDS

Cecil L. Frye, Midland, Mich., assignor to Dow Corning Corporation, Midland, Mich., a corporation of Michigan

No Drawing. Filed Aug. 21, 1967, Ser. No. 661,819
Int. Cl. C07f *7/18*
U.S. Cl. 260—448.8 **12 Claims**

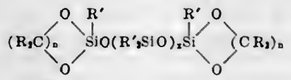
This invention relates to a heterocyclic silicon compound selected from the group consisting of those having the general formulae

(1)



and

(2)



wherein

R is a hydrogen atom, a hydrocarbon radical, or a halohydrocarbon radical, at least two of the R radicals in each ring being hydrocarbon or halohydrocarbon radicals and every R being free of aliphatic unsaturation,

R' is a hydrocarbon radical or a halohydrocarbon radical,

n has a value of from 2 to 5, and

x is an integer, the novel compounds are useful as hydraulic fluids, lubricants, and insect repeilents.

3,465,021

PREPARATION OF AROMATIC ISOCYANATES

Andrew John Nicholas and Harry James Twitchett, Manchester, England, assignors to Imperial Chemical Industries Limited, Millbank, England, a corporation of Great Britain

Filed May 26, 1965, Ser. No. 458,965
Claims priority, application Great Britain, May 29, 1964, 22,310/64, Patent 1,034,285
Int. Cl. C07c *119/04*
U.S. Cl. 260—453 **7 Claims**

A process for the production of organic isocyanates which includes reacting phosgene with a primary amine in the presence of an inert organic diluent. The initial chemical combination of these reactants is performed by separately introducing liquid phosgene and a solution of the primary amine in an inert liquid organic diluent into a tubular reactor through which a stream of a mixture in the same inert organic liquid diluent of phosgene, and the initial reaction products resulting from interaction of phosgene and primary amine is passing continuously by recirculation. The temperature in the reactor is maintained at about 8° to 50° C. and phosgene is added to the recirculating stream of the mixture in amounts of 5 to 20 mols of phosgene per mole of amino group present in the primary amine added thereto.

3,465,022

[(2,2-DIACYLVINYL)ARYLOXY(AND ARYLTHIO)] ALKANOIC ACID DERIVATIVES

Edward J. Cragoe, Jr., and John B. Bicking, Lansdale, Pa., assignors to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey

No Drawing. Filed Aug. 20, 1965, Ser No. 482,040
Int. Cl. C07c *69/66, 103/30;* **A61k** *27/00*
U.S. Cl. 260—453 **29 Claims**

[(2,2 - diacylvinyl)phenoxy- and phenylthio]alkanoic acid products and salts, esters and amide derivatives thereof, wherein the acyl moiety in the diacylvinyl substituents may be an alkanoyl, aroyl or aralkanoyl radical and the benzene ring may be substituted by from one to four halo, trihalomethyl, alkyl, alkoxy, nitro or alkanamido substituents or by a divalent hydrocarbylene chain. The said products are diuretic and saluretic agents which are useful in the treatment of hypertension.

The products may be prepared by three routes: (1) via the condensation of a nuclear formyl substituted phenoxy (or phenylthio)alkanoic acid with a diketone; (2) via the etherification of a 2-(hydroxy(or mercapto)benzylidene) 1,3-diketone; or (3) via the hydrolysis of a [(2,2-diacylvinyl)phenoxy(or phenlythio)]alkanoic acid ester.

3,465,023

PREPARATION OF NONAROMATIC POLYISOCYANATES

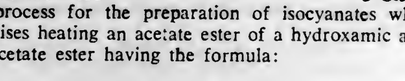
Marwan R. Kamal, Minneapolis, Minn., assignor to General Mills, Inc., a corporation of Delaware

No Drawing. Filed Dec. 7, 1965, Ser. No. 512,597
Int. Cl. C07c *119/04*
U.S. Cl. 260—453 **4 Claims**

Nonaromatic polyisocyanates of high purity are obtained by treating the crude product of the reaction of phosgene and the starting polyamine or halide salt thereof in an inert, water-immiscible solvent with an aqueous solution of a water soluble weak base. Substantially complete removal of hydrogen chloride from the reaction mixture and substantially complete conversion of carbamyl chloride to the corresponding polyisocyanate is obtained.

3,465,024
PROCESS FOR THE PREPARATION OF ISOCYANATES
Arthur M. Brownstein, Morristown, and John P. Sibilia, Livingston, N.J., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York
No Drawing. Filed Nov. 14, 1966, Ser. No. 593,668
Int. Cl. C07c *119/04*
U.S. Cl. 260—453 **3 Claims**

A process for the preparation of isocyanates which comprises heating an acetate ester of a hydroxamic acid, said acetate ester having the formula:



wherein R represents a hydrocarbon radical selected from the group consisting of aliphatic hydrocarbons containing 1 to 20 carbon atoms, alicyclic hydrocarbons containing from 3 to 20 carbon atoms, and mononuclear aromatic hydrocarbons containing from 6 to 20 carbon atoms and *n* is 1 or 2, at a temperature from the melting point of said acetate ester up to about 400° C. in an inert gas atmosphere and recovering the isocyanate product.

3,465,025
PROCESS FOR THE PREPARATION OF ISOCYANATES
Arthur M. Brownstein, Morristown, and John V. Pascale, Parsippany, N.J., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York
No Drawing. Filed Nov. 17, 1966, Ser. No. 595,015
Int. Cl. C07c *119/04, 127/00*
U.S. Cl. 260—453 **7 Claims**

A process for the preparation of aromatic mono- and di-isocyanates comprising reacting an N-mono-substituted aromatic mono- or di-urea with an oxide of nitrogen in an inert solvent at a temperature from about −70° C. to about 25° C. and recovering the isocyanate reaction product.

3,465,026
BORATE N - OXIDES DERIVED FROM BORATE ESTERS OF AMINO SECONDARY ALKANOLS
Graham Keith Hughes, Edina, Minn., assignor to Ashland Oil & Refining Company, Ashland, Ky., a corporation of Kentucky
No Drawing. Filed May 16, 1966, Ser. No. 550,157
Int. Cl. C07f *5/04;* **B01f** *17/00*
U.S. Cl. 260—462 **6 Claims**

N-oxides of borate esters of 1-dialkylamino-2-alkanols are disclosed, these compounds being used in detergent formulations, and as wetting and dispersing agents.

3,465,027
PROCESS FOR MANUFACTURE OF HIGH PURITY α-CYANOACRYLATES
Gary F. Hawkins, Kingsport, Tenn., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
No Drawing. Filed Dec. 9, 1965, Ser. No. 512,797
Int. Cl. C07c *121/40, 121/02, 121/30*
U.S. Cl. 260—464 **2 Claims**

Process for preparing esters of α-cyanoacrylic acid of a highly purified form by a combination of process steps and the control of the reaction conditions in such a manner that substantially all of the basic catalyst originally employed to catalyze the reaction between formaldehyde and cyanoacetate to produce the intermediate polymeric product is removed and no more than traces of acidic material will remain in the intermediate product. The esters of α-cyanoacrylic acid prepared according to the process are useful in adhesive compositions.

3,465,028
PROCESS FOR PREPARING UNSATURATED ALIPHATIC NITRILES
Naoya Kominami, Tokyo, Hitoshi Nakajima, Urawa, Saitama, and Itaru Watanabe, Takeo Kimura, and Tokio Sakurai, Tokyo, Japan, assignors to Asahi Kasei Kogyo Kabushiki Kaisha, Osaka, Japan
Filed Apr. 3, 1967, Ser. No. 627,994
Claims priority, application Japan, Apr. 19, 1966, 41/24,361; Mar. 3, 1967, 42/13,148
Int. Cl. C07c *121/04, 121/16*
U.S. Cl. 260—465.3 **8 Claims**

A process for preparing unsaturated aliphatic nitriles in a high yield and free from any disadvantage accompanied by the use of hydrogen halide while maintaining a high catalyst activity for a prolonged period of time, which process comprises bringing a gaseous mixture consisting of olefinic hydrocarbon, hydrogen cyanide and oxygen or an oxygen-containing gas into contact with a catalyst in the presence of halogenated aliphatic nitriles or a gaseous mixture of the halogenated aliphatic nitriles and hydrogen halide.

3,465,029
ESTERS OF (3,5-DIHYDROCARBYL-4-HYDROXYBENZYL)THIO-DICARBOXYLIC ACIDS
Patrick D. Beirne, Detroit, Mich., assignor to Ethyl Corporation, New York, N.Y., a corporation of Virginia
No Drawing. Filed Jan. 26, 1966, Ser. No. 523,025
Int. Cl. C07c *149/20;* **C10m** *1/38;* **C08k** *1/54*
U.S. Cl. 260—470 **3 Claims**

Esters of (3,5-dihydrocarbyl - 4 - hydroxybenzyl)thiodicarboxylic acids are effective stabilizers for organic material. For example, dilauryl[(3,5-di-tert-butyl-4-hydroxybenzyl)thio]succinate prolongs the life of polypropylene. Effectiveness is synergistically increased by inclusion of an ester of a thio-dialkanoic acid such as dilaurylthiodipropionate.

3,465,030
PROCESS FOR THE PRODUCTION OF DIALLYL-PHTHALATE
Ernst Leumann, Arlesheim, and Daniel Porret, Binningen, Switzerland, assignors to Ciba Limited, Basel, Switzerland, a company of Switzerland
No Drawing. Continuation-in-part of application Ser. No. 372,694, June 4, 1964. This application Feb. 27, 1968, Ser. No. 708,519
Claims priority, application Switzerland, June 18, 1963, 7,566/63
Int. Cl. C07c *67/04, 67/00*
U.S. Cl. 260—475 **1 Claim**

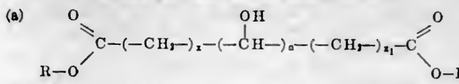
The invention relates to a two stage process for the manufacture of diallyl-ortho-phthalate in non-pressure apparatus, wherein in the first stage about 1 mol of phthalic anhydride is reacted with about 1 to 1.05 mol of allyl alcohol at reflux temperature and at atmospheric pressure, to yield the mono-allyl-ester of ortho-phthalic acid, and wherein in a second reaction stage, the semi-ester formed in the first stage is reacted with a stoichiometric excess of allyl chloride to form the diallyl-ortho-phthalate, said second reaction stage being carried out at reflux and atmospheric pressure in a reaction medium to which about 0.5 to 0.55 mol of anhydrous sodium carbonate for 1 mol of the said semiester, and further a catalyst selected from the group consisting of tertiary amines and quaternary ammonium salts thereof have been added, said catalyst being

at least partially soluble in the reaction medium, and the excess allyl chloride is recovered by distillation after completion of the reaction.

3,465,031
FLAME-RETARDING AGENTS
Robert James Stephenson, Llanyravon, Cwmbran, England, assignor to Monsanto Chemicals Limited, London, England, a British company
No Drawing. Continuation-in-part of application Ser. No. 320,500, Oct. 31, 1963. This application Nov. 9, 1967, Ser. No. 682,738
Int. Cl. C07c *69/72, 43/12;* **C09d** *5/18*
U.S. Cl. 260—484 **4 Claims**

Disclosed herein are novel compositions of matter having flame-retarding properties and corresponding to one of the following general structural formulae:

(a)

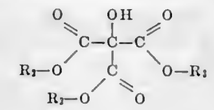


wherein *n*, *x* and x_1 are integers selected in accordance with the following table:

n	*x*	x_1
1	0–2	0–2
2	1, 2	0–2
2	0	1, 2
3	0–2	0–2
4	0–2	0–2

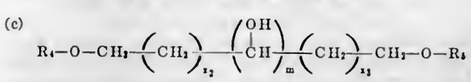
R is a bromoalkyl of from 1 to 4 carbon atoms and at least two bromines and R_1 is selected from the class consisting of hydrogen and R;

(b)



wherein R_2 is a bromoalkyl of from 1 to 4 carbon atoms and at least two bromines, and R_3 is selected from the class consisting of hydrogen and R_2; and

(c)



wherein R_4 is a bromoalkyl of from 1 to 4 carbon atoms and at least two bromines, R_5 is selected from the class consisting of hydrogen and R_4, x_2 and x_3 are, independently, from 0 to 2, and *m* is an integer of from 0 to 4 provided it is at least 1 when R_5 is other than hydrogen.

3,465,032
PROCESS FOR REMOVING CARBONYL COMPOUNDS FROM VINYL ACETATE
Adolfo Aguilo, Gene J. Fisher, and Edward N. Wheeler, Corpus Christi, Tex., assignors to Celanese Corporation, New York, N.Y., a corporation of Delaware
Continuation-in-part of application Ser. No. 552,907, May 25, 1966. This application May 8, 1967, Ser. No. 642,278
Int. Cl. C07c *67/06*
U.S. Cl. 260—499 **15 Claims**

Vinyl acetate containing carbonyl impurities, such as is produced by reacting ethylene with acetic acid in the presence of a redox catalyst, is purified by intimately contacting it with an aqueous solution of a treating reagent comprising a sulfite or bisulfite, at a controlled pH and with a controlled molar ratio of treating reagent to carbonyl impurity, a treated vinyl acetate phase then being separated from a spent aqueous liquor containing bisulfite addition products of the carbonyl impurities.

3,465,033
METHOD FOR PURIFYING SALTS OF AMINOSULFONIC ACID CONDENSATION PRODUCTS
Robert M. Lincoln, Moylan, and Joseph A. Meyers III, Springfield, Pa., assignors to Atlantic Richfield Company, Philadelphia, Pa., a corporation of Pennsylvania
No Drawing. Filed Mar. 11, 1968, Ser. No. 711,924
Int. Cl. C07c *143/14*
U.S. Cl. 260—513 **5 Claims**

Method for purifying aminosulfonic acid condensation products obtained by condensing a long chain epoxyalkane or monohaloalkane with an alkali metal or ammonium salt of an aminoalkyl sulfonic acid or an N-substituted aminoalkyl sulfonic acid, by adding carbon dioxide to an aqueous solution of the salt of the condensation product to precipitate the acid form, separating the acid form from the aqueous phase, washing the precipitate to remove impurities and reconverting the acid form of the condensation product to the salt.

3,465,034
ADAMANTANE-1-CARBOXYLIC ACID DERIVATIVES
André R. Gagneux and Franz Hafliger, Basel, Switzerland, assignors to Geigy Chemical Corporation, Greenburgh, N.Y., a corporation of Delaware
No Drawing. Filed Jan. 19, 1966, Ser. No. 521,556
Claims priority, application Switzerland, Jan. 20, 1965, 816/65
Int. Cl. C07c *101/36*
U.S. Cl. 260—514 **3 Claims**

3-amino adamantane-1-carboxylic acid and pharmaceutical addition salts thereof.

3,465,035
PROCESS FOR PURIFYING TEREPHTHALIC ACID
Kohei Nakaguchi, Osaka, Hirokazu Arai, Ibaragi-shi, Nakataro Kondo, Niihama-shi, and Kuniyoshi Manabe, Takatsuki-shi, Japan, assignors to Sumitomo Chemical Company, Ltd., Osaka, Japan, a corporation of Japan
No Drawing. Filed Nov. 22, 1965, Ser. No. 509,151
Claims priority, application Japan, Nov. 25, 1964, 39/66,527
Int. Cl. C07c *51/42, 63/26*
U.S. Cl. 260—525 **4 Claims**

Crude terephthalic acid obtained by oxidation of 1,4-dialkylbenzene or thermal rearrangement of benzene carboxylic acids according to Henkel process, is purified by dissolving the crude terephthalic acid at a temperature of 80°–190° C. in an aqueous solution containing an alkali metal or ammonium salt of formic acid, acetic acid, propionic acid, oxalic acid, tartaric acid, citric acid, glycolic acid or maleic acid, and 5–120 mole % based on said salt of the corresponding free acid, and then lowering the temperature of the obtained terephthalic acid aqueous solution to a temperature of 0°–100° C. to separate crystalline terephthalic acid.

3,465,036
2-CARBOXYETHOXYMETHYL-TRIS [2-(N-METHYLOLCARBAMOYL)-ETHOXYMETHYL] METHANE
John Peter Dundon, Branchburg Township, Somerset County, N.J., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine
No Drawing. Filed July 7, 1964, Ser. No. 380,915
Int. Cl. C07c *103/46*
U.S. Cl. 260—534 **1 Claim**

This invention relates to novel poly(methylolamido) compounds containing at least one carboxy group, to their process of preparation, and to their use on cellulosic textile materials and to their cellulosic textile material so treated.

3,465,037
PRODUCTION OF MESO 2,3-DIBROMO-SUCCINIC ACID
Herbert Jenkner, Cologne-Deutz, Germany, assignor to Chemische Fabrik Kalk, G.m.b.H., Cologne - Kalk, Germany
No Drawing. Filed Feb. 16, 1966, Ser. No. 527,740
Claims priority, application Germany, Feb. 23, 1965, C 35,154
Int. Cl. C07c *55/10;* **A01n** *9/24;* **C09k** *3/28*
U.S. Cl. 260—537 **3 Claims**

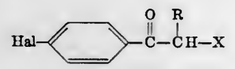
Meso 2,3-dibromosuccinic acid is produced by introducing bromine into a suspension of fumaric acid or maleic acid in an aqueous solution containing 10 to 48 wt. percent of dissolved HBr while maintaining a temperature between about 50 and 90° C.

3,465,038
PROCESS FOR THE PREPARATION OF 2-AMINO-BENZOPHENONE-α-OXIMES
Lee Allen Dolan, Verona, N.J., assignor to Hoffmann-La Roche Inc., Nutley, N.J., a corporation of New Jersey
No Drawing. Filed Nov. 23, 1965, Ser. No. 509,408
Int. Cl. C07c *131/00*
U.S. Cl. 260—566 **8 Claims**

β-Oximes of 2-aminobenzophenones are converted into their corresponding α-oximes by heating said β-oximes in a solvent medium selected from the group consisting of a halogenated aromatic hydrocarbon and xylene. The α-oximes of 2-aminobenzophenones are useful in the preparation of medicinally valuable 3-hydroxy-5-aryl-1,4-benzodiazepin-2-ones.

3,465,039
THERAPEUTICALLY ACTIVE SECONDARY AND TERTIARY 1 - HALOGENPHENYL - 2 - AMINO-ALKANONES (1)
Harm Siemer, Warendorf, Westphalia, Germany, assignor to Andreas J. Rottendorf Chemische Fabrik, Ennigerloh, Germany
No Drawing. Original application Sept. 17, 1962, Ser. No. 224,603, now Patent No. 3,313,687, dated Apr. 11, 1967. Divided and this application Feb. 16, 1967, Ser. No. 664,574
Int. Cl. C07c *97/10;* **A61k** *25/00*
U.S. Cl. 260—570.5 **12 Claims**

1-p-halogenphenyl-2-amino-alkanones-(1) of the formula:



wherein R is a lower alkyl group having 1 to 3 carbon atoms, X is monoalkylamino or dialkylamino in which each of the alkyl moieties has 1 to 5 carbon atoms, and Hal is chlorine or bromine; also, acid addition salts of these compounds.

3,465,040
2,3-DECAMETHYLENE-CYCLOPENTANONE
Hitosi Nozaki, Osaka, Ryoji Noyori, Kobe-shi, and Takashi Mori, Kyoto, Japan, assignors to Chugai Seiyaku Kabushiki Kaisha, Tokyo, Japan, a corporation of Japan
No Drawing. Filed Dec. 29, 1967, Ser. No. 694,414
Int. Cl. C07c *49/28*
U.S. Cl. 260—586 **1 Claim**

The compound 2,3-decamethylene-cyclopentanone, having a musk-like and white sandal wood-like odor and useful for perfume, is obtained by reducing 2,3-decamethylene-2-cyclopentenone.

3,465,041
ADAMANTYL GLYOXALS
Jack Bernstein, New Brunswick, N.J., assignor to E. R. Squibb & Sons, Inc., New York, N.Y., a corporation of Delaware
No Drawing. Continuation-in-part of application Ser. No. 448,289, Apr. 15, 1965. This application Feb. 23, 1968, Ser. No. 707,419
Int. Cl. C07c *49/26, 49/80*
U.S. Cl. 260—586 **9 Claims**

This invention relates to 1-adamantylglyoxal and 3- and/or 5-substituted 1-adamantylglyoxals which are useful as antiviral agents.

3,465,042
SUBSTITUTED 2-NITROBENZOPHENONES
Goetz E. Hardtmann, Madison, and Hans Ott, Convent Station, N.J., assignors to Sandoz, Inc., Hanover, N.J.
No Drawing. Original application June 11, 1965, Ser. No. 463,378. Divided and this application July 26, 1967, Ser. No. 665,655
Int. Cl. C07c *79/36*
U.S. Cl. 260—591 **4 Claims**

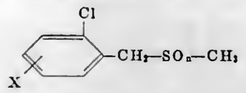
This invention discloses 2' - methyl-2-nitrobenzophenones and 2'-bromomethyl-2-nitrobenzophenones useful as successive intermediates in the preparation of 9,13b-dihydro - 5H - isoindolo[2,1 - d][1,4]benzodiazepin-6(7H)-ones which are useful as sedatives, transquilizers and anticonvulsants.

3,465,043
METHOD FOR THE PRODUCTION OF 2-BUTENAL
David C. Lini, Media, Kermit C. Ramey, Springfield, and William B. Wise, Glenolden, Pa., assignors to Atlantic Richfield Company, Philadelphia, Pa., a corporation of Pennsylvania
No Drawing. Filed Jan. 24, 1968, Ser. No. 700,032
Int. Cl. C07c *47/26, 47/20*
U.S. Cl. 260—601 **10 Claims**

Method for the production of 2-butenal by the catalytic isomerization of butadiene monoepoxide in the presence of a rhodium-containing catalyst.

3,465,044
2,4- and 2,6-DIHALOBENZYL METHYL SULFOXIDES AND SULFONES
Hiroshi Hirano, Suita, Katsutada Masuda, Ashiya, Kiyohisa Kawai, Kyoto-fu, and Noboru Shimahara, Suita, Japan, assignors to Takeda Chemical Industries, Ltd., Osaka, Japan
No Drawing. Filed Feb. 28, 1967, Ser. No. 619,167
Claims priority, application Japan, Mar. 8, 1966, 41/14,437
Int. Cl. C07c *147/14, 147/06;* **A61k** *27/00*
U.S. Cl. 260—607 **11 Claims**

2,4- or 2,6-dihalobenzyl methyl sulfoxides and the corresponding sulfones of the formula



wherein X is Cl, Br or F in the 6-position or Cl in the 4-position and $n=1$ or 2 are effective anti-inflammatory agents.

3,465,045
FLUORINATED VINYL ETHERS AND USE THEREOF
Allen G. Pittman, El Cerrito, and William L. Wasley, Berkeley, Calif., assignors to the United States of America as represented by the Secretary of Agriculture
No Drawing. Filed May 20, 1965, Ser. No. 457,533
Int. Cl. C07c *41/00;* **C08f** *3/38;* **B32b** *27/30*
U.S. Cl. 260—614 **4 Claims**

Fluorinated vinyl ethers are prepared by first reacting a ketone with an alkali metal fluoride to produce an alkali metal fluorocarbinolate, then with a dihaloethane to form an α-fluorinated ether, and then dehydrohalogenating the intermediate to produce the α-fluorinated vinyl ether. The process can be carried out with open- or closed-chain aliphatic ketone which contains at least two fluorine atoms on the carbons adjacent the carbonyl group of the ketone. Homo- and copolymers prepared from the fluorinated vinyl ethers are useful as adhesives and for providing oil- and water-repellent coatings on a large variety of substrates.

3,465,046
METHOD OF MAKING THE BROMOHYDRIN OF 2,3,4,5,6-PENTAMETHYLSTYRENE
Alfred E. Borchert, Cherry Hill, N.J., and Eugene C. Capaldi, Broomall, Pa., assignors to Atlantic Richfield Company, Philadelphia, Pa., a corporation of Pennsylvania
No Drawing. Original application July 20, 1965, Ser. No. 473,479. Divided and this application Apr. 2, 1968, Ser. No. 718,243
Int. Cl. C07d *102;* **C08g** *23/00*
U.S. Cl. 260—618 **2 Claims**

Method for the production of 2,3,4,5,6-pentamethylstyrene oxide by dissolving 2,3,4,5,6-pentamethylstyrene in a mixture of dimethylsulfoxide, tetrahydrofuran and water, adding N-bromosuccinimide to the solution, recovering the resulting bromohydrin from the reaction solution, reacting the bromohydrin with potassium hydroxide to produce the oxide and recovering the 2,3,4,5,6-pentamethylstyrene oxide from the solution.

3,465,047
PROCESS FOR PRODUCING 2,6-XYLENOL
Ken Ito and Hiroshi Kaminaka, Toyonaka-shi, Norio Kotera, Amagasaki-shi, Kosuke Shigehiro and Hiroshi Kuruma, Takarazuka-shi, and Kenji Tanimoto, Minoo-shi, Japan, assignors to Sumitomo Chemical Company, Ltd., Osaka, Japan, a corporation of Japan
No Drawing. Filed Dec. 14, 1966, Ser. No. 601,574
Claims priority, application Japan, Dec. 28, 1965, 40/81,085
Int. Cl. C07c *37/04, 143/34*
U.S. Cl. 260—621 **5 Claims**

2,6-xylenol is produced by tertiary alkylating m-xylene to form 3,5-dimethyl-tertiary-alkylbenzene, sulfonating the resulting 3,5-dimethyl-tertiary-alkylbenzene to form 2,6-dimethyl-4-tertiary-alkylbenzene sulfonic acid, fusing the resulting 2,6-dimethyl-4-tertiary-alkylbenzene sulfonic acid with an alkali to form 2,6-dimethyl-4-tertiary-alkylphenol, and de-tertiary alkylating the resulting 2,6-dimethyl-4-tertiary-alkylphenol.

3,465,048
METHOD FOR PREPARING 2,6-XYLENOL
Ken Ito and Hiroshi Kaminaka, Toyonaka-shi, Norio Kotera, Amagasaki-shi, Kosuke Shigehiro and Hiroshi Kuruma, Takarazuka-shi, and Kenji Tanimoto, Minoo-shi, Japan, assignors to Sumitomo Chemical Company, Ltd., Osaka, Japan, a corporation of Japan
No Drawing. Filed Jan. 23, 1967, Ser. No. 610,817
Claims priority, application Japan, Mar. 8, 1966, 41/14,525
Int. Cl. C07c *39/06, 37/14*
U.S. Cl. 260—621 **7 Claims**

A method for preparing 2,6-xylenol being useful as an intermediate of polyphenylene oxide resin in which phenol is subjected to tertiary-butylation at 4-position; hydroxymethylation at 2- and 6-position; reduction of hydroxymethyls to methyls; and detertiary-butylation to form 2,6-xylenol. Similarly 2,6-xylenol is produced from o-cresol, and o-cresol is produced from phenol.

3,465,049
PRODUCTION OF PHENOLS
William H. Starnes, Jr., Baytown, Tex., assignor to Esso Research and Engineering Company
No Drawing. Filed Oct. 22, 1965, Ser. No. 502,538
Int. Cl. C07c *37/00, 39/26*
U.S. Cl. 260—623 **10 Claims**

Hindered ortho-chlorophenol is prepared by treating an aromatic hydrocarbon solution of a selected dienone with hydrogen chloride when the dienone is peroxy dienone and with a halogen acid catalyst when the dienone is chlorodienone at a suitable reaction temperature in the absence of light to form a product containing the hindered ortho-chlorophenol from which the hindered ortho-chlorophenol is recovered.

3,465,050
FLUORINATED COMPOUNDS AND USE THEREOF
Allen G. Pittman, El Cerrito, and William L. Wasley, Berkeley, Calif., assignors to the United States of America as represented by the Secretary of Agriculture
No Drawing. Application Jan. 9, 1967, Ser. No. 623,483, now Patent No. 3,419,602, dated Dec. 31, 1968, which is a division of application Ser. No. 398,129, Sept. 21, 1964, now Patent No. 3,384,628. Divided and this application Dec. 28, 1967, Ser. No. 704,206
Int. Cl. C07f *1/00;* **C07c** *29/14;* **D06m** *15/38*
U.S. Cl. 260—633 **10 Claims**

Novel alkali metal fluorocarbinolates are produced by a novel method which involves reacting a great variety of ketones and substituted ketones with an alkali metal fluoride. The resulting fluorocarbinolates are then converted to fluorinated esters by reaction with an acid halide. Because the resulting esters have a fluorine on the α-carbon of the alcohol moiety, they are useful as oil and water repellants for fabrics. By using the halide of an unsaturated acid in the reaction, the resulting esters can be made into homo- or copolymers which are useful for the production of oil and water resistant coatings on a variety of fabrics made from both natural and synthetic fibers.

3,465,051
CHLOROMETHYLATION OF BENZENE COMPOUNDS
Benjamin Pecherer, Montclair, N.J., assignor to Hoffmann-La Roche Inc., Nutley, N.J., a corporation of New Jersey
No Drawing. Filed Dec. 28, 1966, Ser. No. 605,167
Int. Cl. C07c *79/12, 25/04, 25/14*
U.S. Cl. 260—646 **8 Claims**

This invention relates to a process for substituting an aromatic compound having at least one benzenoid carbocyclic ring system and at least one replaceable hydrogen on the benzenoid ring system with a chloromethyl group by reacting the aromatic compound with chlorosulfonic acid and para-formaldehyde.

3,465,052
STABILIZED CHLOROFLUOROALKANE COMPOSITIONS
Kazuo Okamura, Itami-shi, Japan, assignor to Daikin Kogyo Kabushiki Kaisha, Osaka-shi, Japan
No Drawing. Filed June 13, 1967, Ser. No. 645,635
Claims priority, application Japan, June 15, 1966, 41/38,987
Int. Cl. C07c *17/40*
U.S. Cl. 260—652.5 **4 Claims**

Chlorofluoroalkane compositions resistant to reaction between chlorofluoroalkanes and amine-based polyols, which contain, as an inhibitor to said reaction, p-isopropenyl toluene in an amount ranging from 0.1 to 5 weight percent, based on the weight of the chlorofluoroalkane. Said composition is useful for the production of urethane foams in which chlorofluoroalkanes are brought into contact with amine-based polyols.

3,465,053

PROCESS FOR THE MANUFACTURE OF TRANS-2-CHLOROBUTENE-(2)

Kurt Sennewald and Wilhelm Vogt, Knapsack, near Cologne, and Herbert Baader, Hermulheim, near Cologne, Germany, assignors to Knapsack Aktiengesellschaft, Knapsack, near Cologne, Germany, a corporation of Germany

No Drawing. Filed June 22, 1965, Ser. No. 466,119
Claims priority, application Germany, July 15, 1964, K 53,477
Int. Cl. C07c *17/08*
U.S. Cl. 260—654 **4 Claims**

A process whereby trans-2-chlorobutene-(2) is obtained by reacting butyne-(2) with concentrated hydrochloric acid at a temperature of about 16–28° C.

3,465,054

PROCESS FOR THE MANUFACTURE OF 2,2-DICHLOROBUTANE

Kurt Sennewald and Wilhelm Vogt, Knapsack, near Cologne, and Herbert Baader, Hermulheim, near Cologne, Germany, assignors to Knapsack Aktiengesellschaft, Knapsack, near Cologne, Germany, a corporation of Germany

No Drawing. Filed June 25, 1965, Ser. No. 467,122
Claims priority, application Germany, July 15, 1964, K 53,476
Int. Cl. C07c *17/08*
U.S. Cl. 260—663 **4 Claims**

A noncatalytic process for producing 2,2-dichlorobutane by contacting butyne-(2) with hydrogen chloride gas at −50° through 100° C. and 1–50 atmospheres pressure.

3,465,055

XYLENE SEPARATION PROCESS

William K. T. Gleim, Island Lake, Richard C. Wackher, Palatine, and Frederick C. Ramquist, Stickney, Ill., assignors to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

Filed Feb. 13, 1967, Ser. No. 615,641
Int. Cl. C07c *15/08, 7/10*
U.S. Cl. 260—674 **10 Claims**

Method for separating para xylene from a hydrocarbonaceous feed having C_8 aromatics contained therein, wherein the feed is contacted with an aqueous solution of α-dextrin to selectively form a para xylene-α-dextrin clathrate.

3,465,056

DIMERISATION PROCESS

James Keith Hambling, Aldershot, and John Robert Jones, Walton-on-Thames, England, assignors to The British Petroleum Company Limited, London, England, a corporation of Great Britain

No Drawing. Filed June 22, 1966, Ser. No. 559,399
Claims priority, application Great Britain, July 14, 1965, 29,831/65
Int. Cl. C07c *3/10*
U.S. Cl. 260—683.15 **7 Claims**

A process for the production of a product consisting predominantly of branched chain dimers having internal unsaturation and also containing linear dimers is provided which process comprises dimerising an alpha mono-olefin containing 3 or more carbon atoms per molecule in the presence of a catalyst comprising the reaction product of cobalt or nickel chloride and aluminium diethyl monochloride or aluminium triethyl, the reaction product being supported on an activated carbon support, at a temperature in the range −40° C. to +200° C. at a pressure in the range 200 to 2000 p.s.i.g.

3,465,057

CURABLE ESTER COMPOSITIONS

Grant McLay Cameron, Brockenhurst, and Angus John Duke, Weedon, Aylesbury, England, assignors to Ciba Limited, Basel, Switzerland, a company of Switzerland

No Drawing. Filed Feb. 8, 1966, Ser. No. 525,822
Claims priority, application Great Britain, Feb. 22, 1965, 7,619/65
Int. Cl. C08g *43/02, 23/00*
U.S. Cl. 260—830 **14 Claims**

Curable compositions comprising an ester or mixture of esters, containing on average more than two mercaptan groups per molecule, of one or more mercaptocarboxylic acids with one or more polyhydric alcohols having a molecular weight of at least 250 and containing on average more than two hydroxyl groups per molecule, and an oxidative curing agent for the said ester or mixture of esters and are useful as sealants, caulking agents, cable-jointing agents, and the like.

3,465,058

CARBOXY TERMINATED LIQUID POLYBUTYL ACRYLATE CURED WITH EPOXY RESIN

William J. McCarthy, Avon Lake, Ohio, assignor to The B. F. Goodrich Company, New York, N.Y., a corporation of New York

No Drawing. Filed Dec. 21, 1967, Ser. No. 692,280
Int. Cl. C08g *45/04*
U.S. Cl. 260—837 **1 Claim**

Liquid butyl acrylate polymers can be given carboxyl termination. These functionally terminated polyacrylates can be cured to form long life pressure sensitive adhesives that resist creep by the addition of a polyglycidyl ether of a polyhydric phenol, alcohol or amine.

3,465,059

CARBOXY TERMINATED GRAFT COPOLYMERS OF CARBONAMIDE GROUP ON ACRYLIC COPOLYMERS

Manfred K. Seven, Long Valley, and Richard J. Bellet, Mountain Lakes, N.J., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed Nov. 28, 1966, Ser. No. 597,212
Int. Cl. C08g *41/04;* **C08f** *27/08*
U.S. Cl. 260—857 **10 Claims**

This invention relates to polyamide graft polymer compositions containing polyamide homopolymer and polyamide graft polymer in which polyamide chains are grafted onto active sites provided by a copolymer of a major portion of an ethylenically unsaturated monomer and minor portion of an unsaturated compound providing carboxy groups, such as the acrylic acid esters, and to a process for their preparation by first admixing the ethylenic copolymer with shearing agitation with a polyamide-forming monomer at a temperature above the softening point of the ethylenic copolymer to form a dispersion of fine molten particles of the ethylenic copolymer in the polyamide-forming monomer, and thereafter effecting polymerization of the polyamide-forming monomer at a temperature above the melting point of the polyamide, in the presence of a chain terminating agent for the polyamide, to form a molten polymer composition having a stable melt index, and recovering the polyamide graft polymer composition.

3,465,060

POLYOLEFINS CONTAINING A MINOR AMOUNT OF A POLYAMIDE HAVING SECONDARY OR TERTIARY AMINE GROUPS

Joseph Oldham, Manchester, England, assignor to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

No Drawing. Filed Jan. 16, 1967, Ser. No. 609,284
Claims priority, application Great Britain, Jan. 20, 1966, 2,642/66
Int. Cl. C08f *29/10*
U.S. Cl. 260—857 **11 Claims**

Acid dyeable stereoregular polyolefine compositions containing 0.05–1.0% basic nitrogen in the form of a dibasic polyamide formed by reaction of one or more dicarboxylic acids, a polyamine and a lactam.

3,465,061

UNSATURATED POLYESTER RESIN COMPOSITIONS HAVING A THICKENING AGENT THEREIN

Frank Fekete and Melvin E. Baum, Monroeville, Pa., assignors to Koppers Company, Inc., a corporation of Delaware

Filed Nov. 1, 1967, Ser. No. 679,876
Int. Cl. C08f *1/84, 21/02;* **C08g** *1/84*
U.S. Cl. 260—865 **3 Claims**

The viscosity of unsaturated polyester resins formed by mixing the (1) condensation polymers of: (a) dicarboxylic acids, at least a portion of which contains ethylenic unsaturation, and (b) dihydric alcohols with (2) an ethylenically unsaturated copolymerizable monomer such as styrene may be increased by adding a mixture of an oxide of a Group II–A metal and an anhydride of a cyclic hydrocarbon which can be either saturated or unsaturated.

3,465,062

STABLE POLYPHENYLENE ETHER COMPOSITION

Klaus E. Holoch, Peter F. Erhardt, and Kenneth W. Benner, Pittsfield, Mass., assignors to General Electric Company, a corporation of New York

No Drawing. Filed Feb. 2, 1967, Ser. No. 613,451
Int. Cl. C08g *51/56, 51/60*
U.S. Cl. 260—874 **7 Claims**

A stabilized polyphenylene ether composition consisting of a major portion of polyphenylene ether and a minor portion of a stabilizer consisting of a hexaalkylphosphoric triamide, a boron compound and a hydrazine.

3,465,063

HYDROGENATED DIOLEFIN BLOCK COPOLYMERS

Howard L. Hassell, San Leandro, and Alfred W. Shaw, Moraga, Calif., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Oct. 6, 1965, Ser. No. 493,570
Int. Cl. C08f *27/25, 29/10*
U.S. Cl. 260—876 **5 Claims**

A thermoplastic elastomeric block copolymer having the general configuration

A—B—A

wherein, prior to hydrogenation, each A is a polymer block of a conjugated diene having 4–8 carbon atoms per molecule, such as butadiene, and B is an elastomeric homopolymeric block of an alkyl substituted conjugated diene having 5–8 carbon atoms per molecule, such as isoprene, said block copolymer being essentially completely hydrogenated.

3,465,064

ADHESIVE PLASTICISED SULPHUR CONTAINING AN OLEFINE POLYMER

Jean-Baptiste Signouret, Billiere, France, assignor to Societe National des Petroles, d'Aquitaine, Courbevoie, France

No Drawing. Filed Mar. 2, 1967, Ser. No. 619,927
Claims priority, application France, Mar. 11, 1966, 53,146
Int. Cl. C08g *43/02*
U.S. Cl. 260—878 **15 Claims**

A process is provided for the manufacture of a new plastic composition formed by heating sulphur at a temperature in the range from 100° to 200° C. with a polythiomethylene alkanol, a polyolefin having a molecular weight of 200 to 20,000 and being derived from a monoolefin having 2 to 8 carbon atoms and optionally an ethylenic hydrocarbon until a homogenous plastic composition is formed.

3,465,065

PREPARATION OF BLOCK COPOLYMERS USING PARTICULAR POLYMERIZATION SOLVENTS

Fred Dudley Moss, Long Beach, and Arthur R. Bean, Jr., Buena Park, Calif., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware

Filed Oct. 28, 1964, Ser. No. 407,125
Int. Cl. C08d *3/02;* **C08f** *19/06*
U.S. Cl. 260—879 **6 Claims**

A process for making a copolymer having the general configuration

A—B—C—B—A

wherein each A is a polymer block of a monovinyl-substituted aromatic compound, each B is a polymer block of a conjugated diene and C is a monomeric residue of a coupling agent wherein the first block A is formed under adiabatic conditions in the presence of a C_{6-7} cyclic hydrocarbon inert solvent and block B is formed in the presence of a C_{4-5} open chain inert alkene solvent.

3,465,066

PROCESS FOR THE PRODUCTION OF SHOCK RESISTING POLYMERS

Atsushi Tanaka, Uenodai, Fukuoka, and Teizo Kudo, Iruma, Saitama, Japan, assignors to Daicel Ltd., Osaka, Japan, a corporation of Japan

No Drawing. Filed Aug. 1, 1966, Ser. No. 569,024
Claims priority, application Japan, July 31, 1965, 40/46,348
Int. Cl. C08f *19/16, 19/08, 41/10*
U.S. Cl. 260—880 **6 Claims**

A process for the production of a high impact polymer in which a preliminary polymerization of a mixture of a rubbery conjugated 1,3-diene polymer and a polymerizable monomer comprising an aromatic monoalkenyl hydrocarbon monomer is carried out while the mixture is in a water-in-oil type dispersion state and, after the polymerization percentage reaches from about 10 to about 60 percent by weight based on the weight of the monomer, a suspension agent is added to the mixture in order to invert same into an oil-in-water type dispersion, following which the polymerization is completed in order to obtain the polymer in granular form.

3,465,067

HIGH IMPACT POLYVINYL HALIDES

Jacques A. Waterman and Jan Selman, Amsterdam, Netherlands, assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Feb. 21, 1966, Ser. No. 528,820
Claims priority, application Netherlands, Feb. 23, 1965, 6502232
Int. Cl. C08f *29/22, 29/24*
U.S. Cl. 260—890 **8 Claims**

High impact polymers of vinyl halides are disclosed.

These polymers comprise a mixture of polymers of a vinyl halide and a copolymer of a conjugated diolefin and an ester of a polybasic propylene carboxylic acid.

3,465,068

PHOSPHORUS-CONTAINING ESTERS AND PROCESS THEREFOR

Vasco G. Camacho, James J. Anderson, and Wendell M. Byrd, Jr., Richmond, Va., assignors to Mobil Oil Corporation, a corporation of New York

No Drawing. Filed Mar. 24, 1966, Ser. No. 536,978

Int. Cl. C07f *9/08, 9/40;* **C08k** *1/60*

U.S. Cl. 260—952 **25 Claims**

Phosphorus-containing compounds which are useful in the preparation of polyurethanes and which are derived from (1) phosphorus compounds containing at least one active function, (2) alkylene oxides or epihalohydrin and (3) dicarboxylic acid anhydrides are provided. Among the compounds are those prepared by reacting a dicarboxylic acid anhydride with a phosphorus acid which has been partially or completely reacted with an alkylene oxide or epihalohydrin, followed by reaction of the carboxyl group thus formed with additional alkylene oxide or epihalohydrin. Methods for preparation of the compounds are also provided.

3,465,069

PROCESS FOR TREATING ELECTROSTRICTIVE CERAMIC ELEMENTS

Carl T. Durham, Jr., Roanoke, Va., assignor to General Electric Company, a corporation of New York

No Drawing. Filed Oct. 13, 1966, Ser. No. 586,386

Int. Cl. C04b *35/46, 41/00*

U.S. Cl. 264—82 **1 Claim**

The invention contemplates a process for ageing electrostrictive ceramic elements of the lead metaniobate and lead zirconate titanate types to increase the specific resistance of these elements prior to their being polarized. The process consists of heating the elements in a closure under a maintained sub-atmospheric pressure and a temperature maintained at several times room temperature for several hours, thereafter introducing oxygen at atmospheric pressure into the closure while maintaining the temperature constant for a fractional part of an hour.

3,465,070

METHOD OF PRODUCING THERMOPLASTIC FILM CHARACTERIZED BY IMPROVED PROPERTIES

Keith L. Smith, Charleston, W. Va., and Joseph V. Petrone, Shrewsbury, Mass., assignors to Union Carbide Corporation, a corporation of New York

No Drawing. Filed May 20, 1966, Ser. No. 551,556

Int. Cl. B29c *17/04*

U.S. Cl. 264—88 **10 Claims**

Marked improvement in such properties as stress endurance, clarity, gloss, tensile strength and gas impermeability is imparted to films of poly (ethylene oxide) and other high polymers by a cold-rolling process which involves very high levels of nip pressure and web tension. The product films are free of wrinkles, folds, tears, striations and other imperfections commonly imparted during cold-rolling.

3,465,071

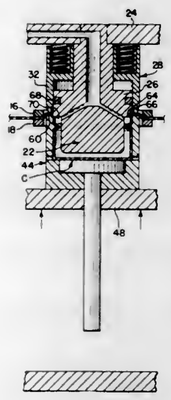
REDUCED NECK ARTICLE FORMING METHOD AND APPARATUS

Bryant Edwards, Clarendon Hills, Ill., assignor to Illinois Tool Works Inc., Chicago, Ill., a corporation of Delaware

Filed June 8, 1966, Ser. No. 556,088

Int. Cl. B29g *1/00;* **B29d** *31/00;* **B29c** *17/08*

U.S. Cl. 264—93 **10 Claims**



A method and apparatus for fabricating an openmouthed container article with restricted throat area from thermoplastic sheet stock material by forming an openmouthed article with an inwardly directed shoulder therein, severing the openmouthed container article from the material portions from which the article is formed and then moving portions on opposite sides of the inwardly directed shoulder toward each other and also inwardly of the container to provide a restricted throat area of substantial size in the container.

3,465,072

METHOD FOR FORMING BIAXIALLY ORIENTED FILM

Razmic S. Gregorian, Silver Spring, Md., assignor to W. R. Grace & Co., New York, N.Y., a corporation of Connecticut

No Drawing. Filed Oct. 20, 1966, Ser. No. 587,957

Int. Cl. B29d *7/02, 7/22, 23/04*

U.S. Cl. 264—95 **5 Claims**

A process is provided for forming a heat shrinkable polyethylene film with high shrink tension wherein a tape of the molten polymer is extruded. The tape is then cooled in a bath at a temperature in the range 15–25° C. below the polymers melting point for a period not exceeding 5 seconds. The cooled tape is then immediately biaxially oriented under gaseous pressure and subsequently quenched to room temperature.

3,465,073

METHOD FOR THE MANUFACTURE OF HOLLOW PLASTIC ARTICLES

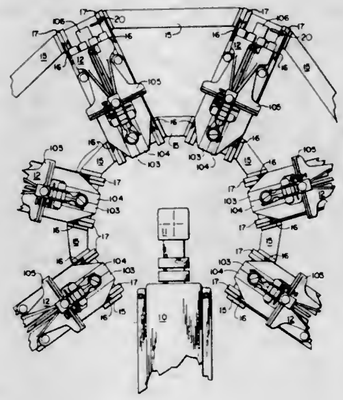
Clement V. Fogelberg, Boulder, and William D. Hough, Denver, Colo., assignors to Ball Brothers Company Incorporated, Muncie, Ind., a corporation of Indiana

Original application Mar. 25, 1963, Ser. No. 268,517. Divided and this application Feb. 1, 1966, Ser. No. 547,139

Int. Cl. B29d *23/03*

U.S. Cl. 264—99 **1 Claim**

Method for manufacturing hollow plastic articles by blow molding in a plurality of fixed, nonaligned blow mold cavities utilizing asymmetric parisons wherein each parison is transferred from a central extruder to each blow mold and aligned with the blow mold during transfer by appropriate rotation of the parison preferably around its longitudinal axis.



3,465,074

METHOD OF HOT PRESSING LiF

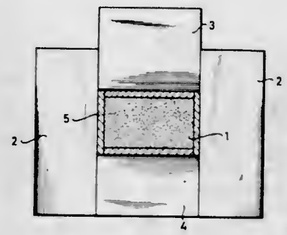
Norbert Neuroth and Klaus Warnach, Mainz-Mombach, Germany, assignors to JENAer Glaswerk Schott & Gen., Mainz, Germany, a corporation of Germany

Filed Nov. 22, 1966, Ser. No. 596,233

Claims priority, application Germany, Nov. 7, 1966, J 29,448

Int. Cl. B29d *11/00;* **B29c** *1/04;* **B29f** *5/00*

U.S. Cl. 264—125 **5 Claims**



The articles of the invention are manufactured by introducing lithium fluoride powder into a mold and compressing said powder therein for a period of 5 to 30 minutes at a temperature of 400 to 550° C. and a pressure from 5000 to 10000 atmospheres. Before the lithium fluoride powder is introduced into the mold it is subjected to a drying period of about one hour at a temperature of 750° C.

3,465,075

METHOD FOR MAKING A MONOLITHIC CLAY FITTING

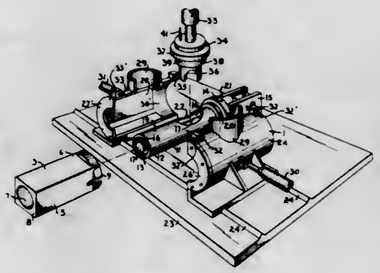
Edward C. Siegfreid, Meridian, Miss., assignor to W. S. Dickey Clay Manufacturing Company, Kansas City, Mo., a corporation of Delaware

Filed Nov. 21, 1966, Ser. No. 595,950

Int. Cl. B28b *7/18, 1/48, 21/18*

U.S. Cl. 264—155 **3 Claims**

A compression extruded green clay pipe section is hollow core-supported and compressed within a split shell having an inside surface configuration generally corresponding to the outside configuration of the fitting. The apparatus used to carry out the method includes a mold collar extending transversely from and communicating into the shell and receiving a moving socket former. Substantial pressure is applied to close the shell and move the socket former into the mold collar causing a portion of the recompressed green clay in the pipe section to reflow into a new configuration as defined by the shell, mold collar and socket former, producing a monolithic fitting such as a T. The former includes a projecting cutting die received into a side opening in the core for cutting out the T passageway which is surrounded by bell structure in the finished fitting.



3,465,076

PROCESS FOR PRODUCING SYNTHETIC RESIN ARTICLE HAVING MAR-RESISTANT SURFACE

Ko Asami, Yokohama, and Hiroshi Hariu, Yamaguchiken, Japan, assignors to Mitsubishi Rayon Co., Ltd., Tokyo, Japan, a corporation of Japan

No Drawing. Filed Oct. 11, 1965, Ser. No. 494,920

Claims priority, application Japan, Oct. 13, 1964, 39/58,258; Mar. 18, 1965, 40/15,834; July 15, 1965, 40/42,816; July 16, 1965, 40/42,902

Int. Cl. B29c *9/00;* **B29d** *3/00*

U.S. Cl. 264—255 **10 Claims**

An acrylic resin article having a thin mar-resistant surface is produced by coating the inside surface of a mold member with a thin layer of a mixture of diethylene glycol bisallylcarbonate (GAC) and a polymerization initiator therefor. The layer is substantially completely polymerized in an oxygen free environment. An acrylic monomer is then cast into the coated mold and polymerized. The mold is then removed. The oxygen free environment can be achieved with an inert gas or by covering the layer of GAC with a thin film of material such as polypropylene or aluminum foil.

3,465,077

PROTECTING HORSES AGAINST INFECTIOUS EQUINE RHINOPNEUMONITIS WITH LIVE BOVINE RHINOTRACHEITIS VIRUS INOCULATION

James A. Baker, Ithaca, N.Y., assignor to Cornell Research Foundation, Inc., Ithaca, N.Y., a corporation of New York

No Drawing. Original application July 1, 1964, Ser. No. 379,744, now Patent No. 3,346,456, dated Oct. 10, 1967. Divided and this application Aug. 15, 1967, Ser. No. 660,599

Int. Cl. A61k *23/02*

U.S. Cl. 424—89 **1 Claim**

A method of protecting a horse against infectious equine rhinopneumonitis by inoculation of the horse with bovine rhinotracheitis alien to the horse.

3,465,078

METHOD OF RECOVERING ANTIGENS FROM *BORDETELLA PERTUSSIS* CELLS

Sydney Z. Spiesel, 312 Willow, New Haven, Conn. 06511

No Drawing. Filed Oct. 21, 1965, Ser. No. 500,222

Int. Cl. A61k *23/00;* C12d *13/00*

U.S. Cl. 424—92 7 Claims

Antigens are recovered from *Bordetella pertussis* cells by suspending the cells in an aqueous solution to form a suspension, disintegrating the cells by violent mechanical forces, such as sonic vibrations, to release the antigens from the cell and form an antigen-containing solution, precipitating the antigens from the antigen-containing solution with a protein salting out agent, washing the precipitates with acetone, and extracting the antigens from the precipitates with a saline solution having a pH in the range of about 6.5 to 9. Exemplary protein salting out agents are sulfates, chlorides, phosphates and acetates of ammonium, sodium or potassium. The most preferred protein salting out agent is ammonium sulfate.

Antigens recovered in accordance with this process may then be used to make whooping cough vaccine. This process obviates the necessity of heating the antigens, which reduces their potency.

3,465,079

ANTIBIOTIC SL 1846

Hans-Peter Sigg, Binningen, and Christian Stoll, Basel, Switzerland, assignors to Sandoz Ltd. (also known as Sandoz A.G.), Basel, Switzerland

Continuation-in-part of abandoned application Ser. No. 598,089, Nov. 30, 1966. This application June 19, 1967, Ser. No. 647,132

Claims priority, application Switzerland, Dec. 6, 1965, 16,789/65

Int. Cl. A61k *21/00;* C07g *11/00*

U.S. Cl. 424—122 3 Claims

SL 1846 is an antibiotic prepared by cultivating a new strain *Pseudeurotium ovalis* Stolk in a nutrient solution. The antibiotic is useful in inhibiting the proliferation of tumor cells in vitro and alleviating amebiasis.

3,465,080

THERAPEUTIC COMPOSITIONS CONTAINING MORPHOLINOALKYLENE - INDOLES AND METHODS OF ADMINISTERING SUCH IN THE TREATMENT OF DEPRESSION

William Blythe Wright, Jr., Woodcliff Lake, N.J., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Continuation-in-part of application Ser. No. 584,354, Oct. 5, 1966. This application Oct. 7, 1968, Ser. No. 765,689

Int. Cl. A61k *27/00;* C07d *99/00*

U.S. Cl. 424—248 10 Claims

This invention relates to compositions containing N-(morpholinoalkyl)-2-indolecarboxamides and methods of administering the same. The active components can be prepared by several methods such as reacting an indolecarboxylic acid chloride with an alkylenediamine. The N-(morpholinoalkyl)-2-indolecarboxamides are useful for their antidepressant properties.

3,465,081

METHOD OF CONTROLLING PESTIFEROUS ORGANISMS

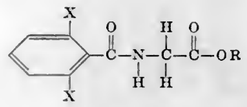
Donald W. Fuhlhage, Kansas City, Mo., assignor to Thompson-Hayward Chemical Company, Kansas City, Kans., a corporation of Delaware

No Drawing. Filed May 13, 1966, Ser. No. 549,788

Int. Cl. A01n *9/20*

U.S. Cl. 424—309 2 Claims

This invention relates to the control of pestiferous organisms, particularly nematodes, by causing said organisms to be contacted with a pesticidal amount of a compound of the formula:



wherein each X may be halogen and R may be hydrogen, alkyl, aryl or acyl, and the salts thereof.

3,465,082

PROCESS OF CONTROLLING FUNGI WITH 3,4-DIHALOCINNAMIDES

Gilbert A. Youngdale, Kalamazoo, Mich., assignor to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware

No Drawing. Original application Sept. 27, 1966, Ser. No. 582,265. Divided and this application Sept. 25, 1968, Ser. No. 762,656

Int. Cl. A61k *27/00;* A01n *9/20;* C07c *103/30*

U.S. Cl. 424—324 3 Claims

The instant invention pertains to a process of controlling fungi with 3,4-dihalocinnamides.

3,465,083

METHOD AND PREPARATIONS FOR THE PREVENTION AND TREATMENT OF BLOAT IN RUMINANTS

Erle E. Bartley and George C. Scott, Manhattan, Kans.; said Bartley assignor to Kansas State University Research Foundation, Manhattan, Kans., a non-profit corporation, and said Scott assignor to Smith Kline & French Laboratories, Philadelphia, Pa., a corporation of Pennsylvania

No Drawing. Continuation-in-part of application Ser. No. 523,543, Jan. 28, 1966. This application July 18, 1967, Ser. No. 654,053

Int. Cl. A61k *27/00;* A23k *1/16, 1/18*

U.S. Cl. 424—342 7 Claims

Polyoxypropylene-polyoxyethylene polymers of specific polyoxypropylene chain size (mol. wt. 1900–2200) and polyoxyethylene content (25 to 40%) are employed for bloat control in ruminants. The polymers, viz. poloxalene (approx. 2000 mol. wt. polyoxypropylene chain, 33% polyoxyethylene), combine in-rumen effectiveness with oral platability.

3,465,084

TREATMENT OF VIRUS DISEASES WITH A HALOGENATED NITROPHENOL

William F. Jackson, 4006 S. Florida Ave., Lakeland, Fla. 33803

No Drawing. Continuation-in-part of application Ser. No. 607,162, Jan. 4, 1967. This application May 6, 1968, Ser. No. 727,041

Int. Cl. A61k *27/00;* A01n *9/26*

U.S. Cl. 424—347 9 Claims

The treatment of virus diseases involving a predominance of deoxyribonucleic acid in animals by the injection of halogenated nitrophenols.

ELECTRICAL

3,465,085

SMELTING ELECTRIC FURNACE APPARATUS

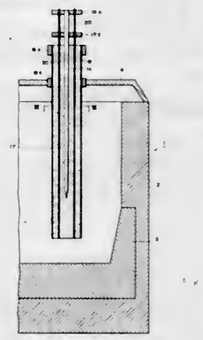
Jutaro Yonemochi, Koadachi 171, Komae-machi, Kitatama-gun, Tokyo, Japan

Filed Oct. 23, 1967, Ser. No. 677,249

Claims priority, application Japan, Oct. 29, 1966, 41/71,539, 41/71,538

Int. Cl. H05b *7/06*

U.S. Cl. 13—18 4 Claims



An electrode structure to be utilized in an electric furnace, especially a smelting electric furnace, comprising a highly conductive metal peg, such as copper, suspended longitudinally in the center of a casing by a pair of holders connected to a power source, a plurality of steel or molded electrode rods suspended in a concentrically spaced arrangement about said peg from the same holders, and a paste filled in the space between said peg and rods in said casing, said casing being suspended from another pair of holders exclusively for holding said casing, said paste being melted and sintered gradually by the heat transmitted thereto from within the furnace to integrate the whole structure, whereby the capacity of said furnace can be substantially increased.

3,465,086

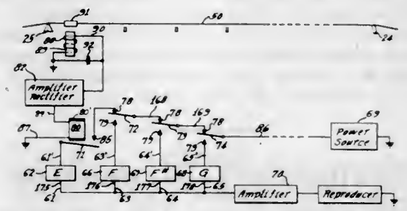
COMBINING SYSTEM FOR MUSICAL INSTRUMENTS

James J. Borell, 5495 Lake Jessamine Drive, Orlando, Fla. 32809

Filed Dec. 6, 1965, Ser. No. 511,872

Int. Cl. G10h *3/00*

U.S. Cl. 84—1.16 16 Claims



This application contains a technical disclosure of a system of combining musical instruments by which musical tones produced by a player on a stringed instrument, e.g. a guitar, may be concurrently and correspondingly reproduced on other musical instruments, e.g. an electric organ or a piano, without special finger manipulations or external playing controls. The system as disclosed consists of electrical circuitry which includes sensors for open tones of unkeyed strings and associated switches, in series combination with switches for keyed strings at each keying position. The circuitry arrangement is such that not only are open tones reproduced but also only the desired keyed tones are reproduced when normal finger manipulations cause strings to be keyed in a plurality of positions, e.g. when playing barred chords.

3,465,087

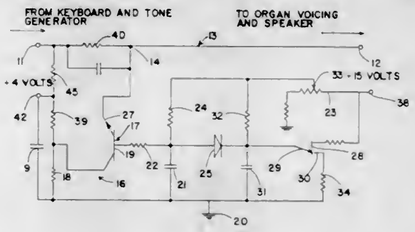
ELECTRIC ORGAN CIRCUIT

John R. Brand, Northridge, and Bradley J. Plunkett, Van Nuys, Calif., assignors to Warwick Electronics Inc., Chicago, Ill., a corporation of Delaware

Filed Apr. 28, 1965, Ser. No. 451,376

Int. Cl. G10h *1/02*

U.S. Cl. 84—1.26 9 Claims



A percussion envelope is applied to a tone signal by selectively shunting tone signal away from the output circuit. Shunting is accomplished by a shunt-connected variable impedance, such as a transistor, the control electrode of which has applied thereto a repetitive voltage pulse which abruptly increases the shunt impedance and then gradually decreases the impedance to create a correspondingly shaped percussive envelope. The pulse is created by a pair of RC circuits, one of which controls the shape of the envelope, the other of which controls the repetition frequency of the pulses.

3,465,088

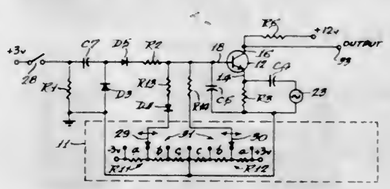
MUSICAL INSTRUMENT PERCUSSIVE KEYER WITH VARIABLE SIGNAL DECAY

Norman R. Kohls, Morton Grove, Ill., assignor to Hammond Corporation, Chicago, Ill., a corporation of Delaware

Filed May 31, 1966, Ser. No. 554,066

Int. Cl. G10h *1/02*

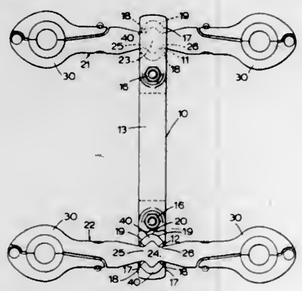
U.S. Cl. 84—1.26 3 Claims



A percussive keyer circuit of the general type in which conduction is normally held off by a bias potential and conduction occurs when a pulse overcomes the bias, and in which the pulse also charges a capacitor which subsequently runs down to the bias potential to produce decay

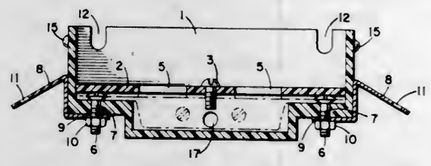
of the signal. Variability in the decay is produced without appreciably disturbing the bias potential by connecting the capacitor run down path through a dynamic resistance element, the resistance of which varies with the current therethrough and varying the current therethrough by varying the voltage spread across the dynamic resistance element. Passive resistance elements and the voltages in the circuit can be chosen such that increasing or decreasing the voltage spread does not appreciably affect the potential at the circuit midpoint which serves as the bias connection.

3,465,089
SPACERS FOR OVERHEAD TRANSMISSION LINES
Ralph P. Torr, New Malden, Surrey, England, assignor to Andre Rubber Company Limited, Surbiton, Surrey, England, a British company
Filed June 18, 1968, Ser. No. 737,937
Claims priority, application Great Britain, June 19, 1967 28,169/67
Int. Cl. H02g *7/12*
U.S. Cl. 174—40 **5 Claims**



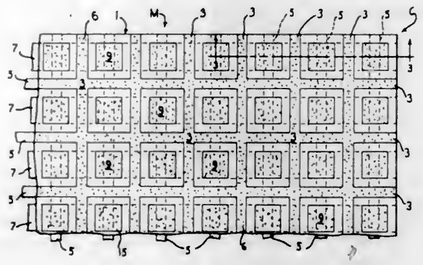
A spacer for bundled conductors of overhead transmission lines comprising a rigid elongate link arm having at least one cavity formed therein at each end. Each cavity receives a knob formed on a respective spacer arm mounting at least one clamp. In one embodiment, each spacer arm has a central knob and a clamp at each end, such that the arms extend perpendicular to the link arm. In a second embodiment, each spacer arm has a knob at one end and a clamp at the other end, the spacer arms being arranged in pairs, the arms in each pair extending in opposite directions away from the link arm. The knob of each spacer arm is embraced by elastomeric material to permit pivoting of the spacer arm to a limited extent under resilient constraint relative to the link arm.

3,465,090
ELECTRICAL JUNCTION BOXES FOR CHRISTMAS TREE HOLDERS
Theophylus Foster Rose, 1771 Berkeley Ave., Petersburg, Va. 23830
Filed Dec. 4, 1967, Ser. No. 696,668
Int. Cl. H01r *13/46;* **H01h** *9/02*
U.S. Cl. 174—58 **3 Claims**



The distinct features of the invention consist of a rectangular box having semi-spherical lugs at each end, a receptacle cover plate with square holes which fits inside the box to provide additional safety against dirt and moisture, and a cover with circular holes at each end to match the lugs of the box for secure fastening and easy removal. The dielectric properties of molded phenolic makes the enclosure safe against short circuiting from outside sources. The resilience of the material facilitates forming of a seal between cover and box, insulating the current carrying parts against dirt and moisture.

3,465,091
UNIVERSAL CIRCUIT BOARD AND METHOD OF MANUFACTURE
Allen C. Bradham III, Menomonee Falls, Wis., assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware
Continuation-in-part of application Ser. No. 599,114, Dec. 5, 1966. This application Feb. 24, 1967, Ser. No. 618,442
Int. Cl. H05k *1/02*
U.S. Cl. 174—68.5 **14 Claims**

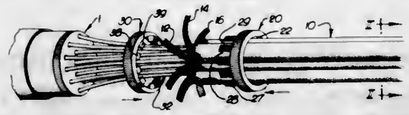


A master circuit board is prepared, comprising an insulating layer on opposite sides of which are attached conductive cross-barred metal grids, one set of the bars of which are staggered relative to one another in one direction across the plane of the layer. These grids present openings staggered on opposite sides of the layer. In the layer are zigzag conductive metal ribbons intertwining the staggered bars to expose lines of conductive areas on opposite faces of the layer in said staggered openings. These areas, with portions of the grids, form pockets for containment of heat-bondable metal conductive slugs. Substantially all of the exposed conductive surfaces of the grids and ribbons are covered with photoresist material. To convert a master board into a circuit board, there is provided scanning means in the form of a laser beam which is under control of programming tape or the like for scanning movement and intensity of excitation. The beam while scanning is excited to one degree for intermittently exposing photoresist material on a grid which is subsequently developed and the grid etched to form desired circuitry. The beam is excited intermittently to another degree to heat portions of the ribbons and grids and of the slugs to form metallurgically bonded interconnections between the grids and the ribbons.

3,465,092
MULTI-SHIELDED CABLE GROUNDING CONNECTOR
Lawrence Schwartz, Monterey Park, Calif., assignor to Glenair, Inc., Glendale, Calif., a corporation of California
Filed Dec. 4, 1967, Ser. No. 687,666
Int. Cl. H02g *15/02, 15/08;* **H01r** *13/54*
U.S. Cl. 174—78 **8 Claims**

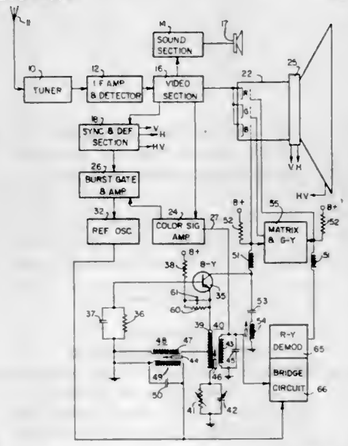
Terminal and grounding connector assembly for bundles of electrical leads or shielding, comprising a cylindrical, externally threaded element with a plurality of spaced

longitudinal slots, and a driving ring in threaded engagement with the cylindrical element, the driving ring rotatably carrying a contact annulus provided with a plurality of contact sections, each contact section extending into a



slot, rotation of the ring moving the annulus and contact sections toward the end of slots to position and hold leads or shielding. Externally threaded element may be part of a plug, adapter, bulkhead fitting, coupling or other fixture.

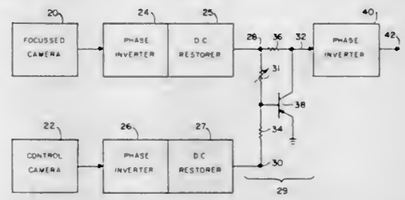
3,465,093
COLOR DEMODULATOR FOR TELEVISION RECEIVERS
Rolf E. Spies, Lyons, Ill., assignor to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois
Filed Aug. 15, 1966, Ser. No. 572,528
Int. Cl. H04n *5/38, 5/44*
U.S. Cl. 178—5.4 **10 Claims**



A half-wave transistorized demodulator uses a transistor with the emitter-base path connected in one arm of a four-arm balanced bridge circuit. The composite color input signals are applied to one diagonal of the bridge, with the 3.58 reference oscillator signal being applied to the other diagonal thereof. Two of the arms of the bridge comprise the center tapped secondary winding to which the color signals are applied. The fourth arm of the bridge includes an RC network which is adjusted to match the RC characteristics of the first arm of the bridge in which the emitter-base path of the transistor is connected. When the bridge is balanced, the signal appearing on the collector of the transistor is the desired demodulated color signal, while undesirable coupling of the input signals is minimized.

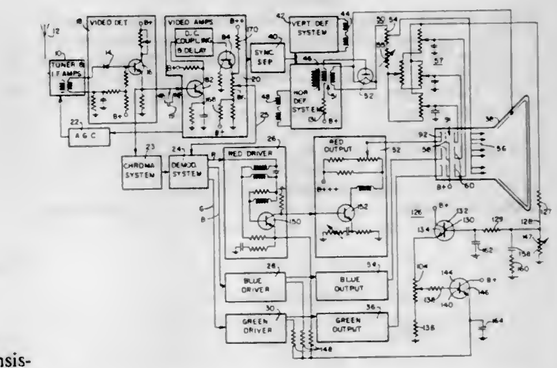
3,465,094
TELEVISION CAMERA DYNAMIC COMPENSATION APPARATUS FOR CONTROLLING THE EFFECT OF LIGHT VARIATIONS WITHIN A SCENE
George A. Biernson, Concord, and David J. Kinsley, Winthrop, Mass., assignors to Sylvania Electric Products, Inc., a corporation of Delaware
Filed Sept. 28, 1966, Ser. No. 582,739
Int. Cl. H04n *5/38, 5/44*
U.S. Cl. 178—5.4 **6 Claims**

A television camera dynamic compensation apparatus for controlling the effect of light variations within a scene by employing focused and control television cameras directed at the same scene and scanned in synchronism. The control camera receives a spatially smoothed image



of the scene and produces a signal to control instantaneously the output signal of the focused television camera on a point-by-point basis within the scene.

3,465,095
AUTOMATIC BEAM INTENSITY LIMITER
Robert B. Hansen, Arlington Heights, and Ernest C. Macintyre, Jr., Villa Park, Ill., assignors to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois
Filed Apr. 26, 1967, Ser. No. 633,927
Int. Cl. H04n *3/16, 5/38, 3/44*
U.S. Cl. 178—5.4 **12 Claims**

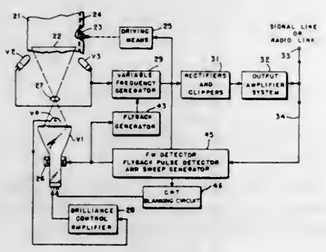


The average direct current component of a video signal may be of sufficient magnitude to increase the average cathode ray beam intensity beyond a predetermined level. The beam limiter includes a sensing network to derive a control voltage indicative of such intensity and a control circuit which generates an output potential in response to the control voltage. Such potential is coupled to the direct current signal path which applies the video signal to the cathode ray tube to reduce the direct current voltage thereon to limit the beam intensity to the predetermined level.

3,465,096
DETECTOR FOR VARIABLE SPEED FACSIMILE SYSTEM
Maurice Artzt, Princeton, N.J., assignor to the United States of America as represented by the Secretary of the Army
Filed July 2, 1964, Ser. No. 380,109
Int. Cl. H04n *3/28, 7/00*
U.S. Cl. 178—6 **11 Claims**

A detector-timer network for use in a facsimile system in which variable-velocity scanning is used for half-tone reproduction and fast transmission speed. A timing capacitor is connected to a steady charging source and is periodically discharged by a narrow pulse produced by a pulse

generating network. An amplifier associated with the timer capacitor is biased such that it conducts only after the timer capacitor has been charged to a predetermined level. The resultant timer pulses at the amplifier output

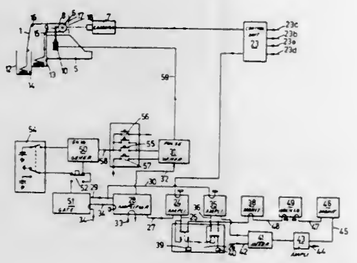


have widths equal to a half cycle of the FM signal minus the time required for the capacitor to reach the predetermined level of charge. The resultant pulses control a sweep generator for the scanning network.

3,465,097
SUBTITLING SYSTEM FOR TELEVISION PROGRAMS

Roger Brabon, Auderghem, Andre Beaumariage, Brussels, Willy De Boeck, St.-Gilles-Brussels, Roland De Broeyer, Leeuw-St.-Pierre, Firmin Delplancke, Brussels, and Marcel Van Innis, Meise, Belgium, assignors to Ateliers de Constructions Electriques de Charleroi (ACEC) Societe Anonyme, Brussels, Belgium

Filed Sept. 6, 1966, Ser. No. 577,513
Claims priority, application Belgium, Sept. 9, 1965, 669,390
Int. Cl. H04n *7/00, 3/02*
U.S. Cl. 178—6 **22 Claims**

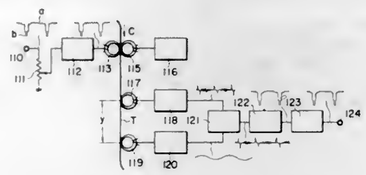


The disclosure relates to an installation for producing subtitles on television programs. Such installation includes a paper strip on which the subtitle is printed, a motor for moving the strip in front of a camera, an emitter of control signals controlling the motor, and a camera control unit transmitting to the camera composite synchronization and horizontal and vertical scanning signals. In addition, a first amplifier is connected to the camera control unit for the transmission of the signals produced by the camera and a gating assembly is connected to the first amplifier and has inputs for the composite synchronization signals, for the vertical scanning signal and for an unblocking signal transmitted by the emitter of control signals, the unblocking signal determining the reading time of the subtitle. Furthermore, a second amplifier is connected to the gating circuit assembly and a program-subtitle mixing assembly is connected to the second amplifier and has a further input for the video signal of the program, the output of the program-subtitle mixing assembly being transmitted to a final communication center.

3,465,098
FINE GAP AND COARSE GAP VIDEO MAGNETIC HEAD ARRANGEMENT

Katsuyuki Iwai, Motonori Fukatsu, and Katsuya Atsumi, Tokyo, Japan, assignors to Akai Electric Co. Ltd., Tokyo, Japan

Filed Sept. 6, 1966, Ser. No. 577,451
Claims priority, application Japan, Nov. 5, 1965, 40/67,677; Nov. 11, 1965, 40/69,008
Int. Cl. H04n *5/78*
U.S. Cl. 178—6.6 **4 Claims**

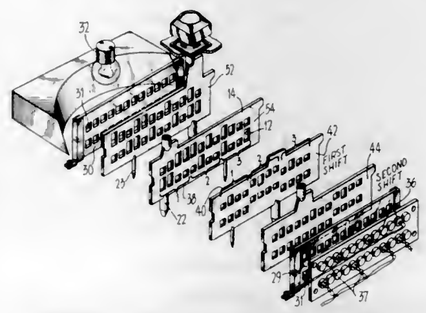


Magnetic tape reproducing machines for wide frequency band signal reproduction are disclosed. The machines use various arrangements of a main and auxiliary reproducing head. The main reproducing head. The main reproducing head has a fine slit gap for the reproduction of higher frequency signals, while the auxiliary head has a coarser slit gap for the reproduction of lower frequency signals.

3,465,099
OPTICAL ENCODER

George A. Harris, San Ramon, Calif., assignor to Friden, Inc., a corporation of Delaware

Filed Sept. 5, 1967, Ser. No. 665,588
Int. Cl. H04l *15/18, 15/12, 15/16*
U.S. Cl. 178—17 **5 Claims**

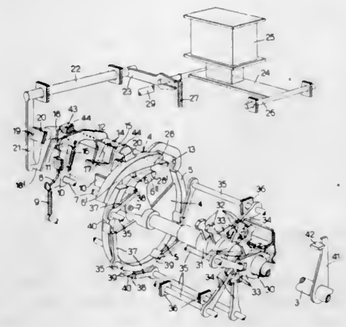


A photoelectric keyboard has key-operated shutters controlling two or more groups of light channels, the groups being assigned to alternative characters, or alternative codes. One or more shift keys operate shift control shutters that normally obscure all but one group, but when depressed obscure that one group and activate others.

3,465,100
MECHANICAL SETTING AND/OR READING DEVICE FOR CODE UNIT ON TELEPRINTERS AND SIMILAR DATA PROCESSING EQUIPMENTS

Giuseppe Ricciardi and Bruno Sandrone, Ivrea, Turin, Italy, assignors to Ing. C. Olivetti & C., S.p.A., Ivrea, Italy, a corporation of Italy

Filed Apr. 25, 1967, Ser. No. 638,180
Claims priority, application Italy, May 10, 1966, 10,951/66
Int. Cl. H04l *15/24, 15/34, 17/16*
U.S. Cl. 178—33 **15 Claims**



A mechanical setting and/or reading device for code units on teleprinters, comprises a plurality of settable code elements circumferentially arranged around a predetermined axis and each one provided with a wedge shaped portion. A setting and/or reading member is provided with a pair of opposite tapered surfaces and is rotatable around said axis to sequentially cooperate with said portions. The code elements are settable through a radial movement in an embodiment for a series-to-parallel converter of a telegraphic receiver, and are settable through an axial movement in an embodiment for a parallel-to-series converter. The device is also embodied in storing device for a plurality of code combinations and comprises for each code unit a plurality of axially settable elements adapted to be set by a first rotatable member and to be read by a second rotatable member.

3,465,101
HIGH SPEED INTER-COMPUTER COMMUNICATION USING NARROW BANDWIDTH TWISTED PAIR CABLE

Hugh S. Christian, Lafayette, Ind., Dale R. Lowe, Milwaukee, Wis., and Charles J. Ulrick and Charles P. Womack, Marion, Iowa, assignors to Collins Radio Company, Cedar Rapids, Iowa, a corporation of Iowa

Filed Apr. 18, 1966, Ser. No. 543,157
Int. Cl. H04l *15/04, 15/24*
U.S. Cl. 178—68 **6 Claims**

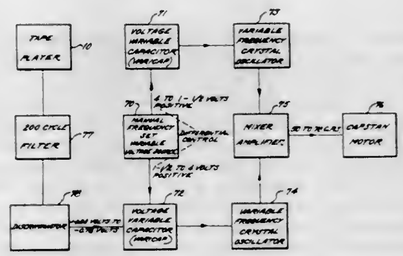


A means for transmitting and receiving a two-level data signal and comprising transmitter means for creating a short duration positive pulse for each positive transition of the two-level signal and a short negative pulse for each negative transition thereof. A transformer means has its primary center-tapped to ground with the two end terminals connected to receive the short duration positive and negative pulses respectively. The two end terminals of the secondary are connected, one each to a pair of twisted wires. At the receiver at the other ends of the twisted wires are transformer-coupled to appropriate reshaping and detecting circuits.

3,465,102
READOUT ANALYZER

James R. Trammell, Cleveland, Ohio, assignor to the United States of America as represented by the Secretary of the Air Force

Filed Aug. 16, 1966, Ser. No. 572,864
Int. Cl. H04m *1/74*
U.S. Cl. 179—1 **3 Claims**

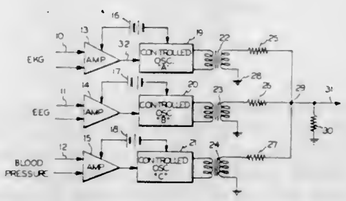


A speech analyzer selects a desired voice from a multiplicity of voices by examining the harmonic content of the voices. The desired voice is separated from interfering voices by filtering the fundamental along with its related harmonics of the desired voice from the interfering voices.

3,465,103
SYSTEM FOR COMBINING PLURAL ISOLATED PHYSIOLOGICAL SIGNALS WITHOUT MUTUAL INTERFERENCE AND WITH REDUCED NOISE LEVEL

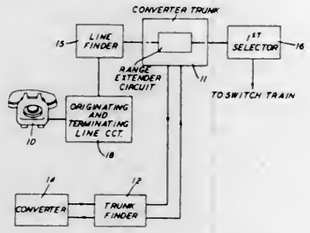
Thomas J. Lynch, Huntingdon Valley, Pa., assignor to United Aircraft Corporation, a corporation of Delaware

Filed June 23, 1966, Ser. No. 559,832
Int. Cl. H04j *1/16*
U.S. Cl. 179—15 **8 Claims**



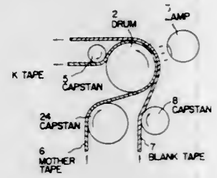
A monitoring system for combining plural physiological signals is disclosed wherein each isolated body signal frequency modulates a "floating" subcarrier oscillator powered by a source isolated from the powering sources for the other oscillators, and the isolated FM signals are coupled together by an isolation transformer network.

3,465,104
STEP-BY-STEP TELEPHONE SYSTEM WITH RANGE EXTENSION
Charles W. Zebe, New Shrewsbury, N.J., assignor to Bell Telephone Laboratories, Incorporated, Murray Hill and Berkeley Heights, N.J., a corporation of New York
Filed Sept. 9, 1966, Ser. No. 578,345
Int. Cl. H04m 3/42
U.S. Cl. 179—16 8 Claims



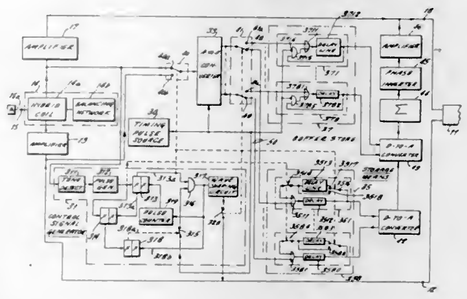
I disclose a step-by-step telephone switching system adapted to provide range extension facilities for high impedance customer loops without the necessity for segregating such loops on particular connectors. Terminating line finders are provided between the high impedance loops and the conventional connectors which incorporate range extension facilities in the path between a connector and a called high impedance loop on terminating calls. For originatinng calls, high impedance loops are terminated on special line finders. These special line finders extend to trunks incorporating range extension facilities which couple the line finders and the conventional first selectors.

3,465,105
DUPLICATION OF MAGNETIC RECORDINGS
Akio Kumada, Hachioji-shi, Tokyo-to, and Fumitada Hayama, Kodaira-shi, Tokyo-to, Japan, assignors to Kabushiki Kaisha Hitachi Seisakusho, Tokyo-to, Japan, a joint-stock company of Japan
Continuation-in-part of application Ser. No. 269,137, Mar. 29, 1963. This application May 17, 1967, Ser. No. 639,196
Claims priority, application Japan, Apr. 2, 1962, 37/12,608
Int. Cl. G11b 5/02
U.S. Cl. 179—100.2 8 Claims



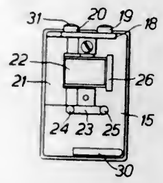
A quick, simple, and easy duplication of magnetic recording signals can be carried out with excellent frequency characteristics and high fidelity by causing an unrecorded magnetic record member (blank) coated on its surface with magnetic powder in spherical shape to closely contact the surface of a recorded magnetic record member (mother) coated with magnetic powder, heating the blank member to decrease coercive force of the magnetic powder coated thereon so as to duplicate the recording signals of the mother member, and, if necessary in the course of duplication, subjecting a mother member to frequency-correction, or recording on the blank member beforehand a direct current signal, or a signal having a frequency higher or lower than the frequency band to be recorded.

3,465,106
ECHO SUPPRESSOR FOR LONG-DISTANCE COMMUNICATION NETWORK
Kuniichi Nagata and Akira Miura, Tokyo, Japan, assignors to Nippon Electric Company Limited, Tokyo, Japan
Filed Sept. 8, 1965, Ser. No. 485,886
Claims priority, application Japan, Sept. 10, 1964, 39/51,649
Int. Cl. H04b 3/22; H04m 9/08
U.S. Cl. 179—170.2 15 Claims



An echo suppressor for eliminating the phenomenon referred to as "talker's echo" normally encountered in long-distance communication networks. The suppressor is especially useful in networks comprising a four-wire circuit having an incoming and an outgoing path, which paths are coupled to a two-wire circuit by means of a hybrid circuit. The echo suppressor applies an impulse to the incoming path responsive to the indication of an established connection between calling and called parties and prior to the occurrence of the actual message. The leakage component of the impulse passed from the input path to the output path by way of the hybrid circuit is converted into its binary equivalent and stored. As soon as the message begins, the instantaneous signals of the message are converted into a binary equivalent and applied to a buffer storage circuit. The binary signals in the memory and buffer storage circuits are converted into analog signals, the product of these analog signals is formed, and the resulting product signal is integrated and phase-inverted so as to be subtractively combined with the leakage component appearing in the output path resulting from the calling subscriber signals so as to substantially cancel and thereby eliminate "talker's echo."

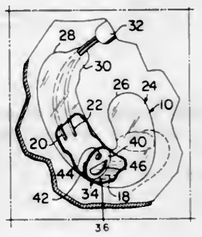
3,465,107
MICROPHONE WITH MOUNTING FRAME OF PREFIXED COMPONENTS
Werner Manfred Parthum, Kongens Lyngby, Denmark, assignor to Danavox International A/S, Copenhagen, Denmark
Filed Aug. 10, 1965, Ser. No. 478,592
Claims priority, application Denmark, Aug. 12, 1964, 3,978/64
Int. Cl. H04r 25/00; H04m 1/02
U.S. Cl. 179—179 4 Claims



A microphone having a bipartite housing with a frame supported between the two parts. The components are previously mounted on the frame whereby the frame

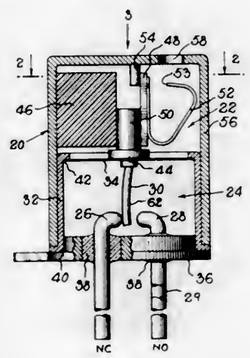
is mounted in the housing without a soldering operation and the terminals of the frame are accessible from the exterior of the housing since they project through corresponding openings in the housing.

3,465,108
TIME DELAY SWITCH
Joseph M. Massanova, Philadelphia, and Vincent R. Melso, Broomall, Pa., assignors to Joseph M. Massanova, Philadelphia, Pa.
Filed Aug. 15, 1967, Ser. No. 660,753
Int. Cl. H01b 43/02
U.S. Cl. 200—33 3 Claims



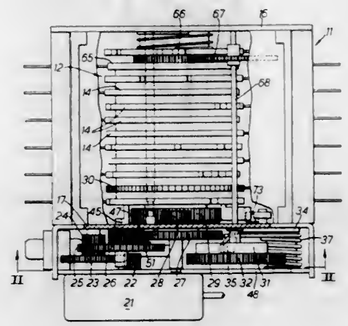
A time delay switch of the mercury contact type incorporating an integral fixed baffle and a movable member cooperating therewith to form a mercury retaining valve operable upon rotation of the switch, the said valve being provided with a small aperture to allow continuous mercury leakage therethrough.

3,465,109
ELECTRICAL SWITCH HAVING DEFORMABLE MOVING CONTACT ARM
Neal T. Williams, Bloomfield, N.J., assignor to Sealtronics, Inc., Clifton, N.J., a corporation of New Jersey
Filed Oct. 25, 1967, Ser. No. 677,915
Int. Cl. H01h 43/24
U.S. Cl. 200—33 11 Claims



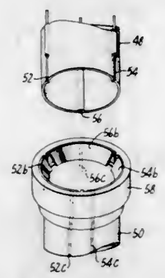
An electrical switch having at least one fixed contact, a moving contact arm and means for urging the moving contact arm into and out of contact with the fixed contact. The moving contact arm being formed of deformable, electrically conductive, material so that the moving contact arm is deformed by contact with the fixed contact and so that there is a delay before the contact between the moving contact arm and the fixed contact is broken, the delay being determined by the deformation, the elastic memory and the velocity of the moving contact arm.

3,465,110
MULTIPLE TIME BASE TIMER
Jean Pierre Marcel and Claude Velay, Milan, Italy, assignors, by mesne assignments, to Controls Company of America, Melrose Park, Ill., a corporation of Delaware (1966)
Filed Feb. 15, 1966, Ser. No. 527,415
Claims priority, application Great Britain, Feb. 15, 1965, 6,426/65
Int. Cl. H01h 7/08, 43/10
U.S. Cl. 200—38 6 Claims



A timing device arranged to operate a programme controller at intervals, the programme controller in particular being a cam bank which is rotatable at intervals to actuate electric switches. Two motors are used, one of which effects the movement of the programme controller at the end of each interval and the other of which controls the timing of the interval.

3,465,111
APPARATUS FOR ESTABLISHING A COMBINED FLUID CONDUIT AND ELECTRIC CIRCUIT SYSTEM
John J. Breslin, Los Altos Hills, Calif., assignor to Beamco, Inc., Mountain View, Calif., a corporation of California
Filed Jan. 19, 1967, Ser. No. 610,435
Int. Cl. H01h 3/16; H01b 7/00
U.S. Cl. 200—61.6 5 Claims

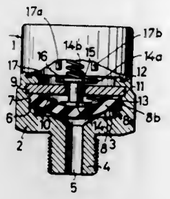


An apparatus for establishing an electrical circuit simultaneously with the establishment of a fluid conduit circuit. The apparatus incorporate electrical leads into fluid conduits and connecting fittings therefor in such a manner that assembly of the conduits and fittings simultaneously effects connection of the electrical leads.

3,465,112
FLUID PRESSURE ACTUATED DIAPHRAGM SWITCH

Ludwig Reichert, Waiblingen, and Werner Heinlein, Stuttgart, Germany, assignors to Robert Bosch GmbH, Stuttgart, Germany

Filed Oct. 9, 1967, Ser. No. 673,604
Claims priority, application Germany, Aug. 23, 1967, B 89,592
Int. Cl. H01h *35/40*
U.S. Cl. 200—83 **9 Claims**

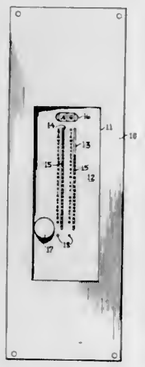


A fluid pressure actuated switch whose housing is provided with an internal annular recess for the marginal portion of an elastomeric semielastic diaphragm whose central portion bulges into the pressure chamber of the housing. The pressure chamber is located opposite a second chamber which receives one or more contacts. When the pressure chamber receives a fluid, the central portion of the diaphragm tends to flatten out with resultant radial expansion of the diaphragm. This radial expansion is resisted by contact of the diaphragm edge with the bottom wall of the recess so that the material of the marginal portion of the diaphragm yields in axial direction, whereby the thickness of the marginal portion increases so that the latter also bears against the side walls of the recess to provide a fluidproof seal between the two chambers. Prior to admission of fluid into the pressure chamber, the thickness of the marginal portion at most equals the axial length of the recess.

3,465,113
READ-OUT SLIDE SWITCH

Walter L. Cherry and Raymond G. Castle, Highland Park, Ill., assignors to Cherry Electrical Products Corporation, Highland Park, Ill., a corporation of Illinois

Filed Feb. 19, 1968, Ser. No. 706,227
Int. Cl. H01h *9/16, 3/20*
U.S. Cl. 200—167 **5 Claims**

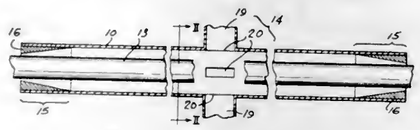


A multiple slide read-out switch for use in data transmission, having a reset mechanism for each switch carrying slide for independently resetting each slide, and a common reset mechanism for simultaneously resetting all actuated switch carrying slides.

3,465,114
METHOD AND APPARATUS FOR DIELECTRIC HEATING

William J. Bleackley and William A. Cumming, Ottawa, Ontario, Canada, assignors to Canadian Patents and Development Limited, Ottawa, Ontario, Canada, a company of Canada

Filed Sept. 19, 1966, Ser. No. 580,428
Int. Cl. H05b *9/06*
U.S. Cl. 219—10.55 **4 Claims**

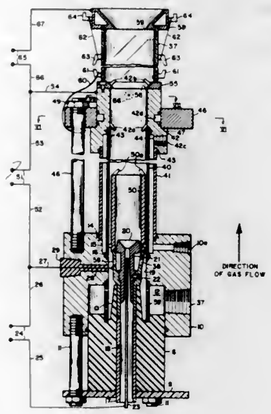


Microwave energy is propagated along a circular waveguide in the TE°_{01} mode to yield a concentration of lines of electric force in the portion of the waveguide occupied by a hollow cylindrical workpiece to be heated. In an alternative the microwave energy is propagated as a circularly polarised wave for heating a similar workpiece.

3,465,115
METHOD AND APPARATUS FOR HEATING GASES TO HIGH TEMPERATURES

Thomas J. Hirt, Omaha, Nebr., and Chester W. Marynowski, Mountain View, Calif., assignors to Northern Natural Gas Company, Omaha, Nebr., a corporation of Nebraska

Continuation-in-part of application Ser. No. 429,756, Feb. 2, 1965. This application Apr. 10, 1968, Ser. No. 720,070
Int. Cl. B23k *9/16, 35/38*
U.S. Cl. 219—75 **26 Claims**

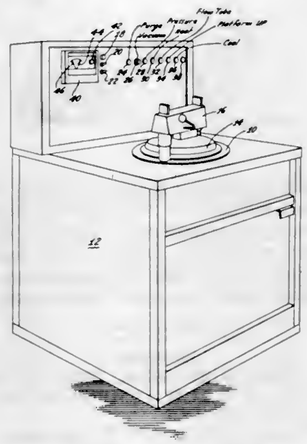


A method and apparatus for heating gases to high temperatures in which a first combustible mixture and ionizing additives are ignited to form a pilot flame, a second combustible mixture is supplied to the pilot flame and ignited, an electrical discharge is maintained through the combusting gases and products of combustion of the two ignited combustible mixtures, a uniformly distributed electrical discharge is maintained through the products of combustion resulting from the first electrical discharge, and there is optionally provided a thermally promoted chemical reaction such as introducing methane in the apparatus for acetylene synthesis.

3,465,116
MULTIPLE HEATING UNIT

Sydney Dix, Huntington Beach, Calif., assignor, by mesne assignments, to GTI Corporation, Providence, R.I., a corporation of Rhode Island

Continuation-in-part of application Ser. No. 506,428, Oct. 20, 1965. This application Feb. 1, 1967, Ser. No. 613,163
Int. Cl. B23k *1/02, 1/04*
U.S. Cl. 219—85 **19 Claims**

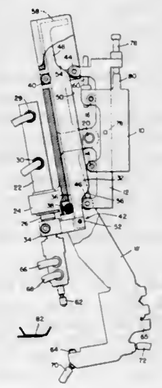


Apparatus for performing a heating operation on a plurality of individual devices arranged in a predetermined spatial pattern on a workholder and using a unitary heating element having preformed heating areas arranged in the predetermined spatial pattern and with the heating element and workholder movable relative to each other so as to preheat the heating element before performing the heating operation on the individual devices by moving the workholder and unitary heating element adjacent to each other.

3,465,117
TILTING WELDING GUN

Albert Bende, Haddon Heights, N.J., George G. Hiemenz, Philadelphia, Pa., and Charles Dana Moore, Rowley, Mass., assignors of one-half to Goodrich Welding Equipment Corporation, a corporation of Michigan, and one-half to The Budd Company, a corporation of Pennsylvania

Filed Dec. 15, 1966, Ser. No. 601,958
Int. Cl. B23k *11/10, 37/02*
U.S. Cl. 219—89 **11 Claims**

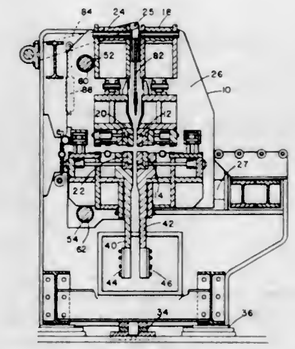


A welding gun and supporting structure having cams and followers for swinging the welding gun between a stored position and a welding position. The hydraulic actuating means for moving the welding electrodes during the welding cycle is also utilized for moving the welding gun between the stored position and the welding position.

3,465,118
SIDE-SHIFTING, STRIP-WELDING APPARATUS

Charles M. Senn and Owen S. Cecil, Jr., Pittsburgh, Pa., assignors to Mesta Machine Company, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Oct. 21, 1966, Ser. No. 588,484
Int. Cl. B23k *9/02, 11/04*
U.S. Cl. 219—101 **7 Claims**

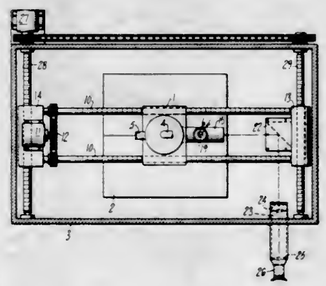


We disclose apparatus for aligning and joining objects said apparatus comprising a pair of clamping members for each of said objects, means for supporting each of said clamping members upon said apparatus, one of said supporting means being mounted for movement of its clamping toward and away from the other of said clamping members, the other of said supporting means being mounted for movement in a direction transverse to that of said first mentioned movement, and means for joining said objects when so clamped. We also disclose means for electrically insulating at least one of said supporting means.

3,465,119
MULTIAXIS OPTICAL VIEWING SYSTEM OF A MOVABLE ELECTRON BEAM IN A VACUUM CHAMBER

Swan William Larson, West Springfield, Mass., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware

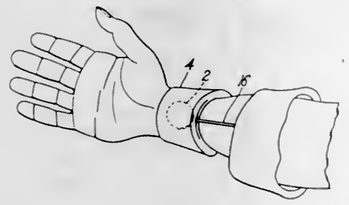
Filed June 21, 1967, Ser. No. 647,779
Int. Cl. H05b *7/18*
U.S. Cl. 219—121 **3 Claims**



An apparatus for coaxial viewing of the area being worked by an electron beam in a vacuum chamber where

the electron beam generator is provided with two dimensional movement. Optical observation means are provided for continuous observation of the workpiece regardless of the location of the electron beam generator relative to the workpiece as the same is moved thereacross.

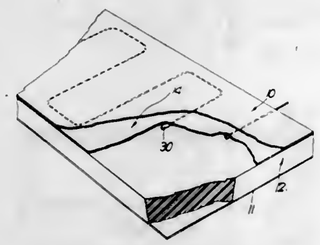
3,465,120
METHOD AND ELECTRICAL HEATING MEANS FOR WARMING BODY EXTREMITIES
Thomas F. Merna, P.O. Box 121, South Londonderry, Vt. 05155
Filed Apr. 29, 1968, Ser. No. 724,849
Int. Cl. H05b *1/00, 3/00, 3/18*
U.S. Cl. 219—211 **2 Claims**



Method for warming body extremities, as for example the hands, without the provision of the usual protective materials, the method comprising raising the temperature of the arteries proximate to the extremities whereby to raise the temperature of blood flowing therethrough to the extremities.

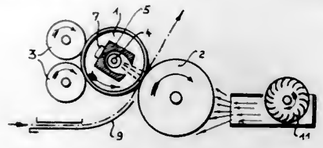
Means for warming body extremities in accordance with the above method, the means comprising a portable localized heat applicator capable of raising the surface temperature of the skin, as for example at the wrist, sufficient to increase the temperature of the arteries proximate thereto to increase the temperature of blood flowing through the arteries to the extremities.

3,465,121
PANELS
Robert Edward Clark, Surrey, England, assignor to BTR Industries Limited, London, England
Filed Sept. 12, 1966, Ser. No. 578,534
Int. Cl. H05b *1/00, 3/00, 11/00*
U.S. Cl. 219—213 **5 Claims**



A floor panel including a plurality of heating elements which are electrically connected together in parallel, and control means to regulate the electrical supply to the elements in response to the total heat emitted from the panel, so as to keep the total heat emitted from the panel constant even in the event of failure of one or more of the individual elements.

3,465,122
CONTROL ARRANGEMENT FOR COPYING DEVICES
Siegfried Kolless, Neuenhain, Taunus, Germany, assignor to Eichner Organisation G.m.b.H., Frankfurt, Germany
Filed Sept. 9, 1966, Ser. No. 578,180
Claims priority, application Germany, Oct. 23, 1965, E 30,347
Int. Cl. H05b *1/02*
U.S. Cl. 219—216 **18 Claims**



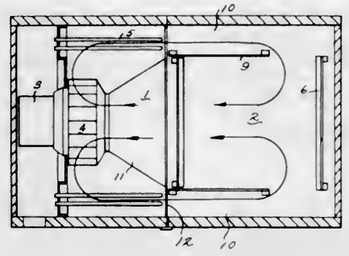
A control arrangement for copying devices of the type utilizing heat and light for their copying function protects sensitive components of the apparatus against damage resulting from overheating. Cooling means actuated by a heat-responsive detector keep the temperature to which the components are exposed within a predetermined range.

3,465,123
MEANS FOR DIRECTING SUPPLY WATER TOWARD THE LOW TEMPERATURE ZONE OF WATER HEATER
Sidney F. Harris, 1371 N. Christina, Sarnia, Ontario, Canada
Filed Sept. 2, 1965, Ser. No. 484,662
Int. Cl. H05b *3/02*
U.S. Cl. 219—328 **6 Claims**

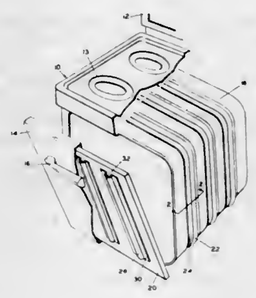
An electric water heater tank having vertically spaced thermostatically controlled immersion heating rods is supplied with cold water that discharges into a bottom portion of the water tank adjacent the lower heating rod and its thermostat so as to produce immediate heating of the water whenever cold water enters the tank upon withdrawal of hot water. In one arrangement, the cold water is discharged from the lower end of a chill pipe directly onto a portion of the tank wall mounting an external thermostat. In other embodiments, the water is discharged from the lower end of a chill pipe directly onto the thermostatically controlled heating rod. The discharge end of the pipe may be enlarged to telescopically receive the rod. In a further embodiment, the thermostat is externally mounted on a portion of the tank wall and an internal baffle box cooperates with the wall portion to form a reception chamber for the cold water.

3,465,124
ELECTRICALLY HEATED THAWING OVEN
Paul Sauer, Dill, Kreis Burg, Germany, assignor to Burger Eisenwerke Aktiengesellschaft, Dill, Kreis Burg, Germany, a German company
Filed May 20, 1966, Ser. No. 551,564
Int. Cl. A21b *1/00*
U.S. Cl. 219—400 **2 Claims**

A thawing oven is made up of an installation cell and a rectangular-shaped thawing chamber. The installation cell includes a fan and electric heating elements arranged around the fan. A funnel-shaped air guide is positioned in the installation cell to form a communication between the installation cell and the thawing chamber.



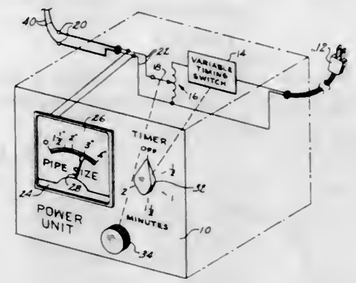
3,465,125
COOKING OVEN CLEANING APPARATUS
George McArthur, Jr., Delaware, Ohio, assignor, by mesne assignments, to Glenwood Range Company, Taunton, Mass., a corporation of Massachusetts
Filed Oct. 10, 1966, Ser. No. 585,596
Int. Cl. F27d *11/10;* **A21b** *1/02;* **F24b** *7/00*
U.S. Cl. 219—406 **6 Claims**



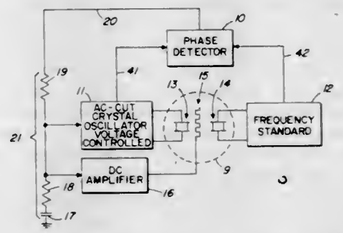
A cooking oven apparatus for cleaning grease and other deposits from an oven liner and more particularly relates to a cleaning method wherein the liner is raised to cleaning temperature by supplying heat directly to the liner from heating units which are affixed to or are a part of the oven liner, and a heating unit apparatus in which a portion of the oven liner serves as an integral part of the heating unit in a manner to increase the efficiency of heat conduction to and through the oven liner and in a manner to permit an improved process for manufacturing an oven liner by forming the liner after the heating units are placed thereon.

3,465,126
POWER UNIT
James J. Blumenkranz, Hollywood, Calif., assignor to Susquehanna Corporation, a corporation of Delaware
Filed Oct. 25, 1967, Ser. No. 678,052
Int. Cl. H05b *3/02*
U.S. Cl. 219—482 **4 Claims**

An example of the power unit is a power supply which uses a variable auto-transformer for voltage control. The controlled output voltage is supplied to plastic pipe joints for thermal welding. A voltmeter is connected across the output line and is responsive to the varying of the auto-transformer so that the user will know when the correct output voltage level has been attained for the size of plastic pipe being welded. The face of the meter is graduated in pipe-size indicia rather than in volts to permit this determination without the necessity for computations.

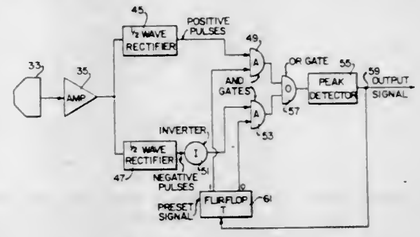


3,465,127
FREQUENCY CONTROLLED OVEN
Albert E. Anderson, Cedar Rapids, Iowa, assignor to Collins Radio Company, Cedar Rapids, Iowa, a corporation of Iowa
Filed Oct. 9, 1967, Ser. No. 673,690
Int. Cl. H05b *1/02*
U.S. Cl. 219—494 **6 Claims**



A frequency controlled oven employing two oscillators, the first controlled by a crystal whose change of frequency with temperature at the desired oven temperature is small, the second oscillator controlled by a crystal whose change of frequency with oven temperature is large. A phase detector compares the outputs of the two oscillators to produce D-C voltage which controls the frequency of said first oscilaltor to that of the second oscillator.

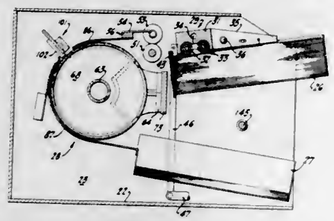
3,465,128
READOUT SYSTEM IN INCREMENTAL TAPE TRANSPORT
Eleuthere Poumakis, East Islip, and Andrew Gabor, Huntington, N.Y., assignors to Potter Instrument Company, Inc., Plainview, N.Y., a corporation of New York
Filed Sept. 21, 1964, Ser. No. 397,934
Int. Cl. G06k *7/00;* **G08b** *29/00;* **G11b** *5/00*
U.S. Cl. 235—61.11 **9 Claims**



The specification and drawings disclose a circuit for an incremental tape transport that prevents a false output

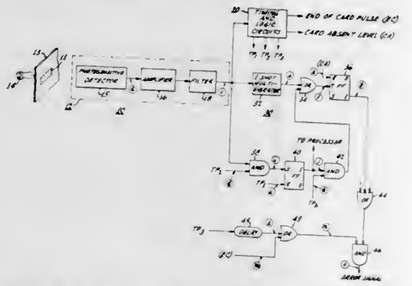
signal when the transducer head stops in a position that partially overlaps the region where the character just read was recorded.

3,465,129
OPTICAL READER
Charles S. Mitchell, Palo Alto, Calif., assignor to Hewlett-Packard Company, a corporation of California
Filed May 7, 1965, Ser. No. 454,059
Int. Cl. G06k *7/00;* **B65h** *5/08, 3/08*
U.S. Cl. 235—61.11 **16 Claims**



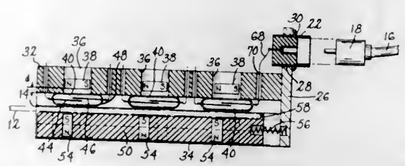
A pickup mechanism in which a vacuum is drawn between a pair of spaced, parallel, rotating rollers is pivotally mounted for removing data sheets one at a time from the top of a stack of data sheets in an input hopper. The rollers of the pickup mechanism are momentarily prevented from rotating as each data sheet is lifted from the stack and then are released for feeding the lifted data sheet onto a rotary transport unit. A vacuum drawn through perforations in limited peripheral portions of a plurality of annular stationary members holds each data sheet on the transport unit while a plurality of rotary discs having a slightly larger diameter than the annular stationary members drives the vacuum held data sheet past a data mark reading unit. As the data sheets are driven past the end of the limited peripheral portions of the annular stationary members, they are ejected from the transport unit and stacked in the original order in an output hopper positioned beneath the input hopper. A mechanical feedback system adjusts the position of the input hopper to maintain the top of the stack of data sheets placed therein at the proper level for data sheet removal by the pickup mechanism.

3,465,130
RELIABILITY CHECK CIRCUIT FOR OPTICAL READER
John P. Beltz, Willingboro, and Donald E. Phelps, Haddonfield, N.J., assignors to RCA Corporation, a corporation of Delaware
Filed Aug. 30, 1965, Ser. No. 483,710
Int. Cl. G06k *7/00*
U.S. Cl. 235—61.11 **8 Claims**



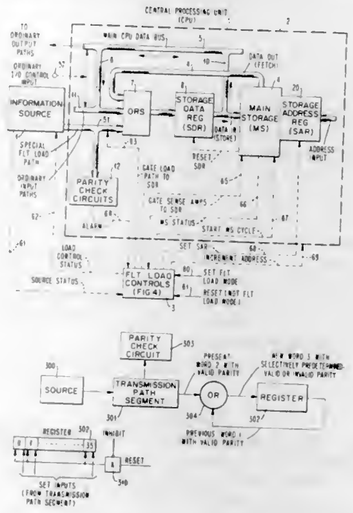
An optical reader reads documents and generates sense signals corresponding to data on the documents. A transition signal is generated at the leading edge of a sense signal to provide a first reading of the document. The transition signal is converted into an error signal when a second reading of the document indicates that the sense signal does not coincide with a column timing pulse.

3,465,131
METALLIC CODED CARD WITH MAGNETIC REED SWITCH READER
Robert S. Ten Eyck, 617 Highland Ave., Middletown, Conn. 06457
Filed May 27, 1966, Ser. No. 553,433
Int. Cl. G06k *7/08*
U.S. Cl. 235—61.11 **5 Claims**



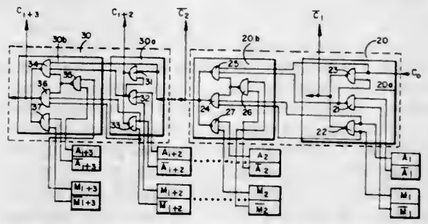
This is an identification card sensing device for use with a laminated plastic card having a sandwiched coded strip of metal foil. The card is inserted on a slidable tray having an array of magnets suitably arranged therein and said tray is then moved beneath an array of reed switches, each having another magnet associated therewith. The interaction of the field of each associated pair of magnets is affected by the coding openings in the foil causing the reed switches to react to said coding and "scan" the card.

3,465,132
CIRCUITS FOR HANDLING INTENTIONALLY MUTATED INFORMATION WITH VERIFICATION OF THE INTENTIONAL MUTATION
Peter N. Crockett, Wappingers Falls, Frank J. Hackl, Poughkeepsie, and Thomas S. Stafford, Wappingers Falls, N.Y., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed Aug. 23, 1965, Ser. No. 481,689
Int. Cl. G06f *11/00;* **G11b** *13/00*
U.S. Cl. 235—153 **15 Claims**



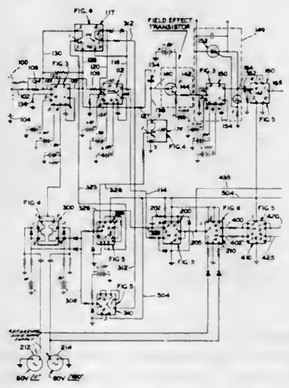
Invalid test signals are deliberately transmitted into a computer from external equipment to be used to test the error detection circuits of the computer. However, in order to provide a validity check on the transmitted signals which assures that they arrive in the computer in the desired invalid form, and not in some other invalid form due to transmission error, the signals are first sent to the computer in a valid form, then checked for validity upon reception, and afterwards converted to the desired invalid form intended for the test application. The conversion is made by logical manipulation of the signal elements as they are received in the valid form. In a specific example test signals with a bad parity condition are entered into a computer main store by transmitting signals with good parity and redundancy through a parity check circuit preceding the store and thereafter logically Or-ing bits of the redundant signal to construct the desired test signals with bad parity.

3,465,133
CARRY OR BORROW SYSTEM FOR ARITHMETIC COMPUTATIONS
Robert K. Booher, Downey, Calif., assignor to North American Rockwell Corporation, a corporation of Delaware
Filed June 7, 1966, Ser. No. 555,717
Int. Cl. G06f *7/385, 7/42, 7/50*
U.S. Cl. 235—175 **2 Claims**



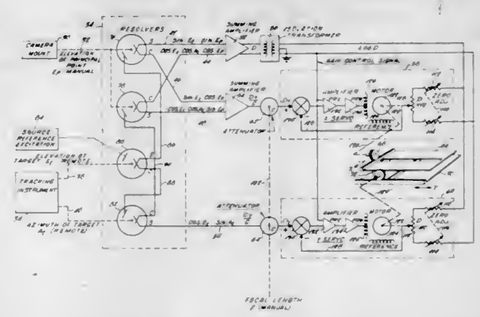
The system includes gates which form logic groups comprising at least one logic order. Alternate logic groups receive operand information corresponding to a particular bit position and primed borrow or carry information from a preceding logic group for producing unprimed borrow or carry information. The other groups also receive operand information corresponding to those bit positions and the unprimed borrow or carry information from the alternate groups for producing the primes of the borrow or carry information.

3,465,134
SOLID STATE MICROCIRCUIT INTEGRATOR SYNCHRONIZER SYSTEM
Robert L. James, Bloomfield, N.J., assignor to The Bendix Corporation, a corporation of Delaware
Filed July 23, 1965, Ser. No. 474,352
Int. Cl. G06g *7/18*
U.S. Cl. 235—183 **19 Claims**



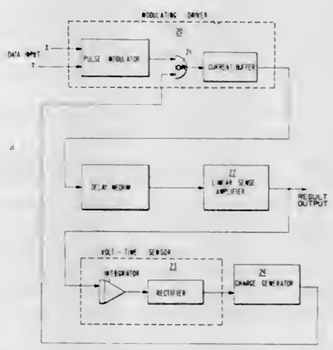
An integrator-synchronizer system for an integrating and/or synchronizing operation on an alternating current input signal for effecting a train of pulses by a voltage to frequency converter which is in turn controlled by a direct current output signal from a hold circuit arranged to periodically sample an alternating current input signal.

3,465,135
COMPUTER FOR SOLVING TRIGONOMETRIC EQUATIONS
Charles A. Belsterling, Norristown, and Bruce B. Young, Radnor, Pa., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Army
Filed Aug. 2, 1963, Ser. No. 299,551
Int. Cl. G06g *7/22*
U.S. Cl. 235—189 **3 Claims**



A computer for changing from a spherical coordinate system to a plane rectangular coordinate system, wherein input signals are applied to a resolver section and the resolver outputs are combined so as to obtain signals corresponding to transformation functions; these signals are applied to servo-loops for the determination of the rectangular coordinates.

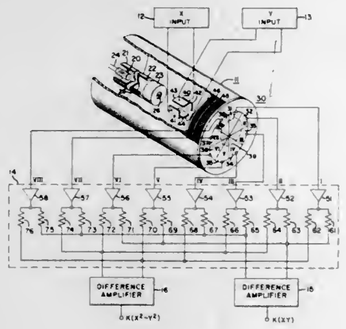
3,465,136
ANALOG TIME-DIVISION MULTIPLIER WITH RECIRCULATING STORAGE
Jack R. Dailey, Apalachin, and Richard L. Lake, Binghamton, N.Y., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed Oct. 3, 1966, Ser. No. 583,905
Int. Cl. G06g *7/16*
U.S. Cl. 235—194 **5 Claims**



An improved analog multiplier system utilizing recirculating storage that includes a modulating driver circuit which integrates the input signals and produces a

resultant current signal for energizing a magnetostrictive delay line storage medium and a sense amplifier for reading the voltage output signals from the magnetostrictive delay line. The outputs from the sense amplifier are fed in a recirculating pattern through a voltage-time sensor circuit to a charge generating circuit to produce a feedback pulse to the modulating driver circuit.

3,465,137
ANALOG COMPUTATION APPARATUS FOR GENERATION OF DYNAMIC CORRECTION SIGNALS FOR CATHODE RAY TUBES
Joseph W. Brouillette, Jr., Jamesville, and Milton L. Noble, Liverpool, N.Y., assignors to General Electric Company, a corporation of New York
Filed Dec. 29, 1966, Ser. No. 605,810
Int. Cl. G06g *7/20*
U.S. Cl. 235—193 **10 Claims**



1. An analog computation apparatus comprising:
(a) an electron target assembly having eight mutually insulated sectors each having equal central angles;
(b) an electron gun for producing a beam of centrosymmetric cross-section and of uniform current density throughout, arranged to produce a spot on said target, embracing a substantial portion thereof;
(c) a first beam deflection means having terminals for application of a first electrical input quantity, aligned to deflect said beam parallel to the boundary between sectors I and VIII and the boundary between IV and V where the sector numerals are assigned in consecutive order;
(d) a second beam deflection means having terminals for application of a second electrical input quantity aligned to produce a deflection orthogonal to that of said first beam deflection means;
(e) a first subtractive means coupled to each of said sectors to obtain an electrical quantity:

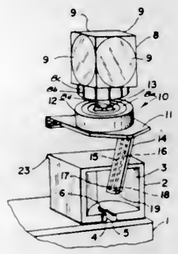
$$[Q_I+Q_{II}+Q_V+Q_{VI}]-[Q_{III}+Q_{IV}+Q_{VII}+Q_{VIII}]$$

where said Q quantities are currents flowing into said correspondingly numbered sectors for producing an output quantity proportional to the product of said first and second input quantities; and
(f) a second subtractive means coupled to each of said sectors to obtain an electrical quantity equal to:

$$[Q_I+Q_{IV}+Q_V+Q_{VIII}]-[Q_{II}+Q_{III}+Q_{VI}+Q_{VII}]$$

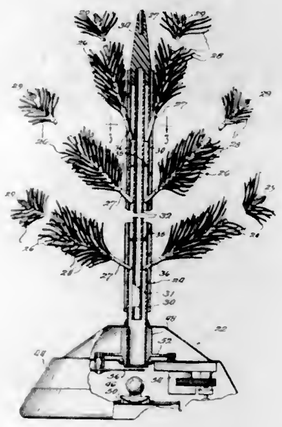
for producing an output quantity proportional to the difference in the squares of said input quantities.

3,465,138
FLASH CUBE ADAPTER FOR CAMERA
Albert E. Long, 3832 Highland Ave., Shadyside, Ohio 43947
Filed Sept. 14, 1967, Ser. No. 667,781
Int. Cl. G03b *15/035*
U.S. Cl. 240—1.3 **2 Claims**



An adapter for converting a camera having a built-in flash bulb unit for a single flash bulb to one using a multiple flashlamp unit having a plurality of reflectors and bulbs thereon. The adapter has a base with a circular receptacle thereon for receiving the multiple flashlamp unit, a depending leg with electrical contacts extending therealong for making contact with the spring contacts of the built-in socket on the camera, and a channel portion on the base. The top of the built-in reflector housing has a tongue portion thereon for engaging the channel portion of the adapter when it is attached to the camera. The multiple flashlamp unit is manually turned to successively place one of the unused flashlamps in the firing position.

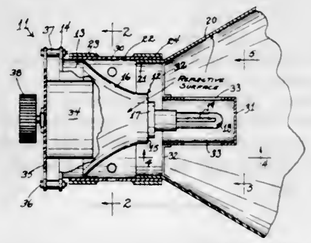
3,465,139
INTERNALLY ILLUMINATED ARTIFICIAL TREE
Burton L. Siegal, Skokie, Ill., assignor to Mard Continental, Inc., Chicago, Ill., a corporation of Illinois
Filed Mar. 1, 1967, Ser. No. 619,771
Int. Cl. F21p *1/02*
U.S. Cl. 240—10 **4 Claims**



An internally illuminated artificial tree has a trunk section capable of receiving and transmitting light rays emitted from an illumination source associated with the supporting base for the tree, and a plurality of branch elements removably secured to the trunk of the tree each

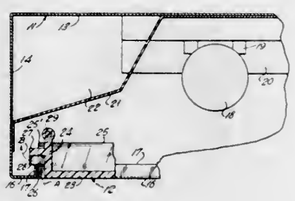
including a stem member constructed of a transparent light transmitting material. The inner end of each stem member is optically associated with said light transmitting trunk such that the inner end surface thereof can receive a portion of the light rays being transmitted internally along said trunk for transmission to and diffusion at the outer end of said stem member so as to cause said outer end to glow.

3,465,140
DENTAL SPOTLIGHT
Lawrence Goldsmith, New York, N.Y. (1043 Admont Ave., Franklin Square, N.Y. 11010)
Filed Dec. 12, 1967, Ser. No. 689,883
Int. Cl. A61b *1/06*
U.S. Cl. 240—41.15 **10 Claims**



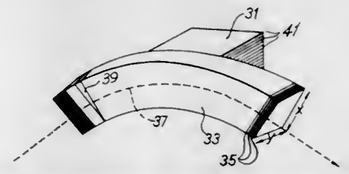
A dental spotlight assembly consisting of a hollow convergent main supporting shell with a lamp socket mounted on its apex. A high intensity, linear-filament lamp is mounted in the socket, axially projecting from the apex. A divergent reflector is adjustably secured axially to the supporting shell by means of an apertured clamping collar. The reflector has a lamp housing provided with diametrically opposite longitudinal light-transmission slots. A rear end plate is secured to and spaced from the rear end rim of the supporting shell. A control rheostat is centrally mounted on the end plate, connected in series with the lamp socket and ventilated by the provision of the space between the end plate and the rear rim of the supporting shell.

3,465,141
LIGHTING FIXTURE HAVING MEANS FOR VENTILATION
Henry C. Schiffer, Chesire, Conn., assignor to The Miller Company, Meriden, Conn., a corporation of Connecticut
Filed Mar. 17, 1966, Ser. No. 535,220
Int. Cl. F21v *29/00;* **F21s** *3/02*
U.S. Cl. 240—47 **1 Claim**



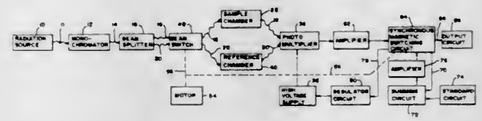
A lighting fixture has a housing having a top wall from which side and end walls extend downwardly. About the lower periphery of the side and end walls a rim extends substantially perpendicularly inwardly. An upwardly extending ledge extends along the inner edge of at least one pair of opposing rim portions. A light transmitting closure member has a planar bottom wall from which side walls extend upwardly from at least two opposing edges. The side walls of the closure member are parallel to and spaced inwardly from the upwardly extending ledges of the housing and at the upper edge of the closure walls a rib extends outwardly such that it overhangs and is supported by the upwardly extending ledges. Each rib has spacers for centering the closure member and for spacing the rib from the upwardly extending ledge to provide an air passageway.

3,465,142
MASS SPECTROMETER MAGNETIC ANALYZER HAVING POLE PIECES COMPOSED OF SPACED PARAMAGNETIC LAMINAE
Thomas Oliver Merren, Mawdesley, England, assignor to Associated Electrical Industries Limited, London, England, a British company
Filed Aug. 10, 1966, Ser. No. 571,463
Int. Cl. H01j *39/36;* **B01d** *59/48*
U.S. Cl. 250—41.9 **9 Claims**



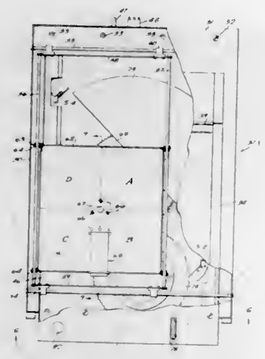
In a mass spectrometer apparatus including a magnetic analyzer establishing a path of ion travel from an ion source to a detector the magnetic pole pieces are composed of a plurality of spaced paramagnetic laminae having insulating elements therebetween. The laminae are stacked along an axis paalleling the beam path with the laminae positioned transversely with respect to the beam path.

3,465,143
SWITCHING SYSTEM FOR DETECTING A PLURALITY OF PHYSICAL QUANTITIES IN A CONSECUTIVE TIMING SEQUENCE
Douglas D. Doonan, Rochester, N.Y., assignor to Bausch & Lomb Incorporated, Rochester, N.Y., a corporation of New York
Filed Dec. 9, 1965, Ser. No. 512,672
Int. Cl. G01j *3/08*
U.S. Cl. 250—43.5 **7 Claims**



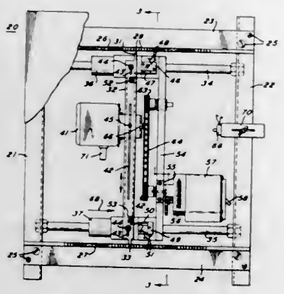
A switching system is disclosed for systems detecting a plurality of physical quantities in a consecutive timing sequence. The physical quantities are applied to a detecting device by a motor drive switching device. The switching system includes a plurality of magnetic operated switches mounted adjacent to magnetic means for actuation thereof. The detecting device is coupled to the switches. A magnetic shield having a magnetic flux transmitting window is coupled to the motor for movement between the magnetic means and the switches to synchronously activate the switches in accord with the timing sequence in which the physical quantities are applied to the detector.

3,465,144
SERIAL X-RAY CASSETTE POSITIONER
Robert M. Kies, Milwaukee, and Louis C. Mente, West Allis, Wis., assignors to General Electric Company, a corporation of New York
Filed July 19, 1967, Ser. No. 654,621
Int. Cl. G01n 23/04
U.S. Cl. 250—66 4 Claims



A unitary serial radiographic device is adapted to be carried and operated in the bucky tray which usually carries only a single radiographic cassette in an X-ray table. The bucky tray and the device may be transferred manually or automatically from parked position in the X-ray table to a position for intercepting and recording a sequence of X-ray images that are normally viewed on a television monitor by way of an image amplifier that is located in the table body.

3,465,145
SCANNING AND RECORDING MEANS FOR DETECTING RADIOACTIVE DISTRIBUTIONS
Harry Leiter, Lower Merion Township, Montgomery County, Pa. (107 Henley Road, Philadelphia, Pa. 19151)
Filed Apr. 6, 1965, Ser. No. 445,959
Int. Cl. G01t 1/20; H04n 7/00; G01d 9/00
U.S. Cl. 250—71.5 20 Claims



1. Apparatus for detecting and storing signals generated by radioactive material substantially statically disposed within a predetermined area to be scanned, comprising in combination:

(a) a mechanical scanner including a carrier and means for shifting said carrier across said predetermined area to be scanned first in one direction and then in the opposite direction to line scan said area in uniform scanning intervals, and means for unidirectionally stepping said carrier in constant increments in the time interval between successive line scans transversely to the path of line scanning movement to thereby successively scan through said predetermined area along uniformly spaced parallel lines,

(b) a radiation detector secured to and shiftable with sadi carrier which detector generates sequential data signals in accordance with the concentration of radioactive material at the sequentially scanned points being inspected,

(c) signal storage means operatively coupled to said radiation detector effective to recoverably store in received sequence the data signals received from said detector,

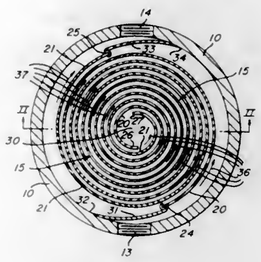
(d) control signal generating means, and

(e) scanner actuated signal transmission means effective when actuated to transmit signals from said control signal generating means to said signal storage means to recoverably store same in the received sequence, said scanner actuating said signal transmission means for control signal transmission during only a part of each composite interval which includes one scanning and one stepping interval successively occurring.

3,465,146
FLAW DETECTION METHOD USING A DYE PENETRANT ADDITIVE
Orlando G. Molina, Westminster, Calif., assignor to North American Rockwell Corporation
No Drawing. Filed May 12, 1967, Ser. No. 637,926
Int. Cl. H01j 1/62
U.S. Cl. 250—71 8 Claims

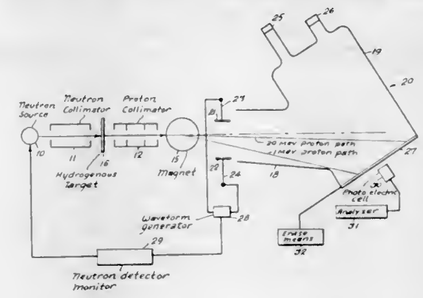
An agent is disclosed for thickening liquid dye penetrants without change in viscosity thereof, so that the thickened mixture can be applied to vertical and overhead surfaces without dripping or runoff. The preferred agent is silicon dioxide in powdered form to act as a multitude of minute sponges.

3,465,147
GAS FLOW NUCLEAR DETECTOR CELL UTILIZING THIN SCINTILLATION MATERIAL IN A SPIRAL ARRANGEMENT
Bertrand J.-R. Banville, Dorval, Quebec, Canada, assignor to Atomic Energy of Canada Limited, Ottawa, Ontario, Canada, a corporation of Canada
Filed May 3, 1965, Ser. No. 452,466
Int. Cl. G01t 1/20
U.S. Cl. 250—71.5 3 Claims



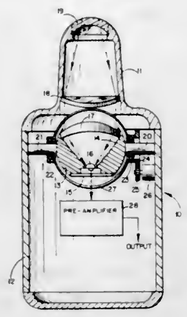
A highly sensitive detector cell that can be used for coincidence nuclear radiation detection in fluid media; the detector core disposed in a casing is in the form of two spirally wound juxtaposed strips of light conductive scintillating material defining a double spiral flow path, with the edges of both strips being light-coupled to photomultiplier tubes via and windows.

3,465,148
METHOD AND MEANS FOR OBTAINING STEADY STATE OR MICROSECOND ENERGY SPECTRA IN A NEUTRON SPECTROMETER
Thomas R. Jeter, Bel Air, Md., and John D. Baldeschwieler, Portola Valley, Calif., assignors to the United States of America as represented by the Secretary of the Army
Filed Aug. 10, 1967, Ser. No. 660,886
Int. Cl. G01t 3/00
U.S. Cl. 250—83.1 7 Claims



Neutron microsecond spectrometer for and method of measurement of neutron energy from radioactive sources having time durations of several microseconds to infinite duration and wherein a unique momentum analyzer and data storage system is employed to measure the energy of the recoil proton resulting from the radiation incident on a hydrogenous target.

3,465,149
THERMAL DETECTION SYSTEM
Edward F. Flint, Fullerton, Calif., assignor to North American Rockwell Corporation
Filed July 11, 1966, Ser. No. 565,351
Int. Cl. G01t 1/16
U.S. Cl. 250—83.3 8 Claims



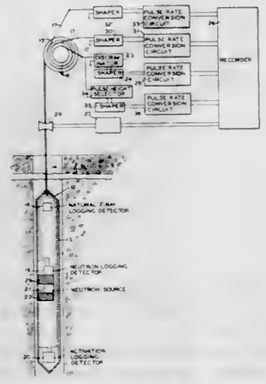
A thermal detection system comprising an infrared detector which is enclosed in a liquid tight housing having an infrared radiation transparent window oriented to permit incoming radiation to be focused on the detector assembly. Radiation from a reference blackbody and incoming radiation is alternately measured by the detector assembly.

3,465,150
METHOD OF ALIGNING SEMICONDUCTORS
Frances Hugle, 3818 Thrush Court, Santa Clara, Calif. 95051; assignor to Frances Hugle, trustee of Frances Hugle Trust
Filed June 15, 1967, Ser. No. 646,371
Int. Cl. G01t 1/16
U.S. Cl. 250—83.3 8 Claims



The method of aligning a semiconductor device for face bonding to a substrate. The device is illuminated with infra-red light passing through it, which reveals a pattern of electrical connections thereon and on a substrate for viewing by microscope means. Apparatus for accomplishing the method includes a source of infra-red energy, a filter to pass only infra-red light, optical elements for directing the infra-red light to the device and substrate, and to view an image of the patterns of connections. An infra-red to visible light converter is typically employed at the end of the infra-red optical path, as are mechanical means for aligning the patterns.

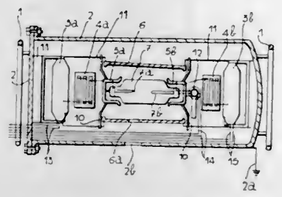
3,465,151
METHOD AND APPARATUS FOR OXYGEN ACTIVATION WELL LOGGING
Arthur H. Youmans, Tulsa, Okla., assignor, by mesne assignments, to Dresser Industries, Inc., Dallas, Tex., a corporation of Delaware
Continuation of application Ser. No. 579,829, Apr. 23, 1956. This application Oct. 24, 1967, Ser. No. 677,781
Int. Cl. G01t 1/16
U.S. Cl. 250—83.3 13 Claims



This method and apparatus for making an oxygen activation log utilize a source 14 mev. neutrons to irradiate earth formations in a borehole. The gamma rays emitted by the irradiated earth formations are detected by a scintilation counter which is set to selectively measure

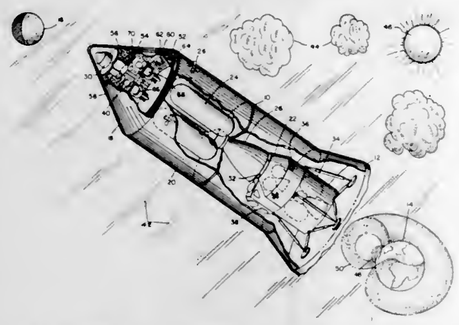
the gamma rays emitted with energies between 1.5 mev. and 3 mev. The gamma rays with energies within this range have been found to permit the making of an oxygen activation log by discriminating statistically from gamma rays produced by other elements and minerals in the borehole.

3,465,152
COMPACT AND LIGHTWEIGHT RADIOGRAPHY APPARATUS
Joseph H. d'Adler-Racz, Tilff, Belgium, assignor to Usines Balteau Societe Anonyme, Liege, Belgium
Filed Oct. 3, 1966, Ser. No. 583,827
Claims priority, application France, Oct. 15, 1965, 35,089
Int. Cl. H01j *35/16*
U.S. Cl. 250—90 **5 Claims**



In a radiography apparatus comprising an X-ray tube supplied with a rectified high voltage there are provided semi-conductor rectifiers and the supplying circuit for said X-ray tube and also capacitors which are constituted by a metallic protective shield surrounding said X-ray tube, by at least two metallic supports supporting said X-ray tube and by an insulating medium filling an enclosure containing said X-ray tube and the foregoing elements.

3,465,153
RADIATION PROTECTION SYSTEM AND APPARATUS
Willard F. Libby, Los Angeles, Calif., assignor to McDonnell Douglas Corporation, Santa Monica, Calif., a corporation of Maryland
Filed Aug. 14, 1964, Ser. No. 389,734
Int. Cl. G21f *1/12, 3/02, 7/00*
U.S. Cl. 250—108 **16 Claims**



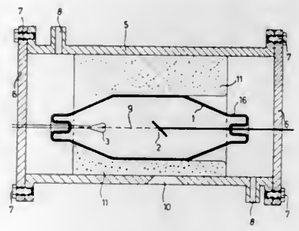
1. A method for protecting an object and predetermined parts of the object from excessive exposure to radiation, which comprises:

housing and regularly shielding the object in a structure including structural elements which are normally integral with said structure and can be used as shielding;

determining any development of excessive environmental radiation intensity from a radiation sensing device for indicating development of excessive radiation intensity in said structure; and

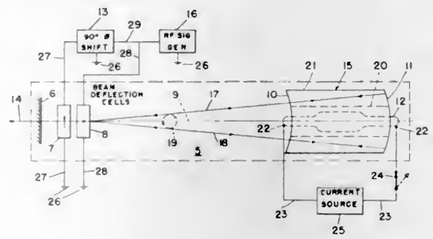
removing selected ones of said elements from said structure on such determination and forming in accordance with the indication of said sensing device, a matrix wherein the selected ones of said elements are positioned in proximity to at least the predetermined parts of the object in an adequate amount and thickness to protect the same from deleterious effects caused by excessive exposure to radiation.

3,465,154
HIGH-VOLTAGE APPARATUS HAVING AN INSULATION OF FOAMED MATERIAL
Werner Berends, Hamburg, Germany, assignor, by mesne assignments, to U.S. Philips Corporation, New York, N.Y., a corporation of Delaware
Filed Mar. 9, 1967, Ser. No. 626,911
Claims priority, application Germany, Mar. 23, 1966, M 68,869
Int. Cl. G21f *1/00*
U.S. Cl. 250—108 **12 Claims**



A high-voltage electrical apparatus particularly an X-ray apparatus having an electrical screen. The parts of the apparatus which are at a high potential relative to the screen are embedded in a foamed insulating material.

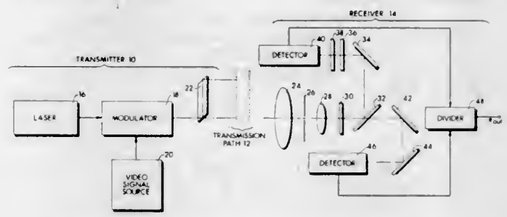
3,465,155
LASER OUTPUT CONTROL SYSTEM
Bill D. Cook, Lansing, Mich., assignor to the United States of America as represented by the Secretary of the Army
Filed Sept. 16, 1965, Ser. No. 487,935
Int. Cl. H04b *9/00*
U.S. Cl. 250—199 **1 Claim**



A laser system is provided which produces laser pulses of relatively long duration which pulses may be utilized to transmit high frequency intelligence information or the like. Ultrasonic cells at right angles to each other are placed within the laser cavity and receive dual, quadrature, sinusoidal electrical signals. Laser energy, derived from a photon emitter which is concentric with, and internal to, lasing material of cylindrical cross-section, reflects from a mirror and is both horizontally and vertically deflected by the ultrasonic cells. A 90° phase shifter in combination therewith causes the laser energy to move in a circle within the cavity. Upon reentering the laser material, this

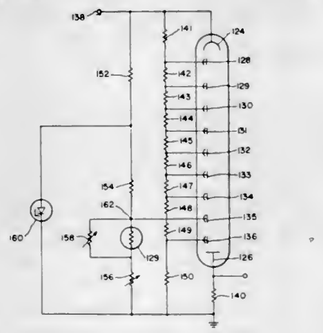
light beam moving in a circle overpopulates successive portions of the laser material thereby continuously changing the gradient of the refractive index within the laser cavity and thus producing relatively long laser beam emission.

3,465,156
LASER COMMUNICATIONS SYSTEM EMPLOYING NARROW BAND NOISE CANCELLATION
Charles J. Peters, Wayland, Mass., assignor to Sylvania Electric Products, Inc., a corporation of Delaware
Filed June 4, 1965, Ser. No. 461,347
Int. Cl. H04b *9/00*
U.S. Cl. 250—199 **5 Claims**



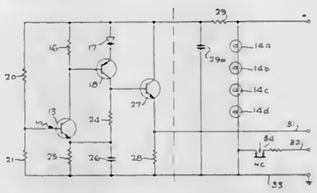
1. A laser communications system operative to cancel atmospheric and laser noise which amplitude modulates the light beam, said system comprising, a laser, a polarization light modulator operative to impress video signals onto the laser beam, means for splitting the modulated beam into two converging paths, means for receiving said modulated light, means for splitting said received light into first and second portions, first detector means operative in response to said first portion to produce a first signal containing said video signals amplitude modulated by noise, second detector means operative in response to said second portion to produce a second signal containing only noise, and a divider for dividing said first and second signals to produce an output signal containing only said video signals.

3,465,157
TEMPERATURE COMPENSATING CIRCUITS FOR PHOTOELECTRIC DEVICES
Alexander E. Martens, Greece, N.Y., assignor to Bausch & Lomb Incorporated, Rochester, N.Y., a corporation of New York
Continuation-in-part of application Ser. No. 643,661, June 5, 1967. This application Oct. 19, 1967, Ser. No. 676,452
Int. Cl. H01j *39/12*
U.S. Cl. 250—207 **14 Claims**



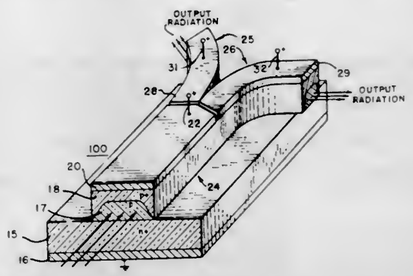
A temperature compensating circuit, including a temperature sensitive element mounted near the electrodes of a photoelectric device to sense its operating temperature, is coupled to an electrode of the device to stabilize its operation. The temperature compensating circuit includes two variable resistors for matching the temperature compensating action of the circuit to the characteristics of the connected photoelectric device.

3,465,158
FORWARD BIASED PHOTOTRANSISTOR WITH EXPOSED BASE
Roy P. Foerster, Thousand Oaks, Calif, assignor to The Bunker-Ramo Corporation, Canoga Park, Calif., a corporation of Delaware
Filed Nov. 14, 1966, Ser. No. 594,064
Int. Cl. H01j *39/12*
U.S. Cl. 250—211 **6 Claims**



A "light pen" useful in combination with a cathode ray tube display device for enabling an operator to identify a particular displayed symbol by responding to the light produced by the beam forming that symbol. The light pen utilizes a phototransistor positioned therein so that the light to be detected is incident on the transistor base. In order for the phototransistor to have a sufficiently fast response, it is electrically forward biased to a moderate current level. A phototransistor is connected in a circuit which has a high AC gain and a low DC gain. As a consequence, the phototransistor is able to distinguish between a transient light signal (as would be caused by detection of the beam light) and ambient conditions.

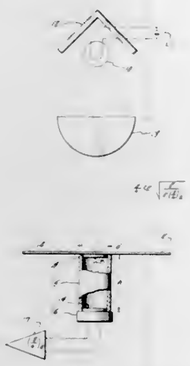
3,465,159
LIGHT AMPLIFYING DEVICE
Frank Stern, Pleasantville, N.Y., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Army
Filed June 27, 1966, Ser. No. 561,677
Int. Cl. H01j *31/50*
U.S. Cl. 250—213 **11 Claims**



A light guiding structure for interconnecting a light source and a light receiver located on a substrate by means of a light channel located on said substrate for providing light gain along the path of said structure. The device includes a light guiding member associated with the substrate and includes a forward biased electroluminescent diode which may include a substrate of one conductivity type material, a layer of semiconductor material of the opposite conductivity type and, in some instances, an intermediate layer of material of one of said conductivity types which is doped much less heavily

than the other layer of material of the same conductivity type. The light guiding member may be designed to have any contour and any number of inputs and outputs.

3,465,160
PERFORATED TAPE READER HAVING LIGHT ABSORBENT TUBE BETWEEN TAPE AND LIGHT SENSOR
Narsingh Deo, Arcadia, Calif., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan
Filed May 16, 1966, Ser. No. 550,543
Int. Cl. G01n *21/30*
U.S. Cl. 250—219 **4 Claims**

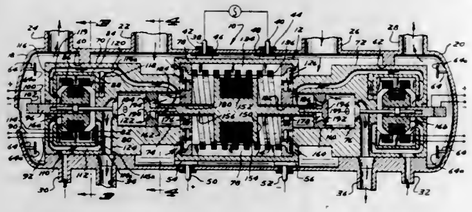


A tube having a black, light absorbent, cylindrical surface that encloses a light transmitting medium is disposed between the tape and the photoelectric cell in a perforated tape reader. The ratio of the diameter of the tube to the height of the tube is smaller than

$$2\sqrt{\frac{2}{K\left(\frac{S}{N}\right)_a}}$$

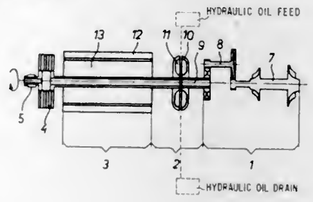
where K is an empirically determined property of the tape indicative of its transmissivity and diffusivity and $(S/N)_a$ is the minimum signal-to-noise ratio of light energy that the photoelectric cell and its amplifier are able to accommodate. Discs made of a material capable of transmitting light are fitted within the tube in spaced apart relationship so as to be flush with its ends.

3,465,161
RECIPROCATING INTERNAL COMBUSTION ELECTRIC GENERATOR
Harold C. Cutkosky, 1227 Avenue D, Billings, Mont. 59102
Filed June 30, 1967, Ser. No. 650,424
Int. Cl. H02p *9/04*
U.S. Cl. 290—1 **27 Claims**



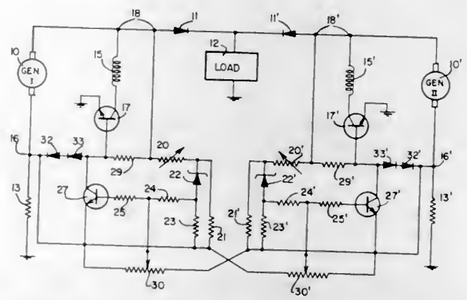
A free piston internal combustion engine and electric generator consisting of a housing having spaced slide bearings upon which an engine frame assembly is mounted for reciprocal movement. The engine frame includes longitudinally spaced coaxial cylinders at each end and a generator armature at its center. The pistons are rigidly secured to each end of a generator field assembly. Poppet type intake and exhaust valves are located within the piston and cylinder head respectively. The exhaust valves are operated by an electric linear actuator (solenoid). Armature windings are spirally oriented to reduce current ripple.

3,465,162
AUXILIARY GAS TURBINE GENERATOR FOR AIRCRAFT
Ulrich Oprecht, Wittenbach, St. Gall, Switzerland, assignor to Adolph Saurer Ltd., Arbon, Switzerland, a corporation of Switzerland
Filed Sept. 12, 1966, Ser. No. 578,538
Claims priority, application Switzerland, Oct. 25, 1965, 14,668/65
Int. Cl. F02c *7/02*
U.S. Cl. 290—4 **5 Claims**



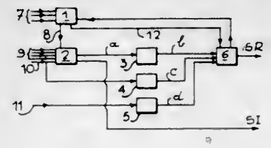
An installation for driving a generator and for starting an aircraft jet engine comprising a small auxiliary gas turbine, an A.C. or a D.C. generator, and a shaft of the aircraft engine, all axially and concentrically aligned, with a hydrodynamic coupling interconnecting the turbine and generator, and an electromagnetic clutch interconnecting the generator and the shaft of the aircraft engine. Means for filling and draining the coupling is provided. With the coupling filled and the electromagnetic clutch disengaged, the gas turbine is able to drive the generator, and upon the engagement of the clutch, the gas turbine is connected to the aircraft engine shaft for starting the engine. With the coupling drained, the driving connection between the gas turbine and the generator is rendered inoperative and, by engaging the clutch, the generator is driven by the aircraft engine. If a D.C. generator is used, it may be run as a motor to start the gas turbine.

3,465,163
VOLTAGE CURRENT REGULATOR
William H. White, Jr., Wheaton, Ill., assignor to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois
Filed July 29, 1966, Ser. No. 568,846
Int. Cl. H02j *1/10*
U.S. Cl. 307—57 **4 Claims**



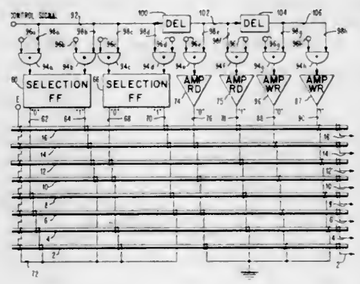
Regulator system having control circuits for a pair of direct current generators for controlling the output voltage thereof and including balancing system operating through the control circuits so that the two generators share the load substantially equally. The load current of each generator is applied through a ballast resistor and a pair of potentiometers are connected between the two ballast resistors and each applies a voltage to one control circuit for adjusting the operation thereof so that the generators are controlled to share the load.

3,465,164
LOGIC ADAPTIVE PROCESS AND SYSTEM FOR THE AUTOMATIC CONTROL OF THE PRODUCTION OF POWER IN INTERCONNECTED ELECTRIC NETWORKS
Michel Joseph Couvreur, 2 Rue Hicquet, Auvelais, Belgium
Filed Nov. 28, 1966, Ser. No. 597,409
Claims priority, application Belgium, Mar. 29, 1966, 678,622
Int. Cl. H02j *1/10, 3/00*
U.S. Cl. 307—57 **23 Claims**



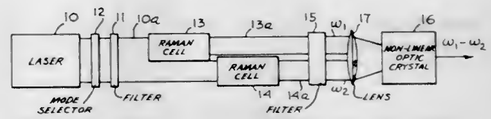
In a system for automatically controlling the production of power in interconnected electric networks operating in synchronism, logic means are provided such that the control signal is effective only in specified conditions and within prescribed limits in order to reduce the power deviation in a variable manner according to the actual working conditions in the interconnected networks.

3,465,165
MAGNETIC SWITCH
Richard Norman Hill, Philadelphia, and William John Bartik, Jenkintown, Pa., assignors to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed Nov. 18, 1963, Ser. No 324,365
Int. Cl. H03k *17/80*
U.S. Cl. 307—88 **6 Claims**



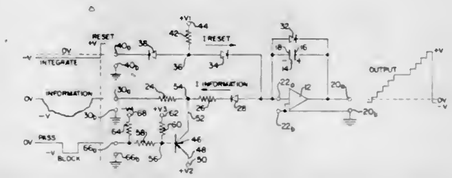
This invention relates to a selection circuit whereby a group of selection flip-flops, which are less than the number required to completely select and switch a core are employed to partially select a desired core and to provide the bias to all undesired cores. In this manner, should the outputs of the selection flip-flops vary, the DC bias will also vary maintaining the desired relationship between the bias and selection currents. An amplifier is then provided to complete the selection and switching of the desired core.

3,465,166
FAR INFRA-RED COHERENT LIGHT GENERATOR
Amnon Yariv, Altadena, Fred M. Johnson, Pasadena, and Mostafa A. El Sayed, Los Angeles, Calif., assignors, by mesne assignments, to Xerox Corporation, a corporation of New York
Filed Feb. 1, 1966, Ser. No. 524,144
Int. Cl. H02m *5/16*
U.S. Cl. 307—88.3 **11 Claims**



An infra-red coherent light generator comprising a laser light source, a pair of Raman cell chambers receiving the light from such source and generating two light beams whose frequency difference is the desired infra-red frequency, and a non-linear optic crystal which mixes the two light beams to produce the desired infra-red light beam.

3,465,167
INTEGRATING CIRCUITS WITH GATING AND RESETTING PROVISIONS
Gerald B. Hollins, Dayton Ohio, assignor to The National Cash Register Company, Dayton, Ohio, a corporation of Maryland
Filed July 14, 1966, Ser. No. 565,301
Int. Cl. G06g *7/12;* **H03k** *17/00, 3/00*
U.S. Cl. 307—229 **9 Claims**

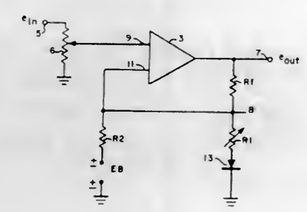


An integrating circuit that includes an amplifier with a feedback capacitor coupled between its input and output terminals is provided with a gating transistor that is coupled in shunt with the input impedance path of the amplifier so as to control the application of input signals to the amplifier, and also with means to reset the feedback capacitor which includes a current steering circuit.

3,465,168
NONLINEAR FUNCTION GENERATOR
Gabriel J. Luhowy, Lima, and Richard H. Moehlmann, Rochester, N.Y., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Army
Filed July 11, 1966, Ser. No. 564,436
Int. Cl. G06g *7/12*
U.S. Cl. 307—230 **3 Claims**

The generator comprises a negative feedback amplifier including signal and feedback inputs and an output. A high resistance is connected between the output and feedback input to form a feedback path. A nonlinear network shunts the feedback path and the feedback factor of the

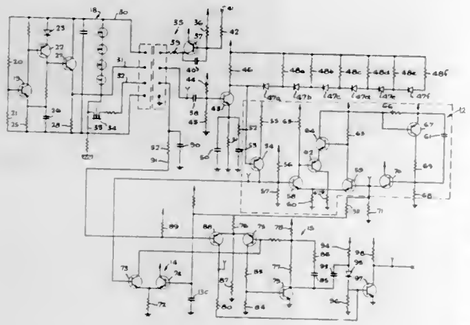
amplifier is made large. With this arrangement the transfer characteristic of the circuit will be substantially the same shape as the voltage vs. current characteristic of the nonlinear network.



3,465,169
CIRCUIT APPARATUS FOR DETECTING RECURRING INPUT SIGNALS WITHIN A WIDE AMPLITUDE RANGE

Roy P. Foerster, Thousand Oaks, Calif., assignor to The Bunker-Ramo Corporation, Canoga Park, Calif., a corporation of Delaware

Filed Nov. 14, 1966, Ser. No. 594,105
Int. Cl. H03k *5/20*
U.S. Cl. 307—235 **5 Claims**



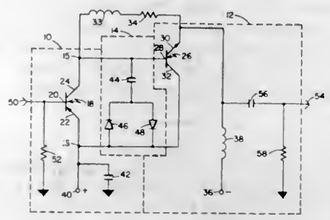
Circuit apparatus for detecting recurring input signals within a wide amplitude range out of a noisy background. The circuit apparatus employs a logarithmic amplifier to compress the amplitude range of the input signals. A peak storage circuit stores the peak occurring in the output of the logarithmic amplifier. The stored peak is permitted to decay and is subsequently used as a variable threshold with which the following signal peak is compared. An output pulse circuit is triggered only when a new signal peak exceeds the established variable threshold.

3,465,170
LIMITER CIRCUIT

Lawrence R. Lavallee, Stow, Mass., assignor to Sylvania Electric Products Inc., a corporation of Delaware

Filed May 11, 1966, Ser. No. 549,286
Int. Cl. H03k *5/08*
U.S. Cl. 307—237 **8 Claims**

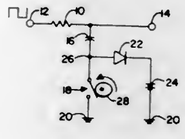
Limiter circuit including a complementary pair of transistors arranged to provide an amplifier and a limiting network having one terminal connected to the collector of one transistor and the base of the other transistor and a second terminal connected to the emitter of the one transistor and the collector of the other transistor. The limiting network includes a capacitor having one end connected to the one terminal and a pair of oppositely poled diodes connected in parallel between the other end of the capacitor and the second terminal.



3,465,171
SIGNAL LIMITING APPARATUS

Adrian J. Moses, Rush City, Minn., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware

Filed May 11, 1967, Ser. No. 637,827
Int. Cl. H03k *5/08, 17/00*
U.S. Cl. 307—237 **8 Claims**

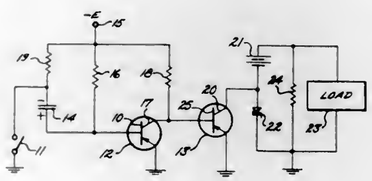


A low level limiting circuit utilizing a capacitor and switch connected across a signal source to be limited comprising in addition a unidirectional current control means such as a diode connected from a junction between the switch and the capacitor to a voltage reference level which sets the peak voltage of the input signal which is applied to the output. A pair of these units can be combined if switched at opposite polarities of the input signals so as to provide a unit which will be operable for either phase input signal.

3,465,172
TRANSIENT SIMULATOR

Peter A. Ragusa, San Jose, Calif., assignor to the United States of America as represented by the Secretary of the Air Force

Filed Dec. 7, 1965, Ser. No. 520,541
Int. Cl. H03k *1/14*
U.S. Cl. 307—265 **3 Claims**



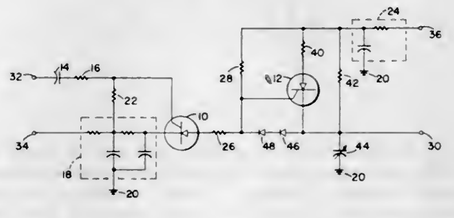
A system for controlling load voltages having a shorting transistor that shorts out a bias, the shorting transistor being controlled by a control transistor atcivated by a switch that controls the voltage at the base of the control transistor through a resistor-capacitor combination for determining its conducting state, the timing of the conducting state being controlled by the values of the resistor-capacitor combination.

3,465,173
ELECTRONIC SHUTTER EMPLOYING TWO NORMALLY NONCONDUCTING SCR's IN WHICH SECOND SCR IS SELF-EXTINGUISHING BY RC TIMER AND IS TRIGGERED ON WHEN FIRST SCR TURNS OFF

Henry Chin, Burlington, and Joseph Salvato, Medford, Mass., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Army

Filed Jan. 4, 1967, Ser. No. 607,611
Int. Cl. H03k *17/28*
U.S. Cl. 307—293 **4 Claims**

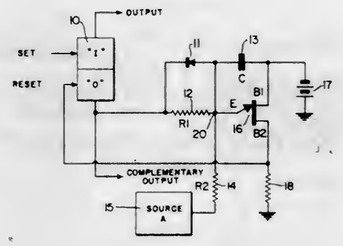
An electronic shutter for photoelectric devices wherein the photocathode voltage of an image orthicon is switched on rapidly, held on for a controlled and variable time duration, and then switched off rapidly. The voltage to a variable capacitive load is controlled by two silicon controlled rectifiers and associated biasing circuitry. The first rectifier, responsive to an input voltage, discharges the load. The second rectifier, connected to a source voltage and the load, is responsive to the deactivation of the first rectifier to activate and reset the circuit. When the load potential restores to a predetermined value the second rectifier deactivates and the circuit is reset.



3,465,174
VARIABLE SINGLE-SHOT MULTIVIBRATOR

Daniel J. Soltz, Elkins Park, Pa., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware

Filed Mar. 13, 1967, Ser. No. 622,486
Int. Cl. H03k *3/26, 17/00, 5/00*
U.S. Cl. 307—274 **1 Claim**

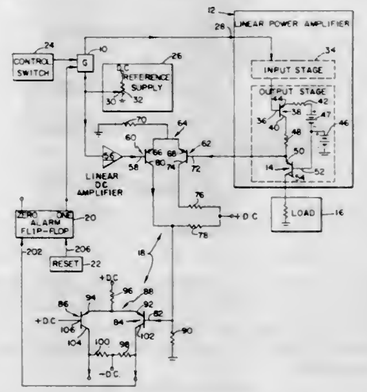


The circuit comprises a variable single-shot multivibrator which selectively produces a single output signal for an input signal and wherein the output signal has a selectively variable time duration which in one embodiment provides two time durations which, in turn, respectively represent a "one" and a "zero."

3,465,175
OVERLOAD PROTECTED TRANSISTOR AMPLIFIER

Jonel D. Sutton, Harvard, Mass., assignor to Digital Equipment Corporation, Maynard, Mass.

Filed Jan. 21, 1966, Ser. No. 522,280
Int. Cl. H03k *1/12*
U.S. Cl. 307—297 **11 Claims**

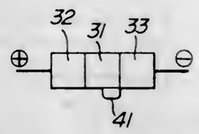


A temperature monitoring circuit compares the emitter-base voltage of a transistor delivering current to a load with a reference voltage related to the current input to the transistor. When the emitter-base voltage goes beyond the reference voltage, the monitoring circuit produces an alarm signal for turning off the transistor.

3,465,176
PRESSURE SENSITIVE BILATERAL NEGATIVE RESISTANCE DEVICE

Masaru Tanaka, Toyonaka-shi, and Akio Yamashita, Ikeda-shi, Japan, assignors to Matsushita Electric Industrial Co., Ltd., Osaka, Japan, a corporation of Japan

Filed Dec. 1, 1966, Ser. No. 598,297
Claims priority, application Japan, Dec. 10, 1965, 40/76,823
Int. Cl. H03k *1/00, 19/08, 3/26*
U.S. Cl. 307—308 **5 Claims**



A pressure sensitive bilateral negative resistance device is disclosed. The device has a body at least part of which is composed of a semiconductive material or an insulating material which have been doped with a deep-level impurity. At least two electrical connections exhibiting the same type of conduction are provided to that part of the body which has been doped with a deep-level impurity.

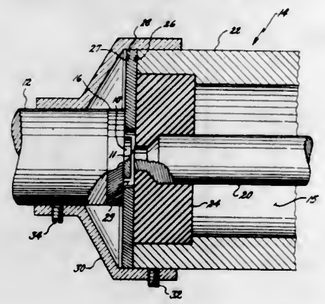
3,465,177
THIN FILM PIEZOELECTRIC TRANSDUCER

Donald K. Winslow, Palo Alto, Herbert J. Shaw, Stanford, and Calvin F. Quate, Los Altos Hills, Calif., assignors to the United States of America as represented by the Secretary of the Air Force

Filed Nov. 22, 1967, Ser. No. 685,209
Int. Cl. H01v *7/00*
U.S. Cl. 310—8 **3 Claims**

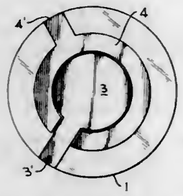
A piezoelectric thin film transducer evaporated on a first film which has been deposited on the face of an

optically polished rod, the diameter of the piezoelectric thin film transducer being smaller than the diameter of the first film. A second film is juxtapositioned to the first film and deposited upon an optically polished surface of a



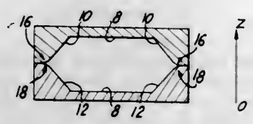
coaxial line having a conductor in the center thereof, the second film being thicker than the piezoelectric thin film transducer and having a hole in the center thereof greater in diameter than the diameter of the piezoelectric thin film transducer.

3,465,178
DRIVEN-BOUNDARY PIEZOELECTRIC CRYSTALS
Don R. Pardue, Rockville, Md., assignor to the United States of America as represented by the Secretary of the Army
Filed Sept. 13, 1966, Ser. No. 579,803
Int. Cl. H02k *49/00, 7/10;* **H02p** *15/00*
U.S. Cl. 310—9.7 **2 Claims**



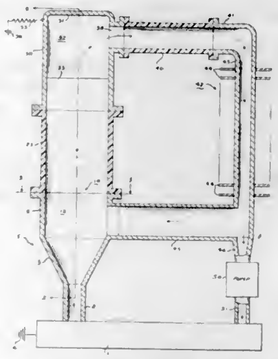
A supplementary electrode in addition to the usual exciting electrodes is placed on a piezoelectric crystal to drive the boundary of unexcited material. This, in effect, produces essentially a one dimensional motion throughout the crystal.

3,465,179
MAGNETOHYDRODYNAMIC ACCELERATOR OR CONVERTER DUCT FOR REDUCING THE DISADVANTAGES OF THE HALL EFFECT
Pierre Ricateau, Garches, France, assignor to Commissariat a l'Energie Atomique, Paris, France
Filed Mar. 23, 1967, Ser. No. 625,435
Claims priority, application France, Apr. 5, 1966, 56,562
Int. Cl. H02k *45/00;* **G21d** *7/02*
U.S. Cl. 310—11 **13 Claims**



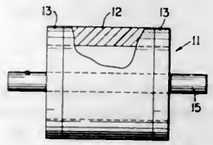
An MHD accelerator or converter duct for reducing the disadvantages arising from the Hall of effect in the vicinity of the duct walls and characterized in that the angle made by a line tangent to the transverse cross-section with the direction of the magnetic field is at least 30° over the greater part of the perimeter of the transverse cross-section.

3,465,180
TWO COMPONENT ELECTRO-FLUID-DYNAMIC POWER GENERATOR EMPLOYING CONTACT IONIZATION
Hans J. P. von Ohain, Dayton, Ohio, and Frank L. Wattendorf, Paris, France, assignors to the United States of America as represented by the Secretary of the Air Force
Filed May 15, 1967, Ser. No. 639,934
Int. Cl. H02k *45/00;* **G21d** *7/02*
U.S. Cl. 310—11 **6 Claims**



An electrical power generation apparatus in which an alkali metal vapor under high pressure is passed between closely spaced tungsten sheets whereby contact phenomena, the tungsten withdraws electrons from the alkali metal vapor producing positive ions or charged particles in the vapor stream. The vapor is passed through a series of supersonic nozzles where its pressure is reduced and its velocity increased. After passage through the expansion nozzles, the vapor is ultimately mixed with a relatively cool gas of low molecular weight (i.e. hydrogen). This causes the metal vapor to condense in tiny droplets enclosing the respective ions and serving as a very efficient means for transferring kinetic energy from the vapor stream to the ions. The vapor is then passed to a collector chamber electrically insulated from the other duct sections and serving to collect the electrical ion charges and supply electric current to an external load circuit. The remaining metal vapor in the cooling gas is discharged from the collector chamber and passed through a condenser where the metal vapor is condensed to a liquid and separated from the low molecular weight gas and each are returned for recirculation in the system.

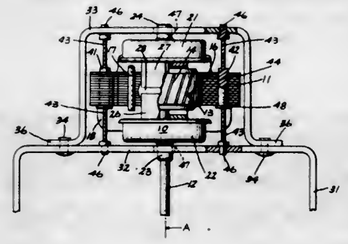
3,465,181
ROTOR FOR FRACTIONAL HORSEPOWER TORQUE MOTOR
Leo K. Colby and Burton F. Kirby, Rochester, N.Y., assignors to Fasco Industries, Inc., Rochester, N.Y., a corporation of New York
Filed June 8, 1966, Ser. No. 556,106
Int. Cl. H02k *15/12*
U.S. Cl. 310—44 **3 Claims**



The rotor comprises a hollow, cylindrical, core sintered from a blend of magnetic and non-magnetic particles, and

a pair of sintered copper end rings secured to opposite ends of the core coaxially thereof to conduct current in a sheet across opposite ends of the rotor, thereby to eliminate cogging. The quantity of magnetic particles in the core exceeds that of the non-magnetic particles. A sample core blend is 75% iron particles and 25% of copper particles. The peripheral surface of the core may also be coated with a layer of copper, as by sintering or plating.

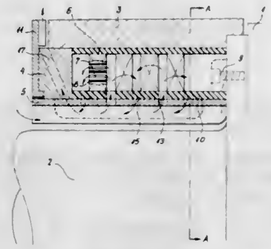
3,465,182
MOTOR VIBRATION SUPPRESSION MOUNTING SYSTEM
Ralph E. Church, Fort Wayne, Ind., and Stanley L. Lindt, Morrison, Ill., assignors to General Electric Company, a corporation of New York
Filed Apr. 12, 1967, Ser. No. 630,420
Int. Cl. H02k *5/24*
U.S. Cl. 310—51 **8 Claims**



An electric motor vibration suppression mounting system especially effective in controlling transmission of forces produced by a forced frequency of 120 cycles per second during operation from supporting structure. An electric motor has elongated members formed with beam-like deflectable sections extending away from the associated stator end faces, with the free ends of the members being mounted to the supporting structure. The elongated members are formed relatively rigid in an axial direction while being slightly deflectable in radial and torsional directions, such that they tend to suppress the transmission of vibration-producing forces to the supporting structure during operation. These sections are so constructed that they permit an attainment of a resonant frequency no greater than 40 cycles per second during operation. In addition, the motor includes a projection which is closely spaced from the supporting structure such that it engages the structure under the sudden application of a preselected load to limit radial movement of the motor.

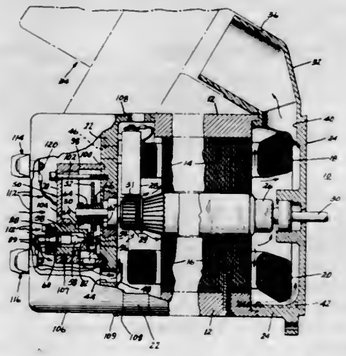
3,465,183
DEVICE FOR SUPPORTING AND DIRECT COOLING OF TURBOALTERNATOR ROTOR END WINDINGS
Mihály Wallenstein, Budapest, Hungary, assignor to Ganz Villamossagi Muvek, Budapest, Hungary
Filed Jan. 16, 1967, Ser. No. 609,608
Claims priority, application Hungary, Feb. 5, 1966, WA-154
Int. Cl. H02k *9/16*
U.S. Cl. 310—54 **8 Claims**

In an alternator comprising a rotor with end windings, the cooling is improved and at the same time the mechanical strength is increased. For this purpose a centering ring is provided at each end of the rotor for securing the end windings, and at least one centering tube and one endbell are fixed to the body of the rotor; at the same time insulating spacers are mounted on centering tubes, and inside the endbells. The end windings are positioned between the insulating spacer inside the endbell and the insulating spacer on the centering tube, so as to define chambers between adjacent end windings and said insulating spacers. The centering tube or tubes and the associated insulating spacer have channels formed in them



for the passage of coolant into and out of the chambers, the end windings being formed with transverse ducts for the passage of the coolant between the chambers.

3,465,184
FLUID COOLED ELECTRIC MOTOR HAVING A SPEED INDICATING ARRANGEMENT
Fredrick J. Armstrong and Robert A. Susdorf, Fort Wayne, Ind., assignors to General Electric Company, a corporation of New York
Filed Apr. 27, 1967, Ser. No. 634,183
Int. Cl. H02k *9/02*
U.S. Cl. 310—66 **5 Claims**

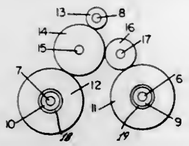


An electric motor having a speed indicating assembly for permitting the speed of the armature to be accurately controlled, and cooling means for transferring heat away from the motor components, including the speed indicating assembly. The speed indicating assembly includes among other parts an optical disc, light source and photocell for producing an output signal proportional to the rotational speed of the armature. The cooling means includes an airflow path through the motor, vents in one end shield and deflectors for directing air between the commutator and the speed indicating assembly, and a hollow tubular projection on the other end shield communicating with the airflow path and including a seat for a forcing or exhaust fan.

3,465,185
ELECTRIC MOTOR DRIVE FOR TWO WINDING SHAFTS
Karl Rollig, Binningen, Switzerland, assignor to Dr. C. Schachenmann & Co., Basel, Switzerland
Filed Feb. 3, 1966, Ser. No. 525,800
Int. Cl. H02k *7/116, 7/20*
U.S. Cl. 310—112 **5 Claims**

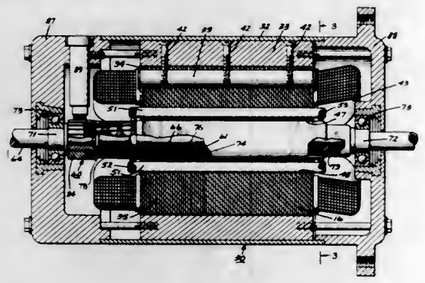
A drive arrangement for winding up a long flexible element on a pair of winding shafts which are respectively

adapted to be driven from a pair of main motors and in which a third motor is automatically connected over re-



duction gearing to the respective winding shaft when, due to the increase of the diameter of the roll wound thereon, the driving torque increases.

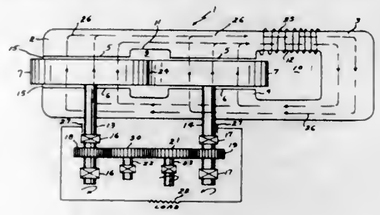
3,465,186
DYNAMOELECTRIC MACHINE AND METHODS OF MANUFACTURING ARMATURE ASSEMBLIES THEREFOR
Robert A. Susdorf and Fredrick J. Armstrong, Fort Wayne, Ind., assignors to General Electric Company, a corporation of New York
Filed Apr. 27, 1967, Ser. No. 634,182
Int. Cl. H02k *23/64*
U.S. Cl. 310—158 **17 Claims**



A high performance dynamoelectric machine having a low inertia armature assembly and capable of fast response and acceleration rates especially suitable for such applications as single-capstan tape transports and other peripheral computer equipment. The armature assembly has a number of coils, with side portions non-circular in cross-section, positioned on an insulating layer adhering to the outer surface of the armature core and shaft. The coils are covered with insulating material compatible to the layer for maintaining the coils in proper position in the assembly. A single short-circuited winding is carried by the magnetic poles of a stationary member to enhance the low inductance and linear acceleration of the machine. The method of manufacturing the armature assembly insures the intimate relationships of the armature assembly components.

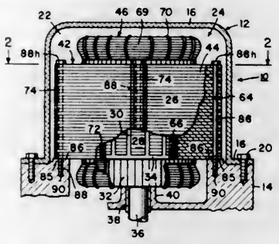
3,465,187
HOMOPOLAR GENERATOR HAVING PARALLEL POSITIONED FARADAY DISK STRUCTURES
Onezime Philip Breaux, 104 E. 3rd St., Dayton, Ohio 45402
Filed June 5, 1967, Ser. No. 644,456
Int. Cl. H02k *31/00*
U.S. Cl. 310—178 **12 Claims**

A homopolar generator having parallel positioned Faraday disks rotated in a magnetic field. The disks operate at a high speed and the current takeoff point on each periphery employs a circular confined column of mercury which moves at the same velocity as the peripheral speed of the disk. Each disk is also provided with a central opening of relatively small size, the periphery of which is employed as a low speed current takeoff point. The disks are presented edgewise toward one another by being mounted on the parallel shafts and are separated from each other along the shafts by thin layers of insulation material. Thus, the combined mass of each bank of disks is extremely



compact and the magnetic field which passes through the banks of disks is used most efficiently. The disks are electrically connected either by physical contact at their peripheries or by the use of conducting belts in order to complete the electrical circuit.

3,465,188
LAMINATED MOTOR STATOR WITH BONDING MATERIAL, THROUGH BOLTS, AND WELDS
Hollis D. Sisk, Chesterfield, Mo., assignor to Wagner Electric Corporation, Newark, N.J., a corporation of Delaware
Filed Aug. 11, 1967, Ser. No. 664,230
Int. Cl. H02k *1/18*
U.S. Cl. 310—217 **13 Claims**

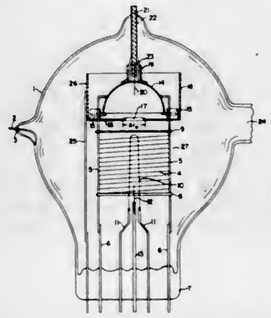


A laminated stator core having a plurality of axially extending mounting holes spaced from the periphery of the core for respectively receiving mounting bolts is provided with a plurality of axially extending welds extending across the periphery of the core and located respectively closely adjacent to the mounting holes to stiffen laminations and reduce the compressibility of the core in regions of the core adjacent to the mounting holes. The stator core is formed with a core projecttion radially outwardly of each mounting hole to provide adequate yoke cross-section and to provide an axial core corner along the periphery of the core for welding. An insulating bonding material, as thermosetting resin, may be used between laminations.

3,465,189
IONIZATION VACUUM GAUGE WITH X-RAY SHIELDING AND ION REFLECTING MEANS
Paul Aveling Redhead, Ottawa, Ontario, Canada, assignor to Canadian Patents and Development Limited, Ottawa, Ontario, Canada, a corporation of Canada
Filed Mar. 20, 1967, Ser. No. 624,430
Claims priority, application Canada, Oct. 13, 1966, 972,886
Int. Cl. H01j *7/16, 13/28, 17/24*
U.S. Cl. 313—7 **4 Claims**

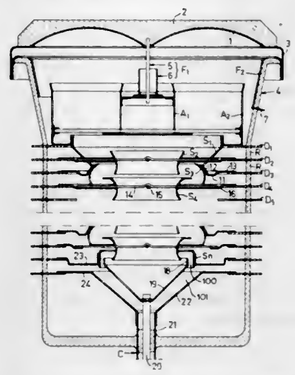
A vacuum gauge of the gas ionization variety which has an accelerating grid cage for accelerating electrons which subsequently bombard and ionize gas molecules

within a region substantially defined by the grid cage. The region is separated from a collecting electrode which collects the ionized molecules by a separation plate having a small hole therein through which the ionized molecules migrate. The plate assists in shielding the collecting electrode from the effects of soft X-rays produced by electron bombardment within the region. In proximity to the



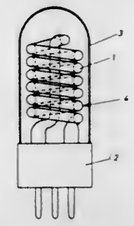
collecting electrode, a reflecting electrode is provided to focus the ionized molecules which migrate through the opening unto the collecting electrode. Because of the potential gradient between the reflecting and collecting electrodes, and their symmetrical relationship to the opening and the grid cage, desorbable ions are not focused on the collecting electrode.

3,465,190
ELECTRON MULTIPLIER TUBE WITH A TAPERED COLLECTOR AND INTERNAL INTERELECTRODE DECOUPLER
Michel Betoule, Pierre l'Hermite and René Petit, Brive, France, assignors, by mesne assignments, to U.S. Philips Corporation, New York, N.Y., a corporation of Delaware
Filed Jan. 15, 1968, Ser. No. 697,751
Claims priority, application France, Jan. 13, 1967, 91,005
Int. Cl. H01j *43/06*
U.S. Cl. 313—105 **5 Claims**



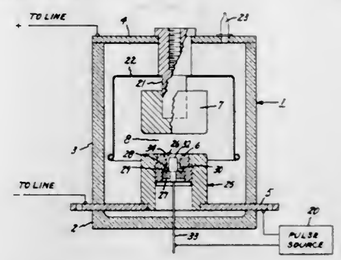
An electron multiplier which includes a dynode for the emission of secondary electrons and an anode for collecting the secondary electrons both of which form bodies of revolution about a common axis, the electrode nearest the axis of revolution having an electrically conductive extension which also forms a body of revolution about the aforesaid axis and which tapers and connects to an inner conductor of a coaxial conductor of an output lead while the outer conductor of the coaxial conductor is connected to a screen for limiting waves produced between the electrodes which also forms a body of revolution about the axis.

3,465,191
FLASH DISCHARGE TUBE FOR EXPOSING EMULSIONS SENSITIVE TO ARTIFICIAL LIGHT
Wolfgang Ludloff, Porz-Westhoven, Germany, assignor to Gesellschaft für Multiblilzgerate Dr.-Ing. D. A. Mannesmann m.b.H., Porz-Westhoven, Germany
Filed July 19, 1967, Ser. No. 654,456
Claims priority, application Germany, Sept. 23, 1966, G 47,961
Int. Cl. H01j *1/62, 63/04*
U.S. Cl. 313—109 **1 Claim**



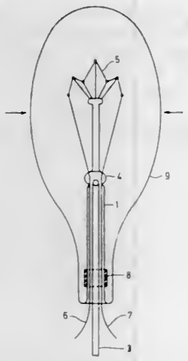
High-performance flash discharge tube with lower color temperature, less light loss, and decreased fluorescent coating wear. The flash discharge tube resides within a protective transparent tube, both being supported by the same socket, and has no fluorescent coating on its interior, but does have fluorescent coating on its exterior.

3,465,192
TRIGGERABLE ARC DISCHARGE DEVICES AND TRIGGER ASSEMBLIES THEREFOR
James M. Lafferty, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York
Continuation-in-part of application Ser. No. 516,941, Dec. 28, 1965. This application Sept. 21, 1966, Ser. No. 580,998
Int. Cl. H01j *19/68*
U.S. Cl. 313—174 **12 Claims**



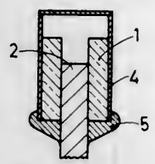
Improved trigger assemblies for vacuum arc devices such as vacuum switches and triggerable vacuum gap devices, having a primary arc gap and a trigger assembly in which the trigger assembly includes a cavity containing a trigger gap and a trigger anode, and means adjacent the trigger gap for evolving ionizable species when the trigger gap is pulsed. The trigger assembly is separated from the primary gap by a nozzle which permits egress of the ionized species from the cavity into the primary arc gap, but inhibits ingress of particles and vapor from the arc gap to the trigger gap. In one specific device, a large central post-like trigger anode further constricts the nozzle.

3,465,193
INCANDESCENT LAMP CONTAINING A GETTER FOR BINDING WATER VAPOR
Herman Joseph Hendrik Beuvens and Jan Jacob Schuitemaker, Emmasingel, Eindhoven, Netherlands, assignors, by mesne assignments, to U.S. Philips Corporation, New York, N.Y., a corporation of Delaware
Filed Sept. 12, 1967, Ser. No. 667,189
Claims priority, application Netherlands, Sept. 15, 1966, 6613009
Int. Cl. H01j *19/68, 19/70, 61/24*
U.S. Cl. 313—178 **5 Claims**



A getter for an incandescent lamp consisting of a metal phosphide which reacts with water-vapor at room temperature but does not dissociate into metal and phosphorus at the operating temperature of the part of the lamp where it is located.

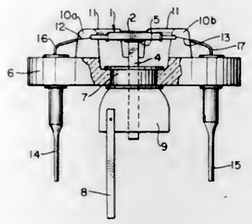
3,465,194
COLD-CATHODE GLOW-DISCHARGE TUBE
Raymond Frederick Hall, Crawley, England, assignor, by mesne assignments, to U.S. Philips Corporation, New York, N.Y., a corporation of Delaware
Continuation-in-part of application Ser. No. 660,331, Aug. 14, 1967. This application Oct. 11, 1967, Ser. No. 674,457
Claims priority, application Great Britain, Oct. 7, 1966, 44,937/66
Int. Cl. H01j *17/04, 61/04*
U.S. Cl. 313—209 **9 Claims**



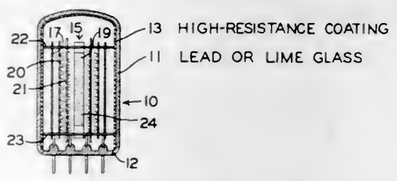
A cathode assembly for a cold-cathode discharge tube comprising an electrically insulating member having a recess therein and a metal pin extending through from the recess through the member, an end surface of the pin forming an end wall of the recess as well as cathode surface.

3,465,195
SHOCK AND VIBRATION-RESISTANT ARRANGEMENT FOR CATHODES OF SMALL HEATING POWER
Klaus Fuchs, Erfurt, Germany, assignor to VEB Funkwerk Erfurt, Erfurt, Germany
Filed Mar. 10, 1967, Ser. No. 622,161
Int. Cl. H01j *1/94*
U.S. Cl. 313—270 **3 Claims**

A cathode tube of rectangular cross-section has a pair of spaced parallel side surfaces and a pair of spaced parallel upper and under surfaces perpendicular to the side surfaces. The upper surface has an electron emitting surface. A principal cathode axis extends parallel to and equally spaced from and between the upper and under surfaces and the two side surfaces. The cathode tube has a length extending along the principal cathode axis. A cathode support tube of substantially rectangular cross-section has an upper surface affixed to the central area of the under surface of the cathode tube and extends for a length equal to the length of the cathode tube. A metal heat reflector is positioned around the cathode tube. A reflector support tube coaxially positioned around and affixed to the cathode support tube supports the reflector in spaced parallel relation with the under surface of the cathode tube. The reflector is equidistantly spaced from the under and side surfaces of the cathode tube.



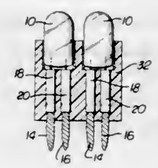
3,465,196
ELECTRIC DISCHARGE DEVICE WITH MEANS TO PREVENT RELEASE OF OCCLUDED GASES FROM THE ENVELOPE THEREOF AND METHOD
Walter T. Millis, Owensboro, Ky., assignor to General Electric Company, a corporation of New York
Continuation-in-part of application Ser. No. 302,490, Aug. 9, 1963. This application Mar. 2, 1966, Ser. No. 531,082
Int. Cl. H01j *1/52*
U.S. Cl. 313—313 **9 Claims**



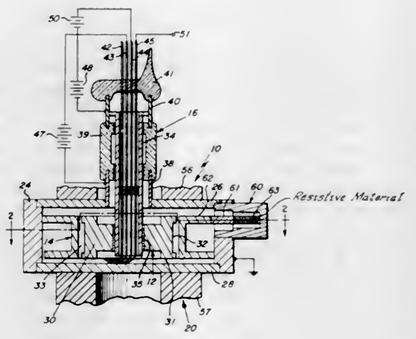
An electric discharge device having a vitreous envelope containing occluded gases which upon release adversely affect the operation and life of such device, wherein the operation and life are improved by inhibiting the release of such gases by the provision of a high-electrical resistance coating covering substantially all of the interior surface of the envelope.

3,465,197
MICROMINIATURE LAMP ASSEMBLIES
Charles W. Martin, Placentia, Calif., assignor to Opcalite, Inc., Santa Ana, Calif., a corporation of Delaware
Filed May 1, 1967, Ser. No. 635,228
Int. Cl. H01j *5/50*
U.S. Cl. 313—318 **8 Claims**

Microminiature lamps formed with an envelope containing an illuminating filament electrically connected by a pair of filament wires to a pair of pin connectors of the type which are comprised of a group of spiral wound wire strands which resiliently compress to provide a tensioned fit within mating electrical contact sockets. A collar surrounds the filament wires and is overlappingly attached to the interconnected portions of the envelope and the pin connectors.



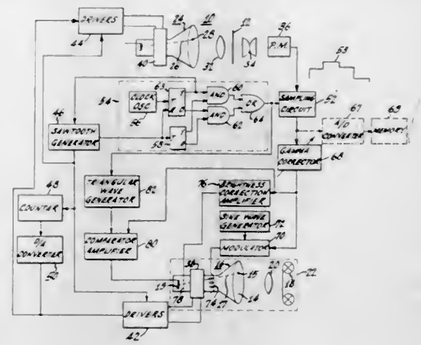
3,465,198
COAXIAL ATTENUATOR FOR TRAVELING WAVE DEVICES
Arthur H. Downing, Woburn, and Peter Janis, Auburndale, Mass., assignors to Raytheon Company, Lexington, Mass., a corporation of Delaware
Filed Oct. 31, 1966, Ser. No. 590,901
Int. Cl. H01j *25/34*
U.S. Cl. 315—3.5 **7 Claims**



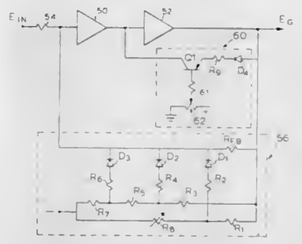
A slow wave transmission circuit coaxial termination for traveling wave devices to dissipate and absorb high power electromagnetic energy. A center conductor of a metallic material and an energy absorbing resistive material is joined to a terminal circuit element and the short circuited end wall of a surrounding outer conductor. The spacing between the resistive material member and the outer conductor provides for the matching of the impedance characteristic.

3,465,199
ELECTRONIC HALFTONE IMAGE GENERATOR
Elvin D. Simshauser, Columbus, N.J., assignor to Radio Corporation of America, a corporation of Delaware
Filed Nov. 26, 1968, Ser. No. 779,078
Int. Cl. H01j *29/70*
U.S. Cl. 315—22 **9 Claims**

An electronic halftone image generator produces halftone images on the face of an imaging device by scanning the face with a plurality of substantially linear scanlines and periodically unblanking the device during the scanlines to produce a plurality of "dots." The sizes of the dots are made to correspond to the tones to be simulated by unblanking the imaging device for periods of time corresponding to the densities of these tones and by superimposing on the scanlines transverse alternations that have amplitudes corresponding to the densities of these tones.



3,465,200
CATHODE RAY TUBE SYSTEM INCLUDING MEANS FOR VARYING BEAM INTENSITY
John E. Higbee, Santa Susana, and Martin C. Henderson, Canoga Park, Calif., assignors to The Bunker-Ramo Corporation, Canoga Park, Calif., a corporation of Delaware
Filed Jan. 23, 1967, Ser. No. 610,952
Int. Cl. H01j *29/52*
U.S. Cl. 315—30 **8 Claims**

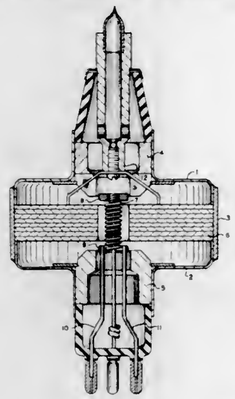


Circuit apparatus useful in a cathode ray tube display system for facilitating accurate control of beam intensity thus enabling intensity variations resulting from variations in beam velocity to be compensated for. The nonlinearity of the beam intensity versus control voltage characteristic typical of most cathode ray tubes is compensated for by incorporating a nonlinear feedback path in the amplifier producing the control voltage in response to an input voltage. Additionally, the amplifier incorporates a limiting feedback path to prevent the grid voltage from increasing beyond a certain threshold level at which defocussing occurs.

3,465,201
MAGNETRON CASING
Eduard G. Dorgelo, Huntington, N.Y., assignor, by mesne assignments, to U.S. Philips Corporation, New York, N.Y., a corporation of Delaware
Filed Mar. 27, 1967, Ser. No. 626,300
Int. Cl. H01j *25/50*
U.S. Cl. 315—39.51 **4 Claims**

An envelope for a magnetron having a relatively thin wall of soft copper or other heat-conducting material in intimate contact with the anode block which is maintained

by the pressure difference between the evacuated interior and the outside atmosphere, the envelope being supported



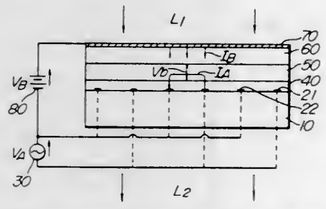
internally by the anode, internal pole pieces, and metal shims.

3,465,202

ELECTROLUMINESCENT DEVICE FOR DERIVING A BRIGHT OUTPUT IMAGE FROM A DARK INPUT IMAGE

Tadao Kohashi, Yokohama, Japan, assignor to Matsushita Electric Industrial Co., Ltd., Osaka, Japan, a Japanese corporation

Filed Oct. 17, 1966, Ser. No. 587,227
Claims priority, application Japan, Oct. 25, 1965, 40/65,856
Int. Cl. H05b *37/02, 39/04, 41/14*
U.S. Cl. 315—169 **19 Claims**



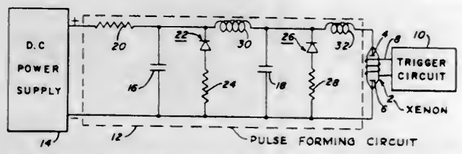
An electroluminescent device for deriving a bright output image from a dark input image comprising an electroluminescent layer, a non-linear impedance layer and means for applying a biasing electric field across said non-linear impedance element, wherein a current flowing through said electroluminescent element is caused to flow in the lengthwise direction thereof depending upon the variation in the impedance of said impedance element.

3,465,203

FLASHLAMP FOR ELECTROSCOPIC TONER

Thomas H. Galster and Thomas B. Michaels, Rochester, N.Y., assignors to Xerox Corporation, Rochester, N.Y., a corporation of New York

Filed June 2, 1966, Ser. No. 554,758
Int. Cl. G03g *13/20*
U.S. Cl. 315—173 **5 Claims**



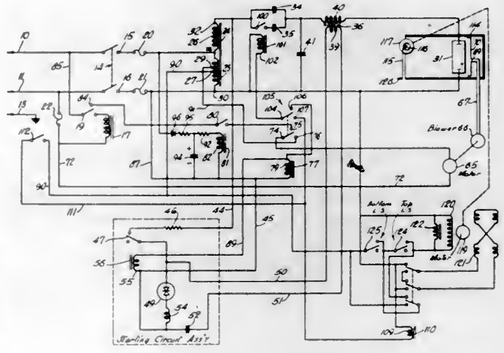
A toner fusing flashlamp system wherein a pulse shaping circuit employs an asymmetrical current conducting device to provide a current bypass for a capacitive element thereby reducing the voltage reversal across this element as well as the flashlamp.

3,465,204

ELECTRIC SYSTEM

Maksymilian A. Michalski, Woodside, N.Y., assignor to Berkey Photo, Inc., New York, N.Y.

Filed July 25, 1967, Ser. No. 655,954
Int. Cl. H05b *41/14*
U.S. Cl. 315—363 **6 Claims**



An electric system for operation of a gas discharge lamp includes first and second capacitor means adapted to be switched into the circuit in series with the discharge lamp for variation in the power output thereof. The discharge lamp is enclosed in a housing having a shutter which is opened to emit light as for an exposure. Electric circuit means is provided so that upon energization of the lamp both capacitors are connected in parallel therewith so that the lamp is fully loaded upon ignition so that it will arrive at operating temperature as soon as possible. In addition the shutter means is closed. Upon arriving at operating temperature time delay means is actuated disconnecting one of the capacitors from the circuit so that the light operates in stand-by condition. Switching means is provided so that when an exposure is to be made the shutter means is opened and the second capacitor is switched into the circuit so that the full light output of the lamp is available. Upon the termination of the exposure the switching means causes the second capacitor to be disconnected and the shutter to be closed.

3,465,205

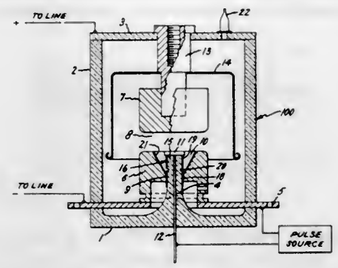
VACUUM GAP DEVICES WITH METAL IONIZABLE SPECIES EVOLVING TRIGGER ASSEMBLIES

James M. Lafferty, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York

Continuation-in-part of application Ser. No. 516,942, Dec. 28, 1965. This application Feb. 12, 1968, Ser. No. 704,935
Int. Cl. H01j *11/04, 13/48*
U.S. Cl. 315—330 **10 Claims**

Triggerable vacuum gap devices adapted for use at high power and/or high duty cycles, resulting in high quiescent temperature, are equipped with trigger gap assembly utilizing vaporizable metal or alloy having high vapor pressure, low thermal conductivity, and moderate work function. Such trigger assemblies are effective to

inject electron-ion plasma into discharge gap at only slightly higher pulse power than gaseous storage type



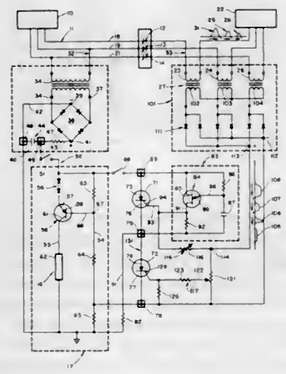
triggers, but are much more stable at high quiescent temperatures found under heavy duty cycle application.

3,465,206

TIME DELAY CIRCUIT BREAKER WITH SHORT-CIRCUIT BYPASS

James Lincoln Harker, Minneapolis, and Robert T. Kendall, Hopkins, Minn., assignors to Litton Systems, Inc., Beverly Hills, Calif., a corporation of Maryland

Filed Dec. 5, 1966, Ser. No. 598,989
Int. Cl. H02h *7/00, 1/04, 3/00*
U.S. Cl. 317—13 **9 Claims**



A three-phase power source supplies line power to a load circuit connected to a load through a relay. A control power circuit connected to the load circuit energizes the relay during normal operation of the load. A pair of series connected silicon control rectifiers (SCR's) conduct simultaneously in response to an overload condition or a short-circuit condition in the load, but do not conduct simultaneously in response to a normal start-up current surge even though the normal start-up current surge has an amplitude that exceeds the overload amplitudes. Upon simultaneous conduction of the pair of SCR's, the relay is immediately opened to protect the load from the overload or short-circuit condition.

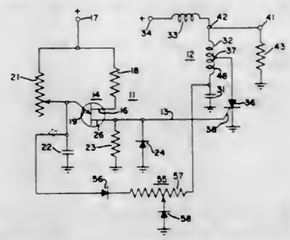
3,465,207

PROTECTION CIRCUIT FOR SCR PULSE GENERATOR

Anton W. Merdian, Jr., Mexico, N.Y., assignor to General Electric Company, a corporation of New York

Filed Dec. 29, 1966, Ser. No. 605,729
Int. Cl. H02h *7/00, 1/04;* **H03k** *3/64*
U.S. Cl. 317—33 **6 Claims**

A protection circuit is disclosed for use with a pulse generator employing an SCR (silicon controlled rectifier) type of device for periodically discharging a capacitor. The SCR is periodically triggered by a trigger circuit. The protection circuit is connected between the pulse generator and the trigger circuit and functions to permit the trigger circuit to operate only when the pulse gener-



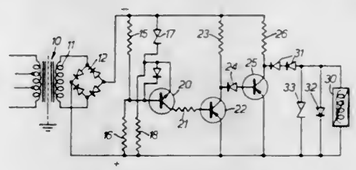
ator is in proper operative condition, thus preventing damage to the SCR and other components which could occur if the SCR were triggered when the pulse generator was not operative such as due to insufficient operating voltage.

3,465,208

ELECTRIC LEVEL-RESPONSIVE CIRCUITS

John Brian Patrickson, South Shields, Victor Stanley Davey, Melton Park, Newcastle-Upon-Tyne, and Leonhard Martin Wedepohl, Disley, England, assignors to A. Reyrolle & Company Limited, Hebburn, England, a company of Great Britain

Filed Apr. 22, 1966, Ser. No. 544,449
Claims priority, application Great Britain, Apr. 23, 1965, 17,291/65
Int. Cl. H01h *47/02, 47/22*
U.S. Cl. 317—123 **10 Claims**



An electric signal level-responsive circuit includes a switching device rendered operative and inoperative in response to first and second predetermined levels, respectively, of an alternating or pulsating signal input. The first predetermined level is greater than the second predetermined level to form a first reset ratio of the switching means which is substantially below unity. An accumulating or integrating circuit stores pulse output signals from the switching means in response to the first signal level to provide a signal output at a predetermined level determined by the duration and number of signal pulses stored by the accumulating means. The predetermined level in the accumulating means, together with the first predetermined level, forms a second reset ratio of the apparatus which is substantially equal to unity. The accumulating circuit may include a feedback network connected to an input circuit to modify the first reset ratio.

3,465,209

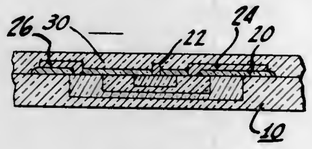
SEMICONDUCTOR DEVICES AND METHODS OF MANUFACTURE THEREOF

Richard Denning and Charles L. Tollin, Union, N.J., assignors to RCA Corporation, a corporation of Delaware

Filed July 7, 1966, Ser. No. 563,505
Int. Cl. H01l *3/00, 5/00, 11/00*
U.S. Cl. 317—234 **13 Claims**

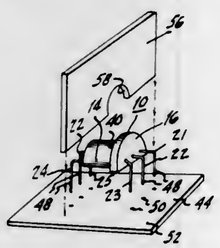
Semiconductor wafers are quite susceptible to injury. In many present-day devices, for example surface patterns of extremely narrow and closely spaced metal con-

nector strips are used which are readily damaged by the slightest touching or scratching of the wafer surface. Further, during processing of the wafers, undesired contaiminants from the processing apparatus or ambient atmosphere often settle upon the wafer and react with the materials thereof. Such contaminant are found to effect the electrical characteristics of the devices during the



operating life thereof. Removal of these contaminants has heretofore been a difficult task, the attempted solutions of which have been generally unsuccessful. It has been discovered that by providing a protective coating extending over the wafer surface and metal contacts, which is capable of passivating contaminating impurities, the problem is resolved.

3,465,210
HOUSING AND LEAD ASSEMBLY FOR HIGH-FREQUENCY SEMICONDUCTOR DEVICES
Howard W. Bertram, Somerville, Oliver P. Hart, Berkeley Heights, and Robert E. Kleppinger, Raritan, N.J., assignors to RCA Corporation, a corporation of Delaware
Filed May 23, 1967, Ser. No. 640,563
Int. Cl. H01l *5/00, 13/00*
U.S. Cl. 317—234 **4 Claims**

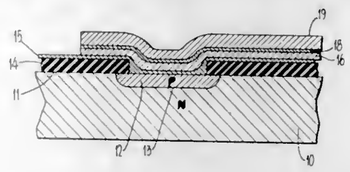


A high-frequency semiconductor device comprises an elongated, plastic-molded envelope having input and output leads extending outwardly from opposite ends of the envelope. The envelope comprises two end-to-end joined cylindrical members, each member having, in cross section, the shape of a segment of a circle, and each member having a flat side surface, the two surfaces lying in a common plane. The transverse extent of the two cylindrical members are unequal, whereby an arcuate ledge is provided where the two members join. The envelope configuration provides indicia means by means of which the endwise and angular orientation of the device can be readily determined for the purpose of mounting the device on a chassis.

A metallic shield is mounted on the device transversely thereof, the shield fitting snugly around a side portion of the device and being abutted against the device envelope ledge.

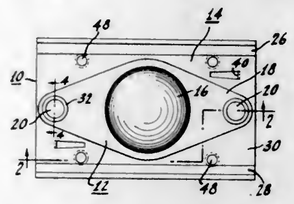
3,465,211
MULTILAYER CONTACT SYSTEM FOR SEMICONDUCTORS
Clark N. Adams, Mountain View, Calif., assignor to Friden, Inc., a corporation of Delaware
Filed Feb. 1, 1968, Ser. No. 702,457
Int. Cl. H01l *1/14, 5/02*
U.S. Cl. 317—234 **11 Claims**

A multilayer ohmic contact to a semiconductor device wherein the ohmic contact, which is capable of withstanding high processing temperatures up to about 900° C., comprises a very thin film of titanium which contacts the semiconductor surface and extends over the surface of the insulating layer, a film of molybdenum overlying the



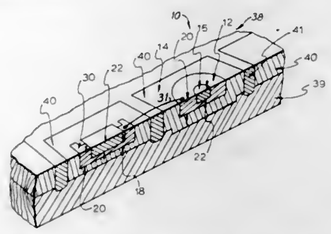
titanium film, a relatively thin film of a metal such as chromium, titanium, a manganese overlying the molybdenum film, and finally an overlying exposed film of gold. The four films may be deposited by evaporation techniques and etched as described herein.

3,465,212
HEAT DISSIPATOR
Milton J. Grimes, Flemington, and Herbert R. Meisel, Springfield, N.J., assignors to RCA Corporation, a corporation of Delaware
Continuation-in-part of application Ser. No. 533,174, Mar. 10, 1966. This application Dec. 23, 1968, Ser. No. 788,988
Int. Cl. H01l *1/12;* **H02b** *1/04*
U.S. Cl. 317—234 **6 Claims**



A heat dissipator is provided for a power transistor. To facilitate mounting, the dissipator and transistor are preassembled into a rigid assembly which is then mounted on a chassis. The heat dissipator is provided with integral rivets for securely mounting the transistor on the dissipator, with tabs for mounting the assembly on a chassis, and with embosses for maintaining the dissipator in spaced apart relation with the chassis to prevent excessive heating thereof.

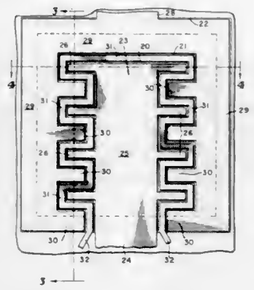
3,465,213
SELF-COMPENSATING STRUCTURE FOR LIMITING BASE DRIVE CURRENT IN TRANSISTORS
Frances B. Hugle, Santa Clara, Calif., assignor to William B. Hugle, Executor of said Frances B. Hugle, deceased
Filed June 20, 1966, Ser. No. 558,979
Int. Cl. H01l *11/14, 15/00*
U.S. Cl. 317—235 **1 Claim**



A semiconductor structure having a transistor and a resistor of semiconductor material connected to the base of the transistor. The width (thickness, depth) of the base

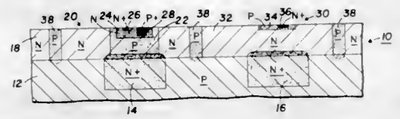
of the transistor and the width of the resistor are the same, by virtue of being formed simultaneously in close proximity on a semiconductor chip. This provides a self-compensating circuit structure for limiting base drive current in the transistor to a preferred value by; (1) matching the resistance value of the resistor to the current gain (beta) of the particular transistor involved because of the simultaneous formation of each upon the same semiconductor chip, and (2) neutralizing variations of temperature in the operation of the transistor because of the close proximity of the transistor and the resistor and the equivalent thermal properties of each having opposite effects.

3,465,214
HIGH-CURRENT INTEGRATED-CIRCUIT POWER TRANSISTOR
Raymond G. Donald, Burlington, Mass., assignor to P. R. Mallory & Co. Inc., Indianapolis, Ind., a corporation of Delaware
Filed Mar. 23, 1967, Ser. No. 625,535
Int. Cl. H01l *19/00*
U.S. Cl. 317—235 **10 Claims**



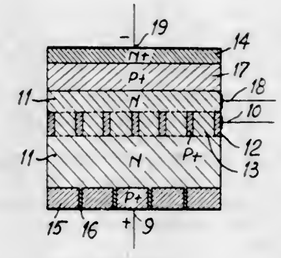
A high-current, double-diffused, bipolar power transistor for use in monolithic integrated circuits having comb-shaped emitter and base regions surmounting a collector region and having interdigitated metallized emitter and collector contacts with a serpentine base contact therebetween.

3,465,215
PROCESS FOR FABRICATING MONOLITHIC CIRCUITS HAVING MATCHED COMPLEMENTARY TRANSISTORS AND PRODUCT
Ralph O. Bohannon, Jr., and Robert A. Stehlin, Richardson, Tex., assignors to Texas Instruments Incorporated, Dallas, Tex. a corporation of Delaware
Filed June 30, 1967, Ser. No. 650,303
Int. Cl. H01l *11/00, 7/00*
U.S. Cl. 317—235 **7 Claims**



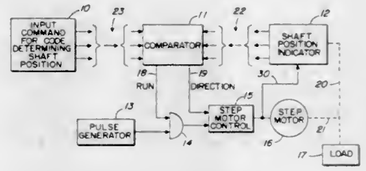
A process for fabricating a monolithic circuit having a matched pair of complementary transistors, a diffused resistor, and a diode. The starting material is a p-type substrate having heavily doped n-type diffused regions buried under an n-type epitaxial layer at each position where a transistor is to be formed. First a p-type diffusion is made to form the collector of the PNP transistor and an isolation ring around each buried n-type diffused region. The p-type diffusion is made to a depth sufficient to penetrate through the epitaxial layer to the p-type substrate to form isolation rings. However, where a PNP transistor is to be formed, the buried n-type region isolates the p-type collector region from the p-type substrate. Then a first n-type diffusion forms the base of the PNP transistor, and a second p-type diffusion forms the base of the NPN transistor, the resistors, and the anode of the diode. A third p-type diffusion forms the emitter of the PNP transistor, and finally a second n-type diffusion forms the emitter of the NPN transistors.

3,465,216
BISTABLE SEMICONDUCTOR DEVICE FOR HEAVY CURRENTS
Stanislas Teszner, Paris, France, assignor of one-half to Societe de Constructions Electromecaniques Jeumont-Schneider, Paris, France
Filed July 19, 1967, Ser. No. 654,435
Claims priority, application France, July 22, 1966, 70,448
Int. Cl. H01l *11/00, 15/00*
U.S. Cl. 317—235 **11 Claims**



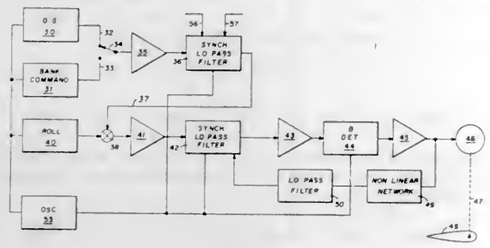
A semiconductor switching device having at least four layers of alternate P and N conductivity types with a rectifying P/N grid in one of the intermediate layers, and at least four terminals.

3,465,217
DIGITALIZED SHAFT ROTATION DIRECTION CONTROL
Charles E. Kress, Marion, Iowa, assignor to Collins Radio Company, Cedar Rapids, Iowa, a corporation of Iowa
Filed Feb. 26, 1965, Ser. No. 435,504
Int. Cl. H02p *1/54, 5/46, 7/68*
U.S. Cl. 318—18 **6 Claims**



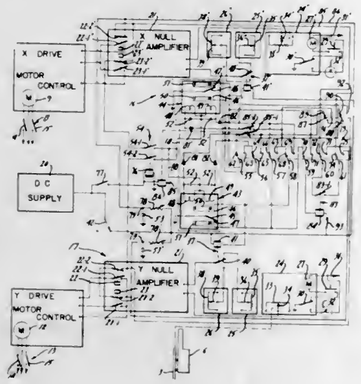
A control circuit for rotating a shaft, whose position is digitally represented, to a new digitally represented position in the shortest arcuate path. The two binary numbers representing old and new positions are subtracted one from the other. The nature of the most significant bit of the difference determines the direction of the shortest arcuate path of shaft rotation from the old to the new position.

3,465,218
MULTIFUNCTION SYNCHRONOUS FILTER
James R. Younkin, Mineral Wells, Tex., assignor to Mitchell Industries, Inc., Mineral Wells, Tex., a corporation of Texas
Filed Mar. 11, 1966, Ser. No. 533,698
Int. Cl. G05b *23/02, 11/01*
U.S. Cl. 318—18 **8 Claims**



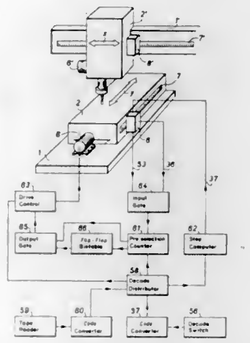
The invention disclosed is a system for controlling elements of an aircraft or the like in accordance with various signals derived from a number of sensors. A first synchronous filter is connected at its input to the structure which controls the actuation of the elements. A square wave reference voltage source is connected to control the synchronous filter. The A.C. output signal from a second synchronous filter is synchronized by the square wave reference voltage and is applied to a summation circuit for summing with a sensor signal. The summed signal is then applied to the input of the first synchronous filter. The output of the first synchronous filter is converted to a D.C. signal and delayed in a feedback signal loop leading to the input of the first synchronous filter.

3,465,219
TOOL CONTROL SYSTEM FOR LINEAL MOVEMENT IN ACCORDANCE WITH SELECTED GEOMETRIC SHAPES
Jon C. Wirth, Wauwatosa, Wis., assignor, by mesne assignments, to C.R.O. Engineering Co. Inc., Brookfield, Wis., a corporation of Wisconsin
Filed June 30, 1966, Ser. No. 561,770
Int. Cl. G05b *11/00*
U.S. Cl. 318—18 **21 Claims**



This disclosure relates to a tool moving servo system having a shift register to automatically and sequentially establish interconnection of X and Y coordinate servo units into the circuit with one unit holding the tool in a reference position and the other driving the tool along such reference position to define a rectangular path for the tool. The shifter register includes a pair of relays sequentially energized to sequentially insert the comparators for the coordinate control drive. Each of the relays has two operative positions which are interrelated and interconnected to establish the four coordinate movements required for rectangular movement.

3,465,220
DIGITAL DECADE POSITIONING SYSTEM INCLUDING A STEPPING MOTOR "FINE" DECADE DRIVE FOR THE SCALE-SCANNER
Laszlo Rabian, Zurich, and Georg Grendelmeier, Dietikon, Switzerland, assignors to Oerlikon-Buehrle Holding Ltd., Zurich, Switzerland
Filed Sept. 2, 1966, Ser. No. 576,989
Claims priority, application Switzerland, Sept. 2, 1965, 12,292/65
Int. Cl. G05b *11/00;* **H02p** *7/18*
U.S. Cl. 318—18 **9 Claims**

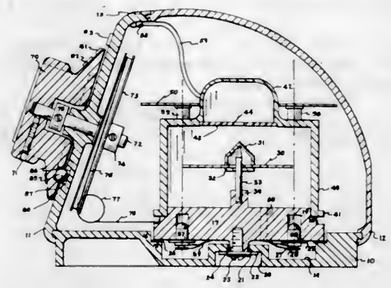


A device for the automatic displacement of a scale by a preselected decadal amount relative to a photo-electric scale-scanner. A slider drive is controlled by a signal proportional to the difference between the actual and nominal values. A sensor is operated from at least the last decade of the nominal value and there is a stepped disc for operating the sensor. A stepping motor drives the disc and a pulse computer feeds the motor with pulses and moves the sensor in the direction of the enlarged projection of the scale divisions. The sensor is connected with the stepped disc via a contact and is movable in the direction of the projected scale on a device consisting of two parallel flat springs. A pin makes contact with a stationary conductor at the moment when the contact passes from sector "9" to sector "0" on the stepped disc. The contact lies on the stepped disc by pretensioned springs.

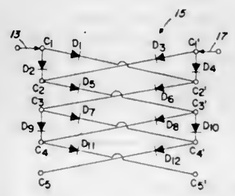
3,465,221
COMPASS CARD AUTOPILOT WITH 360 DEGREE DIRECTIONAL CONTROL
Henry L. Arce, Huntington Park, and Jack L. Whitener, Los Alamitos, Calif., assignors, by mesne assignments, to Ametek, Inc., New York, N.Y., a corporation of Delaware
Filed Jan. 23, 1967, Ser. No. 610,916
Int. Cl. H02p *1/54, 5/46, 7/68*
U.S. Cl. 318—18 **8 Claims**

An autopilot which is unidirectionally responsive throughout the entire 360 degree field and which is well suited for a corrosive marine environment because of an entirely transistorized motor control circuit. The course

setting unit uses a pair of photocells with an eccentrically mounted compass card to modulate light reception by the photocells and electric signal feedback attains proportional control. Complementary, bistable, multivibrator circuits are used to control the switching of the motor control transistors.



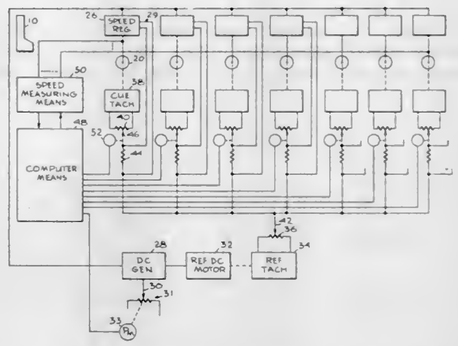
3,465,222
AUTOMATIC DIRECTION CONTROL FOR AN ELECTRICAL MOTOR
George E. Bishop, Cedar Rapids, and Donald L. McManis, Marion, Iowa, assignors to Collins Radio Company, Cedar Rapids, Iowa, a corporation of Iowa
Filed Aug. 17, 1966, Ser. No. 573,077
Int. Cl. G05b *5/00*
U.S. Cl. 318—33 **7 Claims**



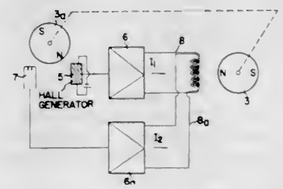
Control circuitry including a diode matrix interconnecting contacts at a controlling station and contacts at a controlled station whereby a signal applied to a contact at the controlling station will not pass to the equivalent contact at the controlled station but will pass to other contacts at the controlled station depending on signal polarity. A motor controlled element is positioned by energizing the motor through the diode matrix until a contact at the controlled station corresponding to a contact at the controlling station is detected.

3,465,223
SPEED MEASURING SYSTEM
Francis C. Mears, Canoga Park, Calif., assignor to The Bunker-Ramo Corporation, Stamford, Conn., a corporation of Delaware
Filed May 10, 1965, Ser. No. 454,594
Int. Cl. H02p *5/50*
U.S. Cl. 318—72 **9 Claims**

A system for individually controlling the speed of a plurality of motors. The system includes apparatus capable of measuring absolute motor speed by determining the time duration required to count a predetermined number of events, e.g., the number of markers driven by the motor past a fixed point. Programmed digital computer means are utilized for computing desired motor speeds and for comparing the desired speeds with the measured speeds to develop correction signals for adjusting the speeds of the motors.



3,465,224
BRUSHLESS DIRECT-CURRENT MOTOR
Kiyo Takeyasu, Hachioji-shi, Tokyo-to, Japan, assignor to Kabushiki Kaisha Hitachi Seisakausho, Tokyo-to, Japan, a joint-stock company of Japan
Filed Aug. 30, 1965, Ser. No. 483,655
Claims priority, application Japan, Sept. 1, 1964, 39/49,478
Int. Cl. H02k *29/00;* **H02p** *5/06*
U.S. Cl. 318—138 **3 Claims**

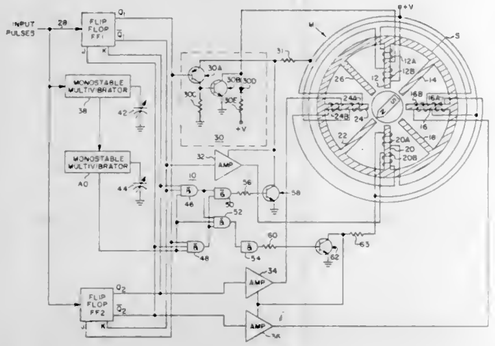


A brushless D-C motor wherein rotation of the rotor is maintained by utilizing means to detect the rotor position and by varying, in accordance with the rotor position so detected, the polarity of magnitude of the armature, and the armature winding is divided into a plurality of parts, and there are provided means to cause a first armature current supplied to one of said parts to assume a high value at the time of starting of the rotor and to decrease as the rotor speed increases, and means to cause a second armature current supplied to another of the parts to be of low value in the regions of relatively low rotor speed and to increase as the rotor speed increases, whereby the total current value of the first and second armature currents in the neighborhood of the rotor starting point is caused to be substantially equal to that in the neighborhood of the rated speed.

3,465,225
STEPPER MOTOR DAMPING CIRCUIT
Charles P. O'Regan, Bronx, N.Y., and Louis P. DeLeo, Totowa Borough, N.J., assignors to Singer-General Precision, Inc., a corporation of Delaware
Filed Dec. 6, 1966, Ser. No. 599,421
Int. Cl. H02p *1/54, 5/46*
U.S. Cl. 318—138 **1 Claim**

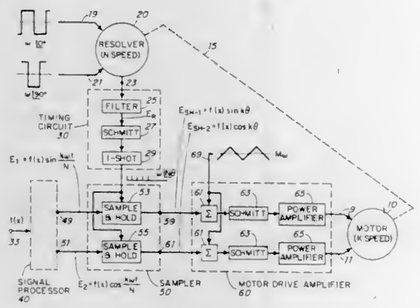
In stepper motors, the overshoot and oscillation of a rotor with respect to its destination step position is prevented by applying a retarding torque to the rotor during

an interval of time intermediate to its acceleration from one step to the next. This intermediate retardation is controllable in timing and duration so that the rotor moves quickly between steps but arrives at its destination with low energy and momentum and overshoot and oscillation are virtually prevented. Common stepper motors having magnetized rotors and stator windings energizable individually or in pairs to produce radial



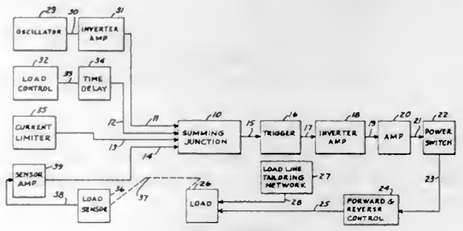
magnetic fields through the rotor are operable in accordance with different embodiments of the invention by energizing one or a pair of windings to provide accelerating torque. For applying the retarding torque in the first embodiment, a second winding is also energized and in the second embodiment one of the energized windings is de-energized. In each case, a retarding field nonaligned with the rotor field is produced.

3,465,226
DC BRUSHLESS MOTOR
Douglas R. Sullivan, Weston, Mass., assignor to Massachusetts Institute of Technology, Cambridge, Mass., a corporation of Massachusetts
Filed June 21, 1967, Ser. No. 647,848
Int. Cl. H02k *29/02;* **H02p** *3/08*
U.S. Cl. 318—138 **11 Claims**



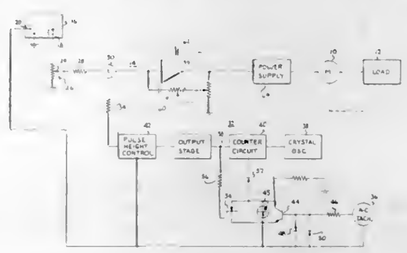
A DC brushless motor wherein the closed loop operation of a two-phase motor, resolver and drive system develops the misalignment between the field vectors in the motor necessary for torquing. The motor and resolver are mechanically coupled by a shaft. The output of the resolver, which is a function of the shaft angle, initiates the sampling of a pair of command signals in phase quadrature. The sampled values are coupled to the stator windings in the motor and develop a DC field vector that interacts with the rotor field vector to generate torque.

3,465,227
CONTROL SYSTEM FOR A D.C. LOAD HAVING AN ANALOG INPUT
Charles V. Ivie, 1227 S. Concord Lane, Glendora, Calif. 91740, and Marvin R. Wilkerson, 1853 Alta Oaks Drive, Arcadia, Calif. 91006
Filed May 10, 1966, Ser. No. 549,043
Int. Cl. H02p *7/00*
U.S. Cl. 318—257 **12 Claims**



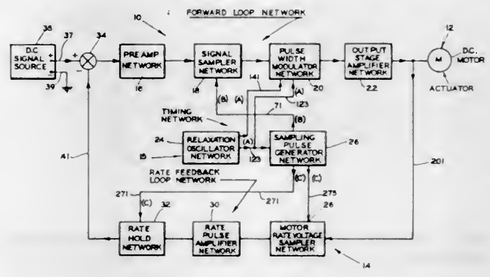
A control system comprises a summing junction having a plurality of inputs. An oscillator provides a signal of a first polarity on one input of the summing junction. A control means provides a signal of the first polarity and representative of a control function on a second input of the summing junction. The summing junction algebraically adds the input signals and operates a trigger to produce a pulse, the time duration of which pulse is dependent on the resultant signal derived by the summing junction. A D.C. power switch is responsive to the pulse for controlling a D.C. load. A current limiter is connected to the switch to impress a signal on the summing junction of an opposite polarity to the first polarity. According to one feature, a load sensor is connected to the D.C. load and to a fourth input of the summing junction to impress a signal on the junction representative of the condition of the load.

3,465,228
PULSE WIDTH CONTROL FOR ADJUSTABLE SPEED DRIVE SYSTEM
James Long and Niels P. Pedersen, Erie, Pa., assignors to General Electric Company, a corporation of New York
Filed May 19, 1967, Ser. No. 639,899
Int. Cl. H02k *27/20;* **H02p** *5/46*
U.S. Cl. 318—328 **3 Claims**



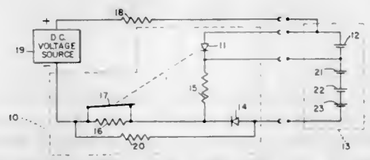
Relates to an analog-to-digital converter for the feedback loop of an adjustable speed drive system in which a precision width pulse is produced in response to each cycle of an alternating-current tachometer signal. The duration of each precision width pulse is equal to the duration of a predetermined number of cycles of a signal produced by a crystal oscillator.

3,465,229
METHOD OF CONTROLLING A DIRECT CURRENT MOTOR
Harold Moreines, Springfield, N.J., assignor to The Bendix Corporation, a corporation of Delaware
Filed Sept. 2, 1965, Ser. No. 484,528
Int. Cl. H02p *5/06, 7/06*
U.S. Cl. 318—341 **6 Claims**



A method of controlling a direct current motor including the steps of applying to a load winding of the motor a pulsating direct current signal providing energizing pulses of constant amplitude, varying the width of the pulses of the direct current signal in accordance with the amplitude of an applied command voltage signal, sampling back electromotive forces generated across the load winding at intervals between the energizing pulses, storing the sampled back electromotive forces, converting the stored electromotive forces to a direct current signal, and applying the converted direct current signal in opposition to the command voltage signal for damping the energizing pulses by varying the width thereof.

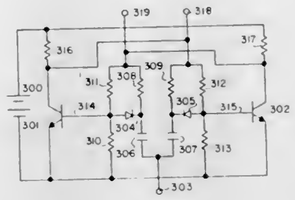
3,465,230
THERMAL RESPONSIVE RECHARGE PROTECTION DEVICE TO PROVIDE TWO LEVEL CHARGING
James V. Ball, Lowell, Mass., assignors to P. R. Mallory & Co. Inc., Indianapolis, Ind., a corporation of Delaware
Filed Jan. 9, 1967, Ser. No. 607,959
Int. Cl. H02j *7/00;* **H01m** *45/04*
U.S. Cl. 320—17 **14 Claims**



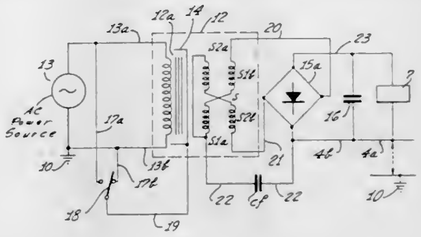
The present invention relates generally to means and methods for allowing electrical energy to flow from a source of electrical energy to a rechargeable multiple cell battery. More particularly, the present invention relates to a means and method which provides recharging of a multiple cell battery at a fast recharging rate and when one cell of the multiple cell battery reaches its fully recharged state, the fast recharge rate for the entire multiple cell battery is reduced to the safe continuous overcharge rate without the necessity of requiring operator assistance.

3,465,231
TRANSFORMERLESS CONVERTER-INVERTER
Robert L. Hyde, Plano, Tex., assignor to Varo, Inc.
Filed Dec. 26, 1967, Ser. No. 693,273
Int. Cl. H02m *3/22, 5/40*
U.S. Cl. 321—2 **12 Claims**

An electronic converter for converting low voltage input direct current to high voltage direct current output at significant power levels without the use of a power transformer. An electronic inverter for obtaining an alternating current output from a high voltage direct current input without the use of a power transformer.



3,465,232
POWER SUPPLY UNIT WITH SHIELDED TRANSFORMER
Paul Weber, Freiburg im Breisgau, Germany, assignor to Fritz Hellige & Co., G.m.b.H., Freiburg im Breisgau, Germany
Filed Mar. 20, 1967, Ser. No. 624,290
Claims priority, application Germany, Mar. 25, 1966, H 58,903
Int. Cl. H02m *7/04*
U.S. Cl. 321—8 **2 Claims**

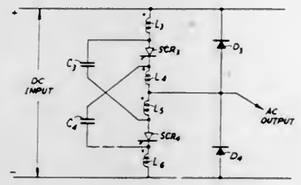


Electrical apparatus comprising a power supply including a transformer, an ungrounded load, and connecting means, wherein the secondary winding of the transformer is divided by a center tap into first half and second half sections each having a plurality of succeeding lengths which are alternately mounted to the core of the transformer so that each alternating succeeding length of the respective first and second half sections from said center tap are alternately mounted on opposite halves of the core, the center tap is at a floating zero reference potential, and the power supply is connected to the ungrounded load via connecting means and the power supply and the ungrounded load are maintained at the floating zero reference potential of the center tap.

3,465,233
SELF-COMMUTATING INVERTER
Gerald T. Johnston, Mahwah, Joseph T. Fleming, Ramsey, and Robert L. Boyd, Woodcliff Lake, N.J., assignors to Ramsey Controls, Inc., Mahwah, N.J., a corporation of New Jersey
Filed Jan. 10, 1968, Ser. No. 696,743
Int. Cl. H02m *7/44, 7/68*
U.S. Cl. 321—45 **20 Claims**

A self-commutating inverter for converting direct electrical current to variable frequency alternating electrical current. Controlled rectifiers are gated to conduction at

predetermined intervals to produce the desired frequency of the alternating current output. The controlled rectifiers are self-commutated by means of a commutating circuit. Energy stored within the commutating circuit

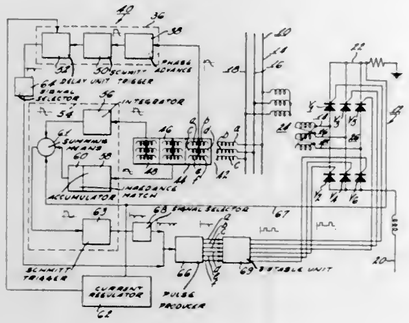


during the conduction cycle of one controlled rectifier is utilized at the start of the conduction cycle of another controlled rectifier to produce a reverse bias voltage to commutate the former off.

3,465,234
AC-DC CONVERTER RESPONSIVE TO A SINGLE SIGNAL IN THE AC SYSTEM

Arun G. Phadke, Madison, Wis., assignor to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.

Filed Oct. 17, 1966, Ser. No. 587,332
Int. Cl. H02m *7/02*
U.S. Cl. 321—5 **4 Claims**



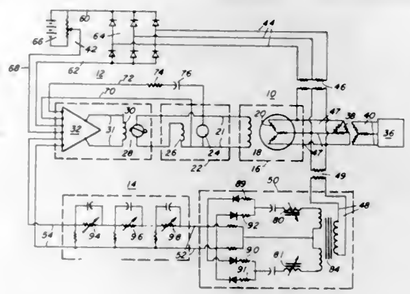
A converter system comprises three AC conductors and two DC conductors which are interconnected by three sets of controlled rectifiers (two rectifiers in each set). The control means for firing the rectifiers in a predetermined sequence provides six symmetrical grid signals in response to the one signal in the AC system which provides the maximum margin for commutation and occurs earliest in time.

3,465,235
CONTROL OF ROTATING EXCITERS FOR POWER SYSTEM DAMPING

Ferber R. Schleif, Denver, and Glenn E. Martin, Edgewater, Colo., assignors to the United States of America as represented by the Secretary of the Interior

Filed Oct. 16, 1967, Ser. No. 676,013
Int. Cl. H02k *7/06;* **H02p** *11/04*
U.S. Cl. 322—24 **5 Claims**

Rapid damping of power system swing oscillations is achieved by controlling generator excitation with signals derived in circuits responsive to frequency deviations of terminal voltage so as to direct the terminal voltage into

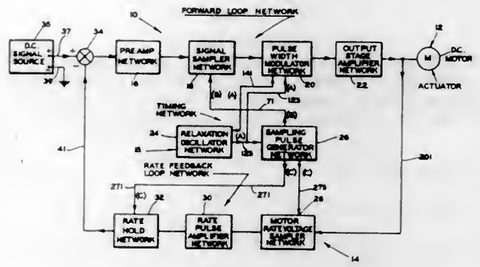


phase with the oscillations characterizing the frequency deviations.

3,465,236
TIMING MEANS INCLUDING FIRST AND SECOND TIMING NETWORKS TO SELECTIVELY GATE TURN-ON DEVICES IN OPPOSITE SENSES IN RESPONSE TO CONTROL PULSES

Robert Ludlow James, Bloomfield, N.J., assignor to The Bendix Corporation, a corporation of Delaware

Original application Oct. 15, 1965, Ser. No. 496,428, now Patent No. 3,401,324, dated Sept. 10, 1968. Divided and this application Jan. 17, 1968, Ser. No. 698,564
Int. Cl. H02p *13/14, 13/16*
U.S. Cl. 323—18 **7 Claims**



A timing means including a relaxation oscillator and first and second timing networks operative in response to reference pulses supplied by the oscillator to control the operation of first and second unijunction transistors to provide output pulses predetermined intervals after the reference pulses, and silicon controlled rectifiers responsive to said reference pulses and the output pulses from the unijunction transistors for operating devices controlled thereby.

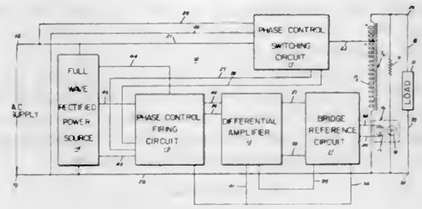
3,465,237
ALTERNATING CURRENT REGULATING APPARATUS WITH CLOSED-LOOP FEEDBACK CONTROL

James L. Brookmire, Marcellus, N.Y., assignor to General Electric Company, a corporation of New York

Filed Jan. 5, 1967, Ser. No. 607,420
Int. Cl. G05f *1/40, 1/60;* **H02m** *3/08*
U.S. Cl. 323—21 **7 Claims**

Apparatus for regulating parameters, such as load voltage and current, using a closed feedback control loop in conjunction with a phase controlled transformer. The closed feedback control loop includes a signal reference

circuit that produces at its output terminals a signal corresponding to the difference between an input signal proportional to the actual magnitude of the electrical parameter regulated and a preselected reference signal. This output signal is magnified by a differential amplifier coupled to a phase control firing circuit that fires a bilateral semi-

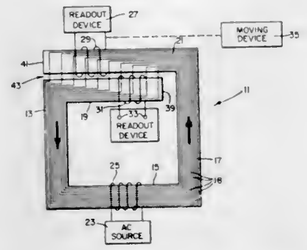


conductor switch in response to variations in the difference between the magnitudes of the input signal and preselected reference signal to regulate the electrical parameter. A single rectified power source is utilized to energize the phase control firing circuit, the differential amplifier and the signal reference circuit.

3,465,238
POSITION AND VELOCITY DETECTING APPARATUS

Jacob Marlow, 327 Valley View Road, King of Prussia, Pa. 19406

Filed Oct. 2, 1967, Ser. No. 672,365
Int. Cl. H02p *13/08, 13/10*
U.S. Cl. 323—53 **23 Claims**



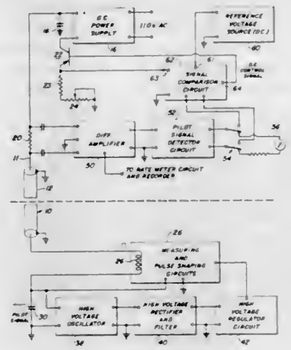
The present apparatus provides a ferromagnetic flux path means which has at least two legs which overlap. A gap is formed between said at least two legs which define said overlap portion of the flux path means. At least one moveable electrical conductor coil is embracing at least one of the said two last-mentioned legs. The flux path means is subjected to an A.C. magnetomotive force which produces an alternating flux therein and the formation of the flux path at the overlap legs thereof enables a controlled distribution pattern of flux to be provided within and along said gap. Within the leg members which make up the overlap there is a controlled flux gradient developed which changes from a condition of low intensity at the cross-sectional area of such leg members where the flux, considered as a whole, has the longest excursion to high intensity at the cross-sectional area of such leg members where the flux, considered as a whole, has the shortest excursion. Accordingly, as the position of the conductor coil is changed along the leg which is embracing, the alternating flux linking the conductor coil either increases or decreases as a function of the conductor coil position. It follows that since $E=\omega\phi N$, the output voltage provided by the conductor coil is indicative of the position of the conductor coil. In another embodiment two such flux path means are connected by an additional leg to form a third magnetic circuit. An electrical conductor coil links this additional leg and, conveniently, a permanent bar magnet is arranged to rotate within the properly formed outside legs of the two flux path means. The bar magnet is mounted within the pair of conductor coils which conductor coils can be positioned along, and are embracing each of two legs forming the gaps. The conductors can be interconnected to provide voltage as a function of the position as explained above. As the bar magnet changes its velocity while rotating through an angle, the denominator "dt" of the equation $E=d\phi/dt$ will also change.

It follows also that the voltage induced in the conductor coil linked by the "$d\phi$" in this additional leg will be a function of the velocity at which the position change takes place.

3,465,239
STABILIZED POWER SUPPLY ARRANGEMENT FOR WELL LOGGING SYSTEM

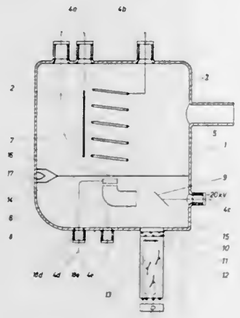
Homer M. Wilson and Leroy C. Delatorre, Houston, Tex., assignors, by mesne assignments, to Dresser Industries, Inc., a corporation of Delaware

Filed Apr. 20, 1965, Ser. No. 449,495
Int. Cl. G01v *3/00, 3/18, 1/40*
U.S. Cl. 324—1 **12 Claims**



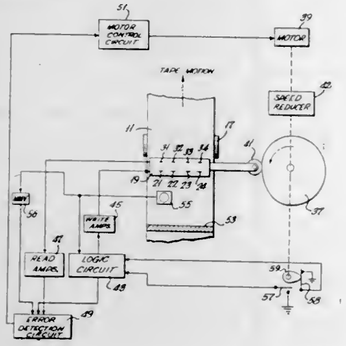
A D.C. power supply at the earth's surface is connected in series with a resistive measuring element, a variable impedance transistor control device and a signal sampling resistor to the upper end of the logging cable. In the subsurface unit, the D.C. voltage produced across a capacitative load circuit is employed to energize an oscillator and the output of this oscillator is rectified and filtered to provide energizing voltage for the measuring device in the subsurface unit. The oscillator is arranged so that its frequency of oscillation varies in proportion to the voltage produced across the capacitative load circuit and during periods when the oscillator draws current from this load circuit the voltage thereacross is reduced to produce a ripple component across the capacitative load circuit which constitutes an alternating current pilot signal and is transmitted to the earth's surface over the same conductor as the logging signal. This pilot signal is detected at the earth's surface and is employed selectively to provide either an indication of the actual voltage developed in the subsurface unit, or in the alternative, is applied to a signal comparison circuit wherein it is compared with a stabilized reference voltage to control the variable impedance transistor and maintains the voltage actually developed in the subsurface unit constant despite variations in operating temperature, length of cable employed, variations in leakage resistance of the cable and current drain in the subsurface unit.

3,465,240
MEASURING TUBE FOR AN IONIZATION VACUUM GAUGE
Maximilian Wutz, Gross-Krotzenburg, Germany, assignor, by mesne assignments, to Leybold-Heraeuse-Verwaltung GmbH, Cologne-Bayenthal, Germany
Filed Sept. 5, 1967, Ser. No. 665,321
Claims priority, application Germany, Sept. 14, 1966, H 60,499
Int. Cl. G01n *27/62*
U.S. Cl. 324—33 **6 Claims**



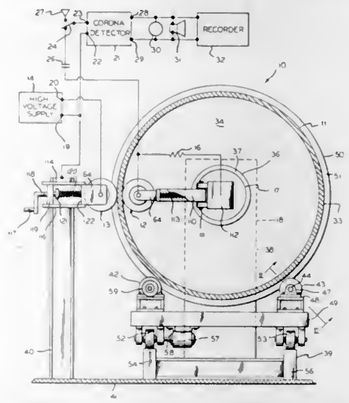
Measuring tube for an ionization vacuum gauge in which an ion generating chamber is separated from an ion converting chamber by a photon impermeable plate having an aperture by which the two chambers are connected. An electron source and a positive grid-shaped electrode with respect thereto are provided within the generating chamber while an ion deflecting means is provided within the converting chamber and ion lens aligned with the aperture is provided between the plate and the deflecting means. Moreover, ion converting means is positioned within the converting chamber to receive ions deflected from the deflecting means. This arrangement allows the accurate measuring of low gas pressures and substantially eliminates the effects of extraneous currents generated during the measuring process.

3,465,241
FLAW TESTING SYSTEM FOR ENDLESS MAGNETIC STORAGE BELTS
Louis G. Metzger, New York, N.Y., and Eleuthere Poumakis, Danville, Calif., assignors to Potter Instrument Company, Inc., Plainview, N.Y., a corporation of New York
Filed June 9, 1967, Ser. No. 645,037
Int. Cl. G01r *33/12*
U.S. Cl. 324—37 **2 Claims**



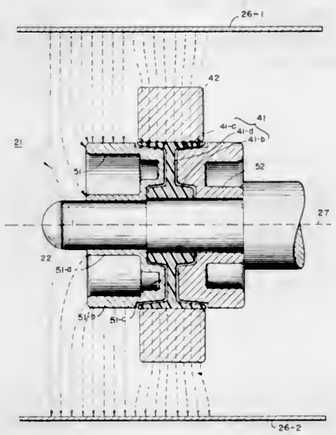
This specification discloses a system for testing endless magnetic belts used for storing digital information. The system tests the endless belts by recording with transducers which are gradually moved across the tape as the tape is driven past the transducers at a constant speed. Read out transducers are gradually moved across the tape with the recording transducers and the read out transducers reproduce the signals recorded by the recording transducers. If the signals reproduced by any of the reading transducers rises above a maximum value or falls below a minimum value the system will indicate a tape flaw. In this manner the entire recording surface of the endless belt is tested for flaws except in the region of the splice, which is eliminated from the test by logic circuitry. A circuit is provided which automatically stops the gradual movement of the transducers in response to detecting a flaw and backs up the transducers to the lateral position where the flaw was detected.

3,465,242
APPARATUS FOR NON-DESTRUCTIVE TESTING OF A DIELECTRIC MATERIAL INCLUDING RESILIENT DIELECTRIC COUPLING MEANS POSITIONED BETWEEN AN ELECTRODE AND THE MATERIAL UNDER TEST
Ralph W. Gruetzmacher, River Grove, Glenn O. McClurg, Evanston, and Donald T. O'Connor, Barrington, Ill., assignors to Magnaflux Corporation, Chicago, Ill., a corporation of Delaware
Filed Jan. 17, 1964, Ser. No. 338,430
Int. Cl. G01r *31/12*
U.S. Cl. 324—54 **22 Claims**



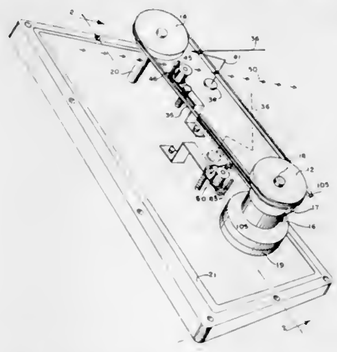
1. In a system for corona testing of a dielectric material,
a pair of electrodes adapted for disposition on opposite sides of the material under test,
means for applying a high voltage between said electrodes,
means for detecting corona discharges occurring in the electrostatic field between said electrodes, and
coupling means adapted to be disposed between at least one of said electrodes and adjacent surface of the dielectric material under test for avoiding the production of corona discharges outside the dielectric material under test,
said coupling means comprising a rotatable tire of resilient dielectric material surrounding said one electrode and adapted to be compressed between said one electrode and the adjacent surface of the dielectric material under test to allow relative movement of the electrode and the dielectric material and means for rotatably mounting said tire.

3,465,243
MEASUREMENT OF CAPACITIVITY OF MATERIALS UTILIZING A SHIELD
Warren E. Benson, Jr., Needham, Stanley Breen, Norwood, and Ralph Monaghan, Medfield, Mass., assignors, by mesne assignments, to Kingsbury Technology Inc., Norwood, Mass., a corporation of Delaware
Filed Dec. 22, 1966, Ser. No. 603,820
Int. Cl. G01r *27/26*
U.S. Cl. 324—61 **15 Claims**



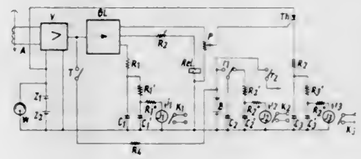
An apparatus and method for determining the moisture content of a material supported on a support, such as a spool, of dielectric material, said system including means for establishing an electric field, means for holding in the field the support and material thereon and shielding for diverting the field around the support to reduce the passage of the field through the support.

3,465,244
BEAM SCANNER FOR INDICATING THE DIMENSIONS AND CONFIGURATION OF A BEAM OF CHARGED PARTICLES
Lars E. Wahlin, Boulder, Colo., assignor to Colutron Corporation, Boulder, Colo., a corporation of Colorado
Filed June 6, 1966, Ser. No. 560,950
Int. Cl. G01n *27/62*
U.S. Cl. 324—71 **8 Claims**



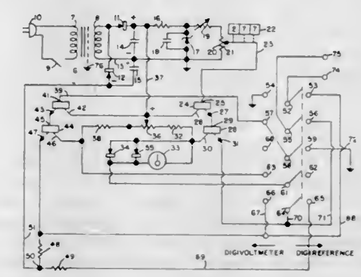
A charged particle beam scanner uses a single probe mounted on an endless belt and mounted at a 45° angle to the longitudinal axis of beam, and the probe is arranged at a 45° angle to the belt so that on one stretch of the belt it passes horizontally through the beam and on the other stretch of the belt it passes vertically through the beam. A pick off at the end of each pass through the beam, picks off the charge from the probe and alternately displays the charge on the X and Y axes of an oscilloscope, thereby visually showing the dimensions and configuration of the beam.

3,465,245
ELECTRONIC DEVICE FOR AUTOMATIC INDICATION, REGISTRATION AND FORECAST OF LOCAL AND DISTANT THUNDERSTORMS
Heinz-Jurgen Fischer, Elisabethenstrasse 2, Ravensburg, Germany, and Walter Schmidt, Badstrasse 16½, Lindau-Enzisweller, Germany
Filed Dec. 14, 1966, Ser. No. 601,674
Claims priority, application Germany, Dec. 15, 1965, A 51,124; Oct. 12, 1966, A 53,799
Int. Cl. G01r *31/02*
U.S. Cl. 324—72 **18 Claims**



An electronic device for automatic indication, registration and forecasting of local and distant thunderstorms, whereby a part of a signal emitted from lightning flashes is received by means of a ferrite antenna. The signal is amplified by means of a resonance amplifier, whereupon the signal is threefold exploited and in particular: (1) relating to the intensity of the lightning flash; (2) in relation to the lightning flashes during a time unit; and (3) relative to the time duration, in which during a time interval total lightning disturbances occur.

3,465,246
COMBINED REFERENCE VOLTAGE SOURCE AND COMPARISON VOLTMETER WITH DIGITAL INDICATOR
Alfred W. Barber, Bayside, N.Y.
(32—44 Francis Lewis Blvd., Flushing, N.Y. 11358)
Filed June 30, 1966, Ser. No. 561,804
Int. Cl. G01r *17/02*
U.S. Cl. 324—98 **6 Claims**



A regulated voltage is programmed by means of a digital indicating potentiometer to provide a accurately

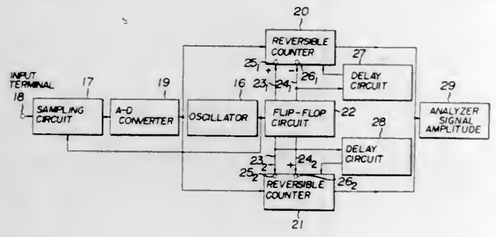
known reference voltage. Alternately an unknown voltage is measured by comparison with the digitally indicated reference voltage. The device presents a very high impedance to unknown voltages when used as a voltmeter and is insensitive to loading when used as a voltage source.

3,465,247

APPARATUS FOR AUTOMATICALLY STATISTICALLY ANALYZING SIGNALS HAVING FLUCTUATING PORTIONS AND STEEP SLOPE PORTIONS

Moritada Kubo, Tokyo, Japan, assignor to Tokyo Shibaura Electric Co., Ltd., Kawasaki-shi, Japan, a corporation of Japan

Filed Dec. 16, 1965, Ser. No. 514,195
Claims priority, application Japan, Dec. 25, 1964, 39/73,232
Int. Cl. G01r *23/16, 27/02*
U.S. Cl. 324—77 **4 Claims**



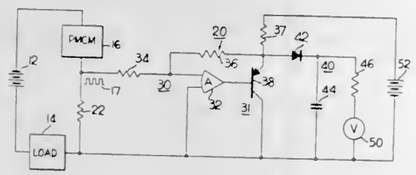
Apparatus for automatically statistically analyzing the characteristics of the suddenly changing portions (or steep slope portions) of an input signal and for analyzing the frequency of occurrence of said steep slope portions.

3,465,248

PULSING CURRENT PEAK LEVEL MEASURING MEANS

Tom N. Thiele, Milwaukee, Wis., assignor to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.

Filed May 29, 1967, Ser. No. 642,062
Int. Cl. G01r *19/16*
U.S. Cl. 324—103 **1 Claim**



A load is energized from a battery through a pulse modulation control system that cyclically turns on and off to provide a controlled average voltage to the load. A measurement of current through the load derived from a shunt and amplified by an operational amplifier controls a common collector transistor amplifier connected to turn on at a conductance varying as a function of the operational amplifier output and, therefore, as a function of the shunt voltage. A capacitor is connected to be charged through a diode to a voltage level varying as a function of the peak conductance of the transistor amplifier and a voltmeter is connected to measure the charge on the capacitor.

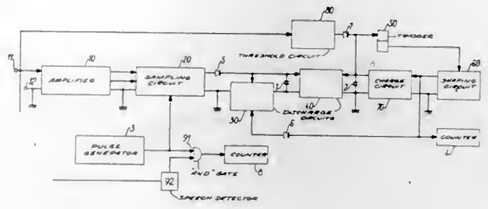
3,465,249

WIDE FREQUENCY BAND SIGNAL CONVERTER

Antoine Marié Jousset, 50 Blvd. Beaumarchais, Paris 11, France; Christian Augustin Jacquart, Rue de Pont Hele 22, Perros-Guirec, France; Yves Henri le Goffic, Pavillon No. 3, Saint-Roch 22, Lannion, France; and Jean Emile Milon, 142 D. Kervoilan 22, Perros-Guirec, France

Filed July 28, 1967, Ser. No. 656,902
Claims priority, application France Aug. 3, 1966, 71,996
Int. Cl. G01r *1/28, 1/30*
U.S. Cl. 324—111 **5 Claims**

A device allowing precise measurement in digital form of the mean power of variable amplitude electrical signals covering a wide frequency band, over a given time interval, without employing high speed counting means; said device comprises means for periodically sampling said signals for their amplitude, means for charging a first capacitor to a voltage proportional to each sampled amplitude, means for completely discharging said first capacitor at constant current rate during each sampling period, a second capacitor, means for partially discharging said second capacitor at a current rate proportional to the voltage across said first capacitor during each discharge period thereof, means for rapidly recharging said second capacitor up to a predetermined maximum voltage as soon as the voltage across its terminals reaches a predetermined minimum value, and means for counting the number of rechargings of said second capacitor over said given time interval.

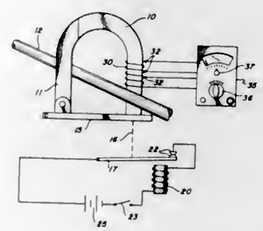


3,465,250

SPLIT CORE DIRECT CURRENT MEASURING DEVICE

Arden L. Schilling, 2857 W. Palmetto, Tucson, Ariz. 85705

Filed Sept. 14, 1967, Ser. No. 667,807
Int. Cl. G01r *33/02*
U.S. Cl. 324—127 **1 Claim**



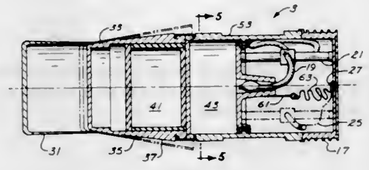
A split core device openable for receiving a conductor carrying a direct current. A movable portion is provided as part of the magnetic circuit of the core and is oscillatory between two positions to vary the reluctance of the magnetic circuit. The magnetic flux induced in the core by the direct current is thus measured by varying the flux as a result of varying the reluctance.

3,465,251

IMPACT DAMPER AND ANTENNA RELEASE MECHANISMS FOR AIRBORNE RADIO RECOVERY BEACON

James M. Meek and David T. Lokerson, Silver Spring, Md., and Gary A. Briggs, Falls Church, Va., assignors to the United States of America as represented by the Secretary of the Army

Filed Apr. 6, 1966, Ser. No. 540,773
Int. Cl. H04b *1/02*
U.S. Cl. 325—112 **8 Claims**



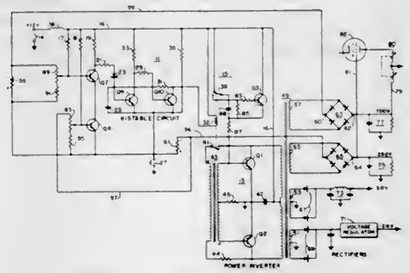
An airborne radio recovery beacon having a hollow body member of cylindrical shape with a slightly tapered front portion which is partially inserted into a hollow impact damper cup member having a tapered lip portion of a configuration complementary to the shape of the tapered front portion. A self-contained radio transmitter is located within the hollow body member and is connected to a collapsible spring steel antenna which is held within the hollow body member in a substantially flat collapsed condition. The antenna is secured in this position by a metal band surrounding the body member and locked in position by a pin member which is released by a clock mechanism.

3,465,252

TRANSCEIVER POWER SUPPLY WITH OVERLOAD PROTECTIVE CIRCUITRY

William M. McLean, West Henrietta, and Kendall Seybolt, Mumford, N.Y., assignors to the United States of America as represented by the Secretary of the Army

Filed Sept. 20, 1966, Ser. No. 580,840
Int. Cl. H04b *1/40*
U.S. Cl. 325—151 **5 Claims**



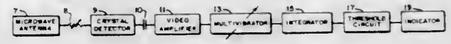
This DC to DC type power supply includes a transistorized inverter which is controlled by a flip-flop. In the event of an overload in either the plate or screen supply voltages of a tetrode, which voltages are provided by this power supply, the flip-flop changes state and switches off the inverter. The flip-flop also controls the starting of the inverter.

3,465,253

PULSED AND CONTINUOUS WAVE ELECTROMAGNETIC SIGNAL DETECTORS

Otto E. Rittenbach, Neptune, N.J., assignor to the United States of America as represented by the Secretary of the Army

Filed Feb. 9, 1967, Ser. No. 615,034
Int. Cl. H04b *1/06, 1/10, 1/16*
U.S. Cl. 325—322 **7 Claims**



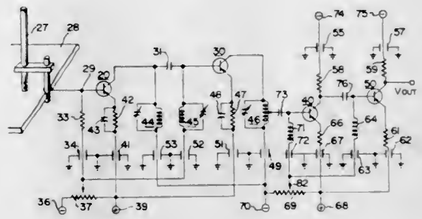
Three signal detectors are shown which are intended to detect the presence of microwave signals such as radar signals. The circuitry comprises basically untuned crystal-video receivers combined with various means to discriminate against random noise and to enhance the response to pulsed radar signals of known or estimated characteristics. One circuit is primarily intended to detect pulsed microwave signals, another continuous wave signals and a third will efficiently detect either type of signal.

3,465,254

ULTRAHIGH FREQUENCY PHASE SHIFTER

Earl R. Murphy and Philip L. Shelton, Scottsdale, Ariz., assignors to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois

Filed Nov. 29, 1965, Ser. No. 510,302
Int. Cl. H04b *1/16*
U.S. Cl. 325—376 **11 Claims**



A system for shifting the phase of an ultrahigh frequency signal including a negative feedback transistor coupled to the incoming ultrahigh frequency signal and means connected to the negative feedback transistor to vary the DC bias thereon. The amount of phase insertion introduced into the incoming ultrahigh frequency signal is controlled by varying the current flow in the negative feedback transistor.

3,465,255

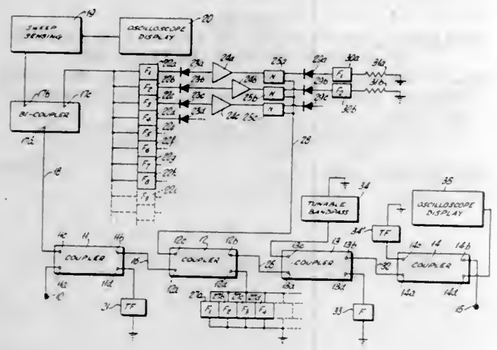
ENVIRONMENTAL CONTROL FOR RADIO FREQUENCY RECEIVING SYSTEMS

Aldo M. Scandurra, Greenlawn, N.Y., assignor to Applied Research, Inc., Port Washington, N.Y., a company of New York

Filed Feb. 16, 1966, Ser. No. 527,862
Int. Cl. H04b *1/06*
U.S. Cl. 325—462 **10 Claims**

A radio frequency environmental control system for sensing energy levels within incremental portions of the

radio frequency spectrum and utilizing the sensed energy levels to control the amplitude of any selected signal or



group of signals in a selected manner to control a radio frequency environment.

3,465,256

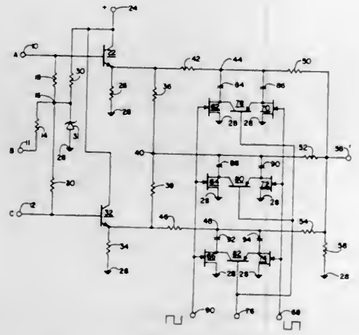
SHAFT POSITION INDICATOR CIRCUIT FOR A SYNCHRO-TRANSMITTER

Adrian J. Moses, Rush City, Minn., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware

Filed May 16, 1967, Ser. No. 638,961

Int. Cl. H03k *9/06;* **H03d** *13/00*

U.S. Cl. 328—133 **7 Claims**



Circuitry for electronically converting three wire signals from a synchro-transmitter into a variable amplitude analog output indicative of shaft position of the transmitter. The circuitry utilizes switching, limiting and summing techniques such that the amplitude of the individual received signals are never passed to the summing network at greater than the amplitude obtained by the input signal at the 30° level. Due to the switching, there is always one signal varying in amplitude which is combined with the remaining, limited signals to produce the output signal.

ERRATUM

For Class 328—142 see:
Patent No. 3,465,276

3,465,257

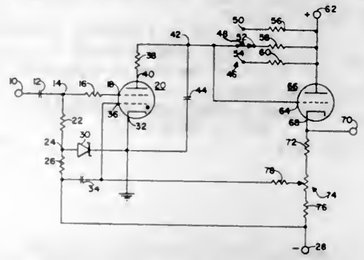
FUNCTION GENERATING APPARATUS

William E. Currie and Paul M. Mettert, Seattle, Wash., assignors to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware

Filed May 31, 1966, Ser. No. 553,921

Int. Cl. H03k *6/00*

U.S. Cl. 328—185 **2 Claims**



A sawtooth waveform generator capable of providing a sawtooth waveform output which is a sub-multiple of a basic frequency pulse input.

3,465,258

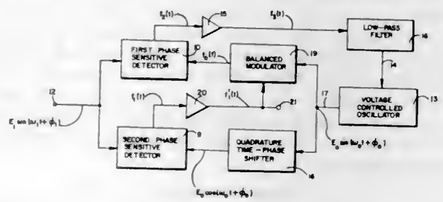
PHASE LOCK DEMODULATOR

Charles E. Wheatley III, Manhattan Beach, Calif., assignor to North American Rockwell Corporation, a corporation of Delaware

Filed Dec. 21, 1966, Ser. No. 603,500

Int. Cl. H03d *3/18*

U.S. Cl. 329—122 **8 Claims**



The subject invention relates to phase-modulated communication systems employing a bi-polar demodulator having a phase-locked loop, and more particularly to a bi-phase demodulator employing double side-band suppressed carrier modulation for phase-doubling the phase error to which the phase-lock control loop responds.

3,465,259

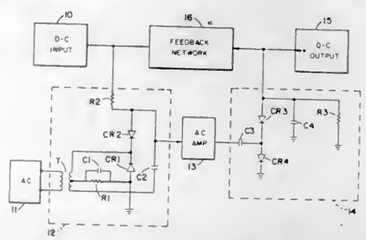
LOW DRIFT D-C OPERATIONAL AMPLIFIER

Donald W. Peck, Newbury Park, Calif., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Army

Filed Sept. 27, 1966, Ser. No. 583,118

Int. Cl. H03f *1/02*

U.S. Cl. 330—9 **1 Claim**



Amplification of a D-C input signal is obtained by controlling the amplitude of an A-C signal, amplifying the A-C, then rectifying the amplified A-C signal. A feedback path is provided to feed back a portion of the rectified A-C and compare it to the D-C input signal to be amplified. The difference between the D-C input signal and the feedback rectified A-C signal is used to vary the amplitude of the A-C signal fed to the A-C amplifier. The arrangement allows a D-C signal to be effectively amplified, with small amplitude drift in the amplifier.

3,465,260

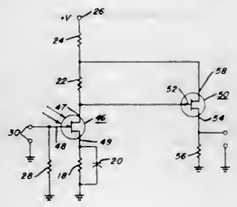
HIGH GAIN AMPLIFIER CIRCUIT

Bernard J. Sullivan, Rochester, N.Y., assignor to Bausch & Lomb Incorporated, Rochester, N.Y., a corporation of New York

Filed Apr. 18, 1967, Ser. No. 631,635

Int. Cl. H03f *3/18*

U.S. Cl. 330—17 **2 Claims**



An amplifier circuit including two cascade connected semiconductor amplifying stages with a positive feedback circuit for increasing the gain of the first stage. The amplifiers comprise field-effect transistors of complementary types and the feedback is connected from the source electrode of the output transistor to the junction of two resistors which are connected to the drain electrode of the input transistor.

3,465,261

RESONANT CIRCUIT ARRANGEMENT

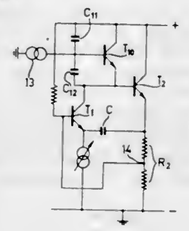
Adrianus Johannes Wilhelmus Marie van Overbeek and Wilhelmus Antonius Joseph Marie Zwijsen, Eindhoven, Netherlands, assignors, by mesne assignments, to U.S. Philips Corporation, New York, N.Y., a corporation of Delaware

Filed Aug. 25, 1966, Ser. No. 574,964

Claims priority, application Netherlands, Aug. 26, 1965, 6511133

Int. Cl. H03f *3/42*

U.S. Cl. 330—18 **6 Claims**



A resonantly tunable circuit having two transistors interconnected with a phase shifting feedback coupling and a second phase shifting network connected to the collector base interconnection of the first and second transistor, the second phase shifting network having a third transistor with its emitter collector path connected to the collector of the first transistor so as to supply the current through the first transistor, the base electrode of the third transistor connected to the tap on a potential divider.

ERRATUM

For Class 331—94.5 see:
Patent No. 3,465,358

3,465,262

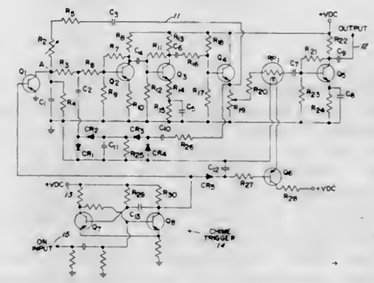
CHIME GENERATOR CIRCUIT FOR A P.A. AMPLIFIER

Arthur L. Kemper, Marion, Iowa, assignor to Collins Radio Company, Cedar Rapids, Iowa, a corporation of Iowa

Filed Aug. 25, 1967, Ser. No. 663,254

Int. Cl. H03b *3/02*

U.S. Cl. 331—109 **2 Claims**



Disclosed is a chime generator circuit which is frequency stable and the output of which is not distorted by saturation of the amplifier components. These advantages are obtained by shunting a portion of the amplifier input to ground through a feedback network which is sensitive to the output voltage. The output voltage is therefore nearly constant and the amplifier operates in a compressed state and consequently the output is not distorted by saturation of the amplifying elements. A chime trigger flip-flop initiates oscillation of the amplifier by removing a ground connection to the amplifier input, and allowing maximum feedback to the input. Light sensitive resistor means at the amplifier output increases in resistance in response to actuation of the chime trigger, and a percussive effect with an exponential decay is produced at the chime generator output.

3,465,263

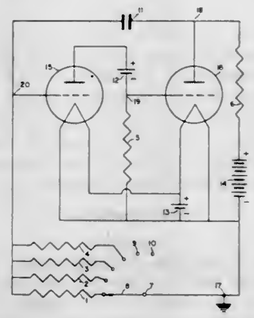
ASTABLE MULTIVIBRATOR PULSE GENERATOR

Donald A. Schultz, P.O. Box 113, Baker, Mont. 59313

Filed Jan. 26, 1967, Ser. No. 612,763

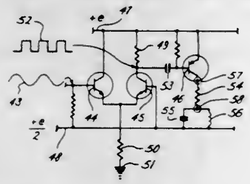
Int. Cl. H03k *3/06*

U.S. Cl. 331—144 **1 Claim**



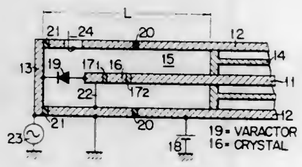
A free-running multivibrator wherein one of the cross-coupling capacitors has been replaced by a battery which serves the dual function of energizing one of the tubes and coupling the output of this tube to the input of the other tube.

3,465,264
PHASE INDICATOR
Charles S. Stone, Austin, Tex., assignor to Tracor, Inc., Travis, Tex., a corporation of Texas
Filed Dec. 14, 1964, Ser. No. 418,013
Int. Cl. H03b *11/08, 11/10;* **G01r** *25/00*
U.S. Cl. 331—166 **1 Claim**



1. A preringing circuit comprising
a first active component biased by a bias voltage and adapted to receive an applied sine wave voltage,
a second active component connected to said first active component for producing a square wave voltage as determined by the operation of said first active component, said square wave voltage fluctuating between said bias voltage and a lesser voltage, and
resonant active switch means connected to said second active component for producing high frequency resonant oscillations as determined by the edges of the square wave voltage from said second active component.

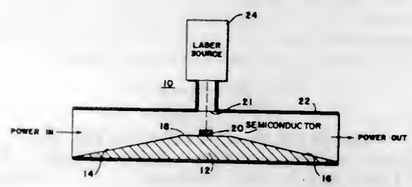
3,465,265
FREQUENCY MODULATOR USING AN N-TYPE SEMICONDUCTOR OSCILLATION DEVICE
Isamu Kuru, Yokohama-shi, Japan, assignor to Tokyo Shibaura Electric Co., Ltd., Kawasaki-shi, Japan, a corporation of Japan
Filed Sept. 9, 1966, Ser. No. 578,262
Claims priority, application Japan, Sept. 13, 1965, 40/55,696; June 8, 1966, 41/36,561
Int. Cl. H03c *3/22*
U.S. Cl. 332—30 **5 Claims**



A frequency modulator having a resonance circuit formed of a coaxial type resonator or a waveguide and an N-type Gunn effect semiconductor oscillation device which produces a high frequency signal. A varactor is electromagnetically connected to the resonance circuit to which a frequency modulating signal is applied, thereby varying a resonant condition of the resonance circuit and producing a modulated high frequency signal.

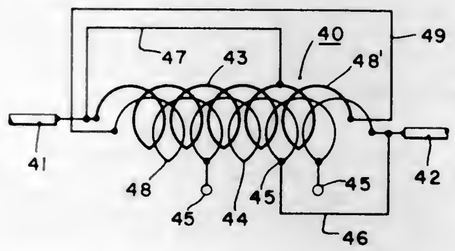
3,465,266
RF POWER LIMITER COMPRISING AN IRRADIATED SEMICONDUCTOR BLOCK
Samuel Dixon, Jr., Neptune, N.J., assignor to the United States of America as represented by the Secretary of the Army
Filed Feb. 12, 1968, Ser. No. 704,664
Int. Cl. H04b *3/04*
U.S. Cl. 333—17 **8 Claims**

An RF power limiter including a ridged waveguide section on which is mounted an intrinsic silicon semiconductor block. The semiconductor block is irradiated and preionized by a laser beam, the degree of preionization being predetermined such that at a critical power level P_c,



avalanche breakdown occurs within the semiconductor. The avalanche breakdown will cause reflection to take place so that P_c will be the limited power output.

3,465,267
CIRCUIT COMPONENT
Ernest H. Carlson, Jr., 7333 W. 90th St., Los Angeles, Calif. 90045
Filed Mar. 4, 1966, Ser. No. 531,815
Int. Cl. H01h *7/10, 7/14;* **H03h** *7/38*
U.S. Cl. 333—76 **13 Claims**

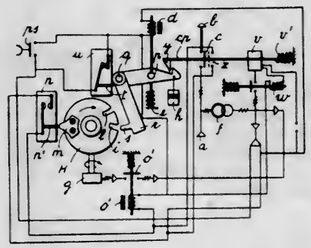


The invention is an electronic component which is a bifilar wound capacitor coil having circuit connections whereby any inherent inductive effect can be selectively eliminated by introducing the current at two electrical points. These points may be both ends of both windings. Inductance taps are provided along the length of both windings whereby a part of a winding may be shunted by connecting a tap to the end of a winding, and in this manner, any combination of inductance and capacitance can be realized.

3,465,268
REMOTELY OPERATING PROGRAMMER TO LOCATE ELECTRIC LINE FAILURES
Adriano Pipponzi, Via Magenta 7, Busto Arsizio, Varese, Italy
Filed Feb. 28, 1967, Ser. No. 619,274
Claims priority, application Italy, Mar. 5, 1966, 4,927/66
Int. Cl. H01h *75/02, 77/02*
U.S. Cl. 335—26 **1 Claim**

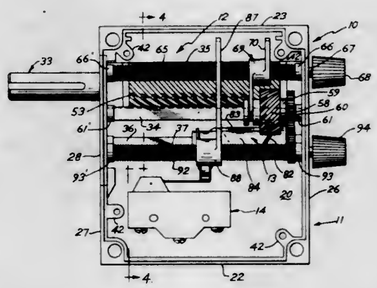
A remotely operating programmer, with electric axis, especially suitable for locating remote electric line failures and for the progressive reapplication of power to

systems serving particular working cycles, which includes, in combination with an automatic interrupting device, a rotating device, provided with cam means, actuated by a motor fed by a voltage proportional to that of the network, adapted to stop in predetermined different positions and cooperating with the means controlling the opening of said automatic interrupting device, said rotating device being in turn combined with auxiliary switches,



connected in the circuits controlling the opening of the automatic interrupting device and the motion of said rotating device, that may allow, in connection with the position taken up by said rotating means, the opening of the interrupting device, in a way so as to be easily reclosable, or in a way to lock the different members, and therefore also the movable contacts of the interrupting device, in the open position.

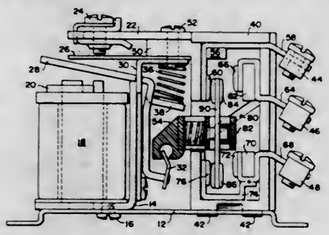
3,465,269
PHASE TIME VARIATOR
Robert V. Hendershot, Evanston, Ill., assignor to Candy Mfg. Co., Inc., Chicago, Ill., a corporation of Illinois
Filed Sept. 28, 1967, Ser. No. 671,332
Int. Cl. H01h *3/42*
U.S. Cl. 335—69 **8 Claims**



A mechanical control device for regulating the operational cycle of electrical switches and related circuitry, both as to a duration of a given operating condition for a switch and as to the point in time at which such condition of operation is initiated.

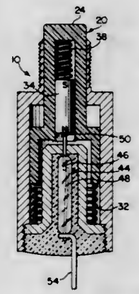
3,465,270
HEAVY DUTY RELAY WITH WIPING CONTACTS
James J. Schattler, Marshfield, Mass., assignor to Joseph Pollak Corporation, Boston, Mass., a corporation of Massachusetts
Filed July 6, 1967, Ser. No. 651,614
Int. Cl. H01h *67/02*
U.S. Cl. 335—132 **5 Claims**

A heavy duty relay for industrial applications including individually removable contacts, each spring loaded and centered against a positive stop; wiping action between fixed and movable contacts being provided by off-axial overtravel in two directions. The entire relay may be easily dismantled and stacking of multiple sets of contacts all operated by the same relay coil is possible. The



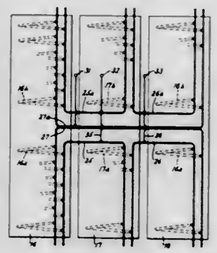
linkage between the armature and the contact carrier includes a plastic yoke slipped over a metal bridging bar of a pivoted armature minimizing friction and facilitating disassembly.

3,465,271
MAGNETIC SWITCHING DEVICE
John A. Koepke, Mount Prospect, Ill., assignor to Illinois Tool Works Inc., Chicago, Ill., a corporation of Delaware
Filed Apr. 2, 1968, Ser. No. 718,144
Int. Cl. H01h *9/00*
U.S. Cl. 335—205 **8 Claims**



A magnetic switching device including a push button operated reed switch wherein a magnet carried by the push button is arranged in a predetermined magnetic relationship relative to the reed switch.

3,465,272
INTERNAL BUS CONNECTION FOR HIGH-CURRENT RING-CONNECTED TRANSFORMERS AND THE LIKE
Werner Bach, Pittsfield, Mass., assignor to General Electric Company, a corporation of New York
Filed Dec. 1, 1967, Ser. No. 687,243
Int. Cl. H01f *33/02*
U.S. Cl. 336—12 **7 Claims**



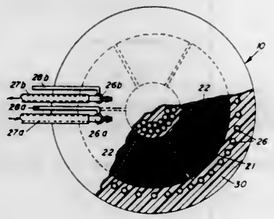
An improved internal arrangement of bus conductors for ring-connected high current power transformers. Each

phase winding is formed of a plurality of coils in a cylindrical phase winding assembly connected in parallel circuit relation through axially parallel pairs of bus conductors at one side of the winding assembly. In a three-phase apparatus three pairs of bus conductors are formed as the parallel side legs of three open-ended conductor loops in coplanar relation, two loops being nested in side-by-side relation within the third loop.

3,465,273
TOROIDAL INDUCTOR

Elwood M. Brock, Flemington, N.J., assignor to Hunterdon Transformer Company, Flemington, N.J., a corporation of New Jersey

Filed Dec. 14, 1967, Ser. No. 690,674
Int. Cl. H01f *27/08*
U.S. Cl. 336—62 **9 Claims**

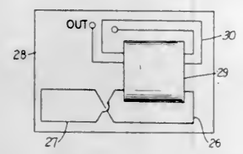


A high power inductor for use as a load impedance, comprising a ring-shaped segmented core having tubular windings and encapsulated in an epoxy, and a method for assembling the same is disclosed. The core is comprised of a plurality of radial laminations, with the segments being separated by rigid, nonmagnetic spacers which do not fill their respective gaps. The core assembly is held in place by a stainless steel strap, and the assembly is wrapped with a glass fiber tape saturated in epoxy and cured. The tape is then drilled to provide access to the core air gaps, and the tubular winding is wrapped on the core. By making the core generally circular or oval-shaped in cross section, the tubular winding is placed on the core with a minimum of lost space. The assembly is then vacuum encapsulated in a resin composition, the resin flowing into the core gaps and any other voids which might exist in the assembly. Upon curing of the resin, the inductor is capable of being operated at high power levels without vibration.

3,465,274
SEARCH COIL ARRANGEMENT

Noel B. Proctor, Houston, Tex., assignor to American Machine and Foundry Company, New York, N.Y., a corporation of New Jersey

Continuation-in-part of application Ser. No. 652,463, July 26, 1967. This application Oct. 23, 1967, Ser. No. 681,052
Int. Cl. H01f *27/28*
U.S. Cl. 336—73 **8 Claims**

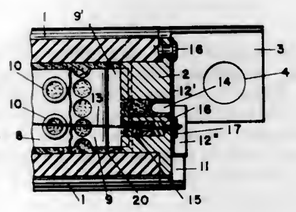


A printed circuit search coil arrangement for use in magnetic testing equipment including a first coil for detecting a magnetic flux pattern and a second coil magnetically coupled with the first coil. The transformer action of the two coils allows an induced signal in the first coil to be stepped up in voltage in the second coil. The first or primary coil may include several loops connected in parallel-aiding, series-aiding, or series-opposed. Each loop may be magnetically coupled to a second coil. A current source may be serially connected with either the first or second coils to bias the magnetic coupling means thereby utilizing a linear region of the magnetic characteristic of the magnetic coupling means.

3,465,275
CURRENT LIMITING FUSE FOR USE IN ROTATING MACHINERY

Kenneth W. Swain, North Hampton, N.H., assignor to The Chase-Shawmut Company, Newburyport, Mass.

Continuation of application Ser. No. 187,261, Apr. 13, 1962. This application Feb. 26, 1968, Ser. No. 708,028
Int. Cl. H01h *85/04*
U.S. Cl. 337—158 **9 Claims**



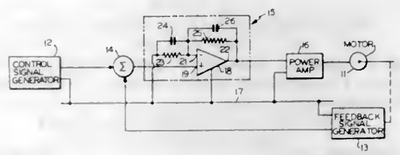
A fuse structure having a fuse link shaped to be braced against centrifugal forces by the pulverulent arc-quenching filler inside the casing of the fuse. The fuse link assembly includes a back-up plate of a synthetic-resin-glass-cloth laminate for the fuse link. The fuse link assembly is designed to minimize let-through currents or let-through $i^2 \cdot t$ values, respectively, and to yield fuse structures having high current carrying capacities in spite of their great compactness. The electrical performance characteristics of the fuse link assembly are due to the coaction of a ribbon fuse link having a specific geometrical configuration, and its aforementioned back-up plate of synthetic-resin-glass-cloth laminate. The back-up plate forms an auxiliary brace for the fragile perforated portion of the fuse link.

This application further discloses a blown fuse indicator having a restraining wire acted upon by braking means and being subject to minimal stresses when the fuse is being rotated.

3,465,276
NEGATIVE FEEDBACK CIRCUIT EMPLOYING COMBINATION AMPLIFIER AND LEAD-LAG COMPENSATION NETWORK

John R. Silva, Rehoboth, Mass., and Quentin C. Turtle, Cranston, R.I., assignors to General Signal Corporation, a corporation of New York

Filed Sept. 6, 1967, Ser. No. 665,886
Int. Cl. G06g *7/12*
U.S. Cl. 328—142 **5 Claims**



Negative feedback electrical control circuits employing a unit which performs both amplifying and lead-lag compensation functions. The unit consists of an operational amplifier having a pair of gain resistors which are sized to insure nonlinear operation of the amplifier, and which are associated with shunt capacitors sized to afford the phase margin required for stability. In one embodiment, one capacitor shunts only a portion of the feedback resistor, and the other capacitor shunts the balance of this resistor as well as the input resistor. In another embodiment, a potentiometer is used to feed a varying portion of the output voltage to the minor feedback path of the operational amplifier.

3,465,277
LINEAR MOTION POTENTIOMETER ACTUATOR

Mogens W. Bang, Ridgway, Pa., assignor to Stackpole Carbon Company, St. Marys, Pa., a corporation of Pennsylvania

Filed Aug. 15, 1967, Ser. No. 660,652
Int. Cl. H01c *5/02, 1/02*
U.S. Cl. 338—183 **8 Claims**

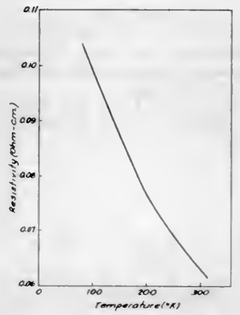


An elongated potentiometer housing has a longitudinal slot in its front, in which is disposed a slide that carries a bridging contact engaging a resistor strip and a collector strip inside the housing. A knob is rotatably mounted on a pin projecting from the slide and has a portion provided with gear teeth meshing with a row of rack teeth extending lengthwise of the housing, so that when the knob is turned it will move the slide along the slot.

3,465,278
MOLYBDENUM DISULFIDE ELECTRICAL RESISTANCE DEVICES

Edward L. Kern, Midland, and Orison J. Cain, Auburn, Mich., assignors to Dow Corning Corporation, Midland, Mich., a corporation of Michigan

Filed Dec. 22, 1965, Ser. No. 515,688
Int. Cl. H01c *7/04;* **H01b** *1/10*
U.S. Cl. 338—308 **5 Claims**

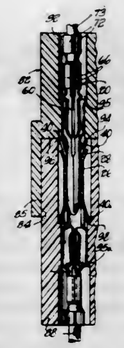


1. An electrical resistance element comprising
a body consisting substantially of molybdenum disulfide and
means for supplying electrical current to and conducting electrical current away from said body.

3,465,279
MINIATURE PIN TERMINAL CONNECTOR

John H. Krehbiel, Downers Grove, Ill., assignor to Molex Products Company, Downers Grove, Ill., a corporation of Illinois

Filed Sept. 8, 1967, Ser. No. 666,299
Int. Cl. H01r *13/20, 13/50, 9/08*
U.S. Cl. 339—30 **5 Claims**

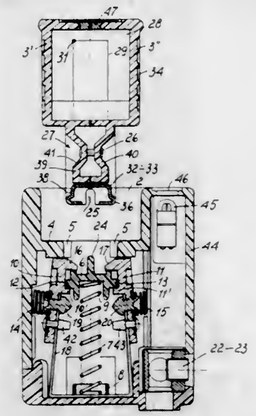


Miniature pin terminal connectors comprising complementary male and female terminals formed of stamped and rolled sheet metal having flanges for crimped, solderless connection to a wire, and having struck out protuberances for positioning and retaining the terminals in insulated housings.

3,465,280
FUSE-HOLDER

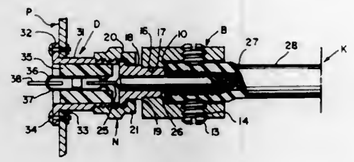
Mario Paganelli, Varese, Italy, assignor to Bassani, S.p.A., Milan, Italy

Filed Mar. 28, 1967, Ser. No. 626,508
Claims priority, application Italy, Apr. 12, 1966, 8,311/66
Int. Cl. H01r *13/44, 3/00*
U.S. Cl. 339—42 **9 Claims**



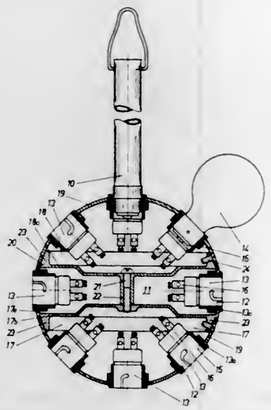
A fuse-holder wherein the fuse is located in a discardable member consists of a fuse box into which the member must be inserted to complete the circuit. Upon withdrawal of the member the current-carrying contacts in the interior of the fuse box are automatically sealed off against tampering. The circuit can be refused only by insertion of a precise duplicate member.

3,465,281
BASE FOR COAXIAL CABLE COUPLING
Lewis A. Florer, Greeley, Colo.
(2342 California Ave., Wahiawa, Hawaii 96786)
Filed Oct. 2, 1967, Ser. No. 672,172
Int. Cl. H01r *17/18, 13/54, 7/32*
U.S. Cl. 339—89 **4 Claims**



An improved base for a coaxial cable coupling adapted to be used with several types of coupling connectors. The connectors are exemplified in the disclosure as a nut for turning upon an externally threaded stub and as a split sleeve jack within an attachment thimble. The base is a short, tubular member with the coupling connector at its leading end and sockets at its trailing end to receive the end of a coaxial cable. The structure includes further an axially centered, tubular sleeve within this socket whose passageway extends through the head. The sleeve is adapted to fit over the core insulation of a peeled back end coaxial cable and underneath the braided shield of the cable. The core insulation, extending through the unit, is peeled back from the axial conductor wire within the coupling connector for attachment of the wire to a finger or pin. The unit is completed by opposing lock screws in the base which extend into the socket to bear against opposing sides of the cable to press the shield against the sleeve and to lock the members together.

3,465,282
LIGHT FITTING
Arnold Berges, Fassensteg 5, Hohenhausen, Lippe, Germany, and Karl Wehling, Reinertstr. 19, and Erich Rübsamen, Slavertrift 32, both of Lemgo, Lippe, Germany
Filed Jan. 24, 1968, Ser. No. 700,087
Int. Cl. H01r *13/60;* **F21p** *1/02;* **F21s** *1/06*
U.S. Cl. 339—121 **7 Claims**



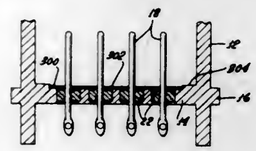
A light fitting includes a connection body in the form of a housing with connection bodies arranged therein for light bulbs and the like. The wall of the connection body is of shell-like configuration and provided with openings and holding and connecting devices. The connecting devices are to be fixed in said holes and connected to the electric circuit interconnecting the bulbs. The connecting devices are provided for the bulbs and/or for holding members for at least one further connection body.

3,465,283
ELECTRICAL PLUG CONTACTS
Stanley Thomas Deakin, Farlington, England, assignor to Sealectro Limited, Farlington, Portsmouth, England, a British company
Filed Apr. 10, 1967, Ser. No. 629,567
Claims priority, application Great Britain, Apr. 13, 1966, 16,225/66
Int. Cl. H01r *11/22, 13/50*
U.S. Cl. 339—150 **2 Claims**



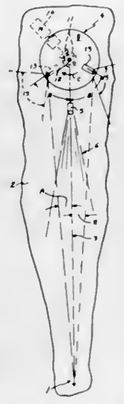
An electric plug contact comprises a split tube with resilient ears, forming the contact surfaces, folded back from the edge of the split to lie around the outside of the tube. Two or more such contacts may be held on an insulating stem. The contact, or one of them, may receive a diode or other electrical device.

3,465,284
MULTIPIN CONNECTOR
Joseph M. McManus, Pasadena, Calif., assignor to Physical Sciences Corporation, Arcadia, Calif., a corporation of California
Filed May 5, 1965, Ser. No. 453,418
Int. Cl. H01r *13/52, 33/06;* **H01j** *5/26*
U.S. Cl. 339—196 **9 Claims**



This invention relates to a multipin connector. More specifically, the invention relates to multipin connectors wherein the individual pins are sealed in position through a crosswall by the use of first insulating members and wherein the first insulating members and the crosswall are covered by a second insulating material so as to provide a multipin connector which is more resistant to the deleterious effects of moisture than prior art multipin connectors.

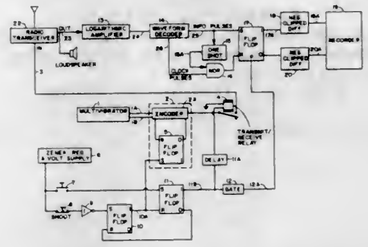
3,465,285
VEHICLE APPROACH DIRECTION INDICATING APPARATUS
John C. Simons, Dayton, Ohio, assignor to the United States of America as represented by the Secretary of the Air Force
Filed Apr. 5, 1967, Ser. No. 628,794
Int. Cl. G08g *5/00*
U.S. Cl. 340—25 **8 Claims**



An aircraft or vehicle landing approach indicating apparatus having a fixed indicator light on the center line of a predetermined approach course, such as a landing strip, or on a predetermined guide path, and a second light in the form of a beacon which is slowly rotated in a circle around a pivotal center located materially behind the fixed light and on the center line of the desired glide path approach The fixed light is always in view in front of the rotating beacon light during an approach toward the apparatus and within a predetermined angle at either side of the center line or above or below the glide path. The apparatus produces an equal length visible sweep of the moving beacon light at opposite sides of the fixed light when approaching "on course," and an unequal visible length of sweep of the moving beacon light one one or the other sides of the fixed light when approaching "off course." The longer visible sweep of the rotating light at the side of the fixed light indicates the "off course" direction and amount to the aircraft or vehicle pilot. The beacon moves in a horizontal plane in the case of the center line of the landing strip or in a vertical plane in the case of the center line of a glide path and is fixed on a rotating platform, or on a pivoted arm, at a predetermined material radial distance from the pivot to sweep a circle of 360° behind the fixed light, but is only visible with the fixed light on the approach side through an arc somewhat less than 180°.

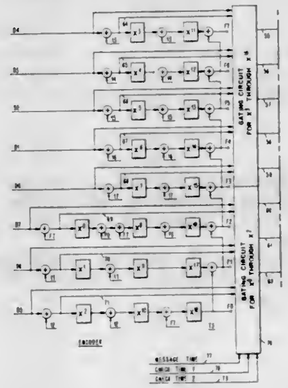
3,465,286
SEISMIC SYSTEM WITH A RADIO COMMUNICATIONS LINK CONNECTING THE OPERATING AND SEISMIC WAVE GENERATING STATIONS
Jacob E. Stone, Bellaire, Tex., assignor to Esso Production Research Company, a corporation of Delaware
Filed July 5, 1968, Ser. No. 742,697
Int. Cl. G01v *1/16, 1/22*
U.S. Cl. 340—15.5 **5 Claims**

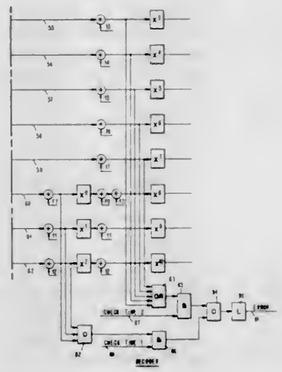
Apparatus for controlling seismic energy sources utilizes a communications link between operating site and seismic wave generating site. Seismic waves can be initiated at the generating site only when a fixed predetermined number of pulses is transmitted from the operating site. Break time and time of arrival of initial seismic waves at the earth's surface are transmitted to operating



location by changing frequency of a pulse train produced at disturbance location. Reception of extraneous signals at transmitting location are ineffective to actuate the seismic source.

3,465,287
BURST ERROR DETECTOR
Joseph C. Kennedy and John H. Sorg, Jr., Poughkeepsie, N.Y., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed May 28, 1965, Ser. No. 459,854
Int. Cl. G08b *29/00;* **G06f** *11/00*
U.S. Cl. 340—146.1 **14 Claims**

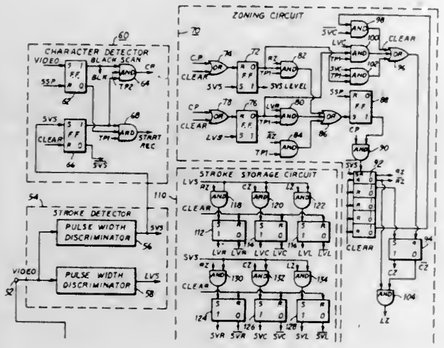




A shift register with feedback through modulo 2 adders for encoding or decoding binary data according to a gener-

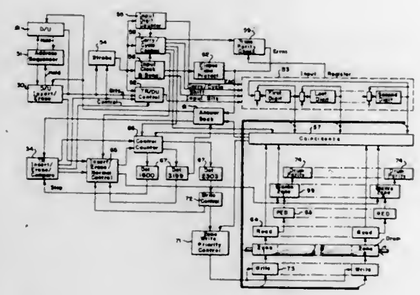
ator polynomial for error detection is disclosed in an improved form for transmitting code bits from an encoder to a decoder and for parallel transmission of data.

3,465,288
CHARACTER READER
Bernard P. Silverman, Moorestown, and Harold B. Currie, Gibbsboro, N.J., assignors to RCA Corporation, a corporation of Delaware
Filed Jan. 8, 1965, Ser. No. 424,286
Int. Cl. G06k *9/02*
U.S. Cl. 340—146.3 **6 Claims**



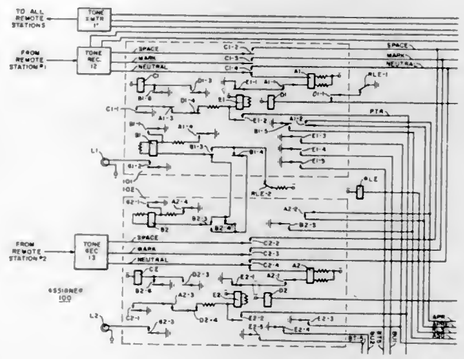
A character reader relies on the detection of vertical strokes in a character and the relative positions of these vertical strokes within the character to recognize the character.

3,465,289
VALIDITY CHECKING SYSTEM
Ronald L. Klein, Philadelphia, Pa., assignor to Ultronic Systems Corp., Pennsauken, N.J., a corporation of Delaware
Filed Apr. 19, 1966, Ser. No. 543,646
Int. Cl. H04q *1/20;* **G11b** *5/00*
U.S. Cl. 340—149 **21 Claims**



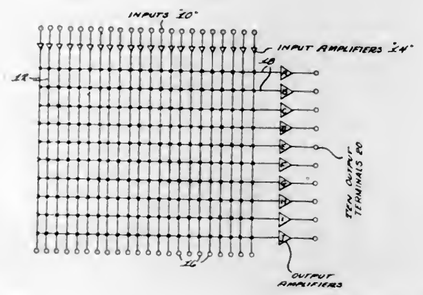
A system for checking the validity of account numbers on credit cards or the like. Numbers which can be either valid or invalid are stored on a magnetic drum. A plurality of desk mountable interrogation units, remotely located, are connected to a data processor using this drum. Each desk unit is adapted to read the number, send an appropriate message to the processor and receive an answer indicating whether or not the number is valid. This answer is produced by means for comparing the read in number with those contained in the drum to establish the presence or absence of the same number in the drum.

3,465,290
PLURAL CODE SUPERVISORY CONTROL AND TELEMETERING SYSTEM
Len B. Mitchell, Arlington Heights, and Robert E. Stoffels, Glen Ellyn, Ill., assignors, by mesne assignments, to Leeds & Northrup Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed June 2, 1965, Ser. No. 460,655
Int. Cl. H04q *5/04, 5/12*
U.S. Cl. 340—163 **7 Claims**



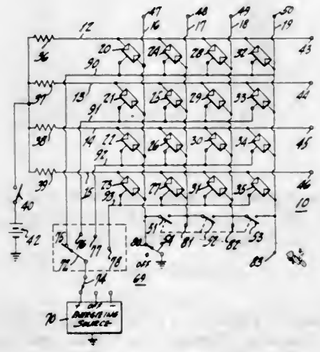
A supervisory and control system providing indications of the status of a number of remotely located devices to a central location. Dispatcher controlled apparatus at the central location is utilized to select a remotely located device and then to operate the selected device in a desired mode.

3,465,291
GLASS REED RELAY SWITCHING MATRIX
John H. De Witt, Jr., 3602 Hoods Hill Road, Nashville, Tenn. 37215
Filed Aug. 24, 1964, Ser. No. 391,633
Int. Cl. H04q *9/04*
U.S. Cl. 340—166 **3 Claims**



A switching arrangement to permit the interconnection of a selected one of a number of input lines and a selected one of a plurality of output lines. The input and output lines are arranged in spaced relationship in a matrix to define cross-over points between the input and output lines. Reed relays, which may be selectively closed, interconnect the input and output lines at the cross-over points.

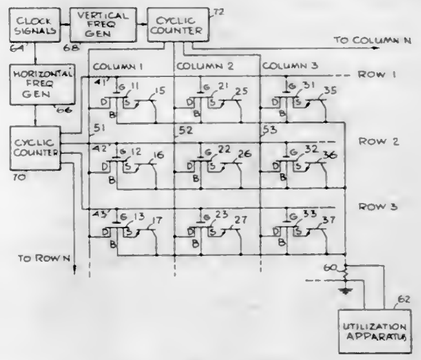
3,465,292
FLEXODE CROSSPOINT ADAPTIVE MATRIX CIRCUITS
Ronald B. Schilling, East Brunswick, and Charles M. Wine, Princeton, N.J., assignors to RCA Corporation, a corporation of Delaware
Filed Oct. 29, 1965, Ser. No. 505,685
Int. Cl. H04q *1/18*
U.S. Cl. 340—166 **4 Claims**



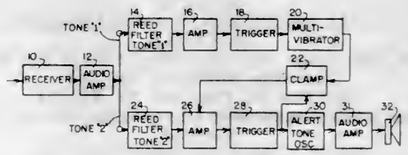
An adaptive matrix includes a plurality of column and row conductors having an adaptive semiconductor device coupled between each column and row conductor. Each of the semiconductor devices is adaptive to operate in a first operating state, wherein the device functions as a diode, or in a second operating state, wherein the device functions as a high impedance or substantially open circuit. Selected devices are adapted to operate as diodes by applying an energizing signal of one polarity thereto and the remaining devices are adapted to operate as open circuits by applying an energizing signal of one polarity thereto and the remaining devices are adapted to operate as open circuits by applying an energizing signal of an opposite polarity thereto. The matrix therefore exhibits one particular coding form that may be changed to a different coding form by readapting the semiconductor devices.

3,465,293
DETECTOR ARRAY CONTROLLING MOS TRANSISTOR MATRIX
Gene P. Weckler, Campbell, Calif., assignor to Fairchild Camera and Instrument Corporation, Syosset, N.Y., a corporation of Delaware
Filed Mar. 11, 1966, Ser. No. 533,635
Int. Cl. H04g *1/04*
U.S. Cl. 340—166 **4 Claims**

1. A system comprising a first array of a plurality of detecting devices arranged in rows and columns, a second array of a plurality of MOS transistors arranged in a corresponding number of rows and columns, there being an MOS transistor for each detecting device, means for selectively applying energizing potentials to a predetermined row and column of MOS transistors to render operative the MOS transistor at the intersection of the predetermined row and column, means coupling each of said plurality of detecting devices in said first array to an MOS transistor in a corresponding row and column in said second array for energizing a detecting device connected to an energized MOS transistor, and means for deriving an output from an energized detecting device.



3,465,294
PLURAL CHANNEL FREQUENCY DETECTING CIRCUIT
Richard D. Carsello and Richard E. Lunquist, Chicago, Ill., assignors to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois
Filed Mar. 7, 1966, Ser. No. 532,359
Int. Cl. H40q *1/18*
U.S. Cl. 340—171 **10 Claims**

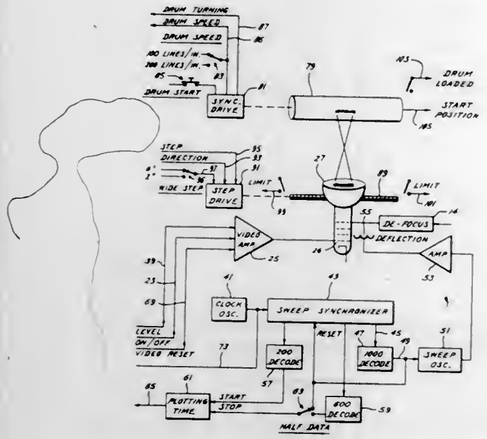


1. A tone decoder including in combination; first tone channel means including first frequency selective means for receiving and translating a first tone signal of predetermined frequency, said first tone channel means being responsive to said first tone signal to develop a control signal a predetermined time after the termination of said first tone signal, said control signal having a particular time duration, second tone channel means including second frequency selective means for receiving a second tone signal of predetermined frequency, alerting means coupled to said second tone channel means and adapted to be energized by said second tone signal, inhibiting means coupled between said first and second tone channel means and being normally operative to prevent said second tone signal from energizing said alerting means, said inhibiting means being responsive to said control signal to become disabled whereby said second tone signal received during said particular time duration energizes said alerting means.

3,465,295
ELECTRONIC DATA PLOTTER
William W. Witt and Paul E. Madeley, Houston, Tex., assignors to Geo Space Corporation, Houston, Tex., a corporation of Texas
Filed Nov. 30, 1965, Ser. No. 510,588
Int. Cl. G11b *7/26*
U.S. Cl. 340—172.5 **19 Claims**

An apparatus for pictorially displaying intelligence information on a recording medium, said information being provided in digital form by a computer. A transducer

controlled by logic circuits means for impinging discrete progressive images whereby the intelligence information is consecutively reproduced on the recording medium.

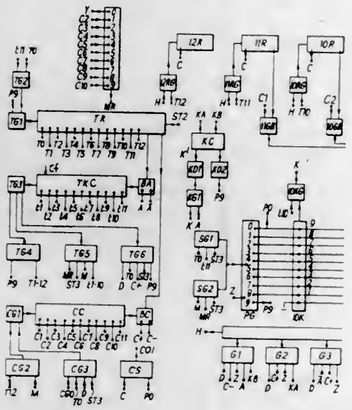


Synchronizing means are provided to synchronize the movement of the recording medium, the timing of the logic circuit means, and the operation of the transducer.

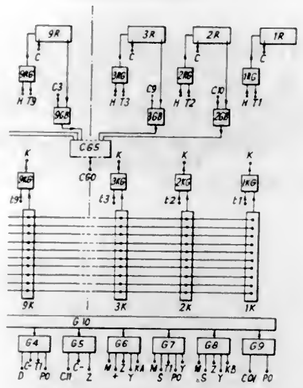
3,465,296
PLURAL REGISTERS IN A CALCULATING MACHINE

James John Drage and Alan Fripp, both of The Island, Uxbridge, Middlesex, England

Filed Feb. 24, 1966, Ser. No. 529,778
Claims priority, application Great Britain, Feb. 26, 1965, 8,467/65
Int. Cl. G11b *13/00*; **G06f** *7/00, 7/44*
U.S. Cl. 340—172.5 **7 Claims**



A circuit for controlling the storage and transfer of numbers in and between a plurality of registers in a calculating machine. The control circuitry includes switches for activated selected ones of a plurality of gates to selectively apply pulses to a decade counter in accordance with the desired operation as determined by the individual switches. The decade counter provides control pulses which, in cooperation with a control pulse gener

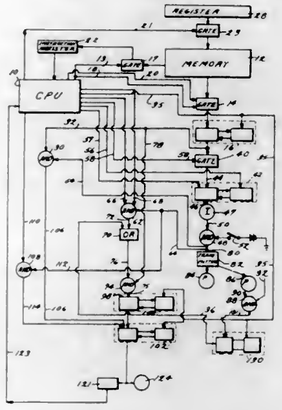


ated by the register to which numbers are being transferred to or from, serve to control the storage and transfer of numbers between the register units.

3,465,297
PROGRAM PROTECTION ARRANGEMENT

Neil L. Thomas, Minneapolis, Minn., and Albert A. Petrini, San Diego, Calif., assignors to Control Data Corporation, Minneapolis, Minn., a corporation of Minnesota

Filed Sept. 30, 1966, Ser. No. 583,386
Int. Cl. G06f *13/08*
U.S. Cl. 340—172.5 **2 Claims**

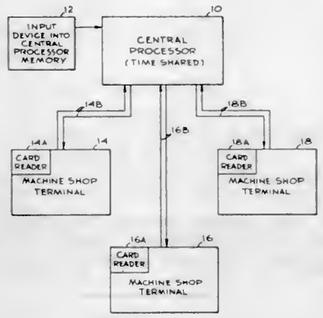


Apparatus for preventing a nonprotected computer program from interfering with a protected program. The class of program, protected or nonprotected, is established in accordance with the presence or absence, respectively, of bit information in particular locations of a program word or words. The bits of information from separate locations of a program word, or words, are held in separate storing means. A logic network is connected to the storing means to perform a comparison of the stored information and to produce an output whenever a nonprotected program attempts to interfere with a protected one.

3,465,298
TIME SHARED AUTOMATIC MACHINE TOOL CONTROL SYSTEM

Norman L. La Duke, Willoughby, and Thomas Proctor, Lyndhurst, Ohio, assignors to The Bunker-Ramo Corporation, Canoga Park, Calif., a corporation of Delaware

Filed Oct. 26, 1966, Ser. No. 590,142
Int. Cl. G11b *13/00*; **G06f** *1/00, 15/46*
U.S. Cl. 340—172.5 **19 Claims**

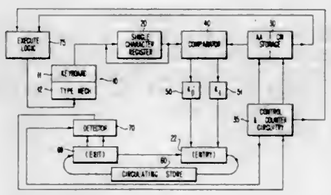


A system for numerical machine tool is provided wherein a centrally located computer facility stores a large number of numerical machine tool control programs. Means is provided at each of a plurality of numerical machine tools for requesting the central facility to provide a particular program. Means is provided at the central facility for obtaining the program and feeding it to the machine tool requesting it in predetermined increments which can be executed by the machine tool. In this manner the central facility can service a large number of remotely located numerically controlled machine tools on a time shared basis.

3,465,299
INFORMATION TRANSLATING DATA COMPARING SYSTEMS

Anselm Gotthard Schellenberg, Los Gatos, Calif., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York

Filed Jan. 26, 1967, Ser. No. 611,881
Int. Cl. G11b *13/00*
U.S. Cl. 340—172.5 **24 Claims**

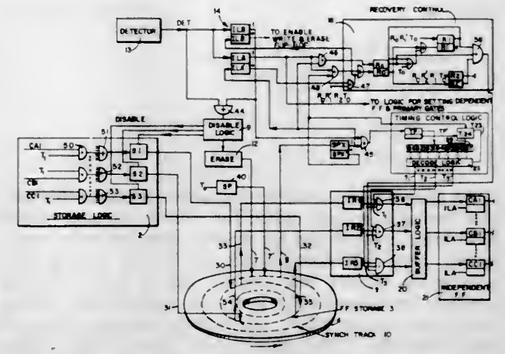


Incoming digital data wording is compared in real time in one of a number of useful modes with a plurality of stored anticipated wordings associated with instructions or operations carried out on meeting comparison criteria. Results of successive comparisons are temporarily stored and a circulating store updated accordingly and thereafter sensed for the determination of the proper instructions or operations. Serial logical circuitry is exemplified.

3,465,300
COMPUTER OPERATION RECOVERY AFTER INTERFERENCE

Howard M. Maddox, Anaheim, and Arie W. Poldervaart, Orange, Calif., assignors to North American Rockwell Corporation, a corporation of Delaware

Filed Feb. 13, 1967, Ser. No. 615,787
Int. Cl. G11b *27/36*
U.S. Cl. 340—172.5 **6 Claims**

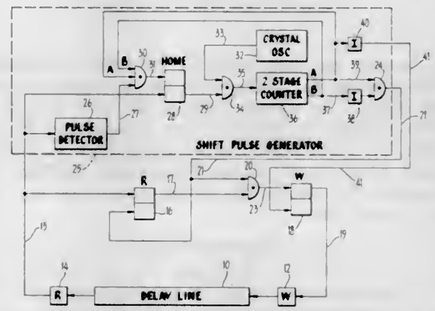


A system usable by serial computers for storing the logical states of all independent flip flops at the beginning of each computer word time, including logic for storing a pulse for synchronizing reading the stored flip flops. The system also includes logic for, in effect, erasing the stored information if no computer interruption occurs during the word time in which the information is stored. The sync pulse is erased and the flip flop information is written over. The system further comprises logic for detecting an interference condition, for disabling the erase logic, and logic for restoring the independent flip flops to their logical states before the normal operation is restored following an interruption. The system further provides for the synchronization of the return to normal operations such that the contents of the recirculating loops may be recovered.

3,465,301
DELAY LINE RESYNCHRONIZATION APPARATUS

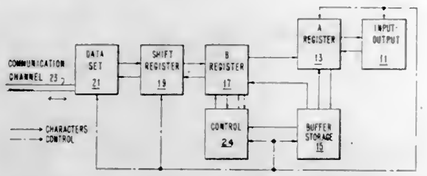
Peter E. Osborn, San Leandro, Calif., assignor to Friden, Inc., a corporation of Delaware

Filed Feb. 15, 1967, Ser. No. 616,222
Int. Cl. G11b *13/00*
U.S. Cl. 340—172.5 **10 Claims**



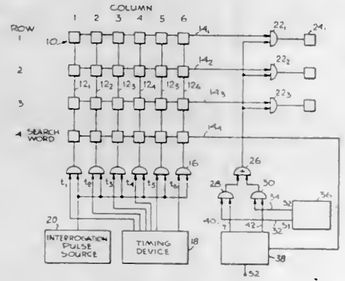
Apparatus for resynchronizing pulses on a delay line provides a series of timing pulses from a pulse source at intervals equal to the intervals at which the data bits, or pulses comprising a data train, were written onto the delay line and which is initiated by the first bit on the data train and terminated by the lapse of a predetermined period of time during which no pulses emerged from the delay line.

3,465,302
BUFFERED TELETYPEWRITER DEVICE
Donald R. Andrews, Lexington, Ky., and Eliott D. James, Palm Beach Gardens, Fla., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed Mar. 21, 1967, Ser. No. 624,891
Int. Cl. G11c *19/00*
U.S. Cl. 340—172.5 **9 Claims**



An apparatus for transmitting and receiving intelligence and having a storage device for storing messages which have been received and for storing messages to be transmitted. Received messages can be directly printed with appropriate register buffering or can be stored. Polling requests are immediately answered without interrupting other data manipulation. Additionally, message interrupt can be initiated by the same control circuitry that handles polling requests. Polling and control responses are sent through the registers utilized for data transmission and receipt.

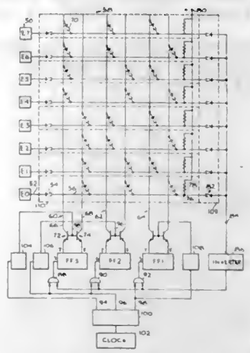
3,465,303
CONTENT ADDRESSABLE MEMORY EMPLOYING SEQUENTIAL CONTROL
Ralph J. Koerner, Canoga Park, Calif., assignor to The Bunker-Ramo Corporation, Stamford, Conn., a corporation of Delaware
Filed June 20, 1966, Ser. No. 558,651
Int. Cl. G11c *7/00*
U.S. Cl. 340—173 **15 Claims**



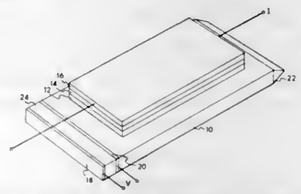
A parallel by word, serial by bit content addressable memory system for comparing a search word with stored data words. The system provides for both search and control words to be stored in rows of the system memory so that the bits thereof can be sequentially accessed, as needed, by essentially the same sequencing hardware that is required for comparison of the stored data word and search word bits.

3,465,304
SELECTION DEVICE FOR CONTENT ADDRESSABLE MEMORY SYSTEM
Ralph J. Koerner, Canoga Park, Calif., assignor to The Bunker-Ramo Corporation, Stamford, Conn., a corporation of Delaware
Filed June 20, 1966, Ser. No. 558,704
Int. Cl. G11c *7/00*
U.S. Cl. 340—173 **9 Claims**

A selection device suitable for use in a content addressable memory system for seeking, out of a plurality of binary elements, one element in a given state. The selection device includes a memory which stores a different multibit identification code for each of the binary elements. By searching those locations of the memory associated with elements defining the sought state for the minimum (or, alternatively, a maximum) identification code, one of the elements will be isolated.

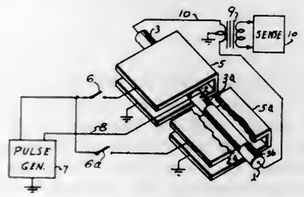


3,465,305
MAGNETOSONIC THIN FILM MEMORY
Edmund U. Cohler, Brookline, and Harvey Rubinstein, Lynnfield, Mass., assignors to Sylvania Electric Products Inc., a corporation of Delaware
Filed Oct. 14, 1965, Ser. No. 495,934
Int. Cl. G11b *5/62*
U.S. Cl. 340—174 **8 Claims**



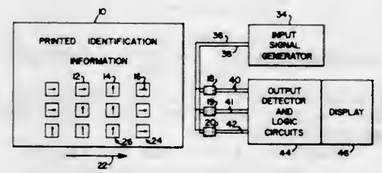
A memory employing a planar substrate of sonically conductive material having a transducer attached to one edge to impart a stress wave along the substrate. Formed on one surface of the substrate is a thin film of magnetostrictive material with its easy axis at an acuate angle to the direction of propagation of the stress wave. By applying a magnetic field to the film coincident with the stress wave, data is stored in the film.

3,465,306
ORIENTED MAGNETIC MEMORY CORES
Richard L. Snyder, Fullerton, Calif. (4625 Van Kleek Drive, New Smyrna Beach, Fla. 32069)
Filed June 1, 1964, Ser. No. 371,591
Int. Cl. G11e *11/04, 11/14*
U.S. Cl. 340—174 **12 Claims**



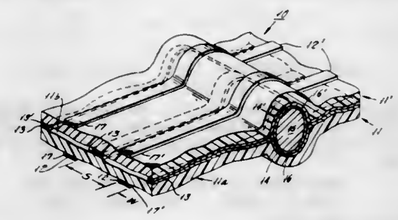
Computer memory cores composed of thin magnetic films deposited on linear substrates such as wires or ribbons have uniaxial anisotropy induced by controlling strains to which they are subject and by dividing the magnetic material into regions which restrict the flux paths to the desired directions of orientation. In order to insure that the flux paths in the easy direction are not impeded by scratches, the substrate is polished with strokes in the direction of orientation. The film and substrate are heated to the annealing temperature to remove the variable strains of deposition. The substrate material has a coefficient of thermal expansion which, in combination with that of the film, produces the condition of strain in the latter required for orientation when cooled from the annealing to the operating temperature. Both longitudinal and circumferential strains are controlled.

3,465,307
ANISOTROPIC MAGNETIC THIN FILM MEMORY APPARATUS
Edwin H. Schmidt, Minnetonka, Minn., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware
Filed Oct. 8, 1964, Ser. No. 402,575
Int. Cl. G11b *5/02*
U.S. Cl. 340—174 **10 Claims**



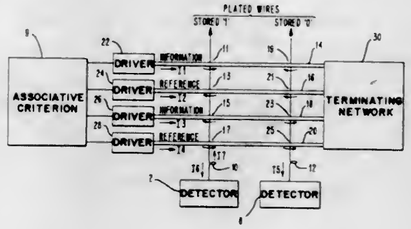
A coding and readout device utilizing the orientation of the easy axes of magnetization of thin film elements to store coded information. Nondestructive readout techniques employ scanning transducers coupling an interrogating field to the thin film elements. The relative strength of induced output signals responsive to such interrogation indicate the orientation of easy axes.

3,465,308
MAGNETIC-WIRE MEMORY MATRIX
Yozo Sasaki, Takashi Furuoya, Haruo Sugiyama, and Hiroshi Murakami, Tokyo, Japan, assignors to Nippon Electric Company Limited, Tokyo, Japan
Filed Feb. 9, 1965, Ser. No. 431,318
Claims priority, application Japan, Feb. 18, 1964, 39/8,536
Int. Cl. G11b *5/62*
U.S. Cl. 340—174 **15 Claims**



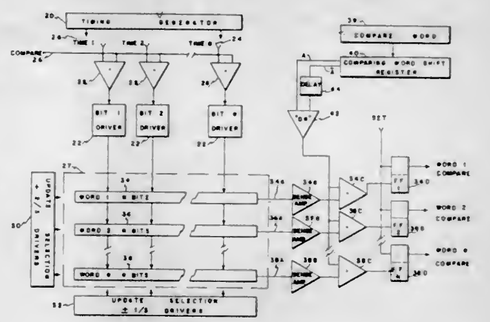
A memory matrix having a thermoplastic plate or film supporting a plurality of driving wires arranged in spaced parallel fashion. Grooves within the plate or film support the magnetic wires in each of the grooves which are arranged transversely to the driving wires. A pair of such plates are provided which sandwich the magnetic wires and driving wires, said plates having sufficient rigidity to prevent all wires within the matrix from experiencing any mechanical strain.

3,465,309
ASSOCIATIVE MEMORY DEVICE PROVIDING INFORMATION WHICH IS "GREATER THAN" OR "LESS THAN" THE STORED INFORMATION
Woo F. Chow, Horsham, Pa., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed June 30, 1965, Ser. No. 468,498
Int. Cl. G11b *5/62*
U.S. Cl. 340—174 **12 Claims**



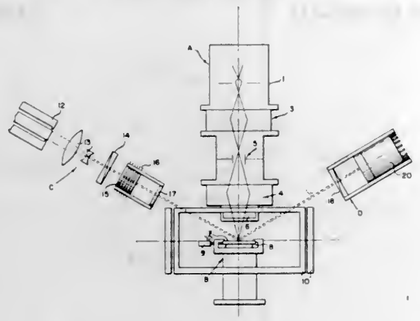
An associate memory device is disclosed using nondestructive thin film memory elements which is capable of providing not only a "match" and "mismatch" signal, when a search is made for a piece of information, but additionally, the memory arrangement of this invention may provide a certain polarity signal for searched for information which is "greater than" or "less than" the stored information.

3,465,310
HIGH SPEED ASSOCIATIVE MEMORY
Anthony M. Apicella, Jr., Massillon, and John T. Franks, Jr., Akron, Ohio, assignors to Goodyear Aerospace Corporation, Akron, Ohio, a corporation of Delaware
Filed Sept. 27, 1965, Ser. No. 490,209
Int. Cl. G11b *5/12*
U.S. Cl. 340—174 **13 Claims**



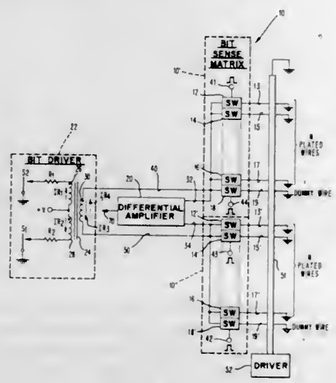
A high speed associative memory utilizing devices with bi-directional outputs achieved by utilizing the crossfield switching technique to achieve non-destructive readout. In essence, a high magnitude short duration solenoidal magnetic field is applied to change the rotational flux characteristics of an endless flux pattern around the apertude of a toroidal memory core element, and measuring the change of the rotational flux as a current on a sense winding positioned at a point where the greatest rotational flux change will take place. This current detection is measured in phase with a predetermined pattern associated with a compare word to determine the associative process.

3,465,311
THERMOSTRICTIVE RECORDING
Bruce I. Bertelsen and Herbert J. Kump, Poughkeepsie, and Paul T. Chang, Syracuse, N.Y., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed Nov. 19, 1965, Ser. No. 508,680
Int. Cl. G11b *5/00;* **G02f** *1/22*
U.S. Cl. 340—174 **20 Claims**



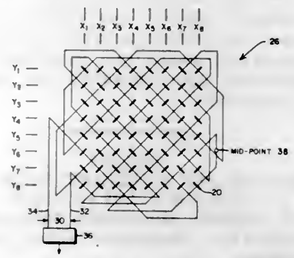
A system of recording by switching the direction of magnetization at selected points in a film of anisotropic, magnetostrictive material by combining stress at a point with a magnetic field which tends to rotate the direction of the magnetization. The stress at a point may be produced by impingement of a beam of energy at a point to raise the temperature above the ambient temperature of the material and develop a temperature gradient at the point of impingement.

3,465,312
BALANCED BIT-SENSE MATRIX
Charles A. Nelson, Philadelphia, Pa., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed Nov. 19, 1965, Ser. No. 508,695
Int. Cl. G11b *5/74*
U.S. Cl. 340—174 **10 Claims**



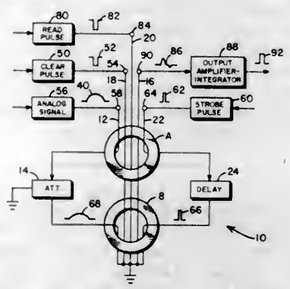
There is disclosed an invention for selecting a plurality of memory words from a plurality of bits wherein each bit of any word is in a balanced condition for noise. The corresponding bit of any word is balanced by placing an equal number of bits and a dummy bit on each terminal of a differential amplifier.

3,465,313
BIT-ORGANIZED SENSE LINE ARRANGEMENT
John F. Bruder, Minneapolis, and Dale L. Fausett, White Bear Lake Township, Ramsey County, Minn., assignors to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed Apr. 1, 1966, Ser. No. 539,481
Int. Cl. G11b *5/00*
U.S. Cl. 340—174 **6 Claims**



Apparatus utilized for the storage of digital data and in particular a method of wiring a sense line in a two-dimensional array of magnetizable memory elements.

3,465,314
MAGNETIZABLE ANALOG SAMPLING DETECTOR
Karl T. Kulp and Lanny L. Harklau, Minneapolis, Minn., assignors to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed Mar. 13, 1967, Ser. No. 622,779
Int. Cl. G11c *7/00, 27/00*
U.S. Cl. 340—174 **9 Claims**



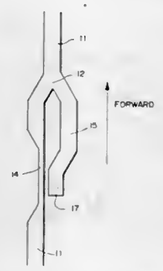
An analog signal sampling detector that stores the level of the discrete sampled portion of an analog signal in a magnetizable memory element as a function of the degree of the partial switching of the element's magnetic flux.

3,465,315
LOW TEMPERATURE LIQUID LEVEL INDICATOR
William E. Alexander, Yellow Springs, and Bernard C. Boggs, Springfield, Ohio, assignors to the United States of America as represented by the Secretary of the Air Force
Filed Mar. 28, 1967, Ser. No. 627,254
Int. Cl. G08b *21/00;* **G01f** *23/00*
U.S. Cl. 340—244 **1 Claim**



A thermocouple is attached to a thin metal disc which is welded to the end of a protective tube. A heating element is located within the tube adjacent the disc. The heating element is powered by a battery with a switch in the circuit to permit selective energization of the heating element. A temperature indicating device is connected to the output of the thermocouple.

3,465,316
NON-RECIPROCAL MAGNETIC TRANSMISSION PATHS FORMED IN THIN MAGNETIC FILMS
Robert J. Spain, Paris, France, and Harvey I. Jauvtis, Belmont, Mass., assignors, by mesne assignments, to Cambridge Memory Systems, Inc., Framingham, Mass., a corporation of Massachusetts
Filed Jan. 22, 1968, Ser. No. 699,445
Int. Cl. G11b *5/74*
U.S. Cl. 340—174 **8 Claims**



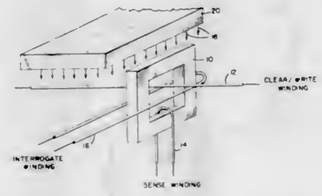
Non-reciprocal transmission paths are formed in thin magnetic films in order to serve as magnetic diodes between magnetic domain tip logic elements. The non-reciprocal characteristic is produced by patterning the transmission path either to have a branch dead end channel with the field from a domain tip in the branch inhibiting delayed transmission through the main channel or with the continuing channel emerging from the side of the main channel so that the domain tip can be propagated from the continuing channel into the main channel but is inhibited from propagating from the main channel into the containing channel.

3,465,317
MAGNETIC RECORDING ON PIECES OF MAIL AND THE LIKE
Jacob Rabinow, Takoma Park, Md., assignor, by mesne assignments, to Control Data Corporation, Minneapolis, Minn., a corporation of Minnesota
Filed May 4, 1959, Ser. No. 810,760
Int. Cl. G11b *5/00*
U.S. Cl. 340—174.1 **11 Claims**



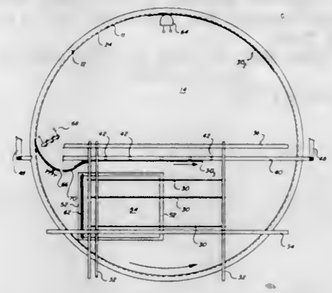
1. A process of recording magnetic information on the surface of an envelope bearing optical markings on said surface, consisting of adherently depositing on an area of said surface including said markings and surface area adjacent to said markings, a thin, uniform, uninterrupted layer of magnetic particles through which said markings are visible; pressing the surface so formed against a magnetic writing head by air suction; moving the surface relative to a magnetic recording head in the plane of said surface, and selectively energizing said head to magnetically write bits of coded information on said layer during said relative motion.

3,465,318
EXTERNALLY BIASED HIGH SPEED NON-DESTRUCTIVE MEMORY ELEMENT
Anthony M. Apicella, Jr., Massillon, Norman L. Boling, Cuyahoga Falls, and John T. Franks, Jr., Akron, Ohio, assignors to Goodyear Aerospace Corporation, Akron, Ohio, a corporation of Delaware
Filed Aug. 6, 1964, Ser. No. 387,824
Int. Cl. G11b *5/00*
U.S. Cl. 340—174 **1 Claim**



This invention relates to an externally biased high speed non-destructive memory element, and more particularly to a substantially conventional square looped magnetic material in a single apertured closed geometry core utilizing substantially conventional cross field switching techniques under the influence of an external magnetic field to substantially increase the magnitude of non-destructive core outputs for a given interrogation field strength and substantially decrease the time requirements for output signals for destructive switching of the core.

3,465,319
STORAGE DEVICE WITH ADHERENCE OF RECORD MEMBER TO ROTATING DRUM DURING INFORMATION TRANSFER
Michael S. Shebanow, Medfield, Mass., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware
Filed June 21, 1965, Ser. No. 465,638
Int. Cl. G11b *5/76*
U.S. Cl. 340—174.1 **15 Claims**

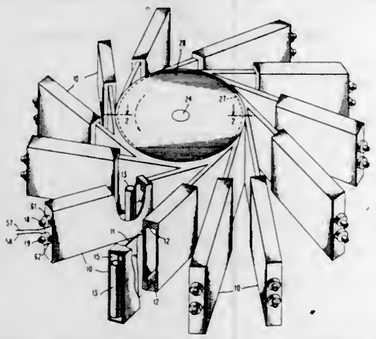


Records, preferably flexible, are stored in cartridges which are located within the periphery of a hollow cylindrical rotating drum. A randomly selected record is moved from the cartridge into contact with the drum. The record is then held on the internal surface of the rotating drum and passed by a transducer. After completion of the information transfer operation, the card is returned to the storage cartridge.

3,465,320
CONVEX-SURFACED VACUUM CONTROLLED AIR FILM

James A. Weidenhammer, Edward J. Wroblewski, and Raymond A. Barbeau, Poughkeepsie, N.Y., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York

Filed Jan. 10, 1966, Ser. No. 519,788
Int. Cl. G11b *5/00;* **B65h** *17/32*
U.S. Cl. 340—174.1 **8 Claims**



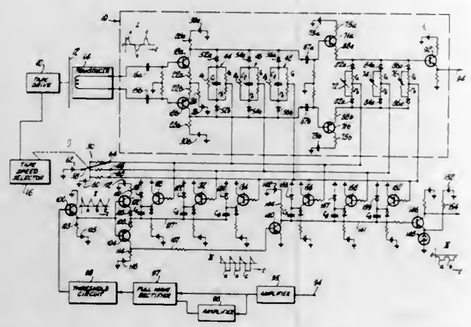
A convex "controlled-spaced area" over which a web is moved with only a thin air film lubricating separation.

The convex "controlled-spaced area" has a magnetic transducer smoothly embedded therein and is bounded on a leading side by one or more vacuum ports and is optionally bounded on its lagging side by one or more blowing air ports. Vacuum ports may be provided on opposite sides of the "area" for bidirectional relative movement; or blowing air and vacuum may be reversed for bidirectional relative motion, since only the leading ports are required to have vacuum. With long angular length webs (having more than about 100° angle-of-wrap about the convex surface), lagging blowing air ports prevent excessive tension and wear on the initial angular portion of the web. The convex "controlled-spaced area" requires a smoothness factor that is inter-related with the spacing (h^*) between the "area" and the web.

3,465,321
DIFFERENTIAL AMPLIFIER AND PEAK DETECTOR FOR MULTIPLE SPEED MAGNETIC TAPE TRANSPORT

Frederick Reisfeld, Bayside, N.Y., assignor to Potter Instrument Company, Inc., Plainview, N.Y., a corporation of New York

Filed Feb. 21, 1966, Ser. No. 529,042
Int. Cl. G11b *5/00*
U.S. Cl. 340—174.1 **4 Claims**

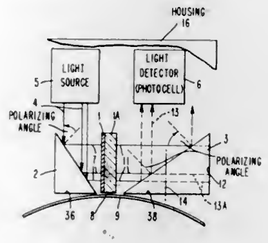


The specification and drawings disclose a differential amplifier and peak detector for a magnetic tape transport which can be operated at any one of several different selectable speeds. For each selectable speed, the gain and band width of the amplifier are adjustable by means of selectable parallel resistance-capacitance networks and the operating frequency of the peak detector is variable to match the frequency of the information signal.

3,465,322
TRANSDUCER UTILIZING ELECTRO-OPTIC EFFECT

Charles H. Stapper, Jr., Fridley, Minn., assignor to International Business Machines Corporation, Armonk, N.Y. a corporation of New York

Filed June 20, 1966, Ser. No. 558,952
Int. Cl. G11b *5/00*
U.S. Cl. 340—174.1 **15 Claims**

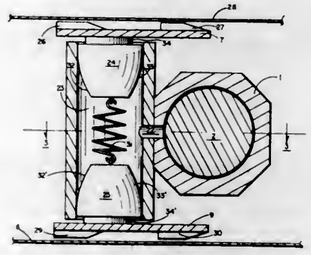


The disclosed transducer converts signals stored on a magnetic medium into corresponding electrical signals by the Faraday electro-optic effect. In one embodiment the transducer is a transparent thin film of magnetically sensitive material formed on a glass supporting substrate. The transducer is mounted with its edge adjacent the transport path of a magnetic record medium. Polarized light directed through the transducer film and glass substrate is additionally polarized according to the induced magnetic condition of the film. In another embodiment the transducer is a similarly interactive slab of transparent crystalline material. The first embodiment provides only a binary output, due to the nonlinear hysteresis responsive characteristic of the film, while the crystal of the second embodiment has a linear response which yields output light polarization variations more closely matched to the recorded magnetic signals.

3,465,323
FLUID ALIGNMENT BEARING FOR SUPPORT MEMBERS

Robert B. Horsfall, Placentia, and William A. Farrand, Fullerton, Calif., assignors to North American Rockwell Corporation, a corporation of Delaware

Filed Jan. 23, 1967, Ser. No. 611,159
Int. Cl. G11b *5/00*
U.S. Cl. 340—174.1 **2 Claims**

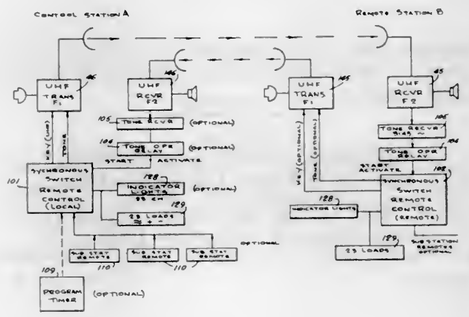


A hydrostatic fluid alignment bearing arrangement for a transducer support comprising at least one piston member connected to the support and disposed inside a cylinder. The piston has an outer circumference which increases toward the device support member for decreasing the space between the cylinder surface and the piston surface in the direction of fluid flow whereby a fluid bearing is formed to permit the support member to be self-aligning with respect to a reference surface. Fluid pressure in the cylinder also forces the support toward the reference surface.

3,465,324
SYNCHRONOUS SWITCH REMOTE CONTROL SYSTEM

Victor H. Oberg, 37 Oak Knoll Ave., San Anselmo, Calif. 94960

Filed Mar. 23, 1966, Ser. No. 538,177
Int. Cl. H04q *9/04*
U.S. Cl. 343—225 **6 Claims**

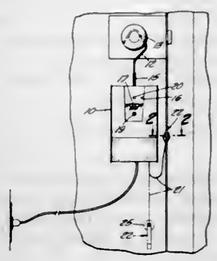


A synchronous switch remote control system for interrogation and control of selected functions at remote stations. The system provides for manual or automatic selection of desired functions by means of switches and timing control circuits.

3,465,325
SELF-CONTAINED CONTACT ALARM DEVICE

Adolph E. Goldfarb, 7427 Varna St., North Hollywood, Calif. 91605, and Jane Betts Davis, Hollywood, Calif.; said Davis assignor to said Goldfarb

Filed June 23, 1966, Ser. No. 559,757
Int. Cl. G08b *13/08*
U.S. Cl. 340—258 **7 Claims**

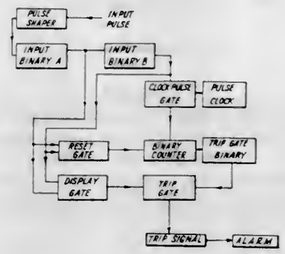


The device is an alarm device. It is a small self-contained portable device provided with means for hanging it on a doorknob. The device embodies a capacity operated alarm circuit responsive to changes in capacity occasioned by contact with the device, the doorknob or the door itself.

3,465,326
SPEED DETECTION

Robert James Weir and Anthony David Hewitt, Norton-on-Tees, England, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

Filed May 4, 1966, Ser. No. 547,602
Claims priority, application Great Britain, July 26, 1965, 31,783
Int. Cl. G08b *5/22*
U.S. Cl. 340—263 **16 Claims**

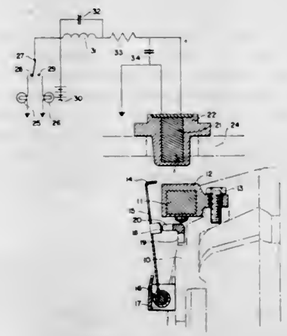


Method and apparatus for detecting the speed of a body moving with a recurring motion, for example a rotating shaft. A sensing device detects a sensible portion or a series of sensible portions on the body and generates pulses accordingly. A time interval between successive pulses is measured and compared with a standard time interval and significant departures from standard are identified.

3,465,327
ARRANGEMENT FOR INDICATING POSITION OF AN ADJUSTING MECHANISM MOUNTED ON A ROTATABLE MEMBER

Kurt Schröter and Clemens Nienhaus, Lohmar, Jurgen Vollmer, Siegburg, and Alfons Burghardt, Hennef, Germany, assignors to Firma Jean Wallerscheid K.G., Siegburg-Lohmar, Germany, a corporation of Germany

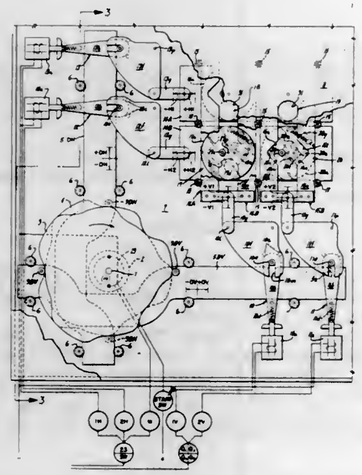
Filed Nov. 2, 1966, Ser. No. 591,588
Claims priority, application Germany, Mar. 15, 1966, W 41,142
Int. Cl. G08b *21/00*
U.S. Cl. 340—282 **5 Claims**



1. In an arrangement for indicating on a stationary member the position of an adjusting mechanism carried by a rotatable member without contact between the stationary and rotatable members, the combination of a

rotatable member having means thereof for establishing a magnetic field, an adjusting mechanism carried by said rotatable member and movable between a plurality of operating positions, a stationary member having means thereon responsive to said magnetic field, a shield mounted on said rotatable member and movable between a first position wherein the magnetic field between said magnetic means and said magnetic responsive means is undisturbed and a second position wherein said magnetic field is disturbed, and means on said rotatable member for moving said shield to its positions in response to the operating position of said adjusting member.

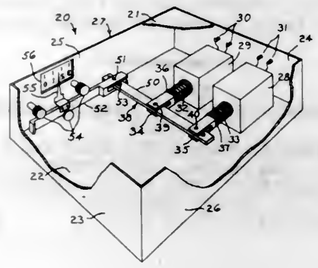
3,465,328
INFORMATION CONTROL SYSTEM
Tyrell T. Gilb, 111 El Camino Real, Berkeley, Calif. 94705
Filed Sept. 18, 1967, Ser. No. 668,533
Int. Cl. G08b *23/00;* **G11b** *5/00;* **H04l** *3/00*
U.S. Cl. 340—324 **9 Claims**



An information control system consisting of a submechanism having a rotatably mounted information transmittal member, first and second members mounted for reciprocation and intersecting one another at the submechanism, the members and submechanism being devised to accept input information and to display different information only upon movement of both intersecting members. The submechanisms are primarily devised for mounting a plurality of same in a grid pattern with a plurality of intersecting members arranged for actuating the submechanisms.

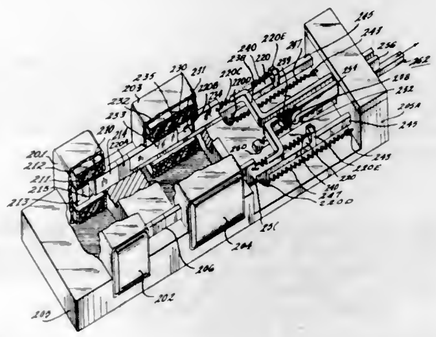
3,465,329
DIGITAL CONVERTERS
Donald J. Abel, 712 Summit Ave., Franklin Lakes, N.J. 07417
Filed Sept. 28, 1964, Ser. No. 399,464
Int. Cl. H04l *3/00*
U.S. Cl. 340—347 **2 Claims**

A digital-to-analog converter requiring external support is disclosed. The digital signals excite polar electromagnets which position coupled actuator members which have code members pivotally attached thereto. The code



members have output members, including a pointer, coupled to them for movement indicative of the input digital signals.

3,465,330
DECODING SYSTEM AND METHOD
Frederick W. Pfleger, 1152 Barbara Drive, Cherry Hill, N.J. 08034
Filed Apr. 30, 1965, Ser. No. 452,146
Int. Cl. H04l *3/00;* **H02k** *41/00;* **H03k** *13/00*
U.S. Cl. 340—347 **14 Claims**

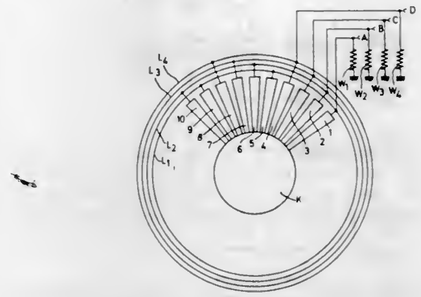


A plurality of groups of motion generators, movable elements associated with respective motion generators for predetermined movement by the generators, and combining means for combining the movements of movable elements of each group and for combining the resultant movements of the plural groups.

3,465,331
INTERPOLATION DEVICE
Otto Trötscher, Aalen, Wurttemberg, Germany, assignor to Carl Zeiss-Stiftung, doing business as Carl Zeiss, Wurttemberg, Germany, a corporation of Germany
Filed Oct. 21, 1965, Ser. No. 499,735
Claims priority, application Germany, Nov. 6, 1964, Z 11,155
Int. Cl. H04l *3/00;* **H03k** *13/00;* **G06f** *7/38*
U.S. Cl. 340—347 **2 Claims**

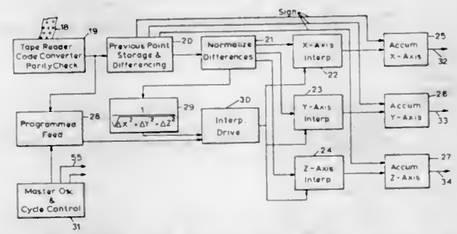
An interpolation device for digital interpolation in which an electron beam is moved continuously in a closed circular path over a plurality of electrically conductive screen elements arranged in a circle and extending radially from a common center. The screen elements are arranged

in at least three separate groups which are electrically separated from each other. The pulses produced by the



screen elements are fed into a selection circuit which permits a prefix-correct counting of said pulses.

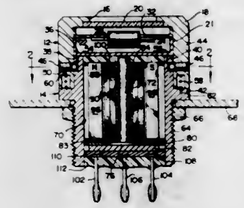
3,465,332
AUTOMATIC CONTROL APPARATUS
Norman D. Neal and Ralph C. Taylor, Jr., Cincinnati, and George O. Albrecht, Loveland, Ohio, assignors to The Cincinnati Milling Machine Co., Cincinnati, Ohio, a corporation of Ohio
Filed Nov. 24, 1965, Ser. No. 509,524
Int. Cl. H04l *3/00;* **H02p** *5/46;* **H03k** *13/00*
U.S. Cl. 340—347 **10 Claims**



An automatic control system is described herein and the system operates in response to recorded program instructions to simultaneously control a plurality of conditions—specifically coordinated movement of machine tool slides. The system employs at one point, time multiplexed or interlaced digital information that is converted into a plurality of direct current error signals that are used in separate servo loops, each directing a respective condition of control or slide movement.

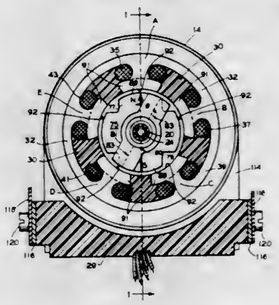
3,465,333
ELECTROMAGNETIC INDICATOR HAVING PLURAL MAGNETICALLY INTERACTING INDICATOR ELEMENTS
George E. Pihl, Abington, Mass., assignor to Miniature Electronics Components Corp., Holbrook, Mass., a corporation of Massachusetts
Filed July 31, 1967, Ser. No. 657,344
Int. Cl. G08b *5/24*
U.S. Cl. 340—373 **29 Claims**

A hermetically sealed, two-state electromagnetic indicating device including first and second radially polarized magnetic indicators rotatable on parallel axes and having interacting magnetic fields for preventing rotational movement of the indicators in both states. The preferred embodiment also comprises electromagnetic means energizable to provide first and second magnetic fields for overcoming the force of the interacting magnetic fields in the first state and to move the first and second indicators, respectively, to the second state, and reset means for providing third and fourth magnetic fields for overcoming



the interacting magnetic fields in the second state and returning the first and second indicators, respectively to the first state.

3,465,334
ROTARY ELECTROMAGNETIC INDICATOR DEVICE
Arnold H. Cohen, Park Ridge, and Leonard C. Pursiano, Ridgewood, N.J., assignors to The Bendix Corporation, a corporation of Delaware
Filed Apr. 22, 1968, Ser. No. 723,009
Int. Cl. G09f *11/02*
U.S. Cl. 340—378 **10 Claims**

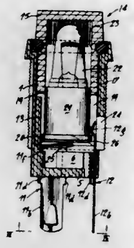


An electromagnetic indicator device including a plurality of electrically actuated indicators for positioning a plurality of discrete numbers or symbols on rotating drums by electrical pulses selectively applied to energize controlling electromagnets is disclosed. The device is a miniature or relatively narrow width indicator including a novel shunting means to prevent intermittent "hang-up" in selectively positioning indicia on drums to be angularly displaced one hundred and eighty degrees. Suitable shielding means are included to prevent coupling or interaction between permanent magnet rotors of adjacent indicator devices. Novel L shaped electromagnetic stator pole pieces provide greater magnetic effect on a permanent magnet rotor for driving the indicator drum of each of the relatively narrow width indicator devices.

3,465,335
LUMINOUS WARNING DEVICE WITH INTERCHANGEABLE TELLTALE LAMP FOR VARIOUS ELECTRIC CIRCUITS
Victor Russenberger, 40 Ave. de la Source, Nogent-sur-Marne, France
Filed Apr. 4, 1966, Ser. No. 539,678
Claims priority, application France, Apr. 7, 1965, 12,345
Int. Cl. G09f *9/00;* **G08b** *5/36*
U.S. Cl. 340—381 **3 Claims**

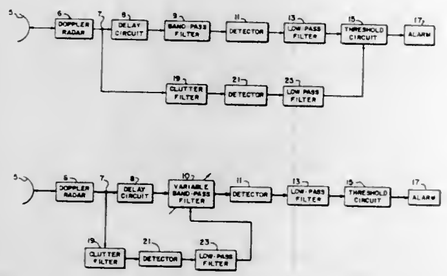
An inexpensive easily-assembled warning light including a tubular casing housing two terminal blades which

extend through and are locked in the bottom of the casing, with each engaging one contact of a lamp held



by a plastic lamp-holder which inserts in the front end of the tubular casing.

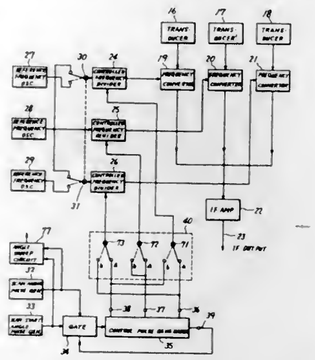
3,465,336
DOPPLER RADAR WITH CLUTTER CONTROLLED FILTER CHANNEL
William Fishbein, Elberon, and Otto E. Rittenbach, Neptune, N.J., assignors to the United States of America as represented by the Secretary of the Army
Filed May 9, 1968, Ser. No. 728,016
Int. Cl. G01s *9/42*
U.S. Cl. 343—7.7 **2 Claims**



The detected Doppler signals are applied in parallel to a target signal channel and a lower-frequency clutter control channel. The target signal channel includes an alarm which is actuated if the signal level therein exceeds the threshold of a threshold circuit. The output of the clutter control channel raises the threshold or reduces the bandwidth of the target signal channel, thus maintaining high sensitivity in the absence of wind-induced clutter and preventing false alarms caused by clutter in the target signal channel.

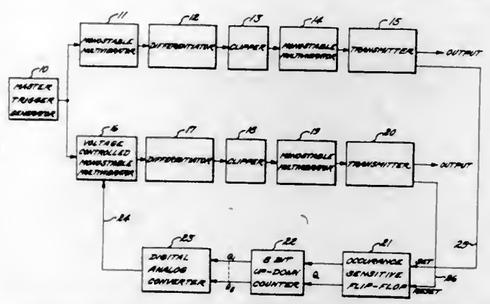
3,465,337
BEAM SCANNING DEVICE OF SONIC OR ELECTRIC WAVE OR THE LIKE
Isokazu Tanaka, 2–40–13, Hon-amanuma, Suginami-ku, Tokyo, Japan, and Shizuo Kurimura, 216 Karasuyama Jutaku, 790 Karasuyama-machi, Setagaya-ku, Tokyo, Japan
Filed Dec. 14, 1967, Ser. No. 690,676
Claims priority, application Japan, Dec. 27, 1966, 41/84,743
Int. Cl. G01s *9/06*
U.S. Cl. 343—11 **7 Claims**

A beam scanning device for sonic and electromagnetic waves wherein an exceedingly narrow beam is produced and moved at a selected rate and through a selected angle, which may be initiated from a selected starting point, by



electronic control of the transducers, which transducers may also be utilized to receive the reflected signals.

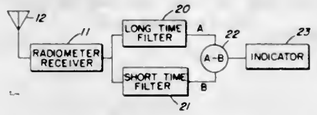
3,465,338
SYSTEM FOR SYNCHRONIZING A PLURALITY OF TRANSMITTERS
Wilmer H. McFarland, Fullerton, Calif., assignor to the United States of America as represented by the Secretary of the Air Force
Filed May 15, 1968, Ser. No. 729,328
Int. Cl. G01s *9/06;* **H04b** *7/00*
U.S. Cl. 343—17.1 **4 Claims**



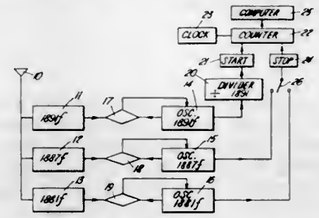
Apparatus to synchronize the firing of a plurality of transmitters utilizing an initial single trigger which activates simultaneously a serial arranged first pair of monostable multivibrators and a serial arranged second pair of monostable multivibrators. The pulse width of the first monostable multivibrators of the second pair is varied as a function of the difference in delays in firing the first and second transmitters. The trailing edges of the pulse outputs of the first multivibrators of the first and second pair initiate pulses for firing the first and second transmitters, respectively.

3,465,339
METHOD AND MEANS FOR DETECTING AIR TURBULENCE
Gene R. Marner, Marion, Iowa, assignor to Collins Radio Company, Cedar Rapids, Iowa, a corporation of Iowa
Filed Oct. 22, 1965, Ser. No. 500,682
Int. Cl. H04b *7/00*
U.S. Cl. 343—100 **13 Claims**

Disclosed is a system which utilizes the natural microwave radiation emitted by regions of elevated or depressed air temperature to remotely detect such regions. The invention includes a radiometric receiver capable of detecting the temperature changes caused by such regions and a filtering system capable of determining the temperature differential between the turbulent regions and the ambient air. The output of the filtering system is passed to an indicator where it is translated into useful information. Because the temperature differential results in a change in the frequency of the radiation emitted by the turbulent region, the system detects frequencies lying on either side of the frequency emitted by the ambient temperature.



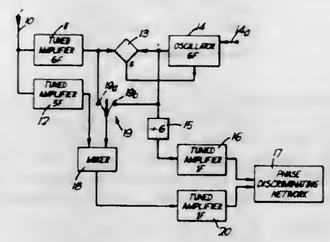
3,465,340
HYPERBOLIC RADIO NAVIGATION SYSTEMS OF THE PHASE COMPARISON TYPE
William Joseph O'Brien and Dennis Alfred Hendley, London, England, assignors to Decca Limited, London, England, a British company
Filed Aug. 15, 1968, Ser. No. 752,936
Claims priority, application Great Britain, Aug. 18, 1967, 38,141/67
Int. Cl. G01s *1/30*
U.S. Cl. 343—105 **14 Claims**



A receiver for use with a hyperbolic radio navigation system in which synchronised signals of frequency pf and nf are radiated simultaneously from spaced transmitting stations, each frequency being radiated by only one station at a time, p and n being different integers, and f being a fundamental frequency, has an oscillator at a frequency mf when m is an integer which may be the same or different from p and n. Said oscillator is synchronised with a received signal of frequency pf and a frequency divider providing a time index at frequency $1f$ is locked to the output of the oscillator. Timing means responsive to the time interval between the $1f$ time index and a next succeeding time index locked to the nf signals provide an indication of the phase relation between the received signals. The time interval determined by said timing means can be integrated to provide a positional indication. This system avoids the ambiguities inherent in the use of frequency dividers in phase comparison systems and also avoids the unreliability which occurs if frequency multiplication by factors greater than about 12 is used. It thus permits the use of large factors for n, m and p, for example 1000 or more.

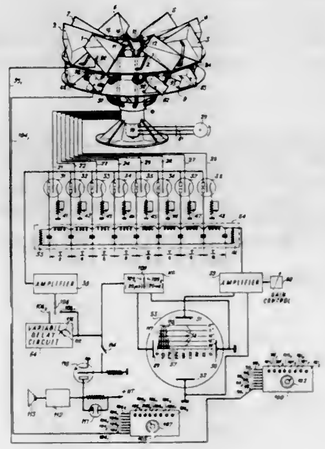
3,465,341
RECEIVERS FOR PHASE COMPARISON RADIO NAVIGATION SYSTEMS
Donald Edward Bridges, London, England, assignor to Decca Limited, London, England, a British company
Filed Oct. 17, 1968, Ser. No. 768,300
Claims priority, application Great Britain, Dec. 4, 1967, 55,110/67
Int. Cl. G01s *1/30*
U.S. Cl. 343—105 **14 Claims**

A simplified receiver for a continuous wave radio navigation system of the Decca Navigator type. The receiver makes use of two amplifiers tuned to frequencies 5F and 6F, namely only two of the four frequencies normally radiated by a chain of stations in a Decca Navigator system. A switch couples the 6F output signal of a phase locked oscillator or a received 6F to a mixer which derives from a 5F and the selected 6F signal a 1F signal



which is compared with 1F signal obtained by dividing the oscillator's output by 6. A phase comparison between the various 1F signals yields phase angles denoting hyperbolae of position relating to an effective comparison frequency of 1F or 5F and thereby provides an accurate position fix.

3,465,342
RADIO DIRECTION-FINDING RECEIVER FOR THE DETECTION OF RADAR APPARATUS
Bernard M. Delapalme, 12 Rue Montrosier, Nueilly-sur-Seine, France
Filed May 4, 1953, Ser. No. 352,670
Claims priority, application France, May 6, 1952, 628,223; Feb. 2, 1953, 51,729
Int. Cl. G01s *5/02*
U.S. Cl. 343—113 **9 Claims**



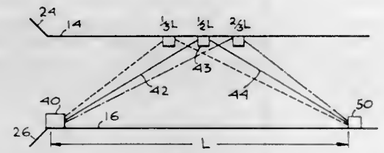
1. A direction-finding radio receiver for determining the bearing of microwave radio signals of the pulsed type, said receiver comprising a plurality of microwave receiving antennas having similar directivity characteristics, means to mount said antennas in a fan-shaped array in such relative positions that the axis of the horizontal pattern of each is substantially tangent to the pattern of the adjacent antenna in said array at the base thereof, means to rotate said mounting means about a vertical axis through at least half the angle of said pattern at the base

thereof, and indicator means for presenting side by side on a cathode-ray tube after detection and substantially equal amounts of amplification pulses of microwave energy received by two adjacent antennas of said array.

ERRATUM

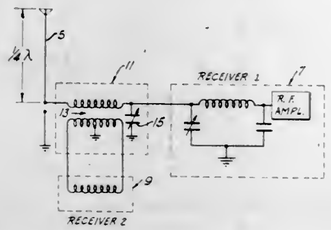
For Class 343—225 see:
Patent No. 3,465,324

3,465,343
MULTI-HOP RAMP FEED FOR WIRE-GRID LENS ANTENNA
Robert L. Tanner, Menlo Park, Edward M. T. Jones and Frank B. Harris, Jr., Portola Valley, and Eugene D. Sharp, Palo Alto, Calif., assignors to Control Data Corporation, Minneapolis, Minn., a corporation of Minnesota
Filed Oct. 11, 1965, Ser. No. 494,659
Int. Cl. H01q *11/06, 9/06*
U.S. Cl. 343—736 **3 Claims**



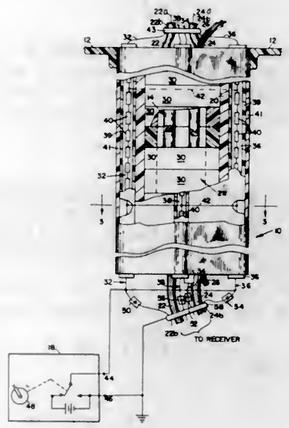
A feed arrangement is provided for a wire grid lens antenna. The antenna comprises a pair of spaced overlying conductive wire grids substantially in the form of two circular concave discs spaced from one another. The feed arrangement for said antenna, in accordance with this invention, comprises at least one conductor which makes multiple transitions or multiple hops between the upper and lower grids. A phase inverting network is connected at each reversal between upper and lower discs of the ramp feed conductors so that all the current of the several sections radiates in phase in one direction. A transmitter is provided at one end of these feed conductors and a terminating network is employed at the other end.

3,465,344
SINGLE ANTENNA DUAL FREQUENCY BAND SIGNAL COUPLING SYSTEM
Benton Boyd Scott and Thomas Lester Taylor, Batavia, N.Y., assignors to Sylvania Electric Products Inc., a corporation of Delaware
Filed Jan. 26, 1967, Ser. No. 611,984
Int. Cl. H01q *1/50*
U.S. Cl. 343—852 **8 Claims**



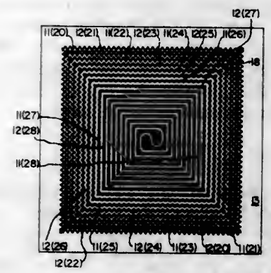
A system for coupling a pair of receivers individually responsive to one of a pair of spaced frequency band signals to a single antenna tuned to provide signals at both frequency bands. A maximum transfer of signal from the antenna to each of the receivers is effected without deleterious effect upon the capabilities of the other receiving system.

3,465,345
WIDE BAND DIRECTION FINDER MAST
Chester Stromswold, Nashua, and Ronald G. Purington, Hudson, N.H., assignors to Sanders Associates, Inc., Nashua, N.H., a corporation of Delaware
Filed June 29, 1966, Ser. No. 561,617
Int. Cl. H01q *1/50*
U.S. Cl. 343—885 **13 Claims**



The antenna mast structure described herein contains the means to vary the inductive reactance thereof such that the resonant frequency of the mast is outside of the selected operating frequency band of the antenna. More specifically, the means comprises a plurality of variable impedance paths which extend parallel with but outside of the conductors which pass through the mast. The mast also contains a stack of closed magnetic rings which surround the conductors but are inside of the variable impedance paths.

3,465,346
CIRCULARLY-POLARIZING SPIRAL ANTENNA HAVING SAWTOOTH CONDUCTORS
William F. Patterson, Reynoldsburg, Ohio, and Ernesto T. Roland, Silver Spring, Md., assignors to North American Rockwell Corporation
Original application May 5, 1967, Ser. No. 636,422. Divided and this application Nov. 12, 1968, Ser. No. 775,078
Int. Cl. H01q *1/36*
U.S. Cl. 343—895 **4 Claims**



An antenna having surface-supported conductors that raidate a circularly-polarized electromagnetic energy field, the conductors being characterized in whole or in part by a geometrical configuration that, in comparison to antenna

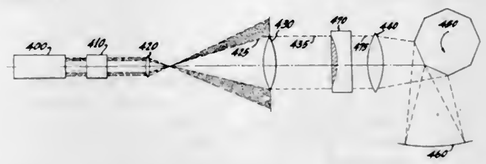
straight-line or uniformly-curved conductor configurations, achieves an extended antenna operating bandwidth capability in terms of available support area or alternately achieves a significantly reduced support area requirement for a given antenna operating bandwith capability.

ERRATA

For Class 343—911 see:
Patent No. 3,465,361

For Class 343—911 see:
Patent No. 3,465,362

3,465,347
LASER RECORDER WITH OPTICAL FILTER
Kenneth C. Hudson, Philadelphia, Pa., assignor to RCA Corporation, a corporation of Delaware
Filed Oct. 11, 1967, Ser. No. 674,614
Int. Cl. G01d *9/42;* **G02b** *5/22*
U.S. Cl. 346—1 **5 Claims**

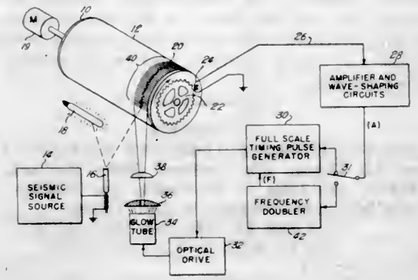


There is disclosed an optical filter, primarily for use within a laser recorder, which operates to selectively absorb portions of a light beam of nonuniform intensity passing therethrough so as to result in the emergence therefrom of a light beam of uniform intensity.

ERRATUM

For Class 346—23 see:
Patent No. 3,465,359

3,465,348
OSCILLOGRAPHIC APPARATUS FOR PRODUCING HALF-SCALE TIMING LINES
Elton J. Brewster, Rockwall, and Jack J. Rousso, Dallas, Tex., assignors to Mobil Oil Corporation, a corporation of New York
Filed Apr. 29, 1968, Ser. No. 724,808
Int. Cl. G01d *9/02*
U.S. Cl. 346—23 **5 Claims**

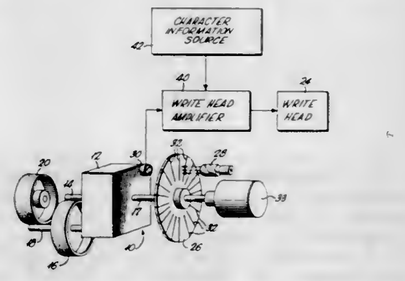


The specification discloses a technique for plotting directly a seismic record cross section or other oscillographic record in half-scale format. A novel apparatus is also described for recording half-scale timing lines coincident with the recording of data by means of the same tone wheel used for plotting full-scale timing lines. The timing signal derived from the tone wheel is electronically doubled in frequency so that timing lines are generated at twice full-scale rate.

ERRATUM

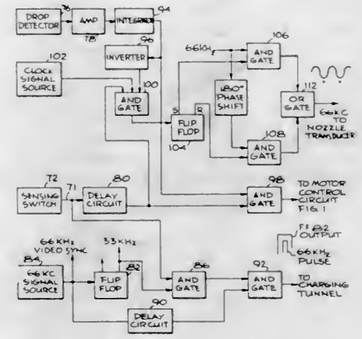
For Class 346—34 see:
Patent No. 3,465,360

3,465,349
INCREMENTAL STEPPER FOR TAPE TRANSPORTS
Robert E. Schoeneman, Port Washington, N.Y., assignor to Potter Instrument Company, Inc., Plainview, N.Y., a corporation of New York
Filed Oct. 22, 1965, Ser. No. 501,962
Int. Cl. G01d *15/06*
U.S. Cl. 346—74 **9 Claims**



A high speed incremental tape transport having a magnetically detented incremental motor which rotates its output shaft through a precise predetermined angle each time it is commanded to do so. A control signal is generated by a photoelectric device precisely at the mid point of each incremental step to record each character while the tape is moving and in accurate spaced relation to the preceding character.

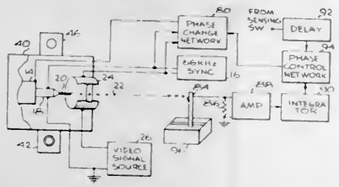
3,465,350
INK DROP WRITING APPARATUS
Robert I. Keur, Niles, and Alfred H. Vorne, Chicago, Ill., assignors to A. B. Dick Company, Chicago, Ill., a corporation of Illinois
Filed Mar. 13, 1968, Ser. No. 712,800
Int. Cl. G01d *15/18*
U.S. Cl. 346—75 **6 Claims**



In an apparatus of the type wherein ink under pressure is applied to a nozzle which is vibrated, and the ink emitted by the nozzle thereafter breaks down into ink

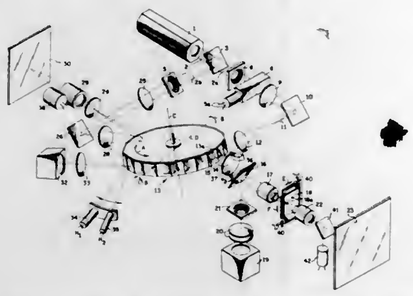
drops which are charged in a charging tunnel in response to a video signal, means are provided, in accordance with this invention, for controlling the phase of the vibration of the nozzle relative to the video charging signal to insure correct phasing of the ink drops emitted by the nozzle and as a result proper charging of the ink drops by the video signal is made to occur. Properly charged ink drops will strike a detector, while improperly charged ink drops are deflected away from the detector.

3,465,351
INK DROP WRITING APPARATUS
Robert I. Keur, Niles, and Henry A. Dahl, Mount Prospect, Ill., assignors to A. B. Dick Company, Chicago, Ill., a corporation of Illinois
Filed Mar. 13, 1968, Ser. No. 712,808
Int. Cl. G01d *15/18*
U.S. Cl. 346—75 **9 Claims**



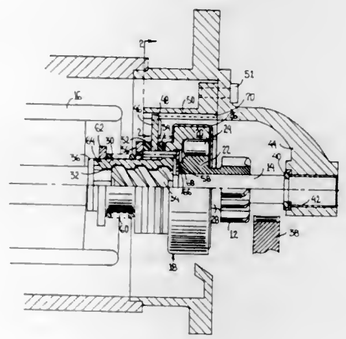
In an apparatus of the type wherein ink under pressure is applied to a nozzle which is vibrated, and the ink emitted by the nozzle thereafter breaks down into ink drops which are charged in a charging tunnel in response to a video signal, means are provided, in accordance with this invention, for controlling the phase of the vibration of the nozzle relative to the video charging signal to insure correct phasing of the ink drops emitted by the nozzle and as a result proper charging of the ink drops by the video signals is made to occur. All the drops, which pass out of the charging tunnel strike the drop charge detector. The drop charge detector provides an output from which an indication of the phasing of the ink drops is derived.

3,465,352
INFORMATION PROCESSING SYSTEMS USING LASERS
Carl O. Carlson, Los Angeles, Herbert L. Bernstein, Gardena, and Eliot Stone, Los Angeles, Calif., assignors to The National Cash Register Company, Dayton, Ohio, a corporation of Maryland
Filed May 11, 1966, Ser. No. 549,281
Int. Cl. G01d *15/10*
U.S. Cl. 346—76 **27 Claims**



A record system in which a beam of coherent radiation is optically formed into an intense spot which is deflected according to a field scan and made to impinge upon a sensitive recording surface, and in which the recording is similarly scanned by a spot of reduced intensity for read out. A laser generates the beam which is spot-focused by a triple-lens system, the spot being deflected in a field scan pattern by a rotating and oscillating mirrored polygon located between two of the lenses, and the record is made by decolorization of a film deposited on a substrate. Also included are a projection system for display, rack and pinion positioning to select a portion of the record medium to be recorded or sensed, and photoelectric and optical systems, the latter utilizing the above polygon to field scan a document, to provide signal input to a polarization-type intensity modulator for the beam.

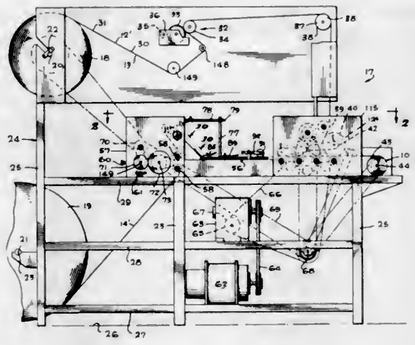
3,465,353
STARTER DRIVE WITH SELECTIVELY-RELEASABLE FRICTION ADVANCE MECHANISM
James E. Buxton, Horseheads, Charles R. Emmick, Elmira, and Harold R. Mortensen, Horseheads, N.Y., assignors to The Bendix Corporation, a corporation of Delaware
Filed Nov. 2, 1967, Ser. No. 680,258
Int. Cl. F02n *11/00, 17/00*
U.S. Cl. 74—7 **6 Claims**



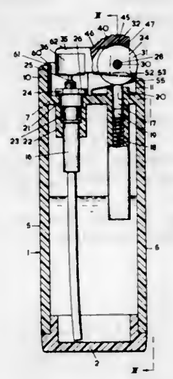
A starter drive mounted on a motor driven helical screw shaft and having a resilient or spring-loaded friction connection with the housing structure which provides a force component axially translating the drive on the screw shaft into a cranking position whereby it engages an engine flywheel. The starter drive contains a unidirectional overrunning clutch and a pinion for engaging the flywheel. An abutment stop member is provided which the pinion strikes, producing a reactive thrust on the starter drive during cranking. The improvement consists of means utilizing the reactive thrust on the starter drive during cranking to release the resilient spring-applied friction connection and reduce frictional load on the starting motor during cranking.

3,465,354
MANUFACTURE OF ADHESIVE SHIPPING UNITS
Leon M. Timms, 636 Amherst Drive, Burbank, Calif. 91504, and John C. McKusick, Los Angeles, Calif.; said McKusick assignor to said Timms
Filed Aug. 24, 1966, Ser. No. 574,776
Int. Cl. B31b *1/26, 23/26, 23/74*
U.S. Cl. 93—61 **22 Claims**

1. Apparatus for forming a packing unit, comprising means for directing along a predetermined path a first strip of sheet material having adhesive at one side thereof, and means for directing a second strip of sheet material along a second path, shaping successive portions thereof along the path to form a series of pockets, each comprising two superimposed layers of the sheet material, and then passing successive ones of said pockets into engagement with successive portions of said adhesive for attachment thereto, said two means being constructed and arranged to feed successive ones of the pockets to the adhesive in a relation causing two adjacent previously unattached portions of each pocket, near or at two different edges of the material forming that pocket, to both contact said adhesive and be retained thereby in fixed relative positions closing the pocket at said edges.



3,465,355
DISPOSABLE LIGHTER
Albertus van Poppel, Asserstraat 11, Rolde, Netherlands
Filed Dec. 19, 1967, Ser. No. 691,770
Claims priority, application Netherlands, Sept. 29, 1967, 6713274
Int. Cl. F23q *2/16, 2/36, 2/46*
U.S. Cl. 431—126 **13 Claims**



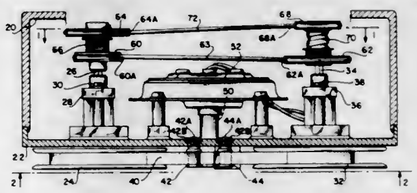
A disposable cigar lighter with a minimized number of parts. The one-piece closure cap comprises a portion which is resiliently movable radially relative to the sparking wheel, said portion being operable by the user's thumb or other finger to frictionally engage said sparking wheel to rotate the same against a flint element to strike sparks when said portion is pressed by said thumb or finger to open the closure cap, the sparking wheel and the closure cap being mounted on a common shaft which is journalled in holes in the extended sidewalls of the fuel reservoir.

3,465,356
APPARATUS AND METHODS FOR USE IN WELL BORES
Forrest V. Porter, Houston, Tex., assignor to Dresser Industries, Inc., Dallas, Tex., a corporation of Delaware
Continuation-in-part of abandoned application Ser. No. 583,900, Oct. 3, 1966. This application Jan. 22, 1968, Ser. No. 699,721
Int. Cl. E21b *47/00*
U.S. Cl. 166—301 **6 Claims**



Apparatus useful in assisting the movement of wireline operated well tools through well bores having portions disposed at an angle deviating from the vertical. The apparatus includes one or more propellant charges arranged, when ignited, to exert a thrust on the well tool, thereby moving the tool along the well bore.

3,465,357
AUTOMATIC SELF-LOAD COMPENSATING VARIABLE SPEED TRANSMISSION
Richard S. Anderson, 6260 S. Jamestown, Tulsa, Okla. 74135
Filed Aug. 26, 1968, Ser. No. 755,330
Int. Cl. G11b *15/32*
U.S. Cl. 242—191 **9 Claims**

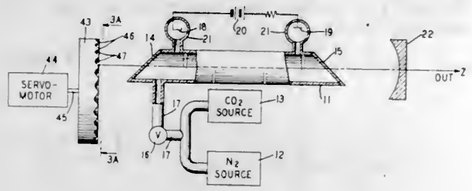


A transmission used to transfer torque between two reels having tape coiled on each reel such as used in tape transports. Different size pulleys are coupled to each reel such that the smaller pulley attempts to drive the other pulley faster than necessary. The over-driving results in an increased stretching of the elastic belt on one side of the pulleys and a decreased tension on the other side of the pulleys. This unbalance of tensions results in a torque applied to both reels which maintains tape tension.

3,465,358
Q-SWITCHED MOLECULAR LASER
Thomas J. Bridges, Bernardsville, N.J., assignor to Bell Telephone Laboratories, Incorporated, Murray Hill and Berkeley Heights, N.J., a corporation of New York
Filed July 21, 1966, Ser. No. 566,892
Int. Cl. H01s *3/22, 3/05*
U.S. Cl. 331—94.5 **10 Claims**

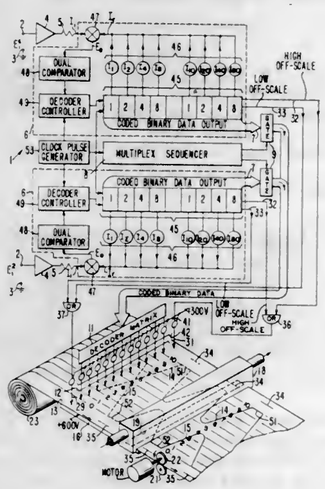
1. A pulsed laser comprising means forming an active region including a molecular gas capable of lasing action

upon a transition between rotational energy levels of differing vibrational states thereof, means for supplying pump energy to said molecular gas to promote said lasing action, means for resonating energy produced by said



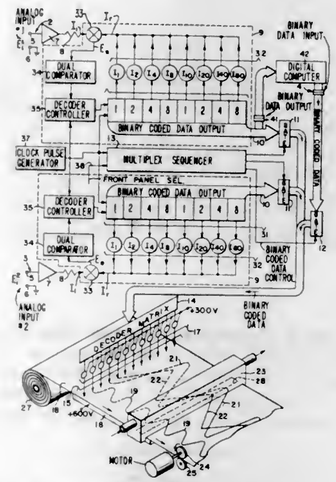
lasing action, and means for changing a condition of said resonating means to provide optimum resonance at time intervals that are larger than half the lifetime of the lower laser level and less than twice the lifetime of the lower laser level.

3,465,359
ELECTROGRAPHIC RECORDER EMPLOYING MEANS FOR SENSING AND RECORDING INDICIA OF OFF-SCALE INPUT SIGNALS
Thomas H. Hackley, Mountain View, and William A. Lloyd, San Jose, Calif., assignors to Varian Associates, Palo Alto, Calif., a corporation of California
Filed Aug. 21, 1967, Ser. No. 662,102
Int. Cl. G01d *9/00, 15/06*
U.S. Cl. 346—23 **7 Claims**



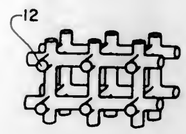
An electrographic recorder is disclosed employing means for sensing and recording indicia of off-scale input signals. The recorder includes an array of electrostatic writing electrodes disposed crosswise over an electrographic recording medium. An input sigal to be recorded is applied to a input channel including an analog-to-digital converter means which tracks the amplitude of the input signals and produces a binary output signal representative of the input signal. The binary output signal is employed for selectively energizing the writing electrodes in accordance with the amplitude of the input signal to be recorded, whereby the trace of the input signal is reproduced on the electrographic recording medium.

3,465,360
ELECTROGRAPHIC PLURAL CHANNEL RECORDER EMPLOYING ANALOG-TO-DIGITAL CONVERTER MEANS AND MULTIPLEXED BINARY DATA OUTPUTS
Thomas H. Hackley, Mountain View, and Nicky M. Johnson, San Carlos, Calif., assignors to Varian Associates, Palo Alto, Calif., a corporation of California
Filed Aug. 21, 1967, Ser. No. 662,103
Int. Cl. G01d *9/00, 15/06*
U.S. Cl. 346—34 **6 Claims**



A plural channel electrographic recorder is disclosed employing an analog-to-digital converter in at least one of the input channels for converting the analog input signal to binary data. The binary data output of a second channel of the recorder is multiplexed with the binary data output of the first channel to selectively energize writing electrodes of an array of writing electrodes disposed over an electrographic recording medium to produce substantially simultaneous recording of the inputs supplied to the first and second channels. The second channel may receive either analog or binary input signals and additional binary and/or analog input channels may be provided.

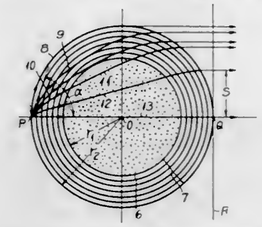
3,465,361
ELECTROMAGNETIC WAVE RETARDING STRUCTURE
Tenny D. Lode, Madison, Wis., assignor to Rosemount Engineering Company, Minneapolis, Minn., a corporation of Minnesota
Filed Jan. 13, 1965, Ser. No. 425,188
Int. Cl. H01q *15/08*
U.S. Cl. 343—911 **4 Claims**



A structure made to pass an electromagnetic wave and change its velocity with little loss due to reflection. Two materials are arranged within the structure so that electric field lines are passed predominantly through high dielectric constant material and magnetic field lines are passed predominantly through high magnetic permeability material thus allowing independent control over velocity and impedance through selection of materials.

3,465,362
SHELL-TYPE LUNEBERG LENS
Noriomi Ochiai, Tokyo, Japan, assignor to Kabushikikaisha Tokyo Keiki Seizosho (Tokyo Keiki Seizosho Co., Ltd.), Tokyo, Japan, a corporation of Japan
Filed July 13, 1966, Ser. No. 564,769
Claims priority, application Japan, July 17, 1965, 40/43,297
Int. Cl. H01q *15/08*
U.S. Cl. 343—911 **3 Claims**

A spherical dielectric lens having a homogeneous spherical core and a plurality of outer layers surrounding the core substantially concentrically therewith, the dielectric constant of the core being determined in accordance with the diameter of the outermost layer of the outer layers, the ratio of the diameter of the core to the diameter of the outermost layer and the shortest wave length of waves to be used, the dielectric constant of each of the outer layers being determined by Luneberg lens equation, and



the radius of the core exceeding 40% of the radius of the spherical lens.

DESIGNS

SEPTEMBER 2, 1969

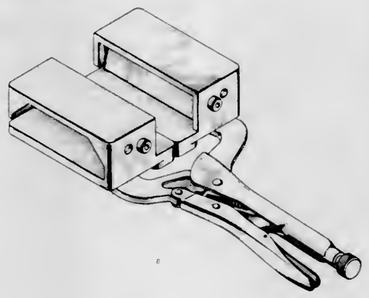
215,077
EXPANDED CEREAL FOOD PRODUCT
Charles C. Harwood, Elgin, and Raleigh J. Wilkinson, Arlington Heights, Ill., assignors to The Quaker Oats Company, a corporation of New Jersey
Filed Aug. 23, 1968, Ser. No. 13,254
Term of patent 14 years
Int. Cl. D1—*01*
U.S. Cl. D1—13



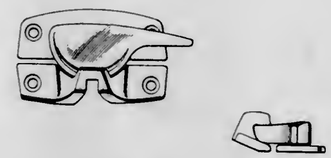
215,078
HAT
Stewart Hicks, P.O. Box 15246, Sarasota, Fla. 33778
Filed July 23, 1968, Ser. No. 12,862
Term of patent 14 years
Int. Cl. D2—*03*
U.S. Cl. D2—248



215,079
CONVEYOR BELT VICE GRIP FOR THE CONNECTION OF CONVEYOR BELTING
Charles P. Heater, 309 SW. 7th Ave., Deerfield Beach, Fla. 33441
Filed Oct. 14, 1968, Ser. No. 13,971
Term of patent 3½ years
Int. Cl. D8—*02*
U.S. Cl. D8—52



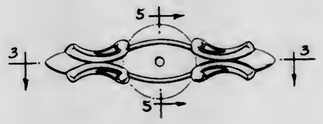
215,080
SASH LOCK
Axel W. Ahlgren, Rockford, Ill., assignor to Amerock Corporation, Rockford Ill., a corporation of Connecticut
Filed Aug. 27, 1968, Ser. No. 13,291
Term of patent 14 years
Int. Cl. D8—*03*
U.S. Cl. D8—111



215,081
GOLF CART HANDLE GRIP
Anthony T. Zagwyn, Delavan, Wis., assignor to A. J. Industries Corporation, Delavan, Wis., a corporation of Wisconsin
Filed Aug. 8, 1968, Ser. No. 13,060
Term of patent 14 years
Int. Cl. D8—*03*
U.S. Cl. D8—138



215,082
ESCUTCHEON PLATE
LaVerne E. Clayton, Rockford, Ill., assignor to Amerock Corporation, Rockford, Ill., a corporation of Connecticut
Original design application Dec. 11, 1967, Ser. No. 9,741, now Patent No. 211,779, dated July 30, 1968. Divided and this application Apr. 29, 1968, Ser. No. 11,656
Term of patent 14 years
Int. Cl. D8—*03*
U.S. Cl. D8—179



215,083
COMBINED BOTTLE, CAP AND NAIL POLISH APPLICATOR
Lawrence Carter, 420 E. 72nd St., New York, N.Y. 10021
Filed Sept. 26, 1968, Ser. No. 14,499
Term of patent 3½ years
Int. Cl. D9—*01*
U.S. Cl. D9—10



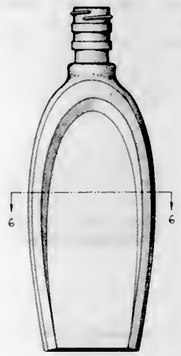
215,084
BOTTLE
Warren J. Luedtke, Racine, Wis., assignor to S. C. Johnson & Son, Inc., Racine, Wis.
Filed Nov. 1, 1968, Ser. No. 14,283
Term of patent 14 years
Int. Cl. D9—*01*
U.S. Cl. D9—44



215,085
COMBINED DECANTER AND CLOSURE THEREFOR
Ernest L. Du Pree, New York, N.Y., assignor to Schenley Industries, Inc., New York, N.Y., a corporation of Delaware
Filed Aug. 1, 1968, Ser. No. 12,996
Term of patent 14 years
Int. Cl. D9—*01*
U.S. Cl. D9—118



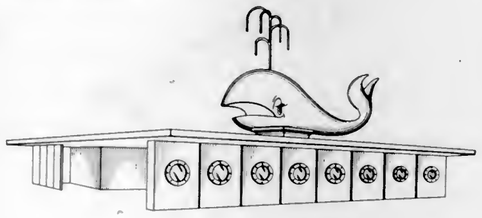
215,086
DECANTER
Walter T. Heintze, New Canaan, Conn., assignor to Schenley Industries, Inc., New York, N.Y., a corporation of Delaware
Filed Aug. 12, 1968, Ser. No. 13,100
Term of patent 14 years
Int. Cl. D9—*01*
U.S. Cl. D9—143



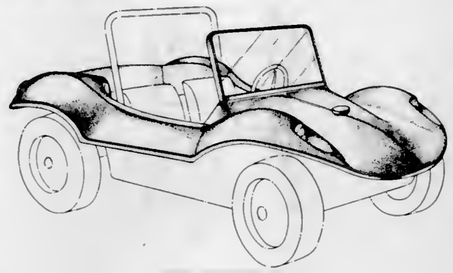
215,087
END CLOSURE FOR A CONTAINER
Herman R. Markert, Hartsville, S.C., assignor to Sonoco Products Company, Hartsville, S.C., a corporation of South Carolina
Filed June 25, 1968, Ser. No. 12,495
Term of patent 14 years
The portion of the term of the patent subsequent to Apr. 30, 1982, has been disclaimed
Int. Cl. D9—*02*
U.S. Cl. D9—255



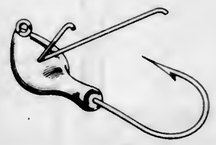
215,088
CARWASH STRUCTURE
James W. Baker, Santa Monica, Calif., assignor to Hunter Structures Inc., Los Angeles, Calif., a corporation of Delaware
Filed Aug. 19, 1968, Ser. 13,177
Term of patent 14 years
Int. Cl. D25—*04*
U.S. Cl. D13—1



215,089
AUTOMOBILE BODY
Edward D. Jeffries, 9824 Horley Ave., Downey, Calif. 90240
Filed Oct. 9, 1968, Ser. No. 13,913
Term of patent 14 years
Int. Cl. D12—*08*
U.S. Cl. D14—3



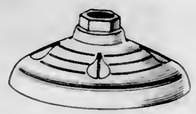
215,090
FISHING LURE
August A. Bruckner, 2324 28th St., Lubbock, Tex. 79411
Filed Dec. 4, 1968, Ser. No. 14,789
Term of patent 14 years
Int. Cl. D22—*07*
U.S. Cl. D22—27



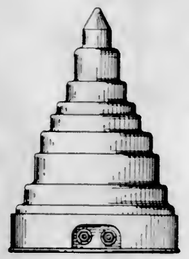
215,091
INTEGRAL HOSE AND NOZZLE
Clarence W. Borden, John Kocsis and Francis William Kubala, Trenton, N.J., assignors to Goodall Rubber Company, Trenton, N.J.. a corporation
Filed July 2, 1968, Ser. No. 12,596
Term of patent 14 years
Int. Cl. D23—*01*
U.S. Cl. D23—34



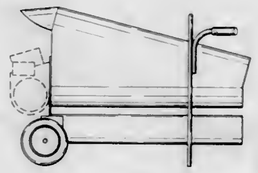
215,092
SHOWER HEAD
Thomas M. Vicknair, Walnut Creek, and Richard W. Sargent, San Jose, Calif., assignors to Western Drinking Fountains Inc., a corporation of California
Filed Nov. 7, 1968, Ser. No. 14,339
Term of patent 14 years
Int. Cl. D23—*01*
U.S. Cl. D23—35



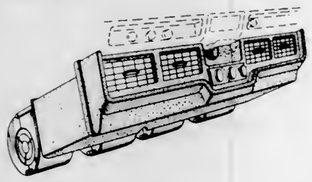
215,093
HEATER FOR THERMALLY EXPANDING BEARINGS FOR MOUNTING PURPOSES OR THE LIKE
Clyde C. Cone, 7395 W. 67th Ave., Arvada, Colo. 80002
Filed May 8, 1968, Ser. No. 11,851
Term of patent 14 years
Int. Cl. D23—*03*
U.S. Cl. D23—77



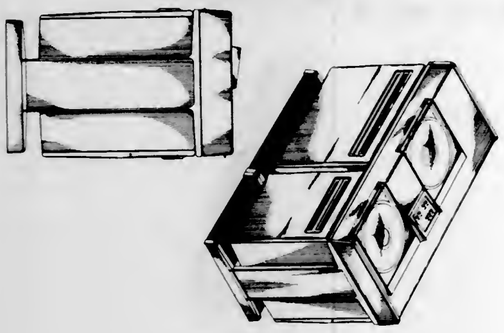
215,094
PORTABLE SPACE HEATER
Monroe E. Ringis, St. Louis, Mo., assignor to Champion Heater Co. Inc., St. Louis, Mo., a corporation of Missouri
Filed Oct. 10, 1968, Ser. No. 13,931
Term of patent 14 years
Int. Cl. D23—*03*
U.S. Cl. D23—91



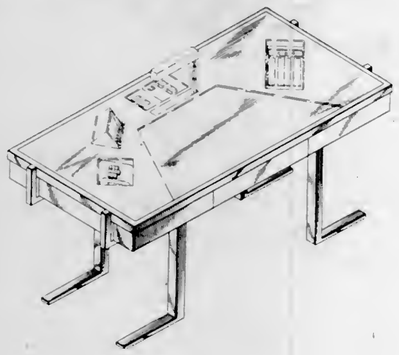
215,095
COMBINED OUTLET AND CONTROL PANEL FOR AN AUTOMOBILE AIR CONDITIONER
Don P. Dixon, 2011 Sable Lane, San Antonio, Tex. 78217
Filed Nov. 8, 1968, Ser. No. 14,365
Term of patent 14 years
Int. Cl. D23—*04*
U.S. Cl. D23—142



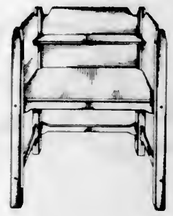
215,096
MAGNETIC DISC HANDLER UNIT
Charles T. Inatomi, Culver City, and Jackson R. Ibiings, Manhattan Beach, Calif., assignors to The National Cash Register Company, Dayton, Ohio, a corporation of Maryland
Filed Sept. 25, 1968, Ser. No. 13,707
Term of patent 14 years
Int. Cl. D14—*02*
U.S. Cl. D26—5



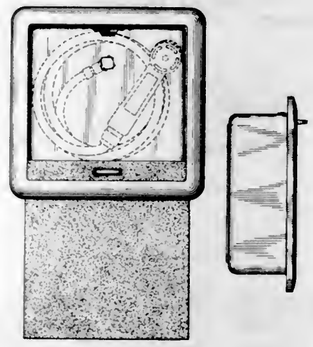
215,097
COMMUNICATION DESK
Guy R. van der Meulen, Pearl River, N.Y., assignor to Planned Tectronics, Inc., New York, N.Y., a corporation of New York
Filed Jan. 2, 1968, Ser. No. 10,033
Term of patent 14 years
Int. Cl. D6—*01*
U.S. Cl. D33—7



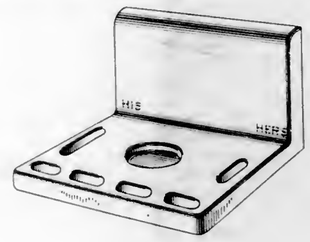
215,098
CARREL
Lucile M. Wilcox, Bellevue, Wash., assignor to Fred Bassetti & Co./Architects, Seattle, Wash.
Filed May 31, 1968, Ser. No. 12,190
Term of patent 3½ years
Int. Cl. D6—*01*
U.S. Cl. D33—11



215,099
CABINET FOR A BATH SPRAY OR SIMILAR ARTICLE
John E. Svabek, Jr., Westchester, and Nicholas P. Arvan, Berwyn, Ill., assignors to Crane Co., Chicago, Ill., a corporation of Illinois
Filed Feb. 16, 1968, Ser. No. 10,606
Term of patent 14 years
Int. Cl. D6—*01*
U.S. Cl. D33—21



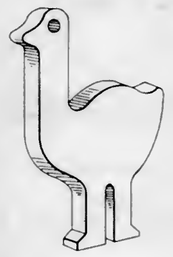
215,100
TOOTHBRUSH AND DENTIFRICE HOLDER FOR BATHROOMS
Susan F. Seller, 5039 Collinwood Drive, Clarksville, Tenn. 37040
Filed June 3, 1968, Ser. No. 12,184
Term of patent 14 years
Int. Cl. D6—*01*
U.S. Cl. D33—27



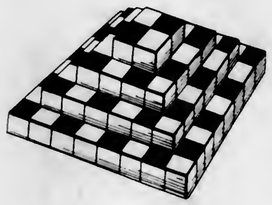
215,101
GOLF CLUB HEAD
John Sabat, 24520 W. Twelve Mile Road, Southfield, Mich. 48075
Filed Apr. 16, 1968, Ser. No. 11,477
Term of patent 14 years
Int. Cl. D21—*03*
U.S. Cl. D34—5



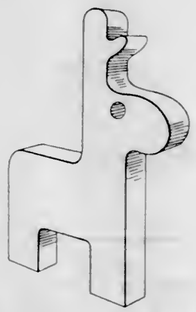
215,102
OSTRICH FIGURE FOR PLAYGROUND APPARATUS
John E. Hill, 21 Sheraton Park, Arlington, Mass. 02172, and Joseph E. Hill, 221 Mount Auburn St., Cambridge, Mass. 02139
Filed July 24, 1968, Ser. No. 12,880
Term of patent 14 years
Int. Cl. D21—*03*
U.S. Cl. D34—5



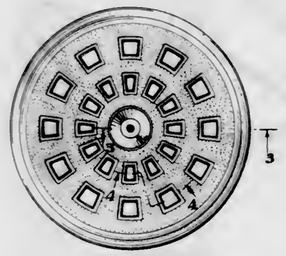
215,103
THREE-DIMENSIONAL GAME BOARD
Jack R. Stevens, 409 W. Arden, Cocoa, Fla. 32952, and John V. Hays, 201 Monroe Ave., Cape Canaveral, Fla. 32920
Filed Aug. 21, 1967, Ser. No. 8,338
Term of patent 14 years
Int. Cl. D21—*01*
U.S. Cl. D34—5



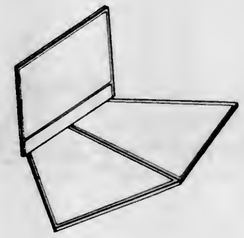
215,104
ANIMAL FIGURE FOR PLAYGROUND APPARATUS
John E. Hill, 21 Sheraton Park, Arlington, Mass. 02172, and Joseph E. Hill, 221 Mount Auburn St., Cambridge, Mass. 02139
Filed July 24, 1968, Ser. No. 12,878
Term of patent 14 years
Int. Cl. D21—*03*
U.S. Cl. D34—5



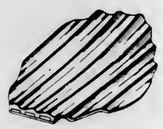
215,105
SWING SEAT OR SIMILAR ARTICLE
Irwin Cohn, 746 West St., Leominster, Mass. 01453
Filed Sept. 17, 1968, Ser. No. 13,571
Term of patent 3½ years
Int. Cl. D21—*03*
U.S Cl. D34—5



215,106
PLAYING BOARD FOR TABLE BALL GAME
Robert L. Rienecker, 1524 Cabrillo Ave., Burlingame, Calif. 94010
Filed Dec. 12, 1968, Ser. No. 14,937
Term of patent 14 years
Int. Cl. D21—*01*
U.S. Cl. D34—5



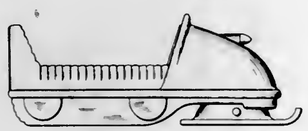
215,107
WHISTLE
John F. Chmela, 7256 W. Davis St., Morton Grove, Ill. 60053, and Joseph E. Schiltz, 42 S. Cypress Drive, Bristol, Ill. 60512
Filed Aug. 13, 1968, Ser. No. 13,128
Term of patent 14 years
Int. Cl. D21—*02*
U.S. Cl. D34—15



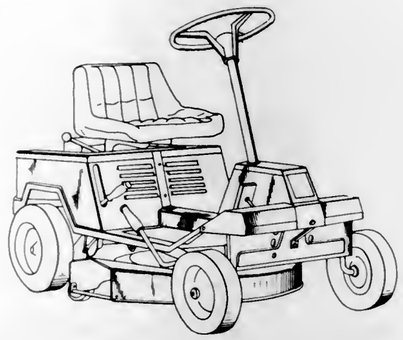
215,108
CHILD'S VEHICLE
Irwin Cohn, 746 West St., Leominster, Mass. 01453
Filed Nov. 12, 1968, Ser. No. 14,406
Term of patent 3½ years
Int. Cl. D21—*02*
U.S. Cl. D34—15



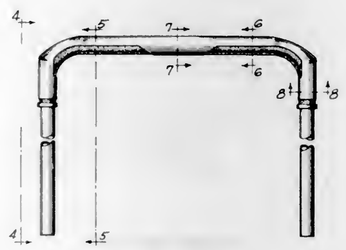
215,109
SLED
William F. Davis and Orville R. Oliver, Tecumseh, Mich., assignors to William F. Davis and Dorothy L. Davis, doing business as Jiffy Manufacturing Company, Tecumseh, Mich.
Filed Jan. 9, 1969, Ser. No. 15,281
Term of patent 14 years
Int. Cl. D21—*03*
U.S. Cl. D34—15



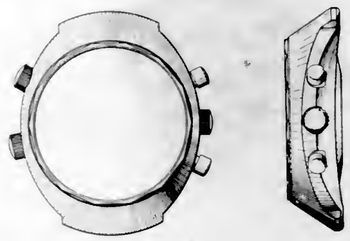
215,110
RIDING-TYPE POWER LAWNMOWER
Viktor Schreckengost, Cleveland Heights, Ohio, assignor to The Murray Ohio Manufacturing Co., Nashville, Tenn., a corporation of Ohio
Filed Oct. 22, 1968, Ser. No. 14,118
Term of patent 14 years
Int. Cl. D8—*01*
U.S. Cl. D40—1



215,111
HANDLE FOR LAWNMOWERS, SNOW BLOWERS OR SIMILAR ARTICLES
Donald L. Gobin, Newark, Ohio, and Robert M. Goodman, Morton Grove, Ill., assignors to Roper Corp., Kankakee, Ill., a corporation of Delaware
Filed July 5, 1968, Ser. No. 12,644
Term of patent 14 years
Int. Cl. D8—*01*
U.S. Cl. D40—1



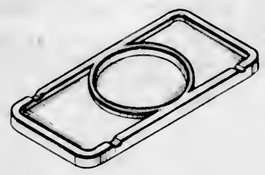
215,112
WRIST WATCH CASE
René Meylan, Vaud, Switzerland, assignor to OMEGA Louis Brandt & Frere S.A., Berne, Switzerland
Filed Aug. 26, 1968, Ser. No. 13,279
Claims priority, application Switzerland Feb. 27, 1968
Term of patent 14 years
Int. Cl. D10—*06*
U.S. Cl. D42—8



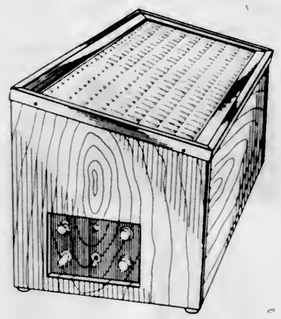
215,113
MOLD FOR ICE CREAM OR THE LIKE
Ben Edward Rasmusson, 915 1st S., Kent, Wash. 98031
Filed July 24, 1968, Ser. No. 12,869
Term of patent 14 years
Int. Cl. D7—*99*
U.S. Cl. D44—1



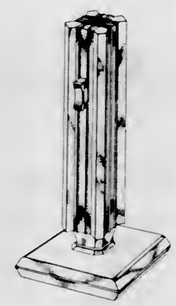
215,114
COMBINED COASTER AND ASH TRAY
Richard B. Cronheim, 7 Upper Barnes, St. Louis, Mo. 63124
Filed Dec. 9, 1968, Ser. No. 14,850
Term of patent 14 years
Int. Cl. D7—*99*
U.S. Cl. D44—10



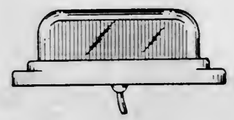
215,115
LIGHT FOR SPECIAL EFFECTS, INCLUDING ENTERTAINMENT, STAGE LIGHTING, AND ADVERTISING
Charles R. Ames, Joplin, Mo., assignor to Eagle-Picher Industries, Inc., Cincinnati, Ohio, a corporation of Ohio
Filed June 24, 1968, Ser. No. 12,488
Term of patent 14 years
Int. Cl. D26—*02*
U.S. Cl. D48—20



215,116
CIGARETTE LIGHTER
Kenjiro Goto, Tokyo, Japan, assignor to Mansei Kogyo Kabushikikaisha, Kawaguchi-shi, Japan
Filed Dec. 5, 1968, Ser. No. 14,798
Term of patent 7 years
Int. Cl. D27—*05*
U.S. Cl. D48—27



215,117
VEHICLE MARKER LIGHT
John F. Stahl, Bridgeport, N.Y., assignor to R. E. Dietz Company, Syracuse, N.Y., a corporation of New York
Filed Oct. 18, 1968, Ser. No. 14,075
Term of patent 14 years
Int. Cl. D26—*99;* D12—*14, 99;* D29—*99*
U.S. Cl. D48—32



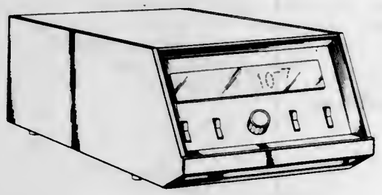
215,118
LOCKING TAPE MEASURE OR SIMILAR ARTICLE
John J. Evans, Jr., Westfield, N.J., assignor to Evans-Aristocrat Industries, Inc., Elizabeth, N.J., a corporation of New Jersey
Filed June 10, 1968, Ser. No. 12,290
Term of patent 14 years
Int. Cl. D9—*04*
U.S. Cl. D52—1



215,119
RODENT POISON DISPENSER
Paul M. Dozier, 655 E. LaLoma Ave.
Camarillo, Calif. 93010
Filed Oct. 22, 1968, Ser. No. 14,105
Term of patent 14 years
Int. Cl. D9—*04*
U.S. Cl. D52—2



215,120
RADIOMETER
David R. Estes, Mountain View, Calif., assignor to Physics International Company, San Leandro, Calif., a corporation of California
Filed Mar. 29, 1968, Ser. No. 11,201
Term of patent 14 years
Int. Cl. D10—*11*
U.S. Cl. D52—6



215,121
SPOON OR SIMILAR ARTICLE
Ellen B. Manderfield, Syracuse, N.Y., assignor to Oneida Ltd., Oneida, N.Y., a corporation of New York
Filed Jan. 7, 1969, Ser. No. 15,241
Term of patent 14 years
Int. Cl. D7—*03*
U.S. Cl. D54—12



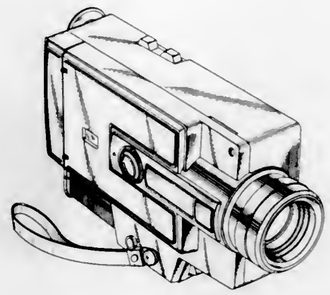
215,122
SCREEN FOR RICE-BRAN REMOVING DEVICE
Yoshiharu Satake, Tokyo-to, Japan, assignor to Kabushiki Kaisha Satake Seisakusho, Tokyo-to, Japan, a joint-stock company of Japan
Filed Apr. 17, 1968, Ser. No. 11,485
Claims priority, application Japan Oct. 20, 1967
Term of patent 14 years
Int. Cl. D15—*12*
U.S. Cl. D55—1



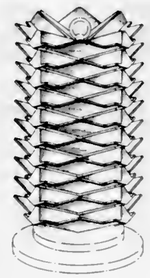
215,123
MUSICAL INSTRUMENT
Martin B. Cohen, 230 Parkway,
Maywood, N.J. 07607
Filed Mar. 4, 1968, Ser. No. 10,825
Term of patent 14 years
Int. Cl. D17—*04*
U.S. Cl. D56—1



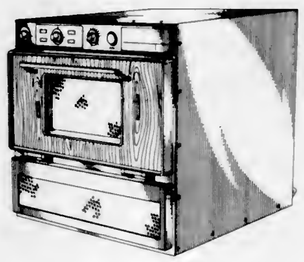
215,124
MOVIE CAMERA OR SIMILAR ARTICLE
Richard J. Olson, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed Apr. 15, 1968, Ser. No. 11,452
Term of patent 14 years
Int. Cl. D16—*02*
U.S. Cl. D61—1



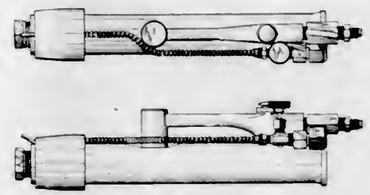
215,125
ROTARY RACK
Theodore K. Joy, 5245 Craner Ave., North Hollywood, Calif. 91601, and Herbert M. Rose, 2617 Palos Verdes Drive W., Palos Verdes Estates, Calif. 90274
Filed Jan. 13, 1969, Ser. No. 15,320
Term of patent 14 years
Int. Cl. D6—*01*
U.S. Cl. D80—9



215,126
MICROWAVE OVEN
Joseph R. Mango, Midlothian, Ill., assignor to Litton Precision Products, Inc., Minneapolis, Minn., a corporation of Delaware
Filed Sept. 6, 1968, Ser. No. 13,431
Term of patent 14 years
Int. Cl. D7—*04*
U.S. Cl. D81—4



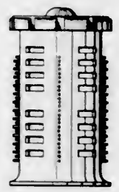
215,127
COMBINED ASPIRATION AND RESPIRATION APPARATUS
Joseph M. Magrath, P.O. Box 148,
McCook, Nebr. 69001
Filed Aug. 22, 1968, Ser. No. 13,238
Term of patent 14 years
Int. Cl. D24—*02*
U.S. Cl. D83—1



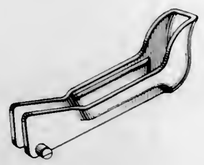
215,128
CIGARETTE CASE
Georg Reitzel, Gelnhausen, Germany, assignor to Drescher & Kiefer, Gelnhausen, Germany, a German firm, and Randolph-Rand Corporation, New York, N.Y., a corporation of New York
Filed May 3, 1968, Ser. No. 11,773
Term of patent 14 years
Int. Cl. D27—*06*
U.S. Cl. D85—2



215,129
HAIR CURLER
Henry J. Talge, Kansas City, Mo., assignor to The Songrand Corporation, a corporation of Missouri
Filed Dec. 1, 1967, Ser. No. 9,608
Term of patent 14 years
Int. Cl. D28—*03*
U.S. Cl. D86—10



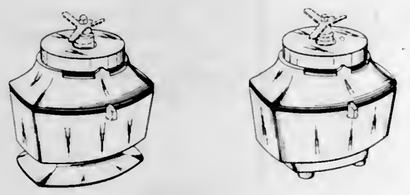
215,130
HEEL MEMBER FOR A SHOETREE
Abraham Messinger, 50 Park Ave.,
New York, N.Y. 10016
Filed Apr. 16, 1968, Ser. No. 11,474
Term of patent 14 years
Int. Cl. D28—*99*
U.S. Cl. D86—10



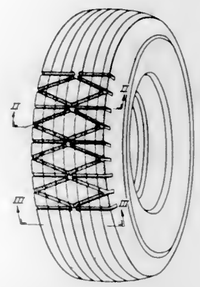
215,131
TOE MEMBER FOR A SHOETREE
Abraham Messinger, 50 Park Ave.,
New York, N.Y. 10016
Filed Apr. 16, 1968, Ser. No. 11,475
Term of patent 14 years
Int. Cl. D28—*99*
U.S. Cl. D86—10



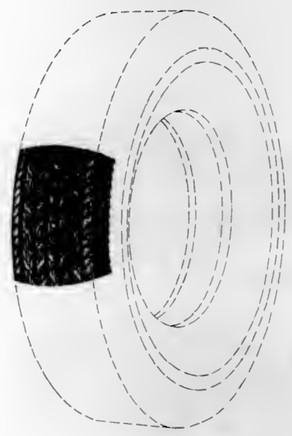
215,132
POWER UNIT FOR A BLENDER OR THE LIKE
Thomas E. Hanson and Paul D. Younge, Syracuse, N.Y., assignors to Proctor-Silex Incorporated, Philadelphia, Pa., a corporation of New York
Filed May 14. 1968, Ser. No. 11,937
Term of patent 14 years
Int. Cl. D7—*05*
U.S. Cl. D89—1



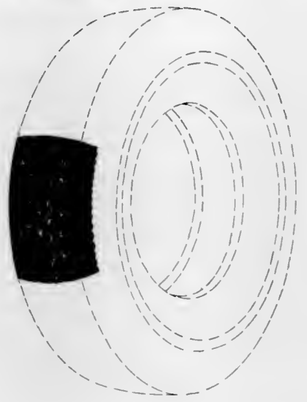
215,133
PNEUMATIC TIRE
Laurence Porten, 5836 Clark Ave.,
Bethel Park, Pa. 15102
Filed May 22, 1968, Ser. No. 12,039
Term of patent 14 years
Int. Cl. D12—*14*
U.S. Cl. D90—20



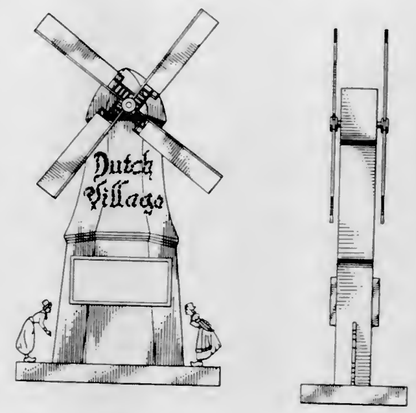
215,134
PNEUMATIC TIRE
Arthur C. Blankenship, Detroit, Mich., assignor to Uniroyal, Inc., New York, N.Y., a corporation of New Jersey
Filed Nov. 21, 1968, Ser. No. 14,563
Term of patent 14 years
Int. Cl. D12—*14*
U.S. Cl. D90—20



215,135
PNEUMATIC TIRE
Arthur C. Blankenship, Detroit, Mich., assignor to Uniroyal, Inc., New York, N.Y., a corporation of New Jersey
Filed Nov. 21, 1968, Ser. No. 14,564
Term of patent 14 years
Int. Cl. D12—*14*
U.S. Cl. D90—20



215,136
MOTEL SIGN
August C. Schoenfeld, 45555 Michigan Ave.,
Belleville, Mich. 48111
Filed June 17, 1968, Ser. No. 12,377
Term of patent 14 years
Int. Cl. D20—*03*
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LIST OF DEFENSIVE PUBLICATIONS

APPLICANTS TO WHOM

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"Published at the request of the applicant or owner in accordance with the Notice of April 11, 1968, 849 O.G. 1221. Identification is by serial number of the application."

Arots, Joseph B., and J. E. Mirolli to Hercules Inc. Corrosion inhibiting. 809,368, 9–2–69, Cl. 260—37.
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Du Pont de Nemours, E. I., and Co.: *See*—
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Banville, Bertrand J. R., to Atomic Energy of Canada Limited. Gas flow nuclear detector cell utilizing thin scintillation material in a spiral arrangement. 3,465,147, Cl. 250-071.5

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Mayor, Philip Arthur, Haddlesey, David Ian, Lewis, John William, and Bentley, Kenneth Walter 3,464,993.

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Berni, Ralph J., Benerito, Ruth R., and McKelvey, John B., to United States of America, Agriculture. Partial cellulose ethers with strong anion exchange properties. 3,464,781, Cl. 008-116.2

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Bolhofer, William A., and Baldwin, John J., to Merck & Co., Inc. (Succinimidoaryloxy)alkanoic acids, esters and amides thereof. 3,465,002, Cl. 260-326.3

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Bouvier, John J., to Ferro Corporation. Polishing plate. 3,464,166, Cl. 051-209.

Bovensiepen, Hans-Friedrich. Shaft and bearing arrangement for a carding machine. 3,464,092, Cl. 019-098.

Bowser, Inc.: *See—*
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Boyd, David M., to Universal Oil Products Company. Method of optimizing heat input to a fractionation column. 3,464,895, Cl. 203-002.

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Brabon, Roger, Beaumariage, Andre, De Boeck, Willy, De Broeyer, Roland, Delplancke, Firmin, and Van Innis, Marcel, to Ateliers de Constructions Electriques de Charleroi (ACEC) Societe Anonyme. Subtitling system for television programs. 3,465,097, Cl. 178-006.

Brace, Eldred C., to Banner Mining Company. Method for treating metallic sulfide compounds. 3,464,904, Cl. 204-105.

Brader, Allen C. Dental Attachment with cooperating extension or socket. 3,464,114, Cl. 032-014.

Bradham, Allen C., III, to Texas Instruments, Incorporated. Circuit board and method of manufacture. 3,464,769, Cl. 355-084.

Bradham, Allen C., III, to Texas Instruments, Incorporated. Universal circuit board and method of manufacture. 3,465,091, Cl. 174-068.5

Brand, John R., and Plunkett, Bradley J., to Warwick Electronics Inc. Electric organ circuit. 3,465,087, Cl. 084-001.26

Brandon, John R. Front box plate. 3,464,455, Cl. 139-183.

Brandon, John R. Front box plate for looms. 3,464,456, Cl. 139-183.

Brannen, Wiley W. Hydraulic brake adjuster. 3,464,526, Cl. 188-152.

Branson Instruments, Incorporated: *See—*
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Brasier, Charles A.: *See—*
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Braun Aktiengesellschaft: *See—*
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Bray, Thomas L.: *See—*
Cofer, Daniel B., and Bray, Thomas L. 3,464,483.

Bray, Thomas L., to Southwire Company. Casting machine with removable casting ring. 3,464,484, Cl. 164-278.

Breaux, Onezime Philip. Homopolar generator having parallel positioned faraday disk structures. 3,465,187, Cl. 310-178.

Breen, Stanley: *See—*
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Breslin, John J., to Beamco, Inc. Apparatus for establishing a combined fluid conduit and electric circuit system. 3,465,111, Cl. 200-061.6

Brewster, Elton J., and Rousso, Jack J., to Mobil Oil Corporation. Oscillographic apparatus for producing half-scale timing lines. 3,465,348, Cl. 346-023.

Bridges, Donald Edward, to Decca Limited. Receivers for phase comparison radio navigation systems. 3,465,341, Cl. 343-105.

Bridges, Thomas J., to Bell Telephone Laboratories, Incorporated. Q-switched molecular laser. 3,465,358, Cl. 331-094.5

Briggs, Gary A.: *See—*
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Briggs, Peter Richard Ashworth: *See—*
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Holava, Henry Michael, Jr., and Partyka, Richard Anthony, 3,464,988.
Holdrege, Charles Truman, 3,464,985.

Bristow, Barney C., to L.N.B. Company, mesne. Hydraulic tank cleaning apparatus. 3,464,632, Cl. 239-227.

British Industrial Plastics Limited: *See—*
Downing, Brian York, 3,464,946.

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British Titan Products Company Limited: *See—*
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Brociner, Ronald Eric, to English Clays Lovering Pochin & Company Limited. Treatment of clay. 3,464,634, Cl. 241-004.

Brock, Elwood M., to Hunterdon Transformer Company. Toroidal inductor. 3,465,273, Cl. 336-062.

Brody, Leo L., and Atkinson, Wallace E., to Trojan Luggage Company, The, mesne. Luggage lock. 3,464,240, Cl. 070-071.

Broeckl, Heinz Wilhelm, and Freudenschuss, Otto, to Vockenhuber, Karl, and Hauser, Raimund. Cartridge for striplike record carrier and apparatus for handling striplike record carrier. 3,464,765, Cl. 352-072.

Brois, Stanley J., to Esso Research and Engineering Company. Herbicidal aminohydrins. 3,464,811, Cl. 071-088.

Bronnes, Robert L., Sweet, Richard C., and Hughes, Ray C., to U.S. Philips Corporation. Hermetic electrical lead-in assembly. 3,464,725, Cl. 287-189.365

Brookmire, James L., to General Electric Company. Alternating current regulating apparatus with closed-loop feedback control. 3,465,237, Cl. 323-021.

Brookpark-Royalon, Inc.: *See—*
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Brooks, Alden W., Bishop, Clinton L., Thomas, James R., and Richard, Kenneth D., to Dayco Corporation. Method of making endless V-type transmission belts having inwardly disposed transverse teeth. 3,464,875, Cl. 156-138.

Brossi, Arnold, Focella, Antonino, Rachlin, Albert Israel, and Teitel, Sidney, to Hoffmann-La Roche Inc. Barbituric acid derivatives substituted in the five position. 3,464,990, Cl. 260-257.

Brouillette, Joseph W., Jr., and Noble, Milton L., to General Electric Company. Analog computation apparatus for generational dynamic correction signals for cathode ray tubes. 3,465,137, Cl. 235-193.

Brouwer, Charles W., and Richter, Hans H., to Leesona Corporation. Storage apparatus. 3,464,452, Cl. 139-122.

Brouwer, Gerardus Johannes. Sod rolling apparatus. 3,464,641, Cl. 242-055.

Brouwers, Alexander P., McCulla, Walter J., and Swanson, Morris A., to Caterpillar Tractor Company. Leaf spring coupling. 3,464,233, Cl. 064-027.

Brown Citrus Machinery Corporation: *See—*
Douglas, Peter L., 3,464,976.

Brown, Edward. Dump trailer safety device. 3,464,755, Cl. 298-022.

Brownfield, Robert Bruce, to American Cyanamid Company. 16α,17α,21-Cyclic orthoesters of steroids. 3,464,980, Cl. 260-239.55

Brownlee, William G. Surgical sponge and method of producing same. 3,464,415, Cl. 128-296.

Brownstein, Arthur M., and Pascale, John V., to Allied Chemical Corporation. Process for the preparation of isocyanates. 3,465,025, Cl. 260-453.

Brownstein, Arthur M., and Sibilia, John P., to Allied Chemical Corporation. Process for the preparation of isocyanates. 3,465,024, Cl. 260-453.

Bruder, John F., and Fausett, Dale L., to Sperry Rand Corporation. Bit-organized sense line arrangement. 3,465,313, Cl. 340-174.

Bruning, Earl F. Self-cleaning fluid coupling. 3,464,436, Cl. 137-237.

Brunswick Corporation: *See—*
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Bryan, James F., to Esso Research and Engineering Company. Mooring system for tanker vessels. 3,464,466, Cl. 141-346.

BTR Industries Limited: *See—*
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Buchanan, William. Respiratory pad. 3,464,410, Cl. 128-140.

Buck, Thomas Olaf, to Meade Electric Company of Indiana, Inc. Heat exchange housing for television camera and the like. 3,464,218, Cl. 062-003.

Bucyrus-Erie Company: *See—*
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Mork, George W., 3,464,570.

Budd Company, The: *See—*
Bende, Albert, Hiemenz, George G., and Moore, Charles Dana, 3,465,117.
Dean, Walter B., 3,464,726.

Budzich, Tadeusz, to Weatherhead Company, The. Flow control valve. 3,464,439, Cl. 137-504.

Bullard, Richard W., to United States of America, Army. Vibration damped platform. 3,464,657, Cl. 248-020.

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Foerster, Roy P., 3,465,158.
Higbee, John E., and Henderson, Martin C., 3,465,200.
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Burgess, James V., Jr. Ventilation control system. 3,464,756, Cl. 299-019.

Burghardt, Alfons: *See—*
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Burkett, Francis L., and Lee, Richard J., to Dow Chemical Company, The. Packaging apparatus. 3,464,085, Cl. 018-005.

Burlington Industries, Inc.: *See—*
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Burns, Benny Ray: *See—*
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Burroughs Corporation: *See—*
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Tibbetts, Ernest L., 3,464,532.

Burson, Bob Orman, to AMBAC Industries, Incorporated. Ignition system for internal combustion engines and the like. 3,464,397, Cl. 123-148.

Busch, Richard E., to Sperry Rand Corporation. Control mechanism for calculating machine. 3,464,623, Cl. 235-130.

Butler, Robert. Vehicle suspension system. 3,464,716, Cl. 280-124.

Buxton, James E., Emmick, Charles R., and Mortensen, Harold R., to Bendix Corporation, The. Starter drive with selectively-releasable friction advance mechanism. 3,465,353, Cl. 074-007.

Buzby, George C., Jr.: *See—*
Stein, Reinhardt P., Buzby, George C., Jr., Smith, Robert C., Jr., and Smith, Herchel 3,465,011.

Buzzelli, Frank D. Method for retaining hair. 3,464,424, Cl. 132-007.

Byers, Robert C. Grinding and mixing apparatus and method. 3,464,636, Cl. 241-021.

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C.R.O. Engineering Co., Inc.: *See—*
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Jordan, Merrill E., and Burbine, William G., 3,464,793.

Cahill, John W., to Globe Manufacturing Company. Stabilized polyurethanes. 3,464,851, Cl. 117-138.8

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Caldironi, Franco: *See—*
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Caldwell, John R., and Gilkey, Russell, to Eastman Kodak Company. Polyester article coated with a cured, cross- linked polyester derived from (a) at least one polyhydric alcohol (b) at least one dicarboxylic compound and (c) a poly(oxyethylene) alcohol. 3,464,852, Cl. 117-138.8

California Computer Products, Inc.: *See—*
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Camacho, Vasco G., Anderson, James J., and Byrd, Wendell M., Jr., to Mobil Oil Corporation. Phosphorus-containing esters and process therefor. 3,465,068, Cl. 260-952.

Cambersburg Engineering Company: *See—*
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Cambridge Memory Systems, Inc.: *See—*
Spain, Robert J., and Jauvtis, Harvey I., 3,465,316.

Cameron, Grant McLay, and Duke, Angus John, to Ciba Limited. Curable ester compositions. 3,465,057, Cl. 260-830.

Campbell, Trevor G., to Caterpillar Tractor Company. Loader lift linkage. 3,464,574, Cl. 214-776.

Canadian International Paper Company: *See—*
Latter, Lionel E., 3,464,367.
MacDonald, Donald M., 3,464,840.

Canadian Patents and Development Limited: *See—*
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Candy Mfg. Co., Inc.: *See—*
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Canno, Leonard E., and Grob, William H. F., to Equitable Paper Bag Co., Inc. Handle construction for carrier box bag. 3,464,620, Cl. 229-054.

Cantarutti, Armindo, to NRM Corporation. Tire curing press. 3,464,090, Cl. 018-017.

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Borchert, Alfred E., and Capaldi, Eugene C. 3,465,046.

Capalia, Nick N., and Burich, John J. Game element for manipulating a hoop. 3,464,155, Cl. 046-220.

Carbasse, Andre. Composite fishing line. 3,464,140, Cl. 043-042.74

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Carl Zeiss-Stiftung: *See—*
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Carlson, Carl O., Bernstein, Herbert L., and Sone, Eliot, to National Cash Register Company, The. Information processing systems using lasers. 3,465,352, Cl. 346-076.

Carlson, Ernest H., Jr. Circuit component. 3,465,267, Cl. 333-076.

Carlsson, Osten, to Atlas Copco Aktiebolag. Method and means for making snow. 3,464,625, Cl. 239-002.

Carrier Corporation: *See—*
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Wellman, Donald C., 3,464,400.

Carrotte, Frederick H., to Kirkland, A., & Company Limited. Knitting machines. 3,464,234, Cl. 066-025.

Carsello, Richard D., and Lunquist, Richard E., to Motorola, Inc. Plural channel frequency detecting circuit. 3,465,294, Cl. 340-171.

Carson, Samuel Corbett, to Imperial Chemical Industries Limited. Purification of hydrogen chloride. 3,464,787, Cl. 023-154.

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Cason, Charles M., III: *See—*
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Castro, Peregrino Mario Del Pilar. Process for pasteurizing liquid products in a continuous line of plastic sachets. 3,464,835, Cl. 099-212.

Caterpillar Tractor Company: *See—*
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Celanese Corporation: *See—*
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Cerniglia, Nino P.: *See—*
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Chambers, Michael B., to Blair Products S.A. Device for closing and locking a door, in particular for vehicles and containers. 3,464,729, Cl. 292-218.

Chambert, Lars Axel A., to AB Svenska Maskinverken. Steam generator with forced circulation. 3,464,393, Cl. 122-406.

Chameroy, Jean, to Societe Anonyme Groupement Atomique Alsacienne Atlantique (G.A.A.A.). Gaseous mixture. 3,464,927, Cl. 252-372.

Chancellor, Forrest E., and Chancellor, Robert O. Port collar for well casings and method for packing well bores. 3,464,493, Cl. 166-285.

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Chang, Chung-Wie. Apparatus for continuous steel refining. 3,464,687, Cl. 266-037.

Chang, Paul T.: *See—*
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Chang, Richard Shin-Teng: *See—*
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Cherry Electrical Products Corporation: *See—*
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Cherry, Walter L., and Castle, Raymond G., to Cherry Electrical Products Corporation. Read-out slide switch. 3,465,113, Cl. 200-167.

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Chevron Research Company: *See—*
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Chicago Lock Co.: *See—*
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Childers, Thomas W., Genois, Edmond R., and Brasier, Charles A.; to Esso Production Research Company. Washing a well. 3,464,495, Cl. 166-312.

Chin, Henry, and Salvato, Joseph, to United States of America, Army, mesne. Electronic shutter employing two normally non-con- ducting SCR's in which second SCR is self extin- guishing by RC timer and is triggered on when first SCR turns off. 3,465,173, Cl. 307-293.

Chock, Barbara M. Table tennis net. 3,464,695, Cl. 273-030.

Chow, Ho, to International Patent Research Corporation. Selective pattern lawn sprinkler. 3,464,628, Cl. 239-097.

Chow, Woo F., to Sperry Rand Corporation. Associative memory device providing information which is 'greater than' or 'less than' the stored information. 3,465,309, Cl. 340-174.

Christensen, Ferdinand. Method of and machine for automatically continuously making ribbon bows. 3,464,601, Cl. 223-046.

Christian, Hugh S., Lowe, Dale R., Ulrick, Charles J., and Womack, Charles P., to Collins Radio Company. High speed inter-computer communication using narrow bandwidth twisted pair cable. 3,465,101, Cl. 178-068.

Christiansen, Godtfred Kirk. Interlego A.G. Building set combination including toy rails, ties and special track sections. 3,464,624, Cl. 238-010.

Chugai Seiyaku Kabushiki Kaisha: *See—*
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Ciaccio, Peter L., to Flexible, Inc. Sewer rodding machine with power reel. 3,464,076, Cl. 015-104.3

Ciba Corporation: *See—*
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Class, Jean, to Les Ateliers de Constructions Mecaniques C. & A. Holweg S.A.R.L. Manufacture of paper and like bags with attached flat handles. 3,464,325, Cl. 219-101.

Clatterbuck, Ronald D. Spiral path with object receiving means. 3,464,700, Cl. 273-119.

Clement, Pierre L., and Lestienne, Andre F. P., to Eastman Kodak Company. Chromatographic chamber. 3,464,560, Cl. 210-198.

Clements, Arthur C., to Interstruct Corporation. Building construction. 3,464,176, Cl. 052-251.

Closs, George M., and Dougherty, Patrick F., to Sun Oil Company. Storage of normally gaseous material in subterranean caverns. 3,464,219, Cl. 062-045.

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CMP Industries, Inc.: *See—*
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Coast Carton Corporation: *See—*
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Cogez, Paul Antoine Alexandre, Conte, Madeleine Marcelle, and Sabatier, Jacques Georges Robert, to Commissariat a l'Energie Atomique. High-pressure sealing system. 3,464,706, Cl. 277-059.

Cohen, Arnold H., and Pursiano, Leonard C., to Bendix Corporation, The. Rotary electromagnetic indicator device. 3,465,334, Cl. 340-378.

Cohen, Morton: *See—*
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Silverman, Elliott, and Cohen, Morton 3,464,113.

Cohler, Edmund U., and Rubinstein, Harvey, to Sylvania Electric Products, Inc. Magnetosonic thin film memory. 3,465,305, Cl. 340-174.

Colby, Leo K., and Kirby, Burton F., to Fasco Industries, Inc. Rotor for fractional horsepower torque motor. 3,465,181, Cl. 310-044.

Colchester, John Edward, Entwisle, John Hubert, and Green, Maurice Berkeley, to Imperial Chemical Industries Limited. Separation process. 3,464,981, Cl. 260-240.

Collez, Louis, to Societe Anonyme Peltex. Methods for dyeing pile fabrics and colored fabrics obtained thereby. 3,464,779, Cl. 008-014.

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Compagnie Generale des Etablissements Michelin, raison sociale Michelin & Cie: *See—*
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Continental Can Company, Inc.: *See—*
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Conway, David H. Sneaker. 3,464,125, Cl. 036-002.5

Conzinc Riotinot of Australia Limited: *See—*
Foley, Ernest, and Herwig, George L., 3,464,900.

Cook, Bill D., to United States of America, Army. Laser output control system. 3,465,155, Cl. 250-199.

Cook, Don L. Liner for head covering. 3,464,064, Cl. 002-190.

Cook, Edward H., Jr.: *See—*
Grotheer, Morris P., and Cook, Edward H., Jr. 3,464,901.

Copley, Russell Dean, and Sutherland, Gail Russell, to Deere & Company. Discharge structure for cotton harvester. 3,464,191, Cl. 056-012.

Cordani, Eugene J., to ACF Industries Incorporated. Foldable bulkhead for a railroad flatcar. 3,464,368, Cl. 105-369.

Corn Products Company: *See—*
Gramera, Robert E., and Le Roy, David H., 3,464,974.

Cornell Research Foundation, Inc.: *See—*
Baker, James A., 3,465,077.

Corning Glass Works: *See—*
Connelly, John H., and Hares, George B., 3,464,932.

Cottam, Ronald Geoffrey, and Topham, Alan Roger, to Imperial Chemical Industries Limited. Electro chemical apparatus. 3,464,911, Cl. 204-220.

Courvoisier, Pierre, and Lambert, Irma, to Commissariat a l'Energie Atomique. Process of isotopic enrichment by bithermal exchange NH_3H_2. 3,464,789, Cl. 023-193.

Coutant, Robert W., to United States of America, Air Force. Preparation of triphenyl (biphenylyl) silanes. 3,465,017, Cl. 260-448.2

Couvreur, Michel Joseph. Logic adaptive process and system for the automatic control of the production of power in interconnected electric networks. 3,465,164, Cl. 307-057.

Cox, Jesse H.: *See—*
McClintock, Eugene P., and Cox, Jesse H. 3,464,600.

Cox, Lewis. Mixer-distributor for dry cementitious material. 3,464,676, Cl. 259-153.

Cox, Thomas C.: *See—*
Bernholz, William F., and Cox, Thomas C. 3,464,922.

Cragoe, Edward J., Jr., and Bicking, John B., to Merck & Co., Inc. [(2,2-Diacylvinyl)aryloxy(and arylthio)] alkanoic acid derivatives. 3,465,022, Cl. 260-453.

Cram, Donald John: *See—*
Birkett, Gordon, and Cram, Donald John 3,464,934.

Crane, Jack W., and Nolt, Edwin B., to Sperry Rand Corporation. Hay baler. 3,464,345, Cl. 100-142.

Crane, Jack W., Nolt, Edwin B., and James, William E., to Sperry Rand Corporation. Hay baler. 3,464,346, Cl. 100-142.

Crawford, Jack E., Foster, Harold M., and Higgins, Thomas W., to Mobil Oil Corporation. Aluminum chloride catalyzed reaction of aliphatic dibasic acid anhydrides with heterocyclic compounds. 3,465,004, Cl. 260-332.2

Creighton, Stephen M.: *See—*
Miller, Robert B., Creighton, Stephen M., and Raczuk, Taras W. 3,464,877.

Cremer, Joseph: *See—*
Harnisch, Heinz, Cremer, Joseph, and Schulte, Friedrich 3,464,786.

Crichfield, Paul D. Machine for picking fruit from trees. 3,464,195, Cl. 056-328.

Crockett, Peter N., Hackl, Frank J., and Stafford, Thomas S., to International Business Machines Corporation. Circuits for handling intentionally mutated information with verification of the intentional mutation. 3,465,132, Cl. 235-153.

Croll, Donald C.: *See—*
Hendrickson, Thomas A., and Croll, Donald C. 3,464,265.

Cromie, Harry W., to Surgitool Incorporated. Prosthetic heart valve. 3,464,065, Cl. 003-001.

Cruse, Oliver B., to Wagner Electric Corporation. Control valve. 3,464,742, Cl. 303-013.

Cullen, Douglas H., to Dollinger Corporation. Filter with by-pass valve and indicator. 3,464,556, Cl. 210-090.

Cumming, Ian George, to United Wire Works Limited, The. Endless belt for paper or board making machine and a method of weaving cloth therefor. 3,464,461, Cl. 139-425.

Cumming, William A.: *See—*
Bleackley, William J., and Cumming, William A. 3,465,114.

Cummisford, Patricia D., to General Mills, Inc. Method of preparing puffed cereal product. 3,464,828, Cl. 099-082.

Cunningham, Henry L.: *See—*
Parsons, Hubert J., and Cunningham, Henry L. 3,464,292.

Curley, Henry: *See—*
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Currie, Harold B.: *See—*
Silverman, Bernard P., and Currie, Harold B. 3,465,288.

Currie, William E., and Mettert, Paul M., to Honeywell Inc. Function generating apparatus. 3,465,257, Cl. 328-185.

Curry, William J., Jr., to Globe Refractories, Inc. Ladle valve. 3,464,598, Cl. 222-559.

Customark Corporation: *See—*
Skofronick, Bruce D., 3,464,841.

Cuthill, James Caithness: *See—*
Bamford, William Randall, and Cuthill, James Caithness 3,464,937.

Cutkosky, Harold C. Reciprocating internal combustion electric generator. 3,465,161, Cl. 290-001.

Cutters Machine Company, Inc.: *See—*
Rogers, Asa Scobey, Jr., 3,464,689.

Dacus, Wilburn W.: *See—*
Thompson, Max W., and Dacus, Wilburn W. 3,464,468.

d'Adler-Racz, Joseph H., to Usiness Balteau Societe Anonyme. Compact and lightweight radiography apparatus. 3,465,152, Cl. 250-090.

Dahl, Henry A.: *See—*
Keur, Robert J., and Dahl, Henry A. 3,465,351.

Dahlem, Francis E., and Gonzalez, Don J., to American Air Filter Company, Inc. Liquid filter apparatus. 3,464,563, Cl. 210-400.

Daicel Ltd.: *See—*
Tanaka, Atsushi, and Kudo, Teizo, 3,465,066.

Daiho Construction Company, Limited: *See—*
Yamagata, Kazumi, and Kamisaka, Kazuo, 3,464,212.

Daikin Kogyo Kabushiki Kaisha: *See—*
Okamura, Kazuo, 3,465,052.

Dailey, Jack R., and Lake, Richard L., to International Business Machines Corporation. Analog time-division multiplier with recirculating storage. 3,465,136, Cl. 235-194.

Dainippon Pharmaceutical Co., Ltd.: *See—*
Minami, Shinsaku, Fujita, Akio, Shimizu, Masanao, and Takase, Yoshiyuki, 3,464,982.

Dalton, John F., and Sharples, Philip P., to Mohawk Data Sciences Corporation. Strip feeding device. 3,464,612, Cl. 226-155.

Damon Engineering, Inc.: *See—*
Hurtig, Carl R., 3,464,123.

Dana Laboratories, Inc.: *See—*
Engle, Charles E., and Nelson, James A., 3,464,508.

Danavox International A/S: *See—*
Parthum, Werner Manfred, 3,465,107.

Darling & Company: *See—*
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Dathe, Christian: *See—*
Muller, Richard, Reichel, Sigrid, and Dathe, Christian 3,465,012.

Daugherty, Ray W., to Ethyl Corporation. Fluid transfer apparatus. 3,464,465, Cl. 141-059.

Davenport, Charles T.: *See—*
Davidson, Gareth M., and Davenport, Charles T. 3,464,255.

Davey, Victor Stanley: *See—*
Patrickson, John Brian, Davey, Victor Stanley, and Wedepohl, Leonhard Martin 3,465,208.

Davidson, Gareth M., and Davenport, Charles T., to AMBAC Industries, Incorporated. Accelerometer and method for its calibration. 3,464,255, Cl. 073-001.

Davidson, Robert W., to American Machine & Foundry Company. Low profile dolly. 3,464,713, Cl. 280-079.1

Davis, Harry F.: *See—*
Zubal, Anthony, and Davis, Harry F. 3,464,101.

Davis, Jane Betts: *See—*
Goldfarb, Adolph E., and Davis, Jane Betts 3,465,325.

Davis, Lewis K., and Obadal, Richard D., to Deere & Company. Vehicle accessory box and detachable cover plate. 3,464,717, Cl. 280-164.

Davison, Richard H., and Dietz, Milton S., to Polaroid Corporation. Automatic exposure control system. 3,464,332, Cl. 095-010.

Davy and United Engineering Company Limited: *See—*
Dowsing, John, Briggs, Peter Richard Ashworth, and Sturdy, Clifford, 3,464,245.

Day, Harold R. Sheet material separation device. 3,464,621, Cl. 229-085.

Day, Ian H., to Polymark Limited. Method and apparatus for testing the visual properties of pigmented liquids. 3,464,772, Cl. 356-208.

Dayco Corporation: *See—*
Brooks, Alden W., Bishop, Clinton L., Thomas, James R., and Richard, Kenneth D., 3,464,875.

Deakin, Stanley Thomas, to Sealectro Limited. Electrical plug contacts. 3,465,283, Cl. 339-150.

Dean, Walter B., to Budd Company, The. Quick opening latch mechanism. 3,464,726, Cl. 292-039.

De Boeck, Willy: *See—*
Brabon, Roger, Beaumariage, Andre, De Boeck, Willy, De Broeyer, Roland, Delplancke, Firmin, and Van Innis, Marcel 3,465,097.

De Broeyer, Roland: *See—*
Brabon, Roger, Beaumariage, Andre, De Boeck, Willy, De Broeyer, Roland, Delplancke, Firmin, and Van Innis, Marcel 3,465,097.

Decca Limited: *See—*
Bridges, Donald Edward, 3,465,341.
O'Brien, William Joseph, and Hendley, Dennis Alfred, 3,465,340.

Deere & Company: *See—*
Copley, Russell Dean, and Sutherland, Gail Russell, 3,464,191.
Davis, Lewis K., and Obadal, Richard D., 3,464,717.
Johnson, Leslie William, and Reeder, Edwin William, 3,464,376.

Degginger, Edward R.: *See—*
Sepkoski, Joseph J., Trepa, Robert F., and Degginger, Edward R. 3,464,935.

Degremont S.A.: *See—*
Bernard, Jacques Joseph Paul, 3,464,559.

De Hart, Edward G., and Froehling, Dieter K. O. Circuit screening machine. 3,464,351, Cl. 101-126.

Dehne, Clarence A. Conveyor switch. 3,464,364, Cl. 104-096.

Deichert, James W., and Evans, Richard J., to Armstrong Cork Company. Composite floor structure-method of installation. 3,464,178, Cl. 052-309.

Delaby, Pierre-Andre Raymond, to Les Laboratoires Dausse. Tetracycline salts of 4-methyl-aesculetin- monoethanoic acid. 3,465,005, Cl. 260-343.2

Delapalme, Bernard M. Radio direction-finding receiver for the detection of radar apparatus. 3,465,342, Cl. 343-113.

Delatorre, Leroy C.: *See—*
Wilson, Homer M., and Delatorre, Leroy C. 3,465,239.

DeLeo, Louis P.: *See—*
O'Regan, Charles P., and DeLeo, Louis P. 3,465,225.

Delplancke, Firmin: *See—*
Brabon, Roger, Beaumariage, Andre, De Boeck, Willy, De Broeyer, Roland, Delplancke, Firmin, and Van Innis, Marcel 3,465,097.

Demag A.G.: *See—*
Walzel, Leopold, 3,464,686.

Dennard, Albert E.: *See—*
George, James H. B., Dennard, Albert E., and Kreidl, Ekkehard L. 3,464,860.

Denning, Richard, and Tollin, Charles L., to RCA Corporation. Semiconductor devices and methods of manufacture thereof. 3,465,209, Cl. 317-234.

Dennis, Donald I. Blower fan. 3,464,622, Cl. 230-134.

Deo, Narsingh, to Burroughs Corporation. Perforated tape reader having light absorbent tube between tape and light sensor. 3,465,160, Cl. 250-219.

De Pauw, Richard A.: *See—*
Knapp, William H., Gochanour, Caroll Q., and De Pauw, Richard A. 3,464,419.

de Poray, Marcel C. K. Display apparatus. 3,464,133, Cl. 040-130.

Design and Manufacturing Corporation: *See—*
Zane, Victor H., 3,464,437.

DeVries, Charles V., and Zimmerman, Arnold, to International Harvester Company. Agricultural apparatus. 3,464,192, Cl. 056-025.

De Witt, John H., Jr. Glass reed relay switching matrix. 3,465,291, Cl. 340-166.

Diamond Shamrock Corporation: *See—*
Papendick, Paul, and Curley, Henry, 3,464,541.

Dick, A. B., Company: *See—*
Bach, Frederick O., and Thomas, Richard E., 3,464,353.
Keur, Robert I., 3,465,350.
Keur, Robert I., and Dahl, Henry A., 3,465,351.

Dickey, W. S., Clay Manufacturing Company: *See—*
Siegfreid, Edward C., 3,465,075.

Diebold, Incorporated: *See—*
Anders, Walter G., 3,464,750.

Dietrich, Ambrosius: *See—*
Schilde, Fritz, Richter, Manfred, Dietrich, Ambrosius, Tille, Manfred, Gunther, Ludwig, Loos, Gunter, Mzyk, Heinrich, Miersch, Siegfried, Haupt, Winfried, Rossel, Wolfgang, Beuchel, Gunter, Erler, Gerhard, and Weder, Herbert 3,464,453.

Dietz, Milton S.: *See—*
Davison, Richard H., and Dietz, Milton S. 3,464,332.

Digital Equipment Corporation: *See—*
Sutton, Jonel D., 3,465,175.

Di Leva, Anthony Joseph, 50% interest to Chamberlain, Darwin G. Swimming figurine with steering means and propulsion motor. 3,464,154, Cl. 046-247.

Diversified Products Corporation: *See—*
Ammondson, Clayton J., Cockrell, Eldridge H., Silberman, Ira J., and James, Forrest H., Jr., 3,464,692.

Dix, Sydney, to GTI Corporation, mesne. Multiple heating unit. 3,465,116, Cl. 219-085.

Dixie-Narco, Inc.: *See—*
Oden, Kenneth W., 3,464,589.

Dixon, Samuel, Jr., to United States of America, Army. RF power limiter comprising an irradiated semiconductor block. 3,465,266, Cl. 333-017.

Dobrin, Russell L. Damper construction for ventilator duct. 3,464,341, Cl. 098-110.

Dohmeier, Hans O. Rod anchoring means. 3,464,308, Cl. 085-032.

Dolan, Lee Allen, to Hoffmann-La Roche Inc. Process for the preparation of 2- aminobenzophenone-α-oximes. 3,465,038, Cl. 260-566.

Dollar, Delores A.: *See—*
Dollar, Melvin L., 3,464,699.

Dollar, Melvin L., 1/2 to Dollar, Delores A. Adjustable and removable targets on a gameboard. 3,464,699, Cl. 273-118.

Dollinger Corporation: *See—*
Cullen, Douglas H., 3,464,556.

Dolphin-Kamper, Inc.: *See—*
Smith, Kenneth L., 3,464,735.

Donald, Raymond G., to Mallory, P. R., & Co., Inc. High-current integrated-circuit power transistor. 3,465,214, Cl. 317-235.

Donaldson, Thomas Alexander, to Huber, J. M., Corporation. Apparatus for measuring hydrogen now concentration of a slurry. 3,464,908, Cl. 204-195.

Doody, Frank X.: *See—*
Jensen, Charles C., and Doody, Frank X. 3,464,824.

Doonan, Douglas D., to Bausch & Lomb Incorporated. Switching system for detecting a plurality of physical quantities in a consecutive timing sequence. 3,465,143, Cl. 250-043.5

Dorgelo, Eduard G., to U.S. Philips Corporation, mesne. Magnetron casing. 3,465,201, Cl. 315-039.51

Dougherty, Patrick F.: *See—*
Closs, George M., and Dougherty, Patrick F. 3,464,219.

Douglas, George H.: *See—*
Teller, Daniel M., Douglas, George H., and Smith, Herchel 3,465,009.

Douglas, Peter L., to Brown Citrus Machinery Corporation. Citrus oil recovery from emulsions. 3,464,976, Cl. 260-236.6

Dow Chemical Company, The: *See—*
Bieler, Barrie H., and Madison, Robert P., 3,464,550.
Burkett, Francis L., and Lee, Richard J., 3,464,085.
Thomka, Laddie M., 3,464,546.

Dow Corning Corporation: *See—*
Atwell, William H., 3,465,018.
Frye, Cecil L., 3,465,020.
Gordon, David J., 3,464,183.
Hampton, James F., 3,465,016.
Kern, Edward L., and Cain, Orison J., 3,465,278.
Speier, John L., 3,465,015.

Downie, George: *See—*
Loveland, Robert, and Downie, George 3,464,595.

Downing, Arthur H., and Janis, Peter, to Raytheon Company. Coaxial attenuator for traveling wave devices. 3,465,198, Cl. 315-003.5

Downing, Brian York, to British Industrial Plastics Limited. Alkylated amino resin trans-etherified with hydroxy carboxylic acid. 3,464,946, Cl. 260-029.4

Downing, John G. Foldable display stand. 3,464,569, Cl. 211-135.

Downing, William D., and Remond, Jean, to Heli-Coil Corporation. Feeding strips for fastener-accepting inserts and method. 3,464,542, Cl. 206-056.

Dowsing, John, Briggs, Peter Richard Ashworth, and Sturdy, Clifford, to Davy and United Engineering Company Limited. Rolling mill having a controlled hydraulic prestress range and other gap adjusting means for initial operation and for adjustment to said range. 3,464,245, Cl. 072-101.6

Drage, James, John, and Fripp, Alan. Plural registers in a calculating machine. 3,465,296, Cl. 340-172.5

Dresser Industries, Inc.: *See—*
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Wilson, Homer M., and Delatorre, Leroy C., 3,465,239.
Youmans, Arthur H., 3,465,151.

Drew Chemical Corporation: *See—*
Bernholz, William F., and Cox, Thomas C., 3,464,922.

Driscoll, Gary L., to Sun Oil Company. Novel polyamides of adamantane. 3,464,957, Cl. 260-078.

Driver, Wilfred D. Storable bed. 3,464,070, Cl. 005-136.

Duke, Angus John: *See—*
Cameron, Grant McLay, and Duke, Angus John 3,465,057.

Dull, Thomas J., and Goldmeyer, Clifford, to Greeno, J. R., Company, The. Apparatus for forming wire stock. 3,464,463, Cl. 140-105.

Dundon, John Peter, to American Cyanamid Company. 2-Carboxyethoxymethyl-tris [2-(N-methylol- carbamoyl)-ethoxymethyl]methane. 3,465,036, Cl. 260-534.

Du Pont de Nemours, E. I., and Company: *See—*
Blake, Ralph Kingsley, 3,464,822.
Fletcher, Eldon L., 3,464,300.
Hecht, James Lee, and Hughes, Charles T., 3,464,963.
Schwarz, Eckhard Christian August, 3,464,878.

Duport, Jacques P., and Martin, Gilbert, to Societe Grenobloise d'Etudes et d'Applications Hydrauliques (Sogreah). Reversible hydraulic apparatus. 3,464,357, Cl. 103-003.

Durham, Carl T., Jr., to General Electric Company. Process for treating electrostrictive ceramic elements. 3,465,069, Cl. 264-082.

Durham Chemicals Limited: *See—*
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Eastman Kodak Company: *See—*
Caldwell, John R., and Gilkey, Russell, 3,464,852.
Clement, Pierre L., and Lestienne, Andre F. P., 3,464,560.
Hawkins, Gary F., 3,465,027.
Leone, Joseph Thomas, and Mc Kague, James Francis, 3,464,821.
Martin, Emmett Virgil, 3,464,197.
Meyers, John J., Martin, Lawrence R., and Rubin, Jacob C., 3,464,562.
Newland, Gordon C., and Tamblyn, John W., 3,464,943.
Newland, Gordon C., 3,464,953.
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Weaver, Max A., and Wallace, David J., 3,464,971.

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Edwards, Bryant, to Illinois Tool Works Inc. Stackable container. 3,464,587, Cl. 220-097.

Edwards, Bryant, to Illinois Tool Works Inc. Reduced neck article forming method and apparatus. 3,465,071, Cl. 264-093.

Edwards, Roger, and Perron, Paul P., Jr., to Bell Telephone Laboratories, Incorporated. Method of enhancing transistor switching characteristics. 3,464,868, Cl. 148-186.

Eggers, Larry A.: *See—*
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Eggers, Walter A., 1/2 to Eggers, Larry A. Illuminable fish attracting float. 3,464,139, Cl. 043-017.5

Egleston, Harry B., to Ex-Cell-O Corporation. Continuous motion machine for heating, forming, and sealing container closures. 3,464,326, Cl. 093-044.1

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Patzauer, Gyozo, 3,464,783.

Ehlen, Jack W., to McCulloch Corporation. Method of removing pin means from link chain devices. 3,464,201, Cl. 059-007.

Ehrhardt, Henry B. Automatic washer for small machine parts. 3,464,429, Cl. 134-140.

Ehrig, Raymond J., and Lin, Tien-Sung, to Grace, W. R., & Co. Coating process. 3,464,849, Cl. 117-132.

Ehrlich, John J., Hutcheson, Guilford J., Jr., Rust, Charles M., Roberts, Thomas G., and Cason, Charles M., III, to United States of America, Army. Laser powermeter. 3,464,267, Cl. 073-190.

Eichelman, George H., Jr., to Olin Mathieson Chemical Corporation. Process for treating copper base alloys. 3,464,865, Cl. 148-011.5

Eichenbaum, Raymond: *See—*
Geacintov, Cyril, Eichenbaum, Raymond, and Wu, William C. L. 3,464,962.

Eichner Organisation GmbH: *See—*
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Eidinger, Robert. Holder for X-ray films and reports. 3,464,135, Cl. 040-159.

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El Sayed, Mostafa A.: *See—*
Yariv, Amnon, Johnson, Fred M., and El Sayed, Mostafa A. 3,465,166.

Electro Development Corporation: *See—*
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Elliott, Michael, to National Research Development Corporation. Insecticidal esters of chrysanthemic and pyrethric acids. 3,465,007, Cl. 260-347.4

Emco Limited: *See—*
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Enright, James H., and Wicke, Charles A., 3,464,638.
Harelson, Robert G., and Flynn, Kenneth L., 3,464,639.

Emery, Alvin T., and Ruthel, Walter W., to Hooker Chemical Corporation. Cathode assembly for electrolytic cell. 3,464,912, Cl. 204-286.

Emhart Corporation: *See—*
Surko, Walter E., Jr., 3,464,721.

Emmick, Charles R.: *See—*
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England, Harold H. Ice auger hole visual fishing aid. 3,464,137, Cl. 043-004.

Engle, Charles E., and Nelson, James A., to Dana Laboratories, Inc. Force transducer output measuring system employing ratio technique. 3,464,508, Cl. 177-164.

English Clays Lovering Pochin & Company Limited: *See—*
Brociner, Ronald Eric, 3,464,634.

Enk, Albert T., to Midland-Ross Corporation. Rotary retort furnace. 3,464,683, Cl. 263-034.

Enright, James H., and Wicke, Charles A., to Emerson Electric Co., mesne. Comminuting chamber for a waste disposal. 3,464,638, Cl. 241-100.5

Entwisle, John Hubert: *See—*
Colchester, John Edward, Entwisle, John Hubert, and Green, Maurice Berkeley 3,464,981.

Equitable Paper Bag Co., Inc.: *See—*
Canno, Leonard E., and Grob, William H. F., 3,464,620.

Eramo, Anthony J. Carpet fastening tool. 3,464,731, Cl. 294-008.6

Erhardt, Peter F.: *See—*
Holoch, Klaus E., Erhardt, Peter F., and Benner, Kenneth W. 3,465,062.

Erickson, George F., to United States of America, Atomic Energy Commission. Heat actuated control rod utilizing a cadmium- potassium mixture. 3,464,889, Cl. 176-086.

Erickson, John W., Konrad, Marion G., and McCloud, James, to Preco Incorporated. Suspension and locking mechanism for load dividing gate. 3,464,369, Cl. 105-376.

Erler, Gerhard: *See—*
Schilde, Fritz, Richter, Manfred, Dietrich, Ambrosius, Tille, Manfred, Gunther, Ludwig, Loos, Gunter, Mzyk, Heinrich, Miersch, Siegfried, Haupt, Winfried, Rossel, Wolfgang, Beuchel, Gunter, Erler, Gerhard, and Weder, Herbert 3,464,453.

Erler, Werner G., and Gerber, Siegfried. Fire extinguishing process and method. 3,464,921, Cl. 252-002.

Esch-Werke K.G.: *See—*
Thomas, Adolf, 3,464,536.

Esso Production Research Company: *See—*
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Esso Research and Engineering Company: *See—*
Brois, Stanley J., 3,464,811.
Bryan, James F., 3,464,466.
Rogers, Dilworth T., and Munday, John C., 3,464,156.
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Esterline Corporation: *See—*
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Ethyl Corporation: *See—*
Beirne, Patrick D., 3,465,029.
Daugherty, Ray W., 3,464,465.
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Eureka-Carlisle Company: *See—*
Smith, Ruslon John, 3,464,871.

Evans, Frederick M., to Frankenstein Group Limited. Inflatable escape chutes for aircraft. 3,464,515, Cl. 182-020.

Evans, Richard J.: *See—*
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Evans, Robert G., Company: *See*—
Haase, Victor H., and Harclerode, John R., 3,464,737.
Everett, Lilian F., to Texfoam International Limited. Resilient materials. 3,464,872, Cl. 156-079.
Ex-Cell-O Corporation: *See*—
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F'Geppert, Erwin, and Lugoski, Arnold N., to United States of America, Army. Cascaded universal joint. 3,464,231, Cl. 064-018.
Fabrize, Romayne. Paint shaking device. 3,464,675, Cl. 259-075.
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Krzewinski, Zbigniew, Franciszczak, Eugeniusz, Jerzykiewicz, Jerzy, and Kostrzewski, Janusz, 3,464,635.
Fairchild Camera and Instrument Corporation: *See*—
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Falk, Edward J., to Wagner Electric Corporation. Control valve. 3,464,741, Cl. 303-006.
Fall, Herbert S. Heavy-duty chassis track. 3,464,744, Cl. 308-003.8
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Farley, James Valentine, Fryer, Rodney Ian, and Sternbach, Leo Henryk, to Hoffmann-La Roche Inc. 1-Substituted urea alkyl 1,2-dihydro-1,4- benzodiazepines and benzodiazepin-2-ones. 3,464,978, Cl. 260-239.3
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Fegley, Charles R., and Regneth, Lorenz, to Western Electric Company, Incorporated. Gauging and sorting apparatus. 3,464,548, Cl. 209-074.
Fekete, Frank, and Baum, Melvin E., to Koppers Company, Inc. Unsaturated polyester resin compositions having a thickening agent therein. 3,465,061, Cl. 260-865.
Fergason, Rector C., to Allis-Chalmers Manufacturing Company. Cotton harvester. 3,464,194, Cl. 056-047.
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Ferris, Robert G., Gillette, Allen K., and Ferris, Howard J., to Starline, Inc. Program controlled feeder shuttle feeder. 3,464,390, Cl. 119-056.
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Figar, Stepan, to Ceskoslovenska akademie ved. Sensing device for a plethysmograph. 3,464,403, Cl. 128-002.05
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Fischer, Artur. Structural element for a toy assembly kit. 3,464,147, Cl. 046-026
Fischer, Heinz-Jurgen, and Schmidt, Walter. Electronic device for automatic indication, registration and forecast of local and distant thunderstorms. 3,465,245, Cl. 324-072.
Fishbein, William, and Rittenbach, Otto E., to United States of America, Army. Doppler radar with clutter controlled filter channel. 3,465,336, Cl. 343-007.7
Fisher, Colin Hordley, to Millard Brothers Limited. Air gun trigger and safety device. 3,464,399, Cl. 124-037.
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Mayo, Fletcher, 3,464,833.
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Fiterman, Benjamin, and Paletz, Leonard M., to Fidelity File Box, Inc. Desk top file with selectively positionable dividers and corner shelves. 3,464,372, Cl. 108-060.
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Flemings, Merton C.: *See*—
Utech, Harvey P., and Flemings, Merton C. 3,464,812.
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Ciaccio, Peter L., 3,464,076.
Flint, Edward F., to North American Rockwell Corporation. Thermal detection system. 3,465,149, Cl. 250-083.3
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Florsheim, Leonard S., Jr., and Hacker, Frederick W., to Robertson Photo-Mechanix, Inc. Multi-size sheet film feeding magazine for photo- graphic apparatus. 3,464,768, Cl. 355-073.
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Foerster, Roy P., to Bunko-Ramo Corporation, The. Circuit apparatus for detecting recurring input signals within a wide amplitude range. 3,465,169, Cl. 307-235.
Fogelberg, Clement V., and Hough, William D., to Ball Brothers Company, Incorporated. Method for the manufacture of hollow plastic articles. 3,465,073, Cl. 264-099.
Foley, Ernest, and Herwig, George L., to Conzinc Riotinot of Australia Limited, and Commonwealth Scientific and Industrial Research Organization. Production of aluminum and aluminum alloys from aluminum chloride. 3,464,900, Cl. 204-067.
Forman, Ronald Max, 1/2 interest to Interfil Limited. Flexible containers attached to a collapsible supporting frame. 3,464,594, Cl. 222-185.
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Polcer, John, 3,464,581.
Foulet, Francois, to Societe A.M.O. Process for the manufacture of pistons made of a light alloy and having a cooling fluid circulation arrangement, for internal combustion engines. 3,464,100, Cl. 029-156.5
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Harris, George A., 3,465,099.
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Friedlander, Saul. Method of determining area. 3,464,796, Cl. 023-230.
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Froger, Claude, to Charbonnages de France. Hot-wire anemometers. 3,464,269, Cl. 073-204.
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Gagneux, Andre R., and Hafliger, Franz, to Geigy Chemical Corporation. Adamantane-1-carboxylic acid derivatives. 3,465,034, Cl. 260-514.
Gagnon, Robert E. Dough cutting, transporting and depositing apparatus. 3,464,299, Cl. 083-099.
Galasso, Salvatore F., to United Aircraft Corporation. Process for producing ordered complex perovskite-type crystals with high dielectric constants. 3,464,785, Cl. 023-051.
Gallant, Reginald R., to Olivetti Underwood Corporation. Carbon ribbon supply handling features in a typewriter. 3,464,533, Cl. 197-151.
Gallay, Harry M., Mainland, Albert F., Teumin, Mota, and Yarina, William, to United States of America, Army, mesne. Mechanical, double-integrating accelerometer. 3,464,274, Cl. 073-490.
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Geacintov, Cyril, Eichenbaum, Raymond, and Wu, William C. L., to Mobil Oil Corporation. Copolymers of butene-1 and propylene. 3,464,962, Cl. 260-088.2
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Hasten, Mark, and Lobash, Floyd, 3,464,086.
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McKown, William L., Zietlow, Philip K., and Ball, Murray E., 3,464,826.
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Genois, Edmond R., and Childers, Thomas W., to Esso Production Research Company. Running of elongated pipe in a well. 3,464,496, Cl. 166-315.
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Gerarde, Horace W. Pipette assembly having precise quantity of dry stabilized reagent and method of preparing same. 3,464,800, Cl. 023-259.
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Newstead, Charles, 3,464,525.
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Stan, Henry, and Glass, Marvin I. 3,464,702.
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Apicella, Anthony M., Jr., Boling, Norman L., and Franks, John T., Jr., 3,465,318.
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Landgraf, Helmut, and Vogt, Gerd, to Mannesmann Aktiengesellschaft. Water-cooled plate mold for continuous casting. 3,464,485, Cl. 164-283.
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Larson, Swan William, to United Aircraft Corporation. Multi-axis optical viewing system of a movable electron beam in a vacuum chamber. 3,465,119, Cl. 219-121.
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Laures, Pierre, to Compagnie Generale d'Electricte. Optical system with variable focal length. 3,464,760, Cl. 350-040.
Laut, William. Method and apparatus for centrifugal separation. 3,464,554, Cl. 210-078.
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McWilliams, Joseph E. Apparatus for loading bagged mail from a loading dock into a highway vehicle. 3,464,572, Cl. 214-006.
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Pirson, Ewald, Roth, Michael, and Nitzsche, Siegfried, to Wacker-Chemie G.m.b.H. Method of removing oil from the surface of water using oleophilic, hydrophobic comminuted organic materials. 3,464,920, Cl. 210-029.
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Poulsen, Peder Ulrik. Driven mandrel rotatable about its longitudinal axis for continuous production of tubing a running lengths, preferably glass fibre reinforced plastic tubing. 3,464,879, Cl. 156-425.
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Mayor, Philip Arthur, Haddlesey, David Ian, Lewis, John William, and Bentley, Kenneth Walter, 3,464,993.
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Siegfreid, Edward C., to Dickey, W. S., Clay Manufacturing Company. Method for making amonolithic clay fitting. 3,465,075, Cl. 264-155.

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Siewert, Hans Wolfgang, to Wyss, Escher, G.m.b.H. Laboratory apparatus for determining the industrial beating behaviour of cellulose or paper pulp. 3,464,637, Cl. 241-037.

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Sigg, Hans-Peter, and Stoll, Christian, to Sandoz Ltd., a/k/a/ Sandoz A.G. Antibiotic SL 1846. 3,465,079, Cl. 424-122.

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Silverman, Bernard P., and Currie, Harold B., to RCA Corporation. Character reader. 3,465,288, Cl. 340-146.3

Silverman, Daniel, to Pan American Petroleum Corporation. Formation nuclear fracturing process. 3,464,490, Cl. 166-245.

Silverman, Elliott, and Cohen, Morton. Orthodontic appliance. 3,464,112, Cl. 032-014.

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Skofronick, Bruce D., to Customark Corporation, mesne. Method of preparing security paper containing an ultraviolet inhibitor. 3,464,841, Cl. 117-001.

Sledz, Edward F., to Superior Concrete Accessories, Inc. Concrete wall form panel attachment for the production of a decorative wall surface effect. 3,464,667, Cl. 249-190.

Small, Robert W. Method of assembling toy or model vehicle and the so assembled vehicle. 3,464,153, Cl. 046-223.

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Snyder, Richard L. Oriented magnetic memory cores. 3,465,306, Cl. 340-174.

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Societa Italiana Resine S.p.A.: *See—*
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Spiesel, Sydney Z. Method of recovering antigens from Bordetella pertussis cells. 3,465,078, Cl. 424-092.

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Stamm, Alex F., to Rockwell-Standard Company. Friction welding machine and method. 3,464,616, Cl. 228-002.

Stamps, Otis C., and Neikirk, David W., to Inject-O-Meter Manufacturing Company, Inc. Agricultural chemical application process and apparatus therefor. 3,464,626, Cl. 239-010.

Stan, Henry, Barlow, Gordon A., and Meyer, Burton C., to Glass, Marvin & Associates. Game apparatus having playing piece ejecting means. 3,464,694, Cl. 273-001.

Stan, Henry, and Glass, Marvin I., to Glass, Marvin & Associates. Game apparatus for simulating an automobile trip and comprising a coin actuated simulated parking meter. 3,464,702, Cl. 273-134.

Stange, Wilfred H. Vehicle mounted soil sampling device. 3,464,504, Cl. 173-028.

Stanke, Walter, and Mertens, Gottfried, to Koppers Company, Inc., mesne. Apparatus for cleaning the sealing surfaces of coke oven doors and door jambs. 3,464,074, Cl. 015-093.

Stapper, Charles H., Jr., to International Business Machines Corporation. Transducer utilizing electro-optic effect. 3,465,322, Cl. 340-174.1

Stark, Norman H., to Walker Manufacturing Company. Protective packaging and method. 3,464,540, Cl. 206-046.

Starline, Inc.: *See—*
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Stephenson, Henry W. Buoyant fenders. 3,464,213, Cl. 061-046.

Stephenson, Robert James, to Monsanto Chemicals Limited. Flame retarding agents. 3,465,031, Cl. 260-484.

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Stone, Jacob E., to Esso Production Research Company. Seismic system with a radio communications link connecting the operating and seismic wave generating stations. 3,465,286, Cl. 340-015.5

Stone, William, Jr.: *See—*
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Strike, Nicholas L., Thun, Richard G., and Radford, David L., to McGraw-Edison Company. Clothes hanger dispenser. 3,464,588, Cl. 221-075.

Stromswold, Chester, and Purington, Ronald G., to Sanders Associates, Inc. Wide band direction finder mast. 3,465,345, Cl. 343-885.

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Tennis, Francis H., to Koehring Company. Pilot controllable valve mechanism. 3,464,444, Cl. 137-596.12
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156.5	3,464,100	199	3,464,187	400	3,464,270	99— 2	3,464,824	126—113	3,464,400	210	3,464,476
157.3	3,464,101	234	3,464,188	421	3,464,271	18	3,464,825		3,464,401	353	3,464,477
183.5	3,464,802	256	3,464,189	423	3,464,272	81	3,464,826	271	3,464,402	156— 21	3,464,870
200	3,464,102	56— 11	3,464,190	432	3,464,273	82	3,464,827	127— 50	3,464,856	60	3,464,871
402	3,464,103	12	3,464,191	490	3,464,274		3,464,828	71	3,464,857	79	3,464,872
582	3,464,104	25	3,464,192	491	3,464,275	91	3,464,829	128— 2.05:	3,464,403	96	3,464,873
588	3,464,105	47	3,464,193	516	3,464,276	139	3,464,830	.06:	3,464,404		3,464,874
596	3,464,106		3,464,194	74— 7	3,465,353	140	3,464,831	33	3,464,405	138	3,464,875
	3,464,107	328	3,464,195	15.4	3,464,277	171	3,464,832	57	3,464,406	155	3,464,876
597	3,464,108	57— 90	3,464,196	89.15:	3,464,278	174	3,464,833	76.5	3,464,407	259	3,464,877
605	3,464,109	152	3,464,197	126	3,464,279	199	3,464,834	81	3,464,408	330	3,464,878
30— 41	3,464,110	157	3,464,198	142	3,464,280	212	3,464,835	129	3,464,409	425	3,464,879
32— 2	3,464,111	58— 2	3,464,199	200	3,464,281	235	3,464,342	140	3,464,410	159— 6	3,464,478
14	3,464,112	58	3,464,200	226	3,464,282	272	3,464,343	145.8	3,464,411	160—327	3,464,479
	3,464,113	59— 7	3,464,201	424.8	3,464,283	100—102	3,464,344	218	3,464,412	368	3,464,480
	3,464,114	60— 13	3,464,202	492	3,464,284	142	3,464,345	268	3,464,413	161— 1	3,464,880
19	3,464,115	52	3,464,203	501	3,464,285		3,464,346	272	3,464,414	60	3,464,881
33— 61	3,464,116		3,464,204		3,464,286	189	3,464,347	296	3,464,415	151	3,464,882
77	3,464,117	53	3,464,205		3,464,287	210	3,464,348	410	3,464,416	167	3,464,883
172	3,464,118		3,464,206	525	3,464,288	101— 78	3,464,350	429	3,464,417	248	3,464,884
174	3,464,119	202	3,464,207	547	3,464,289	91	3,464,349	481	3,464,418	162— 17	3,464,885
205	3,464,120	265	3,464,208	574	3,464,290	126	3,464,351	130— 27	3,464,419	162	3,464,886
34— 10	3,464,121	61— 12	3,464,209	613	3,464,291	327	3,464,352	131— 17	3,464,420	263	3,464,887
35— 2	3,464,122	22	3,464,210	826	3,464,292	470	3,464,353	61	3,464,421	164—269	3,464,481
30	3,464,123	35	3,464,211	75— 65	3,464,812	102— 8	3,464,354	140	3,464,422	274	3,464,482
35	3,464,124	46	3,464,212	84.4	3,464,813	39	3,464,355	261	3,464,423	278	3,464,483
36— 2.5	3,464,125		3,464,213	101	3,464,814	67	3,464,356	132— 7	3,464,424		3,464,484
	3,464,126	48	3,464,214	124	3,464,815	103— 3	3,464,357	9	3,464,425	283	3,464,485

165– 1	3,464,486	206– 46	3,464,541	235– 61.11:	3,465,130	260– 22	3,464,942	260–618	3,465,046	307– 57	3,465,164
16	3,464,487	56	3,464,542		3,465,131	23	3,464,940	621	3,465,047	88	3,465,165
166	3,464,488	59	3,464,543	130	3,465,623		3,464,941		3,465,048	.3	3,465,166
166– .5	3,464,489	78	3,464,544	153	3,465,132		3,464,943	623	3,465,049	229	3,465,167
245	3,464,490	80	3,464,545	175	3,465,133	.5	3,464,944	633	3,465,050	230	3,465,168
261	3,464,491	84	3,464,546	183	3,465,134	29.1	3,464,945	646	3,465,051	235	3,465,169
270	3,464,492	208– 11	3,464,913	189	3,465,135	.4	3,464,946	652.5	3,465,052	237	3,465,170
285	3,464,493	174	3,464,914	193	3,465,137	.6	3,464,947	654	3,465,053		3,465,171
292	3,464,494	218	3,464,915	194	3,465,136	30.4	3,464,948	663	3,465,054	265	3,465,172
301	3,465,356	348	3,464,916	238– 10	3,464,624	32.6	3,464,949	674	3,465,055	274	3,465,174
312	3,464,495	209– 73	3,464,547	239– 2	3,464,625	37	3,464,950	683.15:	3,465,056	293	3,465,173
315	3,464,496	74	3,464,548	10	3,464,626		3,464,951	830	3,465,057	297	3,465,175
169– 2	3,464,497	75	3,464,549	96	3,464,627	45.7	3,464,952	837	3,465,058	308	3,465,176
172–421	3,464,498	112	3,464,550	97	3,464,628	.75:	3,464,953	857	3,465,059	308– 3.8	3,464,744
802	3,464,499	166	3,464,551	104	3,464,629	.85:	3,464,954		3,465,060	6	3,464,745
173– 15	3,464,500	170	3,464,552	124	3,464,630	46.5	3,464,955	865	3,465,061	23	3,464,746
17	3,464,501	467	3,464,553	135	3,464,631	57	3,464,956	874	3,465,062	72	3,464,747
20	3,464,502	210– 1	3,464,917	227	3,464,632	78	3,464,957	876	3,465,063	310– 8.0	3,465,177
	3,464,503	8	3,464,918	425	3,464,633	.4	3,464,958	878	3,465,064	9.7	3,465,178
28	3,464,504	11	3,464,919	240– 1.3	3,465,138	79	3,464,969	879	3,465,065	11	3,465,179
80	3,464,505	29	3,464,920	10	3,465,139	.5	3,464,959	880	3,465,066		3,465,180
174– 40	3,465,089	78	3,464,554	41.15:	3,465,140	80.3	3,464,960	890	3,465,067	44	3,465,181
58	3,465,090	85	3,464,555	47	3,465,141	83.7	3,464,961	952	3,465,068	51	3,465,182
68.5	3,465,091	90	3,464,556	241– 4	3,464,634	88.2	3,464,962	261– 60	3,464,678	54	3,465,183
78	3,465,092	97	3,464,557	21	3,464,635	92.1	3,464,963	114	3,464,679	66	3,465,184
175– 14	3,464,506	159	3,464,558		3,464,636		3,464,964	263– 3	3,464,680	112	3,465,185
85	3,464,507	195	3,464,559	37	3,464,637	94.3	3,464,965	6	3,464,681	158	3,465,186
176– 32	3,464,888	198	3,464,560	100.5	3,464,638	.7	3,464,966	28	3,464,682	178	3,465,187
86	3,464,889	232	3,464,561	242– 1.1	3,464,639		3,464,967	34	3,464,683	217	3,465,188
177–164	3,464,508	321	3,464,562	35.6	3,464,640	.9	3,464,968	264– 82	3,465,069	312–216	3,464,748
208	3,464,509	400	3,464,563	55	3,464,641	137	3,464,970	88	3,465,070	248	3,464,749
178– 5.4	3,465,093	211– 10	3,464,564	68.3	3,464,642	154	3,464,971	93	3,465,071	268	3,464,750
	3,465,094	42	3,464,565	74	3,464,643	210.5	3,464,972	95	3,465,072	313– 7	3,465,189
	3,465,095	71	3,464,566	75.43:	3,464,644	211.5	3,464,973	99	3,465,073	105	3,465,190
6	3,465,096	74	3,464,567	78.1	3,464,645	233.3	3,464,974	125	3,465,074	109	3,465,191
	3,465,097	105.6	3,464,568	84.41:	3,464,646	236	3,464,975	155	3,465,075	174	3,465,192
.6	3,465,098	135	3,464,569	129	3,464,647	.6	3,464,976	255	3,465,076	178	3,465,193
17	3,465,099	212–144	3,464,570	139	3,464,648	239.3	3,464,977	266– 23	3,464,684	209	3,465,194
33	3,465,100	214– 6	3,464,571	191	3,465,357		3,464,978		3,464,685	270	3,465,195
68	3,465,101		3,464,572	244– 3.2	3,464,649	.55:	3,464,979	36	3,464,686	313	3,465,196
179– 1	3,465,102	35	3,464,573	7	3,464,650		3,464,980	37	3,464,687	318	3,465,197
15	3,465,103	776	3,464,574	17.13:	3,464,651	240	3,464,981	267– 34	3,464,688	315– 3.5	3,465,198
16	3,465,104	215– 41	3,464,575	43	3,464,652		3,464,982	270– 31	3,464,689	22	3,465,199
100.2	3,465,105	42	3,464,576	148	3,464,653		3,464,983	271– 45	3,464,690	30	3,465,200
170.2	3,465,106	217– 65	3,464,577	248– 13	3,464,654	243	3,464,984	51	3,464,691	39.51:	3,465,201
179	3,465,107	219– 10.55:	3,465,114		3,464,655		3,464,985	272– 84	3,464,692	169	3,465,202
180– 5	3,464,510	75	3,465,115	15	3,464,656	247.1	3,464,986	273– 1	3,464,693	173	3,465,203
9.54:	3,464,511	85	3,465,116	20	3,464,657	.5	3,464,987		3,464,694	330	3,465,205
	3,464,512	89	3,465,117	43	3,464,658	250	3,464,988	30	3,464,695	363	3,465,204
181– .5	3,464,513	101	3,465,118	56	3,464,659	256.4	3,464,989	55	3,464,696	317– 13	3,465,206
32	3,464,514	121	3,465,119	61	3,464,660	257	3,464,990	56	3,464,697	33	3,465,207
182– 20	3,464,515	211	3,465,120	68	3,464,661	268	3,464,991	58	3,464,698	123	3,465,208
73	3,464,516	213	3,465,121	188	3,464,662	285	3,464,992	118	3,464,699	234	3,465,209
97	3,464,517	216	3,465,122	373	3,464,663		3,464,993	119	3,464,700		3,465,210
120	3,464,518	328	3,465,123	435	3,464,664		3,464,994	131	3,464,701		3,465,211
141	3,464,519	400	3,465,124	249– 10	3,464,665	287	3,464,995	134	3,464,702		3,465,212
142	3,464,520	406	3,465,125		3,464,666	293.4	3,464,996	176	3,464,703	235	3,465,213
207	3,464,521	482	3,465,126	190	3,464,667	294.7	3,464,997		3,464,704		3,465,214
211	3,464,522	494	3,465,127	250– 41.9	3,465,142	295.5	3,464,998	277– 26	3,464,705		3,465,215
188– 73	3,464,523	220– 3	3,464,578	43.5	3,465,143	302	3,464,999	59	3,464,706		3,465,216
78	3,464,524	4	3,464,579	66	3,465,144	307	3,465,000	143	3,464,707	318– 18	3,465,217
79.5	3,464,525	18	3,464,580	71	3,465,146	326.3	3,465,001	151	3,464,708		3,465,218
152	3,464,526	46	3,464,581	.5	3,465,145		3,465,002	213	3,464,709		3,465,219
192– 17	3,464,528	60	3,464,582		3,465,147	329	3,465,003	279– 4	3,464,710		3,465,220
72	3,464,527	77	3,464,583	83.1	3,465,148	332.2	3,465,004	7	3,464,711		3,465,221
193– 7	3,464,529	86	3,464,584	.3	3,465,149	343.2	3,465,005	120	3,464,712	33	3,465,222
194– 71	3,464,530	89	3,464,585		3,465,150	346.6	3,465,006	280– 36	3,464,715	72	3,465,223
195– 66	3,464,890	94	3,464,586		3,465,151	347.4	3,465,007	79.1	3,464,713	138	3,465,224
81	3,464,891	97	3,464,587	90	3,465,152	396	3,465,008	124	3,464,716		3,465,225
197– 98	3,464,531	221– 75	3,464,588	108	3,465,153	397.4	3,465,009	158	3,464,714		3,465,226
	3,464,532	295	3,464,589		3,465,154	.45:	3,465,011	164	3,464,717	257	3,465,227
151	3,464,533	297	3,464,590	199	3,465,155	.5	3,465,010	206	3,464,718	328	3,465,228
181	3,464,534	222– 30	3,464,591		3,465,156	437	3,465,012	438	3,464,719	341	3,465,229
198– 33	3,464,535	82	3,464,592	207	3,465,157	439	3,465,013	457	3,464,720	320– 17	3,465,230
52	3,464,536	182	3,464,593	211	3,465,158	448	3,465,014	285–174	3,464,721	321– 2	3,465,231
89	3,464,537	185	3,464,594	213	3,465,159	.2	3,465,015	367	3,464,722	5	3,465,234
201	3,464,538	249	3,464,595	219	3,465,160		3,465,016	287– 87	3,464,723	8	3,465,232
214	3,464,539	402.2	3,464,596	251–129	3,464,668		3,465,017	189.36:	3,464,724	45	3,465,233
200– 33	3,465,108	529	3,464,597	173	3,464,669		3,465,018	.365	3,464,725	322– 24	3,465,235
	3,465,109	559	3,464,598	252– 2	3,464,921		3,465,019	290– 1	3,465,161	323– 18	3,465,236
38	3,465,110	589	3,464,599	8.6	3,464,922	.8	3,465,020	4	3,465,162	21	3,465,237
61.6	3,465,111	223– 28	3,464,600	33.2	3,464,923	453	3,465,021	292– 39	3,464,726	53	3,465,238
83	3,465,112	46	3,464,601	62.9	3,464,924		3,465,022	67	3,464,727	324– 1	3,465,239
167	3,465,113	57	3,464,602	77	3,464,925		3,465,023	92	3,464,728	33	3,465,240
202– 98	3,464,892	66	3,464,603	316	3,464,926		3,465,024	218	3,464,729	37	3,465,241
158	3,464,893	69	3,464,604	372	3,464,927		3,465,025	294– 2	3,464,730	54	3,465,242
262	3,464,894	96	3,464,605	441	3,464,928	462	3,465,026	8.6	3,464,731	61	3,465,243
203– 2	3,464,895	224– 2	3,464,606	442	3,464,929	464	3,465,027	19	3,464,732	71	3,465,244
18	3,464,896	25	3,464,607	469	3,464,930	465.3	3,465,028	71	3,464,733	72	3,465,245
52	3,464,897	42.03:	3,464,608	470	3,464,931	470	3,465,029	296– 23	3,464,735	77	3,465,247
204– 9	3,464,898	225– 96.5	3,464,609	478	3,464,932	475	3,465,030	50	3,464,734	98	3,465,246
29	3,464,899	226– 43	3,464,610	254– 92	3,464,670	484	3,465,031	297– 84	3,464,736	103	3,465,248
67	3,464,900	119	3,464,611	256– 10	3,464,671	499	3,465,032	216	3,464,751	111	3,465,249
95	3,464,901	155	3,464,612	259– 1	3,464,672	513	3,465,033	231	3,464,752	127	3,465,250
96	3,464,902	178	3,464,613		3,464,673	514	3,465,034	232	3,464,753	325–112	3,465,251
99	3,464,903	227–130	3,464,614	72	3,464,674	525	3,465,035	284	3,464,754	151	3,465,252
105	3,464,904	154	3,464,615	75	3,464,675	534	3,465,036	298– 22	3,464,755	322	3,465,253
168	3,464,905	228– 2	3,464,616	153	3,464,676	537	3,465,037	299– 19	3,464,756	376	3,465,254
181	3,464,906	56	3,464,617	154	3,464,677	566	3,465,038	39	3,464,737	462	3,465,255
192	3,464,907	229– 2.5	3,464,618	260– 2	3,464,933	570.5	3,465,039	301– 5	3,464,738	328–133	3,465,256
195	3,464,908	52	3,464,619	.5	3,464,934	586	3,465,040	39	3,464,739	142	3,465,276
197	3,464,909	54	3,464,620	9	3,464,935		3,465,041	302– 64	3,464,740	185	3,465,257
219	3,464,910	85	3,464,621		3,464,936	591	3,465,042	303– 6	3,464,741	329–122	3,465,258
220	3,464,911	230–134	3,464,622	18	3,464,937	601	3,465,043	13	3,464,742	330– 9	3,465,259
286	3,464,912	235– 61.11:	3,465,128	21	3,464,938	607	3,465,044	305– 35	3,464,743	17	3,465,260
206– 46	3,464,540		3,465,129	22	3,464,939	614	3,465,045	307– 57	3,465,163	18	3,465,261

331– 94.5	3,465,358	339–150	3,465,283	340–173	3,465,304	340–263	3,465,326	343–895	3,465,346	353–116	3,464,767
109	3,465,262	196	3,465,284	174	3,465,305	282	3,465,327	911	3,465,361	355– 73	3,464,768
144	3,465,263	340– 15.5	3,465,286		3,465,306	324	3,465,328		3,465,362	84	3,464,769
166	3,465,264	25	3,465,285		3,465,307	347	3,465,329	346– 1	3,465,347	356– 4	3,464,770
332– 30	3,465,265	146.1	3,465,287		3,465,308		3,465,330	23	3,465,348	32	3,464,771
333– 17	3,465,266	.3	3,465,288		3,465,309		3,465,331		3,465,359	208	3,464,772
76	3,465,267	149	3,465,289		3,465,310		3,465,332	34	3,465,360	215	3,464,773
335– 26	3,465,268	163	3,465,290		3,465,311	373	3,465,333	74	3,465,349	401–110	3,464,774
69	3,465,269	166	3,465,291		3,465,312	378	3,465,334	75	3,465,350	199	3,464,775
132	3,465,270		3,465,292		3,465,313	381	3,465,335		3,465,351	424– 89	3,465,077
205	3,465,271		3,465,293		3,465,314	343– 7.7	3,465,336	76	3,465,352	92	3,465,078
336– 12	3,465,272	171	3,465,294		3,465,316	11	3,465,337	350– 1	3,464,757	122	3,465,079
62	3,465,273	172.5	3,465,295		3,465,318	17.1	3,465,338	10	3,464,758	248	3,465,080
73	3,465,274		3,465,296	.1	3,465,317	100	3,465,339	36	3,464,759	309	3,465,081
337–158	3,465,275		3,465,297		3,465,319	105	3,465,340	40	3,464,760	324	3,465,082
338–183	3,465,277		3,465,298		3,465,320		3,465,341	136	3,464,761	342	3,465,083
308	3,465,278		3,465,299		3,465,321	113	3,465,342	150	3,464,762	347	3,465,084
339– 30	3,465,279		3,465,300		3,465,322	225	3,465,324	176	3,464,763	431–124	3,464,776
42	3,465,280		3,465,301		3,465,323	736	3,465,343	202	3,464,764	126	3,465,355
89	3,465,281		3,465,302	244	3,465,315	852	3,465,344	352– 72	3,464,765	142	3,464,777
121	3,465,282	173	3,465,303	258	3,465,325	885	3,465,345	353– 6	3,464,766		

Classification of Designs

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D 2–248	215,078	D13– 1	215,088	11	215,098		215,108	D52– 1	215,118	D85– 2	215,128
D 8– 52	215,079	D14– 3	215,089	21	215,099		215,109	2	215,119	D86– 10	215,129
111	215,080	D22– 27	215,090	27	215,100	D40– 1	215,110	6	215,120		215,130
138	215,081	D23– 34	215,091	D34– 5	215,101		215,111	D54– 12	215,121		215,131
179	215,082	35	215,092		215,102	D42– 8	215,112	D55– 1	215,122	D89– 1	215,132
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44	215,084	91	215,094		215,104	10	215,114	D61– 1	215,124		215,134
118	215,085	142	215,095		215,105	D48– 20	215,115	D80– 9	215,125		215,135
143	215,086	D26– 5	215,096		215,106	27	215,116	D81– 4	215,126	D96– 12	215,136

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215,120	215,107	215,136	36 : 215,083	39 : 215,110	55 : 215,081
215,125	215,126	29 : 215,094	215,085	215,111	215,084
9 : 215,086	25 : 215,102				

Plant Patents

10 : 783,425	10 : 809,368	36 : 751,354	40 : 821,426	47 : 746,313	47 : 816,168
788,156	817,847	795,353	47 : 665,271	788,684	70 : 689,793

U.S. DEPARTMENT OF COMMERCE
OFFICIAL GAZETTE of the UNITED STATES PATENT OFFICE
September 2, 1969 Volume 866 Number 1

TRADEMARKS
NOTICES

Trademark Suits

Notices under 15 U.S.C. 1116; Trademark Act of July 5, 1946

Reg. No. 22,419 (VOGUE), The Fashion Company, Printed periodical; **Reg. No. 69,530**, same, The Conde Nast Publications, Inc., Weekly magazine; **Reg. No. 125,542**, same, Semi-monthly publication; **Reg. No. 504,006**, same, Magazine published twenty times yearly; **Reg. No. 340,618** (VOGUE INCORPORATING VANITY FAIR), same, Semi-monthly publication, **filed** May 14, 1969, D.C.N.J. (Newark), Doc. C-555-69, *The Conde Nast Publications Inc.* v. *Belle Stephens, doing business as Vogue Modeling & Charm School.*

Reg. No. 69,530. (See Reg. No. 22,419.)

Reg. No. 125,542. (See Reg. No. 22,419.)

Reg. No. 253,733. (See Reg. No. 518,578.)

Reg. No. 253,734. (See Reg. No. 518,578.)

Reg. No. 340,618. (See Reg. No. 22,419.)

Reg. No. 504,006. (See Reg. No. 22,419.)

Reg. No. 518,578 (GOODYEAR FOOTWEAR CORPORATION—FLEET FOOT AND REPRESENTATION OF A FOOT ON WINGS), The Goodyear Tire & Rubber Company, Rubber, canvas and leather footwear—namely, shoes, overshoes, boots, rubbers, sandals, slippers and gaiters; **Reg. No. 253,733** (GOODYEAR BLUE DIAMOND AND DESIGN), same, Rubber boots and shoes; **Reg. No. 253,734**, same, **filed** May 29, 1969, D.C. Mass. (Boston), Doc. C.A. 69-581-C, *The Goodyear Tire & Rubber Company* v. *Fashion Shoe Company, Inc., doing business as Goodyear Distributing Co.*

Reg. No. 635,228 (POGO), Walt Kelly, Newspaper comic or cartoon strips, comic or cartoon magazines, and comic or cartoon books; **Reg. No. 638,377** (POGO MOBILE), same, Toy consisting of cardboard cutout figures from the comic strip "Pogo," designed for assembling as a mobile, **filed** Apr. 7, 1969, D.C., C.D. Calif. (Los Angeles), Doc. 69-645-EC, *Walt Kelly* v. *Richard Furay et al.* Consent judgment, plaintiff is owner of trademarks, defendants have infringed; defendants enjoined, June 20, 1969.

Reg. No. 638,377. (See Reg. No. 635,228.)

Reg. No. 643,926 (DESIGN OF RABBIT'S HEAD), HMH Publishing Co., Inc., Monthly magazine; **Reg. No. 675,006** (FANCIFUL REPRESENTATION OF HEAD OF RABBIT), same, Mechanically grooved phonograph records; **Reg. No. 679,997** (REPRESENTATION OF RABBIT'S HEAD), same, Cocktail glasses; **Reg. No. 728,889** (FANCIFUL DESIGN OF A RABBIT HEAD), same, Ties and men's and women's shirts; **Reg. No. 743,134** (REPRESENTATION OF RABBIT HEAD AND DESIGN), same, Operating private social clubs which feature food, drinks, and entertainment, **filed** June 6, 1969, D.C.N.J. (Newark), Doc. C-641-69, *HMH Publishing Co., Inc.* v. *Ted Scarlet et al.* Consent judgment for permanent injunction, June 6, 1969.

Reg. No. 675,006. (See Reg. No. 643,926.)

Reg. No. 679,997. (See Reg. No. 643,926.)

CONDITION OF TRADEMARK APPLICATIONS AS OF JULY 31, 1969

Total number of applications awaiting action [excluding renewals and Sec. 12(c)]	14,039
Date of oldest new application	October 9, 1968
Date of oldest amended application (filing date)	April 1, 1966

C. M. WENDT, Director, Trademark Examining Operation TRADEMARK EXAMINING DIVISIONS, EXAMINERS AND TRADEMARK CLASSES UNDER EXAMINATION	Oldest Application	
	New	Amended
(I) L. J. BETTENDORF, Classes 2, 3, 4, 5, 7, 9, 10, 11, 27, 28, 30, 32, 33, 37, 38, 39, 40, 41, 42, 43, 50; Certification Marks, Classes A and B	2-17-69	5-3 -66
(II) F. H. WETHERBEE, Classes 1, 6, 15, 18, 45, 46, 47, 48, 49, 51, 52; Collective Membership Mark, Class 200	10-28-68	5-24-66
(III) P. S. BALL, Classes 19, 21, 23, 26, 31, 34, 35, 36	12-18-68	11-10-66
(IV) M. E. ABRAMSON, Classes 8, 12, 13, 14, 16, 17, 20, 22, 24, 25, 29, 44; Service Marks, Classes 100, 101, 102, 103, 104, 105, 106, and 107	10-9 -68	4-1 -66
Renewals (All Classes)	6-3 -69	.....
Sec. 12(c) Publications (All Classes)	6-16-69	.....

Applications filed during the month of July 1969—2,747

Registrations Issued ----------419—No. 875,862 to No. 876,280
Renewals Issued ----------100

The TRADEMARK SECTION of the OFFICIAL GAZETTE, issued weekly, is mailed under the direction of the Superintendent of Documents, Government Printing Office, Washington, D.C., 20402 to whom all subscriptions should be made payable and all communications addressed; subscription price, $20.50 per annum, foreign mailing $5.75 additional; single copies, 40 cents each.

PRINTED COPIES OF TRADEMARK REGISTRATIONS are furnished by the Patent Office for 20 cents each. Address orders to the Commissioner of Patents, Washington, D.C. 20231.

Reg. No. 728,889. (See Reg. No. 643,926.)

Reg. No. 743,134. (See Reg. No. 643,926.)

Reg. No. 744,348 (AMETEK), Ametek, Inc., Electric motors, electric motor actuators and synchro transducers; **Reg. No. 744,381,** same, Springs, spring motors, spring motor reels, metal stampings for machine parts, and centrifugal drying machines; **Reg. No. 744,422,** same, Pressure gauges, wire terminal and material pull testers, mechanical force gauges, material testing machines and accessories, beverage measuring dispsensers, ammeters, voltmeters, thermometers, process control and recording instruments, and timing and pressure actuated mechanisms for opening parachutes; **Reg. No. 744,507,** same, Air volume controllers for water pressure systems, and industrial type fans; **Reg. No. 744,712** (AMETEK AND DESIGN A), same, Electric motors and electric motor actuators and synchro transducers; **Reg. No. 744,750,** same, Springs, spring motors, spring motor reels, metal stampings for machine parts, and centrifugal drying machines; **Reg. No. 744,761,** same, Laundry washing machines, laundry liquid extracting machines, laundry washer-extractors, laundry ironers and laundry folding machines; **Reg. No. 744,769,** same, Pressure gauges, wire terminal and material pull testers, mechanical force gauges, material testing machines and accessories, beverage measuring dispensers, ammeters, voltmeters, thermometers, process control and recording instruments, temperature control instruments, and timing and pressure actuated mechanisms for opening parachutes; **Reg. No. 744,809** (AMETEK), same, Liquid filtering apparatus and filter cloth therefor; **Reg. No. 744,810** (AMETEK AND DESIGN A), same; **Reg. No. 744,829,** same, Air volume controllers for water pressure systems, and industrial type fans, **filed** Mar. 10, 1969, D.C., N.D. Ohio (Cleveland), Doc. C69–182, *Ametek, Inc.* v. *Amtec, Inc., Robert Bennett, Jr., and John Melther, Jr.*

Reg. No. 744,381. (See Reg. No. 744,348.)

Reg. No. 744,422. (See Reg. No. 744,348.)

Reg. No. 744,507. (See Reg. No. 744,348.)

Reg. No. 744,712. (See Reg. No. 744,348.)

Reg. No. 744,750. (See Reg. No. 744,348.)

Reg. No. 744,761. (See Reg. No. 744,348.)

Reg. No. 744,769. (See Reg. No. 744,348.)

Reg. No. 813,175 (LUMS), Lum's Incorporated, Restaurant services; **Reg. No. 813,176** (LUMS AND DESIGN), same; **Reg. No. 827,029,** same, **filed** June 23, 1969, D.C., N.D. Ohio (Toledo), Doc. C–69–179, *Lum's Inc.* v. *Angelo Lumbardo, doing business as Lum's.*

Reg. No. 813,176. (See Reg. No. 813,175.)

Reg. No. 827,029. (See Reg. No. 813,175.)

MARKS PUBLISHED FOR OPPOSITION

SECTION 1

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Application for the registration of these marks in more than one class has been filed as provided in section 30 of said act as amended by Public Law 772, 87th Congress, approved Oct. 9, 1962, 76 Stat. 769. Opposition under section 13 may be filed within thirty days of this publication. See Rules 2.101 to 2.105.

A separate fee of twenty-five dollars for each class opposed must accompany the opposition.

[NOTE: For publication of marks presented in applications for registration in one class, see section 2.**]**

SN 237,082. George W. Canfield, Largo, Fla. Filed Jan. 24, 1966.



Class 38—Prints and Publications

For Newspaper Columns (Int. Cl. 16).

Class 100—Miscellaneous

For Counseling Parents and High School Students With Regard to Career Selection and College Choice for the Latter (Int. Cl. 42).

First use Dec. 17, 1965.

SN 240,138. Alsco, Inc., St. Louis, Mo., assignee of Chromcraft Corporation, St. Louis, Mo. Filed Mar. 4, 1966.

"TECHFAB"

Class 9—Explosives, Firearms, Equipments, and Projectiles

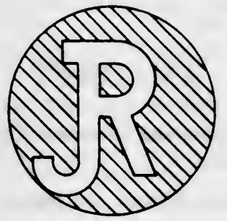
For Rocket Launchers (Int. Cl. 13).

Class 32—Furniture and Upholstery

For Case Goods, Such as Dressers, Chests of Drawers, Vanity Tables and Night Tables, Office Furniture and Lounge Furniture (Int. Cl. 20).

First use Dec. 23, 1965.

SN 268,050. The Johnson Rubber Company, Middlefield, Ohio. Filed Mar. 31, 1967.



The drawing is lined for the color green.

Class 1—Raw or Partly Prepared Materials

For Molded, Extruded, Lathe-Cut and Die-Cut and Calendered Rubber Products—Namely, Rubber Tubing for General Use in the Industrial Arts and Calendered Sheet Stock (Int. Cl. 17).

First use at least as early as August 1955.

Class 12—Construction Materials

For Molded, Extruded, Lathe-Cut and Die-Cut and Calendered Rubber Products—Namely, Floor Base Molding, Corners, Risers, Thresholds, Stair Stringer Material, and Channels (Int. Cl. 27).

First use at least as early as August 1955.

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

For Molded, Extruded, Lathe-Cut and Die-Cut and Calendered Rubber Products—Namely, Carpet Strips and Brush Holders (Int. Cl. 27).

First use at least as early as August 1955.

Class 20—Linoleum and Oiled Cloth

For Molded, Extruded, Lathe-Cut and Die-Cut and Calendered Rubber Products—Namely, Floor Coverings (Int. Cl. 27).

First use at least as early as August 1955.

Class 21—Electrical Apparatus, Machines, and Supplies

For Insulated Rail Joints and Component Parts Thereof of Molded, Extruded, Lathe-Cut and Die-Cut and Calendered Rubber, i.e., Metal Clad Insulation Bonded to Joint Bars, Bonded Rubber to Metal Utilized Washer Plates and Thimbles, and Bonded Rubber to Steel Tie Plates (Int. Cl. 17).

First use June 2, 1960.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Molded, Extruded, Lathe-Cut and Die-Cut and Calendered Rubber Products—Namely Marine Bearings (Int. Cl. 7).

First use at least as early as 1960.

Class 35—Belting, Hose, Machinery Packing, and Nonmetallic Tires

For Molded, Extruded, Lathe-Cut and Die-Cut Rubber Products—Namely Bushings and Gaskets (Int. Cl. 17).

First use at least as early as August 1955.

Class 50—Merchandise Not Otherwise Classified

For Molded, Extruded, Lathe-Cut and Die-Cut and Calendered Rubber Products—Namely, Stair Treads, Stair Nosings, Underfloor Suspension Pads and Bumpers (Int. Cl. 19).

First use at least as early as August 1955.

SN 271,670. Montecatini Edison S.p.A., Milan, Italy. Filed May 17, 1967.

gabbrogrün

Owner of Italian Reg. No. 171,731, dated Sept. 23, 1965.

Class 16—Protective and Decorative Coatings

For Anticorrosive, Antiabrasive and Thermic Barrier Coatings in the Nature of Metallic, Metalloceramic or Ceramic Materials (Int. Cls. 2 and 17).

Class 21—Electrical Apparatus, Machines, and Supplies

For Sprayer in the form of a Plasma-Jet Generator Having Either Gun Form or Head Form for Applying Plasma Sprays of Metallic, Metalloceramic or Ceramic Materials (Int. Cl. 7).

Class 106—Material Treatment

For Treating Goods of Others by Applying Coatings Which Have One or More of the Following Effects: Anticorrosive, Antiabrasive and Thermic Barrier (Int. Cl. 40).

SN 279,184. GAF Corporation, New York, N.Y., by change of name from General Aniline & Film Corporation, New York, N.Y. Filed Aug. 28, 1967.

ANSCOCHROME

Owner of Reg. Nos. 616,815, 700,342, and 726,290.

Class 2—Receptacles

For Boxes for Carrying Photographic Slide Mounts (Int. Cl. 20).

Class 26—Measuring and Scientific Appliances

For Photographic Slide Mounts and Slide Mount Receptacles Designed for Carrying Slide Mounts (Int. Cl. 9).

Class 38—Prints and Publications

For Developed Mounted Photographic Film Slides (Int. Cl. 9).

First use July 30, 1959.

SN 285,695. ILC Industries, Inc., Dover, Del. Filed Nov. 28, 1967.



The mark comprised of the letters "ILC" in a design form.

Class 12—Construction Materials

For Air Supported Structures, Such as Buildings and the Like (Int. Cl. 19).

Class 39—Clothing

For Protective Headgear—Namely, Helmets and Face Shields (Int. Cl. 9).

First use on or about June 2, 1967.

SN 290,999. The Cattleman, Inc., New York, N.Y. Filed Feb. 14, 1968.

THE CATTLEMAN

Class 9—Explosives, Firearms, Equipments, and Projectiles

For Matchboxes (Int. Cl. 34).

Class 38—Prints and Publications

For Simulated Newspapers, Recipe Books, Postcards, Illustrated Special Menu Cards and Brochures, Shopping and Theater Guide, and Wine Booklets (Int. Cl. 16).

First use September 1959.

SN 292,150. Ch. Demel's Söhne, Vienna, Austria. Filed Feb. 29, 1968.

Ch. Demel's Söhne

The English translation of the notation shown in the drawing is "Ch. Demel's Sons." Owner of Austrian Reg. No. 58,636, dated Dec. 22, 1966.

Class 45—Soft Drinks and Carbonated Waters

For Mineral Water and Soft Drinks (Int. Cl. 32).

Class 46—Foods and Ingredients of Foods

For Canned Meats and Fish, Meat Extracts, Jellied Meat, Ice Cream, Canned Fruit Juices, Coffee, Tea, Honey, Table Syrups, Cocoa, Candy, Pastries, Cakes, and Cookies (Int. Cls. 29, 30, and 32).

Class 47—Wines

For Wines (Int. Cl. 33).

Class 49—Distilled Alcoholic Liquors

For Whiskey, Brandy, and Liqueurs (Int. Cl. 33).

SN 293,281. Krack Corporation, Chicago, Ill. Filed Mar. 14, 1968.

KRACK

Class 31—Filters and Refrigerators

For Refrigeration Units and Parts Thereof for Industrial, Commercial, and Institutional Use (Int. Cl. 11).

Class 34—Heating, Lighting, and Ventilating Apparatus

For Air Conditioning Units and Parts Thereof for Domestic, Commercial, Institutional, and Industrial Use (Int. Cl. 11).

First use 1931.

SN 294,341. Starr Company, Incorporated, Petersburg, Va. Filed Mar. 6, 1968.

CANTRIX

Class 6—Chemicals and Chemical Compositions

For Automatic Spray-Type Pressurized Containers With Dispensers Therefor Containing a Soil Fumigant (Int. Cl. 5).

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Automatic Spray-Type Presurized Containers With Dispensers Therefor (Int. Cl. 7).

First use Nov. 18, 1967.

SN 297,935. Aimcee Wholesale Corporation, New York, N.Y. Filed May 13, 1968.

AMCRAFT

Class 16—Protective and Decorative Coatings

For Paints (Int. Cl. 2).

Class 29—Brooms, Brushes, and Dusters

For Paint Brushes (Int. Cl. 16).

First use Feb. 7, 1968.

SN 298,492. Kugelfabrik Schulte & Co., Wermelskirchen, Tente, Rhineland, Germany. Filed May 20, 1968.

KUGELFABRIK SCHULTE & CO.

Owner of German Reg. No. 811,104, dated Oct. 18, 1965.

Class 4—Abrasives and Polishing Materials

For Grinding Balls and Polishing Balls (Int. Cl. 3).

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

For Rollers and Wheels and Parts Thereof; Steel and Other Metal Balls (Int. Cls. 6 and 7).

Class 19—Vehicles

For Wheels for Furniture Wheelbarrows (Int. Cl. 12).

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Ball Bearings and Parts Thereof, Bicycle Ball Bearings, Ball Bearing Holders, Ball Bearing Cages and Ball Bearing Holder Rings (Int. Cls. 7 and 12).

Class 26—Measuring and Scientific Appliances

For Calibrating Balls (Int. Cl. 9).

SN 298,714. Excelsior Belting-Equipment Co., Inc., New York, N.Y. Filed May 21, 1968.

500 PLUS

Class 24—Laundry Appliances and Machines

For Ironing Board Covers and Pressing Machine Pads Comprising High Heat Resistant Textile Cloth Treated With High Heat Resistant Material (Int. Cl. 21).
First use May 1964.

Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

For High Heat Resistant Textile Cloth Treated With High Heat Resistant Material (Int. Cl. 24).
First use June 1965.

SN 298,995. A to Z Rental, Inc., Chicago, Ill. Filed May 24, 1968.

AZTEC

Owner of Reg. No. 853,539.

Class 19—Vehicles

For Travel Trailers, Pickup Coaches (Int. Cl. 12).
First use use November 1967.

Class 22—Games, Toys, and Sporting Goods

For Tents, Sleeping Bags for Outdoor Activity or Recreational Use (Int. Cls. 20 and 22).
First use on or about Apr. 11, 1968.

Class 50—Merchandise Not Otherwise Classified

For Tarpaulins (Int. Cl. 22).
First use on or about Apr. 11, 1968.

SN 301,003. Motorola, Inc., Franklin Park, Ill. Filed June 21, 1968.

Owner of Reg. No. 847,770 and others.

Class 21—Electrical Apparatus, Machines, and Supplies

For Electric Motors; Audio and Visual Signal Intercommunication Systems for Hospitals—Namely, Announciator Systems for Hospital Personnel and Electronic Visual Display Systems for Indicating the Status of Hospital Rooms; Microwave Components—Namely, Circulators and Isolators; Electronic Command Systems for Manned Space Crafts—Namely, Converters for Translating Ground Pushbutton Commands to Digital Signals for Transmission to Airborne Space Crafts (Int. Cls. 7 and 9).
First use 1955.

Class 26—Measuring and Scientific Appliances

For Indicating Apparatus for Vehicles—Namely, Tachometers, Hourmeters, Combination Hourmeters and Tachometers, Combination Speedometers and Tachometers; Electronic Monitoring and Control Ground Support Equipment for Aerospace Command Guidance Systems; Spaceborne Electronic Navagation Systems; and Electrical Testing Equipment—Namely, Binary Signal Generators for Ground and Airborne Space Craft Communciations and Command Systems (Int. Cl. 9).
First use January 1966.

SN 301,004. Motorola, Inc., Franklin Park, Ill. Filed June 21, 1968.

MOTOROLA

Owner of Reg. No. 814,700 and others.

Class 21—Electrical Apparatus, Machines, and Supplies

For Electric Motors; Audio and Visual Signal Intercommunication Systems for Hospitals—Namely, Announciator Systems for Hospital Personnel and Electronic Visual Display Systems for Indicating the Status of Hospital Rooms; Microwave Components—Namely, Circulators and Isolators; Electronic Command Systems for Manned Space Crafts—Namely, Converters for Translating Ground Pushbutton Commands to Digital Signals for Transmission to Airborne Space Crafts (Int. Cls. 7 and 9).
First use 1937.

Class 26—Measuring and Scientific Appliances

For Indicating Apparatus for Vehicles—Namely, Tachometers, Hourmeters, Combination Hourmeters and Tachometers, Combination Speedometers and Tachometers; Electronic Monitoring and Control Ground Support Equipment for Aerospace Command Guidance Systems; Spaceborne Electronic Navigation Systems; and Electrical Testing Equipment—Namely, Binary Signal Generators for Ground and Airborne Space Craft Communications and Command Systems (Int. Cl. 9).
First use January 1966.

SN 301,091. Servicemaster Communications Systems, Inc., Chicago, Ill. Filed June 21, 1968.

Boom SOUND Video SYSTEMS

Applicant disclaims the words "Video Systems" and "Sound" apart from the mark as shown. Owner of Reg. No. 617,414.

Class 100—Miscellaneous

For Designing Electronic and Electromechanical Communications Systems (Int. Cl. 42).

Class 103—Construction and Repair

For Installing and Maintaining Electronic and Electromechanical Communications Systems (Int. Cl. 37).

First use Mar. 8, 1968.

SN 301,294. Armour Industrial Chemical Company, Chicago, Ill. Filed June 25, 1968.

PEAK

Owner of Reg. No. 692,940.

Class 6—Chemicals and Chemical Compositions

For Fabric Softening Chemical (Int. Cl. 1).

Class 52—Detergents and Soaps

For Laundry Detergent for Household Use (Int. Cl. 3).

First use on or prior to June 18, 1968.

SN 304,222. Houstonaire, Inc., Houston, Tex. Filed Aug. 2, 1968.

HOUSTONAIRE

Class 100—Miscellaneous

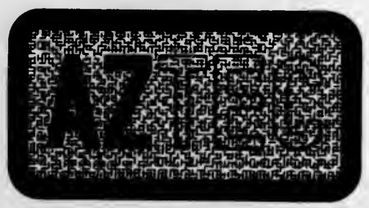
For Restaurant, Hotel, and Private Club Cocktail Lounge Services (Int. Cl. 42).

Class 107—Education and Entertainment

For Variety Show Entertainment and Dancing Services (Int. Cl. 41).

First use Jan. 27, 1965.

SN 304,659. A to Z Rental, Inc., Chicago, Ill. Filed Aug. 8, 1968.



The drawing is lined for the colors yellow and black, and the color is claimed as an integral part of the mark. Owner of Reg. No. 853,539.

Class 19—Vehicles

For Camping Trailers, Travel Trailers, Pickup Coaches (Int. Cl. 12).
First use on or about Jan. 15, 1966.

Class 22—Games, Toys, and Sporting Goods

For Tents, Sleeping Bags for Outdoor Activity or Recreational Use (Int. Cls. 20 and 22).
First use on or about Apr. 11, 1968.

Class 50—Merchandise Not Otherwise Classified

For Tarpaulins (Int. Cl. 22).
First use on or about Apr. 11, 1968.

SN 304,660. A to Z Rental, Inc., Chicago, Ill. Filed Aug. 8, 1968.

AZTEC

Owner of Reg. No. 853,539.

Class 19—Vehicles

For Camping Trailers, Travel Trailers, Pickup Coaches (Int. Cl. 12).
First use on or about Jan. 15, 1966.

Class 22—Games, Toys, and Sporting Goods

For Tents, Sleeping Bags for Outdoor Activity or Recreational Use (Int. Cls. 20 and 22).
First use on or about Apr. 11, 1968.

Class 50—Merchandise Not Otherwise Classified

For Tarpaulins (Int. Cl. 22).
First use on or about Apr. 11, 1968.

SN 305,602. Marvin H. Allred, d.b.a. Allred's Pool Supplies, Santa Ana, Calif., assignee of Allred's Pool Supplies, Inc., Garden Grove, Calif. Filed Aug. 21, 1968.

ALLRED'S

Class 101—Advertising and Business

For Retail Store Services in the Field of Swimming Pool Supplies (Int. Cl. 35).

Class 103—Construction and Repair

For Swimming Pool Maintenance Services (Int. Cl. 37).

First use in or about April 1958.

SN 306,295. The Certified Medical Representatives Institute, Inc., Roanoke, Va. Filed Aug. 30, 1968.

C.M.R.

Class 38—Prints and Publications

For Training Textbooks for the Pharmaceutical Industry (Int. Cl. 16).

Class 107—Education and Entertainment

For Providing Educational Training Programs for Medical Representatives of Pharmaceutical Firms (Int. Cl. 41).

First use Apr. 14, 1967.

SN 307,856. Obrey, Paris, France. Filed Sept. 20, 1968.

Obrey

Priority claimed under Sec. 44(d) on French Reg. No. 741,570, dated Mar. 25, 1968.

Class 27—Horological Instruments

For Watches and Parts Thereof (Int. Cl. 14).

Class 28—Jewelry and Precious-Metal Ware

For Watch Bracelets (Int. Cl. 14).

First use Aug. 9, 1957; in commerce Mar. 22, 1968.

SN 310,104. Integrated Circuit Engineering Corp., Phoenix, Ariz. Filed Oct. 21, 1968.

ICE

Class 100—Miscellaneous

For Consultation Services Relating to the Design and Fabrication of Electronic Circuits (Int. Cl. 42).

Class 101—Advertising and Business

For Consultation Services Relating to the Marketing of Electronic Circuits (Int. Cl. 35).

First use July 15, 1964.

SN 311,323. Diamond Shamrock Corporation, Cleveland, Ohio. Filed Nov. 5, 1968.

INDACO

Owner of Reg. No. 838,538.

Class 6—Chemicals and Chemical Compositions

For Dry Cleaning Sizing (Int. Cl. 1).

Class 15—Oils and Greases

For Dry Cleaning Lubricant (Int. Cl. 4).

Class 52—Detergents and Soaps

For Dry Cleaning Detergent (Int. Cl. 3).

First use Feb. 7, 1968.

SN 313,858. Charles Equipment Company, Villa Park, Ill. Filed Dec. 9, 1968.

CHARLES

Class 21—Electrical Apparatus, Machines, and Supplies

For Engine Electric Generator Sets and Electric Switchboards (Int. Cls. 7 and 9).

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Tractors Used in Building and Road Construction; Trenching Machinery for Digging Trenches Through Ground for Installation of Pipe, Tile, Electrical Lines and the Like; and Industrial Work Load Lift Platforms for Materiel and Personnel (Int. Cls. 7 and 9).

First use Nov. 6, 1968.

SN 317,174. KCS Industries Inc., Milwaukee, Wis. Filed Jan. 22, 1969.

KCS

Owner of Reg. No. 774,979.

Class 32—Furniture and Upholstery

For Racks for Walls or Counters, and Floor Stands (Int. Cl. 20).

Class 50—Merchandise Not Otherwise Classified

For Plaques, Signs, Badges, and Three-Dimensional Merchandise Displays (Int. Cl. 20).

First use June 3, 1968.

SN 319,220. Continental Chemical Company, Inc., d.b.a. Anchor Continental, Columbia, S.C. Filed Feb. 17, 1969.



Class 5—Adhesives

For Pressure-Sensitive Tapes (Int. Cl. 16).
First use Dec. 14, 1964.

Class 37—Paper and Stationery

For Sandblast Stencils (Int. Cl. 16).
First use Feb. 15, 1966.

SN 320,301. International Paper Company, New York, N.Y., assignee of Facelle Company Limited, Toronto, Ontario, Canada. Filed Feb. 27, 1969.

FACELLE

Owner of Reg. Nos. 270,416, 831,072, and others.

Class 37—Paper and Stationery

For Facial Tissues, Paper Towels, Bathroom Tissues and Paper Napkins (Int. Cl. 16).
First use in or about July 1965; in commerce on or about Jan. 31, 1966.

Class 39—Clothing

For Disposable Diapers (Int. Cl. 25).
First use on or about Apr. 16, 1967; in commerce on or about Apr. 16, 1967.

SN 324,110. Ansley, Incorporated, Shelby, N.C. Filed Apr. 10, 1969.

LAWNDALE

Class 7—Cordage

For Twine, Cord and Line (Int. Cl. 22).
First use 1875.

Class 29—Brooms, Brushes, and Dusters

For Mop Heads (Int. Cl. 21).
First use 1948.

Class 43—Thread and Yarn

For Thread, Carpet Warp and Rug Filler (Int. Cl. 23).
First use 1923.

SECTION 2

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Opposition under section 13 may be filed within thirty days of publication. See Rules 2.101 to 2.105.

A fee of twenty-five dollars must accompany the opposition.

[NOTE: For publication of marks presented in a combined application for registration in more than one class, see section 1.]

Class 1—Raw or Partly Prepared Materials

SN 283,362. Rostone Corporation, Lafayette, Ind. Filed Oct. 25, 1967.

ROSITE

Owner of Reg. Nos. 296,539 and 375,851.
For Plastic Material Adapted To Be Molded or in Other Ways Formed Into Parts (Int. Cl. 1).
First use on or about May 18, 1938.

292,019. Sumitomo Chemical Co., Ltd., Higashi-ku, Osaka, Japan. Filed Feb. 27, 1968.



Owner of Japanese Reg. No. 468,594, dated July 29, 1955.
For Synthetic Resin Powder, Granules, Pellets, Beads, Liquid, and Sheets (Int. Cls. 1 and 17).

SN 293,651. USM Corporation, Boston, Mass., by change of name from United Shoe Machinery Corporation, Boston, Mass. Filed Mar. 19, 1968.

UNITEM

For Polyvinyl Chloride Based Compounds in Pellet Form (Int. Cl. 1).
First use January 1967.

SN 298,283. Domtar Limited, Montreal, Quebec, Canada. Filed May 16, 1968.

DOMTAR

Owner of Canadian Reg. Nos. 131,955, dated July 19, 1963 and 107/25,361, dated Oct. 31, 1919; and U.S. Reg. No. 797,669.
For Crude and Refined Tars, Pitch for Roofing Purposes, Pitch Used in the Manufacture of Electrodes and Briquettes, Coke, Asphalt, Cellulose Gums, Lime and Limestone; Sulphate, Sulphite, and Ground Wood Pulp (Int. Cls. 1, 4, and 19).
First use July 19, 1963; in commerce July 19, 1963.

SN 300,768. Empress Chinchilla Breeders Cooperative, Incorporated, New York, N.Y. Filed May 7, 1968.

GOLDEN EMPRESS

Applicant disclaims the word "Golden" apart from the mark as shown. Owner of Reg. Nos. 666,425 and 667,238.
For Processed Chinchilla Pelts for Use in Stoles, Capes, Coats, Jackets, Boas, Hats, Blankets, and Other Fur Garments (Int. Cl. 18).
First use on or about Dec. 6, 1967.

SN 303,338. Pennsylvania Industrial Chemical Corporation, Clairton, Pa. Filed July 22, 1968.

INKOVAR

For Synthetic Resins (Int. Cl. 1).
First use Aug. 14, 1957.

SN 303,540. Portland-Monson Slate Co., Middle Granville, N.Y. Filed July 24, 1968.

MONSON

For Quarried Slate for Electrical, Structural, Flooring, and Monumental Purposes (Int. Cl. 19).
First use in 1906.

SN 311,051. Multi-Systems and Products Corporation, Bay City, Mich. Filed Oct. 31, 1968.

ROLAWN

For Combination Mulch and Lawn Seed Mat (Int. Cl. 31).
First use Sept. 15, 1968.

SN 312,568. Del Campo Giovanni Battista, d.b.a. Chemetron Del Dr. Del Campo Giovanni Battista, Milan, Italy. Filed Nov. 19, 1968.

CELLODRY

Owner of Italian Reg. No. 206,872, dated Jan. 31, 1967.
For Sheets and Strips of Dry Microporous Cellulose Acetate (Int. Cl. 17).

SN 313,195. Peabody Coal Company, St. Louis, Mo. Filed Nov. 27, 1968.

EAGLE VALLEY

For Coal (Int. Cl. 4).
First use June 2, 1968.

Class 2—Receptades

SN 290,892. George M. Sawyer, d.b.a. New Tomorrow Scientific Co., Inglewood, Calif. Filed Feb. 12, 1968.

MAGIC GARDEN

For Containers for Sprouting Seeds and Bulbs and for Growing Plants Either With or Without Fertilizer (Int. Cl. 21).
First use Jan. 8, 1968.

SN 296,405. Crawford Fitting Company, Solon, Ohio. Filed Apr. 24, 1968.

Swagelok Ferrule-Pak

Owner of Reg. Nos. 595,412, 843,543, and others.
For Packages for Tube Fitting Components (Int. Cl. 20).
First use Apr. 5, 1968.

SN 308,160. Sweetheart Plastics, Inc., Wilmington, Mass. Filed Sept. 24, 1968.

THERM-O-SHEEN

For Disposable Plastic Food Containers (Int. Cl. 20).
First use Sept. 3, 1968.

SN 312,086. Wisconsin Container Corporation, Menasha, Wis. Filed Nov. 13, 1968.



The mark comprises a fanciful letter "W" and design.
For Paperboard Boxes and Cartons (Int. Cl. 16).
First use Dec. 15, 1967.

Class 3—Baggage, Animal Equipments, Portfolios, and Pocketbooks

SN 305,451. Items, Incorporated, d.b.a. Safe-T-Bone Co., St. Louis, Mo. Filed Aug. 19, 1968.

FISHER

Owner of Reg. No. 848,842.
For Animal Chew Toy Made of Rawhide (Int. Cl. 18).
First use May 14, 1968.

SN 317,614. Reliable Luggage, Inc., West Pittsburgh, Pa. Filed Jan. 27, 1969.

TAG-ALONG

For Suitcases, Valises, and Travelling Bags (Int. Cl. 18).
First use Dec. 21, 1968.

Class 4—Abrasives and Polishing Materials

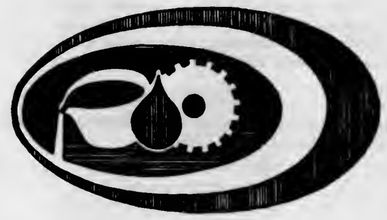
SN 311,486. W. R. Grace & Co., New York, N.Y. Filed Nov. 6, 1968.

VESTAL 1776

Owner of Reg. Nos. 190,608, 831,980, and others.
For Polymeric Floor Polish (Int. Cl. 3).
First use Jan. 3, 1967.

Class 5—Adhesives

SN 296,647. Core-Lube, Inc., Danville, Ill. Filed Apr. 26, 1968.



The drawing is lined for the colors red and blue.
For Core Binders (Int. Cl. 1).
First use Oct. 4, 1963.

SN 313,500. Farbenfabriken Bayer Aktiengesellschaft, Leverkusen-Bayerwerk, Germany. Filed Dec. 3, 1968.

COHEDUR

Owner of German Reg. No. 821,296, dated Mar. 16, 1966.
For Agents Which Are Added to Natural and Synthetic Rubbers in Order To Improve Their Adhesion to Fabrics (Int. Cl. 1).

Class 6—Chemicals and Chemical Compositions

SN 280,688. Bernzomatic Corporation, Rochester, N.Y. Filed Sept. 19, 1967.

BERNZRITE

Owner of Reg. No. 645,750.
For Cylinders Containing Propane (Int. Cl. 4).
First use December 1949.

SN 289,336. Propper Manufacturing Company, Inc., Long Island City, N.Y. Filed Jan. 22, 1968.

ONE-A-DAY

For Chemically Treated Sheets Used To Indicate Proper Sterilization Conditions in an Autoclave (Int. Cl. 1).
First use September 1967.

SN 292,020. Sumitomo Chemical Co., Ltd., Higashi-ku, Osaka, Japan. Filed Feb. 27, 1968.



Owner of Japanese Reg. No. 468,594, dated July 29, 1955.
For Inorganic and Organic Chemicals for Industrial Uses; Surface Active Agents, Chemical Agents; Agricultural and Hygienic Agents Including Insecticides, Fungicides, Disinfectants, Rodenticides, Herbicides, Germination Controllers, Moth Repellants, and Room Deodorants (Int. Cls. 1 and 5).

SN 296,019. Harbor Chemical & Engineering Corporation, Chicago, Ill. Filed Apr. 19, 1968.

HARBCO

For Chemical Compositions for Treating Boilers, Boiler Water, and Cooling Water (Int. Cl. 1).
First use Oct. 2, 1957.

SN 296,884. Sun Cleanser Company, Detroit, Mich. Filed Apr. 29, 1968.



Applicant disclaims the words "Pool Chlorine Concentrate" apart from the mark as shown. The drawing is lined for the colors red and blue.
For Disinfectant-Algaecide-Bactericide Preparation for Use in Swimming Pools (Int. Cl. 5).
First use Apr. 1, 1966.

SN 304,566. Allergan Pharmaceuticals, Santa Ana, Calif. Filed Aug. 7, 1968.

PDx

For Diagnostic Medium for Laboratory Use (Int. Cl. 1).
First use June 5, 1968.

SN 306,157. Major Pool Equipment Corp., South Kearny, N.J. Filed Aug. 28, 1968.

Sparta/clear

For Liquid Anti-Algae Agent for Addition to Swimming Pools (Int. Cl. 5).
First use May 31, 1968.

SN 306,627. BA & T Industrial Supply Co., Los Angeles, Calif. Filed Sept. 5, 1968.

BATCO

For Chemicals Employed in Connection With the Manufacture of Printed Circuit Boards—Namely, Materials for Stripping Photoresist Layers From Said Boards and Materials for Brightening a Solder by Removing Oxides and Electro-Less Tin Solutions (Int. Cl. 1).
First use Feb. 20, 1968.

SN 308,205. Henry Field Seed and Nursery Company, Shenandoah, Iowa. Filed Sept. 25, 1968.



Owner of Reg. No. 754,816.
For Insecticides; Combination Insecticides-Fungicides; Herbicides; Kits of Chemical Reagents for Testing Soil for Agricultural Usage; Soil Treatment Chemicals—Namely, Vermiculite and Aluminum Sulfate; Chemical Preparations for Removing Tree Stumps; Chemical Compounds for Destroying Soot; and Preparations for Digesting Waste Solids in Septic Tanks and Cesspools, and Deodorizing Same (Int. Cls. 1 and 5).
First use on or about Mar. 15, 1962.

SN 308,390. Morton International, Inc., Chicago, Ill. Filed Sept. 27, 1968.

WHITE CRYSTAL

Owner of Reg. No. 545,380.
For Salt for Recharging Water Softeners (Int. Cl. 1).
First use on or about June 15, 1906.

SN 312,535. Wood Treating Chemicals Co., St. Louis, Mo. Filed Nov. 1, 1968.

TERRATOX

Owner of Reg. No. 402,842.
For Herbicides (Int. Cl. 5).
First use at elast as early as Oct. 28, 1954.

SN 312,607. William Recht Co., Inc., New York, N.Y. Filed Nov. 19, 1968.

NO-SKIN

For Retarding Compound in Spray Form Used To Inhibit the Drying of Printing and Lithographic Inks on Plates and Rollers and in Ink Fountain (Int. Cl. 1).
First use May 31, 1963.

SN 314,072. William A. O. Gross, Greenwich, Conn. Filed Dec. 10, 1968.

NO SHOW

For Chemical Composition for Application to Clothing To Repel Stains Therefrom (Int. Cl. 1).
First use Mar. 13, 1968.

Class 7 — Cordage

SN 300,321. American Cotton Yarns, Inc., Chicago, Ill. Filed June 13, 1968.



No claim is made to the word "Quality" apart from the mark.
For Cotton Twine, Rope and Braided Cord for Use as Engine Starter Cords (Int. Cl. 22).
First use August 1948.

SN 318,730. American Cotton Yarns, Inc., Chicago, Ill. Filed Feb. 10, 1969.

ELITE

For Braided Cord (Int. Cl. 22).
First use in 1954.

SN 319,192. Puritan Mills, Inc., Louisville, Ky. Filed Feb. 14, 1969.

HALO

For Clotheslines, Cord, and Rope (Int. Cl. 22).
First use Jan. 4, 1967.

SN 319,193. Puritan Mills, Inc., Louisville, Ky. Filed Feb. 14, 1969.

NRG BRAID

The word "Braid" is disclaimed apart from the mark as shown.
For Rope (Int. Cl. 22).
First use Sept. 11, 1968.

Class 9 — Explosives, Firearms, Equipments, and Projectiles

SN 316,098. Imperial Chemical Industries of Australia and New Zealand Limited, Melbourne, Victoria, Australia. Filed Jan. 8, 1969.

PENNANT

For Cartridges (Int. Cl. 13).
First use Dec. 3, 1968; in commerce Dec. 3, 1968.

Class 10 — Fertilizers

SN 305,401. Continental Oil Company, Ponca City, Okla. Filed Aug. 19, 1968.



The drawing is lined for the color green.
For Fertilizer (Int. Cl. 1).
First use about Mar. 1, 1968.

SN 305,402. Continental Oil Company, Ponca City, Okla. Filed Aug. 19, 1968.



For Fertilizer (Int. Cl. 1).
First use about Mar. 1, 1968.

SN 305,403. Continental Oil Company, Ponca City, Okla. Filed Aug. 19, 1968.



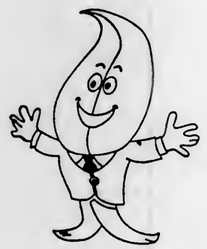
The drawing is lined for the color green.
For Fertilizer (Int. Cl. 1).
First use about Mar. 1, 1968.

SN 305,405. Continental Oil Company, Ponca City. Okla. Filed Aug. 19, 1968.



The drawing is lined for the color green.
For Fertilizer (Int. Cl. 1).
First use about Mar. 1, 1968.

SN 305,406. Continental Oil Company, Ponca City, Okla. Filed Aug. 19, 1968.



For Fertilizer (Int. Cl. 1).
First use about Mar. 1, 1968.

Class 11 — Inks and Inking Materials

SN 318,466. Sun Chemical Corporation, New York, N.Y. Filed Feb. 5, 1969.

STYROPAKE

For Printing Ink (Int. Cl. 2).
First use Nov. 15, 1968.

Class 12 — Construction Materials

SN 279,367. Central American Development Corporation, Lakewood, Ohio. Filed Aug. 30, 1967.

DECOR FLOOR

No claim of exclusive right is made to "Floor" for the goods recited.
For Seamless Surface Coating—Namely, Decorative Chips and a Liquid Resin Coating for Flooring and for Building Surfaces (Int. Cl. 19).
First use Aug. 5, 1967.

SN 291,729. H. B. Fuller Company, St. Paul, Minn. Filed Feb. 23, 1968.

tuff-Lite

Owner of Reg. No. 798,714.
For Industrial Epoxy Adhesives Applied to Wall Exteriors for the Retention of Stone Chips Randomly Applied Thereto, and for Use in Terrazzo Floors, Mosaic Walls, and Precast Panel Construction and the Like (Int. Cl. 19).
First use April 1962.

SN 297,442. A. Carol Sanford, d.b.a. Sanford Associates, Pompano Beach, Fla., assignee of Sanford Industries, Inc., Pompano Beach, Fla. Filed May 6, 1968.

SPANJOIST

For Metal Components for Flat Trusses Having Wood and Metal Components (Int. Cl. 6).
First use on or about Mar. 21, 1968.

SN 297,653. Capitol Products of Grand Rapids, Inc., Grand Rapids, Mich. Filed May 8, 1968.

CAPITOLINE

For Sliding Patio Doors, Window Units, and Calking Compounds for Windows, Doors, and the Like (Int. Cls. 17 and 19).
First use on or about Apr. 23, 1968.

SN 304,001. Karl Kristian Kobs Kroyer, Viby J., Denmark. Filed July 31, 1968.

SINOPAL

For Italian Reg. No. 155,036, dated May 24, 1961.
For White Synthetic Rock-Like Road Construction Material (Int. Cl. 19).

SN 305,499. Rysdon Products Company, Chicago, Ill. Filed Aug. 19, 1968.

SONICBAR

For Sound-Proof Doors (Int. Cl. 19).
First use Oct. 30, 1959.

SN 313,100. Harsco Corporation, Wormleysburg, Pa. Filed Nov. 26, 1968.

20K

For Sectional Shoring (Int. Cl. 19).
First use Nov. 17, 1968.

SN 314,509. American Olean Tile Company, Inc., Lansdale, Pa. Filed Dec. 16, 1968.

POMONASTONE

For Ceramic Tile (Int. Cl. 19).
First use Oct. 4, 1968.

SN 314,619. Rimar Manufacturing, Inc. Manheim, Pa. Filed Dec. 16, 1968.

Rimar

For Window Grilles (Int. Cl. 19).
First use July 30, 1967.

SN 315,151. Dolomite Brick Corporation of America, York, Pa. Filed Dec. 24, 1968.

DBCA

For Refractory Bricks for Use as Furnace Linings (Int. Cl. 19).
First use Jan. 12, 1965.

SN 319,186. Owens-Corning Fiberglas Corporation, Toledo, Ohio. Filed Feb. 14, 1969.

PERMSTOP

For Paper and Asphalt Vapor Barrier in Sheet Form (Int. Cl. 19).
First use May 2, 1967.

Class 13 — Hardware and Plumbing and Steam-Fitting Supplies

SN 279,951. Kenton Industries, d.b.a. Home Equipment Mfg. Company, Westminster, Calif. Filed Sept. 8, 1967.

HEMCO

For Household Hardware—Namely, Storage Racks, Shelf Units, Bath Repair Units, Door Latching Units, Door Clamps, and Toilet Clamps (Int. Cls. 6 and 11).
First use on or about May 6, 1966.

SN 300,183. G.K.N. Screws & Fasteners Limited, Smethwick, Warley, England. Filed June 11, 1968.

ROTOLOK

For Latch-Type Fasteners, Including Parts Thereof, and Levers Made Wholly or Principally of Plastics (Int. Cl. 20).
First use April 1968; in commerce April 1968.

SN 301,028. Bainbridge Manufacturing, Inc., Bainbridge Island, Wash. Filed June 21, 1968.

CABINET MASTER

The word "Cabinet" is disclaimed apart from the mark as shown.
For Cabinet Hardware—Namely, Door and Drawer Pulls, Door Catches, Shelf Supports, and Drawer Guides and Glides (Int. Cl. 6).
First use June 9, 1967.

SN 301,779. Superior Ball Joint Corporation, New Haven, Ind. Filed July 1, 1968.

SUPERBALL

For Ball Joints (Int. Cl. 7).
First use May 31, 1968.

SN 302,411. Ginsey Industries, Inc., Philadelphia, Pa. Filed July 10, 1968.

CUSH'N SOFT

For Toilet Seats (Int. Cl. 11).
First use on or about Apr. 17, 1968.

Class 14 — Metals and Metal Castings and Forgings

SN 299,159. Rasselstein Aktiengesellschaft, Neuwied (Rhine), Germany. Filed May 27, 1968.

ANCROLYT

Owner of German Reg. No. 824,156, dated May 23, 1966.
For Partially Treated Base Metal, Sheet Iron and Hoop Iron (Int. Cl. 6).

SN 302,702. American Smelting and Refining Company, New York, N.Y. Filed July 15, 1968.

BARLET

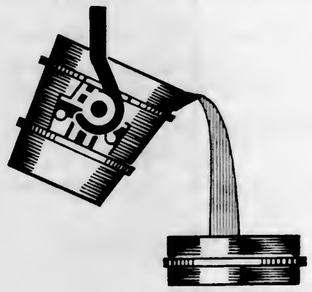
For Continuously Cast Copper and Copper Base Alloy Shapes (Int. Cl. 6).
First use May 14, 1968.

SN 304,709. Precision Steel Warehouse, Inc., Franklin Park, Ill. Filed Aug. 8, 1968.

PRECISION BRAND

The word "Brand" is disclaimed apart from the mark as shown. Owner of Reg. Nos. 500,358, 841,503, and others.
For Cold Rolled Shim Steel, Cold Rolled Strip Steel, Cold Rolled Annealed Spring Steel, Feeler Gauge Stock, Steel Shims and Brass Shims (Int. Cl. 6).
First use December 1944.

SN 307,360. Superior Castings Co., South San Francisco, Calif. Filed Sept. 13, 1968.



For Steel Castings (Stainless and High Alloy) (Int. Cl. 6).
First use July 1965.

SN 308,592. Arcade Tool and Die Company, Bridgeport, Conn. Filed Oct. 1, 1968.

ARCADE

For Miscellaneous Metal Stampings (Int. Cl. 6).
First use Sept. 6, 1968.

SN 309,261. Jones & Laughlin Steel Corporation, Pittsburgh, Pa. Filed Oct. 9, 1968.

JALTEX

For Stainless Steel in Sheet Form (Int. Cl. 6).
First use on or about July 13, 1966.

Class 15 — Oils and Greases

SN 293,883. Oil Center Research, Inc., Lafayette, La. Filed Mar. 22, 1968.

LIQUILON

For Treated Improved Polytetrafluoroethylene, Sold as an Ingredient in General Purpose Lubricants (Int. Cl. 4).
First use on or about Jan. 26, 1968.

SN 301,404. Carolina Company, Inc., d.b.a. The Carolina Soap & Candle Makers, Southern Pines, N.C. Filed June 26, 1968.

TV CANDLE

Without waiving any of its common law rights, applicant disclaims exclusive right to use of the word "Candle" apart from the mark as shown.
For Candles (Int. Cl. 4).
First use May 23, 1968.

SN 301,451. Kent Industries, Inc., Fort Worth, Tex. Filed June 26, 1968.

SEAL-SKIN

For Petroleum Base and Silicone Base Greases and Lubricants (Int. Cl. 4).
First use at least as early as Jan. 30, 1963.

SN 302,949. Marton Chemical Co., Inc., Brooklyn, N.Y. Filed July 17, 1968.

AB/SO/LUBE

For Conveyor Lubricants (Int. Cl. 4).
First use June 6, 1968.

Class 16 — Protective and Decorative Coatings

SN 294,155. H. B. Anderson, d.b.a. Anderson Gun Shop, Yakima, Wash. Filed Mar. 26, 1968.

GLASPRAY

For Gun Stock Finish (Int. Cl. 2).
First use April 1962.

SN 297,759. Byk-Gulden Lomberg Chemische Fabrik GmbH, Konstanz, Germany. Filed May 9, 1968.

CORRECTONE

For Paint Additive—Namely, Anti-Settling and Wetting Agent for Paints and Pigments (Int. Cl. 1).
First use Sept. 22, 1967; in commerce Sept. 22, 1967.

SN 307,983. Cunningham Art Products, Inc., Stone Mountain, Ga. Filed Sept. 23, 1968.

KRAZ-E-KOTE

For Liquid Imparting a Special Crackle-Type Decorative Coating (Int. Cl. 2).
First use Aug. 1, 1968.

Class 18 — Medicines and Pharmaceutical Preparations

SN 290,037. Vita Plus Corporation, Madison, Wis. Filed Jan. 31, 1968.

VITA PLUS

N-RICHER

The term "N-Richer" is disclaimed apart from the mark as shown. Owner of Reg. Nos. 690,442, 821,234, and 825,210.
For Mineral Additives and Vitamin Fortifications Used in the Preparation of Poultry and Livestock Feeds (Int. Cl. 5).
First use Oct. 18, 1967.

SN 291,279. Naremco, Inc., Springfield, Mo. Filed Feb. 16, 1968.

MEDI-MATIC

For Vitamin-Fortified, Soft Foods Product for Use as an Animal Feed and Animal Feed Supplement (Int. Cl. 5).
First use Aug. 26, 1958.

SN 293,824. Hart-Delta, Inc., Zachary, La. Filed Mar. 21, 1968.

VITAMINO

For Vitamin and Mineral Preparations for Veterinary Use (Int. Cl. 5).
First use March 1955.

SN 295,159. Oyster Products Company, Eureka, Calif. Filed Apr. 8, 1968.

OYSTAMINS

For Vitamin-Mineral Tablets (Int. Cl. 5).
First use Mar. 31, 1960.

SN 296,873. Salsbury Laboratories, Charles City, Iowa. Filed Apr. 29, 1968.

TETRA-SAL

For Tetracycline Hydrochloride for Veterinary Use Only (Int. Cl. 5).
First use Apr. 16, 1968.

SN 296,905. The J. B. Williams Company, Inc., New York, N.Y. Filed Apr. 29, 1968.

PRO-SLIM

For Protein Tablet With Prescribed Diet Plan (Int. Cl. 5).
First use Apr. 26, 1968.

SN 298,861. Rachelle Laboratories, Inc., Long Beach Calif. Filed May 22, 1968.

RACHELAMINE

For Chlorpheniramine (an Antihistamine) (Int. Cl. 5).
First use May 25, 1967.

SN 298,862. Rachelle Laboratories, Inc., Long Beach, Calif. Filed May 22, 1968.

NIRAMINE

For Diphenhydramine (an Antihistamine) (Int. Cl. 5).
First use Aug. 19, 1966.

SN 301,227. Allergan Pharmaceuticals, Santa Ana, Calif. Filed June 24, 1968.

FLUOROPLEX

For Dermatological Preparation (Int. Cl. 5).
First use Mar. 13, 1968.

SN 301,562. Vita Plus Corporation, Madison, Wis. Filed June 27, 1968.

VITA PLUS SILO-N-RICH

Owner of Reg. No. 690,442 and others.
For Silage Additive Furnishing Minerals and Protein Values Used in the Preparation of Poultry and Livestock Feeds (Int. Cl. 5).
First use May 21, 1968.

SN 301,817. Block Drug Company, Inc., Jersey City, N.J. Filed July 2, 1968.



For Medicinal Preparation—Namely, Antiseptic Anesthetic (Int. Cl. 5).
First use June 21, 1968.

SN 302,032. American Cyanamid Company, Wayne, N.J. Filed July 5, 1968.

TINE TEST

Applicant disclaims the word "Test" apart from the mark as shown.
For Diagnostic Reagent for Application to the Human Body (Int. Cl. 5).
First use Oct. 5, 1961.

SN 308,074. Foremost-McKesson, Inc., d.b.a. McKesson Laboratories, New York, N.Y. Filed Sept. 24, 1968.

AMPHICOL

Owner of Reg. No. 825,216.
For Antibiotics—Namely, Chloramphenicol (Int. Cl. 5).
First use at least as early as Dec. 14, 1966.

SN 314,172. Armour Pharmaceutical Company, Chicago, Ill. Filed Dec. 11, 1968.

THYROLAR

For Preparation for the Treatment of Hypothyroidism (Int. Cl. 5).
First use on or prior to Dec. 2, 1968.

SN 314,493. Colgate-Palmolive Company, New York, N.Y. Filed Dec. 16, 1968.

TEAM-MATE

For Topical Skin Medication for Pimples, Blackheads, and Oily Skin (Int. Cl. 5).
First use Nov. 12, 1968.

Class 19 — Vehicles

SN 295,742. Ken-Craft Products, Inc., San Fernando, Calif. Filed Apr. 16, 1968.

KEN-CRAFT

For Travel Trailers (Int. Cl. 12).
First use 1954.

SN 303,058. Ettore Lombardi, Milan, Italy. Filed July 18, 1968.

SKI-CONDOR

Priority claimed under Sec. 44(d) on Italian application filed Feb. 29, 1968; Reg. No. 224,723, dated Apr. 3, 1968.
For Snowmobiles (Int. Cl. 12).

SN 303,307. The Hesse Corporation, Kansas City, Mo. Filed July 22, 1968.

HESSE

For Custom Truck Bodies (Int. Cl. 12).
First use during 1903.

SN 303,549. United Marine Co., Inc., Kansas City, Mo. Filed July 24, 1968.

BECKY THATCHER

The name "Becky Thatcher" is the name of a fictional character in the works of Mark Twain (Samuel Clemens).
For Camping Trailers and Boats (Int. Cl. 12).
First use on or about June 3, 1968.

SN 304,167. Uniwate Corporation, d.b.a. Uni-Wate Corp., Bristol, Tenn. Filed Aug. 1, 1968.

UNIWATE

Applicant disclaims any exclusive rights in and to the word "Wate" apart from the mark as shown. Owner of Reg. No. 773,988.
For Wheel Balance Weights for Automobiles and Trucks (Int. Cl. 12).
First use Feb. 5, 1968.

SN 304,520. Traveleze Trailer Co., Inc., Sun Valley, Calif. Filed Aug. 6, 1968.

TRAVELEZE

For Trailers—Namely, House Trailers, Campers, and Mobile Homes (Int. Cl. 12).
First use in 1930.

SN 304,834. Stark Brothers Motor Sales, Inc., Phillips, Wis. Filed Aug. 9, 1968.

STAR TRAIL

For Snowmobile Trailers (Int. Cl. 12).
First use Nov. 6, 1967.

SN 304,997. The United Manufacturing Co., Cleveland, Ohio. Filed Aug. 12, 1968.

CARAVAN

For Non-Driving Trailers and Parts Thereof, for Military and Industrial Uses (Int. Cl. 12).
First use at least as early as 1948.

SN 305,749. Meteor Research Ltd., Roseville, Mich. Filed Aug. 22, 1968.

LAMITRON

For Mechanism for Adjusting Tilt of Automobile Seat Backs (Int. Cl. 12).
First use Aug. 1, 1968.

SN 306,956. Skiroule Ltee, Drummond County, Quebec, Canada. Filed Sept. 9, 1968.

SKIROULE

The mark "Skiroule" is a coined word.
For Motorized Sleds (Int. Cl. 12).
First use Oct. 1, 1963; in commerce Oct. 20, 1963.

SN 307,216. Mallard Coach Corporation, West Bend, Wis. Filed Sept. 12, 1968.

MALLARD

Owner of Reg. Nos. 746,486 and 746,487.
For Travel Trailers, Tent Trailers, Truck Campers, and Snowmobiles (Int. Cl. 12).
First use Feb. 9, 1952.

SN 307,415. Bombardier Limited, Valcourt, Quebec, Canada. Filed Sept. 16, 1968.

NORDIC

Owner of Canadian Reg. No. 157,703, dated July 12, 1968.
For Snowmobiles and Parts Therefor.

SN 308,106. The Heil Co., Milwaukee, Wis. Filed Sept. 24, 1968.

HEIL UNI-HAUL

Owner of Reg. Nos. 510,903, 671,446, and others.
For Truck Body Vehicles Equipped With Mechanism for Loading and Unloading Transferable Non-Self-Propelled Cargo Containers (Int. Cl. 12).
First use Aug. 27, 1968.

SN 309,020. Bestop Manufacturing Co., Inc., Boulder, Colo. Filed Oct. 7, 1968.

BESTOP

For Convertible Fabric Tops for Four-Wheel Drive, Open Top, Utility Vehicles (Int. Cl. 12).
First use on or about Oct. 1, 1954.

SN 310,886. The General Tire & Rubber Company, Akron, Ohio. Filed Oct. 30, 1968.

GTR GRABBER

Owner of Reg. No. 837,130 and others.
For Bicycles (Int. Cl. 12).
First use Sept. 27, 1968.

SN 310,887. The General Tire & Rubber Company, Akron, Ohio. Filed Oct. 30, 1968.

GTR STRIDER 5

Owner of Reg. No. 837,130 and others.
For Bicycles (Int. Cl. 12).
First use Sept. 27, 1968.

SN 310,888. The General Tire & Rubber Company, Akron, Ohio. Filed Oct. 30, 1968.

GTR STRIDER 3

Owner of Reg. No. 837,130 and others.
For Bicycles (Int. Cl. 12).
First use Sept. 27, 1968.

SN 310,933. Sun Shipbuilding and Dry Dock Company, Chester, Pa. Filed Oct. 30, 1968.

ROLOC SYSTEM

Applicant disclaims the word "System" apart from the mark as shown.
For Shipboard Truck Trailer Supporting and Locking Structure (Int. Cl. 12).
First use Sept. 27, 1968.

SN 311,478. The General Tire & Rubber Company, Akron, Ohio. Filed Nov. 6, 1968.

GTR GROOVER

Owner of Reg. No. 595,352 and others.
For Bicycles (Int. Cl. 12).
First use Sept. 27, 1968.

Class 20—Linoleum and Oiled Cloth

SN 286,260. Gard-Tex Inc., Brooklyn, N.Y. Filed Dec. 5, 1967.

WONDA TILE

No claim of exclusive right is made to "Tile" for the goods recited.
For Vinyl Floor and Wall Tiles (Int. Cl. 19).
First use Mar. 15, 1967.

Class 21—Electrical Apparatus, Machines, and Supplies

SN 281,350. Ates Componenti Elettronici S.p.A., Milan, Italy. Filed Sept. 28, 1967.

ATES

For Electrical and Electronic Apparatus and Components—Namely, Transistors, Diodes, Electron Tubes, Resistors, Fuses, Semiconductor Devices, Condensers, and Electrical Cables and Wires (Int. Cl. 9).
First use November 1959; in commerce August 1960.

SN 290,496. International Rectifier Corporation, Los Angeles, Calif. Filed Feb. 7, 1968.

I☆R

Applicant disclaims the rectifier symbol apart from the mark as shown. Owner of Reg. No. 737,057.
For Semiconductors (Int. Cl. 9).
First use Sept. 19, 1967.

SN 290,905. Sony Corporation, Shinagawa-ku, Tokyo, Japan. Filed Feb. 12, 1968.

TRINITRON

For Television Tubes (Int. Cl. 9).
First use Feb. 7, 1968; in commerce Feb. 7, 1968.

SN 294,696. Television Presentations, Inc., New York, N.Y. Filed Apr. 1, 1968.

ALPHAMATIC

For Character Generator That Converts Electrical Signals to Alpha-Numerical Video Information (Int. Cl. 9).
First use Jan. 13, 1968.

SN 295,383. Storm Products Co., Los Angeles, Calif. Filed Apr. 10, 1968.

BAND-O-CODE

For Color Coded Insulated Electrical Wire (Int. Cl. 9).
First use Dec. 14, 1967.

SN 297,499. Columbia Broadcasting System, Inc., New York, N.Y. Filed May 7, 1968.

Twin Reverb-Amp

Owner of Reg. No. 846,633.
For Amplifiers—Namely, Reverb-Amplifiers, for Electrical Musical Instruments (Int. Cl. 9).
First use in or about July 1963.

SN 297,500. Columbia Broadcasting System, Inc., New York, N.Y. Filed May 7, 1968.

Pro Reverb -Amp

Owner of Reg. No. 846,633.
For Amplifiers—Namely, Reverb-Amplifiers, for Electrical Musical Instruments (Int. Cl. 9).
First use in or about July 1965.

SN 298,944. Knight Armature Manufacturing Incorporated, Granby, Quebec, Canada. Filed May 23, 1968.

KNIGHT

Owner of Canadian Reg. No. N.S. 144/3,688, dated June 7, 1950.
For Electric Motor and Generator Armatures (Int. Cl. 7).

SN 299,158. Quixonic, Inc., Plymouth, Mich. Filed May 27, 1968.



For Electrical Assemblies—Namely, Automotive Burglar Alarms (Int. Cl. 12).
First use no later than May 20, 1968.

SN 299,960. Electrospace Corporation, Glen Cove, N.Y. Filed June 7, 1968. Filed June 7, 1968.

MEGPOT

For Megohm Meters (Int. Cl. 9).
First use Nov. 10, 1954.

SN 302,494. Datapax Computer Systems Corporation, New York, N.Y. Filed July 11, 1968.

DATAPAX

For Magnetic Recording Discs Used in Computers (Int. Cl. 9).
First use June 11, 1968.

SN 302,913. Branson Instruments, Incorporated, Stamford, Conn. Filed July 17, 1968.

BRANSONIC

Owner of Reg. No. 823,959.
For Electronicly Operated Ultrasonic Cleaning Apparatus for Laboratory and Domestic Use on Jewelry, Optical Goods, Medical Instruments, Drafting Instruments, and Fluid Filters; and Ultrasonic Energy Sources (Int. Cl. 9).
First use June 28, 1968.

SN 303,140. Chem-Fab, Corp. Doylestown, Pa. Filed July 19, 1968.



For Precision Metal Parts Used as Components in the Manufacture of Integrated Electrical Circuits (Int. Cl. 9).
First use 1962.

SN 306,604. E. R. & F. Turner Limited, Ipswich, Suffolk, England. Filed Sept. 4, 1968.



The word "Motors" is disclaimed apart from the mark as shown.
For Electric Motors (Int. Cl. 7).
First use 1898; in commerce Aug. 15, 1959.

SN 307,673. San Angelo Communications & Electronics, Inc., San Angelo, Tex. Filed Sept. 18, 1968.

SACE

For Central Office and Carrier Telephone Equipment (Int. Cl. 9).
First use Nov. 11, 1966.

Class 22—Games, Toys, and Sporting Goods

SN 291,519. Con W. Colburn, d.b.a. Newport Paipo, Newport Beach, Calif., assignee of Newport Paipo, Newport Beach, Calif. Filed Feb. 20, 1968.

PAIPO

For Surfboards (Int. Cl. 28).
First use Nov. 3, 1966.

SN 292,004. On-Deck, Inc., Tenafly, N.J. Filed Feb. 27, 1968.

ON-DECK

For Weight To Be Attached to a Baseball Bat To Strengthen the Wrists and Arms and To Generally Improve Batting Technique (Int. Cl. 28).
First use Dec. 1, 1967.

SN 294,835. Gorman Golf Products, Inc., Southfield, Mich. Filed Apr. 3, 1968.

ROUGH-RIDER

For Golf Clubs (Int. Cl. 28).
First use Nov. 30, 1967.

SN 295,255. Rexall Drug and Chemical Company, d.b.a. The Seamless Rubber Company, Los Angeles, Calif. Filed Apr. 9, 1968.

CARABELLA

For Underwater Sports Equipment—Namely, Rubber Powered Spear Guns (Int. Cl. 28).
First use Mar. 7, 1960.

SN 298,248. Rexall Drug and Chemical Company, d.b.a. The Seamless Rubber Company, Los Angeles, Calif. Filed May 15, 1968.

COSTA BRAVA

"Costa Brava" is a Spanish term which means "rough or jagged coastal area."
For Swim Fins (Int. Cl. 28).
First use November 1966.

SN 299,953. The Donner Mountain Corporation, Berkeley, Calif. Filed June 7, 1968.

FORMFIT

For Sleeping Bags (Int. Cl. 20).
First use Mar. 1, 1968.

SN 300,565. Jack A. Cronan, d.b.a. Nordon Associates, Lexington, Mo. Filed June 17, 1968.



The wording "Anglers Anise" is disclaimed apart from the mark as used.
For Fish Bait Spray (Int. Cl. 28).
First use June 3, 1968.

SN 309,818. Peter Ottaviani, Los Angeles, Calif. Filed Oct. 17, 1968.

ASTRO-GYM

For Portable Isometric/Isotonic Physical Exerciser (Int. Cl. 28).
First use June 6, 1968.

SN 310,397. Mattel, Inc., Hawthorne, Calif. Filed Oct. 24, 1968.

LITTLE FUN BUGS

For Educational Toy Comprising a Toy Phonograph and Pictures With Indexing Means To Cause Sound Reproduction Relevant to a Picture Indexed (Int. Cl. 28).
First use Sept. 24, 1968.

SN 310,405. Mattel, Inc., Hawthorne, Calif. Filed Oct. 24, 1968.

SPLITTIN' IMAGE

For Toy Miniature Automobile (Int. Cl. 28).
First use Sept. 25, 1968.

SN 310,574. Samuel Lombardo, Palos Verdes Penninsula, Calif. Filed Oct. 25, 1968.

BEELINE

For Golf Clubs (Int. Cl. 28).
First use Sept. 27, 1968.

SN 318,388. Albert W. Ballenger, Loveland, Colo. Filed Feb. 5, 1969.

TACKLEMASTER

For Fishing Line Sinker (Int. Cl. 28.
First use Sept. 17, 1968.
Subj. to Intf. with SN 309,310.

SN 320,104. Children's Supermart, Inc., Beltsville, Md. Filed Mar. 19, 1969.

TOYS "R" US!

No claim of Exclusive right is made to the word "Toys" apart from the mark as shown.
For General Line of Children's Toys and Toy Novelties (Int. Cl. 28).
First use as early as 1960.
Subj. to Intf. with SN 312,047.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

SN 255,445. Kelley Company, Inc., Milwaukee, Wis. Filed Sept. 29, 1966.

Liftjib

For Extendable Material Handling Boom (Int. Cl. 7).
First use May 1, 1966.

SN 282,897. Fabrique de Machines Mikron S.A., Bienne, Switzerland. Filed Oct. 19, 1967.

CONIKRON

Priority claimed under Sec. 44(d) on Swiss Reg. No. 227,865, dated Oct. 3, 1967.
For Bevel Gears and Milling Tools for the Manufacture of Bevel Gears (Int. Cl. 7).

SN 286,378. Sperry Rand Corporation, New York, N.Y. Filed Dec. 6, 1967.



For Fluid Power Packages Comprising One or More of the Following Fluid Units: Transmissions, Motors, Pumps, Cylinders, Control Panels, Storage Accumulators, Switches, Power Take-Offs, Ratio Speed Changers, Winches; and Parts Therefor (Int. Cl. 7).
First use Aug. 16, 1967.

SN 286,513. Day/Ton Progress Corp., Dayton, Ohio. Filed Dec. 8, 1967.

ACTION

For Die Plates (Int. Cl. 8).
First use June 19, 1967.

SN 286,650. Dynavolve Controls, Incorporated, Lathrup Village, Mich. Filed Dec. 11, 1967.

DYNAVOLVE

For Flexible Remote Control Cables (Int. Cl. 6).
First use July 21, 1967.

SN 287,529. Smith Industries International, Inc., Whittier, Calif., by merger from Driico Oil Tools, Inc., Midland, Tex. Filed Dec. 26, 1967.

DI-22

For Threaded Connection for Drill Stem Members, Useful in Rotary Boring of the Earth (Int. Cl. 7).
First use November 1964.

SN 289,704. Lily-Tulip Cup Corporation, New York, N.Y. Filed Jan. 26, 1968.



For Food Packaging Machinery—Namely, Dispensers, Filling Machines and Cappers, All of the Above Items Sold in Combination With Each Other or as Separate Items (Int. Cl. 7).
First use on or about July 22, 1966.

SN 290,924. Wheel Horse Products, Inc., South Bend, Ind. Filed Feb. 12, 1968.

GET A HORSE WHEEL HORSE, OF COURSE

Owner of Reg. No. 597,595.
For Lawn and Garden Tractors and Implements—Namely, Tillers, Plows, Cultivators, Harrows, Dozers, Discs, Rollers, and Aerators (Int. Cls. 7 and 12).
First use about August 1963.

SN 298,790. Breeze Corporations, Inc., Union, N.J. Filed May 22, 1968.

SKY-LEVATOR

For Winches and Hoists for Transferring Personnel and Stores From Airborne Helicopters to the Ground (Int. Cl. 7).
First use Mar. 12, 1968.

SN 299,288. Air Dynamics Corporation, Seattle, Wash. Filed May 29, 1968.



For Pneumatic Equipment—Namely, Pneumatic Motors, Agitators, and Shears (Int. Cl. 7).
First use Apr. 24, 1968.

SN 301,346. Kahle Engineering Co., Union City, N.J. Filed June 25, 1968.

KAHLE

For Machinery for Forming and Processing Glass Products—Namely, Cathode Ray Tube Assembling and Sealing Machines, Cathode Ray Tube Bulb Cutting and Splicing Machines, Automatic Glass Tube Cutting Machines, and Parts and Attachments Therefor (Int. Cl. 7).
First use during April 1931.

SN 301,507. B. Elliott Incorporated, Wilmington, Del. Filed June 27, 1968.

DUALFORM

For Machine Tools—Namely, Presses and Molds, Die and Casting Forming Machines (Int. Cl. 7).
First use March 1967.

SN 302,485. Bimba Manufacturing Company, Monee, Ill. Filed July 11, 1968.

HEX-ROD

For Air Cylinders for Use in Connection With Pneumatically Actuated Mechanisms (Int. Cl. 7).
First use June 19, 1968.

SN 302,590. C.D.M. Company, Ltd., Kishiwada, Osaka Prefecture, Japan. Filed July 12, 1968.

ELEPON

Owner of Japanese Reg. No. 691,971, dated Dec. 8, 1965.
For Submersible Pumps (Int. Cl. 7).

SN 303,067. Paul Ferd. Peddinghaus, Gevelsberg, Germany. Filed July 18, 1968.

PEDDINGHAUS

For Shears, Punches, Bar Bending Machines, and Bar Cutting Machines (Int. Cl. 7).
First use 1934; in commerce Jan. 1, 1950.

SN 303,364. Thermark Corporation, Hammond, Ind. Filed July 22, 1968.

THERMARKER

For Hot Stamping Tools for Transferring Cellophane or Metallic Tape Which Is Specially Treated With Colored Paint or Treated With a Paint Resistant Coating in Hot Stamp Pressing (Int. Cl. 7).
First use May 6, 1968.

SN 303,775. Corona Forge Company, Corona, Calif. Filed July 29, 1968.

NEO-LOK

For Digger Teeth and Digger Tooth Retainers for Earth Digging Equipment (Int. Cl. 7).
First use July 2, 1968.

SN 304,091. Handling Services, Inc., Marne, Mich. Filed Aug. 1, 1968.



For Overhead Trolley Conveyor Components and Systems for Transporting and Handling Manufactured Materials for Assembling, Transporting, Drying, Cooling, Industrial Finishing, and Other Industrial Purposes (Int. Cl. 7).
First use Nov. 21, 1967.

SN 304,593. The Deister Concentrator Company, Inc., Fort Wayne, Ind. Filed Aug. 7, 1968.



Owner of Reg. No. 248,359.
For Vibrating Screens Used for Separating and Sizing Various Materials, Such as Sand, Gravel, Crushed Stone, Coal, Coke, Clay, Sawdust, Meal, Salt, Sugar, Cement, Gypsum, etc. (Int. Cl. 7).
First use Jan. 3, 1927.

SN 304,803. Arthur G. McKee & Company, Cleveland, Ohio. Filed Aug. 9, 1968.

1+1

For Flotation Equipment for Liquid or Solid Materials (Int. Cl. 7).
First use July 8, 1968.

SN 305,055. Mechanical Equipment Company, Inc., New Orleans, La. Filed Aug. 13, 1968.

CENTURBO

For Centrifugal Compressors (Int. Cl. 7).
First use on or about July 22, 1968.

SN 305,920. Chloro-Guard Electronics, Inc., Sacramento, Calif. Filed Aug. 26, 1968.

CHLOROZONE

Owner of Reg. No. 818,233.
For Generator for Making a Liquid Disinfectant Comprising Chlorine and Ozone (Int. Cl. 7).
First use May 9, 1968.

SN 305,950. Mechanize, Inc., Minneapolis, Minn. Filed Aug. 26, 1968.

RAKE-AWAY

For Rotary Mower Rake Blades (Int. Cl. 7).
First use July 26, 1968.

SN 305,973. Overhead Door Corporation, Dallas, Tex. Filed Aug. 26, 1968.

STOW-AWAY

For Tailgate Lifts for Mounting on Motor Vehicles for Raising and Lowering Articles (Int. Cl. 7).
First use July 10, 1968.

SN 306,320. Air Brake Manufacturing Corporation, Chicopee, Mass. Filed Aug. 30, 1968.

VAC'N BAG IT

For Attachments for Motorized Lawn Sweepers for Gathering Grass Clippings, Leaves and the Like (Int. Cl. 7).
First use Aug. 5, 1968.

SN 306,658. FMC Corporation, San Jose, Calif. Filed Sept. 5, 1968.

STABILAIRE

For Packaged Sewage Treatment Plant (Int. Cl. 11).
First use on or about Aug. 10, 1967.

SN 306,901. The Eversman Mfg. Company, Denver, Colo. Filed Sept. 9, 1968.

Eversman

For Agricultural and Ground-Working Implements—Namely, Plows, Cultivators, Harrows, Ditchers, Land Levellers, Scrapers, Planters, Thinners and Seed Bed Formers and Parts Thereof (Int. Cl. 7).
First use on or about Aug. 1, 1929.

SN 307,305. Bibun Machine Construction Co., Ltd., Fukuyama, Hiroshima Prefecture, Japan. Filed Sept. 13, 1968.

BIBUN

For Food Processing Machinery—Namely, Meat Separators and Strainers (Int. Cl. 7).
First use Dec. 26, 1959; in commerce June 9, 1967.

SN 308,624. Interthor, Inc., Oak Park, Ill. Filed Oct. 1, 1968.

THOR

For Wheeled, Hydraulically-Operated Pallet Lift Trucks (Int. Cl. 12).
First use Dec. 2, 1966.

SN 309,107. Sno-Trik Company, Solon, Ohio. Filed Oct. 7, 1968.

SNO-TRIK

Owner of Reg. No. 846,119.
For Tools for Machining the Ends of Tubular Members (Int. Cl. 7).
First use July 24, 1968.

SN 318,860. Ing. C. Olivetti & C., S.p.A., Ivrea, Italy. Filed Feb. 3, 1969.

AUCTOR

Owner of Italian Reg. No. 178,959, dated June 16, 1966.
For Automated Machine Tools and Controls Therefor and the Respective Components Thereof (Int. Cl. 7).

SN 319,977. Trident Industries, Inc., Princeton, N.J. Filed Feb. 24, 1969.

PERM-A-GAUGE

For Expandable Carbide Bit (Int. Cl. 8).
First use May 1968.

Class 26—Measuring and Scientific Appliances

SN 258,969. Atlas Chemical Industries, Inc., Wilmington, Del. Filed Nov. 18, 1966.

ATLAB

Owner of Reg. No. 604,814.
For Material Testing Instruments for Use in Commercial, Educational, and Research Laboratories, Including, Emulsion Viewers, Corrosion Testing Apparatus, Shakers, and Finish Applicators (Int. Cl. 9).
First use Aug. 9, 1951.

SN 271,093. Sherwood Medical Industries Inc., Chicago, Ill., assignee of Brunswick Corporation, Chicago, Ill. Filed May 10, 1967.

SENSAUR

For Various Scientific Laboratory Equipment—Namely, Ultrasound Cleaning Machines for Cleaning Laboratory Glassware and Instruments, Water Baths for Laboratory Use, Microforges for the Manufacture of Micro-Instruments for Laboratory Use, Micromanipulators for Manipulating Micro-Instruments for Laboratory Use, Shaking and Rotating Machines for Agitating Fluid Samples, Centrifuges, Electrically-Operated Sterilizers for Laboratory Use, Vacuum Pumps, Microtome Knife Sharpeners, Microtome Knife Stroppers, Heat Sealing Apparatus for Laboratory Use, Electronic Bacterial Colony Counters and Laboratory Viewers (Int. Cl. 9).
First use Apr. 10, 1964.

SN 290,378. Capital Controls Company, Inc., d.b.a. Capital Controls Co., Inc., Colmar, Pa. Filed Feb. 6, 1968.

BANTAM 75

For Swimming Pool Chlorinators Featuring a Metering Device Permitting Predetermined Amounts of Chlorine To Be Introduced Into the Pool for Purification Purposes (Int. Cl. 9).
First use Jan. 20, 1968.

SN 290,614. W. H. Joens & Co. GmbH., Dusseldorf, Germany. Filed Feb. 8, 1968.

KALIMAT

Owner of German Reg. No. 838,383, dated Oct. 25, 1967.
For Voltage and Current Sources for Measuring and Calibration Purposes (Int. Cl. 9).

SN 290,615. W. H. Joens & Co. Gmbh., Dusseldorf, Germany. Filed Feb. 8, 1968.

JOEDISTAT

Owner of German Reg. No. 838,382, dated Oct. 25, 1967.
For Voltage and Current Sources for Measuring and Calibration Purposes (Int. Cl. 9).

SN 290,676. Weingarden Enterprises, Inc., Toledo, Ohio. Filed Feb. 8, 1968.

LITE-A-LERT

For Audible Indicating Devices To Warn a Vehicle Operator That the Headlights May Have Been Inadvertently Left On (Int. Cl. 9).
First use Dec. 15, 1967.

SN 294,338. Wilhelm Anger OHG, Traun, Austria. Filed Mar. 27, 1968.

SK

Owner of Reg. Nos. 799,496 and 799,857.
For Eyeglasses and Eye Glass Frames (Int. Cl. 9).
First use 1961; in commerce July 1967.

SN 294,784. Sellstrom Manufacturing Co., Palatine, Ill. Filed Apr. 3, 1968.



Owner of Reg. Nos. 585,629, 828,204, and others.
For Industrial Goggles, Spectacles and Eye and Face Shields, and Parts Thereof; Welders' Helmets With Lenses; and Lenses for Such Spectacles, Helmets and Goggles (Int. Cl. 9).
First use in or about October 1966.

SN 295,800. Applied Research Laboratories, Inc., Glendale, Calif. Filed Apr. 17, 1968.



The drawing is lined for the color blue, but no claim is made to color.
For Spectrochemical Materials Analysis Instruments—Namely, Optical Emission Spectrometers, X-Ray Fluorescence and Diffraction Equipment, Electron Microprobe and Microscope Analysis Instrumentation, and Mass Spectrometer Analysis Equipment (Int. Cl. 9).
First use May 1, 1963.

SN 306,568. Illinois Tool Works Inc., Chicago, Ill. Filed Sept. 4, 1968.

FASTEX

Owner of Reg. Nos. 635,402 and 676,524.
For Self-Illuminating Liquid Level Indicators (Int. Cl. 9).
First use on or about July 30, 1968.

SN 306,643. Carolina Biological Supply Company, Burlington, N.C. Filed Sept. 5, 1968.



Applicant disclaims the terms "Biological Supply Co." "Burlington, N.C." and "Service Quality." Owner of Reg. No. 761,767.
For Microscope Slides, Dissecting Instruments, Cover Glasses, Dissecting Pans, Laboratory Balances, Burners, and Clamps (Int. Cls. 9 and 11).
First use June 19, 1962.

SN 309,443. Eaton Yale & Towne Inc., Cleveland, Ohio. Filed Oct. 11, 1968.

DYNAMATIC

Owner of Reg. No. 515,261.
For Electrical Counter (Int. Cl. 9).
First use at least as early as Apr. 29, 1968.

SN 310,368. Tokyo Shibaura Electric Co. Ltd., Kawasaki, Japan. Filed Oct. 23, 1968.

TOSBAC

Owner of Japanese Reg. No. 535,258, dated Sept. 1, 1960.
For Electronic Computers and Parts Thereof (Int. Cl. 9).

SN 312,881. Electro-Learner Corporation, Bethesda, Md. Filed Nov. 22, 1968.

TYPE-A-SCOPE

For Programmed Electrical Displays for Instruction in the Operation of Typing Keyboards (Int. Cl. 9).
First use Oct. 19, 1968.

SN 318,038. Ernst Leitz, G.m.b.H., Wetzlar/Lahn, Germany. Filed Jan. 31, 1969.

ELMARON

Owner of U.S. Reg. Nos. 670,569 and 760,326.
For Lens Systems (Int. Cl. 9).
First use Jan. 31, 1965; in commerce Jan. 31, 1965.

SN 318,897. Eye Kraft Optical, Inc., St. Cloud, Minn. Filed Feb. 11, 1969.

EYELITE

For Opthalmic Lenses (Int. Cl. 9).
First use November 1964.

Class 27 — Horological Instruments

SN 312,022. Bulova Watch Company, Inc., Flushing, N.Y. Filed Nov. 13, 1968.

SPACEVIEW

For Watches and Parts Thereof (Int. Cl. 14).
First use Oct. 21, 1968.

SN 316,649. Edward Isaacs and Martin J. Ryan (joint owners), New York, N.Y. Filed Jan. 15, 1969.

Hattie Carnegie

"Hattie Carnegie" is the name of the founder of Hattie Carnegie Inc., who is now deceased. Owner of Reg. Nos. 362,102 and 680,783.
For Watches and Clocks (Int. Cl. 14).
First use July 1, 1962.

Class 28 — Jewelry and Precious-Metal Ware

SN 319,211. Textron Inc., Providence, R.I. Filed Feb. 14, 1969.

SUFFOLK

For Sterling Flatware (Int. Cl. 8).
First use 1922.

SN 319,212. Textron Inc., Providence, R.I. Filed Feb. 14, 1969.

SUFFOLK

For Silverplated Holloware (Int. Cl. 14).
First use Sept. 13, 1968; 1922 as to the word "Suffolk."

Class 29 — Brooms, Brushes, and Dusters

SN 306,501. Leon J. O'Brien, d.b.a. Manchester Leather Co., Lowell, Mass. Filed Sept. 3, 1968.

PERFECT HOUSEKEEPING IS AN ART

For Genuine Chamois (Int. Cl. 21).
First use Mar. 18, 1968.

Class 31 — Filters and Refrigerators

SN 289,998. Machine Ice Co., Houston, Tex. Filed Jan. 31, 1968.

MIC

For Ice Making Machines (Int. Cl. 11).
First use at least as early as Nov. 13, 1967.

SN 304,194. Air-Rite, Inc., Columbus, Ga. Filed Aug. 2, 1968.

Air-Rite

No claim is made to the word "Air" apart from the mark. The lining on the drawing is not to indicate a particular color, but is an integral part of the mark.
For Compressed Air Dryers, Including Aluminum Filters and Refrigerated Condensation Plates (Int. Cl. 11).
First use on or about June 1, 1967.

Class 32 — Furniture and Upholstery

SN 289,670. Tenneco Chemicals, Inc., New York, N.Y., by merger from General Foam Corporation, New York, N.Y. Filed Jan. 26, 1968.

DENTHANE

For Polyurethane Foam Cushions (Int. Cl. 20).
First use on or about Apr. 26, 1967.

SN 296,646. Comfo Corporation, Wakarusa, Ind. Filed Apr. 26, 1968.

Comfo sleep

For Mattresses and Seat Cushions (Int. Cl. 20).
First use July 1, 1954.

SN 307,621. Alsco, Inc., St. Louis, Mo. Filed Sept. 18, 1968.
The lining within the letter "I" constitutes actual lining in the mark.

CITATION

For Waiting Room Lounge Furniture and Coordinated Tables (Int. Cl. 20).
First use June 12, 1968.

SN 311,113. Christian Holzaepfel KG, Ebhausen, Wurttemburg, Germany. Filed Nov. 1, 1968.

Holzäpfel

For Office Furniture; Bedroom, Dining Room, Living Room and Kitchen Furniture; Removable Partition Walls Composed of Wall Sections Consisting of Wall Panels, Cabinets, and Cupboards (Int. Cl. 20).
First use Dec. 31, 1959; in commerce Jan. 31, 1962.

SN 317,099. Port-A-Crib, Inc., Ballwin, Mo. Filed Jan. 21, 1969.

PORT-A-BAR

Owner of Reg. Nos. 666,598 and 861,010.
For Portable Bar (Int. Cl. 20).
First use Jan. 3, 1969.

SN 321,218. Harter Corporation, Sturgis, Mich. Filed Mar. 10, 1969.

HARTER

Owner of Reg. Nos. 795,226 and 796,380.
For Office, Lobby, Recreation Room, Lounge, and Institutional Furniture (Int. Cl. 20).
First use Sept. 15, 1967.

SN 321,248. Modern Partitions, Inc., Holland, Mich. Filed Mar. 10, 1969.

KARPETWALL

For Semi-Permanent Partitions for Office and Residence Areas (Int. Cl. 20).
First use Feb. 24, 1969.

SN 321,781. D'Altrui Industries, Elizabeth, N.J. Filed Mar. 14, 1969.

DI

For Storage Racks (Int. Cl. 20).
First use on or about May 15, 1968.

Class 34 — Heating, Lighting, and Ventilating Apparatus

SN 294,416. Sinclair Oil Corporation, New York, N.Y., by merger from Sinclair Refining Company, New York, N.Y. Filed Mar. 28, 1968.

SuperFlame

The drawing is lined for green and red. Owner of Reg. Nos. 146,875 and 287,716.
For Oil-Fired Equipment—Namely, Furnaces, Boilers, Water Heaters, and Tobacco Curers (Int. Cl. 11).
First use at least October 1965.

Class 36 — Musical Instruments and Supplies

SN 275,086. Thomas Organ Company, Sepulveda, Calif. Filed June 29, 1967.

WAH WAH

For Musical Auxiliary Amplification and Attenuation Tone Devices, Consisting of a Pedal and an Electronic Circuitry Housing for Use With Electronic Musical Instruments—Namely, Guitars, Organs, Horns, and Violins (Int. Cl. 15).
First use Apr. 3, 1967.

SN 284,209. Lanier Electronics Laboratory, Inc., Atlanta, Ga. Filed Nov. 6, 1967.

For Recording-Transcribing Devices—Namely, Tape Recorder-Player, and Parts Thereof (Int. Cl. 9).
First use on or about Apr. 24, 1967.

SN 310,568. James B. Lansing Sound, Inc., Los Angeles, Calif. Filed Oct. 25, 1968.

JBL

Owner of Reg. Nos. 782,327 and 782,328.
For Amplifiers, Speakers and Sound Systems for Phonographs and Tape Reproducers; Speakers, Amplifiers and Passive Radiators (Non-Energized Speakers) for Electronically Amplified Musical Instruments (Int. Cl. 9).
First use in 1949.

SN 318,537. Fine-Tone Audio Products, Inc., Brooklyn, N.Y. Filed Feb. 6, 1969.



Applicant disclaims the term "Fine-Tone" apart from the mark as shown.

For Phonograph Cartridges, Phonograph Record Brushes, and Kits Containing Phonograph Cartridges and Phonograph Record Brushes; Combined Phonograph Record Brushes and Tone Arm Lifters; Phonograph Record Adaptors; Phonograph Needles; Phonograph Record Carrying Cases; Wire Phonograph Record Racks; Magnetic Recording Tape and Recording Tape Reels; and Bongos (Int. Cls. 9 and 15).

First use on or about Apr. 1, 1961.

SN 322,918. Stenocord Corporation, Los Angeles, Calif. Filed Mar. 26, 1969.

REMINDER

For Dictation Machines—Namely, Portable Cassette Tape Recording Dictating Units, Sound Transcribing Units With Play-Back, and Parts (Int. Cl. 9).

First use Jan. 7, 1969.

SN 324,095. Qatron Corporation, Rockville, Md. Filed Apr. 9, 1969.

QATRON

For Tape Recorders and Tape Players (Int. Cl. 9).
First use May 1966.

Class 37—Paper and Stationery

SN 294,846. Torrence Page, Sepulveda, Calif. Filed Apr. 3, 1968.

MED-I-WILL

For Partially Printed Identification and Instruction Cards Specifying the Wishes of an Individual Regarding Use of His or Her Body for Science (Int. Cl. 16).
First use Feb. 26, 1968.

SN 295,114. Clopay Corporation, Cincinnati, Ohio. Filed Apr. 8, 1968.

CLOPANE SHRINK-TITE

No claim is made to the exclusive right to use the word "Shrink-Tite" separate and apart from the mark as shown. Owner of Reg. Nos. 593,728 and 632,702.

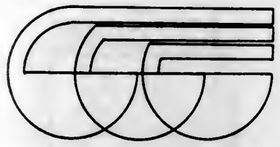
For Plastic Film for Packaging (Int. Cl. 16).
First use Jan. 16, 1968.

SN 297,385. Chrono Graphics, Ltd., New York, N.Y. Filed May 6, 1968.

WRITE-A-ROUND

For Writing Paper and Envelopes (Int. Cl. 16).
First use Apr. 25, 1968.

SN 301,717. American Paper Institute, Inc., Chicago, Ill. Filed July 1, 1968. COLLECTIVE MARK.



COMBINATION PAPERBOARD

For Paperboard (Int. Cl. 16).
First use Feb. 23, 1967.

SN 303,975. Avar, Inc., St. Louis, Mo. Filed July 31, 1968.

AVAR

For Rolls of Plastic Wrapping Film (Int. Cl. 17).
First use Dec. 29, 1967.

SN 308,893. Handi-Bag Corporation, Chelsea, Mass. Filed Oct. 4, 1968.

SNAP-WRAP

For Clear Plastic Food Wrapping Film Material (Int. Cl. 16).
First use Sept. 17, 1968.

SN 313,243. Studnite Corporation, New York, N.Y. Filed Nov. 29, 1968.

CLEARVIEW

For Separable Sheet Used in the Preparation of Stencils (Int. Cl. 16).
First use Sept. 1, 1946.

SN 313,533. Mary Cooney Howard, Cresskill, N.J. Filed Nov. 4, 1968.

PUPKIN

For Place Mats and Napkins of Paper (Int. Cl. 16).
First use Sept. 18, 1968.

SN 320,157. International Paper Company, New York, N.Y. Filed Feb. 26, 1969.

SYNO-PLY

For Corrugated Paperboard (Int. Cl. 16).
First use Jan. 14, 1969.

SN 322,238. Xerox Corporation, Rochester, N.Y. Filed Mar. 20, 1969.



For Bond Paper (Int. Cl. 16).
First use Mar. 10, 1969.

SN 322,393. Xerox Corporation, Rochester, N.Y. Filed Mar. 21, 1969.



For Bond Paper (Int. Cl. 16).
First use Mar. 10, 1969.

SN 322,394. Xerox Corporation, Rochester, N.Y. Filed Mar. 21, 1969.



For Bond Paper (Int. Cl. 16).
First use Mar. 10, 1969.

Class 38—Prints and Publications

SN 246,319. Kaiser Aluminum & Chemical Corporation, Oakland, Calif. Filed May 23, 1966.

KAISER

For Company Publications Such as a Company Magazine, Newsletters, Publicity Reviews, Marketing Activity Reports, and Calendar-Memo Booklets With Inspirational Quotations and Printed Advertising (Int. Cl. 16).
First use at least as early as Jan. 1, 1950.

SN 255,128. Standard & Poor's Corporation, New York, N.Y. Filed Sept. 26, 1966.

STANDARD

Owner of Reg. Nos. 325,230, 765,133, and others.

For Financial and Statistical Reports Relating to Securities (Int. Cl. 16).
First use Sept. 12, 1966.

SN 286,069. Lancer Books, Inc., New York, N.Y. Filed Dec. 4, 1967.



For Books (Int. Cl. 16).
First use Sept. 7, 1967.

SN 291,253. Eastman Kodak Company, Rochester, N.Y. Filed Feb. 16, 1968.



Owner of Reg. Nos. 195,218, 763,542, and others.

For Programmed Instruction Texts, Sheets, Booklets, and Brochures for Training and Education in the Fields of Photography and Marketing (Int. Cl. 16).
First use Oct. 24, 1967.

SN 295,022. Enslow Publishing Corp., New York, N.Y. Filed Apr. 5, 1968.



For Periodical Magazine (Int. Cl. 16).
First use Mar. 22, 1968.

SN 295,179. Sandoz, Inc., Hanover, N.J. Filed Apr. 8, 1968.
Owner of Reg. No. 781,783.

SANDOZ PANORAMA

For Magazine Published Monthly (Except July and August), in the Field of Medicine (Int. Cl. 16).
First use Mar. 8, 1968.

SN 296,042. William H. Rentschler, Chicago, Ill. Filed Apr. 19, 1968.

VIEWPOINT FROM MID-AMERICA

For Newspaper Column (Int. Cl. 16).
First use in or before June 1966.

SN 298,137. Young World Corporation, Washington, D.C. assignee of Marketing Dynamics Incorporated, Washington, D.C. Filed May 14, 1968.

25

For Magazine (Int. Cl. 16).
First use Apr. 25, 1968.

SN 298,662. The Henderson Business Service, Limited, Toronto, Ontario, Canada. Filed Mar. 14, 1968.

SELECTRIC

For Pricing Manual in Loose Leaf Form in Binders, and Refills Therefor (Int. Cl. 16).
First use Dec. 27, 1967; in commerce Jan. 16, 1968.

SN 299,504. Trippensee Planetarium Co., Inc., Saginaw, Mich. Filed May 31, 1968.

SKYSLIDE

For Photographic Films (Int. Cl. 9).
First use May 2, 1968.

SN 299,886. Thiokol Chemical Corporation, Bristol, Pa. Filed June 6, 1968.

Thiokol RETORT

The stippling on the drawing is for shading purposes only and does not represent any particular color.
For House Organ Magazine (Int. Cl. 16).
First use December 1967.

SN 302,392. Commercial Decal, Inc., Mount Vernon, N.Y. Filed July 10, 1968.

UNIFLAME

For Ceramic Decalcomanias Sold to Manufacturers of Earthenware and China as Decorations for Such Ware (Int. Cl. 16).
First use April 1967.

SN 303,563. Audit Controls, Inc., Fair Lawn, N.J. Filed July 25, 1968.

AUDIT CONTROLS

For Series of Collection Letters To Be Used by Others in Collecting Their Overdue Accounts (Int. Cl. 16).
First use March 1960.

SN 304,541. American Chemical Society, Washington, D.C. Filed Aug. 7, 1968.

BJA

For Bi-Weekly Journal Containing Abstracts From the Current Chemical Literature (Int. Cl. 16).
First use Mar. 1, 1968.

SN 304,702. The National Cash Register Company, Dayton, Ohio. Filed Aug. 8, 1968.

Consultants Communiqué

For Monthly Newsletter Containing Topics of Interest to Professional Consultants and Their Clients (Int. Cl. 16).
First use July 23, 1968.

SN 305,048. Jilm Co., Burbank, Calif. Filed Aug. 13, 1968.



For Greeting Cards (Int. Cl. 16).
First use Apr. 13, 1968.

SN 305,841. Penthouse Publications Limited, London, England. Filed July 25, 1968.

PENTHOUSE

Owner of British Reg. No. 893,678, dated Apr. 26, 1966.
For Magazine (Int. Cl. 16).

SN 306,074. The Prairie Farmer Publishing Company, Chicago, Ill. Filed Aug. 27, 1968.

PRAIRIE FARMER

Owner of Reg. Nos. 226,027 and 557,269.
For Newspapers (Int. Cl. 16).
First use 1841.

SN 306,763. Empress Chinchilla Breeders Cooperative, Inc. New York, N.Y. Filed Sept. 6, 1968.



For Brochures, Pamphlets, and Booklets Circulated to Chinchilla Breeders Relating to Equipment and Supplies Available and Various Other Phases of Breeding Chinchillas (Int. Cl. 16).
First use April 1968.

SN 308,097. The Reuben H. Donnelly Corporation, New York, N.Y. Filed Sept. 24, 1968.

RURAL AND URBAN ROADS

Owner of Reg. No. 630,947.
For Magazine Relating to Roads (Int. Cl. 16).
First use in or about June 1963.

SN 309,041. Hello Corporation of Pennsylvania, Pittsburgh, Pa. Filed Oct. 7, 1968.



For Greeting Cards (Int. Cl. 16).
First use at least as early as January 1965.

SN 309,043. Hello Corporation of Pennsylvania, Pittsburgh, Pa. Filed Oct. 7, 1968.

HELLO SHOP

Applicant disclaims the word "Shop" apart from the mark as shown.
For Greeting Cards (Int. Cl. 16).
First use at least as early as January 1965.

SN 309,922. Xerox Corporation, Rochester, N.Y. Filed Oct. 17, 1968.

READ-STUDY-THINK

For Series of Practice Books in Workbook Form for Students on the Elementary Level (Int. Cl. 16).
First use July 9, 1965.

SN 309,997. Sperry Rand Corporation, New York, N.Y. Filed Oct. 18, 1968.

SPERRY RAND ENGINEERING REVIEW

Applicant disclaims the words "Engineering Review" apart from the mark as shown. Owner of Reg. No. 552,383.
For Company Technical Magazine (Int. Cl. 16).
First use January 1968.

SN 310,999. The American Appraisal Company, Milwaukee, Wis. Filed Oct. 31, 1968.



For Building Valuation Manuals, and Building Cost Modifiers (Int. Cl. 16).
First use August 1967.

SN 313,764. Scientific Communications, Inc., Chicago, Ill. Filed Dec. 2, 1968.

DENTAL highlights

The lining in the mark is for shading and does not represent color. No claim is made to the representation of the caduceus apart from the mark as shown.
For Newspaper Published Periodically (Int. Cl. 16).
First use on or about Sept. 4, 1968.

SN 314,937. Kleer-Vu Industries, Inc., New York, N.Y. Filed Dec. 20, 1968.

SONI-FAX

For Bulletins and Newsletters Related to Ultrasonic Sealing of Plastics (Int. Cl. 16).
First use Mar. 1, 1968.

SN 314,969. Hamilton Publishing Company, Inc., Chamblee, Ga. Filed Dec. 20, 1968.

METRO BEAT

For Periodical Magazine (Int. Cl. 16).
First use Nov. 15, 1968.

SN 315,092. National Geographic Society, Washington, D.C. Filed Dec. 23, 1968.

NATIONAL GEOGRAPHIC SOCIETY

The drawing is lined for the color yellow.
For Series of Photographic Slides Reproduced in Continuous strip Photographic Film To Be Projected Intermittently, and Accompanying Phonographic Records (Int. Cl. 9).
First use June 1, 1968.

SN 315,688. W. R. C. Smith Publishing Company, Atlanta, Ga. Filed Dec. 16, 1968.

SPORTS MERCHANDISER

For Business Magazine (Int. Cl. 16).
First use July 1, 1968.

SN 316,121. John Patrick O'Connell, Newhall, Calif. Filed Jan. 8, 1969.



For Books (Int. Cl. 16).
First use Mar. 15, 1968.

SN 317,520. American Institute of Industrial Engineers, Inc., New York, N.Y. Filed Jan. 27, 1969.

ie INDUSTRIAL ENGINEERING

Applicant disclaims "Industrial Engineering" apart from the mark as shown.
For Magazine (Int. Cl. 16).
First use Jan. 16, 1969.

SN 318,291. The Cleveland Museum of Natural History, Cleveland, Ohio. Filed Feb. 4, 1969.

KIRTLANDIA

For Scientific Booklet (Int. Cl. 16).
First use on or about Dec. 28, 1967.

SN 319,157. Gellert Publishing Corporation, New York, N.Y. Filed Feb. 14, 1969.

EDUCATE

For Magazine (Int. Cl. 16).
First use May 1, 1968.

SN 319,933. McGraw-Hill, Inc., New York, N.Y. Filed Feb. 24, 1969.

GAINEY'S CONSTRUCTION NEWSLETTER

For Daily Newsletter (Int. Cl. 16).
First use 1947.

SN 322,538. Alaska Northwest Publishing Company, Edmonds, Wash. Filed Mar. 24, 1969.

LIFE ON THE LAST FRONTIER

For Magazine (Int. Cl. 16).
First use November 1958; May 1941 in a different form.

SN 322,835. Concrete Pipe Machinery Company, Sioux City, Iowa. Filed Mar. 26, 1969.

PACKERHEAD PRESS

Owner of Reg. No. 725,324.
For Promotional House Organ Presently Published Quarterly (Int. Cl. 16).
First use Spring of 1963.

SN 323,219. American Society of Hospital Pharmacists, Inc., Washington, D.C. Filed Apr. 2, 1969.

INTERNATIONAL PHARMACEUTICAL ABSTRACTS

For Periodical Reports Containing Abstracts of Pharmaceutical Literature (Int. Cl. 16).
First use Jan. 15, 1964.

SN 323,504. Jerome Wolk, d.b.a. Freedom Greeting Card Company, Philadelphia, Pa. Filed Apr. 2, 1969.

FREEDOM

For Greeting Cards (Int. Cl. 16).
First use Feb. 11, 1969.

SN 323,650. National Periodical Publications, Inc., New York, N.Y. Filed Apr. 4, 1969.

THE BRAVE AND THE BOLD

For Comic Magazine (Int. Cl. 16).
First use Mar. 28, 1955.

SN 323,869. Zorina Walker, d.b.a. The Black Cat Publishing Co., New York, N.Y. Filed Apr. 7, 1969.

BLACK CAT

For Numerology Leaflets Published Periodically (Int. Cl. 16).
First use April 1943.

SN 323,940. Close-Up, Inc., New York, N.Y. Filed Apr. 8, 1969.

BETTY AND VERONICA

Owner of Reg. No. 598,225.
For Comic Magazine (Int. Cl. 16).
First use July 10, 1950.

SN 324,140. Oliver Tire & Rubber Company, Oakland, Calif. Filed Apr. 10, 1969.

THE GUILDEALER

For Bulletin Issued From Time to Time (Int. Cl. 16).
First use Apr. 12, 1968.

Class 39 — Clothing

SN 293,495. Frayne Sportwear Mfrs. Inc., Tampa, Fla. Filed Mar. 18, 1968.

F.I.T.

For Women's and Girls' Sportwear—Namely, Jackets, Pants, Shorts, Skirts, and Shirts (Int. Cl. 25).
First use Feb. 14, 1968.

SN 299,952. Gertrude Davenport Inc., New York, N.Y. Filed June 7, 1968.

Gertrude Davenport

"Gertrude Davenport" is the name of a living individual, whose consent is of record.
For Men's and Women's Clothing and Sportswear—Namely, Swimwear, Beachwear, Loungewear, Hostess Robes, Bathrobes, Jackets and Dresses (Int. Cl. 25).
First use January 1948.

SN 306,048. Drummond Knitwear Co. Ltd., Maspeth, N.Y. Filed Aug. 27, 1968.



MASADA

For Men's, Women's, Boys', Girls', and Children's Knitted Shirts and Sweaters, Jackets, Walking Shorts, Swimming Trunks and Bathing Suits (Int. Cl. 25).
First use Aug. 1, 1967.

SN 308,872. Cluett, Peabody & Co., Inc., New York, N.Y. Filed Oct. 4, 1968.

SAGA

For Negligee and Dress Shirts (Int. Cl. 25).
First use July 30, 1924.
Subj. to Intf. with SN 312,477.

SN 312,477. Saga M. Lempio, Sausalito, Calif. Filed Nov. 18, 1968.

SAGA

For Blouses, Coats, Dresses, Gloves, Hats, Pants, Scarves, Shirts, Skirts, and Suits (Int. Cl. 25).
First use October 1963.
Subj. to Intf. with SN 308,872.

SN 312,612. Howard B. Samberg, d.b.a. Huston Shoes, Berkeley, Calif. Filed Nov. 19, 1968.

VIA IMPORTO

For Shoes (Int. Cl. 25).
First use on or about Oct. 4, 1968.

SN 313,034. Sue J Inc., San Francisco, Calif. Filed Nov. 25, 1968.

Fantasias

For Ladies' Slacks and Capris (Int. Cl. 25).
First use on or about Nov. 15, 1968.

SN 319,755. Penn-Dale Knitting Mills, Inc., Sinking Spring, Pa. Filed Feb. 18, 1969.

LIVING LEGS

For Panty Hose and Tights (Int. Cl. 25).
First use Nov. 20, 1968.

SN 322,277. Durafab Disposables, Inc., Cleburne, Tex. Filed Mar. 20, 1969.

DURAFAB

For Disposable Articles of Wearing Apparel—Namely, Hospital Garments, Namely, Examining Gowns, Laboratory Coats, Smocks, Head Covers, Footwear Covers, and Coveralls; Industrial Garments, Namely, Clean Room Coveralls, Head Covers, Footwear Covers, Shop Aprons and Coats; General Wearing Apparel for Men, Women and Children, Namely, Kitchen Aprons, Smocks, Overalls, Bibs, and Jackets (Int. Cl. 25).
First use Dec. 31, 1968.

Class 40 — Fancy Goods, Furnishings, and Notions

SN 305,813. Courier Products, Inc., New York, N.Y. Filed Aug. 23, 1968.

COURIER

For Hair Pieces (Int. Cl. 26).
First use July 19, 1968.

SN 317,300. Atherton Associates, Inc., Boston, Mass. Filed Jan. 23, 1969.

TAN·FAN

For Fans Having Reflecting Surfaces and Being Useful in Sun Bathing (Int. Cl. 20).
First use Oct. 9, 1968.

SN 322,028. Russell F. Killoran, Grand View on Hudson, N.Y. Filed Mar. 18, 1969.

FREEBOOTER

For Boot Jack (Int. Cl. 21).
First use Mar. 11, 1969.

Class 42 — Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

SN 309,537. American Associated Companies, Inc., Atlanta, Ga. Filed Oct. 14, 1968.

WONDER WEAR

For Toweling, Towels, Sheets, and Pillow Cases (Int. Cl. 24).
First use Apr. 21, 1921.

SN 312,178. John Boyle and Company, Incorporated, New York, N.Y. Filed Nov. 14, 1968.

PRO-TEC

For Laminated Fabrics for Use as Tarpaulins, Tent Flooring, and the Like (Int. Cl. 24).
First use Nov. 11, 1968.

SN 322,993. P. Kaufmann, Inc., New York, N.Y. Filed Mar. 27, 1969.



For Piece Goods Used for Drapery and Upholstery Fabrics (Int. Cl. 24).
First use Mar. 5, 1969.

SN 323,100. The B. F. Goodrich Company, Akron, Ohio. Filed Mar. 28, 1969.

EMPRESS 100

For Carpet and Rug Underlay (Int. Cl. 27).
First use Mar. 21, 1969.

SN 324,041. Centerfill Aktieselskab (Nordisk Fjerfabrik, Aktieselskab), Jyllandsvej Middelfart, Denmark, Filed Apr. 9, 1969.

CENTERFILL

Owner of Danish Reg. No. 412/68, dated Feb. 9, 1968.
For Bed-Blankets, Including Bed-Blankets With Padding and Stuffing Material, Bed-Blankets Which May Be Zipped Together To Form a Bag, Eider-Downs With Synthetic Padding and Stuffing Materials (Int. Cl. 24).

Class 44—Dental, Medical, and Surgical Appliances

SN 255,301. Becton, Dickinson and Company, East Rutherford, N.J., by merger from Electrodyne Company, Inc., Westwood, Mass. Filed Sept. 28, 1966.



For Electro-Mechanical and Electronic Instruments and Equipment for Diagnostic and Therapeutic Application in the Surgical, Medical, and Hospital Fields (Int. Cl. 10).
First use December 1960.

SN 300,085. Walter E. Jordan, d.b.a. Delta Laboratories, Des Plaines, Ill. Filed June 10, 1968.

BACTRAP

For Trap Which Forms a Component Part of a Urinary Drainage Unit (Int. Cl. 10).
First use on or before Apr. 3, 1968.

SN 300,984. Sunbeam Corporation, Chicago, Ill. Filed June 20, 1968.

SUNBEAM

Owner of Reg. Nos. 663,796, 665,821, and 771,963.
For Liquid Agitating Denture Cleaning Devices, and Parts Therefore (Int. Cl. 10).
First use Aug. 25, 1967.

SN 301,728. Encore, Inc., Portland, Oreg. Filed July 1, 1968.



For Control Units for Dental Appliances, Dental Syringes, Cuspidors, and Handpieces; Portable Dental Field Kits, Mobile Dental Units, and Sterilizers (Int. Cls. 10 and 11).
First use at least as early as 1965.

SN 305,464. Life Aid Products Limited, Toronto, Ontario, Canada. Filed Aug. 19, 1968.

LIFE-GUARD

For Oxygen Mask Resuscitators (Int. Cl. 10).
First use July 18, 1968; in commerce July 18, 1968.

SN 318,365. Kimberly-Clark Corporation, Neenah, Wis. Filed Feb. 5, 1969.

KOTIQUE

For Sanitary Napkins (Int. Cl. 5).
First use Nov. 20, 1968.

SN 318,640. Espe Fabrik Pharamazeutischer Praparate, G.m.b.H., Seefeld, Upper Bavaria, Germany. Filed Feb. 7, 1969.

BASODUR

Owner of German Reg. No. 741,659, dated Oct. 25, 1960.
For Impression Material Exclusively for Dental Purposes; and Tooth Fillers (Int. Cl. 5).

Class 45—Soft Drinks and Carbonated Waters

SN 303,389. Associated Food Stores, Inc., Jamaica, N.Y. Filed July 23, 1968.



The word "Super" is disclaimed apart from the mark as shown. Owner of Reg. Nos. 796,920 and 865,875.
For Orange Drink Containing Water and Grape Drink Containing Water (Int. Cl. 32).
First use Aug. 25, 1966.

SN 319,249. R. J. Reynolds Foods, Inc., New York, N.Y. Filed Feb. 17, 1969.

HAWAIIAN PUNCH

No registration rights are claimed for the word "Punch" apart from the mark show, but applicant waives none of its common law rights in the mark shown or any feature thereof. Owner of Reg. No. 600,083.
For Fruit-Flavored Drinks Containing Water, and Concentrates for Making Same (Int. Cl. 32).
First use May 21, 1931.

Class 46—Foods and Ingredients of Foods

SN 277,356. I. B. Fischer, d.b.a. Orange Blossom Apiaries, Orlando, Fla. Filed Aug. 2, 1967.



For Honey and Honey Spread (Int. Cl. 30).
First use July 18, 1967.

SN 292,110. The Kroger Co., Cincinnati, Ohio. Filed Feb. 28, 1968.

HOME PRIDE

For Wild Bird Seed Mix and Sunflower Seed Sold as Bird Seed (Int. Cl. 31).
First use at least as early as Nov. 10, 1965.

SN 292,292. Gerber Cheese Co., Inc., New York, N.Y., assignee of Price Food Co., Inc., Fort Worth, Tex. Filed Mar. 1, 1968.

PRICE'S HOME STYLE

For Cheese Spreads and Dips (Int. Cl. 29).
First use Apr. 9, 1963.

SN 292,469. Colonial Stores Incorporated, d.b.a. Big Star Products Co., Atlanta, Ga. Filed Mar. 5, 1968.

FARM CHARM

For Margarine, Butter, and Cheese (Int. Cl. 29).
First use Nov. 1, 1967, on margarine.

SN 293,201. Morton International, Inc., Chicago, Ill. Filed Mar. 14, 1968.

T-M

For Salt in Block or Granular Form for Feeding to Animals (Int. Cl. 1).
First use in or about January 1953.

SN 294,301. The Nestle Company, Inc., White Plains, N.Y. Filed Mar. 27, 1968.

CALYPSO

Owner of Reg. No. 802,819.
For Candy Bar (Int. Cl. 30).
First use Dec. 15, 1967.

SN 295,130. Etablissement Omnipatent, Vaduz, Liechtenstein. Filed Apr. 8, 1968.

TISA

Owner of Liechtenstein Reg. Nos. 2, 205, dated Aug. 24, 1966, and 2,386, dated July 6, 1967.
For Tea, Herbal Tea, Tea Extracts for Food Purposes, and Flavorings Intended for Use in Making Food Drinks (Int. Cl. 30).
First use September 1963; in commerce September 1963.

SN 297,712. John Sexton & Co., Chicago, Ill. Filed May 8, 1968.

SPOON-REDI

For Dessert Pudding (Int. Cl. 30).
First use Apr. 1, 1968.

SN 297,798. Perth Cheese Company, Stratford, Ontario, Canada. Filed May 9, 1968.

NIPPICAN

For Dairy Products—Namely, Cheese Based Spreads (Int. Cl. 29).
First use on or about July 1, 1964; in commerce on or about Dec. 10, 1967.

SN 297,990. Edy's Character Candies of Northern California, d.b.a. Edy's, Oakland, Calif. Filed May 13, 1968.

PRIMAVERA

"Primavera" means "spring" in Italian.
For Candy (Int. Cl. 30).
First use Feb. 7, 1968.

SN 298,079. Eskimo Pie Corporation, Richmond, Va. Filed May 14, 1968.

ESKIMO DO-NUT

Owner of Reg. Nos. 300,055, 801,435, and others.
For Frozen Dessert Products—Namely, Ice Cream and Ice Milk (Int. Cl. 30).
First use on or about Nov. 29, 1956.

SN 298,623. Oxo Foods Limited, Don Mills, Ontario, Canada Filed May 20, 1968.

CHUG-A-MUG

Owner of Canadian Reg. No. 154,870, dated Dec. 29, 1967.
For Soups and Liquid Bouilion in Powdered Form (Int. Cl. 29).

SN 299,837. Fabricas de Manteca Sancor Cooperativas Unidas Limitada, Buenos Aires, Argentina. Filed June 6, 1968.

U.16 T.

Owner of Argentine Reg. Nos. 508,033, dated May 28, 1963, and 513,230, dated July 30, 1963.
For Casein for Industrial Use; and Milk Products—Namely, Cheese, Milk and Milk Jam, in Fresh and Canned Form (Int. Cls. 1 and 29).

SN 300,055. Barnegat Light Products, Inc., Middletown, Pa. Filed June 10, 1968.

DUTCH COUNTRY BRAND

The term "Brand" is disclaimed.
For Bacon (Int. Cl. 29).
First use May 9, 1968.

SN 300,445. Hotel Corporation of America, Boston, Mass., assignee of HCA Food Corporation, Baltimore, Md. Filed June 14, 1968.



No registration rights are claimed for the word "Foods" apart from the mark shown, and applicant waives no common-law or other rights in same. Owner of Reg. Nos. 742,491 and 742,492.

For Minced and Chopped Clams, Whole Clams, Steamed Clams, Clam Juice, Clam Chowder, Frozen Fried Clams, Clam Cakes and Stuffed Clams; Maple Syrup and Dietetic Syrup, Blended Cane and Maple Syrup, Imitation Maple Syrup, Pancake Syrup, Fruit Flavored Syrups for Use in Making Food Drinks, All of Said Syrups for Food Purposes; Mayonnaise, Sandwich Spread, Tarter Sauce, and Pourable Salad Dressings, Chile Sauce, Prune Juice, All of Which Are Canned and/or Bottled (Int. Cls. 5, 29, 30, and 32).

First use May 9, 1968.

SN 300,453. Jeno's, Inc., Duluth, Minn. Filed June 14, 1968.

AVANTE

For Monosodium Glutamate, Herbs, Spices, and Protein Food Beverages (Int. Cls. 30 and 32).

First use Feb. 9, 1967.

SN 300,840. Old Home Foods, Inc., St. Paul, Minn. Filed June 19, 1968.

OLD HOME

Owner of Reg. No. 256,411.

For Cottage Cheese, Flavored Milk and Vegetable Oil-Based Snack Dips, Ice Cream, Sour Cream, Puddings, Gelatin Salads, Potato Salad, Three-Bean Salad, and Egg-Nog Mix (Int. Cls. 29 and 30).

First use September 1966.

SN 301,137. Pizza Papa, Inc., d.b.a. Pizza Papa, St. Paul, Minn. Filed June 24, 1968.

SUBWICH

For Sandwiches Sold in Cartons for Home Consumption and in Restaurants for Direct Consumption (Int. Cl. 29).

First use Nov. 20, 1967.

SN 303,609. Frecker's Ice Cream Co., Columbus, Ohio. Filed July 25, 1968.

NORTHWEST

For Water and Dairy Frozen Confections—Namely, Fudge Bars, Twin Pops, Ice Cream Slices, Ice Cream Bars, and Vanilla Flavored Ice Cream With Chocolate Sauce, Sold on a Stick and in Cups (Int. Cl. 30).

First use July 20, 1966.

SN 304,719. Fred Usinger, Inc., d.b.a. Usinger's, Milwaukee, Wis. Filed Aug. 8, 1968.



The representation of the Goods is disclaimed apart from the mark. Owner of Reg. Nos. 632,378, 678,182, and 750,278.

For Link Sausages—Namely, Bratwurst, Wieners, and Polish Sausage (Int. Cl. 29).

First use Aug. 30, 1965.

SN 308,061. Donald P. Waters, d.b.a. Waters Distributing Company, Denver, Colo. Filed Sept. 23, 1968.

CHAR-DON

For Frozen Imitation Cheese Cake (Int. Cl. 30).

First use Feb. 15, 1968.

SN 309,566. Albert F. Goetze, Incorporated, Baltimore, Md. Filed Oct. 14, 1968.

GOETZE

Owner of Reg. Nos. 745,190, 745,561, and others.

For Processed Meats (Int. Cl. 29).

First use May 6, 1968.

SN 309,984. O. Kavli A/S, Bergen, Norway. Filed Oct. 18, 1968.



For Cheese and Flavoured Cheese Spreads (Int. Cl. 29).

First use June 25, 1966; in commerce July 1966.

SN 311,769. Cargill, Incorporated, Minneapolis, Minn. Filed Nov. 12, 1968.

CARGILL

For Grains Sold for Processing Into Food Products; Animal and Poultry Feed, Salt for Food and for Animal Consumption; Edible Oils—Namely, Popcorn Oil, Corn Oil, Coconut Oil, Sunflower Oil, Soybean Oil and Safflower Oil; Soybean Liefthin; Edible Meal and Flour—Namely, Soy Flour, Soybean Meal and Fish Meal; Sweeteners—Namely, Corn Gluten, Corn Syrup, Sugar, and Molasses Copra; Lignon Sulfonate Used as a Binder in Pelletizing Animal Feed (Int. Cls. 29, 30, and 31).

First use 1865.

SN 312,282. DCA Food Industries Inc., New York, N.Y. Filed Nov. 15, 1968.

DOUBLE TEN

For Frozen Confections on a Stick (Int. Cl. 30).

First use Oct. 21, 1968.

SN 313,088. Drew Chemical Corporation, New York, N.Y. Filed Nov. 26, 1968.

DROP O GOLD

For Oleomargarine, and Vegetable Shortening (Int. Cl. 29).

First use at least as early as December 1960.

SN 316,730. B/G Foods, Inc., Chicago, Ill. Filed Jan. 16, 1969.

DUTCHLAND DAIRY'S MORE THAN A DAIRY

For Bread, Ice Cream, Custard, Ice Milk, Butter, Fresh Eggs, Fluid Milk, Potato Chips; and Cooked Foods—Namely, Chicken, Fish, Shrimp, Spareribs, Onions, and Potatoes (Int. Cls. 29 and 30).

First use June 1966.

SN 316,731. B/G Foods, Inc., Chicago, Ill. Filed Jan. 16, 1969.



For Bread, Ice Cream, Custard, Ice Milk, Butter, Fresh Eggs, Fluid Milk, Potato Chips; and Cooked Foods—Namely, Chicken, Fish, Shrimp, Spareribs, Onions, and Potatoes (Int. Cls. 29 and 30).

First use June 1966.

SN 317,930. Borden, Inc., New York, N.Y. Filed Jan. 30, 1969.

STARFLAKE

Owner of Reg. No. 776,724.

For Dairy Products—Namely, Yogurt, Sour Cream, Creamed Creole Cheese, Onion Dip, and Creamed Cottage Cheese (Int. Cl. 29).

First use on or befor Nov. 16, 1968.

SN 319,250. R. J. Reynolds Foods, Inc., New York, N.Y. Filed Feb. 17, 1969.

HAWAIIAN PUNCH

No registration rights are claimed for the word "Punch" apart from the mark shown, but applicant waives none of its common law rights in the mark shown or any feature thereof. Owner of Reg. No. 600,083.

For Frozen Confection—Namely, a Fruit-Flavored Ice Product on a Stick (Int. Cl. 30).

First use June 1962.

SN 320,112. The Quaker Oats Company, Chicago, Ill. Filed Feb. 26, 1969.

BUY 'EM BY THE BARREL

For Snack Crackers (Int. Cl. 30).

First use Feb. 3, 1969.

SN 323,763. Crown Imports Co., Inc., South San Francisco, Calif. Filed Apr. 7, 1969.

HANAYOME

The Japanese word "Hanayome" means "bride" in English.

For Canned Abalone, Alimentary Paste, Baby Abalone, Baby Bream, Baby Clams, Bamboo Shoots, Bean Curd, Black Soy Beans, Burdock, Conger Eel, Cuttle Fish, Eel, Fish Cakes, Fish Cakes With Burdock, Fried Bean Curd, Hokki Clams, Whole Mushrooms, Sliced Mushrooms, Mackerel, Red Beans, Red Bean Flour, Red Clams, Red Clams on Skewers, Rice With Red Beans, Scallops, Scallops on Skewers, Sea Eels, Seaweed, Shark Fin Soup, Top Shell, Top Shell on Skewers, Vegetables, Vegetables With Fried Bean Curd, White Fish; Packaged Agar Agar, Alimentary Paste, Buckwheat, Cuttle Fish, Small Fish, Shaved Bonito, Dehydrated Soup, Jellyfish, Mushrooms, Peas, Red Beans, Rye Flour, Seaweed, Seaweed With Mushrooms, Shrimp, Soup Stock, Vegetables, Vermicelli, Dried Fish, Rice Crackers, Beans, Fried Beans, Rice; Bottled Pickled Egg Plant, Pickled Ginger Sprouts, Pickled Lotus Roots, Red Beans With Chestnut and Seaweed (Int. Cls. 1 and 29).

First use Sept. 16, 1958.

SN 324,652. Osceola Fruit Distributors, Kissimmee, Fla. Filed Apr. 16, 1969.

BREAKFAST GOLD

Owner of Reg. Nos. 749,881, 808,907, and 811,093.

For Fresh Citrus Juices and Fresh Citrus Fruits (Int. Cls. 31 and 32).

First use at least as early as Apr. 28, 1962.

SN 324,663. Tasty Baking Company, Philadelphia, Pa. Filed Apr. 16, 1969.



For Cakes, Pies, and Cookies (Int. Cl. 30).

First use Apr. 8, 1969.

Class 47 — Wines

SN 308,215. Hermann Kendermann, Wiesbaden, Germany. Filed Sept. 25, 1968.

ONDINE

For Wines (Int. Cl. 33).

First use Sept. 1, 1968.

Class 49 — Distilled Alcoholic Liquors

SN 288,650. Tennessee Walking Horse Company, d.b.a. Tennessee Walker Distillery Company, Tullahoma, Tenn. Filed Jan. 11, 1968.



Applicant disclaims the exclusive right to the word "Tennessee" without waiving any of its rights at common law or otherwise with respect to the use of said word in the form presented. Owner of Reg. No. 827,283.
For Whiskey (Int. Cl. 33).
First use Aug. 1, 1966; Dec. 8, 1965 as to "Tennessee Walking Horse."

SN 301,925. Esbeco Distilling Corp., Stamford, Conn. Filed July 3, 1968.

KENTUCKY MIST

The word "Kentucky" is disclaimed apart from the mark as shown.
For Whiskey (Int. Cl. 33).
First use June 3, 1968.

SN 311,714. Stitzel-Weller Distillery, Louisville, Ky. Filed Nov. 4, 1968.



Applicant disclaims exclusive right to use the word "Bottle" apart from the mark as shown. Owner of Reg. No. 864,002 and others.
For Whiskey (Int. Cl. 33).
First use Apr. 9, 1968.

SN 312,181. Charles Muirhead & Son, Limited, Edinburgh, Scotland. Filed Nov. 14, 1968.



Without waiving any common law rights, applicant disclaims any exclusive rights to the word "Scotch" apart from the mark as shown. Owner of British Reg. No. 918,535, dated Dec. 13, 1967; and U.S. Reg. Nos. 367,941 and 517,930.
For Scotch Whisky (Int. Cl. 33).

Class 50 — Merchandise Not Otherwise Classified

SN 309,971. Janox Corporation, Arcanum, Ohio. Filed Oct. 18, 1968.

JANOX

For Non-Electric, Reflective Type Airstrip Marking and Signaling Devices (Int. Cl. 9).
First use June 7, 1967.

Class 51 — Cosmetics and Toilet Preparations

SN 286,187. Societe Neige des Cevennes, Nanterre (Hauts-de-Seine), France. Filed Dec. 4, 1967.

CITRONEIGE

Owner of French Reg. No. 500,178, dated Nov. 17, 1961 (Seine); Natl. Inst. No. 174,007.
For Skin Lotions and Creams (Int. Cl. 3).

SN 292,273. Helene Curtis Industries, Inc., Chicago, Ill. Filed Mar. 1, 1968.

SUMMER COOLER

Without waiving common law rights "Cooler" is disclaimed apart from the mark as shown.
For Bath Oil (Int. Cl. 3).
First use on or about Jan. 22, 1968.

SN 293,643. Paula Payne Products Company, Inc., Charlotte, N.C. Filed Mar. 19, 1968.

ROYAL TREATMENT

Applicant disclaims the term "Treatment" apart from the mark as shown.
For Hair Conditioner (Int. Cl. 3).
First use Feb. 22, 1968.

SN 296,102. Bonne Bell, Inc., Lakewood, Ohio. Filed Apr. 22, 1968.

BRIGHT & SHINING MORNING FACE

Without waiving common law rights, thew ord "Face" is disclaimed apart from the mark as shown.
For Liquid Facial Make-Up (Int. Cl. 3).
First use at least as early as Nov. 20, 1967.

SN 304,663. Block Drug Company, Inc., Jersey City, N.J. Filed Aug. 8, 1968.

DENTU GRIP

Applicant disclaims the word "Grip" apart from the mark as a whole, reserving, however, all common law rights thereto. Owner of Reg. No. 390,473.
For Denture Adhesive (Int. Cl. 5).
First use Jan. 3, 1941.

SN 304,676. Deviline Inc., Mount Vernon, N.Y. Filed Aug. 8, 1968.

WOTO

For Combination Men's Cologne and After Shave Lotion (Int. Cl. 3).
First use July 27, 1968.

SN 305,812. Cosmetically Yours, Inc., Yonkers, N.Y. Filed Aug. 23, 1968.

CULTURED PEARLS

Applicant disclaims any rights in the word "Pearls" apart from the mark as shown.
For Compact Makeup, Liquid Rouge, Liquid Eyeliner, Liquid Makeup, Nail Polish, Eye Shadow, Eyebrow and Liner Pencil, Eyebrow Makeup, and Lipstick (Int. Cl. 3).
First use Aug. 14, 1968.

SN 306,966. Union Carbide Corporation, New York, N.Y. Filed Sept. 9, 1968.

TIGHT SPOT

For Body Refresher and Deodorant Powder (Int. Cl. 5).
First use on or about Sept. 3, 1968.

SN 310,526. Tidy House Products Co., Omaha, Nebr. Filed Oct. 25, 1968.

SPRING RAIN BATH SOFT

Applicant makes no claim of exclusive right to the use of the words "Bath" or "Soft" separate and apart from the mark shown. Owner of Reg. No. 703,100.
For Perfumed Water Softening Chemical for Use in the Bath (Int. Cl. 3).
First use April 1966; Oct. 7, 1959, as to "Spring Rain."

SN 313,803. Caron Corporation, New York, N.Y. Filed Dec. 6, 1968.

MERINGUE SPRAY

Aplicant disclaims the word "Spray" apart from the mark as a whole, while reserving all common law rights therein.
For Perfumed Body Moisturizer (Int. Cl. 3).
First use Oct. 28, 1968.

SN 313,886. Avon Products, Inc., New York, N.Y. Filed Dec. 9, 1968.

EVENING LIGHTS

Applicant disclaims the word "Lights" apart from the mark as shown.
For Face Makeup (Int. Cl. 3).
First use Oct. 28, 1968.

SN 314,363. Roma Royale, Incorporated, Dallas, Tex. Filed Dec. 12, 1968.

ROMA ROYALE

For Perfume, Cologne, Bath Powder, and Bath Oil (Int. Cl. 3).
First use Dec. 2, 1968.

SN 314,850. Carter-Wallace, Inc., New York, N.Y. Filed Dec. 19, 1968.

PEACHES 'N CLEAN

Applicant disclaims any exclusive rights to the word "Clean" apart from the mark as shown. Owner of Reg. No. 115,434.
For Facial Skin Cleanser (Int. Cl. 3).
First use Sept. 3, 1968.

SN 315,183. Redken Laboratories, Inc., Van Nuys, Calif. Filed Dec. 26, 1968.

AMINO PON

The word "Amino" is disclaimed apart from the mark as shown.
For Skin Moisturizing Lotion (Int. Cl. 3).
First use Nov. 12, 1968.

SN 320,997. Clairol Incorporated, New York, N.Y. Filed Mar. 7, 1969.

DEPEND

For Cosmetic Skin Cleanser, Hair Conditioner, Skin Moisturizing Lotion, Bath Crystals, Bath Oil, and Skin Blemish Cover Preparation (Int. Cl. 3).
First use Feb. 19, 1969.

SN 321,605. Carter-Wallace, Inc., New York, N.Y. Filed Mar. 13, 1969.

FLUFF CLEAN

Applicant disclaims the word "Clean" apart from the mark as shown.
For Cosmetic Skin Cleanser (Int. Cl. 3).
First use Feb. 17, 1969.

SN 321,606. Carter-Wallace, Inc., New York, N.Y. Filed Mar. 13, 1969.

MAKEDOWN

For Cosmetic Skin Cleanser (Int. Cl. 3).
First use Feb. 17, 1969.

Class 52 — Detergents and Soaps

SN 283,905. Klix Chemical Co., Inc., South San Francisco, Calif. Filed Nov. 1, 1967.

LIQUI GRILL STONE

Applicant disclaims the words "Grill Stone" apart from the mark as shown.
For Liquid Alkaline Cleaner for Removing Carbonized Food, Grease and the Like From Grills, Ovens, Stoves, and Other Cooking Surfaces (Int. Cl. 3).
First use Sept. 26, 1967.

SN 304,064. The Drackett Company, d.b.a. The Drackett Products Company, Cincinnati, Ohio. Filed Aug. 1, 1968.

BOUTIQUE

Owner of Reg. No. 844,822.
For Deodorant Soap; Liquid Detergent for Washing Dishes and Fine Fabrics; Heavy Duty Laundry Detergent; and Cold Water Wash (Int. Cl. 3).
First use June 27, 1968.

SN 306,407. Texize Chemicals, Inc., Greenville, S.C. Filed Aug. 30, 1968.

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Owner of Reg. Nos. 709,443, 817,958, and 817,967.
For Spray Cleaner for Household Use (Int. Cl. 3).
First use Aug. 5, 1968.

SN 309,157. Block Drug Company, Inc., Jersey City, N.J. Filed Oct. 8, 1968.

STEPHANIE BROOKE

The name "Stephanie Brooke" is fictitious.
For Hair Shampoo (Int. Cl. 3).
First use Sept. 25, 1968.

SN 311,791. Montrose Oil and Belting Company, Inc., d.b.a. Montrose Supply & Equipment Co., Brooklyn, N.Y. Filed Nov. 12, 1968.

KLEEN KUT

For Heavy Duty Industrial Detergent Cleaner for General Use on Knitting Machinery (Int. Cl. 3).
First use Sept. 12, 1966.

SN 315,139. Howland Chemical Products, Inc., Kearny, N.J. Filed Dec. 24, 1968.

NO-SOIL

For Liquid Detergent for General Household Use (Int. Cl. 3).
First use in or before May 1957.

SN 316,612. Caled Products Company, Inc., Brentwood, Md. Filed Jan. 15, 1969.

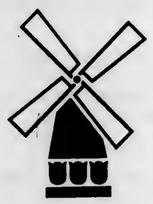
CAL-STRIP

Owner of Reg. Nos. 753,574 and 754,860.
For Color Stripper Composition for Fabrics and Garments (Int. Cl. 3).
First use January 1954.

SERVICE MARKS

Class 100 — Miscellaneous

SN 267,882. General Host Corporation, New York, N.Y., by change of name from General Baking Company, New York, N.Y. Filed Mar. 30, 1967.



The mark consists of the depiction of a windmill above three tulips.
For Restaurant and Coffee Shop Services (Int. Cl. 42).
First use Sept. 30, 1966.

SN 267,883. General Host Corporation, New York, N.Y., by change of name from General Baking Company, New York, N.Y. Filed Mar. 30, 1967.



The mark consists of the depiction of a windmill.
For Restaurant and Coffee Shop Services (Int. Cl. 42).
First use June 1, 1934.

SN 285,775. Wed Enterprises, Inc., Glendale, Calif. Filed Nov. 28, 1967.

PEOPLE MOVER

For Architectural and Engineering Services Rendered in Designing Transportation Systems (Int. Cl. 42).
First use about Dec. 9, 1964.
Subj. to Intf. with SN 277,433.

SN 292,195. General Research Corporation, Goleta, Calif. Filed Feb. 29, 1968.

GENERAL RESEARCH | OORPORATION

For Analytical and Theoretical Investigations Regarding Space Systems, Strategic and Tactical Warfare, and Socio-Economic Planning (Int. Cl. 42).
First use May 8, 1967.

SN 292,313. Bobby's Baby, Inc., Denver, Colo. Filed Mar. 4, 1968.



The drawing is lined for the color red.
For Restaurant Services (Int. Cl. 42).
First use December 1967.

SN 296,335. William T. Mason, Louisville, Ky. Filed Apr. 23, 1968.



For Restaurant Services (Int. Cl. 42).
First use Mar. 5, 1968.

SN 297,730. Research Institute for Diagnostic Engineering, Pasadena, Calif. Filed Apr. 15, 1968.



The lining indicates a feature of the mark and not color.
For Conducting Research and Rendering Advice and Counsel in the Field of Automotive Diagnosis (Int. Cl. 42).
First use Oct. 31, 1967.

SN 298,125. Howard & Collingwood, Incorporated, Pittsburgh, Pa. Filed May 14, 1968.



For Lease of Meat Cutting Equipment (Int. Cl. 42).
First use Dec. 4, 1967.

SN 299,151. National Nuclear Corporation, Palo Alto, Calif. Filed May 27, 1968.



Applicant disclaims the exclusive right to the wording "Nuclear Corporation," except when used as part of the mark.
For Nuclear Reactor Consulting Services (Int. Cl. 42).
First use on or about Mar. 22, 1968.

SN 299,379. The Prairie Farmer Publishing Company, Chicago, Ill. Filed May 29, 1968.

PRAIRIE FARMER

Owner of Reg. Nos. 226,027 and 557,269.
For Providing Assistance and Protection to Consumers and Farmers Including Exposing Fraudulent Schemes, Working With Law Enforcement Officers in the Apprehension and Conviction of Criminal Racketeers, Assisting in Bringing a Reasonable Resolution to Complaints and Claims Against Merchants and Service Agencies, and Providing Advice Concerning the Availability of Public Services (Int. Cl. 42).
First use at least as early as 1918.

SN 300,320. Allstates Leasing Corporation, Tulsa, Okla. Filed June 13, 1968.

ALLSTATES LEASING

Without waiver of common law rights, applicant disclaims any right to the word "Leasing" except as a part of the mark as shown.
For Lease and Rental of Business, Production, Construction, Transportation and Miscellaneous Equipment to Manufacturers, Processors, Wholesalers, Retailers and Service Organizations (Int. Cl. 42).
First use Aug. 16, 1963.
Subj. to Intf. with SN 292,875 and SN 293,012.

SN 300,589. Haven Homes Inc., Hastings, Minn. Filed June 17, 1968.



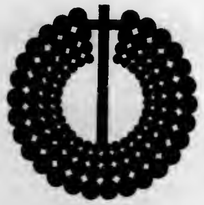
Without waiving any of applicant's common law rights, the terms "Homes" and "Care . . . By Those Who Care" are disclaimed apart from the mark in its entirety.
For Nursing Home Services (Int. Cl. 42).
First use Apr. 1, 1966.

SN 303,825. Restaurant Incorporated, d.b.a. Pouget's, Washington, D.C. Filed July 29, 1968.



For Restaurant Services (Int. Cl. 42).
First use in 1919.

SN 304,021. Southern Christian Leadership Conference Foundation, Chicago, Ill. Filed July 31, 1968.



For Association Services—Namely, the Promotion and Implementation of Civil Rights Activities (Int. Cl. 42).
First use on or before Nov. 1, 1967.

SN 304,892. The Chicken Chef Systems Incorporated, Jackson, Miss. Filed Aug. 12, 1968.

CHICKEN CHEF

The word "Chicken" is disclaimed apart from the mark as shown.
For Restaurant Services (Int. Cl. 42).
First use June 6, 1968.

SN 304,937. Robert H. Libman, Montreal, Quebec, Canada. Filed Aug. 12, 1968.

RESTEL

Owner of Canadian Reg. No. 120,687, dated Dec. 30, 1960.
For Hotel Services (Int. Cl. 42).

SN 305,393. Austral Oil Company Incorporated, Houston, Tex. Filed Aug. 19, 1968.

AUSTRAL

For Exploration, Development, and Production Services Rendered In Connection With Gas, Oil, and Other Minerals (Int. Cl. 42).
First use March 1950.

SN 305,524. Benihana of Tokyo, Inc., New York, N.Y. Filed Aug. 20, 1968.

BENIHANA



The Japanese word "Benihana" is translated as "red flower."
For Restaurant Services (Int. Cl. 42).
First use on or about Apr. 1, 1966.

SN 305,725. Richard L. Davis, d.b.a. Mr. Filet, Des Moines, Iowa. Filed Aug. 22, 1968.



The word "Filet" is disclaimed apart from the mark as shown.
For Restaurant Services—Namely, Serving of Foods and Beverages (Int. Cl. 42).
First use on or about June 1, 1967.

SN 306,729. Chicago Athletic Association, Chicago, Ill. Filed Sept. 6, 1968.



For Services Rendered To Encourage All Manly Sports and To Promote Physical Culture, and To Promote and Cultivate Social Intercourse and Friendly Relations Among the Members of Its Association (Int. Cl. 42).
First use March 1890.

SN 306,796. Nationwide Leasing Company, Chicago, Ill. Filed Sept. 6, 1968.



For Planning and Participating in Purchase-Lease Back Agreements Between Manufacturers and Their Customers Which Are Customized for the Individual Situation Involved (Int. Cl. 42).
First use June 27, 1968.

SN 309,141. Leonard's Pit Barbecue, Inc., Memphis, Tenn. Filed Oct. 8, 1968.

LEONARD'S

For Restaurant and Catering Services (Int. Cl. 42).
First use at least as early as 1922, on restaurant services.

SN 312,697. Restaurant Associates Industries, Inc., New York, N.Y. Filed Nov. 20, 1968.



The drawing is lined for the color red. Applicant disclaims the exclusive right to the word "Kitchen" apart from the mark as shown.
For Restaurant Services (Int. Cl. 42).
First use Nov. 18, 1968.

SN 314,931. Buffalo Bill's Wild West, Inc., and Kulan Enterprises, Inc. (joint owners), Los Angeles, Calif. Filed Dec. 20, 1968.

CAPTAIN JIM'S

For Restaurant Service (Int. Cl. 42).
First use Oct. 9, 1968.

SN 315,226. Gray Tool Company, Houston, Tex. Filed Dec. 26, 1968.

GRAY

Owner of Reg. Nos. 646,340 and 646,782.
For Designing and Engineering of Petroleum Well Drilling and Completion Assemblies and Procedures, Preparation and Furnishing of Engineering Reports to Oil and Gas, Petro-Chemical, Process and Atomic Industries (Int. Cl. 42).
First use during 1936.

SN 315,297. Atlantic Richfield Company, Philadelphia, Pa. Filed Dec. 27, 1968.



For Restaurant Services (Int. Cl. 42).
First use Oct. 24, 1968.

SN 316,729. B/G Foods, Inc., d.b.a. Dutchland Dairy Restaurants, Chicago, Ill. Filed Jan. 16, 1969.



For Restaurant Services (Int. Cl. 42).
First use in about June 1966.

SN 317,081. Edward L. Mejer, d.b.a. Ox Restaurants, South Bend, Ind. Filed Jan. 21, 1969.



For Restaurant Services and Carry-Out Restaurant Services (Int. Cl. 42).
First use Aug. 20, 1968.

Class 101 — Advertising and Business

SN 260,232. Automated Management Systems, Jackson, Miss. Filed Dec. 7, 1966.



AUTOMATED MANAGEMENT SYSTEMS

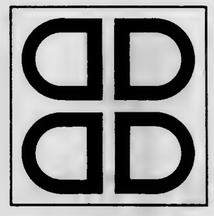
For Electronic Accounting and Account Collection Services (Int. Cl. 35).
First use Sept. 10, 1964.

SN 278,266. International Minerals & Chemical Corporation, Skokie, Ill. Filed Aug. 15, 1967.

Q-PLAN

Applicant disclaims the word "Plan" apart from the mark as shown.
For Business Services in Marketing Agricultural Products—Namely, Providing Assistance to Fertilizer Manufacturers in Advertising, promotion and Fertilizer Manufacturing, and Advising on Crop Production (Int. Cl. 35).
First use October 1966.

SN 288,430. H. L. Davis, d.b.a. Doc Davis & Associates, Cleveland, Ohio. Filed Jan. 9, 1968.



The mark consists of a boxed four letter "D" Design.
For Distributorship Services in the Field of Business Furniture (Int. Cl. 35).
First use Sept. 15, 1967.

SN 291,205. Telmark, Inc., d.b.a. Marktel Investigators, Dewitt, N.Y. Filed Feb. 15, 1968.

MARKTEL

For Delinquent Account Collection Service (Int. Cl. 36).
First use Jan. 10, 1968.

SN 296,824. Soul Shack, Washington, D.C. Filed Apr. 29, 1968.

SOUL SHACK

Applicant disclaims the word "Soul" apart from the mark as shown, reserving unto itself all common law rights which it may have or acquire in said term.
For Retail Record Store Services (Int. Cl. 35).
First use Jan. 19, 1966.

SN 300,501. Insurance Manpower International, Dallas, Tex. Filed June 13, 1968.



"Bob Sanders" identifies Robert H. Sanders, member of applicant firm.
For Employment Agency Services Specializing in Insurance Personnel (Int. Cl. 35).
First use Jan. 15, 1968.

SN 304,041. Juvenile Shoes, Inc., Denver, Colo. Filed Aug. 1, 1968.

SHOE BOAT

Applicant disclaims exclusive rights in and to the term "Shoe" apart from the mark as shown.
For Retail Juvenile Shoe Store Services (Int. Cl. 35).
First use Apr. 28, 1966.

SN 304,570. Aries Corporation, McLean, Va. Filed Aug. 7, 1968.

PROMPT

For Planning Computer Programs for Others (Int. Cl. 35).
First use Nov. 4, 1965.

SN 305,289. Turn-Key Computer Applications, Rolling Hills Estates, Calif. Filed Aug. 16, 1968.



For Computer Programming Services (Int. Cl. 35).
First use July 24, 1968; Apr. 19, 1968 as to "Turn-Key."

SN 305,656. King Karol, Inc., New York, N.Y. Filed Aug. 21, 1968.

KING KAROL

For Retail Record Store Services; Distributorship Services in the Field of Phonograph Records, Tapes and Phonograph Items (Int. Cl. 42).
First use May 1953.

SN 314,664. Dollar General Corporation, Scottsville, Ky. Filed Nov. 1, 1968.

DOLLAR GENERAL

For Retail Variety Store Services (Int. Cl. 35).
First use Mar. 30, 1956.

SN 314,728. J. J. Newberry Co., New York, N.Y. Filed Dec. 17, 1968.

BRITTS

Owner of Reg. No. 759,841.
For Retail Department Store Services (Int. Cl. 35).
First use 1930.

SN 314,742. Westinghouse Electric Corporation, Pittsburgh, Pa. Filed Dec. 17, 1968.

CAMP

For Computer Based Information Service for Programming Numerical Machine Controls (Int. Cl. 35).
First use on or about Nov. 30, 1967.

SN 315,643. Coap Systems Inc., Greenvale, N.Y. Filed Dec. 23, 1968.

DIGITAX

For Preparation of Federal State, City, and Municipal Government Tax Returns by Computer (Int. Cl. 35).
First use July 1, 1968.

SN 316,937. Homarket, Inc., Bridgeport, Conn. Filed Jan. 21, 1969.



For Determining Consumer Attitudes Towards Grocery Store Products and Evaluating Effectiveness of Advertising of Said Products Through Sale and Analysis of Sales of Products to Consumers (Int. Cl. 35).
First use Nov. 11, 1968.

SN 320,677. Bryant Teachers' Bureau, Inc., Philadelphia, Pa. Filed Mar. 4, 1969.

BRYANT TEACHERS BUREAU

Applicant disclaims "Teachers Bureau" apart from the mark as a whole.
For Teacher and Administrative Educational Personnel Placement Service (Int. Cl. 35).
First use 1918.

SN 322,945. International Timesharing Corporation, Minneapolis, Minn. Filed Mar. 27, 1969.

ITS

For Data Processing Services (Int. Cl. 35).
First use Feb. 25, 1969.

Class 102 — Insurance and Financial

SN 276,453. International Services Co., Denver, Colo. Filed S.R. July 20, 1967; Am. P.R. Feb. 27, 1969.



For Life Insurance Brokerage Services (Int. Cl. 36).
First use Mar. 1, 1966.

SN 317,276. The Chase Manhattan Bank, New York, N.Y. Filed Jan. 23, 1969.

Multimatic

For Checking Account Services Which Include the Automatic Payment by the Bank From Said Accounts of Certain Recurring Financial Obligations (Int. Cl. 36).
First use at least prior to Jan. 3, 1969.

SN 318,008. The Peoples Trust and Savings Company, Fort Wayne, Ind. Filed Jan. 31, 1969.



The mark consists of a stylized dollar sign.
For Banking Services (Int. Cl. 36).
First use Nov. 20, 1968.

SN 323,053. The College Life Insurance Company of America, Indianapolis, Ind. Filed Mar. 28, 1969.



The drawing is lined for the color rubine red, but use of the mark by applicant is not limited to this color.
For Underwriting Insurance (Int. Cl. 36).
First use Oct. 23, 1968.

Class 105 — Transportation and Storage

SN 304,014. P & O Lines (North America), Inc., San Francisco, Calif. Filed July 31, 1968.

"A RUN AWAY TO SEA ADVENTURE"

For Organizing and Conducting Escorted Package Travel Tours (Int. Cl. 39).
First use June 1965.

SN 321,722. Northwest Airlines, Inc., d.b.a. Northwest Orient, St. Paul, Minn. Filed Mar. 14, 1969.



For Passenger, Freight and Mail Transportation Services (Int. Cl. 39).
First use Mar. 7, 1969.

Class 106 — Material Treatment

SN 303,572. The Franklin Mint, Inc., Yeadon, Pa. Filed July 25, 1968.



The word "Mint" is disclaimed apart from the mark as shown.
For Providing Custom Non-Monetary Coined Products—Namely, Non-Monetary Coins; Tokens; Medals; Medallions; and Souvenir, Novelty and General Non-Monetary Coined Products (Int. Cl. 40).
First use Apr. 28, 1965.

SN 303,862. The Franklin Mint, Inc., Yeadon, Pa. Filed July 30, 1968.



The word "Mint" is disclaimed apart from the mark as shown.

For Providing Custom Non-Monetary Coined Products—Namely, Non-Monetary Coins; Tokens; Medallions; and Souvenir, Novelty and General Non-Monetary Coined Products (Int. Cl. 40).

First use Apr. 28, 1965.

SN 323,195. The Heckman Bindery, Incorporated, North Manchester, Ind. Filed Apr. 1, 1969.



For Book Binding Services (Int. Cl. 40).

First use July, 1967.

Class 107 — Education and Entertainment

SN 241,987. Cryogenic Society of America, Inc., Orange Calif. Filed Mar. 28, 1966. COLLECTIVE MARK.



For Dissemination of Knowledge Concerning Very Low Temperature Processes and Techniques by Such Means as Conducting Meetings and Seminars and Arranging for Visits to Cryogenic Laboratories by Persons Interested in This Field of Science (Int. Cl. 41).

First use October 1964.

SN 281,931. Tel Ra Productions, Inc., Philadelphia, Pa. Filed Oct. 5, 1967.

We're No. 1

For Title of Television Program Relating to Sporting Events (Int. Cl. 41).

First use Aug. 5, 1967.

SN 298,759. Alvina M. Rinaldo, d.b.a. Alpha Montessori School, Kansas City, Mo. Filed May 21, 1968.

ALPHA MONTESSORI SCHOOL

The words "Montessori School" are disclaimed apart from the mark as shown.

For Operating Pre-School Kindergartens and Training of Teachers for Same (Int. Cl. 41).

First use in or about October 1962.

SN 302,759. Pivot Point International, Inc., Chicago, Ill. Filed July 15, 1968.

PIVOT POINT

For Education and Training of Others in Hair Styling and Design (Int. Cl. 41).

First use Nov. 28, 1965.

SN 302,830. Famous Artists Schools, Inc., New York, N.Y. Filed July 16, 1968.



Owner of Reg. Nos. 581,397, 797,987, and others.

For Correspondence Courses in Graphic, Literary, and Fine Arts (Int. Cl. 41).

First use June 5, 1968.

SN 303,528. Timothy James Hughes, Burlington, Vt. Filed July 24, 1968.

DAZE OF TIME

For Entertainment Services Rendered by an Instrumental and Vocal Group (Int. Cl. 41).

First use Aug. 23, 1967.

SN 303,556. Randall Hank Williams, d.b.a. Hank Williams, Jr., Nashville, Tenn. Filed July 24, 1968.

THE DRIFTING COWBOYS

For Entertainment Services Provided by a Musical Group (Int. Cl. 41).

First use Feb. 2, 1968.

SN 304,444. The Boogie Kings, Lake Charles, La. Filed Aug. 6, 1968.

THE AMERICAN SOUL TRAIN

No claim is made to the word "Soul" apart from the mark as shown, without waiving any common law rights therein.

For Entertainment in the Form of Dance Music, Singing and Comedy Rendered by a Group (Int. Cl. 41).

First use on or about Sept. 1, 1967.

SN 313,924. Flight Centers, Inc., Madison, Wis. Filed Dec. 9, 1968.

FLIGHT CENTER

For Pilot Training Services (Int. Cl. 41).

First use Mar. 24, 1967.

TRADEMARK REGISTRATIONS ISSUED

PRINCIPAL REGISTER

Class 1 — Raw or Partly Prepared Materials

875,862. PLANTEX. USM Corporation, by change of name from United Shoe Machinery Corporation. SN 299,477. Pub. 6-17-69. Filed 4-11-68.

875,863. ALPEX AND DESIGN. Centrala Handlu Zagranicznego "Paged," d.b.a. Paged. SN 303,892. Pub. 6-17-69. Filed 7-30-68.

875,864. IOPLEX. Amicon Corporation. SN 307,722. Pub. 6-17-69. Filed 9-19-68.

875,865. LASTING LANDSCAPE. John's, Inc. SN 308,700. Pub. 6-17-69. Filed 10-2-68.

875,866. TERPALYN. Hercules Incorporated. SN 309,172. Pub. 6-17-69. Filed 10-8-68.

875,867. SOUTHWESTERN. Southwestern Graphite Company. SN 310,501. Pub. 6-17-69. Filed 10-24-68.

875,868. GLASSFORM AND DESIGN. Glassform Incorporated. SN 310,559. Pub. 6-17-69. Filed 10-25-68.

875,869. TIDY CAT. Lowe's, Inc. SN 311,043. Pub. 6-17-69. Filed 10-31-68.

875,870. COLLACO. Collagen Corp. SN 312,226. Pub. 6-17-69. Filed 11-14-68.

875,871. EPCAR. The B. F. Goodrich Company. SN 313,697. Pub. 6-17-69. Filed 12-5-68.

875,872. OREL. E. I. du Pont de Nemours and Company. SN 316,935. Pub. 6-17-69. Filed 1-21-69.

875,873. THALCO. United Merchants and Manufacturers, Inc. SN 319,681. Pub. 6-17-69. Filed 2-20-69.

Class 2 — Receptacles

875,874. WHITMAN. Whitman Publishing Company. SN 278,329. Pub. 6-17-69. Filed 8-15-67.

875,875. ENVO-TAINER. Zayre Corp. SN 289,552. Pub. 6-17-69. Filed 1-24-68.

875,876. KOROWARE. Koro Corporation. SN 313,707. Pub. 6-17-69. Filed 12-5-68.

875,877. TUKILIK. Girard, Bruce, Garabedian and Associates Ltd. SN 314,708. Pub. 6-17-69. Filed 12-17-68.

Class 3 — Baggage, Animal Equipments, Portfolios, and Pocketbooks

875,878. CLUTCHABLES. Sirco Products Co., Inc. SN 293,745. Pub. 6-17-69. Filed 3-20-68.

875,879. MEMORY BANK. Eastman Kodak Company. SN 311,245. Pub. 6-17-69. Filed 11-4-68.

875,880. COUNTESS MARA. Countess Mara, Inc. SN 311,467. Pub. 6-17-69. Filed 11-6-68.

875,881. CORONET DESIGN. Countess Mara, Inc. SN 311,469. Pub. 6-17-69. Filed 11-6-68.

875,882. ARISTOCRAT. Evans-Aristocrat Industries, Inc. SN 313,282. Pub. 6-17-69. Filed 11-29-68.

Class 4 — Abrasives and Polishing Materials

875,883. JELENKO BBC. J. F. Jelenko & Co., Inc. SN 294,737. Pub. 6-17-69. Filed 4-2-68.

875,884. SSK AND DESIGN. S. S. Kresge Company. SN 311,380. Pub. 6-17-69. Filed 11-5-68.

875,885. PROBE. Colgate-Palmolive Company. SN 319,412. Pub. 6-17-69. Filed 2-18-69.

Class 5 — Adhesives

875,886. BIX-PRINT. Bixby Box Toe Company, Inc. SN 304,578. Pub. 6-17-69. Filed 8-7-68.

875,887. EXIDE. ESB Incorporated. MULTIPLE CLASS (Classes 5, 12, and 16). SN 317,675. Pub. 6-17-69. Filed 1-28-69.

Class 6 — Chemicals and Chemical Compositions

875,888. RAYCO. Raybestos-Manhattan, Inc. MULTIPLE CLASS (Classes 6 and 19). SN 210,063. Pub. 9-21-65. Filed 1-18-65.

875,889. BISGUADINE. Sterwin Chemicals Inc. SN 289,431. Pub. 6-17-69. Filed 1-23-68.

875,890. ERLEN. Universal Oil Products Company. MULTIPLE CLASS (Classes 6, 18, and 52). SN 291,300. Pub. 6-17-69. Filed 2-19-68.

875,891. ZAP-ISOTON. Coulter Diagnostics, Inc. SN 307,314. Pub. 6-17-69. Filed 9-13-68.

875,892. ELOCRON. Ciba Limited. SN 307,556. Pub. 6-17-69. Filed 9-17-68.

875,893. FENICRON. Ciba Limited. SN 307,557. Pub. 6-17-69. Filed 9-17-68.

875,894. NADOL. Guardian Chemical Corporation. SN 307,643. Pub. 6-17-69. Filed 9-18-68.

875,895. AMPITOL PE-30. Dexter Chemical Corporation. SN 307,731. Pub. 6-17-69. Filed 9-19-68.

875,896. ISOCHELLE. Allied Research Products, Inc. SN 307,818. Pub. 6-17-69. Filed 9-20-68.

875,897. CAPILLARDIAMIN. U.F. Chemical Corporation. SN 307,882. Pub. 6-17-69. Filed 9-20-68.

875,898. INTERGRAN. Aerostyle Limited. SN 308,080. Pub. 6-17-69. Filed 9-24-68.

875,899. POWERFLO. Powers Chemco, Inc., assignee of Chemco Photoproducts Company, Inc. SN 308,092. Pub. 6-17-69. Filed 9-24-68.

875,900. IMA-GRAPH. Donald J. Simendinger, d.b.a. Berdon Industries. SN 308,234. Pub. 6-17-69. Filed 9-25-68.

875,901. UNITENE. Union Camp Corporation. SN 308,332. Pub. 6-17-69. Filed 9-26-68.

875,902. THALCO. United Merchants and Manufacturers, Inc. SN 319,682. Pub. 6-17-69. Filed 2-20-69.

Class 7 — Cordage

875,903. HOT TAPE. The Chest. SN 290,719. Pub. 6-17-69. Filed 2-9-68.

875,904. CORDUROYAL. Lion Ribbon Company, Inc. SN 302,846. Pub. 6-17-69. Filed 7-16-68.

875,905. WELD LOC AND DESIGN. Global Strapping Company. SN 316,009. Pub. 6-17-69. Filed 1-7-69.

Class 8 — Smokers' Articles, Not Induding Tobacco Products

875,906. TIGER THINGS AND DESIGN. Tiger Fabrics, Inc. SN 275,319. Pub. 6–17–69. Filed 7–3–67.

875,907. SCHULTE'S. Max Morris Schulte, d.b.a. Schulte's Pipe Shop. SN 304,428. Pub. 6–17–69. Filed 7–2–68.

Class 9 — Explosives, Firearms, Equipments, and Projectiles

875,908. AVCO AND DESIGN. Avco Corporation. SN 308,944. Pub. 6–17–69. Filed 10–7–68.

Class 10 — Fertilizers

875,909. TERRA AND DESIGN. Terra Chemicals International, Inc. SN 300,754. Pub. 6–17–69. Filed 6–18–68.

Class 11 — Inks and Inking Materials

875,910. UNI-TONE. Magruder Color Company, Inc. SN 285,031. Pub. 6–17–69. Filed 11–16–67.

875,911. HYDROMATTE. Sun Chemical Corporation. SN 312,349. Pub. 6–17–69. Filed 11–15–68.

875,912. ACETATEX. Sun Chemical Corporation. SN 312,351. Pub. 6–17–69. Filed 11–15–68.

Class 12 — Construction Materials

875,887. (See Class 5 for this trademark.)

875,913. WACO AND DESIGN. Bliss & Laughlin Industries, Inc. SN 299,643. Pub. 6–17–69. Filed 6–4–68.

875,914. TRI-SEAL. Tri-Point Industries, Inc. SN 306,597. Pub. 6–17–69. Filed 9–4–68.

875,915. MESH-UPS. Lotel, Incorporated. SN 308,115. Pub. 6–17–69. Filed 9–24–68.

875,916. MARIMET. Johns-Manville Corporation. SN 313,506. Pub. 6–17–69. Filed 12–3–68.

875,917. ELEVAIR. Baldwin-Ehret-Hill, Incorporated. SN 314,176. Pub. 6–17–69. Filed 12–11–68.

Class 13 — Hardware and Plumbing and Steam-Fitting Supplies

875,918. AUTOMAG. Leonard Troy, d.b.a. The Industrial Design Co. SN 308,163. Pub. 2–18–69. Filed 9–24–68.

875,919. MULTIPLEX AND DESIGN. Multiplex Company. MULTIPLE CLASS (Classes 13, 23, and 31). SN 309,324. Pub. 6–17–69. Filed 10–10–68.

875,920. FRAME-UP. Innovation Industries, Incorporated. SN 314,795. Pub. 6–17–69. Filed 12–18–68.

Class 14 — Metals and Metal Castings and Forgings

875,921. AMORI. Lifetime Career Schools, Incorporated. MULTIPLE CLASS (Classes 14 and 29). SN 312,368. Pub. 6–17–69. Filed 11–18–68.

Class 15 — Oils and Greases

875,922. FORMULA 4 ENGINES AND DESIGN. M. B. Sutcliffe Co. SN 283,729. Pub. 6–17–69. Filed 10–30–67.

875,923. BENDIX AND DESIGN. The Bendix Corporation. SN 303,497. Pub. 6–17–69. Filed 7–24–68.

Class 16 — Protective and Decorative Coatings

875,887. (See Class 5 for this trademark.)

875,924. COLD-GALV. Welco Alloys Corporation. SN 288,394. Pub. 6–17–69. Filed 1–8–68.

875,925. RAWHIDE. Churchill Chemical Company. SN 290,470. Pub. 6–17–69. Filed 2–7–68.

875,926. AGGREBRITE. Sonneborn Building Products, Inc. SN 300,378. Pub. 6–17–69. Filed 6–13–68.

875,927. PLASTITOY. W. J. Ruscoe Company. SN 315,108. Pub. 6–17–69. Filed 12–23–68.

Class 17 — Tobacco Products

875,928. BASIC AND DESIGN. Philip Morris Incorporated. SN 295,081. Pub. 7–2–68. Filed 4–8–68.

875,929. DESIGNER PACKS. Liggett & Myers Incorporated. SN 304,478. Pub. 7–8–69. Filed 8–6–68.

875,930. DAME. Bayuk Cigars Incorporated. SN 314,871. Pub. 6–17–69. Filed 12–19–68.

875,931. EMBRA. R. J. Reynolds Tobacco Company. SN 317,925. Pub. 6–17–69. Filed 1–30–69.

875,932. OPTION. R. J. Reynolds Tobacco Company. SN 317,926. Pub. 6–17–69. Filed 1–30–69.

Class 18 — Medicines and Pharmaceutical Preparations

875,890. (See Class 6 for this trademark.)

875,933. ULTRAGEL. Lafayette Pharmacal, Inc. SN 276,143. Pub. 6–17–69. Filed 7–17–67.

875,934. REGAIN. Bristol-Myers Company. SN 284,592. Pub. 6–17–69. Filed 11–13–67.

875,935. FOCUS-NIGHT. Miles Laboratories, Inc. SN 284,934. Pub. 6–17–69. Filed 11–15–67.

875,936. TREATMENT 20. Block Drug Company, Inc. SN 297,648. Pub. 6–17–69. Filed 5–8–68.

875,937. SOUL BRANDS AND DESIGN. Soul Brands, Inc. MULTIPLE CLASS (Classes 18 and 39). SN 300,865. Pub. 6–17–69. Filed 6–20–68.

875,938. ROLITETRIN. Bristol-Myers Company. SN 303,505. Pub. 6–17–69. Filed 7–24–68.

875,939. LIFE-IRON. Abbott Laboratories. SN 306,318. Pub. 6–17–69. Filed 8–30–68.

875,940. JERI-BATH. Dermik Laboratories, Inc. SN 306,465. Pub. 6–17–69. Filed 9–3–68.

875,941. LIMBITROL. Hoffmann-La Roche Inc. SN 306,565. Pub. 6–17–69. Filed 9–4–68.

875,942. BRACE. Foremost-McKesson, Inc., d.b.a. McKesson Laboratories. SN 308,685. Pub. 6–17–69. Filed 10–2–68.

875,943. PERTUSSIN COLD-SHAKER. Chesebrough-Pond's Inc. SN 309,930. Pub. 6–17–69. Filed 10–18–68.

875,944. DREAMERIN. Carter-Wallace, Inc. SN 312,950. Pub. 6–17–69. Filed 11–25–68.

875,945. ANGINOX. Chas. Pfizer & Co., Inc. SN 315,718. Pub. 6–17–69. Filed 1–3–69.

875,946. OSTOGESIC. Osto Pharmaceutical Company. SN 315,781. Pub. 6–17–69. Filed 1–3–69.

875,947. OSTOTRAN. Osto Pharmaceutical Company. SN 315,784. Pub. 6–17–69. Filed 1–3–69.

875,948. VM AND DESIGN. Vitaminerals, Inc. SN 315,977. Pub. 6–17–69. Filed 1–7–69.

875,949. CARBO-CORT. Miles Laboratories, Inc. SN 318,320. Pub. 6–17–69. Filed 2–4–69.

Class 19 — Vehicles

875,888. (See Class 6 for this trademark.)

875,950. CERTIFIED AND DESIGN. Butler Manufacturing Company, assignee of Stainless & Steel Products Co. SN 245,448. Pub. 6–17–69. Filed 5–12–66.

875,951. MEC CO AND DESIGN. M. E. Canfield Company. MULTIPLE CLASS (Classes 19, 23, and 32). SN 290,254. Pub. 6–17–69. Filed 2–5–68.

875,952. SUMITOMO. Sumitomo Metal Industries, Ltd. SN 305,285. Pub. 6–17–69. Filed 8–16–68.

875,953. SLINGSHOT RAIL AND DESIGN. The Huffman Manufacturing Company. SN 310,897. Pub. 6–17–69. Filed 10–30–68.

875,954. PERMA/RING. Motor Wheel Corporation. SN 312,795. Pub. 6–17–69. Filed 11–21–68.

Class 21 — Electrical Apparatus, Machines, and Supplies

875,955. MISCELLANEOUS DESIGN. Sanders Associates, Inc. SN 245,518. Pub. 6–17–69. Filed 5–12–66.

875,956. M-LINE. Sage Laboratories, Inc. SN 256,772. Pub. 4–11–67. Filed 10–19–66.

875,957. B (DESIGN). D. H. Baldwin Company. MULTIPLE CLASS (Classes 21, 36, and 38). SN 285,083. Pub. 6–17–69. Filed 11–17–67.

875,958. PHANTOM. Crestworth Limited. SN 285,820. Pub. 6–17–69. Filed 11–29–67.

875,959. DE J. De Jur-Amsco Corporation. MULTIPLE CLASS (Classes 21, 23, and 36). SN 286,417. Pub. 6–17–69. Filed 12–7–67.

875,960. BALLARD. Phenix Supply Company. SN 288,339. Pub. 6–17–69. Filed 1–8–68.

875,961. ENGINE MATE. Red Diamond Battery Mfg. Co. SN 288,539. Pub. 6–17–69. Filed 1–10–68.

875,962. LIMIT-BREAK. General Electric Company. SN 290,276. Pub. 6–17–69. Filed 2–5–68.

875,963. MINILITH. Dynamics Corporation of America. SN 296,452. Pub. 6–17–69. Filed 4–24–68.

875,964. NIGHTSUN. Textron, Inc. SN 300,024. Pub. 6–17–69. Filed 6–7–68.

875,965. STICKY FINGERS. Instrument Specialties Company, Inc. SN 309,678. Pub. 6–10–69. Filed 10–15–68.

875,966. MINI-SKIRT. Allen Electric and Equipment Company. SN 309,731. Pub. 6–17–69. Filed 10–16–68.

875,967. SEA MARK. General Battery and Ceramic Corp. SN 309,859. Pub. 6–17–69. Filed 10–17–68.

875,968. SIERRA AND DESIGN. Sierra Electric, Inc. SN 309,995. Pub. 6–17–69. Filed 10–18–68.

875,969. REACTOL. Walco Electric Company. SN 310,157. Pub. 6–17–69. Filed 10–21–68.

875,970. VIDIODE. Scientific Components, Inc. SN 310,592. Pub. 6–17–69. Filed 10–25–68.

875,971. KINODE. Scientific Components, Inc. SN 310,699. Pub. 6–17–69. Filed 10–28–68.

875,972. TRIMWOOD. Lighting Products Inc. SN 310,793. Pub. 6–17–69. Filed 10–29–68.

875,973. PORT-O-REEL AND DESIGN. Industrial Electric Reels, Inc. SN 311,372. Pub. 6–17–69. Filed 11–5–68.

875,974. SDN. International Telephone and Telegraph Corporation. SN 311,375. Pub. 6–17–69. Filed 11–5–68.

Class 22 — Games, Toys, and Sporting Goods

875,975. TIKIE. The Creek Chub Bait Company. SN 274,035. Pub. 10–17–67. Filed 6–16–67.

875,976. MAXEL. Mazzucchelli Celluloide S.p.A. SN 287,566. Pub. 6–17–69. Filed 12–26–67.

875,977. LA BOUTIQUE DE SHEILA. La Boutique de Sheila, S.A.R.L. MULTIPLE CLASS (Classes 22 and 39). SN 289,701. Pub. 6–17–69. Filed 1–26–68.

875,978. PCR-BARTSCH. PCR Patent Development Corporation. SN 294,405. Pub. 6–17–69. Filed 3–28–68.

875,979. A FOUNDATION TOY FOR THE EARLY LEARNING YEARS. Mattel, Inc. SN 298,089. Pub. 6–17–69. Filed 5–14–68.

875,980. CREST. Pioneer Products, Inc. SN 303,821. Pub. 6–17–69. Filed 7–29–68.

875,981. WH. Wonder Products Company. SN 303,947. Pub. 6–17–69. Filed 7–30–68.

875,982. LUCKY DAY. Sportsman's Den, Inc., d.b.a. Kendon Mfg. Co. SN 307,141. Pub. 6–17–69. Filed 9–11–68.

875,983. BABY SWEET-TALK. Mattel, Inc. SN 308,971. Pub. 6–17–69. Filed 10–7–68.

875,984. IMAGE OF RUNNING DOG. The Greyhound Corporation. SN 311,135. Pub. 6–17–69. Filed 11–1–68.

Class 23 — Cutlery, Machinery, and Tools, and Parts Thereof

875,919. (See Class 13 for this trademark.)

875,951. (See Class 19 for this trademark.)

875,959. (See Class 21 for this trademark.)

875,985. MISCELLANEOUS DESIGN. Automatic Feed Company. SN 267,908. Pub. 6–17–69. Filed 3–30–67.

875,986. MANCHA. Westinghouse Air Brake Company. SN 277,744. Pub. 6–17–69. Filed 8–7–67.

875,987. ASKOMET SHUR-LOCK. American Shear Knife Company. SN 295,294. Pub. 6–17–69. Filed 4–10–68.

875,988. EXPECT THE BEST FROM BLACK & DECKER. The Black and Decker Manufacturing Company. SN 295,608. Pub. 6–17–69. Filed 4–15–68.

875,989. LOWELL. The Lowell Corporation. SN 299,685. Pub. 6–17–69. Filed 6–4–68.

875,990. REPRESENTATION OF A CROWN ON A CASTLE. Royal Zenith Corporation. SN 300,622. Pub. 6–17–69. Filed 6–17–68.

875,991. MKT. Koehring Company. SN 301,078. Pub. 6–17–69. Filed 6–21–68.

875,992. QI ETC. AND DESIGN. Qualheim, Inc. SN 301,447. Pub. 6–17–69. Filed 6–26–68.

875,993. ATLAS. Atlas Supply Company. SN 303,494. Pub. 6–17–69. Filed 7–24–68.

875,994. DEVRO. Johnson & Johnson. SN 305,458. Pub. 6–17–69. Filed 8–19–68.

875,995. W AND BIRD DESIGN. Walker Manufacturing Company. SN 308,551. Pub. 6–17–69. Filed 9–30–68.

875,996. FINI-SHEAR. The Fellows Gear Shaper Company. SN 309,247. Pub. 6–17–69. Filed 10–9–68.

875,997. PASTRYSHOP. Automatic Products Co. SN 309,827. Pub. 6–17–69. Filed 10–17–68.

875,998. PRODUCTION KING AND DESIGN. Fairchild Camera and Instrument Corporation. SN 310,220. Pub. 6–17–69. Filed 10–22–68.

875,999. DOWETCH. The Dow Chemical Company. SN 310,551. Pub. 6–17–69. Filed 10–25–68.

876,000. BRINOPAK. International Salt Company. SN 310,068. Pub. 6–17–69. Filed 10–28–68.

876,001. FLEX STRICTOR. Leesona Corporation. SN 310,676. Pub. 6–17–69. Filed 10–28–68.

876,002. BLOCK HEAD AND DESIGN. Professional Instruments Company. SN 310,800. Pub. 6–17–69. Filed 10–29–68.

876,003. POLYACTOR. Ferguson Industries, Inc. SN 311,248. Pub. 6-17-69. Filed 11-4-68.

876,004. ULTRA-MARK. H-C Industries, Inc. SN 311,488. Pub. 6-17-69. Filed 11-6-68.

876,005. ARBOMATIK. Logging Development Corporation. SN 311,685. Pub. 6-17-69. Filed 11-8-68.

876,006. TREE AND SPROCKET DESIGN. Logging Development Corporation. SN 311,686. Pub. 6-17-69. Filed 11-8-68.

876,007. AGRATOR. Kvernelands Fabrikk A/S. SN 312,894. Pub. 6-17-69. Filed 11-22-68.

876,008. ENCANTO. Imperial Knife Associated Companies, Inc. SN 313,504. Pub. 6-17-69. Filed 12-3-68.

876,009. OCTOPULLER. Kenneth B. Shartzer. SN 313,978. Pub. 6-17-69. Filed 12-9-68.

876,010. STARBORNE. Oneida Ltd. SN 314,432. Pub. 6-17-69. Filed 12-13-68.

876,011. PACIFIC. Oneida Ltd. SN 314,434. Pub. 6-17-69. Filed 12-13-68.

876,012. DEL MAR. Oneida Ltd. SN 314,435. Pub. 6-17-69. Filed 12-13-68.

876,013. DUCHESS. Oneida Ltd. SN 314,436. Pub. 6-17-69. Filed 12-13-68.

876,014. BARE NOTHING. Eversharp, Inc. SN 316,375. Pub. 6-17-69. Filed 1-13-69.

876,015. MODULE-VEYOR. Syracuse Supply Company. SN 318,276. Pub. 6-17-69. Filed 2-4-69.

Class 24 — Laundry Appliances and Machines

876,016. DURACREST AND DESIGN. Metro Wholesale Corporation. SN 309,065. Pub. 6-17-69. Filed 10-7-68.

Class 25 — Locks and Safes

876,017. CONTROLLED-ACCESS. Jackes-Evans Manufacturing Company. SN 303,311. Pub. 6-17-69. Filed 7-22-68.

Class 26 — Measuring and Scientific Appliances

876,018. QUIKOMP. Litton Business Systems, Inc., by change of name from Monroe International, Inc. SN 258,133. Pub. 6-17-69. Filed 11-7-66.

876,019. DIGITAL AND DESIGN. Digital Equipment Corporation. SN 266,013. Pub. 6-17-69. Filed 3-6-67.

876,020. ISCO AND DESIGN. Instrumentation Specialties Company. SN 289,682. Pub. 6-17-69. Filed 1-26-68.

876,021. OMNICONTROL. Sundstrand Corporation. SN 296,212. Pub. 6-17-69. Filed 4-22-68.

876,022. CRAFT KING AND DESIGN. Spartans Industries, Inc. SN 300,012. Pub. 6-17-69. Filed 6-7-68.

876,023. QUICK-LOK. The Fibre-Metal Products Company. SN 312,991. Pub. 6-17-69. Filed 11-25-68.

876,024. REVO-COUNT. Engler Instrument Company. SN 313,165. Pub. 6-17-69. Filed 11-27-68.

876,025. BENHIL. Kuhl Egg Equipment Corp. SN 313,511. Pub. 6-17-69. Filed 12-3-68.

876,026. HYDRA-CAT. Gray Company, Inc. SN 314,709. Pub. 6-17-69. Filed 12-17-68.

876,027. ARGOMATIC. Klenzle Apparate GmbH. SN 314,891. Pub. 6-17-69. Filed 12-19-68.

876,028. SWORD. Eugene Dietzgen Co. SN 315,064. Pub. 6-17-69. Filed 12-23-68.

876,029. BALLISTRAK. Flow Technology, Inc. SN 319,537. Pub. 6-17-69. Filed 2-19-69.

Class 28 — Jewelry and Precious-Metal Ware

876,030. SNAP-O-MAT. Lenox Jewelry Products Corp. SN 303,323. Pub. 6-17-69. Filed 7-22-68.

876,031. VT. Veribest Jewelry Co., Inc. SN 319,525. Pub. 6-17-69. Filed 3-13-69.

Class 29 — Brooms, Brushes, and Dusters

875,921. (See Class 14 for this trademark.)

876,032. JAY BEE. American Associated Companies, Inc. SN 309,535. Pub. 6-17-69. Filed 10-14-68.

Class 30 — Crockery, Earthenware, and Porcelain

876,033. JET SET. Interpace Corporation, assignee of Shenango Ceramics, Inc. SN 292,505. Pub. 6-17-69. Filed 3-5-68.

876,034. KENVASE AND DESIGN. Kenneth L. McKinnon. SN 314,397. Pub. 6-17-69. Filed 12-13-68.

Class 31 — Filters and Refrigerators

875,919. (See Class 13 for this trademark.)

876,035. SELF-O-CLEAN. Har-Van Corporation. SN 286,930. Pub. 6-17-69. Filed 12-14-67.

876,036. HV AND DESIGN. Har-Van Corporation. SN 286,931. Pub. 6-17-69. Filed 12-14-67.

876,037. WIZARD CITATION. Western Auto Supply Company. SN 289,051. Pub. 6-17-69. Filed 1-17-68.

876,038. FLUO-WAR. The Virtis Company, Inc. SN 293,185. Pub. 6-17-69. Filed 3-13-68.

876,039. ICELANDER Liquid Carbonic Corporation, by change of name and assignments from Liquid Carbonic Corporation. SN 294,632. Pub. 6-17-69. Filed 4-1-68.

876,040. FILT-R-BELT. Ametek, Inc. SN 304,853. Pub. 6-17-69. Filed 8-12-68.

876,041. TWIST-O. Vistron Corporation. SN 314,282. Pub. 6-17-69. Filed 12-11-68.

Class 32 — Furniture and Upholstery

875,951. (See Class 19 for this trademark.)

876,042. MED-I-FOAM. Truman Boyles, Inc. SN 275,883. Pub. 6-17-69. Filed 7-12-67.

876,043. MAPLE-SHIELD. Sprague & Carleton, Inc. SN 288,135. Pub. 6-17-69. Filed 1-4-68.

876,044. ULTRA-CARE. Zimmer Manufacturing Company. SN 304,424. Pub. 6-17-69. Filed 8-5-68.

876,045. PRESIDENTIAL. American Optical Corporation. SN 304,750. Pub. 6-17-69. Filed 8-9-68.

Class 33 — Glassware

876,046. VIGILPANE. Libbey-Owens-Ford Company, by change of name from Libbey-Owens-Ford Glass Company. SN 281,991. Pub. 6-17-69. Filed 10-6-67.

Class 34 — Heating, Lighting, and Ventilating Apparatus

876,047. TURBOTORCH AND DESIGN. Wingaersheek Turbine Company. SN 295,694. Pub. 6-17-69. Filed 4-15-68.

876,048. EDCO. Standard Oil Company. SN 296,261. Pub. 6-17-69. Filed 4-23-68.

876,049. KALAHARI. Hunting World, Incorporated. SN 311,490. Pub. 6-17-69. Filed 11-6-68.

Class 35 — Belting, Hose, Machinery Packing, and Nonmetallic Tires

876,050. MISCELLANEOUS DESIGN. Pyramid Incorporated. SN 308,033. Pub. 6-17-69. Filed 9-23-68.

Class 36 — Musical Instruments and Supplies

875,957. (See Class 21 for this trademark.)

875,959. (See Class 21 for this trademark.)

876,051. PORTA CELLO. St. Louis Music Supply Co. Inc. SN 293,402. Pub. 6-17-69. Filed 3-15-68.

876,052. TRI-STAR ETC. AND DESIGN. Tri-Star Record Company. SN 304,264. Pub. 6-17-69. Filed 8-2-68.

Class 37 — Paper and Stationery

876,053. SIGMA AND DESIGN. Sigma Sangyo Kabushiki Kaisha. SN 251,075. Pub. 9-19-67. Filed 7-26-66.

876,054. EBERHARD FABER-BOARD. Eberhard Faber Inc. SN 283,789. Pub. 6-17-69. Filed 10-31-67.

876,055. TUFFAK. Rohm and Haas Company. SN 293,052. Pub. 6-17-69. Filed 3-12-68.

876,056. KRAFLENE. Max Katz Bag Co., Inc. SN 293,148. Pub. 6-17-69. Filed 3-13-68.

876,057. VARIACOLOR. Sperry Rand Corporation. SN 295,061. Pub. 6-17-69. Filed 4-5-68.

876,058. DA-TA-DAY. National Blank Book Company, Inc. SN 296,184. Pub. 6-17-69. Filed 4-22-68.

876,059. KLEEN+. Kimberly-Clark Corporation. SN 296,833. Pub. 6-17-69. Filed 4-29-68.

876,060. GOLDEN T. T.G. & Y. Stores Company. SN 299,797. Pub. 6-17-69. Filed 6-5-68.

876,061. DAN-BAR. Daniels Manufacturing Company. SN 300,910. Pub. 6-17-69. Filed 6-20-68.

876,062. FOLD-FILER. Carl G. Matson, d.b.a. Research and Development. SN 305,662. Pub. 6-17-69. Filed 8-21-68.

876,063. FLEX-PEEL. Standard Packaging Corporation. SN 306,280. Pub. 6-17-69. Filed 8-29-68.

876,064. MOORE METERLOPE. Moore Business Forms, Inc. SN 312,599. Pub. 5-13-69. Filed 11-19-68.

876,065. DELCO. Hasbro Industries, Inc. SN 317,041. Pub. 6-17-69. Filed 1-21-69.

876,066. PRESS ROOM. Hasbro Industries, Inc. SN 317,047. Pub. 6-17-69. Filed 1-21-69.

Class 38 — Prints and Publications

875,957. (See Class 21 for this trademark.)

876,067. AIR FORCE TIMES. Army Times Publishing Company. SN 277,423. Pub. 6-17-69. Filed 8-3-67.

876,068. AMERICAN STOCK EXCHANGE. American Stock Exchange. MULTIPLE CLASS (Classes 38, 100, and 102). SN 290,567. Pub. 6-17-69. Filed 2-8-68.

876,069. AM BEST AND DESIGN. Alfred M. Best Company, Inc. SN 293,794. Pub. 6-17-69. Filed 3-21-68.

876,070. NOW. Whittaker Publications, Inc. SN 294,337. Pub. 12-10-68. Filed 3-27-68.

876,071. PPC CHEMICAL PROCESSING AND DESIGN. Putman Publishing Company. SN 309,895. Pub. 6-17-69. Filed 10-17-68.

876,072. GRIPWRIGHT. Wright of Thomasville, Inc. SN 311,967. Pub. 6-17-69. Filed 11-12-68.

876,073. THE COLLEGE GAME. Sherrill-Gibbes Corporation. SN 317,471. Pub. 6-17-69. Filed 1-24-69.

876,074. MIX'N MATCH. Pointer System, Inc. SN 319,247. Pub. 6-17-69. Filed 2-17-69.

876,075. MASTERS GALLERY. Looart Press, Inc. SN 319,546. Pub. 6-17-69. Filed 2-19-69.

Class 39 — Clothing

875,937. (See Class 18 for this trademark.)

875,977. (See Class 22 for this trademark.)

876,076. POLY-PRIM. Harold E. Canaga, Jr., d.b.a. Poly-Prim Plastics Company. SN 272,161. Pub. 8-20-68. Filed 5-23-67.

876,077. SIDOSTE AND DESIGN. T:mi Sidoste, om Lauri Molsa ja Kumpp. SN 275,565. Pub. 6-17-69. Filed 7-7-67.

876,078. THROW A WEAR. Angelica Corporation, by change of name from Angelica Uniform Company. SN 282,525. Pub. 6-17-69. Filed 10-16-67.

876,079. LEONARDO STRASSI. Colfax Industries. SN 282,984. Pub. 6-25-68. Filed 10-20-67.

876,080. MAGGIE COUNTRY CLOTHES AND DESIGN. Maggie, Inc. SN 288,833. Pub. 6-17-69. Filed 1-15-68.

876,081. CAVALIER. Uniroyal, Inc. SN 292,437. Pub. 6-17-69. Filed 3-4-68.

876,082. CAPELLIN PROCESS. Capel Coat Corp. SN 293,107. Pub. 6-17-69. Filed 3-13-68.

876,083. WIN BILT AND DESIGN. Apparel Corporation of America. SN 293,788. Pub. 6-17-69. Filed 3-21-68.

876,084. SNO-GOOSE. Thermorama, Inc. SN 294,543. Pub. 6-17-69. Filed 3-29-68.

876,085. PANCALDI & B. Pancaldi & B. SN 294,652. Pub. 6-17-69. Filed 4-1-68.

876,086. CHEM-SAFE. Worksafe, Inc. SN 296,603. Pub. 6-17-69. Filed 4-25-68.

876,087. DEERFOOT. Jacob Finkelstein & Sons Inc. SN 300,077. Pub. 6-17-69. Filed 6-10-68.

876,088. PENNANT FASHIONS. Montebob Manufacturing Co., Inc. SN 304,372. Pub. 6-17-69. Filed 8-5-68.

876,089. MARCO SARI. Norene Barnes, d.b.a. Marco Sari. SN 306,215. Pub. 6-17-69. Filed 8-29-68.

876,090. KAYE FARMER. Marlene Industries Corp. SN 307,658. Pub. 6-17-69. Filed 9-18-68.

876,091. MR. CRIS. Block-Southland Sportswear, Inc. SN 309,832. Pub. 6-17-69. Filed 10-17-68.

876,092. LAWRENCE RICARDO. Palais Royal of Houston, Inc. SN 313,718. Pub. 6-17-69. Filed 12-5-68.

876,093. BARNSVILLE. Puritan Fashions Corporation. SN 313,837. Pub. 6-17-69. Filed 12-6-68.

876,094. SOFTAT. Aztec Industries, Inc. SN 313,889. Pub. 6-17-69. Filed 12-9-68.

876,095. DARO-GLO. H. Daroff & Sons, Inc. SN 313,913. Pub. 6-17-69. Filed 12-9-68.

876,096. HALL FLEX. Robert Hall Clothes, Inc., d.b.a. Robert Hall Clothes. SN 314,362. Pub. 6-17-69. Filed 12-12-68.

876,097. LINKS AND LATER. The Kandahar Sportswear Co., Inc. SN 315,157. Pub. 6-17-69. Filed 12-24-68.

876,098. COMFORT-BLEND. Hanes Corporation. SN 317,037. Pub. 6-17-69. Filed 1-21-69.

876,099. SPAR. Cluett, Peabody & Co., Inc. SN 317,206. Pub. 6-17-69. Filed 1-22-69.

876,100. WEAR IN THE WORLD. Genesco Inc. SN 318,708. Pub. 6-17-69. Filed 2-10-69.

876,101. INSTANT DRESSING. Genesco Inc. SN 318,711. Pub. 6-17-69. Filed 2-10-69.

876,102. CHARTA. Genesco Inc. SN 318,712. Pub. 6-17-69. Filed 2-10-69.

Class 40 — Fancy Goods, Furnishings, and Notions

876,103. HEARTSAFE. Heartsafe. SN 285,547. Pub. 6-17-69. Filed 11-24-67.

876,104. CURL-ETTE. Tovar Tresses, Inc. SN 287,684. Pub. 12-24-68. Filed 12-27-67.

876,105. CAT LASHES. Helene Curtis Industries, Inc. SN 293,273. Pub. 6-17-69. Filed 3-14-68.

876,106. CLOVER AND DESIGN. Clover Manufacturing Co., Ltd. SN 298,502. Pub. 6-17-69. Filed 5-20-68.

876,107. CURLY GIRLY. Heavenly Creations, Inc. SN 307,612. Pub. 6-17-69. Filed 9-18-68.

Class 41 — Canes, Parasols, and Umbrellas

876,108. KNIRPS FLAT AND DESIGN. Telesco Brophey Limited. SN 314,738. Pub. 6-17-69. Filed 12-17-68.

Class 42 — Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

876,109. DWOSKIN. Dwoskin, Incorporated. SN 273,615. Pub. 6-17-69. Filed 6-12-67.

876,110. WONDERLON. Brentford Nylons Limited. SN 313,555. Pub. 6-17-69. Filed 12-4-68.

876,111. WINDOW WONDERLAND. Broadway-Hale Stores, Inc. SN 316,077. Pub. 6-17-69. Filed 1-8-69.

876,112. ALLAROUND. Mohasco Industries, Inc. SN 316,229. Pub. 6-17-69. Filed 1-9-69.

Class 43 — Thread and Yarn

876,113. TELRON. Robertson Carpet Corp. SN 292,714. Pub. 6-17-69. Filed 3-7-68.

876,114. FINELON. Lion Brand Yarn Company. SN 313,947. Pub. 6-7-69. Filed 12-9-68.

876,115. INDIAN HEAD AND TEPEE DESIGN. Indian Head Inc. SN 315,483. Pub. 6-17-69. Filed 12-31-68.

876,116. SPUNCOSE. Standard-Coosa-Thatcher Company. SN 315,960. Pub. 6-17-69. Filed 1-6-69.

Class 44 — Dental, Medical, and Surgical Appliances

876,117. ROBERTS AND DESIGN. Clive E. Roberts, d.b.a. Roberts Orthodontic Laboratory. SN 291,639. Pub. 6-17-69. Filed 2-21-68.

876,118. PAINT 'N' POUR. Rapid Injection Systems Corp. SN 292,499. Pub. 6-17-69. Filed 3-5-68.

876,119. GEM. The H. C. Cook Company. SN 302,601. Pub. 6-17-69. Filed 7-12-68.

876,120. FITSRITE. Eagle Druggists Supply Co., Inc. SN 305,421. Pub. 6-17-69. Filed 8-19-68.

876,121. DUO-L-A-S-T-I-C. The Texal Company, Inc. SN 310,711. Pub. 6-17-69. Filed 10-28-68.

876,122. LIFE LOCKER. Gene E. Trowbridge, d.b.a. Trowbridge Enterprises. SN 315,610. Pub. 6-17-69. Filed 1-2-69.

876,123. ANEST-EEZE. Lidocaine Dental Mfg. Co., Inc. SN 317,667. Pub. 6-17-69. Filed 1-21-69.

876,124. RCM. Ruthal Industries, Ltd. SN 318,139. Pub. 6-17-69. Filed 2-3-69.

876,125. FORTIFOR. Parke, Davis & Company. SN 318,612. Pub. 6-17-69. Filed 2-7-69.

Class 45 — Soft Drinks and Carbonated Waters

876,126. MARQUETTE CLUB. Gilbert F. Baumeister, d.b.a. Kewaunee Orange Crush Bottling Co. and Kewaunee Bottling Works. SN 299,319. Pub. 6-17-69. Filed 5-29-68.

876,127. PI-NELLA. National Nugrape Company. SN 300,957. Pub. 6-17-69. Filed 6-20-68.

876,128. IRISH ORANGE. Edlo Enterprises, Inc. SN 315,180. Pub. 6-17-69. Filed 12-26-68.

Class 46 — Foods and Ingredients of Foods

876,129. WHEEL. Cook Chocolate Company. SN 146,026. Pub. 6-17-69. Filed 6-4-62.

876,130. DAD'S. Dad's Root Beer Company. SN 250,741. Pub. 6-17-69. Filed 7-21-66.

876,131. GOLDEN TREE AND DESIGN. Savyon Holding SA. SN 264,975. Pub. 6-17-69. Filed 2-17-67.

876,132. COBETTES. North Pacific Canners & Packers, Inc. SN 282,916. Pub. 6-17-69. Filed 10-19-67.

876,133. BILOXI. Biloxi Canning & Packing Co., Inc. SN 285,108. Pub. 6-17-69. Filed 11-17-67.

876,134. TX-10. International Salt Company. SN 286,683. Pub. 6-17-69. Filed 12-11-67.

876,135. TENDERBEST. Tenderbest Corporation. SN 287,770. Pub. 6-17-69. Filed 12-28-67.

876,136. MITY-SWEET. Valley View Packing Co., Inc. SN 288,898. Pub. 6-17-69. Filed 1-15-68.

876,137. LIGHT 'N FANCY. Pet Incorporated. SN 291,632. Pub. 6-17-69. Filed 2-21-68.

876,138. SUPER SIX CHOCK-A-BLOCK. Scott Young & Company Limited. SN 292,425. Pub. 6-17-69. Filed 3-4-68.

876,139. FANCY FIXIN'S. Usen Products Company. SN 292,642. Pub. 6-17-69. Filed 3-6-68.

876,140. PZAZZ! Sweetheart Plastics, Inc. SN 292,825. Pub. 6-17-69. Filed 3-8-68.

876,141. TUNA & MORE. Usen Products Company. SN 293,607. Pub. 6-17-69. Filed 3-18-68.

876,142. EAT-MORE. Walter M. Lowney Company Limited. SN 294,061. Pub. 6-17-69. Filed 3-25-68.

876,143. MPC AND DESIGN. Alpine Geophysical Associates, Inc. SN 294,567. Pub. 6-17-69. Filed 4-1-68.

876,144. CONTADINA. Carnation Company. SN 297,381. Pub. 6-17-69. Filed 5-6-68.

876,145. BOB EVANS FARMS AND DESIGN. Bob Evans Farms, Inc., assignee of Bob Evans Farms, Michigan, Inc. SN 300,179. Pub. 6-17-69. Filed 6-11-68.

876,146. ROMISO. Romano and Son, Inc. SN 300,372. Pub. 6-17-69. Filed 6-13-68.

876,147. LIQUI-LASS. Feed Flavors Incorporated. SN 301,055. Pub. 6-17-69. Filed 6-21-68.

876,148. RICA. Sunland Biscuit Company, Inc. SN 301,974. Pub. 6-17-69. Filed 7-3-68.

876,149. BRISK 'N BOUNCY AND DESIGN. Daitch Crystal Dairies, Inc. SN 303,146. Pub. 6-17-69. Filed 7-19-68.

876,150. CROSSE & BLACKWELL. The Nestle Company, Inc. SN 304,490. Pub. 6-17-69. Filed 8-6-68.

876,151. COME 'N' GET IT! Carnation Company. SN 305,397. Pub. 6-17-69. Filed 8-19-68.

876,152. VEG-CREST. The P. J. Ritter Company. SN 306,402. Pub. 6-17-69. Filed 8-30-68.

876,153. PIEDMONT PATTY. Safeway Stores, Incorporated. SN 310,982. Pub. 6-17-69. Filed 10-31-68.

876,154. VILLAGE FAIR. Benson's, Inc. SN 311,229. Pub. 6-17-69. Filed 11-4-68.

876,155. SHOVELS. National Biscuit Company. SN 311,392. Pub. 6-17-69. Filed 11-5-68.

876,156. APPLAUSE. A. H. Robins Company, Incorporated. SN 311,409. Pub. 6-17-69. Filed 11-5-68.

876,157. HORSE ADE. Talbot-Carlson, Inc. SN 311,417. Pub. 6-17-69. Filed 11-5-68.

876,158. QUEENS AND DESIGN. Ore-Ida Foods, Inc. SN 312,216. Pub. 6-17-69. Filed 11-14-68.

876,159. DEL TROPIC. Ensaladas de Frutas de Mexico, S.A. SN 312,577. Pub. 6-17-69. Filed 11-19-68.

876,160. ISLAND INN AND TREE DESIGN. United California Bank. SN 313,069. Pub. 6-17-69. Filed 11-26-68.

876,161. H AND DESIGN. Helms Bakeries. SN 313,101. Pub. 6-17-69. Filed 11-26-68.

876,162. OLD ELM AND DESIGN. Reinders Brothers, Inc. SN 313,212. Pub. 6-17-69. Filed 11-27-68.

876,163. RT AND DESIGN. American Mushroom Corporation. SN 313,251. Pub. 6-17-69. Filed 11-29-68.

876,164. TERRIFIC. Texize Chemicals, Inc. SN 313,355. Pub. 6-17-69. Filed 11-29-68.

876,165. MAIN STREET ETC. AND DESIGN. Morton Foods, Inc. SN 313,381. Pub. 6-17-69. Filed 12-2-68.

876,166. T-BAR. Sports Candies, Inc. SN 313,991. Pub. 6-17-69. Filed 12-9-68.

876,167. PEYTON PLATE. Peyton Plate Inc. SN 314,109. Pub. 6-17-69. Filed 12-10-68.

876,168. TOMAHAWK. Reese Finer Foods, Inc. SN 314,458. Pub. 6-17-69. Filed 12-13-68.

876,169. MAGIC GOLD. The Procter & Gamble Company. SN 318,883. Pub. 6-17-69. Filed 2-11-69.

Class 47 — Wines

876,170. DESIGN OF MAN BEARING GRAPES ETC. Societe Commerciale des Bourgognes de Marque F. Chauvenet ou par Abreviation "S.C.B.M.," d.b.a. F. Chauvenet. SN 283,040. Pub. 6-17-69. Filed 10-20-67.

876,171. FIOR GINEPRO. Mediterranean Importing Co., Inc., d.b.a. Mediterranean Wines. SN 298,739. Pub. 6-17-69. Filed 5-21-68.

876,172. NOCINO. Mediterranean Importing Co., Inc., d.b.a. Mediterranean Wines. SN 298,741. Pub. 6-17-69. Filed 5-21-68.

876,173. CONBROUGH'S. Contopoulos Brothers, Ltd. SN 305,926. Pub. 6-17-69. Filed 8-26-68.

Class 48 — Malt Beverages and Liquors

876,174. INDIA. Cerveceria India Inc. SN 283,223. Pub. 6-17-69. Filed 10-24-67.

Class 50 — Merchandise Not Otherwise Classified

876,175. DEE BEE CO. Dan Brechner & Company, Inc. SN 285,110. Pub. 6-17-69. Filed 11-17-67.

876,176. ALLEN. The Allen System Inc. SN 310,623. Pub. 6-17-69. Filed 10-28-68.

876,177. KWIK-KAPPS. Kwik Kover Manufacturing Co. SN 314,351. Pub. 6-17-69. Filed 12-12-68.

Class 51 — Cosmetics and Toilet Preparations

876,178. FAIR FAWN. Clairol Incorporated. SN 200,161. Pub. 9-6-66. Filed 8-19-64.

876,179. SENTIMENTAL. Avon Products, Inc. SN 294,448. Pub. 6-17-69. Filed 3-29-68.

876,180. SCENTIMENTS. Avon Products, Inc. SN 294,451. Pub. 6-17-69. Filed 3-29-68.

876,181. MOPPET. Avon Products, Inc. MULTIPLE CLASS (Classes 51 and 52). SN 301,571. Pub. 12-31-68. Filed 6-28-68.

876,182. HOUSE OF SUNTAN AND DESIGN. Pan American Suntan Oil Corp. SN 303,870. Pub. 6-17-69. Filed 7-30-68.

876,183. FEMINIQUE. Intec Laboratories, assignee of Organon Inc. SN 305,099. Pub. 2-18-69. Filed 8-14-68.

876,184. BRECK LUSTRE. John H. Breck, Inc. SN 305,528. Pub. 6-17-69. Filed 8-20-68.

876,185. LANETTA. Joseph D. Farini, d.b.a. Julien Cosmetics. SN 305,649. Pub. 6-17-69. Filed 8-21-68.

876,186. FORMAT. The Wella Corporation. SN 306,193. Pub. 6-17-69. Filed 8-28-68.

876,187. VIN ROUGE. Consumer Products Inc. SN 306,348. Pub. 6-17-69. Filed 8-30-68.

876,188. IMMUNITY. Diplomat Products, Inc. SN 306,430. Pub. 2-25-69. Filed 9-3-68.

876,189. BODI-ENDURE. Summit Laboratories, Inc. SN 308,439. Pub. 6-17-69. Filed 9-30-68.

876,190. RELAX. La Maur, Inc., d.b.a. The House of Style. SN 308,704. Pub. 6-17-69. Filed 10-2-68.

876,191. LIQUI-FRESHNER. Lanvin-Charles of the Ritz, Inc. SN 309,330. Pub. 6-17-69. Filed 10-10-68.

876,192. LADY CORA. De Witt International Corporation, by merger and change of name from E. C. De Witt & Co., Inc. SN 312,543. Pub. 4-22-69. Filed 11-19-68.

876,193. AERODERM. Parke, Davis & Company. SN 313,873. Pub. 6-17-69. Filed 12-9-68.

876,194. A MAN'S WORLD. Avon Products, Inc. SN 313,885. Pub. 6-17-69. Filed 12-9-68.

876,195. RESPLENDA ESTRA-LO. Rexall Drug and Chemical Company, d.b.a. Vanda Cosmetics Co. SN 316,132. Pub. 6-17-69. Filed 1-8-69.

876,196. VOOM-VOOM. Rexall Drug and Chemical Company, d.b.a. Vanda BC Co. SN 316,133. Pub. 6-17-69. Filed 1-8-69.

Class 52 — Detergents and Soaps

875,890. (See Class 6 for this trademark.)

876,181. (See Class 51 for this trademark.)

876,197. SHAFOAM. Masury-Columbia Company. SN 276,327. Pub. 6-17-69. Filed 7-19-67.

876,198. RSA AUTOCARE. Ralph Shrader, Inc. SN 280,469. Pub. 6-17-69. Filed 9-15-67.

876,199. DRYFOS. Pennsalt Chemicals Corporation. SN 300,001. Pub. 6-17-69. Filed 6-7-68.

876,200. STERI-CLAVE. Medi-Chem, Incorporated. SN 305,846. Pub. 6-17-69. Filed 8-23-68.

876,201. POW-R-TERGENT. Foremost-McKesson, Inc., d.b.a. Gentec Hospital Supply Company. SN 306,235. Pub. 6-17-69. Filed 8-29-68.

876,202. BIG POWER. Imoco-Gateway Corporation. SN 308,622. Pub. 6-17-69. Filed 10-1-68.

876,203. THERMAKEM. Kem Manufacturing Corporation. SN 312,304. Pub. 6-17-69. Filed 11-15-68.

876,204. APPROVE. Calgon Corporation. SN 312,560. Pub. Pub. 6-17-69. Filed 11-19-68.

876,205. TOUGH STUFF. American Home Products Corporation. SN 317,177. Pub. 6–17–69. Filed 1–22–69.

876,206. TUFF STUFF. American Home Products Corporation. SN 317,178. Pub. 6–17–69. Filed 1–22–69.

876,207. ARCTIC POWER. Colgate-Palmolive Company. SN 319,534. Pub. 6–17–69. Filed 2–19–69.

Service Marks

Class 100 — Miscellaneous

876,068. (See Class 38 for this trademark.)

876,208. CAPT'N LOUIE'S GALLEY. Dine-Out Foods, Inc. SN 304,212. Pub. 6–17–69. Filed 8–2–68.

876,209. "GET THE MOST OUT OF THE LEASED." Medilease, Inc. SN 305,746. Pub. 6–17–69. Filed 8–22–68.

876,210. GF AND DESIGN. Gingiss Formalwear, Inc. SN 308,845. Pub. 6–17–69. Filed 10–4–68.

876,211. HORTICARE. John E. Girresch. SN 309,450. Pub. 6–17–69. Filed 10–11–68.

876,212. CLOWN DESIGN. Jolly Jack's, Inc. SN 309,767. Pub. 6–17–69. Filed Oct. 16, 1968.

876,213. PREVENTI-MED. Preventi-Med Consultants, Inc. SN 314,161. Pub. 6–17–69. Filed 12–11–68.

876,214. THE TRADERS. Victor J. Bergeron, d.b.a. Trader Vic's. SN 315,879. Pub. 6–17–69. Filed 1–6–69.

Class 101 — Advertising and Business

876,215. PLAY TWIN-DOUBLE. Martin Levine, d.b.a. Twin Double Co. SN 186,731. Pub. 6–14–66. Filed 2–14–64.

876,216. CRC CERTIFIED REMODELING CONTRACTOR AND DESIGN. National Gypsum Company. SN 255,223. Pub. 6–17–69. Filed 9–27–66.

876,217. DESIGN OF DELIVERY BOY. Daniel Liberman, d.b.a. Zip Printing. SN 255,941. Pub. 6–17–69. Filed 10–6–66.

876,218. SPELL AMERICANA. Glendinning Companies, Inc. SN 265,821. Pub. 6–17–69. Filed 3–2–67.

876,219. S AND DESIGN. Systemedics, Inc. SN 288,383. Pub. 6–17–69. Filed 1–8–68.

876,220. COMNET. Computer Network Corporation. SN 289,279. Pub. 6–17–69. Filed 1–22–68.

876,221. POSTAL INSTANT PRESS. Postal Press. SN 290,522. Pub. 6–17–69. Filed 2–7–68.

876,222. POSTAL PRESS AND DESIGN. Postal Press. SN 290,524. Pub. 6–17–69. Filed 2–7–68.

876,223. FAXCORE. Harry and David, assignee of Dial-A-Gift Inc. SN 290,832. Pub. 6–17–69. Filed 2–12–68.

876,224. I WORKED ALL THESE HOURS FOR ONLY THIS MUCH PAY AND DESIGN. Reddy Kilowatt, Inc. SN 294,409. Pub. 6–17–69. Filed 3–28–68.

876,225. LATINO AND DESIGN. ABC International Television, Inc. SN 300,221. Pub. 6–17–69. Filed 6–12–68.

876,226. BELK AND DESIGN. Belk Stores Services, Inc. SN 302,798. Pub. 6–17–69. Filed 7–9–68.

876,227. POST-SCRIPT. Bernard E. Koff, d.b.a. Market Measures. SN 313,175. Pub. 6–17–69. Filed 11–27–68.

876,228. AUTO PACK AND DESIGN. Consumer Advertising Systems, Inc. SN 314,136. Pub. 6–17–69. Filed 12–11–68.

Class 102 — Insurance and Financial

876,068. (See Class 38 for this trademark.)

876,229. RAINBOW OF SAVINGS. First Federal Savings and Loan Association. SN 276,424. Pub. 6–17–69. Filed 7–20–67.

876,230. CBT AND DESIGN. Continental Bank & Trust Co. SN 285,651. Pub. 6–17–69. Filed 11–27–67.

876,231. TEENIE-CHARGES AND DESIGN. Delaware Valley Consumer Discount Company. SN 302,924. Pub. 6–17–69. Filed 7–17–68.

876,232. MERIDAN. Founders Mutual Depositor Corporation. SN 305,436. Pub. 6–17–69. Filed 8–19–68.

876,233. GRYPHON. Founders Mutual Depositor Corporation. SN 305,437. Pub. 6–17–69. Filed 8–19–68.

876,234. ECONOMAX. Georgia International Life Insurance Company. SN 309,675. Pub. 6–17–69. Filed 10–15–68.

876,235. RAILEASE. Transfinancial Corporation. SN 314,300. Pub. 6–17–69. Filed 12–12–68.

Class 103 — Construction and Repair

876,236. STEAMATIC. Steamatic, Inc. SN 293,647. Pub. 6–17–69. Filed 3–19–68.

876,237. LION AND HEART DESIGN. Leonhardt Company, Inc. SN 309,933. Pub. 6–17–69. Filed 10–18–68.

876,238. LEONHARDT. Leonhardt Company, Inc. SN 309,934. Pub. 6–17–69. Filed 10–18–68.

Class 104 — Communication

876,239. THE TRANSCEIVER CORP. AND DESIGN. The Transceiver Corporation. SN 297,617. Pub. 6–17–69. Filed 5–7–68.

Class 105 — Transportation and Storage

876,240. AIRLEASE. United States Leasing Corporation. SN 295,390. Pub. 6–17–69. Filed 4–10–68.

876,241. MW AND DESIGN. Transport Pool, Inc. SN 295,569. Pub. 4–1–69. Filed 4–12–68.

876,242. AE AND DESIGN. North American Van Lines, Inc. (Delaware corporation), assignee of North American Van Lines, Inc. (Indiana corporation). SN 299,576. Pub. 6–17–69. Filed 6–3–68.

Class 106 — Material Treatment

876,243. FOAM-HIDE. Sterling Alderfer Company. SN 307,073. Pub. 6–17–69. Filed 9–11–68.

Class 107 — Education and Entertainment

876,244. TOTAL. Abner B. Green Associates. SN 313,062. Pub. 6–17–69. Filed 11–26–68.

Collective Membership Marks

Class 200

876,245. AMT. American Medical Technologists. SN 298,304. Pub. 6–17–69. Filed 5–16–68.

876,246. BADGE DESIGN. Delta Omicron International Music Fraternity. SN 300,263. Pub. 6–17–69. Filed 6–12–68.

876,247. AMERICAN SIMMENTAL ASSOCIATION. American Simmental Association, Inc. SN 314,129. Pub. 6–17–69. Filed 12–11–68.

SUPPLEMENTAL REGISTER

These registrations are not subject to opposition.

Class 2 — Receptacles

876,248. Tote-A-Way Corp., Brooklyn, N.Y. SN 282,638. Filed P.R. 10–16–67; Am. S.R. 5–28–69.

TOTE-A-LOAD

For Re-Usable Plastic Carrier Bags (Int. Cl. 20).
First use Sept. 22, 1967.

Class 12 — Construction Materials

876,249. The Alumiline Corporation, Pawtucket, R.I. SN 284,563. Filed P.R. 11–13–67; Am. S.R. 4–1–69.

GOLD TONE

For Finish of the Anodized Type Sold or Incorporated as a Component Part of an Architectural Product Such as Store Front and Entrance Moldings, Doors, and Door Frames, Curtain Walls, and Sliding Doors (Int. Cl. 19).
First use on or about Sept. 28, 1967.

Class 14 — Metals and Metal Castings and Forgings

876,250. National Steel Corporation, Pittsburgh, Pa. SN 273,520. Filed P.R. 6–9–67; Am. S.R. 4–4–69.

SUPER STRONG

For Galvanized Full-Hard Steel Sheets and Strip (Int. Cl. 6).
First use Mar. 1, 1964.

Class 17 — Tobacco Products

876,251. Reemtsma Cigarettenfabriken G.m.b.H., Hamburg, Germany. SN 310,919. Filed 10–30–68.



REEMTSMA
ERSTE SORTE

The term "Erste Sorte" is translated as meaning "first quality." The drawing is lined for the colors pink and gold. Owner of German Reg. No. 840,471, dated Dec. 21, 1967; and U.S. Reg. Nos. 657,366 and 667,630.
For Filter Cigarettes (Int. Cl. 34).

Class 18 — Medicines and Pharmaceutical Preparations

876,252. Fisons Pharmaceuticals Limited, Loughborough, England. SN 286,660. Filed P.R. 12–11–67; Am. S.R. 4–18–69.

SPINCAPS

Owner of British Reg. No. 899,736, dated Sept. 24, 1966.
For Pharmaceutical Preparation in Capsule Form Used in an Inhalator (Int. Cl. 5).

876,253. Warner-Lambert Research Institute, Morris Plains, N.J. SN 291,013. Filed P.R. 2–14–68; Am. S.R. 5–15–69.

EUTHROID

For Thyroid Preparation (Int. Cl. 5).
First use Jan. 23, 1968.

Class 19 — Vehicles

876,254. The Huffman Manufacturing Company, Miamisburg, Ohio. SN 286,146. Filed P.R. 12–4–67; Am. S.R. 4–7–69.

THE WHEEL

For Bicycles With a Steering Wheel, and Parts Therefor (Int. Cl. 12).
First use July 25, 1967.

876,255. The Johnson Corporation, Monroeville, Ind. SN 300,939. Filed P.R. 6–20–68; Am. S.R. 4–3–69.

JOHNSON

For Campers for Pick-Up Trucks (Int. Cl. 12).
First use Jan. 31, 1967.

Class 21 — Electrical Apparatus, Machines, and Supplies

876,256. American Biltrite Rubber Co., Inc., Cambridge, Mass. SN 301,321. Filed P.R. 6–25–68; Am. S.R. 6–2–69.

STRAP 'N WRAP

For Electrical Insulating Tape (Int. Cl. 17).
First use Mar. 6, 1968.

Class 22 — Games, Toys, and Sporting Goods

876,257. Jacqueline Hirsh, Bethesda, Md. SN 245,196. Filed P.R. 5–9–66; Am. S.R. 5–23–69.

LINGO-BINGO

For Amusement and Educational Sets Comprising Game Boards and Pieces for Teaching Children Foreign Languages by Both Aural and Visual Methods (Int. Cl. 28).
First use May 2, 1966.

876,258. Milton Bradley Company, Springfield, Mass. SN 267,798. Filed P.R. 3-29-67; Am. S.R. 3-10-69.

THE MODS

For Paper Dolls and Puzzles (Int. Cl. 28).
First use Nov. 1, 1966.

876,259. Gamescience Corporation, Goshen, N.J. SN 291,860. Filed P.R. 2-26-68; Am. S.R. 3-5-69.

THE BATTLE OF BRITAIN

For Equipment Sold as a Unit for Playing an Air Battle Board Game (Int. Cl. 28).
First use Jan. 31, 1968.

876,260. Wham-O Mfg. Co., San Gabriel, Calif. SN 293,448. Filed P.R. 3-18-68; Am. S.R. 3-13-69.

SUPER FOAM MACHINE

For Toy Bubble-Making Apparatus (Int. Cl. 28).
First use Feb. 26, 1968.

876,261. The Allen Company, Inc., Charlottesville, Va. SN 294,793. Filed P.R. 4-3-68; Am. S.R. 3-19-69.

PENCIL GAMES

For Equipment Sold as a Unit for Playing a Card Game While Traveling (Int. Cl. 28).
First use Mar. 12, 1968.

Class 26 — Measuring and Scientific Appliances

876,262. Houdaille Industries, Inc., Buffalo, N.Y., by merger and change of name from Houdaille Industries, Inc., Buffalo, N.Y. SN 289,403. Filed P.R. 1-23-68; Am. S.R. 5-2-69.

TAPETYPER

For Combination Tape Puncher and Typewriter and Control Module Used for the Preparation of Programming Tape and Recording by Print-Out the Information on the Tape as Well as for Direct Manual Control of a Machine Tool (Int. Cl. 9).
First use Nov. 3, 1966.

Class 36 — Musical Instruments and Supplies

876,263. Vincent Demay, Flint, Mich. SN 275,517. Filed P.R. 7-7-67; Am. S.R. 5-21-69.

THE BIG SOUND

For Harmonica Resonators (Int. Cl. 15).
First use on or about Mar. 2, 1967.

Class 42 — Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

876,264. Sun Chemical Corporation, New York, N.Y. SN 278,928. Filed P.R. 8-23-67; Am. S.R. 5-14-69.

VINYL-CLAD

For Heavy-Duty Industrial Fabrics (Int. Cl. 24).
First use Apr. 6, 1967.

Class 44 — Dental, Medical, and Surgical Appliances

876,265. Unitek Corporation, Monrovia, Calif. SN 277,736. Filed P.R. 8-7-67; Am. S.R. 3-13-69.

MULTICOIL

For Orthodontic Appliances—Namely, Orthodontic Springs (Int. Cl. 10).
First use at least as early as July 14, 1967.

876,266. Keenan Industries Limited, Owen Sound, Ontario, Canada. SN 298,943. Filed P.R. 5-23-68; Am. S.R. 4-8-69.

KEENAN

For Tooth Picks (Int. Cl. 21).
First use Feb. 10, 1916; in commerce Mar. 15, 1968.

Class 49 — Distilled Alcoholic Liquors

876,267. Emilio Lustau Ortega, Cadiz, Spain. SN 310,382. Filed 9-24-68.



The linings on the drawing do not represent color. Owner of Spanish Reg. No. 156,570, dated Feb. 7, 1947.
For Brandy, Gin and Rum (Int. Cl. 33).

Class 51 — Cosmetics and Toilet Preparations

876,268. Head-To-Toe Products, Rahway, N.J., assignee of David Jaffe, Scotch Plains, N.J. SN 285,236. Filed P.R. 11-20-67; Am. S.R. 5-21-69.

EMERALD DROPS

For Mouth Wash and Breath Freshener (Int. Cl. 3).
First use Nov. 10, 1967.

876,269. Greer Enterprises, Inc., d.b.a. Hairstyling Research Co., Quincy, Mass. SN 287,222. Filed P.R. 12-19-67; Am. S.R. 5-29-69.



For Hair Spray (Int. Cl. 3).
First use Sept. 12, 1967.

876,270. Elizabeth Arden Sales Corporation, New York, N.Y. SN 289,286. Filed P.R. 1-22-68; Am. S.R. 6-2-69.

COLOR CLEAR

For Lipstick, Rouge and Nail Polish (Int. Cl. 3).
First use Dec. 14, 1967.

876,271. Roux Laboratories, Inc., New York, N.Y. SN 297,805. Filed P.R. 5-9-68; Am. S.R. 6-2-69.

SHEER SILVER

For Creme Hair Lightener (Int. Cl. 3).
First use Apr. 26, 1968.

876,272. Clairol Incorporated, New York, N.Y. SN 309,238. Filed P.R. 10-9-68; Am. S.R. 4-25-69.

EVERY WOMAN SHOULD BE A RED HEAD AT LEAST ONCE IN HER LIFE

For Hair Tinting, Dyeing and Coloring Preparation (Int. Cl. 3).
First use Nov. 15, 1965.

Service Marks

Class 100 — Miscellaneous

876,273. Taco Bueno, Abilene, Tex. SN 283,043. Filed P.R. 10-20-67; Am. S.R. 5-29-69.

TACO BUENO

The mark is in the Spanish language, and the English translation of the word "Bueno" is "good."
For Restaurant Services (Int. Cl. 42).
First use as early as July 17, 1967.

876,274. Edward W. Westhead, d.b.a. The American Family Register Company, St. Davids, Pa. SN 294,102. Filed P.R. 3-25-68; Am. S.R. 4-22-69.

THE AMERICAN FAMILY REGISTER

For Maintaining Family Records for Genealogical Purposes (Int. Cl. 42).
First use Mar. 19, 1966.

Class 101 — Advertising and Business

876,275. The Headliners International, New York, N.Y. SN 270,245. Filed P.R. 4-28-67; Am. S.R. 11-7-68.

Headliners PhotoType

For Designing of Lettering for Use in Photopress Printing by Others (Int. Cl. 35).
First use on or about Sept. 15, 1966.

876,276. Ross-Matthai Corporation, Baltimore, Md. SN 275,172. Filed P.R. 6-30-67; Am. S.R. 9-25-68.

TRIM THE TABLE SHOP

For Arranging Displays of Table Items in Retail Department Stores of Others (Int. Cl. 35).
First use May 1967.

876,277. Wall Industries, Inc., d.b.a. World-Wide Employment Agencies, Cambridge, Mass. SN 280,120. Filed P.R. 9-11-67; Am. S.R. 4-24-69.

WORLD-WIDE

For Employment Agency—Namely, Supplying Full and Part-Time Employees to Employers and Full and Part-Time Positions to Employees (Int. Cl. 35).
First use on or about June 15, 1967.

876,278. Draper M. Harvey, d.b.a. Bank Travel Club, Hingham, Mass. SN 302,618. Filed P.R. 7-12-68; Am. S.R. 5-1-69.



For Promoting the Business of Banks Through the Planning of Tours, the Distribution of Travel and Tour Literature to Bank Customers and Inducing Bank Customers To Enter Into Financial Arrangements With Banks for Travel Purposes (Int. Cl. 35).
First use in or about April 1966.

Class 102 — Insurance and Financial

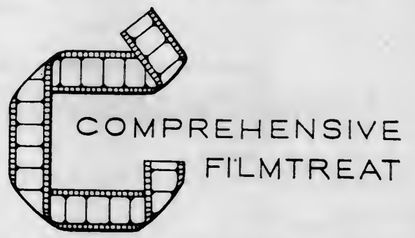
876,279. National Group Plans, Inc., Los Angeles, Calif. SN 288,846. Filed P.R. 1-15-68; Am. S.R. 4-3-69.

HOSPITAL XTRA-CASH

For Service of Writing, Promoting, and Advertising Hospital Insurance in the Capacity of Insurance Agents (Int. Cl. 36).
First use Oct. 21, 1967.

Class 106 — Material Treatment

876,280. Comprehensive Filmtreat, Inc., New York, N.Y. SN 271,446. Filed P.R. 5-15-67; Am. S.R. 4-21-69.



For Rejuvenation of Motion Picture Film—Namely, Removal of Scratches, Abrasions and Other Physical Defects (Int. Cl. 40).
First use on or about June 1, 1965.

TRADEMARK REGISTRATIONS RENEWED

33,236. THOMAS A. EDISON ("EDISON" FORMED IN CHARACTERISTIC AUTOGRAPHIC SCRIPT). Cl. 36 (Int. Cl. 9). 7-18-1899.
74,476. THOMAS A. EDISON (FACSIMILE OF EDISON'S WRITTEN SIGNATURE). Cl. 36 (Int. Cl. 9). 7-13-09.
74,793. "S" WITHIN DIAMOND SHAPED DESIGN. Cl. 19 (Int. Cl. 6). 8-10-09.
75,265. PARIS. Cl. 39 (Int. Cl. 25). 9-14-09.
75,974. SEDATOLE. Cl. 18 (Int. Cl. 5). 11-30-09.
253,859. SUNDIAL. Cl. 46 (Int. Cl. 31). 3-5-29.
256,181. CHATEAU. Cl. 39 (Int. Cl. 25). 5-7-29.
256,539. VOYLANESE. Cl. 42 (Int. Cl. 24). 5-21-29.
257,482. "THE FRIENDLY GRIP" AND REPRESENTATION OF RIGHT FOOT. Cl. 39 (Int. Cl. 25). 6-11-29.
257,500. FORD. Cl. 21 (Int. Cls. 9, 11, and 12). 6-11-29.
257,611. "RUDOR" AND DESIGN. Cl. 32 (Int. Cl. 20). 6-11-29.
258,235. "PHANODORN." Cl. 18 (Int. Cl. 5). 7-2-29.
258,333. VAPROTEX. Cl. 21 (Int. Cl. 11). 7-2-29.
258,351. BEAUTY. Cl. 46 (Int. Cl. 29). 7-2-29.
258,433. TAILORED AT FASHION PARK. Cl. 39 (Int. Cl. 25). 7-9-29.
258,434. FASHION PARK. Cl. 39 (Int. Cl. 25). 7-9-29.
258,442. MANTILLA. Cl. 46 (Int. Cls. 29 and 31). 7-9-29.
258,534. BEAN. Cl. 32 (Int. Cl. 20). 7-9-29.
258,635. RAVISE. Cl. 51 (Int. Cl. 3). 7-9-29.
259,035. EDISON. Cl. 21 (Int. Cl. 9). 7-23-29.
259,355. "THE LOUNGEABOUT" AND DESIGN. Cl. 39 (Int. Cl. 25). 7-30-29.
259,521. "LAUNDER-OMETER" AND DESIGN. Cl. 24 (Int. Cl. 7). 7-30-29.
260,066. R.G. CURRIER. Cl. 18 (Int. Cl. 5). 8-13-29.
260,067. "CURRIER'S" AND DESIGN. Cl. 18 (Int. Cl. 5). 8-13-29.
260,234. TULCO. Cl. 46 (Int. Cl. 29). 8-20-29.
260,573. "WEATHER-OMETER" AND DESIGN. Cl. 26 (Int. Cl. 9). 8-27-29.
260,806. TENDERONI. Cl. 46 (Int. Cl. 30). 8-27-29.
262,417. PAGE. Cl. 13 (Int. Cl. 6). 10-8-29.
262,723. HIDRY. Cl. 12 (Int. Cl. 19). 10-22-29.
263,130. LOZENGE SHAPED DESIGN. Cl. 26 (Int. Cl. 9). 10-29-29.
263,267. "RED STREAK." Cl. 23 (Int. Cl. 8). 11-5-29.
263,577. "D'ORSAY PARFUMEUR PARIS" AND DESIGN. Cl. 51 (Int. Cl. 3). 11-5-29.
263,863. GREEN CIRCLE. Cl. 46 (Int. Cls. 29 and 30). 11-12-29.
263,864. BEAN. Cl. 39 (Int. Cl. 25). 11-12-29.
263,939. THOM MCAN. Cl. 39 (Int. Cl. 25). 11-12-29.
263,982. REPRESENTATION OF SAW BLADE. Cl. 23 (Int. Cl. 8). 11-12-29.
264,062. CONGRESS. Cl. 23 (Int. Cl. 8). 11-19-29.
264,113. COUNTRY CLUB. Cl. 27 (Int. Cl. 14). 11-19-29.
264,124. CHACELON. Cl. 43 (Int. Cl. 23). 11-19-29.
264,339. LOTOL. Cl. 5 (Int. Cl. 1). 11-26-29.
440,890. SKAT SKATER. Cl. 19 (Int. Cl. 12). 10-5-48.
442,825. GRACO AND G DESIGN. Cl. 23 (Int. Cls. 7 and 8). 6-7-49.
443,176. BOARDMASTER. Cl. 26 (Int. Cl. 9). 8-2-49.
443,494. JOANNA. Cl. 46 (Int. Cl. 29). 10-25-49.
507,402. CALIFORNIA SUPER. Cl. 7 (Int. Cl. 22). 3-8-49.
507,640. ARK-LES. Cl. 21 (Int. Cl. 9). 3-15-49.
507,978. BUFFALO. Cl. 6 (Int. Cl. 1). 3-22-49.
507,979. BUFFALO BETTER-BUILT AND DESIGN. Cl. 6 (Int. Cl. 1). 3-22-49.
508,351. STAR GRIPZIN. Cl. 13 (Int. Cl. 6). 4-12-49.
508,621. PLUTO AND DESIGN. Cl. 18 (Int. Cl. 5). 4-12-49.
509,117. SUREX. Cl. 44 (Int. Cl. 10). 4-26-49.
509,717. DEVIL (DESIGN). Cl. 18 (Int. Cl. 5). 5-10-49.
509,941. IVORY TIPPED AND DESIGN. Cl. 17 (Int. Cl. 34). 5-17-49.
510,563. EMLON. Cl. 52 (Int. Cl. 3). 6-7-49.
510,585. SWING-A-WAY. Cl. 23 (Int. Cl. 8). 6-7-49.
510,635. GROG-RE-GATE. Cl. 12 (Int. Cl. 19). 6-7-49.
510,641. FAIRWAY. Cl. 46 (Int. Cls. 29 and 30). 6-7-49.
510,736. SERV-WELL. Cl. 46 (Int. Cls. 29, 30, and 31). 6-7-49.
510,856. PONEMAH. Cl. 42 (Int. Cl. 24). 6-14-49.
510,860. YS AND DESIGN. Cl. 13 (Int. Cl. 6). 6-14-49.
510,912. AMERICAN. Cl. 23 (Int. Cl. 7). 6-14-49.
510,950. NEW LOOK. Cl. 40 (Int. Cl. 25). 6-14-49.
511,104. TEN-DER-RIST. Cl. 46 (Int. Cl. 30). 6-14-49.
511,117. DASH AND DESIGN. Cl. 45 (Int. Cl. 32). 6-21-49.
511,351. CALCOT. Cl. 29 (Int. Cl. 21). 6-21-49.
511,548. TEX DOE. Cl. 46 (Int. Cl. 31). 6-28-49.
511,601. FLEETWOOD. Cl. 19 (Int. Cl. 12). 6-28-49.
511,603. BUICK. Cl. 19 (Int. Cl. 12). 6-28-49.
511,727. OILTONE. Cl. 16 (Int. Cl. 2). 6-28-49.
511,738. ZAAR. Cl. 51 (Int. Cl. 3). 7-5-49.
512,104. BOWES SEAL FAST AND DESIGN. Cl. 21 (Int. Cl. 9). 7-12-49.
512,339. ARROWHEAD. Cl. 35 (Int. Cl. 17). 7-19-49.
512,389. GERONITE. Cl. 52 (Int. Cl. 3). 7-19-49.
512,550. TREASURE CHEST OF FUN & FACTS. Cl. 38 (Int. Cl. 16). 7-19-49.
513,989. BUNTEES. Cl. 39 (Int. Cl. 25). 8-23-49.
514,395. YOUNGSTOWN. Cl. 14 (Int. Cl. 6). 8-30-49.
514,485. ALRO SEQUESTRENE. Cl. 6 (Int. Cl. 1). 8-30-49.
515,002. SNOWHITE. Cl. 6 (Int. Cl. 5). 9-13-49.
515,131. KENSTYLER. Cl. 34 (Int. Cl. 20). 9-13-49.
515,316. FLAGG-FLOW. Cl. 13 (Int. Cl. 6). 9-20-49.
515,635. CENTURY. Cl. 13 (Int. Cl. 6). 9-27-49.
516,000. MINERS & PUDDLERS. Cl. 17 (Int. Cl. 34). 10-4-49.
516,339. DOT SNAPPERS. Cl. 40 (Int. Cl. 26). 10-18-49.
516,340. DOT SYMBOL. Cl. 13 (Int. Cl. 6). 10-18-49.
516,430. STEELBESTOS. Cl. 35 (Int. Cl. 17). 10-18-49.
516,453. FFRR. Cl. 36 (Int. Cl. 9). 10-18-49.
516,641. SILVERSHINE. Cl. 16 (Int. Cl. 2). 10-18-49.
516,699. WORTHINGTON. Cl. 22 (Int. Cl. 28). 10-25-49.
516,886. SUNTONE. Cl. 6 (Int. Cls. 1 and 2). 10-25-49.
516,954. TAYLORMADE. Cl. 40 (Int. Cl. 26). 10-25-49.
517,051. FPI THE HOUSE OF FLOTILL AND DESIGN. Cl. 46 (Int. Cl. 29). 11-1-49.
517,069. RICHARD BROTHERS. Cl. 23 (Int. Cl. 7). 11-1-49.
517,353. DAVIDSON. Cl. 50 (Int. Cls. 7 and 24). 11-8-49.
517,375. TELE-REST. Cl. 21 (Int. Cl. 9). 11-8-49.
517,472. THOR. Cl. 31 (Int. Cl. 7). 11-8-49.
517,715. THE GRAND MACNISH. Cl. 49 (Int. Cl. 33). 11-22-49.
517,718. STEEL CRAFT. Cl. 12 (Int. Cl. 6). 11-22-49.
517,869. LOFTY. Cl. 46 (Int. Cl. 31). 11-22-49.
518,068. RB AND DESIGN. Cl. 23 (Int. Cl. 7). 11-29-49.
518,405. STA-KON. Cl. 23 (Int. Cls. 7 and 8). 12-6-49.

TRADEMARK REGISTRATIONS CANCELED

Section 8

The following registrations issued July 16, 1963

752,708. SECRON. Cl. 1.
752,710. DROPETTE. Cl. 2.
752,713. HAPPY HOURS. Cl. 2.
752,719. THERMO WALL. Cl. 2.
752,729. VISTA. Cl. 8.
752,730. KINGSWOOD. Cl. 8.
752,731. MINI-PAK. Cl. 10.
752,738. NATCO UNIWALL. Cl. 12.
752,741. CUSTOM-FLAKE. Cl. 12.
752,742. CUSTOM-BOND. Cl. 12.
752,743. CUSTOM-BLEND. Cl. 12.
752,749. DYACOR. Cl. 12.
752,752. REPRESENTATION OF A BIRD IN FLIGHT. Cl. 12.
752,753. PB AND DESIGN. Cl. 12.

752,755. LPI. Cl. 12.
752,759. M-THANE AND DESIGN. Cl. 12.
752,762. AGGRE-BOND NI. Cl. 12.
752,763. SHELLFLOR. Cl. 12.
752,766. JETLOCK. Cl. 12.
752,767. VIB-RO-PAC. Cl. 12.
752,779. DRAIN RING. Cl. 13.
752,781. COMBO-DRIVE AND DESIGN. Cl. 13.
752,782. PRUDENTIAL WARE AND DESIGN. Cl. 13.
752,784. GIL AND DESIGN. Cl. 14.
752,789. TRANS-CURE AND DESIGN. Cl. 15.
752,793. ALUMI-FLO. Cl. 16.
752,801. "WIFE'S FRIEND." Cl. 18.
752,804. DENTAPEN. Cl. 18.
752,805. DENTAMYCIN. Cl. 18.
752,818. WHITTAHIST. Cl. 18.
752,819. WHITTANE. Cl. 18.
752,822. TURTLE MAT. Cl. 19.
752,823. SAFETY TOT. Cl. 19.
752,826. DETAX AND DESIGN. Cl. 19.
752,828. BREEZE BACK. Cl. 19.
752,830. CONCERTINA. Cl. 19.
752,834. PARKPRIDE. Cl. 19.
752,835. PARKPLAZA. Cl. 19.
752,837. DESIGN CONTAINING LETTER K. Cl. 19.
752,838. POXY TILE AND DESIGN. Cl. 20.
752,847. DECORATOR CONVERTIBLE. Cl. 21.
752,851. FLUOROCOR. Cl. 21.
752,853. SIGNET. Cl. 21.
752,855. CAPRI. Cl. 21.
752,859. VARI-BIT AND DESIGN. Cl. 21.
752,863. UNIVAC. Cl. 21.
752,873. UVASER. Cl. 21.
752,874. XRASER. Cl. 21.
752,877. HOLGATE. Cl. 22.
752,882. BOWL-A-TRON 300. Cl. 22.
752,883. STC AND DESIGN. Cl. 22.
752,884. GANG FISHER. Cl. 22.
752,885. LITTLE ACE AND DESIGN. Cl. 22.
752,887. HYDRA-RAMP. Cl. 23.
752,888. ROANOKE MERRIMAC AND DESIGN. Cl. 23.
752,890. ADJUSTAMAGIC. Cl. 23.
752,895. HUFFY-VAC. Cl. 23.
752,896. DRI-GLIDE. Cl. 23.
752,897. M AND DESIGN. Cl. 23.
752,899. ALFRED APPLEBY. Cl. 23.
752,906. THE OUTDOOR POWER APPLIANCE AND DESIGN. Cl. 23.
752,914. DC (DESIGN). Cl. 23.
752,915. DISPENS-O-BAR. Cl. 23.
752,919. ECONOVERSIONS. Cl. 23.
752,923. GOLDEN DOVE AND DESIGN. Cl. 23.
752,924. ROAD-ALL. Cl. 23.
752,925. SILVER POWER. Cl. 23.
752,929. TRI-POINT NO STICK "IRON-GLIDER" AND DESIGN. Cl. 24.
752,931. TROJAN. Cl. 25.
752,943. HOL AND DESIGN. Cl. 28.
752,946. AFA. Cl. 28.
752,947. NN. Cl. 28.
752,953. CROWN AND DESIGN. Cl. 31.
752,961. GRAPHIC-ALARMLIGHT. Cl. 34.
752,962. 3-IN-ONE GOURMETTE. Cl. 34.
752,963. SPOT GUARD. Cl. 34.
752,964. PRIMERGON. Cl. 34.
752,965. MARSHAL. Cl. 35.
752,968. TRIOVAC. Cl. 35.
752,976. EDUPHONICS. Cl. 36.
752,977. DUSTAT. Cl. 36.
752,979. LESLEY AND DESIGN. Cl. 36.
752,983. ARTISAN. Cl. 36.
752,984. TRAVEL. Cl. 36.
752,985. TARHEEL. Cl. 36.
752,987. SINCERELY YOURS. Cl. 36.
752,988. VISTATEX. Cl. 37.
752,989. GIBSON'S. Cl. 37.
752,997. MAGNETON. Cl. 39.
752,998. SKAPE. Cl. 39.
753,005. PLAY-TOGETHERS. Cl. 39.
753,009. WENDY LANE. Cl. 39.
753,010. PADDINGTON. Cl. 39.
753,013. RIALTO LADY. Cl. 39.
753,014. THE 6TH FINGER. Cl. 40.
753,017. PROMENADE. Cl. 42.
753,020. WHALEBONE. Cl. 42
753,028. AB AMERICAN BEMBERG ARISTOCRAT OF RAYON YARN. Cl. 43.
753,029. VERY PERSONALLY YOURS AND DESIGN. Cl. 44.
753,030. ETHAIRE. Cl. 44.
753,032. WIFE'S FRIEND. Cl. 44.
753,036. B-W & BORG-WARNER INGERSOLL PRODUCTS AND DESIGN. Cl. 44.
753,041. CAST-O-SOCK. Cl. 44.
753,044. CLASICO AND DESIGN. Cl. 46.
753,047. WIENER WAGON. Cl. 46.
753,048. Q-POP. Cl. 46.
753,052. ALPHA BLOX. Cl. 46.
753,053. K-O-O-L-D-O-G AND DESIGN. Cl. 46.
753,054. K-O-O-L B-E-R-G AND DESIGN. Cl. 46.
753,056. HONEY CREEK AND DESIGN. Cl. 46.
753,063. CALENDAR CUTIES. Cl. 50.
753,065. RAINING RUBIES. Cl. 51.
753,075. "A" ETC. AND DESIGN. Cl. 101.
753,077. GLAMOUR GUILD OF AMERICA. Cl. 102.

TRADEMARK REGISTRATIONS AMENDED, DISCLAIMED, CORRECTED, ETC.

225,345. DOUBLE EAGLE AND DESIGN. Cl. 35. 4-23-29. The Goodyear Tire & Rubber Company, Akron, Ohio. Amended to appear:

DOUBLE XX EAGLE

258,956. EVEREADY. Cl. 44. 7-16-29. National Carbon Company, Inc. Union Carbide Corporation, New York, N.Y. Amended: In the statement, column 1, lines 9 through 11, the description of goods is deleted and *arc carbons for therapeutic purposes* is inserted.

509,840. REGENT. Cl. 46. 5-17-49. Victor Chemical Works. Stauffer Chemical Company, New York, N.Y. Amended to appear:

REGENT

519,682. BAILEY. Cl. 39. 1-10-50. George S. Bailey Hat Co., Inc., Los Angeles, Calif. Amended to appear:

Bailey

755,238. FEC/D.A. Cl. 103. 8-20-63. D. A. Foster Equipment Corporation, Merrifield, Va. Corrected: In the statement, column 1, line 1, before "Foster" *D.A.* should be inserted.

765,020. TU-BUELL-AR AND DESIGN. Cl. 23. 2-18-64. Buell Engineering Company, Inc., New York, N.Y. Corrected: In the statement, column 1, line 1, "New York" should be deleted and *Delaware* should be inserted.

773,837. AMERICAN GIRL. Cl. 107. 7-21-64. American Girl Service, Inc. AGS Services Corporation, New York, N.Y. Amended: In the statement, column 1, line 1, after "Inc." *, now by change of name AGS Services Corporation, 330 Madison Ave., New York, N.Y.* is inserted.

814,189. AMERICAN CAREER SERVICE. Cl. 101. 8-30-66. American Girl Service, Inc. AGS Services Corporation, New York, N.Y. Amended: In the statement, column 1, line 1, after "Inc." *, now by change of name AGS Services Corporation* is inserted.

842,234. AMERICAN TECHNICAL SERVICE. Cl. 101. 1-9-68. American Girl Service, Inc. AGS Services Corporation, New York, N.Y. Amended: In the statement, column 1, line 1, after "Inc." *, now by change of name AGS Services Corporation* is inserted.

842,235. AMERICAN MINUTE-MAN SERVICE. Cl. 101. 1-9-68. American Girl Service, Inc. AGS Services Corporation, New York, N.Y. Amended: In the statement, column 1, line 1, after "Inc.", *now by change of name AGS Services Corporation* is inserted.

846,033. AMERICAN SERVICES. Cl. 101. 3-12-68. American Girl Service, Inc. AGS Services Corporation, New York, N.Y. Amended: In the statement, column 1, line 1, after "Inc." *, now by change of name AGS Services Corporation* is inserted.

856,194. STAMPEDE. Cl. 52. 9-3-68. Texize Chemicals, Inc., Greenville, S.C. Corrected: In the statement, column 1, line 1, "South Carolina" should be deleted and *Delaware* should be inserted.

856,736. AGS AND DESIGN. Cl. 101. 9-10-68. American Girl Service, Inc. AGS Services Corporation, New York, N.Y. Amended: In the statement, column 1, line 1, after "Inc." *, now by change of name AGS Services Corporation* is inserted.

868,237. POLMOS WISNIOWKA CHERRY CORDIAL AND DESIGN. Cl. 49. 4-15-69. Przedsiebiorstwo Handlu Zagranicznego "Agros," Warsaw, Poland. Corrected: In the statement, column 1, line 1, "Handly" should be deleted and *Handlu* should be inserted.

870,444. ELF. Cl. 23. 6-3-69. Her Majesty Underwear Company. Her Majesty Industries, Inc., Mauldin, S.C. Corrected: In the statement, column 1 before line 1, *Her Majesty Industries, Inc., by change of name from* should be inserted.

871,619. PX-ECONO-CLAD. Cl. 14. 6-24-69. Phoenix Steel Corporation, Claymont, Del. Corrected: In the statement, column 2, line 6 should be deleted and *First use Oct. 10, 1968; in commerce Oct. 10, 1968; Jan. 14, 1966, as to Econo-Clad.* should be inserted.

871,742. KORD-A-MATIC. Cl. 26. 6-24-69. The Vacuum Cleaner Corporation of America, assignee of Richard J. Sleeper, doing business as Sleeper Valve & Manufacturing Co., and Sleeper Valve & Mfg. Co., Philadelphia, Pa. Corrected: In the statement, column 1, before line 1, *The Vacuum Cleaner Corporation of America, 1724 W. Indiana Ave., Philadelphia, Pa. 19132, assignee of* should be inserted.

872,237. AQUA-JELL. Cl. 44. 7-1-69. Eagle Druggists Supply Co., Inc., New York, N.Y. Corrected: In the statement, column 1, line 1, after "Supply" *Co.* should be inserted.

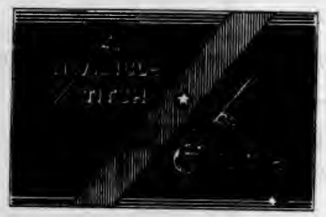
872,681. WHITE SOUR. Cl. 45. 7-8-69. Holland House Brands, Inc., Woodside, N.Y. Corrected: In the statement, column 2, line 4, "inclusive" should be deleted and *exclusive* should be inserted.

REGISTRATIONS PUBLISHED UNDER SEC. 12(c)

The following marks registered under the act of 1905, or the act of 1881, are published under the provisions of section 12(c) of the Trademark Act of 1946. These registrations are not subject to opposition but are subject to cancellation under section 14 of the act of 1946.

Class 3 — Baggage, Animal Equipments, Portfolios, and Pocketbooks

359,533. Aug. 23, 1938. P. A. Gardner, Jr., d.b.a. Prince Gardner, St. Louis, Mo. Pub. by Swank, Inc., Attleboro, Mass.



For Billfolds.

Class 12 — Construction Materials

258,580. July 9, 1929. Duralac Chemical Corporation, Newark, N.J. Pub. by registrant.

SEALAC

For Dry, Paste and Ready-Mixed Paints, Varnishes, Stains, Paint Enamels, etc. (Int. Cls. 2 and 3).

Class 21 — Electrical Apparatus, Machines, and Supplies

256,076. May 7, 1929. Leeds & Northrup Company, North Wales, Pa. Pub. by registrant.

HOMO

For Electric Furnaces, Electric Ovens, Electric Heat-Treating Furnaces, etc. (Int. Cls. 9 and 11).

256,077. May 7, 1929. Leeds & Northrup Company, North Wales, Pa. Pub. by registrant.



For Electric Furnaces, Ovens, and Heaters; for Resistors and Electric Heating Units for Furnaces, etc. (Int. Cls. 7, 9, and 11).

Class 26 — Measuring and Scientific Appliances

262,002. Sept. 24, 1929. Hans P. Luhn, assignor to Textile Machine Works, Wyomissing, Pa. Pub. by Genevieve Luhn, White Plains, N.Y.

LUNOMETER

For Measuring Gauges (Int. Cl. 9).

Class 28 — Jewelry and Precious-Metal Ware

259,457. July 30, 1929. The Baer & Wilde Company, Attleboro, Mass. Pub. by Swank, Inc., Attleboro, Mass.

SWANK

For Items of Men's Jewelry Comprising Collar Buttons, Cuff Buttons, Scarf Pins, etc. (Int. Cls. 8, 14, and 34).

Class 34 — Heating, Lighting, and Ventilating Apparatus

258,424. July 9, 1929. The Sentry Company, Foxboro, Mass. Pub. by registrant.

Sentry DIAMOND Block

For Non-Metallic Heat-Treating Boxes, Chambers, and Blocks (Int. Cl. 11).

Class 42 — Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

442,160. Mar. 1, 1949. Hillsboro Cotton Mills, Hillsboro, Tex. Pub. by registrant.

AJAMO

For Cotton Duck Sold in the Piece (Int. Cl. 24).

Class 46 — Foods and Ingredients of Foods

385,616. Mar. 11, 1941. Ready Foods Company, Inc., Chicago, Ill. Pub. by Perk Foods Co., Chicago, Ill.

Marvel

For Canned Dog Food.

INDEX OF REGISTRANTS

SEPTEMBER 2, 1969

(Registered ; Renewed ; Canceled ; Amended, Disclaimed, Corrected, etc. ; New Certificates ; 12c Publications.)

"A" Stand-By Telephone Secretary : *See*—
McCormick, Burt M.

ABC International Television, Inc., New York, N.Y. 876,225, pub. 6–17–69. Cl. 101.

Abbott Laboratories, North Chicago, Ill. 875,939, pub. 6–17–69. Cl. 18.

Abex Corp. : *See*—
American Brake Shoe & Foundry Co.

Acme-Hamilton Mfg. Corp., Trenton, N.J. 752,968, canc. Cl. 35.

Aerostyle Ltd., London, England. 875,898, pub. 6–17–69. Cl. 6.

Air-Shields, Inc., Hatboro, Pa. 753,030, canc. Cl. 44.

Alan Products, Inc., Watertown, Conn. 753,014, canc. Cl. 40.

Algene Sportswear Co., Inc., Mount Vernon, N.Y. 752,998, canc. Cl. 39.

Allen Co., Inc., The, Charlottesville, Va. 876,261. Cl. 22.

Allen Electric & Equipment Co., Cleveland, Ohio. 875,966, pub. 6–17–69. Cl. 21.

Allen, S. L., & Co., Inc., Philadelphia, Pa. 752,906, canc. Cl. 23.

Allen System Inc., The, Glen Ellyn, Ill. 876,176, pub. 6–17–69. Cl. 50.

Allied Products Corp., to Richard Brothers Punch Co., Detroit, Mich. 517,069, ren. 9–2–69. Cl. 23.

Allied Products Corp., to Richard Brothers Punch Co., Detroit, Mich. 518,068, ren. 9–2–69. Cl. 23.

Allied Research Products, Inc., Baltimore, Md. 875,896, pub. 6–17–69. Cl. 6.

Alpine Geophysical Associates, Inc., Norwood, N.J. 876,143, pub. 6–17–69. Cl. 46.

Alrose Chemical Co., Inc., Cranston, R.I., to Geigy Chemical Corp., Ardsley, N.Y. 514,485, ren. 9–2–69. Cl. 6.

Alumiline Corp., The, Pawtucket, R.I. 876,249. Cl. 12.

American Associated Companies, Inc., Atlanta, Ga. 876,032, pub. 6–17–69. Cl. 29.

American Biltrite Rubber Co., Inc., Cambridge, Mass. 876,256. Cl. 21.

American Brake Shoe & Foundry Co., Mahwah, N.J., and New York, N.Y., to Abex Corp., New York, N.Y. 74,793, ren. 9–2–69. Cl. 19.

American Chain & Cable Co., Inc. : *See*—
Page Steel & Wire Co.

American Chatillon Corp., to Celanese Corp., New York, N.Y. 264,124, ren. 9–2–69. Cl. 43.

American Dairy Queen Corp., Moline, from Marlan Co., Chicago, Ill. 753,048, canc. Cl. 46.

American Family Register Co., The : *See*—
Westhead, Edward W.

American Fastener Corp., from William A. De Vellier, Hollywood, Calif. 752,781, canc. Cl. 13.

American Girl Service, Inc., to AGS Services Corp., New York, N.Y. 773,837. Am. 7(d). Cl. 101.

American Girl Service, Inc., to AGS Services Corp., New York, N.Y. 814,189. Am. 7(d). Cl. 101.

American Girl Services, Inc., to AGS Services Corp., New York, N.Y. 842,234–5. Am. 7(d). Cl. 101.

American Girl Service, Inc., to AGS Services Corp., New York, N.Y. 846,033. Am. 7(d). Cl. 101.

American Girl Service, Inc., to AGS Services Corp., New York, N.Y. 856,736. Am. 7(d). Cl. 101.

American Home Products Corp., New York, N.Y. 876,205–6, pub. 6–17–69. Cl. 52.

American Medical Technologists, Park Ridge, Ill. 876,245, pub. 6–17–69. Cl. 200.

American Mushroom Corp., Wilmington, Del. 876,163, pub. 6–17–69. Cl. 46.

American Optical Corp., Southbridge, Mass. 876,045, pub. 6–17–69. Cl. 32.

American Pulley Co., The, Philadelphia, Pa., to Universal American Corp., New York, N.Y. 510,912, ren. 9–2–69. Cl. 23.

American Shear Knife Co., Homestead, Pa. 875,987, pub. 6–17–69. Cl. 23.

American Simmental Association, Inc., Canton, Ohio. 876,247, pub. 6–17–69. Cl. 200.

American Stock Exchange, New York, N.Y. 876,068, pub. 6–17–69. Multiple Class (Classes 38, 100, and 102).

American Tobacco Co., The, New York, N.Y. 516,000, ren. 9–2–69. Cl. 17.

American Type Founders Co., Inc. : *See*—
Davidson Mfg. Corp.

Ametek, Inc., East Moline, Ill. 876,040, pub. 6–17–69. Cl. 31.

Amicon Corp., Lexington, Mass. 875,864, pub. 6–17–69. Cl. 1.

Anderson, Alfred, d.b.a. Anderson Chemical Co., to Anderson Chemical Co., Litchfield, Minn. 512,389, ren. 9–2–69. Cl. 52.

Anderson Chemical Co. : *See*—
Anderson, Alfred.

Angelica Corp., from Angelica Uniform Co., St. Louis, Mo. 876,078, pub. 6–17–69. Cl. 39.

Angelica Uniform Co. : *See*—
Angelica Corp.

Apparel Corp. of America, Knoxville, Tenn. 876,083, pub. 6–17–69. Cl. 39.

Arden, Elizabeth, Sales Corp., New York, N.Y. 876,270. Cl. 51.

Ark-Les Switch Corp., Watertown, Mass. 507,640, ren. 9–2–69. Cl. 21.

Army Times Publishing Co., Washington, D.C. 876,067, pub. 6–17–69. Cl. 38.

Arrowhead Rubber Co., Vernon, Calif., to Federal-Mogul Corp., Detroit, Mich. 512,339, ren. 9–2–69. Cl. 35.

Ashworth-McDade Machine Co., Cuyahoga Falls, Ohio. 752,919, canc. Cl. 23.

Atlas Electric Devices Co., Chicago, Ill. 259,521, ren. 9–2–69. Cl. 24.

Atlas Electric Devices Co., Chicago, Ill. 260,573, ren. 9–2–69. Cl. 26.

Atlas Supply Co., Springfield, N.J. 875,993, pub. 6–17–69. Cl. 23.

Automatic Feed Co., Napoleon, Ohio. 875,985, pub. 6–17–69. Cl. 23.

Automatic Products Co., St. Paul, Minn. 875,997, pub. 6–17–69. Cl. 23.

Avco Corp., Richmond, Ind. 875,908, pub. 6–17–69. Cl. 9.

Avon Products, Inc., New York, N.Y. 876,179–80, pub. 6–17–69. Cl. 51.

Avon Products, Inc., New York, N.Y. 876,194, pub. 6–17–69. Cl. 51.

Aztec Industries, Inc., Santa Fe, N. Mex. 876,094, pub. 6–17–69. Cl. 39.

Bailey, George S., Hat Co., Inc., Los Angeles, Calif. 519,682. Am. 7(d). Cl. 39.

Baldwin, D. H., Co., Cincinnati, Ohio. 875,957, pub. 6–17–69. Multiple Class (Classes 21, 36, and 38).

Baldwin-Ehret-Hill, Inc., Trenton, N.J. 875,917, pub. 6–17–69. Cl. 12.

Bank Travel Club : *See*—
Harvey, Draper M.

Barnes, Norene, d.b.a. Marco Sari, Waukegan, Ill. 876,089, pub. 6–17–69. Cl. 39.

Baumeister, Gilbert F., d.b.a. Kewaunee, and Kewaunee Bottling Works, Kewaunee, Wis. 876,126, pub. 6–17–69. Cl. 45.

Bayuk Cigars Inc., Philadelphia, Pa. 875,930, pub. 6–17–69. Cl. 17.

Bean, L. L., Inc. : *See*—
Bean, Leon L.

Bean, Leon L., to L. L. Bean, Inc., Freeport, Maine. 258,534, ren. 9–2–69. Cl. 32.

Bean, Leon L., to L. L. Bean, Inc., Freeport, Maine. 263,864, ren. 9–2–69. Cl. 39.

Beaunit Corp., from Beaunit Mills, Inc., New York, N.Y. 753,028, canc. Cl. 43.

Beaunit Mills, Inc. : *See*—
Beaunit Corp.

Belk Stores Services, Inc., Charlotte, N.C. 876,227, pub. 6–17–69. Cl. 101.

Bendix Corp., The, Detroit, Mich. 875,923, pub. 6–17–69. Cl. 15.

Bennett Pumps Corp., to John Wood Co., Muskegon, Mich. 263,130, ren. 9–2–69. Cl. 26.

Benson's, Inc., Athens, Ga. 876,154, pub. 6–17–69. Cl. 46.

Berdon Industries : *See*—
Simendinger, Donald J.

Bergeron, Victor J., d.b.a. Trader Vic's, San Francisco, Calif. 876,214, pub. 6–17–69. Cl. 100.

Best, Alfred M., Co., Inc., Morristown, N.J. 876,069, pub. 6–17–69. Cl. 38.

Biloxi Canning & Packing Co., Inc., Biloxi, Miss. 876,133, pub. 6–17–69. Cl. 46.

Bixby Box Toe Co., Inc., Haverhill, Mass. 875,886, pub. 6–17–69. Cl. 5.

Black & Decker Mfg. Co., The, Towson, Md. 875,988, pub. 6–17–69. Cl. 23.

Bliss & Laughlin Industries, Inc., Oak Brook, Ill. 875,913, pub. 6–17–69. Cl. 12.

Block Drug Co., Inc., Jersey City, N.J. 875,936, pub. 6–17–69. Cl. 18.

Block-Southland Sportswear, Inc., Wilmington, N.C. 876,091, pub. 6–17–69. Cl. 39.

Borg-Warner Corp., Chicago, Ill. 753,036, canc. Cl. 44.

Bowes "Seal-Fast" Corp., Indianapolis, Ind. 512,104, ren. 9–2–69. Cl. 21.

Boyles, Truman, Inc., Alexandria, Va. 876,042, pub. 6–17–69. Cl. 32.

Bradley, Milton, Co., Springfield, Mass. 876,258. Cl. 22.

Brechner, Dan, & Co., Inc., New York, N.Y. 876,175, pub. 6–17–69. Cl. 50.

Breck, John H., Inc., Wayne, N.J. 876,184, pub. 6–17–69. Cl. 51.

Brentford Nylons Ltd., Middlesex, England. 876,110, pub. 6–17–69. Cl. 42.

Bristol-Myers Co., New York, N.Y. 875,934, pub. 6–17–69. Cl. 18.

Bristol-Myers Co., New York, N.Y. 875,938, pub. 6–17–69. Cl. 18.

Broadway-Hale Stores, Inc., Los Angeles, Calif. 876,111, pub. 6–17–69. Cl. 42.

Brodie, F. I., d.b.a. Lesley Records, Louisville, Ky. 752,979, canc. Cl. 36.

Brownsville Citrus Assn., to Larry Lightner, Inc., Brownsville, Tex. 511,548, ren. 9–2–69. Cl. 46.

Bruynzeel Vloerenfabriek N.V., Zaandam, Netherlands. 752,752, canc. Cl. 12.
Buell Engineering Co., Inc., New York, N.Y. 765,020, cor. Cl. 23.
Buffalo Fire Appliance Corp., Dayton, Ohio, to Norris Industries, Inc., Los Angeles, Calif. 507,978–9, ren. 9–2–69. Cl. 6.
Butler Mfg. Co., Kansas City, Mo., from Stainless & Steel Products Co., St. Paul, Minn. 875,950, pub. 6–17–69. Cl. 19.
Calgon Corp., Pittsburgh, Pa. 876,204, pub. 6–17–69. Cl. 52.
California Cotton Mills Co., to Sierra Cotton Mills, Inc., Oakland, Calif. 507,402, ren. 9–2–69. Cl. 7.
California Cotton Mills Co., to Sierra Cotton Mills, Inc., Oakland, Calif. 511,351, ren. 9–2–69. Cl. 29.
Callahan Engineering Co., South Gate, Calif. 752,826, canc. Cl. 19.
Canaga, Harold E., Jr., d.b.a. Poly-Prim Plastics Co., Omaha, Nebr. 876,076, pub. 8–20–68. Cl. 39.
Canfield, M. E., Co., Los Angeles, Calif. 875,951, pub. 6–17–69. Multiple Class (Classes 19, 23, and 32).
Capel Coat Corp., New York, N.Y. 876,082, pub. 6–17–69. Cl. 39.
Carnation Co., Los Angeles, Calif. 876,144, pub. 6–17–69. Cl. 46.
Carnation Co., Los Angeles, Calif. 876,151, pub. 6–17–69. Cl. 46.
Carter-Wallace, Inc., New York, N.Y. 875,944, pub. 6–17–69. Cl. 18.
Celanese Corp.: *See*—
American Chatillon Corp.
Celanese Corp. of America.
Celanese Corp. of America, to Celanese Corp., New York, N.Y. 256,539, ren. 9–2–69. Cl. 42.
Centrala Handlu Zagranicznego "Paged," d.b.a. Paged, Warsaw, Poland. 875,863, pub. 6–17–69. Cl. 1.
Cerveceria India Inc., Mayaguez, Puerto Rico. 876,174, pub. 6–17–69. Cl. 48.
Chauvenet: *See*—
Societe Commerciale des Bourgognes de Marque.
Chemco Photoproducts Co., Inc.: *See*—
Powers Chemco Inc.
Chesebrough-Pond's Inc., New York, N.Y. 875,943, pub. 6–17–69. Cl. 18.
Chula Vista Citrus Association, Chula Vista, to Schell Ranch & Packing Co., Indio, Calif. 253,859, ren. 9–2–69. Cl. 46.
Churchill Chemical Co., Galesburg, Ill. 875,925, pub. 6–17–69. Cl. 16.
Ciba Ltd., Basel, Switzerland. 875,892–3, pub. 6–17–69. Cl. 6.
Clairol Inc., New York, N.Y. 876,178, pub. 9–6–66. Cl. 51.
Clairol Inc., New York, N.Y. 876,272. Cl. 51.
Claredan Corp., Lafayette, Calif. 752,828, canc. Cl. 19.
Clover Mfg. Co., Ltd., Osaka, Japan. 876,106, pub. 6–17–69. Cl. 40.
Cluett, Peabody & Co., Inc., New York, N.Y. 876,099, pub. 6–17–69. Cl. 39.
Coca-Cola Co., The: *See*—
Maxcy, L., Inc.
Colfax Industries, Clifton, N.J. 876,079, pub. 6–25–68. Cl. 39.
Colgate-Palmolive Co.: *See*—
Reefer-Galler, Inc.
Colgate-Palmolive Co., New York, N.Y. 875,885, pub. 6–17–69. Cl. 4.
Colgate-Palmolive Co., New York, N.Y. 876,207, pub. 6–17–69. Cl. 52.
Collagen Corp., New York, N.Y. 875,870, pub. 6–17–69. Cl. 1.
Colonial Tile, Inc., West Conshohocken, Pa. 752,838, canc. Cl. 20.
Colton Razor Blade Co.: *See*—
Rubie Blade Corp.
Comprehensive Filmtreat, Inc., New York, N.Y. 876,280. Cl. 106.
Computer Network Corp., Washington, D.C. 876,220, pub. 6–17–69. Cl. 101.
Conchemco, Inc.: *See*—
Seidlitz Paint & Varnish Co.
Consolidated Avionics Corp., Westbury, N.Y. 752,859, canc. Cl. 21.
Consolidated Olive Growers: *See*—
Lindsay Ripe Olive Co.
Consumer Advertising Systems, Inc., Clayton, Mo. 876,228, pub. 6–17–69. Cl. 101.
Consumer Products Inc., Los Angeles, Calif. 876,187, pub. 6–17–69. Cl. 51.
Continental Bank & Trust Co., Milwaukee, Wis. 876,230, pub. 6–17–69. Cl. 102.
Contopoulos Brothers, Ltd., New York, N.Y. 876,173, pub. 6–17–69. Cl. 47.
Cook Chocolate Co., Chicago, Ill. 876,129, pub. 6–17–69. Cl. 46.
Cook, H. C., Co., The, Ansonia, Conn. 876,119, pub. 6–17–69. Cl. 44.
Coracci, Eugene F., New York, N.Y. 753,009, canc. Cl. 39.
Coulter Diagnostics, Inc., Miami Springs, Fla. 875,891, pub. 6–17–69. Cl. 6.
Countess Mara, Inc., New York, N.Y. 875,880–1, pub. 6–17–69. Cl. 3.
Creek Chub Bait Co., The, Garrett, Ind. 875,975, pub. 10–17–67. Cl. 22.
Crestworth Ltd., Poole, Dorset, England. 875,958, pub. 6–17–69. Cl. 21.
Currier's Tablets Inc., Los Angeles, Calif., to Foremost-McKesson, Inc., New York, N.Y. 260,066–7, ren. 9–2–69. Cl. 18.
Curtis, Helene, Industries, Inc., Chicago, Ill. 876,105, pub. 6–17–69. Cl. 40.
Dad's Root Beer Co., Chicago, Ill. 876,130, pub. 6–17–69. Cl. 46.
Daitch Crystal Dairies, Inc., New York, N.Y. 876,149, pub. 6–17–69. Cl. 46.
Daniels Mfg. Co., Rhinelander, Wis. 876,061, pub. 6–17–69. Cl. 37.
Daroff, H., & Sons, Inc., Philadelphia, Pa. 876,095, pub. 6–17–69. Cl. 39.
Davidson Mfg. Corp., Chicago, Ill., to American Type Founders Co., Inc., Nashville, Tenn. 517,353, ren. 9–2–69. Cl. 50.
Decca Records, Inc., assor. to The Decca Record Co. Ltd., London, England, and New York, N.Y., to London Records, Inc., New York, N.Y. 516,453, ren. 9–2–69. Cl. 36.
Defiance Dairy Products Co., The, to Diehl, Inc., Defiance, Ohio. 258,351, ren. 9–2–69. Cl. 46.
DeJur-Amsco Corp., Long Island City, N.Y. 875,959, pub. 6–17–69. Multiple Class (Classes 21, 23, and 36).
Delaware Valley Consumer Discount Co., Philadelphia, Pa. 876,231, pub. 6–17–69. Cl. 102.
Delightform Foundations, Inc., Easton, Pa. 753,013, canc. Cl. 39.
Delta Omicron International Music Fraternity, Detroit, Mich. 876,246, pub. 6–17–69. Cl. 200.
Demay, Vincent, Flint, Mich. 876,263. Cl. 36.
Dermok Laboratories, Inc., Syosset, N.Y. 875,940, pub. 6–17–69. Cl. 18.
Detroit Gasket & Mfg. Co., to Detroit Gasket & Mfg. Co., Detroit, Mich. 516,430, ren. 9–2–69. Cl. 35.
De Vellier, William A.: *See*—
American Fastener Corp.
De Witt, E. C., & Co., Inc.: *See*—
De Witt International Corp.
De Witt International Corp., from E. C. De Witt & Co., Inc., Chicago, Ill. 876,192, pub. 4–22–69. Cl. 51.
Dexter Chemical Corp., Bronx, N.Y. 875,895, pub. 6–17–69. Cl. 6.
Dial-A-Gift Inc.: *See*—
Harry & David.
Diehl, Inc.: *See*—
Defiance Dairy Products Co., The.
Dietzgen, Eugene, Co., Chicago, Ill. 876,028, pub. 6–17–69. Cl. 26.
Digital Equipment Corp., Maynard, Mass. 876,019, pub. 6–17–69. Cl. 26.
Dine-Out Foods, Inc., Gainesville, Fla. 876,208, pub. 6–17–69. Cl. 100.
Diplomat Products, Inc., Culver City, Calif. 876,188, pub. 2–25–69. Cl. 51.
Ditson, John R., d.b.a. Ditson Mfg. Co., Dallas, Tex. 752,884, canc. Cl. 22.
Ditson Mfg. Co.: *See*—
Ditson, John R.
D'Orsay Perfumeries Corp., New York, N.Y., to Societe Anonyme Compagnie Francaise des Parfums D'Orsay, Pateaux (Haute-de-Seine), France. 263,577, ren. 9–2–69. Cl. 51.
Dougherty Bros. Co., Buena, N.J. 752,710, canc. Cl. 2.
Dow Chemical Co., The, Midland, Mich. 875,999, pub. 6–17–69. Cl. 23.
Duffy-Mott Co., Inc.: *See*—
Pratt-Low Preserving Co.
Duncan, Donald F., Inc., Evanston, Ill. 752,885, canc. Cl. 22.
Du Pont de Nemours, E. I., & Co., Wilmington, Del. 875,872, pub. 6–17–69. Cl. 1.
Dura Corp., Oak Park, Mich. 752,914, canc. Cl. 23.
Dwoskin, Inc., Atlanta, Ga. 876,109, pub. 6–17–69. Cl. 42.
Dynamics Corp. of America, New York, N.Y. 875,963, pub. 6–17–69. Cl. 21.
ESB Inc., Philadelphia, Pa. 875,887, pub. 6–17–69. Multiple Class (Classes 5, 12, and 16).
Eagle Druggists Supply Co., Inc., New York, N.Y. 872,237, cor. Cl. 44.
Eagle Druggists Supply Co., Inc., New York, N.Y. 876,120, pub. 6–17–69. Cl. 44.
Eastman Kodak Co., Rochester, N.Y. 875,879, pub. 6–17–69. Cl. 3.
Eberhard Faber Inc., Wilkes-Barre, Pa. 876,054, pub. 6–17–69. Cl. 37.
Edison, Thomas A., Inc., West Orange, N.J., to McGraw-Edison Co., Elgin, Ill. 259,035, ren. 9–2–69. Cl. 21.
Edlo Enterprises, Inc., San Francisco, Calif. 876,128, pub. 6–17–69. Cl. 45.
Eduphonics Recording Co.: *See*—
Popkins, Lillian B.
Ekco Products Co., Chicago, Ill. 752,782, canc. Cl. 13.
Electronic Organ Arts, Los Angeles, Calif. 752,983, canc. Cl. 36.
Engler Instrument Co., Jersey City, N.J. 876,024, pub. 6–17–69. Cl. 26.
Ensaladas de Frutas de Mexico, S.A., Nuevo Leon, Mexico. 876,159, pub. 6–17–69. Cl. 46.
Estate Homes, Inc., Elkhart, Ind. 752,834–5, canc. Cl. 19.
Evans, Bob, Farms: *See*—
Evans, Bob, Farms, Inc.
Evans, Bob, Farms, Inc., Columbus, Ohio, from Bob Evans Farms, Michigan, Inc., Hillsdale, Mich. 876,145, pub. 6–17–69. Cl. 46.
Evans-Aristocrat Industries, Inc., Elizabeth, N.J. 875,882, pub. 6–17–69. Cl. 3.
Eversharp, Inc., Milford, Conn. 876,014, pub. 6–17–69. Cl. 23.
Exchange Builders & Supply Co., Inc., Cleveland, Ohio. 752,753, canc. Cl. 12.
Fairchild Camera & Instrument Corp., Syosset, N.Y. 875,998, pub. 6–17–69. Cl. 23.
Fairway Foods, Inc.: *See*—
Twin City Wholesale Grocer Co.
Fallbrook Citrus Assn., Fallbrook, Calif. 517,869, ren. 9–2–69. Cl. 46.

Falls City Creamery Co., Falls City, Nebr. 753,056, canc. Cl. 46.
Farini, Joseph D., d.b.a. Julien Cosmetics, San Francisco, Calif. 876,185, pub. 6–17–69. Cl. 51.
Fashion Park Inc., Rochester, to Fashion Park, Inc., New York, N.Y. 258,433–4, ren. 9–2–69. Cl. 39.
Federal-Mogul Corp.: *See*—
Arrowhead Rubber Co.
Federal-Mogul-Bower Bearings, Inc., Detroit, Mich. 752,897, canc. Cl. 23.
Feed Flavors Inc., Chicago, Ill. 876,147, pub. 6–17–69. Cl. 46.
Fellows Gear Shaper Co., The, Springfield, Vt. 875,996, pub. 6–17–69. Cl. 23.
Ferguson Industries, Inc., Dallas, Tex. 876,003, pub. 6–17–69. Cl. 23.
Fibre-Metal Products Co., The, Chester, Pa. 876,023, pub. 6–17–69. Cl. 26.
Finkelstein, Jacob, & Sons Inc., Woonsocket, R.I. 876,087, pub. 6–17–69. Cl. 39.
First Federal Savings & Loan Assn., Bremerton, Wash. 876,229, pub. 6–17–69. Cl. 102.
Fisons Pharmaceuticals Ltd., Loughborough, Leicestershire, England. 876,252. Cl. 18.
Flagg, Stanley G., & Co., Inc., Philadelphia, Pa. 515,316, ren. 9–2–69. Cl. 13.
Flagstaff Foods: *See*—
Greenspan Bros. Co.
Flotill Products, Inc., to Tillie Lewis Foods, Inc., Stockton, Calif. 517,051, ren. 9–2–69. Cl. 46.
Flow Technology, Inc., Tempe, Ariz. 876,029, pub. 6–17–69. Cl. 26.
Ford Motor Co., Dearborn, Mich. 257,500, ren. 9–2–69. Cl. 21.
Foremost-McKesson, Inc.: *See*—
Currier's Tablets Inc.
Foremost-McKesson, Inc., d.b.a. McKesson Laboratories, New York, N.Y. 875,942, pub. 6–17–69. Cl. 18.
Foremost-McKesson, Inc., d.b.a. Gentec Hospital Supply Co., New York, N.Y. 876,201, pub. 6–17–69. Cl. 52.
Foster, D. A., Equipment Corp., Merrifield, Va. 755,238, cor. Cl. 103.
Founders Mutual Depositer Corp., Denver, Colo. 876,232–3, pub. 6–17–69. Cl. 102.
Fox, Al, & Associates, Inc., Chicago, Ill. 752,946, canc. Cl. 28.
Fuel Control Corp., Sullivan, Mo. 752,925, canc. Cl. 23.
Gal's French Bakery: *See*—
Gal's Seattle French Baking Co., Inc.
Gal's Seattle French Baking Co., Inc., d.b.a. Gal's French Bakery, Seattle, Wash. 753,047, canc. Cl. 46.
Gamescience Corp., Goshen, N.J. 876,259. Cl. 22.
Garlock Inc., Palmyra, N.Y. 752,896, canc. Cl. 23.
Geigy Chemical Corp.: *See*—
Alrose Chemical Co., Inc.
General Battery & Ceramic Corp., Reading, Pa. 875,967, pub. 6–17–69. Cl. 21.
General Dynamics Corp., Rochester, N.Y. 752,853, canc. Cl. 21.
General Electric Co., Plainville, Conn. 875,962, pub. 6–17–69. Cl. 21.
General Foods Corp., White Plains, N.Y. 753,052, canc. Cl. 46.
General International Ltd., Atlanta, Ga. 752,784, canc. Cl. 14.
General Motors Corp., Detroit, Mich. 511,601, ren. 9–2–69. Cl. 19.
General Motors Corp., Detroit, Mich. 511,603, ren. 9–2–69. Cl. 19.
General Motors Corp., Detroit, Mich. 752,923, canc. Cl. 23.
General Time Corp.: *See*—
Western Clock Co.
Genesco Inc.: *See*—
Jarman Shoe Co.
Genesco Inc., Nashville, Tenn. 876,100–2, pub. 6–17–69. Cl. 39.
Gentec Hospital Supply Co.: *See*—
Foremost-McKesson, Inc.
Georgia International Life Insurance Co., Atlanta, Ga. 876,234, pub. 6–17–69. Cl. 102.
Gibson, C. R., & Co., Norwalk, Conn. 752,989, canc. Cl. 37.
Gingiss Formalwear, Inc., Chicago, Ill. 876,210, pub. 6–17–69. Cl. 100.
Girard, Bruce, Garbedian & Associates Ltd., Montreal, Quebec, Canada. 875,877, pub. 6–17–69. Cl. 2.
Girresch, John E., Manchester, Mo. 876,211, pub. 6–17–69. Cl. 100.
Glamour Guild of America, Philadelphia, Pa. 753,077, canc. Cl. 102.
Glassform Inc., Compton, Calif. 875,868, pub. 6–17–69. Cl. 1.
Glendinning Companies, Inc., Westport, Conn. 876,218, pub. 6–17–69. Cl. 101.
Global Strapping Co., Dalton, Ga. 875,905, pub. 6–17–69. Cl. 7.
Goodpasture Grain & Milling Co., Inc., Brownfield, Tex. 752,731, canc. Cl. 10.
Goodrich, B. F., Co., The, Akron, Ohio. 875,871, pub. 6–17–69. Cl. 1.
Goodyear Tire & Rubber Co., The, Akron, Ohio. 255,345. Am. 7(d). Cl. 35.
Grado Laboratories, Inc., Brooklyn, N.Y. 752,977, canc. Cl. 36.
Graphics, Inc., Kearny, N.J. 752,961, canc. Cl. 34.
Gray Co., Inc., assor. to Gray Co., Inc., to Gray Co., Inc., Minneapolis, Minn. 442,825, ren. 9–2–69. Cl. 23.
Gray Co., Inc., Minneapolis, Minn. 876,026, pub. 6–17–69. Cl. 26.
Green, Abner B., Associates, New York, N.Y. 876,244, pub. 6–17–69. Cl. 107.
Greenspan Bros. Co., to Flagstaff Foods, Perth Amboy, N.J. 263,863, ren. 9–2–69. Cl. 46.
Greer Enterprises, Inc., d.b.a. Hairystyling Research Co., Quincy, Mass. 876,269. Cl. 51.
Greyhound Corp., The, Chicago, Ill. 875,984, pub. 6–17–69. Cl. 22.
Guardian Chemical Corp., Long Island City, N.Y. 875,894, pub. 6–17–69. Cl. 6.
H-C Industries, Inc., Crawfordsville, Ind. 876,004, pub. 6–17–69. Cl. 23.
Hairstyling Research Co.: *See*—
Greer Enterprises, Inc.
Hal, Robert, Clothes: *See*—
Hall, Robert, Clothes, Inc.
Hall, Robert, Clothes, Inc., d.b.a. Robert Hall Clothes, New York, N.Y. 876,096, pub. 6–17–69. Cl. 39.
Hampshire Mfg. Co. from Holgate Toys, Inc., Chicago, Ill. 752,877, canc. Cl. 22.
Hanes Corp., Winston-Salem, N.C. 876,098, pub. 6–17–69. Cl. 39.
Harrington Mfg. Co., Inc., Lewiston, N.C. 752,888, canc. Cl. 23.
Harry & David, Medford, Oreg., from Dial-A-Gift Inc., Newport Beach, Calif. 876,223, pub. 6–17–69. Cl. 101.
Har-Van Corp., Chicago, Ill. 876,035–6, pub. 6–17–69. Cl. 31.
Harvey, Draper M., d.b.a. Bank Travel Club, Hingham, Mass. 876,278. Cl. 101.
Hasbro Industries, Inc., Pawtucket, R.I. 876,065–6, pub. 6–17–69. Cl. 37.
Hassenfeld Bros. Inc., Central Falls, R.I. 752,882, canc. Cl. 22.
Headliners International, The, New York, N.Y. 876,275. Cl. 101.
Head-To-Toe Products, Rahway, from David Jaffe, Scotch Plains, N.J. 876,268. Cl. 51.
Heartsafe, Hart, Tex. 876,103, pub. 6–17–69. Cl. 40.
Heavenly Creations, Inc., Norfolk, Va. 876,107, pub. 6–17–69. Cl. 40.
Helms Bakeries, Los Angeles, Calif. 876,161, pub. 6–17–69. Cl. 46.
Her Majesty Underwear Co., to Her Majesty Industries, Inc., Mauldin, S.C. 870,444, cor. Cl. 23.
Hercules Inc., Wilmington, Del. 875,866, pub. 6–17–69. Cl. 1.
Hirsh, Jacqueline, Bethesda, Md. 876,257. Cl. 22.
Hoffmann-La Roche Inc., Nutley, N.J. 875,941, pub. 6–17–69. Cl. 18.
Holgate Toys, Inc.: *See*—
Hampshire Mfg. Co.
Holland House Brands, Inc., Woodside, N.Y. 872,681, cor. Cl. 45.
Holzer Watch Co., Inc., New York, N.Y. 752,943, canc. Cl. 28.
Houdaille Industries, Inc., from Houdaille Industries, Inc., Buffalo, N.Y. 876,262. Cl. 26.
House of Perfection, Inc., The, New York, N.Y. 753,005, canc. Cl. 39.
House of Style, The: *See*—
La Maur, Inc.
Hudnut, Richard, Morris Plains, N.J. 753,065, canc. Cl. 51.
Huffman Mfg. Co., The, Dayton, Ohio. 752,895, canc. Cl. 23.
Huffman Mfg. Co., The, Miamisburg, Ohio. 876,254. Cl. 19.
Huffman Mfg. Co., The, Miamisburg, Ohio. 875,953, pub. 6–17–69. Cl. 19.
Hulbert Good Corp., The: *See*—
Hulbert Mfg. Co.
Hulbert Mfg. Co., to The Hulbert Good Corp., Ashtabula, Ohio. 440,890, ren. 9–2–69. Cl. 19.
Humphries, William W., Dover, Ohio. 753,053–4, canc. Cl. 46.
Hunting World, Inc., New York, N.Y. 876,049, pub. 6–17–69. Cl. 34.
Imoco-Gateway Corp., Chicago, Ill. 876,202, pub. 6–17–69. Cl. 52.
Imperial Knife Associated Companies, Inc., Providence, R.I. 876,008, pub. 6–17–69. Cl. 23.
Independent Pneumatic Tool Co., Chicago, to Thor Power Tool Co., Aurora, Ill. 517,472, ren. 9–2–69. Cl. 31.
Indian Head Inc., New York, N.Y. 876,115, pub. 6–17–69. Cl. 43.
Industrial Des. Co., The: *See*—
Troy, Leonard.
Industrial Electric Reels, Inc., Omaha, Nebr. 875,973, pub. 6–17–69. Cl. 21.
Industrial Suppliers Co., San Francisco, Calif. 752,855, canc. Cl. 21.
Innovation Industries, Inc., Silver Spring, Md. 875,920, pub. 6–17–69. Cl. 13.
Instrument Specialties Co., Inc., West Paterson, N.J. 875,965, pub. 6–10–69. Cl. 21.
Instrumentation Specialties Co., Lincoln, Nebr. 876,020, pub. 6–17–69. Cl. 26.
Intec Laboratories, from Organon Inc., West Orange, N.J. 876,183, pub. 2–18–69. Cl. 51.
International Salt Co., Clarks Summit, Pa. 876,000, pub. 6–17–69. Cl. 23.
International Salt Co., Clarks Summit, Pa. 876,134, pub. 6–17–69. Cl. 46.
International Telephone & Telegraph Corp., New York, N.Y. 875,974, pub. 6–17–69. Cl. 21.
Interpace Corp., Parsippany, N.J., from Shenango Ceramics, Inc., New Castle, Pa. 876,033, pub. 6–17–69. Cl. 30.
Jackes-Evans Mfg. Co., St. Louis, Mo. 876,017, pub. 6–17–69. Cl. 25.
Jackson, George W., d.b.a. Jackson Scaffolding Ltd., Vancouver, British Columbia, Canada. 752,766, canc. Cl. 12.
Jackson Scaffolding Ltd.: *See*—
Jackson, George W.
Jaffe, David: *See*—
Head-To-Toe Products.
Jarman Shoe Co., to Genesco Inc., Nashville, Tenn. 257,482, ren. 9–2–69. Cl. 39.
Jelenko, J. F., & Co., Inc., New Rochelle, N.Y. 875,883, pub. 6–17–69. Cl. 4.

Jewel Extract Co., Inc., Pittsburgh, Pa. 511,117, ren. 9–2–69. Cl. 45.
John's, Inc., Apopka, Fla. 875,865, pub. 6–17–69. Cl. 1.
Johnson Corp., The, Monroeville, Ind. 876,255. Cl. 19.
Johnson & Johnson, New Brunswick, N.J. 875,994, pub. 6–17–69. Cl. 23.
Johns-Manville Corp., New York, N.Y. 875,916, pub. 6–17–69. Cl. 12.
Jolly Jack's, Inc., San Antonio, Tex. 876,212, pub. 6–17–69. Cl. 100.
Julien Cosmetics: *See*—
Farini, Joseph D.
Kaiser Aluminum & Chemical Corp.: *See*—
Mexico Refractories Co.
Kandahar Sportswear Co., Inc., The, Allentown, Pa. 876,097, pub. 6–17–69. Cl. 39.
Kapro Corp., Chicago, Ill. 752,789, canc. Cl. 15.
Katz, Max, Bag Co., Inc., Indianapolis, Ind. 876,056, pub. 6–17–69. Cl. 37.
Kayser-Roth Corp.: *See*—
Stein, A., & Co.
Keenan Industries Ltd., Ontario, Canada. 876,266. Cl. 44.
Kem Mfg. Corp., Tucker, Ga. 876,203, pub. 6–17–69. Cl. 52.
Kendon Mfg. Co.: *See*—
Sportsman's Den, Inc.
Kennedy, David E., Inc., to Kentile Floors Inc., Brooklyn, N.Y. 515,131, ren. 9–2–69. Cl. 34.
Kentile Floors Inc.: *See*—
Kennedy, David E., Inc.
Kewaunee: *See*—
Baumeister, Gilbert F.
Kewaunee Bottling Works: *See*—
Baumeister, Gilbert F.
Kienzle Apparate G.m.b.H., Villingen, Black Forest, Germany. 876,027, pub. 6–17–69. Cl. 26.
Kimberly-Clark Corp., Neenah, Wis. 753,029, canc. Cl. 44.
Kimberly-Clark Corp., Neenah, Wis. 876,059, pub. 6–17–69. Cl. 37.
Koehring Co., Milwaukee, Wis. 875,991, pub. 6–17–69. Cl. 23.
Koff, Bernard E., d.b.a. Market Measures, Livingston, N.J. 876,227, pub. 6–17–69. Cl. 101.
Koro Corp., Hudson, Mass. 875,876, pub. 6–17–69. Cl. 2.
Kresge, S. S., Co., Detroit, Mich. 875,884, pub. 6–17–69. Cl. 4.
Kuhl Egg Equipment Corp., Flemington, N.J. 876,025, pub. 6–17–69. Cl. 26.
Kvernelands Fabrikk A/S, Kvernaland, Norway. 876,007, pub. 6–17–69. Cl. 23.
Kwik-Kover Mfg. Co., Lincolnwood, Ill. 876,177, pub. 6–17–69. Cl. 50.
La Boutique de Sheila, S.A.R.L., Paris, France. 875,977, pub. 6–17–69. Multiple Class (Classes 22 and 39).
Lafayette Pharmacal, Inc., Lafayette, Ind. 875,933, pub. 6–17–69. Cl. 18.
La Maur, Inc., d.b.a. The House of Style, Minneapolis, Minn. 876,190, pub. 6–17–69. Cl. 51.
Lanvin-Charles of the Ritz, Inc., New York, N.Y. 876,191, pub. 6–17–69. Cl. 51.
Latex Process, Inc., Melrose, Mass. 752,7755, canc. Cl. 12.
La Valliere Co., The, to The Specialty Products Co., New Orleans, La. 258,635, ren. 9–2–69. Cl. 51.
Lawson, Allen, d.b.a. Travel Records, West Columbia, S.C. 752,984, canc. Cl. 36.
Leeming, Thomas, & Co., Inc., New York, N.Y. 752,804–5, canc. Cl. 18.
Leesona Corp., Warwick, R.I. 876,001, pub. 6–17–69. Cl. 23.
Leggitt, S. H., Co., Marshall, Mich. 752,963, canc. Cl. 34.
Leitner Equipment Co., Franklin Park, Ill. 752,962, canc. Cl. 34.
Lenox Jewelry Products Corp., New York, N.Y. 876,030, pub. 6–17–69. Cl. 28.
Leonhardt Co., Inc., Brookline, Mass. 876,237–8, pub. 6–17–69. Cl. 103.
Lesley Records: *See*—
Brodie, F. I.
Levine, Martin, d.b.a. Twin Double Co., New York, N.Y. 876,215, pub. 6–14–66. Cl. 101.
Lewis, Tillie, Foods, Inc.: *See*—
Flotill Products, Inc.
Libbey-Owens-Ford Co., from Libbey-Owens-Ford Glass Co., Toledo, Ohio. 876,046, pub. 6–17–69. Cl. 33.
Libbey-Owens-Ford Glass Co.: *See*—
Libbey-Owens-Ford Co.
Liberman, Daniel, d.b.a. Zip Printing, Los Angeles, Calif. 876,217, pub. 6–17–69. Cl. 101.
Lidocaine Dental Mfg. Co., Inc., Brooklyn, N.Y. 876,123, pub. 6–17–69. Cl. 44.
Lifetime Career School, Inc., Los Angeles, Calif. 875,921, pub. 6–17–69. Multiple Class (Classes 14 and 29).
Liggett & Myers Inc. New York, N.Y. 875,929, pub. 7–8–69. Cl. 17.
Lighting Products Inc., Highland Park, Ill. 875,972, pub. 6–17–69. Cl. 21.
Lightner, Larry, Inc.: *See*—
Brownsville Citrus Association.
Lindsay Ripe Olive Co., to Consolidated Olive Growers, Lindsay, Calif. 260,234. ren. 9–2–69. Cl. 46.
Lion Brand Yarn Co., New York, N.Y. 876,114, pub. 6–17–69. Cl. 43.
Lion Ribbon Co., Inc., New York, N.Y. 875,904, pub. 6–17–69. Cl. 7.
Liquid Carbonic Corp., from Liquid Carbonic Corp., Chicago, Ill. 876,039, pub. 6–17–69. Cl. 31.
Liston, W. T., Co., Harlingen, Tex. 752,767, canc. Cl. 12.
Litton Business Systems, Inc., from Monroe International, Inc., Orange, N.J. 876,018, pub. 6–17–69. Cl. 26.
Logging Development Corp., Montreal, Quebec, Canada. 876,005–6, pub. 6–17–69. Cl. 23.
London Records, Inc.: *See*—
Decca Record Co. Ltd., The.
Decca Records, Inc.
London Records, Inc., New York, N.Y. 752,985, canc. Cl. 36.
Looart Press, Inc., Colorado Springs, Colo. 876,075, pub. 6–17–69. Cl. 38.
Lotel, Inc., Baton Rouge, La. 875,915, pub. 6–17–69. Cl. 12.
Lowell Corp., The Worcester, Mass. 875,989, pub. 6–17–69. Cl. 23.
Lowe's, Inc., Cassopolis, Mich. 875,869, pub. 6–17–69. Cl. 1.
Lowney, Walter M., Co. Ltd., Sherbrooke, Quebec, Canada. 876,142, pub. 6–17–69. Cl. 46.
MacNish, Robert, & Co. Ltd.: *See*—
McNish, Robert, & Co. Ltd.
Maggie, Inc., Miami, Fla. 876,080, pub. 6–17–69. Cl. 39.
Magruder Color Co., Inc., Newark, N.J. 875,910, pub. 6–17–69. Cl. 11.
Marco Sari: *See*—
Barnes, Norene.
Market Measures: *See*—
Koff, Bernard E.
Marlan Co.: *See*—
American Dairy Queen Corp.
Marlene Industries Corp., New York, N.Y. 876,090, pub. 6–17–69. Cl. 39.
Marvel Plastics Mfg. Corp., Brooklyn, N.Y. 752,719, canc. Cl. 2.
Mask-O-Matic, Inc., Hawthorne, N.J. 752,915, canc. Cl. 23.
Masury-Columbia Co., Melrose Park, Ill. 876,197, pub. 6–17–69. Cl. 52.
Matson, Carl G., d.b.a. Research & Development, Kewanee, Ill. 876,062, pub. 6–17–69. Cl. 37.
Mattel, Inc., Hawthorne, Calif. 875,979, pub. 6–17–69. Cl. 22.
Mattel, Inc., Hawthorne, Calif. 875,983, pub. 6–17–69. Cl. 22.
Maxcy L., Inc., Frostproof, Fla., to The Coca-Cola Co., Atlanta, Ga. 258,442, ren. 9–2–69. Cl. 46.
May Department Stores Co., The, St. Louis, Mo. 256,181, ren. 9–2–69. Cl. 39.
Mazzucchelli Celluloide, S.p.A., Varese, Italy. 875,976, pub. 6–17–69. Cl. 22.
McCormick, Burt M., d.b.a. "A" Stand-By Telephone Secretary, Huntington Park, Calif. 753,075, canc. Cl. 101.
McGraw-Edison Co.: *See*—
Edison, Thomas A., Inc.
National Phonograph Co.
McGregor-Doniger Inc., New York, N.Y. 753,020, canc. Cl. 42.
McKesson Laboratories: *See*—
Foremost-McKesson, Inc.
McKinnon, Kenneth L., San Rafael, Calif. 876,034, pub. 6–17–69. Cl. 30.
McNish, Robert, & Co. Ltd., Glasgow, to Robert MacNish & Co. Ltd., Dumbarton, Scotland. 517,715, ren. 9–2–69. Cl. 49.
Medi-Chem, Inc., Santa Monica, Calif. 876,200, pub. 6–17–69. Cl. 52.
Medilease, Inc., Chicago, Ill. 876,209, pub. 6–17–69. Cl. 100.
Mediterranean Importing Co., Inc., d.b.a. Mediterranean Wines, Long Island City, N.Y. 876,171–2, pub. 6–17–69. Cl. 47.
Mediterranean Wines: *See*—
Mediterranean Importing Co., Inc.
Meierjohan-Wengler Co., to Meierjohan-Wengler, Inc., Cincinnati, Ohio. 515,635, ren. 9–2–69. Cl. 13.
Meierjohan-Wengler, Inc.: *See*—
Meierjohan-Wengler Co.
Melville Shoe Corp., New York, N.Y. 263,939, ren. 9–2–69. Cl. 39.
Merck & Co., Inc.: *See*—
Sharp & Dohme.
Metro Wholesale Corp., New York, N.Y. 876,016, pub. 6–17–69. Cl. 24.
Mexico Refractories Co., Mexico, Mo., to Kaiser Aluminum & Chemical Corp., Oakland, Calif. 510,635, ren. 9–2–69. Cl. 12.
Miles Laboratories, Inc., Elkhart, Ind. 875,935, pub. 6–17–69. Cl. 18.
Miles Laboratories, Inc., Elkhart, Ind. 875,949, pub. 6–17–69. Cl. 18.
Mohasco Industries, Inc., Amsterdam, N.Y. 876,112, pub. 6–17–69. Cl. 42.
Monarch Tool & Machinery Co., from Universal Magnetic Lock, Inc., Chicago, Ill. 752,997, canc. Cl. 39.
Monroe International, Inc.: *See*—
Litton Business Systems, Inc.
Montebob Mfg. Co., Inc., Portland, Oreg. 876,088, pub. 6–17–69. Cl. 39.
Moore Business Forms, Inc., Niagara Falls, N.Y. 876,064, pub. 5–13–69. Cl. 37.
Morris, Philip, & Co. Ltd. Inc., to Philip Morris Inc., New York, N.Y. 509,941, ren. 9–2–69. Cl. 17.
Morris, Philip, Inc.: *See*—
Morris, Philip, & Co. Ltd. Inc.
Morris, Philip, Inc., New York, N.Y. 875,928, pub. 7–2–68. Cl. 17.
Morton Foods, Inc., Dallas, Tex. 876,165, pub. 6–17–69. Cl. 46.
Motor Wheel Corp., Lansing, Mich. 875,954, pub. 6–17–69. Cl. 19.
Multiplex Co., St. Louis, Mo. 875,919, pub. 6–17–69. Multiple Class (Classes 13, 23, and 31).
Mundet Cork Corp., North Bergen, N.J. 752,759, canc. Cl. 12.
Natco Corp., Pittsburgh, Pa. 752,738, canc. Cl. 12.
National Biscuit Co., New York, N.Y. 876,155, pub. 6–17–69. Cl. 46.
National Blank Book Co., Inc., Holyoke, Mass. 876,058, pub. 6–17–69. Cl. 37.

National Carbon Co., Inc., to Union Carbide Corp., New York, N.Y. 258,956. Am. 7(d). Cl. 44.
National Group Plans, Inc., Los Angeles, Calif. 876,279. Cl. 102.
National Gypsum Co., Buffalo, N.Y. 876,216, pub. 6–17–69. Cl. 101.
National NuGrape Co., Atlanta, Ga. 876,127, pub. 6–17–69 Cl. 45.
National Phonograph Co., Orange, N.J., to McGraw-Edison Co., Elgin, Ill. 33,236, ren. 9–2–69. Cl. 36.
National Phonograph Co., West Orange, N.J., to McGraw-Edison Co., Elgin, Ill. 74,476, ren. 9–2–69. Cl. 36.
National Potteries Corp., Bedford, Ohio. 753,063, canc. Cl. 50.
National Steel Corp., Pittsburgh, Pa. 876,250. Cl. 14.
National Titanium Co., Inc., Pico Rivera, Calif. 752,793, canc. Cl. 16.
Naugatuck Chemical Co., The, to Uniroyal, Inc., New York, N.Y. 264,339, ren. 9–2–69. Cl. 5.
Nelson & Nelson Mfg. Jewelers Inc., Minneapolis, Minn. 752,947, canc. Cl. 28.
Nestle Co., Inc., The, White Plains, N.Y. 876,150, pub. 6–17–69. Cl. 46.
Nethercutt Industrial Corp., Sylmar, Calif. 752,762, canc. Cl. 12.
Newlon Mfg. Co.: *See*—
Newlon, Robert J.
Newlon, Robert J., d.b.a. Newlon Mfg. Co., Dallas, Tex. 752,779, canc. Cl. 13.
Newport Boats: *See*—
Pyle, Carter, Enterprises.
Norris Industries, Inc.: *See*—
Buffalo Fire Appliance Corp.
North American Van Lines, Inc., from North American Van Lines, Inc., Fort Wayne, Ind. 876,242, pub. 6–17–69. Cl. 105.
North Pacific Canners & Packers, Inc., Portland, Oreg. 876,132, pub. 6–17–69. Cl. 46.
Oneida Ltd., Oneida, N.Y. 876,010–13, pub. 6–17–69. Cl. 23.
Ore-Ida Foods, Inc., Boise, Idaho. 876,158, pub. 6–17–69. Cl. 46.
Organon Inc.: *See*—
Intec Laboratories.
Ortega, Emilio L., Cadiz, Spain. 876,267. Cl. 49.
Orthwine, Rudolph, New York, N.Y. 257,611, ren. 9–2–69. Cl. 32.
Osto Pharmaceutical Co., Elizabeth, N.J. 875,946–7, pub. 6–17–69. Cl. 18.
PCR Patent Development Corp., Princeton, N.J. 875,978, pub. 6–17–69. Cl. 22.
Page Steel & Wire Co., Adrian, Mich., and Bridgeport, Conn., to American Chain & Cable Co., Inc., Bridgeport, Conn. 262,417, ren. 9–2–69. Cl. 13.
Paged: *See*—
Centrala Handlu Zagranicznego "Paged."
Palais Royal of Houston, Inc., Houston, Tex. 876,092, pub. 6–17–69. Cl. 39.
Pan American Suntan Oil Corp., New York, N.Y. 876,182, pub. 6–17–69. Cl. 51.
Pancaldi & B, Bologna, Italy. 876,085, pub. 6–17–69. Cl. 39.
Parke, Davis & Co., Detroit, Mich. 876,125, pub. 6–17–69. Cl. 44.
Parke, Davis & Co., Detroit, Mich. 876,193, pub. 6–17–69. Cl. 51.
Pavement Salvage, Inc., Pittsburgh, Pa. 752,924, canc. Cl. 23.
Pennsalt Chemicals Corp., Philadelphia, Pa. 876,199, pub. 6–17–69. Cl. 52.
Pet Inc., St. Louis, Mo. 876,137, pub. 6–17–69. Cl. 46.
Peyton Plate, Inc., Nashville, Tenn. 876,167, pub. 6–17–69. Cl. 46.
Pfizer, Chas., & Co., Inc., New York, N.Y. 875,945, pub. 6–17–69. Cl. 18.
Pflaum, Geo. A., Puolisher, Inc., Dayton, Ohio, to Standard International Corp., Andover, Mass. 512,550, ren. 9–2–69. Cl. 38.
Phenix Supply Co., Atlanta, Ga. 875,960, pub. 6–17–69. Cl. 21.
Philadelphia Gear Corp., King of Prussia, Pa. 752,887, canc. Cl. 23.
Phoenix Steel Corp., Claymont, Del. 871,619, cor. Cl. 14.
Pioneer Products, Inc., Ocala, Fla. 875,980, pub. 6–17–69. Cl. 22.
Plasitron Corp., New York, N.Y. 752,851, canc. Cl. 21.
Pluto Corp., to Pluto Corp., French Lick, Ind. 508,621, ren. 9–2–69. Cl. 18.
Pluto Corp. to Pluto Corp., French Lick, Ind. 509,717, ren. 9–2–69. Cl. 18.
Pointer System, Inc., Winona, Minn. 876,074, pub. 6–17–69. Cl. 38.
Poly-Prim Plastics Co.: *See*—
Canaga, Harold E., Jr.
Ponemah Mills, Taftville, Conn., to Ponemah Mills, Inc., New York, N.Y. 510,856, ren. 9–2–69. Cl. 42.
Ponemah Mills, Inc.: *See*—
Ponemah Mills.
Pope & Talbot Inc., San Francisco, Calif. 752,741–3, canc. Cl. 12.
Popkins, Lillian B., d.b.a. Eduphonics Recording Co., Santa Clara, Calif. 752,976, canc. Cl. 36.
Postal Press, Los Angeles, Calif. 876,221–2, pub. 6–17–69. Cl. 101.
Potvin, R. J., Shoe Co., Inc.: *See*—
Potvin, Richard.
Potvin, Richard, d.b.a. R. J. Potvin Shoe Co., assor. to R. J. Potvin Shoe Co., to R. J. Potvin Shoe Co., Inc., Brockton, Mass. 513,989, ren. 9–2–69. Cl. 39.
Powers Chemco, Inc., from Chemco Photoproducts Co., Inc., Glen Cove, N.Y. 875,899, pub. 6–17–69. Cl. 6.
Pratt-Low Preserving Co., Santa Clara, Calif., to Duffy-Mott Co., Inc., New York, N.Y. 443,494, ren. 9–2–69. Cl. 46.
Preventi-Med Consultants, Inc., North Hollywood, Calif. 876,213, pub. 6–17–69. Cl. 100.
Procter & Gamble Co., The: *See*—
Rank, Richard L.
Procter & Gamble Co., The, Cincinnati, Ohio. 876,169, pub. 6–17–69. Cl. 46.
Professional Instruments Co., Minneapolis, Minn. 876,002, pub. 6–17–69. Cl. 23.
Puritan Fashions Corp., New York, N.Y. 876,093, pub. 6–17–69. Cl. 39.
Putman Publishing Co., Chicago, Ill. 876,071, pub. 6–17–69. Cl. 38.
Pyle, Carter, Enterprises, d.b.a. Newport Boats, Newport Beach, Calif. 752,837, canc. Cl. 19.
Przedsiebiorstwo Handlu Zagranicznego "Agros," Warsaw, Poland. 868,237, cor. Cl. 49.
Pyramid Inc., Newton, Iowa. 876,050, pub. 6–17–69. Cl. 35.
Qualheim, Inc., Racine, Wis. 875,992, pub. 6–17–69. Cl. 23.
Rand Ruber Co., Inc., Brooklyn, N.Y. 510,950, ren. 9–2–69. Cl. 40.
Rank, Richard L., d.b.a. The Surex Mfg. Co., St. Louis, Mo., to The Procter & Gamble Co., Cincinnati, Ohio. 509,117, ren. 9–2–69. Cl. 44.
Rapid Injection Systems Corp., Flushing, N.Y. 876,118, pub. 6–17–69. Cl. 44.
Raybestos-Manhattan, Inc., Passaic, N.J. 875,888, pub. 9–21–65. Multiple Class (Classes 6 and 19).
Rayette-Faberge, Inc.: *See*—
Raymond Laboratories, Inc.
Raymond Laboratories, Inc., St. Paul, Minn., to Rayette-Faberge, Inc., New York, N.Y. 511,738, ren. 9–2–69. Cl. 51.
Red Diamond Battery Mfg. Co., Peoria, Ill. 875,961, pub. 6–17–69. Cl. 21.
Reddy Kilowatt, Inc., New York N.Y. 876,224, pub. 6–17–69. Cl. 101.
Reefer-Galler, Inc., to Colgate-Palmolive Co., New York, N.Y. 515,002, ren. 9–2–69. Cl. 6.
Reemtsma Cigarettenfabriken G.m.b.H., Hamburg, Germany. 876,251. Cl. 17.
Reese Finer Foods, Inc., Chicago, Ill. 876,168, pub. 6–17–69. Cl. 46.
Reinders Brothers, Inc., Elm Grove, Wis. 876,162, pub. 6–17–69. Cl. 46.
Rendell, W. J., Ltd., London, England. 752,801, canc. Cl. 18.
Rendell, W. J., Ltd., London, England. 753,032, canc. Cl. 44.
Renneker, H. H., to H. H. Renneker Co., Inc., San Diego, Calif. 517,375, ren. 9–2–69. Cl. 21.
Renneker, H. H., Co., Inc.: *See*—
Renneker, H. H.
Renold Chains Ltd., Manchester, England. 752,899, canc. Cl. 23.
Research & Development: *See*—
Matson, Carl G.
Rexall Drug & Chemical Co., d.b.a. Vanda Cosmetics Co., Los Angeles, Calif. 876,195–6, pub. 6–17–69. Cl. 51.
Reynolds, R. J., Tobacco Co., Winston-Salem, N.C. 875,931–2, pub. 6–17–69. Cl. 17.
Richard Brothers Punch Co.: *See*—
Allied Products Corp.
Ritter, P. J., Co., The, Bridgeton, N.J. 876,152, pub. 6–17–69. Cl. 46.
Roberts, Clive E., d.b.a. Roberts Orthodontic Laboratory, La Canada, Calif. 876,117, pub. 6–17–69. Cl. 44.
Roberts Orthodontic Laboratory: *See*—
Roberts, Clive E.
Robertson Carpet Corp., New York, N.Y. 876,113, pub. 6–17–69. Cl. 43.
Robins, A. H., Co., Inc., Richmond, Va. 752,818–19, canc. Cl. 18.
Robins, A. H., Co., Inc., Richmond, Va. 876,156, pub. 6–17–69. Cl. 46.
Rodriguez, Hermanos, de Cordoba S.A., Cordoba, Spain. 753,044, canc. Cl. 46.
Rohm & Haas Co., Philadelphia, Pa. 876,055, pub. 6–17–69. Cl. 37.
Romano & Son, Inc., Miami, Fla. 876,146, pub. 6–17–69. Cl. 46.
Ross-Matthai Corp., Baltimore, Md. 876,276. Cl. 101.
Roux Laboratories, Inc., New York, N.Y. 876,271. Cl. 51.
Royal Zenith Corp., New Hyde Park, N.Y. 875,990, pub. 6–17–69. Cl. 23.
Rubbermaid Inc., Wooster, Ohio. 752,830, canc. Cl. 19.
Rubie Blade Corp., New York, N.Y., to Colton Razor Blade Co., Boston, Mass. 264,062, ren. 9–2–69. Cl. 23.
Ruscoe, W. J., Co., Akron, Ohio. 875,927, pub. 6–17–69. Cl. 16.
Ruthal Industries, Ltd., Nauppauge, N.Y. 876,124, pub. 6–17–69. Cl. 44.
Safety-Tot, Inc., New Orleans, La. 752,823, canc. Cl. 19.
Safeway Stores, Inc., Oakland, Calif. 876,153, pub. 6–17–69. Cl. 46.
Sage Laboratories, Inc., Natick, Mass. 875,956, pub. 4–11–67. Cl. 21.
St. Louis Music Supply Co. Inc., St. Louis, Mo. 876,051, pub. 6–17–69. Cl. 36.
Saks & Co., New York, N.Y. 753,010, canc. Cl. 39.
Sanders Associates, Inc., Nashua, N.H. 875,955, pub. 6–17–69. Cl. 21.
Savyon Holding SA, Vaud, Switzerland. 876,131, pub. 6–17–69. Cl. 46.
Schell Ranch & Packing Co.: *See*—
Chula Vista Citrus Assn.
Schulte, Max M., d.b.a. Schulte's Pipe Shop, Maplewood, N.J. 875,907, pub. 6–17–69. Cl. 8.

Schulte's Pipe Shop: *See*—
Schulte, Max M.
Scientific Components, Inc., Linden, N.J. 875,970–1, pub. 6–17–69. Cl. 21.
Scotland, Bayard S., Joliet, Ill., to Stokely-Van Camp, Inc., Indianapolis, Ind. 260,806, ren. 9–2–69. Cl. 46.
Sechrist Chemicals, Inc., Bayonne, N.J. 752,708, canc. Cl. 1.
Seidlitz Paint & Varnish Co., to Conchemco, Inc., Kansas City, Mo. 511,727, ren. 9–2–69. Cl. 16.
Seidlitz Paint & Varnish Co., to Conchemco, Inc., Kansas City, Mo. 516,641, ren. 9–2–69. Cl. 16.
Semi-Elements, Inc., Saxonburg, Pa. 752,873–4, canc. Cl. 21.
Sharp & Dohme, Baltimore, Md., to Merck & Co., Inc., Rahway, N.J. 75,974, ren. 9–2–69. Cl. 18.
Shartzer, Kenneth B., Janesville, Wis. 876,009, pub. 6–17–69. Cl. 23.
Shell Oil Co., New York, N.Y. 752,763, canc. Cl. 12.
Shenango Ceramics, Inc.: *See*—
Interpace Corp.
Sherrill-Gibbes Corp., New York, N.Y. 876,073, pub. 6–17–69. Cl. 38.
Shrader, Ralph, Inc., Detroit, Mich. 876,198, pub. 6–17–69. Cl. 52.
Sierra Cotton Mills, Inc.: *See*—
California Cotton Mills Co.
Sierra Electric, Inc., Gardena, Calif. 875,968, pub. 6–17–69. Cl. 21.
Sigma Sangyo Kabushiki Kaisha, Tokyo-to, Japan. 876,053, pub. 9–19–67. Cl. 37.
Simendinger, Donald J., d.b.a. Berdon Industries, Columbus, Ohio. 875,900, pub. 6–17–69. Cl. 6.
Simonds Saw & Steel Co., Fitchburg, Mass., to Wallace-Murray Corp., New York, N.Y. 263,267, ren. 9–2–69. Cl. 23.
Simonds Saw & Steel Co., Fitchburg, Mass., to Wallace-Murray Corp., New York, N.Y. 263,982, ren. 9–2–69. Cl. 23.
Sincerely Yours: *See*—
Willbrand, Alfred J.
Sirco Products Co., Inc., Mount Vernon, N.Y. 875,878, pub. 6–17–69. Cl. 3.
Sleepease, Inc.: *See*—
Stern Bros.
Smallberg, William A., El Paso, Tex. 753,041, canc. Cl. 44.
Smallman, I., & Sons Co., New York, N.Y. 752,729–30, canc. Cl. 8.
Smith Mfg. Ltd., Weston, Ontario, Canada. 753,017, canc. Cl. 42.
Societe Anonyme Compagnie Francaise des Parfums D'Orsay: *See*—
D'Orsay Perfumeries Corp.
Societe Commerciale des Bourgognes de Marque, d.b.a. F. Chauvenet, Cote D'or, France. 876,170, pub. 6–17–69. Cl. 47.
Sonneborn Building Products, Inc., Des Plaines, Ill. 875,926, pub. 6–17–69. Cl. 16.
Soul Brands, Inc., Memphis, Tenn. 875,937, pub. 6–17–69. Multiple Class (Classes 18 and 39).
Southern California Plastic Co., Glendale, Calif. 752,713, canc. Cl. 2.
Southwestern Graphite Co., Burnet, Tex. 875,867, pub. 6–17–69. Cl. 1.
Spartans Industries, Inc., New York, N.Y. 876,022, pub. 6–17–69. Cl. 26.
Specialty Products Co., The: *See*—
La Valliere Co., The.
Sperry Rand Corp., New York, N.Y. 752,863, canc. Cl. 21.
Sperry Rand Corp., New York, N.Y. 876,057, pub. 6–17–69. Cl. 37.
Sprague & Carleton, Inc., Houston, Tex. 876,043, pub. 6–17–69. Cl. 32.
Sports Candles, Inc., Burlington, Wis. 876,166, pub. 6–17–69. Cl. 46.
Sportsman's Den, Inc., d.b.a. Kendon Mfg. Co., Ooltewah, Tenn. 875,982, pub. 6–17–69. Cl. 22.
Stainless & Steel Products Co.: *See*—
Butler Mfg. Co.
Standard International Corp.: *See*—
Pflaum, Geo. A., Publisher, Inc.
Standard Oil Co., Flemington, N.J. 876,048, pub. 6–17–69. Cl. 34.
Standard Packaging Corp., Stamford, Conn. 876,063, pub. 6–17–69. Cl. 37.
Standard-Coosa-Thatcher Co., Chattanooga, Tenn. 876,116, pub. 6–17–69. Cl. 43.
Star Expansion Bolt Co., New York, to Star Expansion Co., Mountainville, N.Y. 508,351, ren. 9–2–69. Cl. 13.
Star Expansion Co.: *See*—
Star Expansion Bolt Co.
Steamatic, Inc., Fort Worth, Tex. 876,236, pub. 6–17–69. Cl. 103.
Steel Products Mfg. Co., to Swing-A-Way Mfg. Co., St. Louis, Mo. 510,585, ren. 9–2–69. Cl. 23.
Steelcraft Mfg. Co., The, Cincinnati, Ohio. 517,718, ren. 9–2–69. Cl. 12.
Stein, A., & Co., Chicago, Ill., to Kayser-Roth Corp., New York, N.Y. 75,265, ren. 9–2–69. Cl. 39.
Sterling Alderfer Co., Akron, Ohio. 876,243, pub. 6–17–69. Cl. 106.
Sterling Drug Inc.: *See*—
Winthrop Chemical Co.
Stern Brothers, New York, to Sleepease, Inc., Great Neck, N.Y. 259,355, ren. 9–2–69. Cl. 39.
Sterwin Chemicals Inc., New York, N.Y. 875,889, pub. 6–17–69. Cl. 6.
Stokely-Van Camp, Inc.: *See*—
Scotland, Bayard S.
Styro Toy Corp., McAllen, Tex. 752,883, canc. Cl. 22.
Sumitomo Metal Industries, Ltd., Osaka, Japan. 875,952, pub. 6–17–69. Cl. 19.
Summit Laboratories Inc., Indianapolis, Ind. 876,189, pub. 6–17–69. Cl. 51.
Sun Chemical Corp., New York, N.Y. 516,886, ren. 9–2–69. Cl. 6.
Sun Chemical Corp. New York, N.Y. 875,911–12, pub. 6–17–69. Cl. 11.
Sun Chemical Corp., New York, N.Y. 876,264. Cl. 42.
Sunbeam Corp., Chicago, Ill. 752,890, canc. Cl. 23.
Sundstrand Corp., Rockford, Ill. 876,021, pub. 6–17–69. Cl. 26.
Sunland Biscuit Co., Inc., Yauco, Puerto Rico. 876,148, pub. 6–17–69. Cl. 46.
Surex Mfg. Co., The: *See*—
Rank, Richard L.
Sutcliffe, M. B., Co., Philadelphia, Pa. 875,922, pub. 6–17–69. Cl. 15.
Sweetheart Plastics, Inc., Wilmington, Mass. 876,140, pub. 6–17–69. Cl. 46.
Swing-A-Way Mfg. Co.: *See*—
Steel Products Mfg. Co.
Syracuse Supply Co., Syracuse, N.Y. 876,015, pub. 6–17–69. Cl. 23.
Systemedics, Inc., Princeton, N.J. 876,219, pub. 6–17–69. Cl. 101.
T: mi Sidoste. om Lauri Molsa ja Kumpp, Tampere, Finland. 876,077, pub. 6–17–69. Cl. 39.
T.G. & Y. Stores Co., Oklahoma City, Okla. 876,060, pub. 6–17–69. Cl. 37.
Taco Bueno, Abilene, Tex. 876,273. Cl. 100.
Talbot-Carlson, Inc., Audubon, Iowa. 876,157, pub. 6–17–69. Cl. 46.
Taylor, Thomas, & Sons, Inc., Hudson, Mass. 516,954, ren. 9–2–69. Cl. 40.
Telesco Brophey Ltd., Montreal, Quebec, Canada. 876,108, pub. 6–17–69. Cl. 41.
Temp-Matic, Inc., Houston, Tex. 752,964, canc. Cl. 34.
Tenderbest Corp., Cleveland, Ohio. 876,135, pub. 6–17–69. Cl. 46.
Terra Chemicals International, Inc., Sioux City, Iowa. 875,909, pub. 6–17–69. Cl. 10.
Texal Co., Inc., The, Minneapolis, Minn. 876,121, pub. 6–17–69. Cl. 44.
Texize Chemicals, Inc., Greenville, S.C. 856,194, cor. Cl. 52.
Texize Chemicals, Inc., Greenville, S.C. 876,164, pub. 6–17–69. Cl. 46.
Textron, Inc., Providence, R.I. 875,964, pub. 6–17–69. Cl. 21.
The Chest, Los Angeles, Calif. 875,903, pub. 6–17–69. Cl. 7.
Thermorama, Inc., St. Paul, Minn. 876,084, pub. 6–17–69. Cl. 39.
Thomas & Betts Co., The, to Thomas & Betts Corp., Elizabeth, N.J. 518,405, ren. 9–2–69. Cl. 23.
Thomas & Betts Corp.: *See*—
Thomas & Betts Co., The.
Thor Power Tool Co.: *See*—
Independent Pneumatic Tool Co.
Tiger Fabrics, Inc., New York, N.Y. 875,906, pub. 6–17–69. Cl. 8.
Tote-A-Way Corp., Brooklyn, N.Y. 876,248. Cl. 2.
Tovar Tresses, Inc., New York, N.Y. 876,104, pub. 12–24–68. Cl. 40.
Tractor Supply Co., Chicago, Ill. 752,965, canc. Cl. 35.
Trader Vic's: *See*—
Bergeron, Victor J.
Trans-Atlantic Co., Philadelphia, Pa. 752,931, canc. Cl. 25.
Transceiver Corp., The, Dallas, Tex. 876,239, pub. 6–17–69. Cl. 104.
Transfinancial Corp., San Francisco, Calif. 876,235, pub. 6–17–69. Cl. 102.
Transport Pool, Inc., Los Angeles, Calif. 876,241, pub. 4–1–69. Cl. 105.
Travel Records: *See*—
Lawson, Allen.
Tri-Point Industries, Inc., Albertson, N.Y. 752,929, canc. Cl. 24.
Tri-Point Industries, Inc., Commack, N.Y. 875,914, pub. 6–17–69. Cl. 12.
Tri-Star Record Co., York Haven, Pa. 876,052, pub. 6–17–69. Cl. 36.
Trowbridge Enterprises: *See*—
Trowbridge, Gene E.
Trowbridge, Gene E., d.b.a. Trowbridge Enterprises, Cheyenne, Wyo. 876,122, pub. 6–17–69. Cl. 44.
Troy, Leonard, d.b.a. The Industrial Des. Co., Scranton, Pa. 875,918, pub. 2–18–69. Cl. 13.
Turtle Wax, Inc., Chicago, Ill. 752,822, canc. Cl. 19.
Twin City Wholesale Grocer Co., to Fairway Foods, Inc., St. Paul, Minn. 510,641, ren. 9–2–69. Cl. 46.
Twin City Wholesale Grocer Co., to Fairway Foods, Inc., St. Paul, Minn. 510,736, ren. 9–2–69. Cl. 46.
Twin Double Co.: *See*—
Levine, Martin.
U.F. Chemical Corp., Woodside, N.Y. 875,897, pub. 6–17–69. Cl. 6.
USM Corp., from United Shoe Machinery Corp., Boston, Mass. 875,862, pub. 6–17–69. Cl. 1.
Ultra Plastics, Inc., Philadelphia, Pa. 752,749, canc. Cl. 12.
Union Camp Corp., New York, N.Y. 875,901, pub. 6–17–69. Cl. 6.
Uniroyal, Inc.: *See*—
Naugatuck Chemical Co., The.
Uniroyal, Inc., New York, N.Y. 876,081, pub. 6–17–69. Cl. 39.
United California Bank, Los Angeles, Calif. 876,160, pub. 6–17–69. Cl. 46.
United Merchants & Manufacturers, Inc., New York, N.Y. 875,873, pub. 6–17–69. Cl. 1.

United Merchants & Manufacturers, Inc., New York, N.Y. 875,902, pub. 6–17–69. Cl. 6.
United Shoe Machinery Corp.: *See*—
USM Corp.
United-Carr Fastener Corp., Cambridge, to United-Carr Inc., Boston, Mass. 516,339–40, ren. 9–2–69. Cl. 40.
United-Carr Inc.: *See*—
United-Carr Fastener Corp.
United States Leasing Corp., San Francisco, Calif. 876,240, pub. 6–17–69. Cl. 105.
Unitek Corp., Monrovia, Calif. 876,265. Cl. 44.
Universal American Corp.: *See*—
American Pulley Co., The.
Universal Drafting Machine Co., to Universal Drafting Machines Corp., to Universal Drafting Machine Corp., Bedford Heights, Ohio. 443,176, ren. 9–2–69. Cl. 26.
Universal Drafting Machine Corp.: *See*—
Universal Drafting Machines Corp.
Universal Magnetic Lock, Inc.: *See*—
Monarch Tool & Machinery Co.
Universal Oil Products Co., Des Plaines, Ill. 875,890, pub. 6–17–69. Multiple Class (Classes 6, 18, and 52).
Usen Products Co., Woburn, Mass. 876,139, pub. 6–17–69. Cl. 46.
Usen Products Co., Woburn, Mass. 876,141, pub. 6–17–69. Cl. 46.
Vacuum Cleaner Corp. of America, The, from R. J. Sleeper, d.b.a. Sleeper Valve & Mfg. Co., Philadelphia, Pa. 871,742, cor. Cl. 26.
Valley View Packing Co., Inc., San Jose, Calif. 876,136, pub. 6–17–69. Cl. 46.
Vanda BC Co.: *See*—
Rexall Drug & Chemical Co.
Vanda Cosmetics Co.: *See*—
Rexall Drug & Chemical Co.
Vereinigte Papierwerke Schickedanz & Co., Nuernberg, Bavarie, Germany. 752,988, canc. Cl. 37.
Veribest Jewelry Co., Inc., New York, N.Y. 876,031, pub. 6–17–69. Cl. 28.
Victor Chemical Works, to Stauffer Chemical Co., New York, N.Y. 509,840. Am. 7(d). Cl. 46.
Victor Comptometer Corp.: *See*—
Worthington Ball Co., The.
Virtis Co., Inc., The, Gardiner, N.Y. 876,038, pub. 6–17–69. Cl. 31.
Vistron Corp., Cleveland, Ohio. 876,041, pub. 6–17–69. Cl. 31.
Vitaminerals, Inc., Glendale, Calif. 875,948, pub. 6–17–69. Cl. 18.
Walco Electric Co., Providence, R.I. 875,969, pub. 6–17–69. Cl. 21.
Walker Mfg. Co., Racine, Wis. 752,953, canc. Cl. 31.
Walker Mfg. Co., Racine, Wis. 875,995, pub. 6–17–69. Cl. 23.
Wall Industries, Inc., d.b.a. World-Wide Employment Agencies, Cambridge, Mass. 876,277. Cl. 101.
Wallace-Murray Corp.: *See*—
Simonds Saw & Steel Co.
Warner-Lambert Research Institute, Morris Plains, N.J. 876,253. Cl. 18.
Welco Alloys Corp., Royal Oak, Mich. 875,924, pub. 6–17–69. Cl. 16.
Wella Corp., The, Englewood, N.J. 876,186, pub. 6–17–69. Cl. 51.
Western Auto Supply Co., Kansas City, Mo. 876,037, pub. 6–17–69. Cl. 31.
Western Clock Co., Peru, Ill., to General Time Corp., Stamford, Conn. 264,113, ren. 9–2–69. Cl. 27.
Westinghouse Air Brake Co., Chicago, Ill. 875,986, pub. 6–17–69. Cl. 23.
Westhead, Edward W., d.b.a. The American Family Register Co., St. Davids, Pa. 876,274. Cl. 100.
Wham-O Mfg. Co., San Gabriel, Calif. 876,260. Cl. 22.
White Pine Lumber Co., Chicago, Ill. 262,723, ren. 9–2–69. Cl. 12.
Whitman Publishing Co., Racine, Wis. 875,874, pub. 6–17–69. Cl. 2.
Whittaker Publications, Inc., San Francisco, Calif. 876,070, pub. 12–10–68. Cl. 38.
Willbrand, Alfred J., d.b.a. Sincerely Yours, Odessa, Tex. 752,987, canc. Cl. 36.
Wingaersbeek Turbine Co., Inc., Lynn, Mass. 876,047, pub. 6–17–69. Cl. 34.
Winthrop Chemical Co., Inc., to Sterling Drug Inc., New York, N.Y. 258,235, ren. 9–2–69. Cl. 18.
Wonder Products Co., Collierville, Tenn. 875,981, pub. 6–17–69. Cl. 22.
Wood, John, Co.: *See*—
Bennett Pumps Corp.
Woodhead, Daniel, Co., Northbrook, Ill. 258,333, ren. 9–2–69. Cl. 21.
Worksafe, Inc., New York, N.Y. 876,086, pub. 6–17–69. Cl. 39.
World-Wide Employment Agencies: *See*—
Wall Industries, Inc.
Worthington Ball Co., The, Elyria, Ohio, to Victor Comptometer Corp., Chicago, Ill. 516,699, ren. 9–2–69. Cl. 22.
Wortz Biscuit Co., to Wortz Co., Fort Smith, Ark. 511,104, ren. 9–2–69. Cl. 46.
Wortz Co.: *See*—
Wortz Biscuit Co.
Wright of Thomasville, Inc., Thomasville, N.C. 876,072, pub. 6–17–69. Cl. 38.
Wyandotte Chemicals Corp., Wyandotte, Mich. 510,563, ren. 9–2–69. Cl. 52.
Yost Superior Co., The, Springfield, Ohio. 510,860, ren. 9–2–69. Cl. 13.
Young, Scott, & Co. Ltd., Glasgow, Scotland. 876,138, pub. 6–17–69. Cl. 46.
Youngstown Sheet & Tube Co.: *See*—
Youngstown Sheet & Tube Co., The.
Youngstown Sheet & Tube Co., The, Youngstown, to Youngstown Sheet & Tube Co., Boardman, Ohio. 514,395, ren. 9–2–69. Cl. 14.
Zayre Corp., Natick, Mass. 875,875, pub. 6–17–69. Cl. 2.
Zenith Radio Corp., Chicago, Ill. 752,847, canc. Cl. 21.
Zimmer Mfg. Co., Warsaw, Ind. 876,044, pub. 6–17–69. Cl. 32.
Zip Printing: *See*—
Liberman, Daniel.

U.S. GOVERNMENT PRINTING OFFICE: 0—1969

U.S. DEPARTMENT OF COMMERCE
OFFICIAL GAZETTE of the UNITED STATES PATENT OFFICE
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PATENTS

NOTICES

Board of Appeals Decisions Rendered in the Month of July 1969

Examiner affirmed	114
Examiner affirmed in part	19
Examiner reversed	33
Total	166

Department of the Treasury
Bureau of Customs

(T.D. 69–188)

MURRAY-ALLEN

Notice of Recordation of Trade Name

On June 21, 1969, there was published in the Federal Register (34 F.R. 9721) a notice of application for the recordation under section 42 of the Act of July 5, 1946, as amended (15 U.S.C. 1124) of the trade name MURRAY-ALLEN used by Murray-Allen Imports, Inc., a New York corporation. The notice advised that prior to final action on the application, filed pursuant to section 11.16, Customs Regulations (19 CFR 11.16), consideration would be given to relevant data, views, or arguments submitted in opposition to the recordation and received not later than 30 days from the date of publication of the notice. No responses were received in opposition to the application.

The name "MURRAY-ALLEN" is hereby recorded as the trade name of Murray-Allen Imports, Inc., a corporation organized under the laws of the State of New York, located at 30 Pine Street, New Rochelle, New York 10801, when applied to confectionery, chocolates, biscuits, baked goods, jams, preserves and snack items, manufactured in Italy, France, Poland, England, Holland, Argentina, Denmark, Belgium, Ireland, Germany, Finland, Central America, Israel and Canada.

(Signed) MYLES J. AMBROSE,
Aug. 11, 1969. *Commissioner of Customs.*

Patents Available for Licensing or Sale

D. 214,436. REAR VIEW MIRROR. Noel M. Torres, 2826 Larkin Place, San Diego, Calif., 92123.

3,132,393. FRICTION CLASP. Adalberto Sussman Steinberg, Via Frassinetti 25, Milan, Italy.

3,234,640. METHOD OF MAKING SHIELDING FOR HIGH TEMPERATURE FURNACE. Nuclear Technical Services Corporation, 1340 Burgundy Road, Ann Arbor, Mich., 48105.

3,368,596. MULTI-PURPOSE TABLE SAW. John A. Comer, 24963 Second St., Hayward, Calif., 94541.

3,405,880. METHOD AND APPARATUS FOR PUNCHING BLANKS FROM WEBS OF SHEET-LIKE MATERIAL. Stephan-Werke GmbH & Co., Weser, Germany. Correspondence to: Michael S. Striker, 360 Lexington Ave., New York, N.Y., 10017.

3,421,597. SOUND ABSORBER. Hermann Wiederhold, Rhineland, Germany. Correspondence to: Michael S. Striker, 360 Lexington Ave., New York, N.Y., 10017.

3,434,337. APPARATUS FOR CLAMPING AND SEALING PIPES OR THE LIKE. Th. Kieserling & Albrecht, Solingen, Germany. Correspondence to: Michael S. Striker, 360 Lexington Ave., New York, N.Y., 10017.

3,435,506. METHOD OF FORMING A SLOT FOR A SCREWDRIVER. Ernst Schmidt, Remagen-Kripp, Germany. Correspondence to: Michael S. Striker, 360 Lexington Ave., New York, N.Y., 10017.

3,455,464. MANIPULATIVE TOY FOR CHILD PARTICIPATION. Kenneth G. Neils, Box 267, Bigfork, Mont., 59911.

The following 3 patents are offered by: New England Institute for Medical Research, Post Office Box 308, Ridgefield, Conn., 06877.

2,952,585. IMMUNIZING AGAINST AND TREATMENT OF DISEASES.

3,095,359. HIGH-FREQUENCY TREATMENT OF MATTER.

3,256,168. PROCESS FOR CHANGING CHARGES OF MATTER.

The following 4 patents are offered by: James W. Morrow, 177 E. Main St., Chillicothe, Ohio, 45601.

3,159,248. FENCE POSTS.

3,191,752. BULK MATERIAL DISTRIBUTOR.

3,212,267. CULVERT.

3,212,625. CONVEYOR BUCKET.

The Sherwin-Williams Company offers to grant licenses on reasonable terms under the following patent. Inquiries may be addressed to the Legal Department, The Sherwin-Williams Co., 1123 Midland Bldg., Cleveland, Ohio, 44115.

3,414,601. PROCESS FOR RECOVERY OF ARSANILIC ACID.

The Upjohn Company is prepared to grant non-exclusive licenses under the following patent upon reasonable terms and conditions.

Applications for license may be addressed to: The Upjohn Company, Patent Law Department, 410 Sackett Point Road, North Haven, Conn., 06473.

3,410,888. PROCESS FOR RECOVERING AROMATIC DIISOCYANATES.

The RCA Corporation offers to grant non-exclusive licenses on reasonable terms and conditions under the following 27 patents.

Inquiries respecting licenses should be addressed to RCA Corporation, Staff Vice President, Domestic Licensing, 30 Rockefeller Plaza, New York, N.Y., 10020.

3,447,853 LIGHT DEFLECTING APPARATUS.

3,448,184. METHOD FOR PRESSING PARTICULATE MATERIAL.

New Applications Received During July 1969

Patents	8577
Designs	512
Plant Patents	15
Reissues	9
Total	9113

Issue—September 9, 1969

Patents	1300	No. 3,465,363 to No.	3,466,662, incl.
Designs	57	No. 215,137 to No.	215,193, incl.
Reissues	10	No. 26,657 to No.	26,666, incl.
Total	1367		

3,448,211. MAGNETO-OPTIC DISPLAY SYSTEM.

3,448,323. TELEVISION KINESCOPE VOLTAGE CABLE ASSEMBLY.

3,448,354. SEMICONDUCTOR DEVICE HAVING INCREASED RESISTANCE TO SECOND BREAKDOWN.

3,448,445. CONVERSION FROM SELF-CLOCKING CODE TO NRZ CODE.

3,448,777. WIRE HANDLING APPARATUS.

3,449,594. LOGIC CIRCUITS EMPLOYING COMPLEMENTARY PAIRS OF FIELD-EFFECT TRANSISTORS.

3,449,622. TELEVISION DEFLECTION CIRCUITS.

3,449,623. ELECTRON BEAM DEFLECTION CIRCUIT.

3,449,650. CAPACITOR ANODE HOLDER.

3,449,647. REMOTE CUTOFF JUNCTION GATE FIELD EFFECT TRANSISTOR.

3,449,824. METHOD FOR PREPARING A FERROELECTRIC BODY AND DEVICES.

3,450,897. STEPPING SWITCH EMPLOYING CHAIN OF LOGIC GATES HAVING MEANS FOR LOCKING A GATE IN A GIVEN STATE.

3,450,935. PROTECTION CIRCUIT.

3,450,936. TELEVISION SCANNING AND POWER SUPPLY SYSTEM.

3,450,966. FERROELECTRIC INSULATED GATE FIELD EFFECT DEVICE.

3,451,009. LUMINESCENT MATERIAL AND LASER APPARATUS UTILIZING SAID MATERIAL.

3,451,516. ELECTROMAGNETIC CLUTCH HAVING ECCENTRICALLY MOUNTED POLES.

3,451,858. THERMOELECTRIC DEVICE WITH GRAPHITE ELEMENTS.

3,452,224. METHOD OF OPERATING A THERMIONIC CONVERTER.

3,452,283. CATHODE RAY TUBE.

3,452,241. ELECTRON GUN SUITABLE FOR ELECTRON MICROSCOPE.

3,452,244. ELECTRON BEAM DEFLECTION AND HIGH VOLTAGE GENERATION CIRCUIT.

3,452,299. TRANSMIT-RECEIVE SWITCH.

3,452,333. CRYOELECTRIC MEMORIES.

3,452,348. CONVERSION FROM SELF-CLOCKING CODE TO NRZ CODE.

Patents Withdrawn From Register

General Electric Company hereby withdraws the following patents from the Register of Patents Available for Licensing or Sale. The patents were listed as being available, in the OFFICIAL GAZETTE as indicated below:

2,786,980. WAVEGUIDE IMPEDANCE MATCHING SYSTEM. Mar. 26, 1957.

2,860,342. SUPPORT STRUCTURE FOR RADAR ANTENNA SYSTEMS. Nov. 11, 1958.

Errata

Notice of Vacancy for Director, Office of International Patent and Trademark Affairs, appearing in the OFFICIAL GAZETTE, Aug. 12, 1969, should read GS–1220–16, *not* GS–1220–17.

Notice of Vacancy for Deputy Assistant Commissioner for Patent Examining, appearing in the OFFICIAL GAZETTE, Aug. 19, 1969, is correct. The erratum, appearing in the issue of Aug. 26, 1969, is rescinded.

Adjudicated Patents

(D.C.N.Y.) McClain et al. Patent No. 2,560,655 (66—1), for METHOD OF MENDING KNITTED FABRICS FORMED OF THERMOPLASTIC THREAD, *Held* invalid and not infringed. *Marvel Specialty Co.* v. *Magnet Mills, Inc.*, 297 F. Supp. 1026; 161 USPQ 412.

(D.C.N.Y.) Magee Patent No. 2,628,135 (308—6), for ANTIFRICTION BEARING FOR LINEAR MOTION. Claims 1, 2, 12 and 15 *Held* invalid but infringed, claim 7 *Held* invalid and not infringed. *Thomson Industries, Inc.* v. *Nippon Thompson Co.*, 298 F. Supp. 466; 160 USPQ 318.

(D.C. Mass.) Bartelt Patent No. 2,649,674 (53—89), for PACKAGING MACHINE. Claim 16 *Held* invalid and not infringed. *Bartelt Engineering Co.* v. *Pneumatic Scale Corp.*, 298 F. Supp. 649; 162 USPQ 48.

(D.C. Md.) Kaufman Patent No. 2,731,741 (37—54), for PORTABLE DREDGE. Claims 1 and 2 *Held* valid and not infringed. *Ellicott Mach. Corp.* v. *Wiley Mfg. Co.*, 297 F. Supp. 1044; 162 USPQ 76.

(C.A. Wis.) Kwitek Patent No. 2,870,840 (164—88), for WEB CUTTING APPARATUS. Claims 1–4, 8 and 9 *Held* infringed. *Paper Converting Machine Co.* v. *FMC Corp.*, 409 F.2d 344; 161 USPQ 67.

(C.A.N.Y.) Foster Patent No. 2,882,384 (219—67), for WELDING SYSTEM. Claims 5, 16, 19 and 22 *Held* valid and infringed. *Foster* v. *Magnetic Heating Corp. et al.*, 410 F.2d 12; 161 USPQ 133.

(C. A. 9th Circuit) Harrison et al. Patent No. 2,951,260 (18—5), for MOLDING MECHANISM AND HEATING ARRANGEMENT. Claim 12 *Held* valid but not infringed. *Crown Mach. & Tool Co.* v. *D & S Industries, Inc.*, 409 F.2d 1307; 160 USPQ 584.

(D.C. Mich.) St. Amour Patent No. 2,998,656 (33—178). for HOLE LOCATION GAUGE. Claims 3 and 4 *Held* valid and infringed. *Eisele* v. *St. Amour*, 298 F. Supp. 1086; 161 USPQ 79.

(D.C. Mich.) Walch Patent No. 3,024,301 (174—72), for WIRING GRILLE. Claim 5 *Held* valid and infringed. *Panduit Corp.* v. *Stahlin Bros. Fibre Works, Inc.*, 298 F. Supp. 435; 162 USPQ 114.

(Ct. Cl.) Goldstein et al. Patent No. 3,096,224 (154—45.9), for CORRUGATED PAPER BOARD PRODUCT. Claims 1, 2 and 3 *Held* invalid. *Tri-Wall Containers, Inc.* v. *U.S.*, 408 F.2d 748; 161 USPQ 116.

(D.C. Ala.) Hoven et al. Patent No. 3,111,344 (297—452), for CHAIR. Claim 2 *Held* invalid. *Southeastern Metals Co.* v. *American Seating Co.*, 298 F. Supp. 1128.

(C.A. 9th Cir.) Harrison et al. Patent No. 3,125,780 (18—5), for APPARATUS AND METHOD FOR MAKING PLASTIC CONTAINERS. Claims 1 and 2 *Held* invalid. *Crown Mach. & Tool Co.* v. *D & S Industries Inc.*, 409 F.2d 1307; 160 USPQ 584.

(D.C. Ill.) Kramer Patent No. 3,162,323 (222—1), for METHOD OF AND APPARATUS FOR CARBONATING, COOLING, STORING, DISTRIBUTING AND DISPENSING BEVERAGES. Claims 2–6 *Held* invalid and infringed. *Dole Valve Co.* v. *Perfection Bar Equipment Inc.*, 298 F. Supp. 401; 160 USPQ 393.

(C.A. 9th Cir.) Harrison et al. Patent No. 3,162,705 (264—53), for METHOD FOR MAKING PLASTIC CONTAINERS. Claim 1 *Held* invalid. *Crown Mach. & Tool Co.* v. *D & S Industries Inc.*, 409 F.2d 1307; 160 USPQ 584.

(D.C. Ala.) Hoven et al. Patent No. 3,173,723 (297—451), for SEAT ATTACHMENT. Claims 1–5 *Held* valid but not infringed. *Southeastern Metals Co.* v. *American Seating Co.*, 298 F. Supp. 1128.

(D.C. Mass.) Labombarde Patent No. 3,202,532 (117—64), for GLOSSY COATING MACHINE AND METHOD. Claims 33, 34 and 36 *Held* valid but not infringed. *International Paper Box Mach. Co.* v. *Specialty Automatic Mach. Corp.*, 297 F. Supp. 266; 160 USPQ 466.

(D.C. Mass.) Labombarde Patent Reissue No. 25,792 (117—46), for APPARATUS FOR GLOSSY WAX COATING. Claim 3 *Held* valid and infringed by one device but not by another device; claims 13 and 14 *Held* valid and infringed but intervening rights found. *International Paper Box Mach. Co.* v. *Specialty Automatic Mach. Corp.*, 297 F. Supp. 266; 160 USPQ 466.

(C.A. Ohio) Stiller Reissue Patent No. 24,166 (150—37), for SELF-CLOSING CONTAINER. Claims 1, 3, 5, 7 and 8 *Held* not infringed; claim 6 *Held* invalid. *Quikey Mfg. Co.* v. *City Products Corp.*, 409 F.2d 876; 161 USPQ 4.

Errata

In the OFFICIAL GAZETTE, issue of Aug. 12, 1969, page 356, before Patent Number 3,460,239 insert the following:

ERRATA

For Class 29—492 see:
Patent No. 3,461,462

For Class 29—494 see:
Patent No. 3,461,458

page 373, before Patent Number 3,460,312 insert the following:

ERRATUM

For Class 53—55 see:
Patent No. 3,461,459

page 459, before Patent Number 3,460,661 insert the following:

ERRATUM

For Class 193—43 see:
Patent No. 3,460,664

page 534, before Patent Number 3,460,933 insert the following:

ERRATUM

For Class 71—76 see:
Patent No. 3,460,936

page 544, before Patent Number 3,461,042 insert the following:

ERRATUM

For Class 203—11 see:
Patent No. 3,461,460

page 558, before Patent Number 3,461,126 insert the following:

ERRATUM

For Class 260—256.4 see:
Patent No. 3,461,461

page 581, before Patent Number 3,461,248 insert the following:

ERRATUM

For Class 179—100.2 see:
Patent No. 3,461,457

Certificates of Correction for the week of Sept. 9, 1969

P.P. 2,887
D. 209,885
D. 209,886
D. 210,743
D. 211,632
3,176,120
3,320,425
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3,338,090
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3,443,347
3,451,481

PATENT EXAMINING CORPS

R. A. WAHL, Assistant Commissioner

CONDITION OF PATENT APPLICATIONS AS OF AUGUST 25, 1969

PATENT EXAMINING GROUPS	Actual Filing Date of Oldest New Case Awaiting Action
*Denotes oldest new application.	
CHEMICAL EXAMINING GROUPS	
GENERAL CHEMISTRY AND PETROLEUM CHEMISTRY, GROUP 110—M. STERMAN, Director. Inorganic Compounds; Inorganic Compositions; Organo-Metal and Organo-Metalloid Chemistry; Metallurgy; Metal Stock; Electro Chemistry; Batteries; Hydrocarbons; Mineral Oil Technology; Lubricating Compositions; Gaseous Compositions; Fuel and Igniting Devices.	8-04-67
GENERAL ORGANIC CHEMISTRY, GROUP 120—I. MARCUS, Director. Heterocyclic; Amides; Alkaloids; Azo; Sulfur; Misc. Esters; Carbohydrates; Herbicides; Poisons; Medicines; Cosmetics; Steroids; Oxo and Oxy; Quinones; Acids; Carboxylic Acid Esters; Acid Anhydrides; Acid Halides.	12-14-66*
HIGH POLYMER CHEMISTRY, PLASTICS AND MOLDING; GROUP 140—L. J. BERCOVITZ, Director. Synthetic Resins; Rubber; Proteins; Macromolecular Carbohydrates; Mixed Synthetic Resin Compositions; Synthetic Resins With Natural Polymers and Resins; Natural Resins; Reclaiming; Pore-Forming; Compositions (Part) e.g.: Coating; Molding; Ink; Adhesive and Abrading Compositions; Molding, Shaping, and Treating Processes.	2-23-67
COATING AND LAMINATING, BLEACHING, DYEING AND PHOTOGRAPHY, GROUP 160—A. P. KENT, Director. Coating; Processes and Misc. Products; Laminating Methods and Apparatus; Stock Materials; Adhesive Bonding; Special Chemical Manufactures; Special Utility Compositions; Bleaching; Dyeing and Photography.	2-13-67
SPECIALIZED CHEMICAL INDUSTRIES AND CHEMICAL ENGINEERING, GROUP 170—W. B. KNIGHT, Director. Fertilizers; Foods; Fermentation; Analytical Chemistry; Reactors; Sugar and Starch; Paper Making; Glass Manufacture; Gas; Heating and Illuminating; Cleaning Processes; Liquid Purification; Distillation; Preserving; Liquid and Solid Separation; Gas and Liquid Contact Apparatus; Refrigeration; Concentrative Evaporators; Mineral Oils Apparatus; Misc. Physical Processes.	2-13-67
ELECTRICAL EXAMINING GROUPS	
INDUSTRIAL ELECTRONICS AND RELATED ELEMENTS, GROUP 210—W. S. COLE, Director. Generation and Utilization; General Applications; Conversion and Distribution; Heating and Related Art Conductors; Switches; Miscellaneous.	1-18-68
SECURITY, GROUP 220—S. BOYD, Director. Ordnance, Firearms and Ammunition; Radar, Underwater Signalling, Directional Radio, Torpedoes, Seismic Exploring, Radio-Active Batteries; Nuclear Reactors, Powder Metallurgy, Rocket Fuels; Radio-Active Material.	11-18-66*
INFORMATION TRANSMISSION, STORAGE AND RETRIEVAL, GROUP 230—J. F. COUCH, Director. Communications; Multiplexing Techniques; Facsimile; Data Processing, Computation and Conversion; Storage Devices and Related Arts.	1-13-67
ELECTRONIC COMPONENT SYSTEMS AND DEVICES, GROUP 250—W. L. CARLSON, Director. Semi-Conductor and Space Discharge Systems and Devices; Electronic Component Circuits; Wave Transmission Lines and Networks; Optics; Radiant Energy; Measuring.	6-07-67
PHYSICS, GROUP 280—R. L. EVANS, Director. Photography; Sound and Lighting; Indicators and Optics; Measuring and Testing; Geometrical Instruments.	11-16-67
DESIGNS, GROUP 290—S. BOYD, Director. Industrial Arts; Household, Personal and Fine Arts.	11-27-68
MECHANICAL EXAMINING GROUPS	
HANDLING AND TRANSPORTING MEDIA, GROUP 310—A. BERLIN, Director. Conveyors; Hoists; Elevators; Article Handling Implements; Store Service; Sheet and Web Feeding; Dispensing; Fluid Sprinkling; Fire Extinguishers; Coin Handling; Check Controlled Apparatus; Classifying and Assorting Solids; Boats; Ships; Aeronautics; Motor and Land Vehicles and Appurtenances; Railways and Railway Equipment; Brakes; Rigid Flexible and Special Receptacles and Packages.	4-03-68
MATERIAL SHAPING, ARTICLE MANUFACTURING, TOOLS, GROUP 320—N. BERGER, Director. Manufacturing Processes, Assembling, Combined Machines, Special Article Making; Metal Deforming; Sheet Metal and Wire Working; Metal Fusion—Bonding, Metal Founding; Metallurgical Apparatus; Plastics Working Apparatus; Plastic Block and Earthenware Apparatus; Machine Tools for Shaping or Dividing; Work and Tool Holders Woodworking; Tools; Cutlery; Jacks.	12-04-67*
AMUSEMENT, HUSBANDRY, PERSONAL TREATMENT, INFORMATION, GROUP 330—A. RUEGG, Director. Amusement and Exercising Devices; Projectors; Animal and Plant Husbandry; Butchering; Earth Working and Excavating; Fishing, etc.; Tobacco; Artificial Body Members; Dentistry; Jewelry; Surgery; Toiletry; Printing; Typewriters; Stationery; Information Dissemination.	1-03-68
HEAT AND POWER ENGINEERING, GROUP 340—C. F. GAREAU, Director. Power Plants; Combustion Engines; Fluid Motors; Pumps; Turbines; Heat Generation and Exchange; Refrigeration; Ventilation; Drying; Vaporizing; Temperature and Humidity Regulation; Machine Elements; Power Transmission.	7-09-68
FIXED CONSTRUCTIONS, SUPPORTS, AND HARDWARE, GROUP 350—T. J. HICKEY, Director. Joints; Fasteners; Rod, Pipe and Electrical Connectors; Miscellaneous Hardware; Locks; Building Structures; Closure Operators; Bridges; Closures; Earth Engineering; Drilling; Mining; Furniture; Receptacles; Supports; Cabinet Structures.	6-10-68
TEXTILES, CLEANING AND FLUID HANDLING, GROUP 360—F. H. BRONAUGH, Director. Fluid Handling, including Valves; Conduits; Filling Receptacles; Lubrication; Joint Packing; Bathroom Fixtures; Centrifugal Separators; Cleaning; Coating; Pressing; Agitating; Foods; Textiles; Apparel and Shoes and their Manufacture; Sewing Machines; Winding and Reeling.	2-12-68

Total number of pending applications (excluding Designs)	185,356
Total number of Design applications pending	3,125

Expiration of patents: The patents within the range of numbers indicated below expire during August 1969, except those which may have expired earlier due to shortened terms under the provisions of Public Law 690, 79th Congress, approved August 8, 1946 (60 Stat. 940) and Public Law 619, 83rd Congress, approved August 23, 1954 (68 Stat. 764), or which may have had their terms curtailed by disclaimer under the provisions of 35 U.S.C. 253. Other patents, issued after the dates of the range of numbers indicated below, may have expired before the full term of 17 years for the same reasons, or have lapsed under the provisions of 35 U.S.C. 151.

Patents	Numbers 2,605,466 to 2,608,686, inclusive
Plant Patents	Numbers 1,117 to 1,123, inclusive

DECISIONS IN PATENT AND TRADEMARK CASES

U.S. Court of Customs and Patent Appeals

IN RE HARRY SPONNOBLE

No. 8007. Decided January 16, 1969

[56 CCPA —; 405 F.2d 578; 160 USPQ 237]

1. RES JUDICATA—INCORPORATION BY REFERENCE OF PRIOR DECISION IS NOT RES JUDICATA.

"Inasmuch *res judicata* has never been urged as a ground of rejection by the Examiner, by the Board, or by the Solicitor, we do not perceive the existence of any such issue merely because of an incorporation by reference [in the Board's decision] of the reasons for a holding of obviousness as previously stated in a prior decision * * *"

2. PATENTABILITY—EVIDENCE—DISCOVERY OF SOURCE OF PROBLEM—35 U.S.C. 103.

"It should not be necessary for this court to point out that a patentable invention may lie in the discovery of the source of a problem even though the remedy may be obvious once the source of the problem is identified. This is *part* of the 'subject matter as a whole' which should always be considered in determining the obviousness of an invention under 35 U.S.C. 103. *In re Antonson*, 47 CCPA 740, 272 F.2d 948, 124 USPQ 132; *In re Linnert*, 50 CCPA 753, 309 F.2d 498, 135 USPQ 307. The court must be ever alert not to read obviousness into an invention on the basis of the applicant's own statements; that is, we must view the prior art without reading into that art appellant's teachings. *In re Murray*, 46 CCPA 905, 268 F.2d 226, 122 USPQ 364; *In re Sporck*, 49 CCPA 1039, 301 F.2d 686, 133 USPQ 360. The issue, then, is whether the teachings of the prior art would, *in and of themselves and without the benefits of appellant's disclosure*, make the invention as a whole, obvious. *In re Leonor*, 55 CCPA 1198, 395 F.2d 801, 158 USPQ 20."

3. SAME—SAME—SUBTESTS OF NONOBVIOUSNESS.

"In addition to * * * [stated] reasons for considering the invention to be unobvious, a variety of collateral factors, suggesting the same result, have been evidenced by appellant's numerous affidavits. The commercial success of appellant's device, as suggested by the affidavit of Gauss, is an important indicia of unobviousness, particularly where, as here, it is coupled with other affidavits which suggest that the two-compartment vial had not been a success prior to appellant's invention. The Enz affidavit evidences the efforts and failures of other research specialists and other organizations to solve the problem of moisture transfer and of the long standing need for a commercially acceptable solution to the problem. In this latter regard, we are mindful of our decisions in *In re Tierney*, 55 CCPA 884, 388 F.2d 1018, 156 USPQ 248, and *In re Moore*, 55 CCPA 944, 390 F.2d 1003, 156 USPQ 677. In this situation, these collateral factors merely reinforce our belief that the invention was not obvious."

4. SAME—PARTICULAR SUBJECT MATTER—MIXING VIAL CONSTRUCTION.

The refusal of a certain claim in an application entitled "Mixing Vial Construction," as unpatentable over the prior art, is reversed.

APPEAL from Patent Office. Serial No. 299,039.

REVERSED.

Raymond H. Blanchard (*Eugene O. Retter*, *George T. Johannesen*, of counsel) for appellant.

Joseph Schimmel (*Fred W. Sherling*, of counsel) for the Commissioner of Patents.

Before WORLEY, *Chief Judge*, RICH, SMITH, ALMOND, and BALDWIN, *Associate Judges*

BALDWIN, *J.*, delivered the opinion of the court.

This is an appeal from the decision of the Board of Appeals,[1] affirm-

[1] The board consisted of Messrs. Dracopoulous and Bailey, Examiners-in-Chief and Reynolds, Acting Examiner-in-Chief. Mr. Dracopoulos wrote the opinion of the board.

ing the Examiner's rejection of the sole remaining claim in appellant's application [2] for "Mixing Vial Construction" as "unpatentable over" either Bujan [3] or Lockhart [4] in view of Jensen [5] and either Parsons et al.[6] or Umbdenstock [7] under 35 U.S.C. 103. Following the first decision by the Board of Appeals, appellant requested reconsideration, and the Board rendered a second decision denying any error in the first and making no changes therein.

In the decision from which this appeal stems, the Board made reference to an earlier decision it had rendered in appellant's parent application:

> While we agree with the appellant that the Board's decision in appellant's earlier application, Serial No. 752,907, filed August 4, 1958, Appeal No. 15—87, is not *res judicata* as to the present claim which recites the additional element of a silicone coating, we agree with the Examiner that said decision is equally applicable to the instant claim to the extent of the common subject matter, i.e., without the silicone coating. We deem it unnecessary to rehearse the same herein. Reference is, accordingly, made to said decision.

In view of this, appellant urged in his brief to this court:

> * * * that an erroneous application of the doctrine of res judicata induced the final rejection of claim 6 by the Primary Examiner and a subsequent affirmation of such rejection by the Board of Appeals, without due regard for the appellant's arguments distinguishing the claimed invention from the references. Appellant is convinced that the Examiner believed that claim 6 could not be allowed unless it could be distinguished from the combination of a reference showing a silicone coating and the decision of the Board of Appeals in the parent application, Serial No. 752,097, with respect to the sub-combination of elements contained in its claims. Accordingly, the appellant's parent application was, in effect, improperly used as a reference against the recitations in claim 6 and, in fact, the issue of unobviousness was not considered apart from the influence of the prior decision of the Board of Appeals in Appeal No. 15—87.
>
> The Board of Appeals was also distracted by its prior decision from an unbiased determination on the issue of unobviousness * * *
>
> Furthermore, this constituted an improper application of res judicata in spite of the Board's attempt to avoid such a conclusion in its * * * denial * * *

However, in view of the facts in this case, we agree with the Solicitor that:

> There is no issue of *res judicata* in this case. The Examiner made no mention of *res judicata*. * * * The Board of Appeals held flatly that the earlier decision "is not *res judicata*."

[1] Inasmuch as *res judicata* has never been urged as a ground of rejection by the Examiner, by the Board, or by the Solicitor, we do not perceive the existence of any such issue merely because of an incorporation by reference of the reasons for a holding of obviousness as previously stated in a prior decision; and we will, therefore, direct our attention to the issue of obviousness under 35 U.S.C. 103.

The Invention

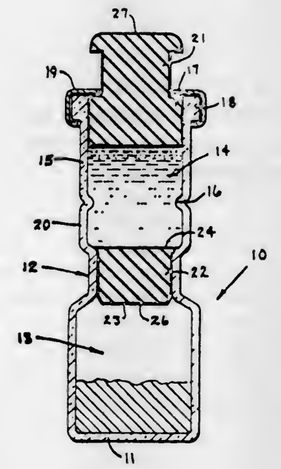
The subject matter of the invention may be briefly summarized from appellant's specification as follows:

> This invention relates to an improvement in a plural compartment mixing vial construction and, more particularly, relates to an improved center seal plug which may be placed between the compartments for temporarily isolating same from each other. * * *

[2] Serial No. 29,039, filed July 31, 1963, alleged to be a continuation-in-part of parent application, Serial No. 752,907, filed August 4, 1958, now abandoned.
[3] U.S. Patent 2,908,274, issued October 13, 1959, on an application filed June 29, 1953.
[4] U.S. Patent 2,695,614, issued November 30, 1954.
[5] U.S. Patent 2,773,591, issued December 11, 1956.
[6] U.S. Patent 2,649,090 issued August 18, 1953.
[7] U.S. Patent 2,652,182, issued September 15, 1953.

> It has been previously suggested to provide a two compartment mixing vial with a construction between the compartments thereof defining a seat against which a natural or synthetic rubber plug was seated to thereby isolate the compartments from each other. One of the compartments is adapted to contain a solid material, such as a desiccated pharmaceutical product, while the other compartment is adapted to contain a liquid, such as an aqueous diluent or solvent for the solid material. A piston is snugly and slidably disposed at one end of the liquid-containing compartment and is arranged so that it can be manually forced into said compartment to pressurize the liquid therein and thereby exert sufficient hydraulic pressure on the plug to discharge it into the solids-containing compartment whereupon the liquid enters the compartment and is mixed with the solid material therein. Such vials are especially well adapted for use as packages for those pharmaceutical products which are used in solution form but are best stored in dry or solid form. In particular, such vials are useful for packaging parenteral formulations which are not stable for a prolonged period of time and, thus, must be formed immediately before use, usually by mixing the medicinal ingredients which are in a sterile powder form with a suitable sterile diluent which consists essentially of water. However, prior vial constructions of this type have not attained substantial commercial acceptance because an excessive amount of moisture is transmitted from the liquid-containing compartment into the solids-containing compartment and, since many sterile powder formulations are sensitive to water, the medicinal agents become unstable during prolonged storage, particularly when stored at elevated temperatures. * * *
>
> * * * * * * *
>
> I have discovered, unexpectedly in view of the prior art, that the above-mentioned problems are satisfactorily solved where the center seal plug for temporarily isolating the compartments from each other is formed of butyl rubber and the center seal plug is coated with a thin film of a silicone. * * *

The invention is more particularly reflected by appellant's drawing reproduced below and by claim 6, the only claim remaining in the application, the improved center seal plug having been emphasized therein for simplicity of identification:



APPELLANT
SPONNOBLE

> 6. A packaged pharmaceutical product comprising in combination:
> a substantially tubular glass body being closed at one end thereof and open at the other end thereof and having a cylindrical portion of reduced cross-sectional area spaced from both ends of the body, said body having

a first chamber and a second chamber on opposite sides of said cylindrical portion, said second chamber being adjacent said one end of said body, said cylindrical portion being of constant diameter between the ends thereof and providing a passageway connecting said chambers and defining a seat therebetween, the internal wall of said seat being free of any coating;

a one-piece, solid and cylindrical plug of butyl rubber having a coating consisting of silicone, said plug being non-toxic and having an outside diameter slightly larger than the inside diameter of said seat so that said plug is slideably removably positioned snugly within said cylindrical portion of reduced cross-sectional area to isolate said chambers from each other and thereby minimize the moisture vapor transmission between said chambers;

a quantity of desiccated material in said second chamber and a quantity of aqueous solvent substantially filling said first chamber; and

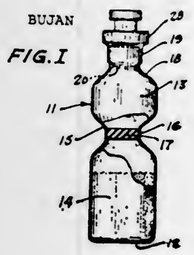
substantially cylindrical piston means snugly disposed in and closing the other end of said body, said piston means being slideably movable axially inwardly of said body to act through said solvent against said plug for displacing said plug into said second chamber to permit mixing of said solvent and said desiccated material.

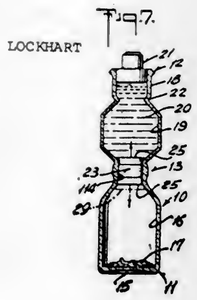
The sole issue is whether the Board was correct in holding that, at the time of the invention, appellant's claimed invention was obvious to one of ordinary skill in the art in view of the references. 35 U.S.C. 103. For reasons developed hereinafter, we agree with appellant that the invention was not obvious.

The References

The disclosures of the reference patents are summarized below in the order in which they appear in the rejection.

Bujan is directed to an improved piston closure assembly for a two-compartment mixing vial, which vial is quite similar to that of appellant, as may be seen from Bujan's FIG. I reproduced below. The material of which Bujan's center seal plug is made, is not disclosed, the only reference to the plug being merely "center seal member 17." However, we accept the Board's inference in its opinion in appellant's parent application (since it was incorporated by reference in the opinion herein) that Bujan's "seal 17 may be made of natural rubber." Bujan discloses no lubricant or film of any kind on his center seal member and makes no reference whatsoever to the problem of moisture transmission from one compartment to the other; accordingly, there is likewise nothing disclosed with respect to the solution of such a moisture transmission problem.





Lockhart also discloses a very similar mixing vial, as may be seen in FIG. 7 reproduced above, the alleged improvement being an elongated, substantially cylindrical center gate plug with enlarged and laterally flared ends, or flanges, to self-center the plug and keep it in place in its seat. As disclosed, the center gate plug "may be formed or molded from any suitable elastic material, such as a rubber composition which may have a relatively high silicone content," the high silicone content providing a slippery surface. Lockhart teaches that the flanged ends of his improved center gate plug avoid the problem encountered if a loader should accidentally push a substantially cylindrical, slippery gate plug, as used in the prior art vials, beyond the desired seating position; normally, such a prior art gate plug would have a tendency to move farther downward and drop into the bottom chamber, but the flared ends of Lockhart's improved center gate plug are alleged to provide automatic self-centering. Despite Lockhart's discussion of a slippery, "high silicone content" rubber, there is no suggestion of any surface coating, much less a silicone coating, on the center gate plug. Moreover, Lockhart's sole enunciation of the moisture transmission problem merits repetition herein:

It is important to prevent in such devices creepage of appreciable amounts of moisture from the liquid chamber to the solids chamber. Hygroscopic medicinal solids may be destructively affected in storage of such devices by the amount of moisture which may creep past the gate plugs. In devices of this type where contact between the gate plugs and their seats are in very narrow zones or is of a line contact nature microscopic fissures which are inherently present in the surfaces of molded and/or blown glass and similar materials permit such creepage past elastic plug surfaces during an initial storage period. Eventually the compressed elastic plug material is set into these fissures to attain a secure seal but by the time that develops the extent of moisture transfer may be such as to make the medicament unsuitable for use. The long surface contact between the flare-ended gate plug and its seat, whether of the crown type illustrated in FIG. 3, or of the flat type illustrated in FIG. 7, efficiently prevents such moisture transfer, particularly during the initial portion of the storage period when the damage usually develops.

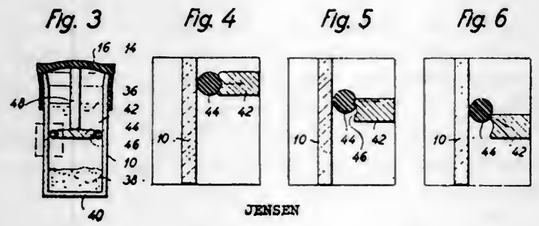
Jensen discloses a vessel with a sterile closure for the separate storage of two substances, which can be brought together before use without breaking the sterile closure. Jensen's somewhat different partition for dividing the vessel into two compartments may be best appreciated by considering a portion of the specification with reference to FIGS. 3–6 reproduced herebelow:

* * * the partition is constituted by a rigid disc-shaped body 42, made e.g. of metal, and an elastic ring 44 surrounding said body, the cross-section of the ring being rounded, preferably circular. The ring 44 may consist of rubber, especially butyl rubber (GR–I) which is impervious to steam. The circumference of the disc-shaped body is suitably circular, so that a gap, having the same width everywhere, will be provided along the periphery, when the body is disposed coaxially in the housing 10, the section of which is circular. In said gap the ring 44 is so disposed that it is subject to a pressure sufficient to provide safe tightening between the body 42 and the wall of the housing. A groove 46 is preferably provided at the edge of the body 42, in which groove the ring 44 normally rests.

* * * * * * *

When the partition is to be broken, the arched part 16 of the cap 14 is forced downwardly like a diaphragm. Thereby a pressure is transferred through the rod 48 to the disc-shaped body 42, and as a consequence thereof the ring 44 will be unrolled between the wall of the housing 10 and the edge of the body 42, as illustrated in FIGS. 4–6. In FIG. 4 the parts assume the same relative positions as in FIG. 3. In FIG. 5 the ring 44 has left the groove 46, and the uppermost part of the edge of the body 42 has been pressed slightly into the ring 44, thereby increasing the stress of same. The body 42 will then be in a position

of labile equilibrium, which is exceeded by its subsequent movement, see FIG. 6. * * *



The patent to Parsons et al. (hereafter "Parsons") discloses that the provision of a silicone coating on rubber, synthetic rubber, or plastic stoppers for pharmaceutical containers "renders the stoppers more impermeable to moisture, renders them less apt to absorb moisture in treatment, and prevents them from sticking," thusly providing stoppers which are "satisfactory for use in automatic stoppering machines." The following objects of the invention are listed in the specification:

> * * * to provide a lubricant for these rubber stoppers so that their tendency to stick to each other is reduced; to provide a surface sealing substance on the rubber stoppers to render the rubber more inert towards the contents of the vials; to reduce the permeability of the rubber stoppers to moisture; * * * and to provide a lubricant which will allow the rubber stoppers to be more easily inserted and withdrawn.

However, it should be noted that the downward movement of the easily slidable silicone coated stopper appears, from the drawings, to be limited by an external flange thereon which bears against the lip of the pharmauceutical container into which the stopper is inserted, and that auxiliary means may also be used to maintain and seal the closure provided by the inserted stopper since the specification further states, "The rubber stopper may be then fastened into the glass container by an aluminum seal or other standard type of seal."

Umbdenstock also relates to "a rubber stopper having improved properties which is adapted for use in machines for automatically and mechanically stoppering vials or bottles," particularly for packaging certain drugs and therapeutic materials in bottles or vials under sterile conditions." It is disclosed that natural rubber, reclaimed rubber, or synthetic rubber stoppers, if coated with a thin film of a high boiling point rubber lubricant, such as a silicone oil, may be used in automatic machinery without adhering to one another or to parts of the machinery and without jamming of the machines and that such silicone coated stoppers are characterized by much greater ease of insertion into bottles and vials. There is no drawing present nor any discussion in the specification to indicate the particular manner by which the silicone coated stoppers are maintained in position after they are inserted. Neither Parsons nor Umbdenstock discuss the in situ sealing qualities of the silicone coated rubber stoppers in great detail since both references are primarily concerned with providing suitable stoppers for automatic stoppering machines.

The Rejection

The Examiner in his answer rejected claim 6 "as being unpatentable over either Bujan or Lockhart in view of Jensen and Parsons," presumably under 35 U.S.C. 103. Although Umbdenstock was listed by the Examiner as a reference relied on, it was not applied to the claims *by the Examiner* as acknowledged by the Board:

> The cited patent to Umbdenstock, while not specifically applied to the claims, is described at page 2 as alternate to Parsons et al. for the disclosure of the use of silicone as a coating on rubber plugs to enhance the ease of insertion into or removal of the plugs from surgical containers or vials.

Moreover, the Board's only discussion of that reference in *its* opinion, other than being listed as a reference relied on, was that "Umbdenstock similarly uses silicone coatings on rubber stoppers for the same purpose" as Parsons. Hence, we conclude that the Examiner and the Board have, at most, treated Umbdenstock merely as an alternative to Parsons; accordingly, it will be treated with Parsons and will not be further mentioned.

In affirming the Examiner's rejection, the Board quoted with approval a portion of the Examiner's answer:

> "The Bujan and Lockhart references show appellant's specific vial shape and center plug arrangement which is conceded by appellant. The use of butyl rubber as the material used for the center plug is believed obvious in view of Jensen whose seal 44 is constructed of butyl rubber and which is stated to be impervious to steam. In regard to the feature of coating the center plug with silicone for use as a lubricant or moisture inhibiter, such a feature is notoriously old in the art. Lockhart * * * discloses the employment of silicone mixed with the plug for lubricating purposes. It is believed obvious to coat silicone on a sealing plug rather than to incorporate silicone into the rubber if so desired. That this is conventional is shown by the patent to Parsons * * *"

The decision of the Board further stated:

> We are of the opinion, after a thorough review of the appeal record, including the affidavits of record and the oral arguments at the hearing, that the rejection of the claim at bar as unpatentable over the references is free of reversible error.
>
> * * * * * * *
>
> Jensen clearly teaches in the art the use of butyl rubber for its steam, i.e., moisture, impervious property * * * and * * * in view thereof it would have been obvious prior to appellant entering the field to make the center plug 17 of Bujan of butyl rubber so as to render it impervious to moisture, the very purpose for which appellant employs butyl rubber.
>
> In the instant case appellant has added a silicone coating to render the plug easier to insert or remove. This, we agree with the Examiner, is taught by Parsons * * *
>
> * * * * * * *
>
> The use of a silicone oil coating for easing the insertion and removal of the center of the plug of Bujan, made of butyl rubber as taught by Jensen, would appear to be obvious even to the uninitiated having these references before them.
>
> * * * * * * *
>
> Appellant has, in effect, merely combined features old in the art for their known purpose without producing anything beyond the results inherently expected therefrom.

Opinion

We believe that the Board of Appeals has erred in its application of 35 U.S.C. 103 notwithstanding the last above-quoted statement, which, even if correct, does not conclusively establish that the invention is obvious under the patent law. A patentable invention, within the am-

bit of 35 U.S.C. 103, *may* result even if the inventor *has*, in effect, merely combined features, old in the art, for their known purpose, without producing anything beyond the results inherent in their use. Although we believe that appellant, here, has actually done more than this *in making his combination*, we also believe that a more proper, albeit not exclusive, inquiry *in a case such as this* is to look further as to the *reasons* for making the combination.

[2] It should not be necessary for this court to point out that a patentable invention may lie in the discovery of the source of a problem even though the remedy may be obvious once the source of the problem is identified. This is *part* of the "subject matter as a whole" which should always be considered in determining the obviousness of an invention under 35 U.S.C. 103. *In re Antonson*, 47 CCPA 740, 272 F.2d 948, 124 USPQ 132; *In re Linnert*, 50 CCPA 753, 309 F.2d 498, 135 USPQ 307. The court must be ever alert not to read obviousness into an invention on the basis of the applicant's own statements; that is, we must view the prior art without reading into that art appellant's teachings. *In re Murray*, 46 CCPA 905, 268 F.2d 226, 122 USPQ 364; *In re Sporck*, 49 CCPA 1039, 301 F.2d 686, 133 USPQ 360. The issue, then, is whether the teachings of the prior art would, *in and of themselves and without the benefits of appellant's disclosure*, make the invention as a whole, obvious. *In re Leonor*, 55 CCPA 1198, 395 F.2d 801, 158 USPQ 20.

Applying these principles to the case at bar and by reference to appellant's specification, we find a clear indication that he discovered the source of the problem:

> The problem of providing a structure for temporarily isolating a compartment containing a solid pharmaceutical product from a compartment containing an aqueous solution to prevent water transference therebetween has long been recognized by workers in the art and great amounts of time, effort and expense have been expended to solve same but without commercially acceptable results, insofar as I am aware, prior to the present invention. It was believed that the water passed through the microscopic cracks and crevices in the mating walls of the vial and the plug which are inherently present as a result of the manufacturing operation thereof. Accordingly, the art has attempted to solve this problem by using a more deformable rubber plug and applying an increased pressure thereon when seating same against the internal wall of the vial so that the plug will deform to more completely fill such cracks and crevices. The art has also increased the length of the plug and the seat portion of the vial in order to provide a longer surface of contact between the seat and the plug to minimize such moisture transmission. Neither of these expedients has successfully solved the afore-mentioned problem.
>
> * * * * * * *
>
> Contrary to the opinion of the other workers in the art, I have discovered that a primary cause of moisture transmission through natural rubber center seal plugs is the permeability of the plugs themselves to passage of moisture. That is, a substantial amount of the water which moves from the water-containing to the solids-containing compartment passes through the natural rubber plug rather than between the plug and the wall of the vial and, thus, no matter how tight a seal is provided between the plug and the vial, a substantial amount of moisture will be transferred, which amount has, in the past, been sufficient to deleteriously affect the solid contents of the other compartment, particularly where such contents are solid pharmaceutical ingredients sensitive to moisture.

The specification reveals: (1) that the problem facing the industry was due to moisture transmission into the lower compartment of the mixing vial; (2) that the appellant discovered the cause of the moisture transmission to be the passage of moisture *through*, rather than around, the center plug; and (3) that appellant solved the problem by fabricating a center seal plug of butyl rubber with a silicone coating. The crux of the matter in this case is the discovery by appellant that passage *through* the center plug was a major cause of moisture transmission.

Jensen disclosed that butyl rubber is impervious to steam, but it does not necessarily follow, as the Solicitor argues, that "Certainly, it would be obvious to the ordinary artisan to utilize butyl rubber to take advantage of its moisture resistance as taught by the prior art since moisture transfer was a recognized problem with center sealing plugs." This reasoning merely begs the question. The fact that moisture transmission was a recognized problem does not establish that knowledge of moisture transmission *through*, rather than around, the plug, was likewise either recognized or obvious. The question here is whether the prior art recognized the *cause* of the problem.

There is no teaching in the prior art which would suggest the necessity of selecting a center seal plug material which is more impervious to *liquid* water than Bujan's or Lockhart's natural rubber. As we pointed out earlier, Bujan makes no mention of any moisture transmission problem, and Lockhart's only discussion of the problem refers to moisture passage *between the plug and the vial* caused by "microscopic fissures inherently present in the surfaces of molded and/or blown glass and similar materials." Jensen's disclosure of the impermeability of butyl rubber to *steam* does not render appellant's invention obvious since neither it nor any other reference suggests that greater impermeability to *liquid* water is desired or necessary in a center seal plug. Likewise, Parsons' mention of moisture permeability does not appear to be directed to permeability to *liquid* water. That a natural rubber plug might be permeable to *steam* in no way establishes or makes obvious its permeability to *liquid* water; thus the cause of the problem is not suggested by the prior art.

Notwithstanding our analysis above, concerning appellant's recognition of the source of the problem and solution thereof, we believe that the multi-reference rejection affirmed below is improper for reasons existing within the disclosures of the references themselves, namely, that the references themselves teach *away* from the combination. First butyl rubber does not slide readily against a glass surface because of its frictional properties, as evidenced by the rolling operation of Jensen's butyl rubber sealing ring as it disengages the metal disc (see FIGS. 4–6 above). Both the operability and utility of Jensen's vessel depend upon this frictionally induced rolling action; in contradistinction, a sliding engagement is absolutely essential to the operability of appellant's center seal plug. Hence, Jensen's center seal is totally incapable of serving appellant's purposes. Moreover, since butyl rubber is significantly less resilient and more rigid than natural rubber, Lockhart's *flanged* center gate plug, if made of butyl rubber, would be difficult, if not impossible, to either seat or displace from its seat. Thus, a combination of either Lockhart or Bujan with Jensen alone would produce a seemingly inoperative device. Still further, since butyl rubber is significantly less compressible and less resilient than natural rubber, one might conclude that a butyl rubber plug should be cylindrical and should be made to close tolerances with the seat; but then, if a silicone coating were applied as a lubricant, one might also conclude that there would be nothing, like the flange

of either Parsons or Lockhart, to prevent the plug from falling through.

[3] In addition to these reasons for considering the invention to be unobvious, a variety of collateral factors,[8] suggesting the same result, have been evidenced by appellant's numerous affidavits. The commercial success of appellant's device, as suggested by the affidavit of Gauss, is an important indicia of unobviousness, particularly where, as here, it is coupled with other affidavits which suggest that the two-compartment vial had not been a success prior to appellant's invention. The Enz affidavit evidences the efforts and failures of other research specialists and other organizations to solve the problem of moisture transfer and of the long standing need for a commercially acceptable solution to the problem. In this latter regard, we are mindful of our decisions in *In re Tierney*, 55 CCPA 884, 388 F.2d 1018, 156 USPQ 248, and *In re Moore*, 55 CCPA 944, 390 F.2d 1003, 156 USPQ 677. In this situation, these collateral factors merely reinforce our belief that the invention was not obvious.

[4] For the foregoing reasons, the decision of the Board of Appeals is reversed.

REVERSED.

WORLEY, *Chief Judge*, concurs in the result.

Judge Smith participated in the hearing of this case but died before a decision was reached.

ALMOND, *J.*, dissenting.

While I agree with the statement of the majority that "patentable invention may lie in the discovery of the source of a problem even though the remedy may be obvious once the source of the problem is identified," I do not believe that the facts of this case warrant the conclusion the appellant was the first to discover that passage *through* the center plug was a major cause of moisture transmission.

I feel that the question of "whether the prior art recognized the *cause* of the problem" must of necessity be answered in the affirmative. Parsons, one of the secondary references employed by the Examiner and Board, discloses:

RUBBER CLOSURE FOR PHARMACEUTICAL VIALS

* * * * * * *

It is an object of our invention * * * to reduce the *permeability* of the rubber stoppers to *moisture* * * *.

* * * * * * *

There has been a tendency for conventional rubber stoppers to stick to the glass rendering it difficult to insert or remove the stoppers. They *absorb moisture* which is *released into* the interior of the vial causing deterioration of moisture-sensitive substances, such as penicillin. [Emphasis supplied.]

Parsons' solution to the problem of moisture permeability is stated also:

We have found that the use of an oily silicone renders the stoppers more impermeable to moisture, renders them less apt to absorb moisture in treatment, and prevents them from stieking.

The source of the problem of moisture transmission being apparent to the art, it seems to me that yet another solution to the problem would be equally obvious to those skilled in the art from a consideration of

[8] See Note, Subtests of "Nonobviousness," 112 U.Pa.L. Rev. 1169 (1964).

Jensen, who discloses that a separating partition in his mixing vial should be constructed in part of butyl rubber "which is impervious to steam." "It would seem that Jensen also recognized, at least implicitly, that moisture from a steam sterilization would pass through a separating partition made of rubber other than butyl rubber, else why his emphasis on the use of "especially butyl rubber (GR–I) which is impervious to steam."

The majority acknowledges these prior art disclosures yet dismisses them by saying that "[no] reference suggests that greater impermeability to liquid water is desired or necessary * * *." Apparently the majority feels that appellant was concerned with *liquid* water transmission and hence would have no reason to look to a teaching of impermeability to steam or water *vapor*. I consider it significant, however, that the specification and claim speak of moisture *vapor* transmission thus indicating that the cause of the problem is in fact *vapor* transmission, as was recognized by the prior art.

That Jensen's center seal of butyl rubber does not slide against a glass surface and would be unsuitable per se in appellant's environment does not detract from the Examiner's position that the solution to that general problem was also recognized by Parsons and Umbdenstock—namely, coat the "sticky" rubber plug with silicone to impart a modicum of slidability to it.

I find unconvincing the majority's attempt to buttress its finding by stating that "a combination of either Lockhart or Bujan with Jensen alone would produce a seemingly inoperative device." It is not necessary in a combination rejection that the structure of one reference be substituted bodily in that of the reference with which it is combined. *In re Billingsley*, 47 CCPA 1108, 279 F.2d 689, 126 USPQ 370; *In re Soderquist*, 51 CCPA 969, 326 F.2d 1016, 140 USPQ 317; *In re Bent*, 52 CCPA 850, 339 F.2d 255, 144 USPQ 28.

I would therefore affirm.

U.S. Court of Customs and Patent Appeals

IN RE ROBERT D. BROADLEY

No. 8013. Decided December 19, 1968

[56 CCPA —; 402 F.2d 616; 160 USPQ 38]

1. PATENTABILITY—COMPOSITION—OBVIOUSNESS—UNEXPECTED RESULT.

"* * * we think that whatever reasons the Examiner and Board may have had—but not expressed or documented—for their belief or presumption that the homologous relationship between CH_2F_2 and CH_3CHF_2 would be of assistance to those in the art in predicting formation of an azeotrope between CH_2F_2 and C_2F_5Cl have been adequately rebutted by appellant. The only other reason offered by the Board in support of its finding of obviousness is that one might well predict that substitution of the lower boiling CH_2F_2 for the higher boiling CH_3CHF_2 in the Lewis composition would yield a mixture boiling at a lower temperature, and thus possessing a higher refrigerating capacity, than that of Lewis. However true that may be, it would seem there would be no assurance that such a two-component mixture would have a capacity roughly twice that of Lewis as shown by an affidavit of Atwood, or even be a particularly useful or efficient refrigerant, absent a teaching that a minimum boiling, substantially azeotropic, non-fractionating composition would result. It is that teaching which we think is missing here."

2. SAME—PARTICULAR SUBJECT MATTER—"FLUORINATED HYDROCARBON COMPOSITIONS."

The refusal of certain claims in an application entitled "Fluorinated Hydrocarbon Compositions," as unpatentable over the prior art, is reversed.

APPEAL from Patent Office. Serial No. 313,643.

REVERSED.

Jay P. Friedenson for appellant.

Joseph Schimmel (*Raymond E. Martin*, of counsel) for the Commissioner of Patents.

Before WORLEY, *Chief Judge*, RICH, SMITH, ALMOND, and BALDWIN, *Associate Judges*

WORLEY, *Chief Judge*, delivered the opinion of the court.

Broadley alleges reversible error in the decision of the Board of Appeals affirming the Examiner's rejection of claims 1–6 [1] as unpatentable over Lewis [2] in view of Midgley [3] under 35 U.S.C. 103.

The invention relates to a high capacity,[4] low boiling, azeotropic refrigerant composition consisting of difluoromethane (CH_2F_2; boiling point of −51.7° C.) and monochloropentafluoroethane (C_2F_5Cl; boiling point of −38.7° C.), as well as to a method of refrigerating using that composition. It appears from the record that azeotropic compositions—ones in which the vapor composition is the same as the boiling liquid composition with which it is in equilibrium—are advantageous refrigerants compared to non-azeotropic multi-component mixtures since fractionation or separation of the components of the composition, with attendant increase in condenser pressures and overall loss of efficiency, does not occur during the refrigeration cycle. Appellant's azeotropic compositions consisting of 30–33 mol percent C_2F_5Cl exhibit a constant, minimum boiling point of −57.3° C., whereas mixtures consisting of 13–65% C_2F_5Cl have boiling points differing only slightly—about 0.7° C. or less—from that of the azeotrope. According to appellant, his compositions boil at temperatures lower than the boiling point of either pure component, and thus exhibit a negative deviation from Raoult's law, an empirical rule to the effect that boiling points and vapor pressures of two-component mixtures vary with concentration between the values for the pure components. It appears that the high capacity of appellant's compositions relative to that of either component is due to the fact that the compositions are azeotropic and boil at a lower temperature than either component alone.

Claim 1 is representative:

1. A low boiling composition consisting of a mixture of difluoromethane and monochloropentafluoroethane, in which mixture the mol percent of monochloropentafluoroethane is substantially in the range of 13–65.

The Examiner noted that Lewis discloses an essentially azeotropic refrigerant composition consisting of 20–40 mol percent of 1,1-difluoro*ethane* and 60–80 mol percent of the heretofore mentioned C_2F_5Cl. The actual azeotrope, formed at 69 mol percent C_2F_5Cl, has a minimum boiling point of −41.3° C., and thus exhibits a negative deviation from Raoult's law. Observing that Lewis does not disclose the use of CH_2F_2 in refrigerant compositions or as a component of an azeotropic mixture, the Examiner turned to Midgley, who discloses that CH_2F_2, C_2F_5Cl or CH_3CHF_2, among many other fluorohydrocarbons, each may be used *individually* as refrigerants [5] and also shows the boiling point of each of those compounds in his FIGURES 1 and 2. In the Examiner's view, it "would be obvious to one having ordinary skill in the art to substitute * * * [CH_2F_2] for the * * * [CH_3CHF_2] of Lewis with the expectation of obtaining suitable results" in view of the fact that CH_2F_2 is a known low boiling refrigerant and is the adjacent lower homolog of CH_3CHF_2. Quite evidently, the Examiner felt that the homologous relationship between CH_2F_2 and CH_3CHF_2 would be sufficient in and of itself to enable one of ordinary skill to predict that CH_2F_2 and C_2F_5Cl, like the known CH_3CHF_2 and C_2F_5Cl, would form a useful azeotropic refrigerant composition. The Board agreed.

Appellant contends here, as below, that nothing in the prior art of record suggests that CH_2F_2 and C_2F_5Cl would form an azeotropic composition possessing high refrigeration capacity. Indeed, appellant urges that "there is no known basis for predicting the formation of an azeotrope" between two given fluorohydrocarbons. In support of that argument, he points to the Kvalnes patent [6] cited by him in his brief before the Board, as well as to certain proprietary data appearing in the same brief. [7] It is appellant's position that he has established that the mere *fact* of homology between CH_2F_2 and CH_3CHF_2 would be of no material assistance to one in the art in determining or predicting *a priori* the proclivity of CH_2F_2 to form an azeotrope with C_2F_5Cl, while the Examiner has offered no evidence to support the bare assertion that homology would be of assistance in that regard.

The Board acknowledged that appellant "documents the unpredictable nature of determining azeotropic pairs of compounds" in his brief before it, thus apparently accepting the comparisons made by appellant and the statements of Kvalnes as factual and accurate.[8] Like the Examiner, however, the Board found it could "give no weight to appellant's argument that the determination of azeotropic mixtures

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[1] Appearing in application Serial No. 313,643, filed October 3, 1963 as a continuation-in-part of Serial No. 179,237, filed March 12, 1962 for "Fluorinated Hydrocarbon Compositions."

[2] U.S. Patent 2,641,580, issued June 9, 1953.

[3] U.S. Patent 1,968,050, issued July 31, 1934.

[4] In explanation, the specification states: "The refrigeration capacity of a given amount of refrigerant is largely a function of boiling point, the *lower boiling* refrigerants generally offering the *greater capacity* at a given evaporator temperature. This factor to a great extent influences the design of refrigeration equipment and affects capacity, power requirements, size and cost of the unit. Another important factor directly related to boiling of the refrigerant is minimum cooling temperature obtained in the evaporator during the refrigeration cycle, the lower boiling refrigerants being used to effect the lower refrigeration temperature." [Emphasis supplied.]

[5] Appellant erroneously contends that neither CH_2F_2 nor C_2F_5Cl is specifically disclosed by Midgley. To the contrary, CH_2F_2 is denoted as "F_2" in FIG. 1 of Midgley while CH_3CHF_2 and C_2F_5Cl are denoted as "0.2" and "3.8," respectively, in FIG. 2 of the reference. The point is not particularly crucial in view of the fact that appellant has not argued in his brief that the components of his composition were not individually known to be refrigerants at the time of his invention.

[6] U.S. Patent 3,085,065, issued April 9, 1963. In the course of discussing formation of azeotropic refrigerant compositions of fluorohydrocarbons, Kvalnes states:

> * * * *It is impossible to predict that an azeotrope will form between any two compounds and so it is impossible to pick any two refrigerants and combine them to obtain an azeotrope boiling at some particular point by prediction. If an azeotrope occurs at all, its boiling point is a function of the system and is not under the control of the experimenter. The mere existence of a large number of fluorinated hydrocarbons does not aid in predicting the formation of azeotropes by mixtures thereof.* [Emphasis supplied.]

The Kvalnes patent does appear to be of evidentiary value in determining the level of skill of those in the art. See *Graham* v. *John Deere*, 383 U.S. 1, 17.

[7] There, appellant made certain comparisons between pairs of two component fluorocarbon refrigerants, stating:

> * * * The ability to make such a prediction [of azeotrope formation] is not aided by closeness in structure of one compound to another or its closeness in structure to a compund which is known to have formed an azeotrope with another material. By way of example the following relationship should be considered:
>
> 1. CH_2F_2/CF_3Br forms an azeotrope.
>
> $CH\text{-}CHF_2/CF_3Br$ does not form an azeotrope.
>
> 2. CHF_3/CF_3Cl forms an azeotrope.
>
> CH_3CF_3/CF_3Cl does not form an azeotrope.
>
> 3. CH_3CF_3/C_2F_5Cl forms an azeotrope.
>
> CHF_3/C_2F_5Cl does not form an azeotrope.
>
> 4. CHF_2Cl/CCl_2F_2 forms an azeotrope.
>
> CH_3CF_2Cl/CCl_2F_2 does not form an azeotrope.
>
> 5. CHF_2Cl/C_2F_5Cl forms an azeotrope.
>
> CH_3CF_2Cl/C_2F_5Cl does not form an azeotrope.
>
> * * * * * * * *
>
> It should be noted that the * * * five relationships are homologous relationships as regards the first noted components, thus demonstrating that the doctrine of homology is of no assistance in providing a basis for the prediction of the formation of an azeotrope. * * *

[8] In his brief, the Solicitor urges that the comparisons presented by appellant should be "regarded as argument only, and without merit, since appellant cites no evidence or authority in support of" those comparisons. As we see it, neither the truth of what appellant presented nor its form was placed in issue below.

is empirical in nature." The only reason each assigned was that "the claims are not limited to azeotropic mixtures."

Strictly speaking, of course, the Examiner and Board are correct in observing that none of appellant's claims is directed to a true azeotropic composition consisting of 30–33% C_2F_5Cl and 67–70% CH_2F_2. But it appears to us that appellant also is correct in stating that all his claims are directed to compositions which are, for all intents and purposes, *essentially* azeotropic in nature and which possess the desirable features, e.g. negligible fractionation, of azeotropic compositions.[9] As appellant points out, his specification states:

* * * It has also been found that mixtures consisting of difluoromethane and monochloropentafluoroethane substantially in the range of 13–65% monochloropentafluoroethane have boiling points differing only slightly from the azeotropic composition. *Compositions within this range will exhibit only negligible fractionation on boiling and represent useful refrigerants.* *

* * * * * * *

The 13–65% chloropentafluoroethane compositions indicated each has a boiling temperature variation of less than 0.75° C., from the maximum boiling minus 57.3° C. azeotrope composition. As compositions containing 13–65% C_2F_5Cl all boil between about −56.6° C. and −57.3° C., representing a maximum boiling temperature variation within 0.75° C., *no significant fractionation occurs on distillation of any compositions within this range, and all such compositions are suited for use as refrigerants.*

* * * * * * *

The system formed by herein mixtures of difluoromethane and monochloropentafluoroethane provides a broad range of mixture compositions which boil at substantially constant temperature and give a constant boiling composition. The azeotropic and substantially azeotropic mixtures differ from refrigerant mixtures proposed in the past which offer only a relatively narrow range of useful compositions. * * * [Emphasis supplied.]

In view of those statements, it seems to us that the Examiner and Board were unduly critical of appellant's claimed subject matter in unnecessarily requiring appellant to limit his claims to true azeotropic compositions consisting of 30–33% C_2F_5Cl before giving consideration to his argument.

[1] Turning to the arguments presented, we think that whatever reasons the Examiner and Board may have had—but not expressed or documented—for their belief or presumption that the homologous relationship between CH_2F_2 and CH_3CHF_2 would be of assistance to those in the art in predicting formation of an azeotrope between CH_2F_2 and C_2F_5Cl have been adequately rebutted by appellant. The only other reason offered by the Board in support of its finding of obviousness is that one might well predict that substitution of the lower boiling CH_2F_2 for the higher boiling CH_3CHF_2 in the Lewis composition would yield a mixture boiling at a lower temperature, and thus possessing a higher refrigerating capacity, than that of Lewis. However true that may be, it would seem there would be no assurance that such a two-component mixture would have a capacity roughly twice that of Lewis as shown by an affidavit of Atwood, or even be a particularly useful or efficient refrigerant, absent a teaching that a minimum boiling, substantially azeotropic, non-fractionating composition would result. It is that teaching which we think is missing here.

Considering the record in its entirety, we find inadequate evidence to sustain the conclusion below that the claimed subject matter as a whole would be obvious to one of ordinary skill within the purview of § 103.

[2] The decision is reversed.

REVERSED.

Judge Smith participated in the hearing of this case but died before a decision was reached.

[9] Indeed, that those in the art would regard appellant's claimed compositions to be essentially azeotropic despite minor deviations from the constant boiling point of the azeotrope is clear, we think, from Lewis, who states:

> I have discovered that mixtures of 1,1-difluoroethane and monochloropentafluoroethane form an azeotrope boiling at approximately −41.3° C., in which about 69 mole percent is monochloropentafluoroethane. The mixture is a highly useful refrigerant * * * This mixture has the further advantage that only slight changes in the boiling point occur when the composition is varied over a considerable range on either side of the actual azeotropic composition. Mixtures containing between 60 and 80 mole percent monochloropentafluoroethane all boil between about −41.1° and −41.3° C., *so that there is little tendency for fractionation to take place with any of these mixtures. They are all effective refrigerating agents.* [Emphasis supplied.]

U.S. Court of Customs and Patent Appeals

IZOD, LTD. *v.* ZIP HOSIERY COMPANY, INC.

No. 8070. Decided January 9, 1969

[56 CCPA —; 405 F.2d 575; 160 USPQ 202]

1. TRADEMARK—OPPOSITION—MOTION TO DISMISS.

"We take cognizance of, but are not persuaded of, merit in appellant's argument that the statement of the Board, in denying appellee's motion to dismiss, that appellant's mark 'consists of a replica of a head of a tiger' was a conclusive determination of the issue preclusive of the Board's right to conclude otherwise when the opposition was finally decided on its merits. The motion to dismiss was in the nature of a motion for summary judgment or in the nature of a demurrer. The Board's decision thereon was on its face purely interlocutory and in nowise determinative of the issue of likelihood of confusion. The merits of the issue were not reached but expressly reserved for consideration pursuant to final hearing. The appeal here lies, as it must, from the Board's final determination dismissing the opposition on the basis of its finding that there is not a likelihood of confusion between the competing marks."

2. SAME—CONFUSING SIMILARITY—HEAD OF FELINE ANIMAL AND "TIGER HEAD" FOR OUTERWEAR.

"The goods sold under the respective marks are articles of clothing of the outerwear type. They are of such a nature that they might well be displayed and sold together, one as a complement of the other, by the same merchants to the same class of purchasers. Members of the purchasing public viewing appellant's pictorial representation of a feline animal as applied to men's and women's outer shirts and appellee's literal designation TIGER HEAD for men's work socks might well and reasonably conclude that the respective goods of the parties emanated from the same source. We think it more consonant with reason to conclude that the quandary posed by the Board by its query 'What is opposer's mark?' 'Is it the head of a tiger?' would find ready and rational resolution in the mind of the purchasing public. The fact that 'it may well represent to the purchasing public a wildcat, an ocelot or some other variety of a feline animal' does not obviate the fact that appellant's mark discloses one of a variety of feline animals aptly described by appellee's mark TIGER HEAD."

3. SAME—SAME.

"The thrust of likelihood of confusion relates to the impact of the competing marks upon those who frequent the market place in the role of prospective purchaser."

4. SAME—SAME—DOUBT RESOLVED AGAINST NEWCOMER.

"As we construe the language of the Board as employed in its decision on the motion to dismiss and in its final determination of the issue, there appears to be a marked degree of doubt as to likelihood of confusion, which in our view should have been resolved in favor of the prior user. Where the question of likelihood of confusion resides in the area of doubt, it should be resolved

against appellee, the newcomer. *American Grease Stick Co. v. Chemplast, Inc.*, 52 CCPA 1103, 341 F.2d 942, 144 USPQ 676."

APPEAL from Patent Office. Opposition No. 45,088.

REVERSED.

Seidel and Gonda, Edward C. Gonda, Ronald L. Panitch for appellant.

Wood, Herron & Evans, Bruce Tittel for appellee.

Before WORLEY, *Chief Judge*, RICH and ALMOND, *Associate Judges*

ALMOND, *J.*, delivered the opinion of the court.

Izod, Ltd. appeals from the decision of the Trademark Trial and Appeal Board [1] dismissing its opposition to the trademark application [2] of Zip Hosiery Company, Inc., appellee, for registration of the mark "TIGER HEAD" for men's work socks. Appellant relies upon its prima facie rights established by ownership of its registration [3] on the Principal Register of a configuration asserted to be a tiger head, reproduced below, for men's outer shirts and ladies' outer shirts.



Neither party took testimony. Appellee, applicant below, on January 13, 1966, filed a motion to dismiss, asserting that:

* * * if the registration [692,842] were considered to display a tiger it cannot necessarily be considered to be a display which would be termed a tiger's *head*.

Appellee took the position that opposer's mark could also be described as "wild tiger," "snarling tiger," "angry tiger" and many others.

On January 27, 1966 the Board denied appellee's motion to dismiss, stating that:

* * * considering the character of the respective marks and goods, which *consists of a replica of a head of a tiger*, as applied to men's outer shirts and ladies' outer shirts, and the designation "TIGER HEAD," as applied to men's work socks, it is believed that the issue of likelihood of confusion is *sufficiently debatable* to warrant that the case continue to final hearing for a consideration of the merits in connection with the arguments of the parties and any evidence which applicant may elect to introduce. [Emphasis supplied.]

Subsequently briefs were filed on behalf of each party, the appellee not electing, however, to introduce any evidence as suggested, at least by implication, by the Board. We think this implication finds support in the tentative finding of the Board that appellant's mark "consists of a replica of a head of a tiger" as applied to appellant's goods. On the basis of the issue thus stemming from the record, as it stood on

[1] Board opinion abstracted, 151 USPQ 744.
[2] Serial No. 191,098, filed April 14, 1964.
[3] Reg. No. 692,842 issued February 9, 1960.

appellee's motion to dismiss, the Board proceeded to final disposition, holding that in view of the differences between the involved marks there is not a likelihood of confusion, stating:

The real question is what is the opposer's mark? It is apparent that it is the head of a feline animal. Is it the head of a tiger? Carefully considering and evaluating the opposer's mark, it cannot be said with any surety that opposer's mark represents a tiger head—it may well represent to the purchasing public a wildcat, an ocelot or some other variety of a feline animal. That is to say, opposer's mark does not immediately and unequivocally suggest a tiger head. On the basis of the record, we are not persuaded that applicant's mark is the literal equivalent of opposer's mark.

[1] We take cognizance of, but are not persuaded of, merit in appellant's argument that the statement of the Board, in denying appellee's motion to dismiss, that appellant's mark "consists of a replica of a head of a tiger" was a conclusive determination of the issue preclusive of the Board's right to conclude otherwise when the opposition was finally decided on its merits. The motion to dismiss was in the nature of a motion for summary judgment or in the nature of a demurrer. The Board's decision thereon was on its face purely interlocutory and in nowise determinative of the issue of likelihood of confusion. The merits of the issue were not reached but expressely reserved for consideration pursuant to final hearing. The appeal here lies, as it must, from the Board's final determination dismissing the opposition on the basis of its finding that there is not a likelihood of confusion between the competing marks.

In passing, however, we think it pertinent to observe that the language employed by the Board in reserving its judgment evinces beyond question grave doubts on the issue of likelihood of confusion which it ultimately resolved without the aid of additional evidence.

Priority of use is not in issue as that facet of the matter before us clearly resides with appellant. The only issue is likelihood of confusion within the purview of section 2(d) of the Lanham Act, 15 U.S.C. 1052(d).

[2] The goods sold under the respective marks are articles of clothing of the outerwear type. They are of such a nature that they might well be displayed and sold together, one as a complement of the other, by the same merchants to the same class of purchasers. Members of the purchasing public viewing appellant's pictorial representation of a feline animal as applied to men's and women's outer shirts and appellee's literal designation TIGER HEAD for men's work socks might well and reasonably conclude that the respective goods of the parties emanated from the same source. We think it more consonant with reason to conclude that the quandary posed by the Board by its query "What is opposer's mark?" "Is it the head of a tiger?" would find ready and rational resolution in the mind of the purchasing public. The fact that "it may well represent to the purchasing public a wildcat, an ocelot or some other variety of a feline animal" does not obviate the fact that appellant's mark discloses one of a variety of feline animals aptly described by appellee's mark TIGER HEAD.

We are unable to subscribe to the rigid test applied by the Board in this case which seems to be a test of surety that appellant's mark represents a tiger head in that it "does not immediately and unequivocally suggest a tiger head." **[3]** The thrust of likelihood of confusion relates to the impact of the competing marks upon those who frequent the market place in the role of prospective purchaser. In

Mishawaka Rubber and Woolen Mfg. Co. v. *Bata Narodni Podnik*, 42 CCPA 872, 222 F.2d 279, 105 USPQ 432, the court said:

> When it comes to trademarks, the views of the experts in the Patent Office or elsewhere do not necessarily establish, however, that the purchasing public would recognize, analyze, and be guided by the same understanding and consideration of the marks. [Citations omitted.]

[4] As we construe the language of the Board as employed in its decision on the motion to dismiss and in its final determination of the issue, there appears to be a marked degree of doubt as to likelihood of confusion, which in our view should have been resolved in favor of the prior user. Where the question of likelihood of confusion resides in the area of doubt, it should be resolved against appellee, the newcomer. *American Grease Stick Co.* v. *Chemplast, Inc.*, 52 CCPA 1103, 341 F.2d 942, 144 USPQ 676.

We have examined and considered the cases cited and relied on by the parties. As we have often had occasion to observe, decided cases afford meager assistance in resolving issues of likelihood of confusion in trademark cases. Each case must be decided on the relevant facts and circumstances appertaining thereto.

We are of the opinion that the marks of the parties, as revealed by this record, are confusingly similar within the meaning of section 2(d) of the Lanham Act. The decision dismissing the opposition is accordingly reversed.

REVERSED.

BALDWIN, *J.*, took no part in the consideration or decision of this case.

U.S. Court of Customs and Patent Appeals

IN RE JULIAN DORSKY AND WILLIAM M. EASTER, JR.

No. 8101. Decided April 17, 1969

[56 CCPA —; 408 F.2d 1042; 161 USPQ 349]

1. PATENTABILITY—PARTICULAR SUBJECT MATTER—"POLYCYCLIC ALCOHOL, COMPOSITIONS CONTAINING SAME AND PROCESS THEREFOR."

The decision of the Board of Appeals, refusing certain claims in an application entitled "Polycyclic Alcohol, Compositions Containing Same and Process Therefor" as unpatentable over the prior art, is reversed.

APPEAL from Patent Office. Serial No. 115,928.

REVERSED.

Thomas Cifelli, Jr., *William E. Hedges*, for appellants.

Joseph Schimmel (*Jack E. Armore*, of counsel) for the Commissioner of Patents.

Before WORLEY, *Chief Judge*, RICH, ALMOND and BALDWIN, *Associate Judges*

RICH, *J.*, delivered the opinion of the court.

This appeal is from the decision of the Patent Office Board of Appeals affirming the rejection of claims 1–5, 9 and 10 of application Serial No. 115,928, filed June 9, 1961, entitled "Polycyclic Alcohol, Compositions Containing Same and Process Therefor." No claim has been allowed. All seven of the above-mentioned claims were originally involved in this appeal, but appellants have since withdrawn claims 1, 2 and 9.

Of the remaining claims, claims 3–5 are directed to a process for preparing a composition defined in claim 10 which is said to possess a strong, sandalwood-type fragrance and to be useful in the manufacture of perfumes. The details of the process and composition are developed below.

All claims were rejected as "substantially met under 35 U.S.C. 103 by Kheifits et al.," Chem. Abstracts, 51, 17,107 (1957). An English translation of the article upon which the cited abstract was based [1] was submitted by appellants and has been relied on by both appellants and the Examiner. We refer herein only to this translation.

Kheifits, which is acknowledged in appellants' specification, discloses a commercial process for preparing bornylhexahydroguaiacol involving the hydrogenation of bornylguaiacol in the presence of Raney Nickel at elevated temperatures and pressures. The disclosure from Kheifits relied on by the Patent Office reads as follows (emphasis added):

> About 40% of the theoretical amount of hydrogen was absorbed in the first hour after the start of hydrogenation. Then the hydrogen absorption nearly ceased, and the residual hydrogen was vented * * * after which fresh hydrogen was added to the autoclave * * * and the process was continued. *Such replacement of the hydrogen was done 3–4 times during the hydrogenation process.*
>
> The need for such an operation is due to the fact that *a side reaction* in the hydrogenation of the condensation product [meaning bornylguaiacol] *leads to the formation of hydrocarbons and water, which greatly inhibits the reaction.* * * * Together with the *main reaction of saturating the aromatic ring* with hydrogen and the side reaction, leading to the formation of hydrocarbons and water, the hydrogenation of the condensation product is also accompanied by a *partial hydrogenolysis of the ether group*, which always occurs when phenol ethers are hydrogenated over nickel catalysts.
>
> The total hydrogenation time, considered from the moment hydrogen absorption begins, is 6–8 hrs; about *110% of the theoretically calculated amount of hydrogen is absorbed* in this length of time.
>
> * * * * * * *
>
> After removal of a small head fraction [by distillation], the commercial fraction is collected in the boiling range *165–175° at 5 mm. Hg.* * * *.
>
> The commercial fraction was obtained as a completely clear, colorless (or very faintly yellow) liquid with an exceedingly high viscosity, *having a fairly mild but at the same time exceedingly persistent odor of the sandalwood type;* n_D^{20} =1.5060–1.5085; d_4^{20} =0.9937–1.0133 * * *. The *chemical structure of the commercial product was not established conclusively. In all probability it is a mixture of different alcohols of closely similar structure.*

Although Kheifits does not state what was considered to be the "theoretically calculated amount of hydrogen" necessary to effect the "main reaction," there appears to be agreement here that it is 3.0 moles of hydrogen per mole of bornylguaiacol. It therefore appears that 3.3 moles of hydrogen per mole of bornylguaiacol (110% of theoretical) were consumed in the reference process.

Appellants' process differs from that of Kheifits in only two substantial respects, namely, the alternate introduction of hydrogen into the reaction mixture and venting of the reaction mixture to remove undesirable by-products is repeated until more hydrogen (4 to 5 moles per mole of bornylguaiacol) is consumed than in the process disclosed in Kheifits, and a different product is isolated by distillation. Appellants' specification contains the following comparison between the claimed process and that of Kheifits and indication of the significance of the differences between the two (emphasis added):

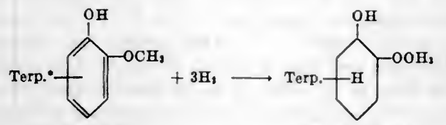
> In accordance with our present invention, we have, surprisingly, found that by modifying the Kheifits et al. process to increase the amount of hydrogen absorbed by the bornylguaiacol, we have succeeded in obtaining a product which has a

[1] L. A. Kheifits, et al., "Industrial Method for the Manufacture of Santalidol," Maslobono-Zhirovaya Prom., 23, No. 6, 35–38 (1957).

materially and unexpectedly greater perfume value than that obtained in accordance with the Kheifits et al. process. We have also found that the increased amount of hydrogen which we employ *alters the chemical nature of the product.* Instead of bornylhexahydroguaiacol, $C_{17}H_{30}O_2$, which contains one hydroxyl (OH) and one methoxyl (OCH_3) group, we form a new polycyclic alcohol, $C_{16}H_{28}O$, which has one hydroxyl and no methoxyl group. The methoxyl group was removed by hydrogenolysis. Our work has demonstrated further that this compound possesses a strong, sandalwood-type odor and that *pure bornylhexahydroguaiacol is odorless.*

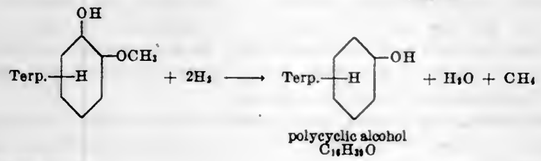
Appellants' specification also states that the product of their process has a perfume value which is 6 to 12 times greater than the "commercial fraction" obtained from the Kheifits process. It therefore appears that, when bornylguaiacol is used as the starting material, the claimed process involves the following two reactions, the first being the "main reaction" of Kheifits:

(1)



bornylguaiacol — bornylhexahydroguaiacol $C_{17}H_{30}O_2$

(2)



polycyclic alcohol $C_{16}H_{28}O$

*Terp. = Terpene group

After noting Kheifits' mention of the "partial hydrogenolysis of the ether group," the Board said:

The reference process, therefore, is recognized as not being restricted to ring hydrogenation, although from appellants' statements it might appear that they continue the hydrogenation until the larger percentage of the more thoroughly hydrogenated product is obtained. We see no "pointing away" from the [claimed] process in the reference. It is doubtful whether the more highly hydrogenated product was regarded as undesirable, but if this was so the expedient of adding more hydrogen and the result to be expected from this expedient did not become unobvious from this alleged undesirability.

Appellants concede that reaction (2), supra, probably occurred to a minor extent in Kheifits' process and that, since bornylhexahydroguaiacol is odorless, the product of reaction (2) was probably responsible for the sandalwood fragrance of Kheifits' "commercial fraction." Appellants maintain, however, that the reference does not suggest that this was the case, and thus, does not suggest modifying the disclosed process by the use of materially more hydrogen, as claimed. We agree.

The gist of the position taken by the Solicitor is that it would be obvious for one skilled in the art to identify the aromatic principle of Kheifits' commercial fraction and then use more hydrogen to increase hydrogenolysis of the ether group. This, we feel, is nothing more than a hindsight approach, for it necessarily assumes that one skilled in the art would have reason to doubt that bornylhexahydroguaiacol was the aromatic principle.

With respect to compound claim 10, the Board was of the view that appellants have not established their product to be substantially different from that of Kheifits. Claim 10 reads:

10. A viscous, colorless oil, having a strong sandalwood-type odor, consisting essentially of a material having the empirical formula, $C_{16}H_{28}O$, free of ethereal oxygen and having a boiling range between about 140°–160° C. under 2 mm. Hg. pressure and a refractive index (n_D^{20}) of about 1.506–1.508.

Although the refractive index of appellants' product and that of Kheifits' "commercial fraction" are substantially identical, we feel that by the recitation of the empirical formula and boiling point and the further recitation that the material is "free of ethereal oxygen," the claim adequately distinguishes appellants' product from that obtained by the Kheifits process.

[1] The decision of the Board is reversed.

REVERSED.

PATENT SUITS

Notices under 35 U.S.C. 290; Patent Act of 1952

2,463,280, Kaehni and Kaehni, SPECTROSCOPE GRATING HAVING SPACED ZONES OF DIFFRACTION LINES, **filed** Apr. 23, 1969, D.C. Md. (Baltimore), Doc. 20691–C, *Frank J. Kaehni and Marie Kaehni v. Jewelarama, Inc.* **Same, filed** Apr. 23, 1969, D.C. Md. (Baltimore), Doc. 20692–C, *Frank J. Kaehni and Marie Kaehni v. Jeri, Inc.* **Same, filed** Apr. 23, 1969, D.C. Md. (Baltimore), Doc. 2093–C, *Frank J. Kaehni and Marie Kaehni v. Diffraction Company.*

2,513,094, G. O. Hall, CURING OF MEAT TO INHIBIT UNDESIRABLE COLOR CHANGE, **filed** June 22, 1967, D.C. Md. (Baltimore), Doc. 18490–C, *Calgon Corporation v. Nathan Mash, Incorporated.* Stipulation dismissing case, Mar. 26, 1969.

2,570,637, M. M. Brown, METHODS OF AND APPARATUS FOR MENDING HOSIERY, **filed** Apr. 11, 1969, D.C., M.D. Pa. (Scranton), Doc. 69–137, *Marvel Specialty Co., Inc. v. Troy Craft, Inc.* Action compromised and settled; dismissed with prejudice, June 2, 1969.

2,579,304, J. B. Crawford, SELF-ADJUSTING RECIRCULATING OVERFLOW, **filed** June 10, 1969, D.C., C.D. Calif. (Los Angeles), Doc. 69–1118, *Walter Kinkead et al. v. White Front Stores et al.*

2,602,105, Welch and Welch, BATTERY TERMINAL CONNECTION, **filed** June 11, 1969, D.C., E.D. Va. (Richmond), Doc. CA232–69–R, *Charles H. Welch and James M. Welch v. General Motors Corporation.*

2,609,129, D. Goldberg, FABRIC EDGE-FOLDING AND PRESSING MACHINES, **filed** Mar. 15, 1967, D.C., S.D.N.Y., Doc. 67–C–1034, *Schreiber & Goldberg, Inc. v. Trufast Products, Inc.* Stipulation and order of discontinuance with prejudice, June 3, 1969.

2,640,580, A. R. De Burgh, CONVEYOR SYSTEM; **2,640,607**, same, MULTIPLE CYCLE CONVEYOR, **filed** Feb. 20, 1969, D.C., C.D. Calif. (Los Angeles), Doc. 69–333–JWC, *George Koch Sons, Inc. v. Rex C. Walter, doing business as Imperial Iron Works.* **Same, filed** Apr. 1, 1969, D.C., W.D.N.C. (Statesville), Doc. 591, *George Koch Sons, Inc. v. Bernhardt Furniture Co.*

2,640,607. (See 2,640,580.)

2,694,168. (See 2,697,806.)

2,697,806, P. E. Gates, GLASS ENCLOSED ELECTRICAL TRANSLATOR; **2,694,168**, North and Carman, Jr., GLASS-SEALED SEMICONDUCTOR CRYSTAL DEVICE, **filed** Nov. 6, 1967, D.C. Del. (Wilmington), Doc. 3428, *Sylvania Electric Products, Inc. v. Hughes Aircraft Corporation.* Consent judgment, action dismissed with prejudice, May 28, 1969.

2,741,407, D. Goldberg, PRESSING AND SHAPING APPARATUS FOR MULTIPLE-PLY FABRIC ARTICLES, **filed** Apr. 10, 1967, D.C., S.D.N.Y., Doc. 67–C–1402, *Schreiber & Goldberg, Inc. v. Trufast Products, Inc.* Stipulation and order of discontinuance with prejudice, May 29, 1969.

2,747,118, Coggeshall and Stafford, SUPPORTING OF COIL END TURNS; **2,747,119**, Petersen and Zeissler, BINDING OF ROTOR END TURNS, **filed** July 16, 1964, D.C., N.D. Ohio (Cleveland), Doc. C64–493, *General Electric Company v. Westinghouse Electric Corporation.* Final judgment, plaintiff owner of Letters Patent Nos. 2,747,118 and 2,747,119 which are invalid, June 3, 1969.

2,747,119. (See 2,747,118.)

2,804,940, A. J. L. Hutchinson, PROCESS FOR DEHYDRATING GAS; **2,804,941**, same, VAPOR-LIQUID CONTACTING METHOD, **filed** May 27, 1969, D.C. Colo. (Denver), Doc. C–1454, *Maloney-Crawford Tank Corporation v. Rocky Mountain Natural Gas Company, Inc.*

2,804,941. (See 2,804,540.)

2,810,206, H. J. Ziemann, SPIRIT LEVEL; **3,311,990**, D. E. Wright, LEVEL, **filed** May 28, 1969, D.C., N.D. Ill. (Chicago), Doc. 69c1149, *Empire Level Mfg. Co., Harry J. Ziemann, Donald E. Wright v. Ace Hardware Corp.*

2,854,839, C. L. Eads, LOCK MECHANISM FOR NARROW STILE DOORS, **filed** Nov. 12, 1968, D.C., S.D. Fla. (Miami), Doc. 68–1294–C–TC, *Adams Rite Manufacturing Company v. Lumidor Manufacturing Corp.* Consent judgment, plaintiff owner of patent. Defendant has infringed and hereby permanently enjoined, Mar. 27, 1969.

2,947,544, A. A. Hurt, FERTILIZER MIXING AND SPREADING MACHINE; **3,073,606**, same, METHOD OF MIXING AND SPREADING FERTILIZER, **filed** May 22, 1969, D.C., N.D. Iowa (Sioux City), Doc. 69–C–3021–W, *Ranco Fertiservice, Inc. v. Arthur A. Hurt.*

2,990,094, R. F. Reifers, MOLDED PULP EGG CARTON, **filed** June 13, 1969, D.C., C.D. Calif. (Los Angeles), Doc. 69–1146–F, *Dolco Packaging Corp. and Olson Brothers, Inc. v. Diamond International Corporation.*

3,018,968, G. S. Levy, CLOSED SYSTEM RECIRCULATING ASSEMBLY, **filed** June 2, 1969, D.C., N.D. Ill. (Chicago), Doc. 69c1171, *Binks Manufacturing Company v. The Spee-Flo Manufacturing Corporation.*

3,037,659, W. H. Frederick, NESTING AND STACKING BASKET, **filed** Oct. 19, 1967, D.C., C.D. Calif. (Los Angeles), Doc. 67–1530–CC, *William H. Frederick et al. v. Strongcraft Products, Inc. et al.* Stipulation and order dismissing complaint and second amended counterclaim with prejudice, June 2, 1969.

3,056,684, Lopata and Keithler, PROTECTIVE COATINGS, **filed** Dec. 10, 1965, D.C., N.D. Ill. (Chicago), Doc. 65c2080, *Carboline Company v. Mobil Finishes Co., Inc. and Socony Paint Products Co.* Judgment, patent valid; defendant Mobil Oil Corporation perpetually enjoined. Defendant's counterclaim for declaratory judgment of invalidity and non-infringement dismissed with prejudice, June 9, 1969.

3,073,606. (See 2,947,544.)

3,118,198. (See 3,195,197.)

3,129,432, N. L. Belkin, SURGEON'S GOWN; **3,349,285**, same, SURGICAL GOWN WITH STATIC ELECTRICITY DISCHARGE MEANS, **filed** Mar. 18, 1969, D.C., N.D. Ill. (Chicago), Doc. 69c581, *Angelica Corporation v. Medline Industries, Inc.* Consent decree, Patent No. 3,349,285 is valid and defendant has infringed and is enjoined, June 5, 1969.

3,138,270, L. A. McCarty, FOLDABLE LOAD LIFTING APPARATUS, **filed** July 23, 1965, D.C., S.D. Calif. (Los Angeles), Doc. 65–1136–TC, *H. S. Watson Co. v. Paul Hardeman, Inc.* Consent decree, plaintiff owner of patent which is valid and plaintiffs waive all claims of infringement asserted against defendants, June 4, 1969.

3,152,427. (See 3,195,197.)

3,195,197, L. J. Prunier, LENS BLOCKING APPARATUS; **3,118,198**, same, METHOD OF BLOCKING LENS; **3,152,427**, same, LENS BLANK AND BLOCK UNIT, **filed** Nov. 28, 1967, D.C., N.D. Ill. (Chicago), Doc. 67c2049, *American Optical Corp.* v. *Coburn Optical Equipment Co., Coburn Mfg. Co. Inc.* Consent judgment, plaintiff is owner of patents which are valid; defendants have infringed and are enjoined, June 4, 1969.

3,216,513, Robbins and Winberg, CUTTER ASSEMBLIES FOR ROCK DRILLING, **filed** June 10, 1969, D.C., W.D. Wash. (Seattle), Doc. 8346, *James S. Robbins & Associates, Inc.* v. *Lawrence Manufacturing Company.*

3,248,815, M. J. Arage, BEAUTY SHOP COIFFURE PROFILE AND ILLUMINATED DISPLAY ENCLOSURE, **filed** June 4, 1969, D.C., W.D. Pa. (Pittsburgh), Doc. CA69–674, *Maurice Arage* v. *Abbott Tresses, Inc., Dominic C. Abbott.*

3,262,146, F. E. Hays, STEAM-VACUUM GENERATOR FOR RUG AND UPHOLSTERY CLEANING, **filed** June 3, 1969, D.C., N.D. Calif. (San Francisco), Doc. 51448, *Deep Steam Extraction, Ltd. and Fred E. Hays* v. *Steamco of San Jose.*

3,311,990. (See 2,810,206.)

3,325,981, Glass and Hale, HAY HARVESTING MACHINE; **3,375,643**, McCarty and Glass, HARVESTING DEVICE; **3,383,844**, Glass, Hale and McCarty, DEFLECTOR STRUCTURE; **3,386,233**, Glass and McCarty, IMPLEMENT FRAME, **filed** June 3, 1969, D.C., N.D. Ill. (Chicago), Doc. 69c1177, *Sperry Rand Corporation* v. *Deere & Company.*

3,337,673, N. C. Jeckel, UNIFORMLY CORRUGATED PROSTHESIS AND PROCESS OF MAKING SAME, **filed** June 2, 1969, D.C.N.J. (Newark), Doc. 622–69, *United States Catheter & Instrument Corporation* v. *Meadox Medical, Incorporated.*

3,344,312, W. G. Buhler, ELECTROSTATIC POWDER SPRAYER, **filed** Dec. 9, 1968, D.C., N.D. Ill. (Chicago), Doc. 68c2360, *Oxy-Dry Sprayer Corporation* v. *Electro Sprayer Systems, Inc.* By agreement cause dismissed with prejudice, June 5, 1969.

3,349,285. (See 3,129,432.)

3,368,280, Friedman and Richman, DENTAL TOOL, **filed** June 10, 1969, D.C., S.D. Fla. (Miami), Doc. 69–698–C–WM, *C & B Corporation* v. *Sonoptics Corporation and American Hospital Supply Corp.*

3,375,643. (See 3,325,981.)

3,383,844. (See 3,325,981.)

3,386,233. (See 3,325,981.)

3,396,399, J. R. Winegard, ULTRA-HIGH FREQUENCY FISHBONE TYPE TELEVISION ANTENNA, **filed** June 10, 1969, D.C., N.D. Ill. (Chicago), Doc. 69c1231, *Winegard Company* v. *The George Company, Community Discount Centers, Inc. and De-Jon Industries, Inc.*

3,434,113, Wiley and Amendt, METHODS AND SYSTEMS FOR PROVIDING GRAPHICAL DISPLAYS, **filed** May 28, 1969, D.C., C.D. Calif. (Los Angeles), Doc. 69–1035–CC, *California Computer Products, Inc.* v. *Bausch & Lomb, Inc. and Product Data Company.*

3,449,129, Reimus and Saporito, CONCENTRATION PROCESS, **filed** June 11, 1969, D.C. Del. (Wilmington), Doc. 3725, *Struthers Scientific & International Corporation* v. *General Foods Corporation.*

D. 184,163, D. Bloomfield, RACK FOR HOLDING SUGAR BAGS, **filed** Nov. 21, 1968, D.C., N.D. Ill. (Chicago), Doc. 68c2253, *Bloomfield Industries, Inc.* v. *Wesco Spring Co., Inc.* Consent Decree, Count 1 charging infringement dismissed without prejudice. Count 2 charging unfair competition dismissed with prejudice. Counterclaim dismissed, Apr. 8, 1969.

REISSUES

SEPTEMBER 9, 1969

Matter enclosed in heavy brackets [ ] appears in the original patent but forms no part of this reissue specification; **matter printed in italics indicates additions made by reissue.**

26,657

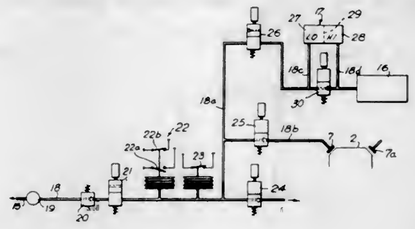
LEAK TESTING METHOD AND APPARATUS

Richard Thomas Fitzpatrick and Ray Moore, Jr., by Ajem Laboratories, Inc., assignee, Livonia, Mich., a corporation of Michigan

Original No. 3,314,283, dated Apr. 18, 1967, Ser. No. 375,515, June 16, 1964. Application for reissue Feb. 23, 1968, Ser. No. 710,437

Int. Cl. G01m *3/04*

U.S. Cl. 73—40 **20 Claims**



1. A method of testing parts for leaks which comprises the steps of subjecting the opposite sides of a wall of a part to be tested to a difference in pressure, forming a closed chamber on at least one side of said wall, connecting said chamber to a standard chamber, segregating the two chambers after the pressure therein is equalized, measuring any difference in pressure in the two chambers during a predetermined period of time, producing a voltage directly proportional to any measured difference in pressure, utilizing any voltage so produced to actuate a responsive device to indicate the occurrence of a leak, [subsequentially] *sequentially* performing the steps of forming the closed chamber, segregating the two chambers and measuring any difference in pressure by successive RC networks each having a predetermined time period, and energizing the successive networks by operation of the preceding network whereby to automatically perform a testing operation by forces produced by each successive step.

26,658

WELDING UNIT FOR LAP-WELDING MACHINES

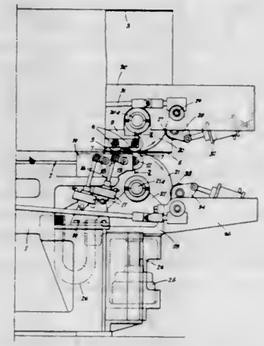
Thomas A. McCoy, Stockton, Calif., assignor to Carando Machine Works, Stockton, Calif., a partnership

Original No. 3,109,914, dated Nov. 5, 1963, Ser. No. 154,684, Nov. 24, 1961. Application for reissue Nov. 29, 1968, Ser. No. 785,827

Int. Cl. B23k *11/30*

U.S. Cl. 219—64 **4 Claims**

1. In a machine to weld the longitudinal edges of a cylindrical shell and which machine includes means to advance the shell along the machine to a point of welding; transversely spaced sets of crowder wheels mounted on the machine back from said point and disposed to engage the shell on the inside and outside thereof adjacent and laterally out from said edges; the peripheral faces of all said wheels sloping in the direction of said edges and being convexly curved to engage the curving



surfaces of shells of different diameters with equal effectiveness; the radius of such convex curvature of the inside wheels being less than that of any shell.

26,659

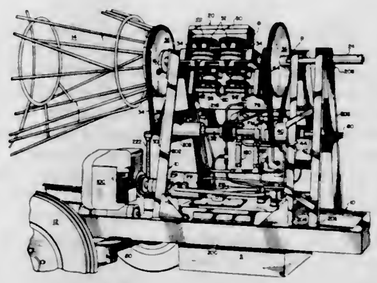
HYDRAULICALLY-OPERATED SEWER CLEANING MACHINE

Burton L. Siegal, Chicago, Ill., assignor to O'Brien Manufacturing Corporation, Chicago, Ill., a corporation of Illinois

Original No. 3,394,422, dated July 30, 1968, Ser. No. 592,132, Nov. 4, 1966. Application for reissue Oct. 15, 1968, Ser. No. 769,450

Int. Cl. F28g *3/00*

U.S. Cl. 15—104.3 **10 Claims**



A sewer cleaning machine for feeding and retracting a rotating sewer rod into and from a sewer pipe. The rotational movements of the rod and its longitudinal movements are controlled by interrelation compound differential drive units, each of which embodies a differential input supplied by a motor of the hydraulic type.

26,660

SEALED ALKALINE CELLS AND ELECTROLYTES THEREFOR

Jean-Pierre Rodolphe Harivel, Paris, France, assignor to Societe des Accumulateurs Fixes et de Traction (Societe Anonyme), Romainville, France, a French company

Original No. 3,342,639, dated Sept. 19, 1967, Ser. No. 380,777, July 7, 1964. Application for reissue Feb. 19, 1968, Ser. No. 719,796

Claims priority, application France, July 8, 1963, 940,759, 940,760

Int. Cl. H01m *35/02, 43/04*

U.S. Cl. 136—6 **6 Claims**

Secondary alkaline storage cell including a sealed container, positive and negative electrodes with interposed porous separator and distance between electrodes of about 0.1 to 0.3 mm., and including an alkali metal hydroxide electrolyte having at ambient temperature a concentration of at least 1 N to the limit of solubility in water thereof and containing a compound selected from the group consisting of zinc hydroxide and cadmium hydroxide in a concentration sufficient to obtain an electro-deposited metal layer on the cathode for catalyzing the consumption of electrolysis products formed during overcharge and overdischarge without causing precipitation of conductive crystals capable of short circuiting the cell.

26,661

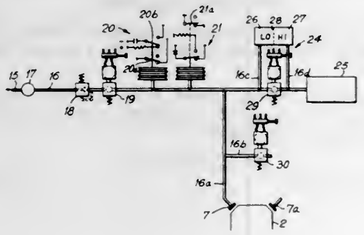
LEAK TESTING APPARATUS

Richard Thomas Fitzpatrick and Ray Moore, Jr., by Ajem Laboratories, Inc., assignee, Livonia, Mich., a corporation of Michigan

Original No. 3,326,034, dated June 20, 1967, Ser. No. 451,103, Apr. 23, 1965. Application for reissue Feb. 23, 1968, Ser. No. 710,439

Int. Cl. G01m *3/04*

U.S. Cl. 73—40 **27 Claims**



1. An apparatus for testing parts for leaks comprising a measuring instrument having separate chambers with a diaphragm therebetween, a source of fluid under pressure, a manifold block having passages and a ballast chamber therein, one of said passages connecting the source of pressure fluid to the ballast chamber, a second passage connecting said one passage to a closed chamber on the part to be tested, a third passage connecting the first passage to the atmosphere, fourth and fifth passages connecting the separate chambers of the measuring instrument to the first passage adjacent to the ballast chamber, a normally closed fill valve in the first passage for filling all of the passages with a testing fluid from said pressure source when the valve is open, a normally open divide valve in said first passageway between the fourth and fifth passages to isolate one chamber of the measuring instrument and ballast chamber from the remainder of the system, a normally open dump valve in the third passage for sealing the system when closed and dumping air from the system when open, said valves extending through the manifold block and having rotary valve elements in alignment with the passages which they control, a mechanical valve actuator for each valve, pressure operated switches connected to the first passage in said manifold block, a sensing mechanism having a transducer for producing an electric potential in a branch circuit proportional to any movement of the diaphragm in said measuring instrument, and an electric control circuit having timing branches for timing the steps of filling, stabilizing and testing, circuit branches including electric solenoids for controlling operation of the valves, circuit branches having current responsive indicating devices for indicating the results of the test, connections between the timing branches, current responsive branches and sensing branch, and each of branch circuits having solid state semiconductors for controlling current flow therein.

26,662

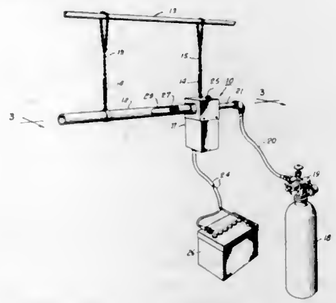
SUSPENDED PRESSURIZED GAS OPERATED PAPER CONE PROJECTOR

Lester F. Hall, 5907 Sherry Lane, Dallas, Tex. 75225

Original No. 3,345,977, dated Oct. 10, 1967, Ser. No. 606,856, Jan. 3, 1967. Application for reissue Sept. 11, 1968, Ser. No. 765,703

Int. Cl. F41f *1/04, 7/02*

U.S. Cl. 124—11 **7 Claims**



A gun-like assembly for firing papers rolled into cone shape from a moving vehicle by means of compressed gas controlled by a solenoid valve.

26,663

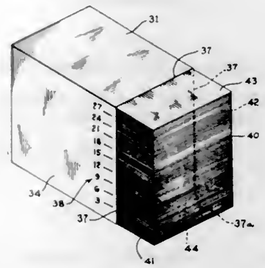
BULK PACKAGE FOR CUT SIZE PAPER

Richard J. Dwyer, Jr., Bellbrook, Ohio, assignor to Kimberly-Clark Corporation, Neenah, Wis., a corporation of Delaware

Original No. 3,367,487, dated Feb. 6, 1968, Ser. No. 635,738, May 3, 1967. Application for reissue May 22, 1968, Ser. No. 741,832

Int. Cl. B65d *79/00*

U.S. Cl. 206—57 **8 Claims**



A bulk package for a multiple-ream stack of cut size paper designed for use with copy making machines. The package is a paperboard carton of a size sufficient to hold several reams. The carton is encircled by a tear strip which when removed to open the carton, detaches a portion of the top and two side panels of the carton at one end to expose the top and sides of the paper stack at that end. A substantial portion of the bottom panel of the carton is retained to provide support for the stack. The opened carton containing the stack acts as a service tray which can be placed on the delivery platform of a copy making machine ready for use.

26,664

BRUSHLESS MOTORS WHEREIN COMMUTATION IS CONTROLLED BY AN IMPEDANCE RESPONSIVE TO ROTOR MOVEMENT

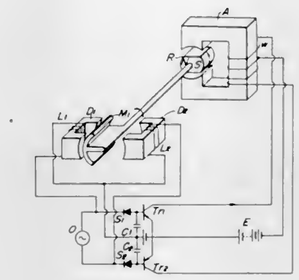
Makoto Noumi, Yokohama, Japan, by Hitachi, Ltd., Tokyo Japan, a corporation of Japan, assignee

Original No. 3,346,792, dated Oct. 10, 1967, Ser. No. 374,929, June 15, 1964. Application for reissue Dec. 13, 1967, Ser. No. 694,773

Claims priority, application Japan, June 19, 1963, 38/30,936

Int. Cl. H02k *29/00*

U.S. Cl. 318—138 **6 Claims**



1. A brushless motor comprising:
(1) a permanent magnet rotor,
(2) a stator,
(3) an armature coil wound around said stator in a manner to provide current flow therethrough in alternate directions,
(4) first and second amplifiers having their outputs applied to said armature coil for supplying current flow therethrough in alternate directions,
(5) first and second reactance elements operatively coupled to said first and second amplifiers for controlling the operation of said amplifiers,
(6) means for continuously applying a high frequency signal to both said reactance elements, and
(7) means for alternately varying primarily only the impedance value of one of said reactance elements in accordance with rotation of said rotor to thereby turn on said first and second amplifiers which alternately excite said armature coil alternately with the outputs of said first and second amplifiers.

26,665

METAL ROLLING SYSTEM

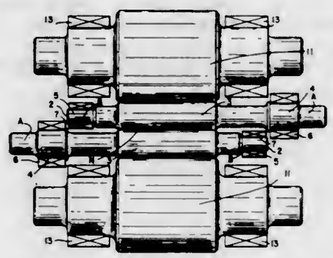
Fred Harding Powell, Henrico County, Va., by Reynolds Metal Company, assignee, Richmond, Va., a corporation of Delaware

Original No. 3,354,502, dated Nov. 28, 1967, Ser. No. 534,469, Mar. 15, 1966. Application for reissue May 2, 1968, Ser. No. 730,209

Int. Cl. B21h *8/00*

U.S. Cl. 18—2 **15 Claims**

A rolling mill comprising parallel working rolls having cooperating working faces, each working roll having at one end a first neck portion of relatively great diameter relatively remote from the working face of the roll and at the opposite end a second neck portion of relatively small diameter close to the working face of the roll, the first mentioned ends of the respective working rolls extending in opposite directions from the working faces of the rolls, the rolls being driven through the first mentioned ends thereof, and bearings for the rolls in which the first and second neck portions are journaled. The axes of the working rolls may be substantially in a common horizontal plane. Means may be provided for feeding particles to the nip of the working rolls to compress and consolidate the particles into a strip. Backing up rolls may be provided behind the working rolls to minimize deformation thereof. The bearings for the first neck portions of the working rolls and the bearings for the second neck portions thereof overlap along the pass line of the rolling mill. The bearings for the first neck portions of the working rolls are disposed more remote from the pass line of the rolling mill than the extremities of the second mentioned ends of the working rolls.



26,666

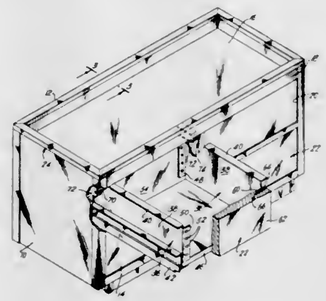
FIXTURE WITH DRAWERS

Jack M. Marateck, New York, N.Y. (785 Mace Ave., Bronx, N.Y. 10467), and Harold Marateck, New York, N.Y. (1075 Nelson Ave., Bronx, N.Y. 10452)

Original No. 3,294,466, dated Dec. 27, 1966, Ser. No. 418,002, Dec. 14, 1964. Application for reissue May 22, 1967, Ser. No. 646,751

Int Cl. A47b *67/04*

U.S. Cl. 312—343 **15 Claims**



1. In combination, a cabinet, including spaced upright walls defining a drawer compartment and a drawer for said cabinet slidably supported between said upright walls in said compartment, said drawer including spaced side walls each having means at its front and rear ends for securing front and rear drawer walls thereto, each said side wall having a longitudinally-extending channel at its bottom facing the channel of the other of said side walls, said channels adapted to receive a bottom wall of said drawer, said bottom wall supported by its marginal edge portions within said channels, and means slidably

supporting said drawer in said cabinet, said means including a roller mounted on the outer face of each of said drawer side walls at its upper rear corner for rotation on an axis normal to said face, a horizontally-extending outwardly-projecting bar secured to the outer face of each of said drawer side walls in normal relation to said face, in vertically spaced relation to said roller, a horizontally-extending, inwardly-facing channel provided on each of said upright walls at the top end of said drawer compartment in position to receive the adjacent of said drawer-supported rollers thereon, and a roller rotatably mounted on the inner face of each of said upright walls at its lower front corner, in position to support the adjacent of said bars when said drawer-supported rollers are disposed within said upright wall-supported channels.

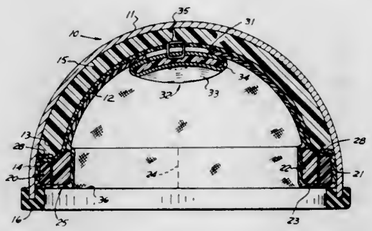
14. The cabinet of claim 1 wherein a wall thereof is arranged to have the marginal portion of an edge thereof free and unconnected to any other wall of said cabinet along at least a portion of its length, and wherein a shield is provided for said marginal portion of said wall, said shield comprising a channel member including side walls and a connecting wall, said shield having outwardly offset projections at the edge of each of its side walls, said marginal edge portion of said walls having grooves formed in its side faces adapted to slidably receive the said inwardly projecting portions of said channel side walls.

PATENTS

GRANTED SEPTEMBER 9, 1969

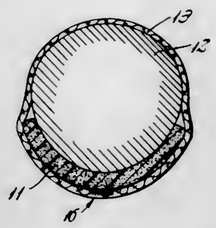
GENERAL AND MECHANICAL

3,465,363
SAFETY HELMET SIZING BAND
Dennis F. Raney, Detroit, Mich., assignor to American Safety Equipment Corporation of Michigan, Oak Park, Mich.
Filed July 1, 1968, Ser. No. 741,477
Int. Cl. A42b *1/08, 1/22*
U.S. Cl. 2—3 **8 Claims**



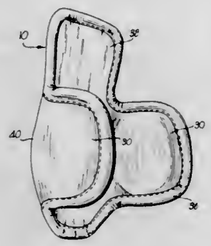
A safety helmet formed of a shell having a lower edge and a resilient, relatively thick sizing band arranged beneath and in contact with the shell lower edge. The band is secured to the shell by means of a tube of elastically stretchable cloth-like material having one end stretched around the outer periphery of the band and fastened to the shell lower edge, with the tube bent around the band and into the shell to thereby elastically hold the band in position. Thus, the band may be removed for replacement by a different thickness band for sizing purposes. The band is formed of an elongated strip which tends to radially expand the band circumference. Hence, the band may frictionally secure the shell within a hard outer shell placed over the above mentioned shell.

3,465,364
PROTECTIVE PAD
Kenneth J. Edelson, Ridgewood, N.J., assignor to General Sportcraft Company Limited, Bergenfield, N.J., a corporation of New York
Filed May 9, 1967, Ser. No. 637,275
Int. Cl. A41d *13/06*
U.S. Cl. 2—22 **4 Claims**



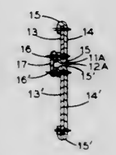
The protective pad is a flexible shock-absorbing member shaped to form a shin guard to be worn under a knit sock or stocking and is held in place by the interlocking of split loops carried by the pad directly with the material of any knit sock or stocking whereby special stockings having projecting closed loops to cooperate with the split loops are not required to hold the pad in position.

3,465,365
KNEEPAD
Billy J. Jones, 6306 W. 77th Terrace, Overland Park, Kans. 66204, and Rodney Cameron Berry, 824 N. 70th St., Kansas City, Kans. 66112
Filed Dec. 15, 1967, Ser. No. 690,975
Int. Cl. A41d *13/06*
U.S. Cl. 2—24 **2 Claims**



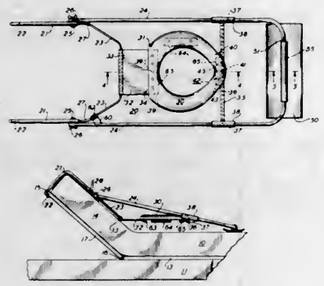
A kneepad having a pair of spaced-apart, opposed, relatively hard plates with a cushion on the inner face of each plate in position to engage the sides of a wearer's knee. The plates are interconnected by an elongated, U-shaped band of spring material which passes around the front of the kneecap and biases the plates toward the knee. The plates are concavo-convex to conform to the shape of the knee and to cooperate with the band in presenting a convex outer surface to a covering of resilient material. The convex outer surface serves to shield the knee from direct blows.

3,465,366
SWEATBAND CONSTRUCTION
Pincus Topiel, New York, and Samuel Feldman, Hewlett, N.Y., assignors to Atsons Products Corporation, New York, N.Y., a corporation of New York
Filed Nov. 10, 1966, Ser. No. 593,366
Int. Cl. A42b *1/22*
U.S. Cl. 2—183 **7 Claims**



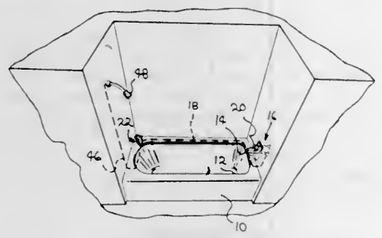
A sweatband construction having a pair of sections in hinged relation to each other; which sections may be selectively folded in face to face, double thickness relation to provide one headband size; or unfolded into a laterally related, single thickness relation to provide another headband size.

3,465,367
PATIENT ELEVATING MEANS FOR USE IN THE PROCESS OF SPONTANEOUS ELIMINATION
William M. Emery, 44 Pittsford Way, New Providence, N.J. 07974
Filed July 25, 1967, Ser. No. 660,859
Int. Cl. A61g 9/00, 7/06; A47c 21/00
U.S. Cl. 4—112 5 Claims



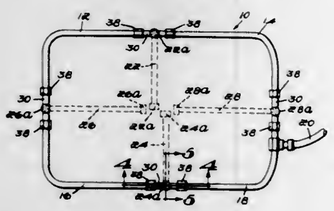
With increased nurse shortage and hospital costs, the effortless raising of the patient to a position conducive to spontaneous elimination and the suspension of a disposable bag thereunder has attained major importance.

3,465,368
WATER DIVERTER SYSTEM
Carl A. Eversman, 2943 Manchester Drive, Toledo, Ohio 43606
Filed Jan. 30, 1967, Ser. No. 612,653
Int. Cl. A47k 3/04
U.S. Cl. 4—148 3 Claims



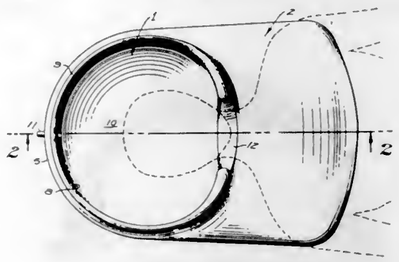
Water diverter system adapted for a bathtub installation wherein the temperature of the water outlet is adjusted at a location remote from the outlet.

3,465,369
SHOWERBATH APPARATUS
Jack Ostrowsky, 22 Malden St., Everett, Mass. 02149
Filed Mar. 8, 1967, Ser. No. 621,506
Int. Cl. A47k 3/22, 3/24
U.S. Cl. 4—150 5 Claims



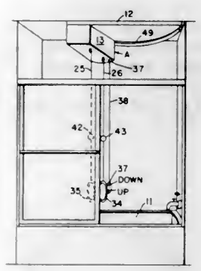
Showerbath apparatus, suitable for use in a bathtub or outdoors, has a conduit support with riser conduits extending therefrom having ports through which water flows to an approximately common point, the riser conduits being pivotably adjustable as to their position.

3,465,370
HAIR WASHING TRAY FOR BED PATIENTS
Mary W. Chernick, 1711 Fillmore Drive, Monterey Park, Calif. 91754
Filed Sept. 30, 1966, Ser. No. 583,190
Int. Cl. A45d 19/06
U.S. Cl. 4—159 2 Claims



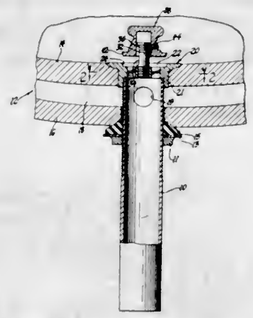
A hair washing tray intended to be placed on a bed, the tray including a circular basin and an integral apron at one side, dimensioned to fit under the shoulders and back of the user, the basin having a neck receiving depression adapted to support the neck of the user.

3,465,371
LIFT FOR AIDING PERSONS IN AND OUT OF BATHTUBS
William L. Schweitzer, 753 Murray Road, Martinez, Ga. 30907
Filed Feb. 19, 1968, Ser. No. 706,474
Int. Cl. A47k 3/12; B66c 7/00
U.S. Cl. 4—185 3 Claims



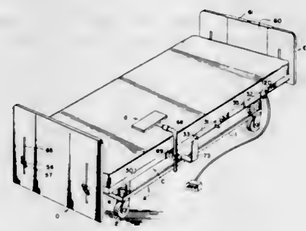
A lift for use with bath tubs comprising spaced apart arm slings suspended from flexible cable means with each cable means reverse reeved around axially spaced pulleys driven by the armature shaft of an electric motor, which motor is mountet above a bath tub in a ceiling suspended housing pivoted at one end and having track engaging grooved rollers at the opposite end engaging a ceiling suspended arcuate track or trolley to permit the motor to wind the cable means to lift a user of the device, whereby the housing and arm slings serve to lift and the rollers and track and grooved roller provide for swinging a bath tub occupant to and from the bath tub.

3,465,372
LAVATORY DRAIN
Cleo A. Reagan, Frankfort, Ind., assignor to The Indiana Brass Co., Inc., Frankfort, Ind., a corporation of Indiana
Filed Feb. 19, 1968, Ser. No. 706,223
Int. Cl. E03c 1/22
U.S. Cl. 4—204 8 Claims



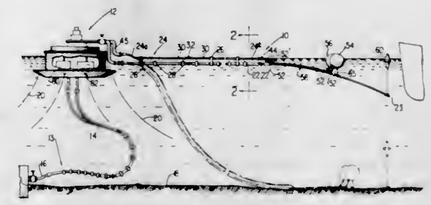
In a preferred form, the present invention relates to a drain plug assembly for a lavatory basin. The drain plug of the present invention is movable between two positions while slidably mounted on a post to allow water flow from the basin to a drain pipe while in a first position and blocks the flow of water from the basin to the drain while in a second position. The drain plug has a screw passing therethrough which coacts with a groove on the post to hold the drain plug raised from the basin while allowing turning in the groove to an open slot allowing the drain plug to drop into sealing engagement with the basin. The drain plug assembly of the present invention can be completely removed from the basin without disturbing the plumbing to the drain pipes.

3,465,373
HOSPITAL BED
Harriet A. Wilson, 115 Hilltop Road, Waverly, Pa. 18471
Filed Dec. 6, 1967, Ser. No. 688,580
Int. Cl. A61g 7/00
U.S. Cl. 5—63 10 Claims



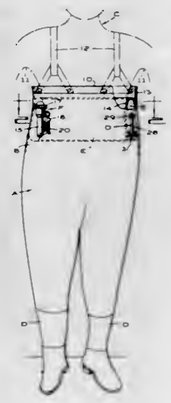
A hospital bed is formed of a three-section mattress supporting structure composed of three hingedly connected sections with the head and intermediate seat sections pivotally connected on the same axis to a support member, the intermediate and foot sections being extensible to adjust to the individual patient. The head and intermediate sections may be pivoted about the axis to raise their opposite ends and the foot section is angularly adjustable relative to the seat section. A footboard with an extensible foot rest is mounted on the support, and the foot rest may be raised and lowered and may extend over the foot section to provide a vertical support surface for the patient's feet. The support member is vertically movable at either or both ends. Arm rests are provided on the head section.

3,465,374
LIQUID CARGO HANDLING SYSTEM
Charles E. Johnson and Paul J. Kolarik, Buffalo, N.Y., assignors to Hewitt-Robins Incorporated, Stamford, Conn., a corporation of Delaware
Filed Jan. 29, 1968, Ser. No. 701,420
Int. Cl. B63b 13/00
U.S. Cl. 9—8 8 Claims



In the present invention a secondary float-sink means is attached to the outboard end section of a flexible supply conduit in an off-shore fluid handling system. This secondary float-sink means combines with a ballasting system and a primary float-sink means (i.e. a satellite hose) attached to the inboard section of the conduit to enable the entire conduit to be raised and lowered without excessively inhibiting the flexibility of the outboard end section of the supply conduit.

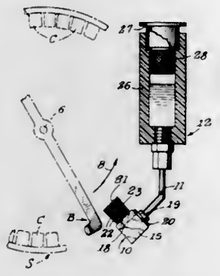
3,465,375
LIFE GUARD CHEST WADERS
Joseph P. Schnell, 977 Cordilleras Ave., San Carlos, Calif. 94070
Filed Mar. 27, 1968, Ser. No. 716,620
Int. Cl. B63c 9/16
U.S. Cl. 9—343 4 Claims



A life guard chest waders for use by fishermen and duck hunters, and having a resilient and expandable air chamber secured to the inside top portion of the chest waders to define a built-in life jacket, the air chamber being made to form a substantially water-tight seal between the top of the chest waders and the wearer's body when this chamber is inflated, thus preventing any ap-

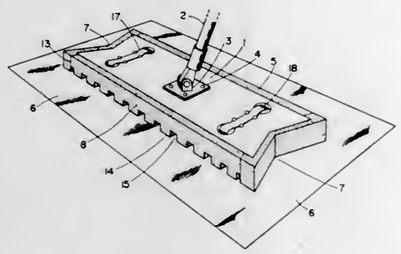
preciable amount of water from gaining access to the interior of the chest waders and further providing floating buoyancy for the wearer.

3,465,376
AUTOMATIC SWITCH-BANK CLEANING MEANS
George H. Smith, 3360–D Norton Ave., Lynwood, Calif. 90262, and Leonard O. Salmon, Lynwood, Calif. (16230 Cornuta Ave., Bellflower, Calif. 90706)
Filed Feb. 19, 1968, Ser. No. 706,571
Int. Cl. A46b *11/04*
U.S. Cl. 15—104.92 **6 Claims**



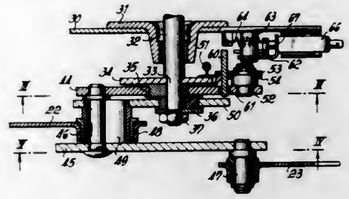
Cleaning means comprising an applicator with a wick that receives cleaner fluid and is provided with a set of tufts of bristles directed angularly upwardly and in the path of movement of intermittently advanced contact brushes of a rotary telephone-central switch having bank terminals engaging said brushes and which are both cleaned by said bristles and are moistened by cleaner fluid wetting said bristles and drawn from said wick through orifices of pinpoint size, a cleaner fluid holder fixedly mounting the applicator by means of a tube that conducts fluid to the wick and is adapted to be mounted adjacent the switch to service the switch brushes automatically as the same are intermittently advanced.

3,465,377
DUST MOP HEAD HAVING CUSHION MEANS
Gordon D. Thomas, Neenah, Wis., assignor to Kimberly-Clark Corporation, Neenah, Wis., a corporation of Delaware
Filed Sept. 11, 1967, Ser. No. 666,682
Int. Cl. A47l *13/257, 13/254*
U.S. Cl. 15—147 **4 Claims**



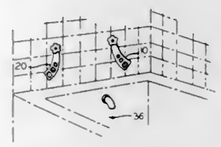
A cleaning mop in which the mop head is provided with cushion means. The cushion means receive thereover a wipe which may be of many convenient types but, most suitably, is of low stretch characteristics so that it will conform well with the cushion means over a long service life. The cushion means include spaced rows of resiliently deformable material such as sponge rubber. The rows extend longitudinally of the mop head and each row has a multiplicity of depending projections. The depending projections of alternate rows lie intermediate the projections of adjacent rows to serve as stops and provide closed paths to dust preventing dust passage through the mop width.

3,465,378
WINDSHIELD CLEANER
Erich Kolb, Eisental, Germany, assignor to Robert Bosch, GmbH, Stuttgart, Germany
Filed Dec. 8, 1967, Ser. No. 689,132
Claims priority, application Germany, Dec. 14, 1966, B 90,297
Int. Cl. B60s *1/24, 1/28*
U.S. Cl. 15—250.17 **16 Claims**



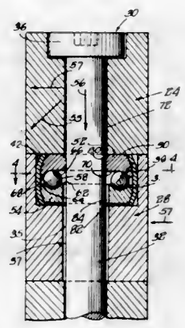
A windshield cleaner wherein two blades oscillate in opposite directions between two end positions and are movable from one end position to a parking position. The motor of the windshield cleaner drives a shaft which carries two eccentrics, one for one arm of a two armed crank the other arm of which is coupled to and drives one of the blades. The other blade is coupled to a connector pin of the crank by a pivot pin which is movable radially of the connector pin by the other eccentric. The one arm of the crank is coupled to the shaft by a pawl which can be disengaged by an electromagnet when the driver initiates stoppage of the motor by closing a master switch. The one eccentric then moves the crank radially of the shaft to move the one blade to parking position and the other eccentric moves the pivot pin radially of the output shaft to move the other blade to parking position. The motor is arrested by a switch which is actuated in response to radial movement of the crank.

3,465,379
VALVE WHEEL FOR FOOT CONTROL
Joan M. Forte, Park Ridge, Ill. (19100 Crest Ave., Castro Valley, Calif. 94546)
Filed Mar. 29, 1967, Ser. No. 626,750
Int. Cl. E05b *1/00, 7/00*
U.S. Cl. 16—110 **3 Claims**



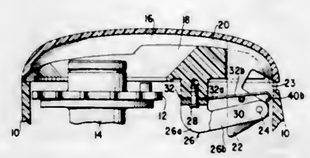
Includes removable valve wheel control that is formed for removable association with existing valve wheels in bathtubs or the like and has a head with a cavity conforming to the shape of existing valve wheels. The valve wheel control can have one or a pair of arms extending from the head so that the foot of a person trying to control a bathtub while lying therein can engage the same. When the head of the removable valve wheel engages the existing valve wheel, the existing valve wheel and its arm(s) are then positioned so that they can be engaged by the feet and actuated to control the flow of water.

3,465,380
HINGE STRUCTURE
Robert E. Foltz, Sterling, Ill., assignor to Lawrence Brothers, Inc., Sterling, Ill., a corporation of Illinois
Filed Feb. 7, 1968, Ser. No. 703,605
Int. Cl. E05d *11/01, 5/12*
U.S. Cl. 16—136 **9 Claims**



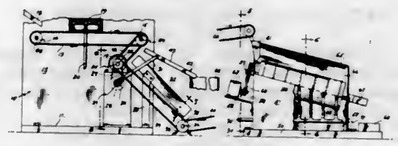
A door hinge including, in certain ones of the knuckles of the leaves thereof a plurality of ball bearing units, each of the units including an upper and lower raceway having a train of ball bearings movably mounted therebetween. The lower raceway includes in the upwardly facing surface thereof a channel in which the ball bearings rest and the upper raceway includes on the downwardly facing surface thereof a shoulder portion about the perimeter thereof. Each of the raceways includes a central aperture therethrough, the aperture of the upper raceway being smaller in diameter than that of the lower raceway so that the hinge pintle of the door hinge which is received in the central bores of the knuckles of the hinge leaves fits snugly within the upper raceway but is spaced from the lower raceway.

3,465,381
HINGE FOR SEWING MACHINES
Donald Lawrie, Clydebank, and Campbell Findlay, Glasgow, Scotland, assignors to The Singer Company, New York, N.Y., a corporation of New Jersey
Filed Feb. 28, 1967, Ser. No. 619,359
Claims priority, application Great Britain, Nov. 10, 1966, 50,351/66
Int. Cl. E05d *11/08, 11/10*
U.S. Cl. 16—142 **5 Claims**



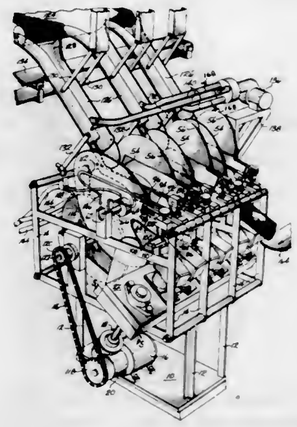
A hinge for the cover plate of a sewing machine frame comprising a bracket mounted on the frame for pivotally supporting the cover plate and a spring mounted with the bracket and disposed relative to pressure receiving means on the cover plate such that the spring will maintain the cover plate either in its opened or closed position.

3,465,382
MEANS FOR PROCESSING SCALLOPS FOR THE MARKET
Lorenz Meyer, 212 E. Main St., East Islip, N.Y. 11730
Original application Apr. 13, 1966, Ser. No. 542,252, now Patent No. 3,417,423, dated Dec. 24, 1968. Divided and this application July 8, 1968, Ser. No. 764,977
Int. Cl. A22b *3/08;* **A22c** *29/00*
U.S. Cl. 17—53 **3 Claims**



Whole scallops are carried on a conveyor belt under downwardly directed jets of steam to loosen the shells and deposite them on a downwardly sloping agitated screen having a mesh which permits the meats to fall through while preventing the shells from doing so, the shells being discharged from the screen into a hopper. Under the screen is a downwardly sloping V-shaped chute to receive the meats which, as they descend the chute, are guided along the median line thereof approximately in single file in which formation they are deposited on a second conveyor belt to be carried into a viscerating machine.

3,465,383
PROCESS AND APPARATUS OF FEEDING SHRIMP TO DESHELLING MEANS AND OF DESHELLING SHRIMP
John C. Willis and Odd B. Sundberg, Juneau, Alaska, assignors to Alaska Peelers, Inc., Seattle, Wash., a corporation of Washington
Continuation-in-part of application Ser. No. 626,848, Mar. 29, 1967. This application Dec. 9, 1968, Ser. No. 782,051
Int. Cl. A22c *29/00*
U.S. Cl. 17—73 **10 Claims**



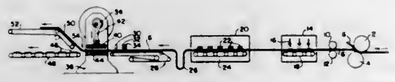
This invention relates to apparatus and method of deshelling cooked shrimp and includes adjustable shrimp-deshelling rotary rubberlike discs; adjustable means to control a deshelling throat between such discs; means to provide water to such throat; and shrimp-feeding means to cause shrimp to travel to such deshelling throat with the shrimp oriented in the same position, as traveling on

their backsides and with their heads trailing. The invention further comprises the use of air directed at substantially an acute angle to shrimp traveling by gravity down an inclined chute and thus orienting the shrimp as indicated. The invention further comprises first mechanically engaging the shrimp shell at the head portion of the shrimp and then at the tail portion of the shrimp and thus causing the shrimp meat to be ejected from the shrimp shell.

3,465,384
APPARATUS FOR REGISTRATION OF PLASTIC WEB

Henry J. Barchi, Yardley, Pa., Donald C. Ferguson, Trenton, N.J., and Merrill M. Smith, Morrisville, Pa., assignors to American Biltrite Rubber Co., Inc., Trenton, N.J., a corporation of Delaware

Filed Feb. 8, 1967, Ser. No. 614,618
Int. Cl. B29c *17/08*
U.S. Cl. 18—4 **12 Claims**

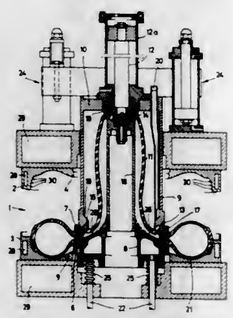


The invention is an apparatus for forming, on a continuous basis, a plastic web, marking a repetitive pattern on the web together with registration marks, and thereafter by suitable control and punching means severing the patterned web into predetermined shaped flooring tiles, with both the tiles and the scrap web being thereafter moved away from the punching machine in such manner that the scrap material and the severed portions move away from the punching means and apart from each other on divergent paths to separate the same.

3,465,385
DEVICE FOR INSERTING AN INFLATION BAG INTO A TIRE THAT IS TO BE VULCANIZED

Karl Zängl, 10 Kantstrasse, 8000 Munich 13, Germany

Filed July 18, 1966, Ser. No. 565,796
Claims priority, application Germany, Oct. 5, 1965, Z 11,787; Mar. 29, 1966, Z 12,139
Int. Cl. B29h *5/18*
U.S. Cl. 18—17 **12 Claims**

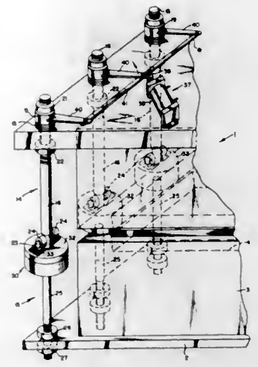


A tire vulcanizing press in which a cylinder for receiving an inflatable expander or bag is associated with one of the mold parts and carries a first annular bead which is adapted to engage a bead of the tire. A centrally located disk body is associated with the opposing mold part. The disk body carries a second annular bead adapted for engaging the other bead of the tire. The first and second annular beads are movable with respect to the mold parts so that the tire beads can be moved into an essentially touching relationship before the expander is inflated, following which the annular beads can be moved apart in order to provide a gap through which the inflatable expander can enter within the tire.

3,465,386
LOCKING MECHANISM FOR DIFFERENTIAL PRESSURE FORMING APPARATUS

Gaylord W. Brown, Beaverton, Mich., assignor to Brown Machine Company of Michigan, Inc., Beaverton, Mich., a corporation of Michigan

Filed June 16, 1966, Ser. No. 558,057
Int. Cl. B29c *17/00, 3/00, 1/16*
U.S. Cl. 18—19 **5 Claims**

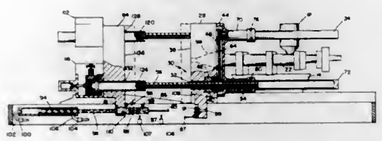


Apparatus for differential pressure forming synthetic plastic web material wherein male and female molds between which the web material is received are moved in a path from a remote position to an engaged position, a lock is carried by one of the molds and a lock-receiving member by the other in alignment so that the lock member is freely received by the lock-receiving member when the molds are brought together, mechanism is provided for rotating one of the lock and lock-receiving members after the molds are engaged, and a ramp is provided on the lock-receiving member which overlies the lock member when the lock member and lock-receiving member are rotated relatively through part of a revolution to displace one of the lock member and lock-receiving member in an axial direction and tend to force the molds further together with a supplemental clamping force.

3,465,387
TWO-STAGE CLAMPING MACHINE

Harrie Martin Allard and Helmut Gerhard Hoeschel, Nashua, N.H., assignors to Improved Machinery Inc., Nashua, N.H., a corporation of Delaware

Filed June 12, 1967, Ser. No. 645,156
Int. Cl. B29f *1/06*
U.S. Cl. 18—30 **13 Claims**



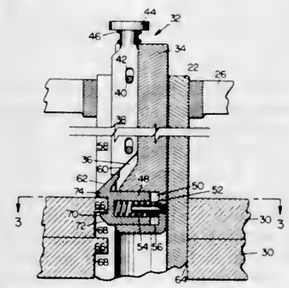
An injection molding machine having a first platen mounted to the base of the machine and a second platen slidable on the base. A plurality of tie rods are mounted on the first platen, and a retraction mechanism is provided for withdrawing and extending the tie rods relative

to the mold area. A drive system for moving the second platen includes: a relatively low power, long travel driving means used to move the second platen and to arrest and cushion it as it stops; a clamping pad for each tie rod having self-centering, fast-acting breech couplings for connecting and disconnecting, and a hydraulic load cell, having a movable member on which the breech mechanism is mounted, for applying the final clamping force to the mold; a hydraulic push-back cylinder aids separation of the first and second platens during initial opening of the mold and aids deceleration of the second platen as the platens approach the closed positions.

3,465,388
COMBINED SEGMENTED MANDREL AND HANDLING MEANS THEREFOR

Edward E. McCullough, Brigham City, Utah, assignor to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware

Continuation-in-part of application Ser. No. 428,466, Jan. 27, 1965. This application Aug. 18, 1967, Ser. No. 661,603
Int. Cl. B29c *1/06*
U.S. Cl. 18—45 **10 Claims**

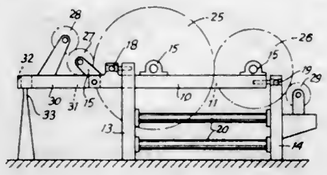


In a mandrel made of flexible, laminar segments arranged on a spindle for making cavities in hollow objects wherein access openings are smaller in diameter than the mandrel, the combination of a handling tool, or mechanism, wherein a pawl may be engaged and disengaged relative to mandrel segments for moving them along the spindle.

3,465,389
CARDING MACHINES

John Maximiliam Jules Varga, 318 Lytton Blvd., Toronto 12, Ontario, Canada

Filed Jan. 25, 1967, Ser. No. 611,736
Claims priority, application Great Britain, Jan. 27, 1966, 3,675/66
Int. Cl. D01g *15/00*
U.S. Cl. 19—98 **20 Claims**

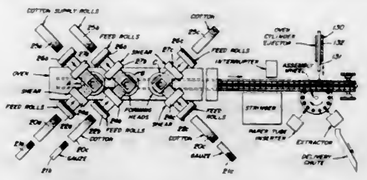


A carding machine includes a frame comprising two oppositely disposed longitudinally extending beams with support and pivot means at each end of each of the beams. The beams are pivotly connected to the support and pivot means so as to permit pivotal movement of the beams about horizontal transverse axes relative to the support means. The machine further includes at least two pairs of oppositely disposed bearings on the beams with a roller mounted in each of the pairs.

3,465,390
MULTIPHASE LINEAR FLOW MACHINE FOR MAKING TAMPONS

John Russell Mooney, Fort Worth, Tex., assignor, by mesne assignments, to Mayfield Laboratories, Inc., Fort Worth, Tex., a corporation of Texas

Filed Jan. 6, 1966, Ser. No. 519,125
Int. Cl. A61l *15/00*
U.S. Cl. 19—144.5 **6 Claims**

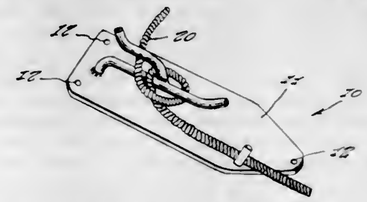


This invention is a machine for making tampons having a plurality of tampon forming means spaced relative to each other so that each operates to load a formed tampon into a receptacle in a moving tampon-carrying means in synchronization with all the other tampon forming means.

3,465,391
SURE-HOLD-NONSLIP ROPE FASTENER

Mearle C. Armstrong, R.R. 6, Rensselaer, Ind. 47978

Filed Nov. 29, 1967, Ser. No. 686,649
Int. Cl. B63b *21/04*
U.S. Cl. 24—115 **1 Claim**

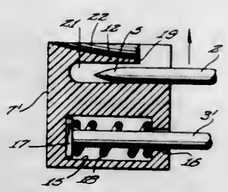


A rope securing device, including a mounting plate and a generally Y-shaped post secured upon the plate, around which a rope may be secured. The post is formed of barstock having one arm substantially parallel to the plate for receiving a rope thereon. A guide post is provided on the plate as a guide.

3,465,392
SELF-CLOSING SAFETY PIN

Gustave Francis Schmidt, Jr., 406 S. Cross, Robinson, Ill. 62454

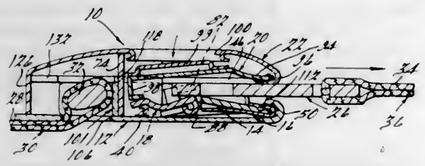
Filed Nov. 13, 1967, Ser. No. 682,206
Int. Cl. A44b *9/10, 9/12*
U.S. Cl. 24—158 **1 Claim**



A safety pin having a pin structure constructed from spring wire stock and formed to provide a generally U-shaped structure, the leg portions of which are resiliently disposed with respect to one another whereby the free ends of such leg portions are resiliently biased in a direction toward one another, and a cooperable head structure mounted upon and carried by the free end of one of said leg portions, the free end of the other leg por-

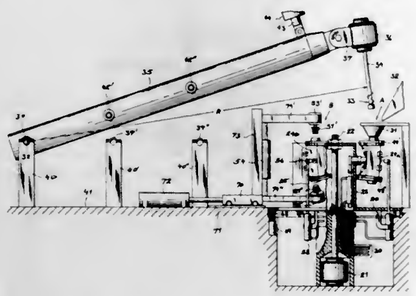
tion being pointed, the head portion having surface portions which define a concave recess disposed between the legs of said pin structure and facing said pointed end, whereby the resilient biasing forces on the latter are operative to urge said pointed end toward such recess, said head structure having a portion disposed to overlie said pointed end when the latter is disposed at the bottom of said recess to restrict undesired outward movement of said pointed end in the plane of said pin structure.

3,465,393
SEAT BELT BUCKLE
Robert C. Fisher, 580 E. Long Lake Road, Bloomfield Hills, Mich. 48013
Filed Apr. 10, 1967, Ser. No. 629,690
Int. Cl. A44b *19/00*
U.S. Cl. 24—230 **11 Claims**



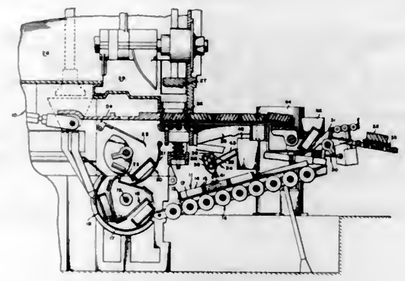
A seat belt buckle assembly comprising a base member having a central web portion and a pair of laterally spaced side walls with reentrantly folded edge portions; a latch plate overlying the base member and having one end thereof pivotably secured thereto, the latch plate having means thereon defining a latching face adapted to engage a complementary-shaped latching surface on an associated belt tongue member for limiting relative movement between the tongue and the base member; spring means for resiliently biasing the latch plate toward the tongue member; a latch lever engageable with the latch plate; a cover member substantially surrounding the upper end of the assembly and defining an access opening overlying the latch face, and a manual operator member disposed between the cover member and the belt tongue and accessible through the opening, movement of the operator member relative to the base member effecting movement of the latch member and the latch plate for disengaging the latch face from the tongue.

3,465,394
PLANTS FOR PRODUCING CURVED CONCRETE DUCTS
Howard Bergesen, Valley Stream, N.Y., and Innis O'Rourke, Jr., Upper Brookville, N.Y.
Filed May 26, 1966, Ser. No. 553,146
Int. Cl. B28b *15/00*
U.S. Cl. 25—2 **8 Claims**



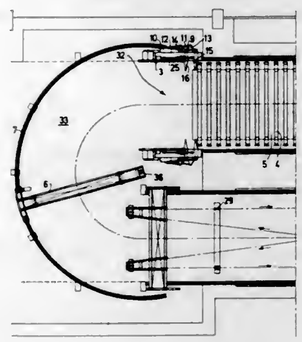
This disclosure relates to method and apparatus for the production of curved concrete ducts wherein an elongated boom carrying a packing tool is arcuately displaced in the mold cavity by swinging about a preselected axis.

3,465,395
APPARATUS FOR MANUFACTURING BRICK
George Victor Cushwa, P.O. Box 406, Williamsport, Md. 21795
Original application Aug. 17, 1964, Ser. No. 389,958. Divided and this application July 20, 1966, Ser. No. 566,544
Int. Cl. B28b *15/00*
U.S. Cl. 25—2 **2 Claims**



Apparatus for manufacturing brick including a conveyor member for brick molds, a manifold assembly for delivering moisture to the cavity walls of a mold, the assembly including a main pipe having a plurality of moisture outlets in the upper surface of the pipe, delivery means extending downwardly from the outlet to a point proximate the mold cavities, the assembly further including steam generating means connected to the main pipe for applying steam thereto, sanding mechanism for applying sand to the moisturized molds, elevating means for lifting the molds to a point subjacent a platen which forces brick material into the mold, and means for removing the green brick from the mold preparatory to firing.

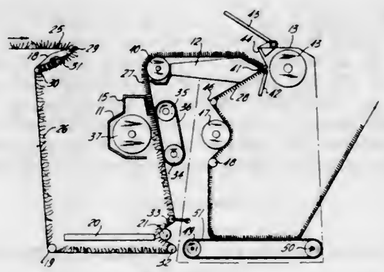
3,465,396
PLANT FOR MANUFACTURING LARGE SLAB-SHAPED CONSTRUCTIONAL ELEMENTS
Gustav E. Hummelshøj, Bagsverd, Denmark, assignor of fifty percent to Thomas Schmidt, Bagsverd, Denmark
Filed Sept. 26, 1966, Ser. No. 581,928
Claims priority, application Denmark, Oct. 1, 1965, 5,073/65
Int. Cl. B28b *15/00*
U.S. Cl. 25—2 **8 Claims**



A plant for manufacturing large molded articles comprising a track for supporting and advancing a battery,

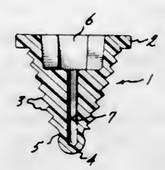
formed by a plurality of verticle partitioning plates and intermediate side boundary walls clamped together, from an assembling station to a disassembling station, means to fill the cavities formed between the plates, and means to return the partitioning plates and side boundary walls, after release at the disassembling station, to the assembling station.

3,465,397
APPARATUS FOR ELECTRIFYING AND SHEARING OF PILE FABRICS
Heinz Hergert, Frankfurt am Main, Germany, assignor to Polrotor, Incorporated, East Farmingdale, N.Y., a corporation of New York
Original application Oct. 31, 1966, Ser. No. 590,807, now Patent No. 3,413,695, dated Dec. 3, 1968. Divided and this application Aug. 7, 1968, Ser. No. 750,945
Int. Cl. D06c *29/00*
U.S. Cl. 26—2 **7 Claims**



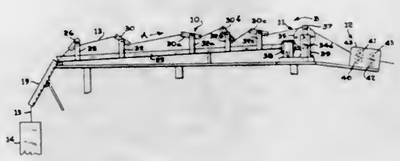
The disclosed apparatus includes a rotating electrifier cylinder, means for conveying a pile fabric past the cylinder in a vertical direction, and a vacuum hood surrounding the cylinder which is effective to facilitate cooling of the pile as it emerges from the cylinder while separating and venting the heated air adjacent the point of departure of the fabric. The fabric is subsequently fed to a shearing device.

3,465,398
TROCAR BUTTON
Walter Rector, Olympia, Wash. (623 N. Tower Ave., Centralia, Wash. 98531)
Filed Sept. 28, 1966, Ser. No. 582,563
Int. Cl. A01n *1/00*
U.S. Cl. 27—21 **5 Claims**



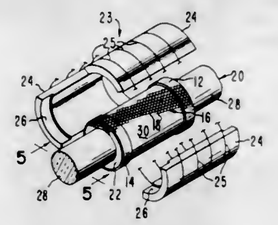
A ventable trocar button is formed as shown in FIGURES 1 and 3 with a threaded conical body having an enlarged flat head at the larger exterior end thereof. A bulbous tip is formed at the apex or interior end of the button and separated from the threads by a reduced neck portion. A deep cavity for containing condensate is formed in the upper portion of the body of the button, as shown in FIGURE 3, with an internal channel axially extending into the lower portion of the body from the cavity toward the tip but not penetrating the tip until the tip is severed at the neck. The head portion forms a socket for reception of an instrument for applying a torque to the button.

3,465,399
DERIGESTERING APPARATUS FOR CRIMPED MULTIFILAMENT TOW
Robert C. Sokolowski, Menasha, and Robert J. Stumpf, Appleton, Wis., assignors to Kimberly-Clark Corporation, Neenah, Wis., a corporation of Delaware
Filed July 3, 1967, Ser. No. 651,023
Int. Cl. D02g *3/00*
U.S. Cl. 28—1 **2 Claims**



Deregistering apparatus for multi-filament tow including a plurality of stationary bars over which the tow is drawn under tension, a beater apparatus subsequently effective on the tow, and a drafting mechanism finally effective on the tow including a pair of rolls under pressure contact between which the tow is drawn with still greater tension.

3,465,400
METHOD OF MAKING CYLINDRICAL MESH ELECTRODE FOR ELECTRON TUBES
James P. Polese, Menlo Park, Calif., assignor to Varian Associates, Palo Alto, Calif., a corporation of California
Filed Feb. 1, 1967, Ser. No. 613,221
Int. Cl. H01j *9/60*
U.S. Cl. 29—25.14 **11 Claims**

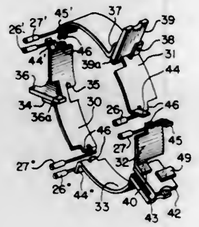


A method of making a cylindrical electrode of wire mesh having fused wire intersections suitable for use in an electrode tube, in which method a refractory metal wire coated with a soft metal is wound about a mandrel made of a material having a higher coefficient of expansion than the refractory metal and the assembly is heated to cause the mandrel to expand against the wire resulting in fusion of the soft metal coating at the wire intersections at a temperature below the melting point thereof under the influence of pressure and temperature.

3,465,401
ELECTRON-DISCHARGE DEVICES
Charles A. Lowery, Jr., Maywood, and Mark J. Videka, Chicago, Ill., assignors to Zenith Radio Corporation, a corporation of Delaware
Original application June 22, 1964, Ser. No. 376,828. Divided and this application June 20, 1966, Ser. No. 558,977
Int. Cl. H01j *9/18, 9/36*
U.S. Cl. 29—25.16 **2 Claims**

A method for establishing a series electrical circuit between the three heaters of a tri-gun cathode-ray tube. A metallic strip is formed into a closed loop, and pairs of

heater terminals are struck from the strip at spaced intervals corresponding to the relative locations of the three-guns of the tube. Support tabs are struck from the portion of the strip intervening between the relative locations of the three guns, and these are fixed to insulating support elements within the tube to hold the loop assembly in



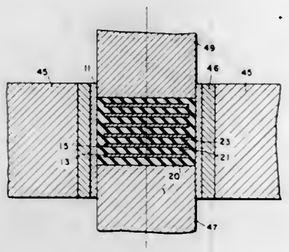
position. After connecting the heaters across respective ones of the heater terminal pairs, the metallic strip is severed between the terminals to establish a mechanically rugged series electrical connection between the three heaters. The method involves only the use of simple and economical punching and forming techniques and is readily adapted to application with automatic equipment.

3,465,402

ELECTRICAL CAPACITOR FOR USE IN ADVERSE ENVIRONMENTS AND METHOD OF MAKING THE SAME

James M. Booe and Joseph T. Hood, Indianapolis, Ind., assignors to P. R. Mallory & Co., Inc., Indianapolis, Ind., a corporation of Delaware

Original application Jan. 11, 1961, Ser. No. 81,979, now Patent No. 3,278,815, dated Oct. 11, 1966. Divided and this application July 28, 1965, Ser. No. 485,964
Int. Cl. H01g *13/00; 1/00*
U.S. Cl. 29—25.42 **12 Claims**



A method is provided for making a capacitor assembly which includes a ceramic cylindrical insulating tube containing longitudinally stacked therein a plurality of conductive disc electrodes interleaved with respective layers of compacted powder ceramic insulating materials.

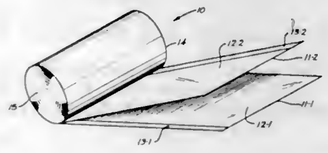
3,465,403

METHOD OF ESTABLISHING A TESTING PROCEDURE FOR SELF-HEALING CAPACITORS

Donald R. Brown, Downers Grove, Ill., assignor to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York

Filed Dec. 28, 1965, Ser. No. 516,877
Int. Cl. H01g *13/00;* **B23q** *17/00*
U.S. Cl. 29—25.42 **5 Claims**

The subject method relates to establishing a testing procedure after the winding of self-healing capacitors so as to determine which of such capacitors should be fully fabricated. Initially, the internal resistance of each of a plurality of self-healing capacitors is measured after the winding thereof so as to determine a representative resistance value. The test capacitors are thereafter subjected to further fabricating operations, at least to the point where the ends of the capacitors are solder sprayed. Each of the plurality of capacitors is then subjected to a high voltage breakdown test so as to determine a representative number of breakdowns therein. The representative internal



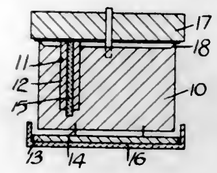
resistance value and the representative number of breakdowns in the plurality of tested capacitors are then correlated so as to establish a relationship therebetween. A value of internal resistance is thereafter selected above which the established relationship shows that the fully fabricated capacitors have less than a preselected number of breakdowns, this selected value then being utilized as a control parameter in the manufacturer of other capacitors.

3,465,404

METHODS OF APPLYING BEARING MEMBERS TO BODIES

Walter Graham Cheary, Birmingham, England, assignor to Joseph Lucas (Industries) Limited, Birmingham, England, a British company

Filed Nov. 30, 1966, Ser. No. 597,996
Claims priority, application Great Britain, Dec. 6, 1965, 51,617/65
Int. Cl. B21d *53/10;* **B23k** *31/02*
U.S. Cl. 29—149.5 **4 Claims**



The application of a bearing member of one material to a body of a different material in which an oversize billet approximating the shape of the intended bearing member is placed in a position which the bearing member will occupy respecting the body and a refractory member supports the billet at least at the side remote from that to be applied to the body. The assemblage is heated above the melting point of the billet material but below that of the body material for bonding the billet to the body. After cooling the assemblage, the refractory member is removed and the exposed surface of the billet is finished to provide a bearing surface.

3,465,405

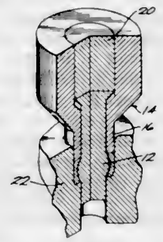
METHOD OF FABRICATING BALL BUSHING

Donald L. Sullivan, Oshkosh, Wis. 54901

Filed Oct. 11, 1966, Ser. No. 585,789
Int. Cl. B21d *39/00;* **B23p** *11/02*
U.S. Cl. 29—149.5 **4 Claims**

A metal strip is coined in a die to form it on a mandrel to accurately dimension the inside and outside. The metal

is sprung when the mandrel is removed and the ball bushing is easily inserted. When the assembly is mounted the



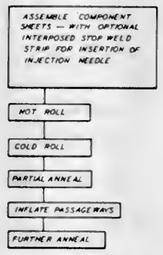
sprung metal is forced back to its formed dimensions and the ball bushing is accurately retained.

3,465,406

PROCESS OF FORMING SHEET METAL PANELS

Lyell V. Myers, Hazelwood, Mo., assignor to Olin Mathieson Chemical Corporation, a corporation of Virginia

Filed May 5, 1964, Ser. No. 365,144
Int. Cl. B21d *53/00;* **B21k** *29/00*
U.S. Cl. 29—157.3 **9 Claims**



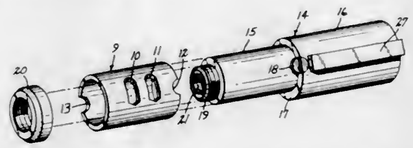
A method of forming a sheet metal panel having a pattern of internal hollow passageways defined by raised portions expanded out of at least one pair of integrally unified sheets, comprising the steps of providing a composite of at least two adjacently positioned metal sheets, unifying said sheets together to form an integral blank, heat treating said blank to soften said sheets, expanding at least one of said sheets between a pair of dies, at least one of which has a pattern of cavities formed therein which corresponds to said pattern of internal hollow passageways, thereby forming an expanded internal passageway panel, and further heat treating said panel to substantially increase the bond strength between said sheets at the interface thereof.

3,465,407

APPARATUS FOR ASSEMBLING A SLEEVE BEARING

Mathias Rau, 16340 S. Temple Drive, Minnetonka, Minn. 55343

Filed Oct. 25, 1966, Ser. No. 589,385
Int. Cl. B23p *19/04;* **B23q** *7/00*
U.S. Cl. 29—200 **4 Claims**



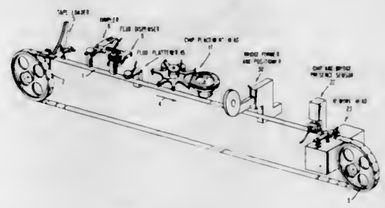
A mandrel comprises a body portion and a reduced diameter portion cooperating with the body portion to provide an annular shoulder for reception of a sleeve bearing, having openings extending radially therethrough, on the reduced diameter portion in abutting relationship with the annular shoulder. The annular shoulder has an axially projecting indexing portion for registration with a cooperating axially projecting indexing portion on the sleeve bearing to dispose the openings in the bearing in a predetermined position circumferentially of the mandrel. A frame mounts the mandrel on a workpiece in axial alignment with a bearing receiving aperture in the workpiece.

3,465,408

APPARATUS FOR FORMING AND POSITIONING

Kendall Clark, Poughkeepsie, Theodor Herrmann, Holmes, Jocelyn C. Lattin, Pleasant Valley, and John Medwid, Wappingers Falls, N.Y., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York

Filed Oct. 26, 1966, Ser. No. 589,645
Int. Cl. B26d *7/06*
U.S. Cl. 29—203 **8 Claims**



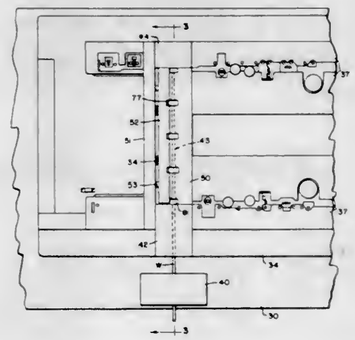
Assembling machine for forming and positioning of wire elements, more particularly, automatic apparatus for forming generally U-shaped bridging elements for microminiaturized circuit devices, and precisely positioning the bridging elements on device substrates.

3,465,409

TERMINAL ATTACHING MACHINE

Fritz V. Brosseit, Kansas City, Mo., assignor to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York

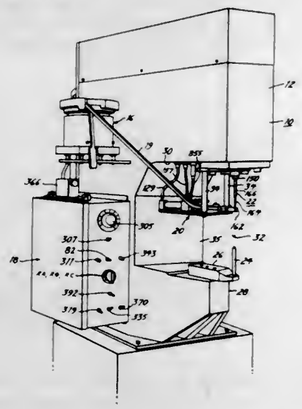
Filed Dec. 23, 1966, Ser. No. 604,350
Int. Cl. B23p *11/00;* **H01r** *43/00*
U.S. Cl. 29—203 **9 Claims**



A device for attaching terminals to both ends of a length of wire including a normally closed wire guiding channel, means for feeding wire into the channel, a pair of anvils positioned under the channel, means for feeding strips of terminals over the anvils, and a plurality of transfer members for movement into the channel, for

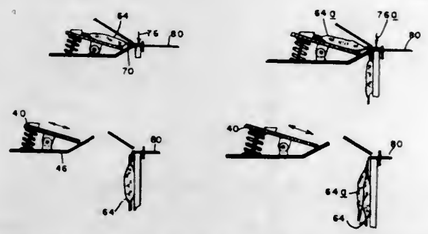
camming the channel open, for severing the wire, for moving the severed wire out of the channel into engagement with the strips of terminals on the anvils and for cooperation with the anvils to crimp terminals on the strips around the wires.

3,465,410
AUTOMATED MACHINE OR PRESS FOR ASSEMBLING A FASTENER TO A WORKPIECE
Richard B. Ernest, Richboro, and Kenneth A. Swanstrom, Doylestown, Pa., assignors to Penn Engineering and Manufacturing Corporation, Doylestown, Pa., a corporation of Delaware
Filed Mar. 8, 1967, Ser. No. 621,647
Int. Cl. B23p *19/04;* **B23q** *7/10*
U.S. Cl. 29—208 **19 Claims**



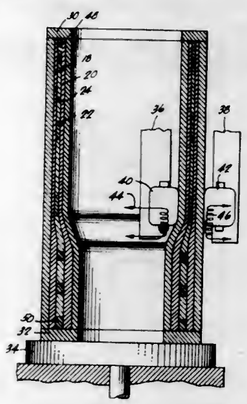
This invention relates to a pneumatic and hydraulic assembling machine or press for semiautomatically installing self-clinching fasteners, such as nuts and studs, to a sheeted plate, usually a sheet metal and hereinafter referred to as the workpiece, in which the fastener is carried to the workpiece by a punch assembly exerting a relatively low force and thereafter a higher force is exerted, of short duration, by the punch assembly to clinch the fastener to the workpiece.

3,465,411
ENVELOPE ATTACHING APPARATUS AND METHOD
George R. Mahnken, 369 Island Road, Ramsey, N.J. 07446
Filed Aug. 21, 1967, Ser. No. 662,029
Int. Cl. B23p *19/04;* **B23q** *17/00*
U.S. Cl. 29—407 **19 Claims**



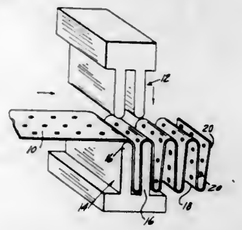
Apparatus for attaching envelopes to a strip includes a chute in which packaged articles are received and guided for assembly one-at-a-time to a strip of paper and the like. The discharge end of the chute has a reciprocating trap door adapted to receive and guide the packaged articles into contact with an actuating means to cause an attachment of the packaged product to a strip or ticket by means of a staple after which the reciprocating trap door is retracted to allow the attached package and a portion of the ticket to drop out of the way of the reciprocating trap door. Concurrently a portion of the ticket is advanced a determined distance and the trap door is moved forwardly to close the chute for receipt of the next packaged product into engagement with the actuating means to attach this next package to the ticket. The attaching of packages and reciprocation of the trap door is continued until the determined number of packages is attached to the ticket after which a knife cuts the advanced ticket portion and the determined number of packages attached thereto.

3,465,412
ROLL-WELD CYLINDER FABRICATION
Preston L. Hill, Sierra Madre, Calif., assignor, by mesne assignments, to McDonnell Douglas Corporation, Santa Monica, Calif., a corporation of Maryland
Filed Feb. 21, 1966, Ser. No. 529,146
Int. Cl. B23k *31/02*
U.S. Cl. 29—423 **7 Claims**



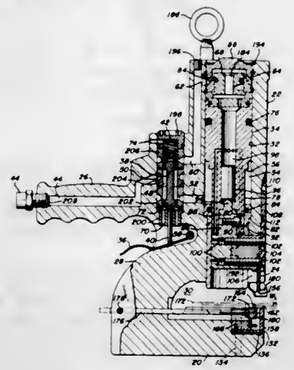
A roll-weld cylinder fabrication process for the fabrication of cylinders of a heat resistant material having a high strength-to-weight ratio. Cylindrical packs are roll extruded under heat and pressure while rotating to elongate the cylinders and roll-weld reinforcing ribs to the cylinder to provide an autogenous complex cylinder structure.

3,465,413
METHOD OF MANUFACTURING PLEATED FILTERS
Nils O. Rosaen, Borje O. Rosaen, and Oscar E. Rosaen, Hazel Park, Mich., assignors, by direct and mesne assignments, to Universal Filters, Inc., Hazel Park, Mich., a corporation of Michigan
Filed Oct. 25, 1966, Ser. No. 589,329
Int. Cl. B23p *17/00;* **B01d** *29/06*
U.S. Cl. 29—428 **9 Claims**



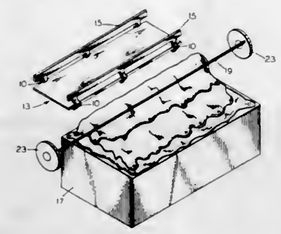
A method for forming a flat circular pleated filter element includes the steps of using a pair of die members to form pleats in a flat perforated metal sheet, providing an elongated corrugated spacing element between each fold to prevent collapsing, and forming an annular frame of thermosetting material around the periphery of the pleated sheet using a rotating mold member.

3,465,414
PNEUMATIC STITCHER AND METHOD OF STITCHING
Albert C. Koett, 2112 Glenside Ave., Cincinnati, Ohio 45212
Filed Oct. 18, 1965, Ser. No. 497,246
Int. Cl. B21d *39/00;* **B23p** *11/00*
U.S. Cl. 29—432.2 **22 Claims**



The stitcher joins two work sheets flatwise, by means of a chisel-like tool which initially descends upon the work sheets to first slightly deform them into a shallow forming-die recess, to prevent lateral shifting thereof, followed immediately and automatically by a rapid succession of hammer blows directed upon the tool to progressively cut narrow tongues in the material of the work sheets, while the forming dies curl the tongues into interlocking relationship at once face of one of the work sheets; all of which is accomplished by a portable light-weight apparatus that may easily be carried to the work site by one operator. The apparatus is operated pneumatically by preferance and includes self-adjusting forming dies for curling the tongues produced by the vibratory tool.

3,465,415
METHODS OF ELIMINATING ICICLE-LIKE FORMATIONS ON WAVE SOLDERED CONNECTIONS ON CIRCUIT SUBSTRATES
Edgar H. Walls, Allentown, Pa., assignor to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York
Filed Mar. 8, 1967, Ser. No. 621,701
Int. Cl. B23k *31/02, 35/12*
U.S. Cl. 29—471.1 **5 Claims**

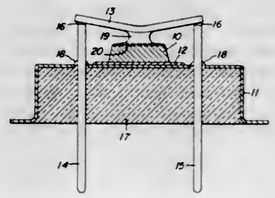


Icicle-like formations of solder which occur when a circuit substrate and associated conductive leads pass over a wave soldering machine are reduced in size by passing the substrate over a fine stretched wire so positioned that a small space exists between the surface of the wire and the highest projection on the circuit substrate, breaking the surface tension of the formations.

3,465,416
BONDING DIAMONDS TO METAL BASES
William W. Wellborn, Milford, Mich. (30231 Stephenson Highway, Madison Heights, Mich. 48071)
No Drawing. Continuation-in-part of application Ser. No. 212,730, July 26, 1962. This application Nov. 17, 1965, Ser. No. 508,394
Int. Cl. B23k *31/00;* **B44d** *1/44*
U.S. Cl. 29—473.1 **5 Claims**

A method of preparing diamonds for bonding to a metal base comprising the steps of bringing the surface of the diamond into contact with a salt of a metal binder having an affinity for carbon, depositing an elementary ionic size coating of the metal constituent on the surface of the diamond, and thereafter heating the coated diamond at an elevated temperature slightly below the melting point of the metal binder.

3,465,417
ALLOY-JUNCTION AND METAL-SEMICONDUCTOR DIODE FABRICATION METHOD
James W. Conley, Scotia, N.Y., assignor to General Electric Company, a corporation of New York
Filed Dec. 27, 1966, Ser. No. 604,845
Int. Cl. B23k *31/02, 35/36, 35/12*
U.S. Cl. 29—473.1 **11 Claims**



A method of forming metal-semiconductor diodes by fusing indium to germanium by soaking for about one minute in a heated bath containing a fluxing reagent. The bath comprises a solution of ethylene glycol containing a saturating amount of ammonium chloride, and is maintained at a constant temperature of between 155°–170° C. Because operation of the process at this temperature range sufficiently minimizes the width of the regrown indium-germanium region, diodes thus formed are of the Schottky barrier type.

3,465,418
METHOD OF MAKING ONE-PIECE TUBULAR VEHICLE AXLE
Glenn L. Clark, Grosse Point Farm, Mich., and William G. Hanley and John Palovcik, Kenton, Ohio, assignors, by mesne assignments, to Rockwell-Standard Company, Pittsburgh, Pa., a corporation of Delaware
Filed Sept. 3, 1965, Ser. No. 484,856
Int. Cl. B23k *31/02;* **B60b** *35/04*
U.S. Cl. 29—477 **10 Claims**



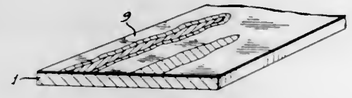
A one-piece trailer or like axle beam is made by two stage bending of a sheet of metal about a longitudinal

axis and welding together the opposite edges to provide a tube while forming the tube with cylindrical end sections and a uniform size rectangular cross section central section and swaging the end sections to form thickened wall wheel bearing spindles and accurately cylindrical surfaces onto which brake spiders are fitted and welded.

3,465,419
METHOD OF MAKING DECORATIVE METAL STOCK

Julian J. Keenan, Short Hills, N.J., Sten A. Lilja, North Attleboro, Mass., and Charles B. Kramos, Barrington, R.I., assignors to Engelhard Industries, Inc., Newark, N.J., a corporation of Delaware

Filed May 22, 1964, Ser. No. 369,374
Int. Cl. B23k *31/02*
U.S. Cl. 29—481 **3 Claims**

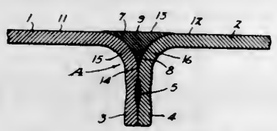


1. The method of making a cladding material having a decorative surface, comprising laminating and bonding a plurality of metal layers of contrasting color relative to each other to provide a composite stock material wherein alternate layers of the composite stock material are each composed of a metal contrasting in color relative to another layer, recessing selective area portions of a surface layer to variable depths one relative to another and continuing the recessing into at least one intermediate layer, exposing portions of at least the said intermediate layer by removal of laminar portions of at least the surface layer and the said intermediate layer, and plastically deforming the composite material to blend the layers of the composite material after removal of the laminar portions into a material having a substantially flat surface comprising blended metals of said layers in a variegated color design.

3,465,420
CERAMIC CRACK SEALER

John M. Webb, Chagrin Falls, and Eldor R. Herrmann, Cleveland Heights, Ohio, assignors to Edward J. Mellen, Jr., East Cleveland, Ohio

Filed June 9, 1965, Ser. No. 462,677
Int. Cl. B22d *19/10;* **B23k** *31/02;* **B23p** *7/00*
U.S. Cl. 29—490 **14 Claims**

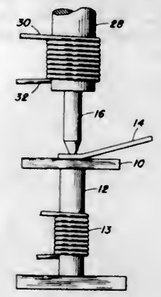


Automobile body panels having lapped welded joints sealed by a process comprising applying at the entrance to the welded joint a narrow strip of a pasty ceramic composition containing 15 to 50 percent by weight of a water-soluble silica-containing binder, such as an alkali-metal silicate, and 50 to 85 percent by weight of refractory particles, heating the strip to harden it and seal the entrance to the joint, applying an acid flux to the heated joint, thereafter heating the entrance to a temperature of 400° to 1200° F., and applying a solder to provide an outer surface flush with the outer surfaces of the welded panels.

3,465,421
HIGH TEMPERATURE BONDING TO GERMANIUM

Raymond M. Chappel, Whippany, Kamala S. Krishnan, Somerville, and Charles W. Van Hise, Union, N.J., assignors to American Standard Inc., New York, N.Y., a corporation of Delaware

Filed Dec. 20, 1966, Ser. No. 603,230
Int. Cl. B23k *31/02*
U.S. Cl. 29—494 **14 Claims**

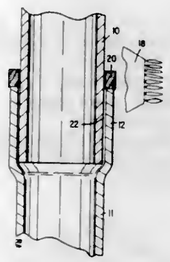


The disclosure relates to bonding of a lead of a refractory metal to a semiconductive element of germanium. The method involves cleaning the surfaces to be bonded, pressing said surfaces together under a pressure of at least to 850 degrees C. in a substantially inert atmosphere for about 5,000 pounds per square inch and heating the compressed surfaces to a temperature in the range from 750 at least 5 minutes.

3,465,422
BRAZING METHOD EMPLOYING FUSED GLASS MATRIX PREFORM

Randolph N. Stenerson, De Witt, N.Y., assignor to Carrier Corporation, Syracuse, N.Y., a corporation of Delaware

Filed Aug. 30, 1966, Ser. No. 576,047
The portion of the term of the patent subsequent to Aug. 31, 1984, has been disclaimed
Int. Cl. B23k *1/04*
U.S. Cl. 29—500 **2 Claims**



A method of making a brazed joint between metal members by placing an inorganic fused glass matrix containing an unsintered brazing alloy powder adjacent the members to be formed and heating the preform to release the brazing alloy to the joint members and to form a protective glass coating about the joint members which prevents splattering and oxidation. The joint is thereafter cooled to a temperature sufficient to remove the glass coating by spalling due to a difference in thermal coefficients of expansion between the glass coating and the metal of the joint members.

3,465,423
PROCESS OF MAKING ALUMINUM BONDED STAINLESS STEEL ARTICLE

Allan Kiesler, Schenectady, William G. Moffatt, Ballston Lake, and James L. Walker, Schenectady, N.Y., assignors to General Electric Company, a corporation of New York

No Drawing. Filed Oct. 14, 1965, Ser. No. 496,181
Int. Cl. B23k *31/02*
U.S. Cl. 29—527.3 **2 Claims**

An aluminum coating is metallurgically bonded directly to a stainless steel article by first cleaning the article of adherent oxide and then providing a protective coating of lead-tin solder on it; and after as long an interval as desired, replacing the solidified solder from the article with aluminum by contacting the solder coating with molten aluminum.

3,465,424
METHOD OF FORMING GLASS COATED STEEL ARTICLES

Wayne A. Deringer, Milwaukee, Wis., assignor to A. O. Smith Corporation, Milwaukee, Wis., a corporation of New York

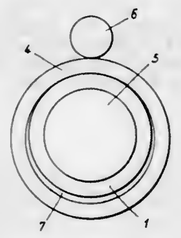
No Drawing. Filed Jan. 26, 1967, Ser. No. 611,844
Int. Cl. B23p *17/04, 17/00, 25/00*
U.S. Cl. 29—527.2 **5 Claims**

This invention relates to a method of fabricating contoured glass coated articles from generally flat, steel plates by initially applying a coating of glass to the steel plate, firing the coated steel plate at an elevated temperature to fuse the glass to the steel and then adjusting the temperature of the glass coated steel plate to a value in the range of 400° to 600° F. below the optimum firing temperature of the glass. While at this temperature, the plate is bent or worked to the desired contour.

3,465,425
PROCESS FOR THE MANUFACTURE OF GAP OR LABYRINTH SEALS

Reinhold Leidenfrost, 101 Birkenstrasse, 8501 Feucht, near Nuremberg, Germany

Filed July 22, 1966, Ser. No. 567,235
Claims priority, application Germany, July 23, 1965, L 51,210; Mar. 11, 1966, L 53,081
Int. Cl. B23p *25/00, 9/00*
U.S. Cl. 29—527.7 **8 Claims**

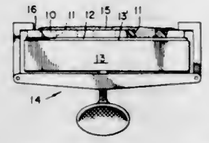


The present invention relates to a process for the manufacture of a contact-free gap or labyrinth seal, consisting of an outer and an inner ring with a sealing gap enclosed between them. It is immaterial if this gap is of a straight form or if it is in an already known form, for example, sawtooth profile. The invention also relates to a contact-free gap or labyrinth seal consisting of a one-piece, outer ring and a one-piece inner ring having a sealing gap enclosed between said rings.

3,465,426
POWDER ON FOIL CAPACITOR

Frederick J. Baier, Indianapolis, and William F. Vierow, Carmel, Ind., assignors to P. R. Mallory & Co., Inc., Indianapolis, Ind., a corporation of Delaware

Filed May 2, 1966, Ser. No. 546,817
Int. Cl. H01g *9/00*
U.S. Cl. 29—570 **18 Claims**

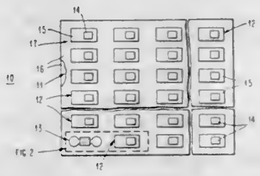


The disclosure relates to electrical capacitors and a process for manufacturing anodes for the electrical capacitors which includes the steps of providing a sheet of film-forming metal having separate areas thereof associated with each of the capacitors, superimposing a barrier over the sheet so that the voids in the barrier are coextensive with the separate areas, depositing moistened powder of the metal within the voids and sintering each deposit of powder in situ to convert it to a porous mass whereby the porous mass and its associated area on a sheet constitute an anode suitable for use in an electrolytic capacitor.

3,465,427
COMBINED TRANSISTOR AND TESTING STRUCTURES AND FABRICATION THEREOF

Fred Barson, Wappingers Falls, and Walter E. Mutter, Poughkeepsie, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York

Original application Feb. 24, 1964, Ser. No. 346,834, now Patent No. 3,335,340. Divided and this application June 7, 1967, Ser. No. 644,212
Int. Cl. B01j *17/00;* **H01l** *7/00*
U.S. Cl. 29—574 **5 Claims**



The method of fabricating semiconductor devices while simultaneously forming a testing structure. The emitter and base regions of a semiconductor device, such as a transistor, and the test structure are simultaneously formed. The test structure is so shaped as to allow the measurement of the effective width of the base region of the semiconductor devices.

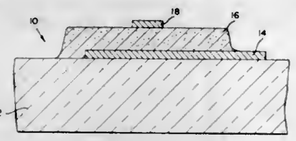
3,465,428
METHOD OF FABRICATING SEMICONDUCTOR DEVICES AND THE LIKE

Rueben S. Spriggs, San Pedro, Arthur J. Learn, Torrance, and John A. Scott-Monck, Redondo Beach, Calif., assignors to TRW Inc., Redondo Beach, Calif., a corporation of Ohio

Filed Oct. 27, 1966, Ser. No. 590,054
Int. Cl. B01j *17/00;* **H01l** *7/02*
U.S. Cl. 29—589 **21 Claims**

A method of fabricating thin film semiconductor devices by vacuum depositing a layer of polycrystalline

semiconductor material onto an ohmic contact layer previously deposited onto a substrate. The layered structure



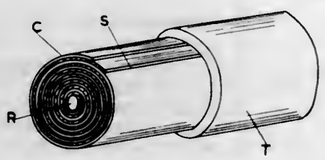
is then immersed in hot silicone oil for a time sufficient to cause heat-treatment of the structure prior to further operations required to produce a completed device.

3,465,429
SUPERCONDUCTORS
Anthony Clifford Barber, Lichfield, and Francis John Vernon Farmer, Erdington, England, assignors to Imperial Metal Industries (Kynoch) Limited, Witton, Birmingham, England, a corporation of Great Britain
Filed Jan. 25, 1967, Ser. No. 611,660
Claims priority, application Great Britain, Jan. 27, 1966, 3,757/66; Mar. 21, 1966, 12,240/66; Jan. 13, 1967, 1,982/67, 1,983/67
Int. Cl. H01s *4/00;* **B23p** *17/00*
U.S. Cl. 29—599 **13 Claims**



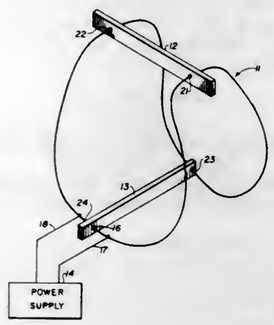
A superconducting wire or rod is made by extruding or otherwise mechanically working a composite superconducting metal core, for example a Nb-Ti alloy, in a metal sheath, for example Cu, at elevated temperature to produce a bond between the core and sheath and subsequently drawing or otherwise cold working the resulting composite at ambient temperature to elongate the composite.

3,465,430
METHOD OF MAKING SUPERCONDUCTOR STOCK
Anthony Clifford Barber, Lichfield, and Francis John Vernon Farmer, Erdington, England, assignors to Imperial Metal Industries (Kynoch) Limited, Witton, Birmingham, England, a corporation of Great Britain
Filed Jan. 25, 1967, Ser. No. 611,662
Claims priority, application Great Britain, Jan. 27, 1966, 3,757/66
Int. Cl. H01s *4/00*
U.S. Cl. 29—599 **13 Claims**



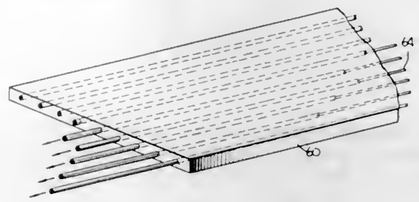
A superconducting wire or rod is made by interposing layers of a superconducting metal, such as an alloy of Nb-Ti, with layers of a non-superconducting metal, such as Cu, extruding the composite at elevated temperatures to produce a bond between the layers and drawing at ambient temperature to elongate the composite.

3,465,431
METHOD FOR MAKING BASEBALL SEAM MAGNETIC COILS
Carl D. Henning, Livermore, Calif., assignor to the United States of America as represented by the United States Atomic Energy Commission
Filed Apr. 10, 1967, Ser. No. 629,826
Int. Cl. H01f *7/06;* **B23p** *17/00*
U.S. Cl. 29—602 **9 Claims**



A twisted electromagnetic coil is made of a pliable conductive wire in which self-induced tensional and bending forces exist tending to deform the coil. Such deformation is checked by tensile bars placed across various opposed regions of the coil which only counter tensional forces, while the bending forces are allowed to deform the wire. The coil is pulsed with a large current to cause permanent deformation so that the resulting deformed coil, now free of bending moments, resembles the original coil to the extent that the tensile bars have preserved certain dimensions of the coil. The moment-free coil serves as a model moment-free shape from which other moment-free coils may be built.

3,465,432
METHOD FOR MAKING MEMORY STORAGE UNITS
David J. Crimmins, Pennington, N.J., and Joseph W. Breakfield, Doylestown, Pa., assignors to Thomas & Betts Corporation, a corporation of New Jersey
Filed June 6, 1966, Ser. No. 555,421
Int. Cl. B23p *17/00;* **H01f** *7/06*
U.S. Cl. 29—604 **8 Claims**



A method of making a memory storage unit comprising the steps of embedding a plurality of spaced elongated elements such as wires within a supporting medium,

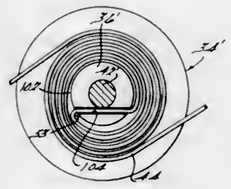
removing the elongated elements to form parallelly spaced holes, and inserting wires have a coating of magnetic material into the holes in the medium. In a preferred method, a laminate is formed by embedding a plurality of parallel wires between two sheets of material which are bonded together and the wires are then removed to form parallel holes within the laminate.

3,465,433
CORE WINDING ARBOR AND METHOD
Howard Stanton, Jr., Ipswich, Mass., assignor to Sylvania Electric Products Inc., a corporation of Delaware
Filed Dec. 30, 1965, Ser. No. 517,581
Int. Cl. H01f *7/06*
U.S. Cl. 29—605 **1 Claim**



An arbor for precision winding of wire coils having end walls supporting two collapsible core blocks coated with a yielding plastic material which receives an impression of the first layer of wire turns wound on the core and holds the turns of the first layer at a predetermined spacing while superimposed layers of wire turns are wound over the inner layer at the same spacing as the turns of the inner layer.

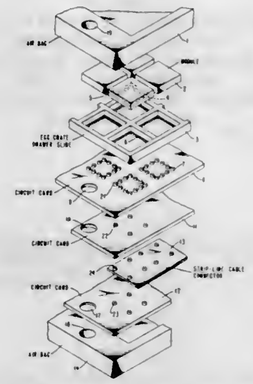
3,465,434
METHOD OF MAKING A TEMPERATURE SENSOR
Rudolph Bergsma, Ann Arbor, Mich., assignor to King-Seeley Thermos Co., Ann Arbor, Mich., a corporation of Michigan
Original application Oct. 19, 1961, Ser. No. 146,176, now Patent No. 3,268,844, dated Aug. 23, 1966. Divided and this application July 18, 1966, Ser. No. 565,768
Int. Cl. B21d *39/00;* **H01c** *17/00*
U.S. Cl. 29—613 **8 Claims**



A method of manufacturing a temperature sensing device in which the sensing wire is bifilarly wound and in which the sensor is secured to a cap.

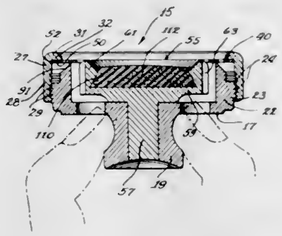
3,465,435
METHOD OF FORMING AN INTERCONNECTING MULTILAYER CIRCUITRY
James J. Steranko, Saratoga, Calif., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed May 8, 1967, Ser. No. 636,859
Int. Cl. B23k *31/02;* **B23p** *19/02;* **H05k** *3/00*
U.S. Cl. 29—628 **4 Claims**

Manufacture of printed circuit cards with through-hole connections therein, made by raised conical risers extending from the underlayer circuitry of the card and protruding beyond the top layer circuitry, thus contacting it, and assembling a series of such cards by aligning the



risers from one card with the associated conical depressions in the next card, joining by frictional contact through pressure means, or by solder reflow.

3,465,436
CIRCULAR SAFETY RAZOR
Ferdinando Pasquale Musso, 53 W. Jackson Blvd., Chicago, Ill. 60604
Continuation-in-part of application Ser. No. 417,988, Dec. 14, 1964. This application Aug. 8, 1967, Ser. No. 659,158
Int. Cl. B26b *21/20, 21/52*
U.S. Cl. 30—49 **5 Claims**

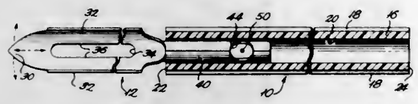


The present invention relates to improvements in the circular razor art. The specification provides a detailed description of a novel concept in circular razors including a blade which is extremely thin, yet completely safe to package and handle in and out of the razor. Also disclosed are certain razor constructions which complement the blades herein described and permit of their efficient use and storage.

More specifically, the blades of the present invention comprise a series of arcuate segments, the inner radial edge of which is sharpened to provide the shaving edge, thereby permitting safe handling of the blade by its outer edge without concern for cuts or nicks. The segments are extremely thin and flexible, and are supported by very thin, integrally formed, spans and bridges which hold the segments in proper alignment and maintain them as a coordinated shaving unit. The razors are especially useful with the blades of the present invention in that they permit complete and unencumbered control of the shaving edges to a proper shaving angle for use in the most delicate of areas, and at the same time permit easy storage

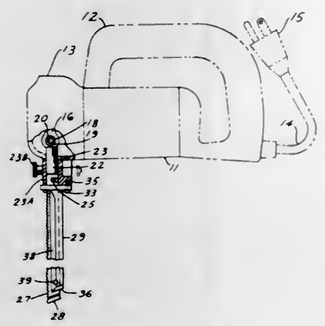
of the blade by moving the sharpened surface to a safe position during nonuse. Thus, there is no chance of becoming nicked or cut by the razor either in use or when in storage.

3,465,437
VEGETABLE PEELER WITH MATERIAL RECEIVING OPENING
Charles Ira Brown, 727 Ridge Road, Smoke Rise, Kinnelon, N.J. 07405
Filed Oct. 30, 1967, Ser. No. 679,046
Int. Cl. B26b *3/00*
U.S. Cl. 30—279 **1 Claim**



A solid one-piece handle portion is provided with a longitudinally extending hole formed therethrough opening through opposite ends thereof. A blade portion includes a connecting portion extending through one open end of the hole in the handle portion, the blade portion being interconnected with the handle portion through a pin and enlarged hole interconnection which provides a lost motion connection enabling relative rotation through a specified arc of the blade portion with respect to the handle portion.

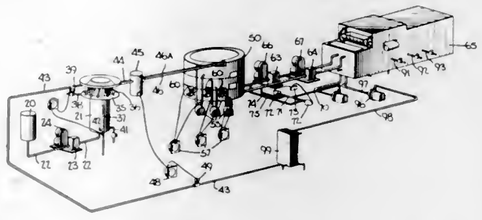
3,465,438
CUTTING ACCESSORY FOR A POWER TOOL
Richard C. Marsh, 7333 Fenkell Ave., Detroit, Mich. 48238
Filed Apr. 19, 1966, Ser. No. 543,684
Int. Cl. B26f *1/00*; **B26b** *19/02*; **B27b** *11/00*
U.S. Cl. 30—359 **3 Claims**



This application discloses a cutting accessory for a power tool which is intended to be used in making cutouts in motor vehicle floor mats, which generally are made of heavy rubber backed with a thick layer of matting, or other cushioning or sound proofing material.

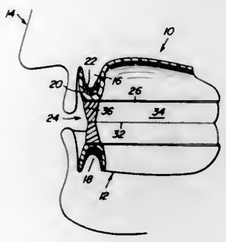
The invention resides in the provision of a pair of longitudinally, oppositely reciprocating, toothed blades, which reciprocate in a channel like guide member attached to a power tool. The blades have their free ends extending beyond the channel shaped guide member, and the blades are provided at their free ends with angular cuts and with teeth along one edge, which teeth are beveled. The channel shaped guide is angularly cut at the free end as well as are the blades, so that the tool may quickly be inserted through a workpiece to be cut.

3,465,439
APPARATUS FOR THE PRODUCTION OF COTTAGE CHEESE
Alden Harvey Wakeman, Lake Mills, and Dan Crabill Roahen and Rodney Lee Knox, Fort Atkinson, Wis., assignors to St. Regis Paper Company, New York, N.Y., a corporation
Filed July 13, 1966, Ser. No. 564,951
Int. Cl. A01j *25/06*
U.S. Cl. 31—46 **5 Claims**



A device for processing milk products in a continuous manner for the production of cheese and comprising a large surface heat exchanger through which the milk products pass while the curd becomes coagulated at a particular acidity; and further comprising cutting means for cutting the emerging curd and means for separating the curd from the associated whey.

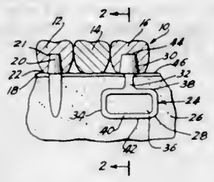
3,465,440
JAW REST DENTURES
Richard W. Gareis, 1234 W. 11th St., Port Angeles, Wash. 98362
Filed Mar. 22, 1967, Ser. No. 625,230
Int. Cl. A61c *13/00*
U.S. Cl. 32—2 **4 Claims**



A set of inexpensive upper and lower dentures made to standard sizes and fitted to the gums of each individual user by a self-curing plastic lining so as to form a temporary rest spacing the gums in order to relieve muscle strain on the jaws.

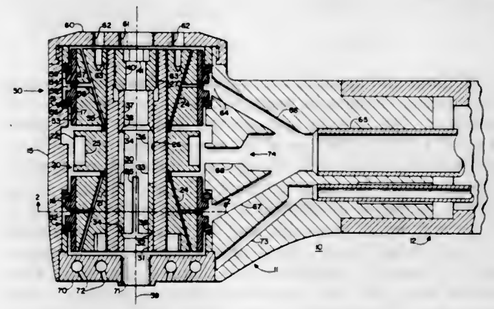
3,465,441
RING-TYPE IMPLANT FOR ARTIFICIAL TEETH
Leonard I. Linkow, 30 Central Park S., New York, N.Y. 10026
Filed Mar. 20, 1968, Ser. No. 714,550
Int. Cl. A61c *13/00*
U.S. Cl. 32—10 **12 Claims**

A device for implanting an artificial tooth comprises a blade with an opening therein and a free end defining a sharp edge. A support portion extends up from the blade, to which support portion a force may be applied which is distributed over the blade so as to facilitate the



implantation of the blade in the jawbone of the patient. Once the blade is implanted, the artificial tooth structure is secured to the support portion which extends up from the gum region.

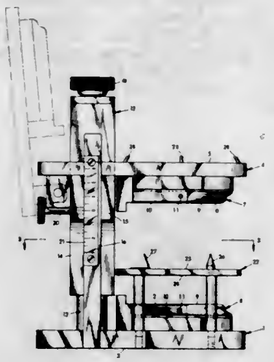
3,465,442
DENTAL HANDPIECE
Rolland G. Baldwin and Darrell M. Petersen, Minneapolis, Minn., assignors to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware
Filed Feb. 27, 1967, Ser. No. 618,645
Int. Cl. A61c *1/05*
U.S. Cl. 32—27 **3 Claims**



This application discloses an extremely high-speed dental handpiece which is capable of operation at speeds exceeding 500,000 r.p.m. This high speed is obtained by utilizing a fluid driven rotor supported by a conical hydrostatic bearing means. The bearing means are designed to allow both limited axial and limited transverse movement so as to permit operation during severe loading of the dental burr. Collet means are provided to secure the burr in the rotor for high-speed rotation therewith.

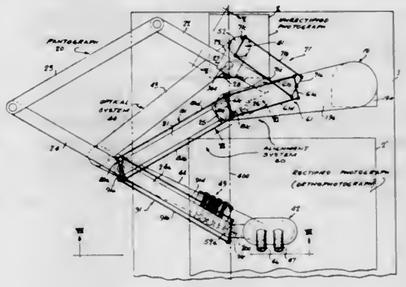
3,465,443
ORTHOPEDIC RELATOR ASSEMBLY
Robert Schwartz, Rahway, N.J., and Harry N. Cooperman, Doylestown, Pa., assignors to Dental Orthopedics, Inc., a corporation of New Jersey
Filed Feb. 20, 1967, Ser. No. 617,272
Int. Cl. A61c *11/00*
U.S. Cl. 32—32 **8 Claims**

An orthopedic relator assembly useful in the formation of standardized diagnostic dental casts comprising a mandibular base member, a vertically disposed support member, the lower end of which is connected to the mandibular base member, a maxillary base member connected to the upper portion of the support member and an occlusal base member. The lower surface of the maxillary base member and the upper surfaces of the mandibular and occlusal base members lie in planes parallel to each other. The maxillary base member is preferably vertically movable in relation to the mandibular base member. The upper surface of the mandibular base member and the lower surface of the maxillary base member are provided with cast positioning means. The



occlusal base is removably mounted on the upper surface of the mandibular base and the upper surface of the occlusal base is provided with a longitudinally disposed guide line, a pin holder positioned on said guide line and a movable knife edge.

3,465,444
PHOTOGRAMMETRIC METHOD AND APPARATUS
Theodore J. Blachut and Antoni J. Smialowski, Ottawa, Ontario, Canada, assignors to Canadian Patents and Development Limited, Ottawa, Ontario, Canada, a company of Canada
Filed June 5, 1967, Ser. No. 643,449
Int. Cl. B43l *13/16, 13/18*
U.S. Cl. 33—20 **7 Claims**

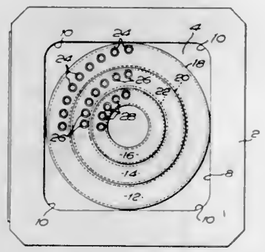


A map making method using aerial photographs, two different ones of which are viewed stereoscopically for improved interpretability. One photograph must be rectified (corrected for geometric accuracy), while the other photograph viewed may either be the unrectified version of the first photograph, or may be a rectified or unrectified version of a second aerial photograph that forms a stereopair with the first photograph.

The apparatus for viewing the photographs may be a conventional stereoscope, or may consist of a pantograph which carries a binocular optical system, and, by virtue of its master-slave movements and operating ratio,

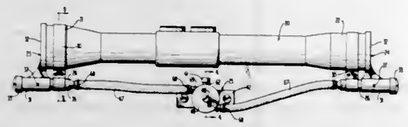
permits stereo viewing of corresponding selected areas of two photographs of different scale.

3,465,445
DRAWING AND DESIGN APPARATUS OR INSTRUMENT
Denys Fisher, Collingham, England, assignor to Denys Fisher Group Limited, a British company
Filed Feb. 16, 1968, Ser. No. 706,165
Claims priority, application Great Britain, Mar. 3, 1967, 10,107/67
Int. Cl. B43l *11/00*
U.S. Cl. 33—27 **4 Claims**



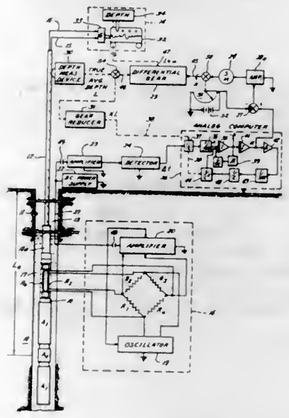
A design drawing device comprising a hinged folded primary member having straight walls and a window opening, at least two secondary ring members having apertures to accommodate a drawing instrument, the secondary members located within the window opening and being movable by the drawing instrument to create a design drawn upon a sheet placed underneath the primary and secondary members. The design drawing device enables the user to quickly draw circles, parallel straight lines, parallel curved lines, intersecting straight and curved lines and various designs made up of such elements. The plurality of apertures which are present in the secondary members are arranged on different pitch circle diameters. In embodiment, two of the secondary members are located side by side in a rectangular window opening while in another embodiment they are located concentrically with each other within a rectangular window opening.

3,465,446
SCOPE SIGHT LENS PROTECTOR
Ernest P. Cox, P.O. Box 165, Seeley Lake, Mont. 59868
Filed Jan. 27, 1969, Ser. No. 794,315
Int. Cl. F41g *1/38, 1/42;* **G03b** *11/04*
U.S. Cl. 33—50 **10 Claims**



A rifle scope sight lens protector which is positive and reliable in operation and seals the lenses effectively from the outside elements when in the closed position. The release means for the lens protector elements is arranged to substantially eliminate accidental actuation. The protector elements are spring-biased to the open or release position and are closed by a simplified winding mechanism and ratchet means.

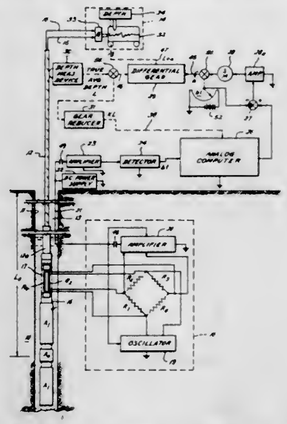
3,465,447
METHODS AND APPARATUS FOR DETERMINING DEPTH IN BOREHOLES
William E. Bowers and William A. Whitfill, Houston, Tex., assignors to Schlumberger Technology Corporation, Houston, Tex., a corporation of Texas
Filed Jan. 3, 1966, Ser. No. 518,370
Int. Cl. G01b *5/04;* **G01d** *7/00*
U.S. Cl. 33—133 **15 Claims**



Methods and apparatus for accurately and continuously determining changes in depth of a tool in a borehole are disclosed. The tension between the tool and its supporting cable is measured, as is the movement of the cable at the surface of the earth. The tension and cable movement measurements are then combined in a computer along with a plurality of constants representative of various characteristics of the cable and its surrounding medium to produce an output signal representative of the movement of the tool relating to the changes in tension. This output signal is then combined with the original cable movement measurement to produce a signal representative of the instantaneous changes in depth of the tool. This last signal can then be used for driving a recording device such that the accumulation by the recording device of this last signal will give accurate and instantaneous indications of the depth of the tool.

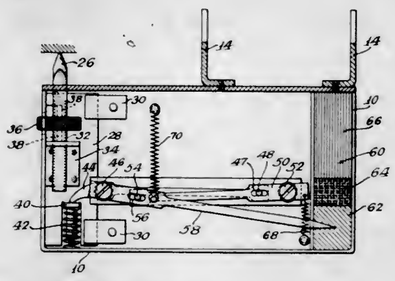
3,465,448
APPARATUS FOR DETERMINING DEPTH IN BOREHOLES
William A. Whitfill, Jr., Houston, Tex., assignor to Schlumberger Technology Corporation, Houston, Tex., a corporation of Texas
Filed Jan. 3, 1966, Ser. No. 518,415
Int. Cl. G01b *3/12, 5/04*
U.S. Cl. 33—133 **4 Claims**

Apparatus for continuously determining changes in depth of a tool in a borehole are disclosed. The tensile force between the tool and its supporting cable is measured, as is the movement of the cable at the surface of the earth. The tension and cable movement measurements are then combined in a computer along with a plurality of constants representative of various characteristics of the cable and its surrounding medium to produce an output signal representative of the movement of the tool due to the changes in tension. The computer solves a second order differential equation which includes inverse and inverse squared functions of the tool depth. Potentiometers which vary directly linear with depth are provided in appropriate feedback paths of the computer to produce these inverse and inverse squared functions. The computer output signal is then combined with the original



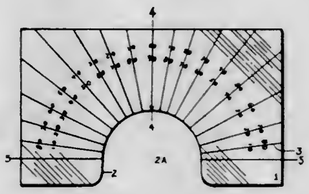
cable movement measurement to produce a signal representative of the instantaneous changes in depth of the tool.

3,465,449
UNIVERSAL JOINT TESTER
Allen C. Wideburg and James E. Steffens, Chicago, Ill., assignors to Avrum G. Gray, Chicago, Ill., and Sheldon Gray, Glencoe, Ill.
Filed Apr. 30, 1964, Ser. No. 363,831
Int. Cl. G01b *3/22*
U.S. Cl. 33—172 **4 Claims**



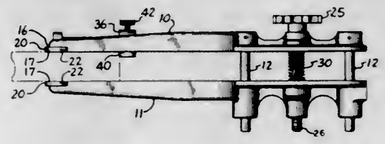
1. In a universal joint tester,
(a) a housing,
(b) a slide vertically movable in one end of said housing,
(c) a detector head carried by said slide and projecting from said housing,
(d) means for adjusting said detector head relative to said slide and said housing, said means engaging said detector head and operatively connected to said slide,
(e) means for securing said housing in fixed position relative to a drive shaft with said detector head in contact with a universal joint trunnion at one end of such drive shaft comprising:
  (1) a V-seat at the other end of said housing opposite said detector head,
  (2) a second V-seat intermediate the ends of said housing,
  (3) means between said V-seats to hold said V-seats in contact with such drive shaft,
  (4) said V-seats being secured to said housing,
(f) a gauge needle pivoted in said housing,
(g) a gauge dial against which said needle may be read, and
(h) a lever system within said housing operatively connecting said slide to said gauge needle.

3,465,450
BODY JOINT MEASURING DEVICE
Richard Alexander Hamilton, 5 Easterly Ave., Auburn, N.Y. 13021
Filed Jan. 13, 1966, Ser. No. 520,454
Int. Cl. A61b *5/10*
U.S. Cl. 33—174 **2 Claims**



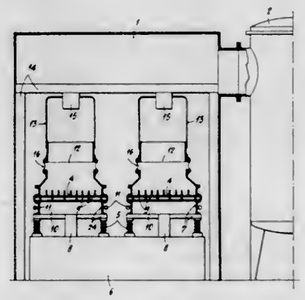
An apparatus and process for measuring the degree of articulation in human body members, employing the use of a body joint measuring device.

3,465,451
ALIGNMENT GAUGE FOR CASTING PATTERNS
Sherwood M. Hanson, S. Main St., Sandwich, Ill. 60548
Filed Mar. 21, 1967, Ser. No. 624,848
Int. Cl. G01b *5/14*
U.S. Cl. 33—180 **3 Claims**



An alignment gauge for detecting relative shift of casting patterns on a pattern board is characterized by adjustable probe arms to accommodate different thicknesses of pattern boards, and an adjustable sliding stop which allows the gauge to be inserted a predetermined distance from the edge of the pattern board.

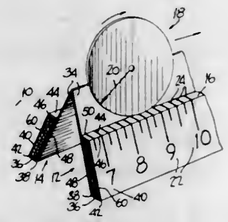
3,465,452
CRYODESICCATION APPARATUS
Willy Rothmayr, La Tour-de-Peilz, Switzerland, assignor to Afico S.A., Lausanne, Switzerland, a corporation of Switzerland
Filed Dec. 1, 1967, Ser. No. 687,353
Claims priority, application Switzerland, Dec. 23, 1964, 18,532/66
Int. Cl. F26b *15/14, 3/22, 7/00*
U.S. Cl. 34—92 **21 Claims**



Cryodesiccating apparatus has a vibrated support for the material to be dried and at least one filter for catching fine particles removed when the frozen matter in the

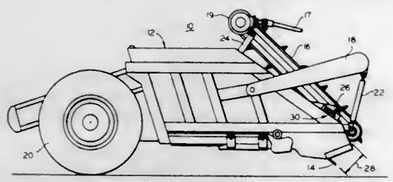
material is sublimed. Various heating systems can be employed. Another embodiment employs a tunnel-shaped drying chamber.

3,465,453
MATHEMATICAL COMPARISON DEVICE
Francis Thomas Sganga, New Smyrna Beach, Fla., assignor to St. Regis Paper Company, New York, N.Y., a corporation of New York
Filed Sept. 14, 1967, Ser. No. 667,844
Int. Cl. G09b *23/04*
U.S. Cl. 35—34 **11 Claims**



A device for comparing mathematical relationships using a ruler-like member which incorporates angularly extending side walls and a longitudinally extending ledge which receives discs that may be rotated therealong to indicate the circumferences thereof.

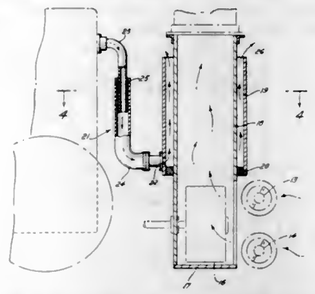
3,465,454
SCRAPER ELEVATOR ADJUSTMENT
James E. Hancock, Lubbock, Tex., assignor to Declark, Inc., a corporation of Delaware
Filed Apr. 12, 1967, Ser. No. 630,274
Int. Cl. E02f *3/14, 3/08*
U.S. Cl. 37—8 **3 Claims**



An adjusting mechanism for changing the normal operating position of the lower end of the elevator of an elevating scraper. Releasable latching means are included for holding and adjusting block in a selected location, which determines the normal operating position, while the location of the adjusting block can be readily changed by operating the scraper in dirt to cause the elevator to move away from the adjusting block.

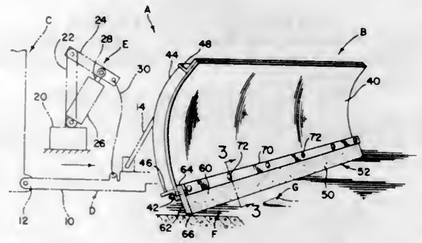
3,465,455
EXHAUST CHUTE WARMER FOR SNOW REMOVAL VEHICLE
Henry E. Kiernan, 136 W. Pulaski Road, Huntington Station, N.Y. 11746
Filed Aug. 24, 1967, Ser. No. 663,129
Int. Cl. E01h *5/08, 5/04*
U.S. Cl. 37—12 **6 Claims**

A self-propelled snow removal vehicle having a snowblower mounted to the front thereof. The vehicle includes an apparatus for directing the warm exhaust gases from the engine of the vehicle to a jacket surrounding the outlet



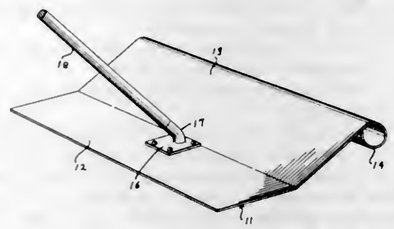
duct of the snowblower such that the warm gases pass over and warm the outlet duct.

3,465,456
BLADE FOR SNOWPLOWS AND SIMILAR DEVICES
Edward T. Meyer, Shaker Heights, Ohio, assignor to Meyer Products, Inc., Cleveland, Ohio
Filed Nov. 18, 1966, Ser. No. 595,470
Int. Cl. E01h *5/06, 5/04*
U.S. Cl. 37—50 **3 Claims**



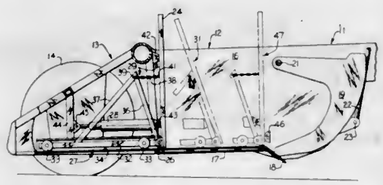
A snowplow of the like includes a moldboard having a cutting edge of elastomeric material attached to the lower edge thereof. The elastomeric cutting edge slopes downwardly and forwardly from the lower edge of the moldboard and is sufficiently rigid to stay in its static position when subjected to horizontal forces defined by friction and loose material being plowed. The elastomeric cutting edge is sufficiently flexible to bend backwardly when striking a substantially immovable object projecting up from a roadway.

3,465,457
PULLER SCOOP
John Y. Stone, 465 70th St., Niagara Falls, N.Y. 14303
Continuation-in-part of application Ser. No. 361,611, Apr. 17, 1964. This application May 9, 1966, Ser. No. 549,133
Int. Cl. E01h *5/02;* **A47l** *13/02*
U.S. Cl. 37—53 **2 Claims**



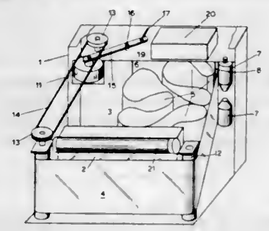
A snow clearing device formed from a sheet of metal by bending it to provide a flat scoop portion, an integral back slanting upwardly from the scoop portion for holding snow, and a rolled over portion of said back adapted to facilitate dumping of snow from said device. A handle is mounted on the device.

3,465,458
PIVOTED EJECTOR FOR EARTHMOVING SCRAPERS
Robert G. Wagner, Tazewell, Ill., assignor to Caterpillar Tractor Co., Peoria, Ill., a corporation of California
Filed July 10, 1967, Ser. No. 652,114
Int. Cl. E02f *3/76;* **B60p** *1/00*
U.S. Cl. 37—129 **2 Claims**



An ejector assembly for earthmoving scrapers having an ejector plate pivotally connected at its base to an ejector carriage. Mechanical supports and stops control its angular position during traversal of the scraper bowl to provide increased load carrying capacity in the bowl while permitting the ejector to assume a desired angle during its unloading traversal of the bowl.

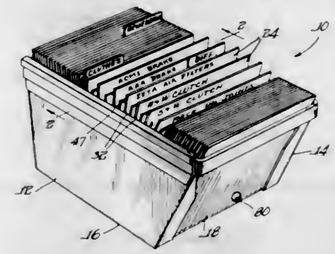
3,465,459
ADVERTISING DISPLAYS
Leonard S. Rogoff, 13 2nd Ave., Houghton, Johannesburg, Transvaal, Republic of South Africa
Filed Dec. 12, 1966, Ser. No. 600,809
Claims priority, application Republic of South Africa, Dec. 17, 1965, 65/6,761
Int. Cl. G09f *27/00*
U.S. Cl. 40—28.1 **1 Claim**



A display device includes an enclosure which has a screen for a window. The screen is illuminated from the edge. Along each vertical edge of the screen are power driven vertical rollers. The rollers move on an endless band of translucent foldable material with separate displays across the front of the screen. The band is bunched behind the screen in a plurality of random free folds. Means are employed in moving the band in a step-by-step manner across the screen and in coordination with a sound reproducing apparatus with a prerecorded message therein.

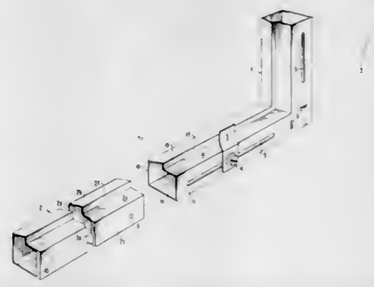
3,465,460
FILE STRUCTURE
Ernest A. Dahl, Jr., 729 Greenwood Ave., Wilmette, Ill. 60091
Continuation of application Ser. No. 557,310, June 13, 1966. This application Aug. 7, 1968, Ser. No. 753,837
Int. Cl. B42f *19/04, 21/00*
U.S. Cl. 129—16 **2 Claims**

A file arrangement including a container for holding a plurality of film sheets of microfiche cards. Permanent magnets are located on opposite side walls of the container and a plurality of full width metallic, magnetic dividers are interposed between the microfiche cards. The dividers may be color-coded to separate the cards into definite categories. The metallic dividers are easily separated by the magnetic force of the magnets and serve to



provide easy access to microfiche cards as well as preventing them from curling. One embodiment provides metallic dividers with upstanding spaced-apart tabs on the upper edge thereof so that damage to the microfiche cards from objects being placed on the file arrangement is avoided.

3,465,461
ADJUSTABLE PICTURE FRAME
Herbert Price, East Northport, and Seymour Kesten, Grahamsville, N.Y., assignors to Associated Electrical Industries Limited, London, England, a British company
Filed Aug. 3, 1967, Ser. No. 658,239
Int. Cl. G09f *1/12*
U.S. Cl. 40—155 **4 Claims**

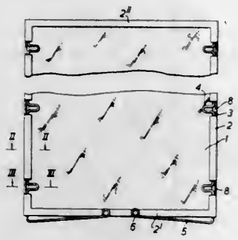


An adjustable picture frame which is assembled and adjusted by means of screws with integral washers passing through spring steel retainers and elongated adjusting slots located in the eight arms of four hollow corner portions of the frame assembly, the picture being fastened from the back by then threading the screws into holes provided in expander members of slightly smaller dimension than the corner members but of identical configuration thereto and telescopically slidable therein.

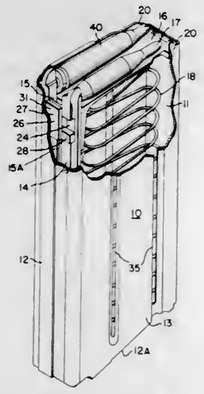
3,465,462
BASE PLATES FOR SECURING SHEETS OF PAPER
Tor Arnt-Jensen, Carlberg gard, Moss, Norway
Filed Feb. 28, 1967, Ser. No. 619,314
Claims priority, application Norway, Mar. 2, 1966, 161,919
Int. Cl. G09f *1/12, 3/18*
U.S. Cl. 40—156 **6 Claims**

A base plate for securing a sheet of paper to the flat surface of the plate, the plate having wires pivoted to the

sides, the wires lying in grooves in the plate projecting through the grooves and serving as ears and also as operating and securing means. The plate can be of transparent material or not.



3,465,463
ADAPTER ASSEMBLY FOR MAGAZINE CONTAINING BLANK CARTRIDGES
Andrew J. Grandy, North Hills, and Angelo S. Spinelli, Philadelphia, Pa., Seymour De Mesquita, Camden, N.J., and Alfred P. Batezell, Montgomery, Pa., assignors to the United States of America as represented by the Secretary of the Army
Filed Mar. 13, 1968, Ser. No. 712,635
Int. Cl. F41c *25/02*
U.S. Cl. 42—50 **2 Claims**



A conventional small arms magazine is provided with an elongated longitudinally grooved follower guide adjacent the magazine interior rear wall. A follower, having a rearwardly projecting tongue slidably positioned within the follower groove with a further rearwardly projecting finger at a lowermost portion of the tongue, moves cartridges upwardly and into the weapon chamber. The follower guide has a slot extending transversely to the groove that slidably receives a latch which is moved upwardly into the operative path of a cartridge chambering bolt after the last cartridge in the magazine has been expended.

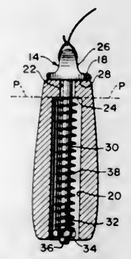
3,465,464
FISHING APPARATUS INCLUDING ANIMATED LURE
James F. De Berry, Cross Plains, Tenn., assignor of one-half interest to O. W. Ramsey, Cross Plains, Tenn.
Filed Aug. 2, 1968, Ser. No. 749,807
Int. Cl. A01k *85/06, 87/00*
U.S. Cl. 43—19.2 **8 Claims**

A fishing apparatus comprises a fishing rod, which may be flexible and sectional; a driver on the handle end of the rod; an animated lure including a body fixedly secured to the outer end of the rod and a lure adjunct mounted on and for movement relative to the lure body; and means



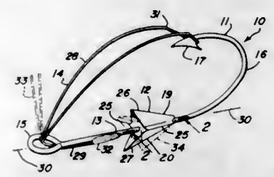
operatively connecting the driver to the lure adjunct. Angling movement of the lure body in or on the water can take place only by manipulation of the rod.

3,465,465
REACTION SINKER
Frank Smizaski, 11 Bernice Road, North Arlington, N.J. 07032, and Stan Kirkowski, 285 York St., Jersey City, N.J. 07302
Filed June 27, 1966, Ser. No. 560,403
Int. Cl. A01k *95/00, 97/00, 91/00*
U.S. Cl. 43—42.72 **4 Claims**



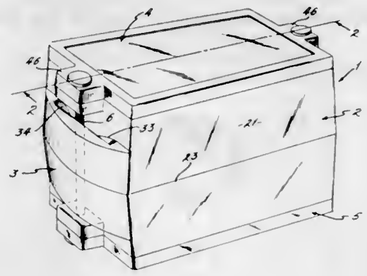
A sinker for fishing lines comprising a body portion provided with a longitudinal bore and an end wall with an opening therethrough. A rod extends through the opening into the bore and has a head portion on the end thereof outwardly of the body portion to which a fishing line is attached and with a spring surrounding the rod portion within the bore. The head portion normally contacts the end wall and is adapted to be pulled away from the end wall against the biasing force of the spring so that when the head portion is snapped back into contact with the end wall an axial thrust is exerted upon the sinker to jar it free from a snag or wedged position.

3,465,466
FISHHOOK FOR ARTIFICIAL BAIT
Joseph S. Showalter, Winter Park, Fla., assignor to Boone Bait Co., Inc., Winter Park, Fla., a corporation of Florida
Filed Apr. 15, 1968, Ser. No. 721,431
Int. Cl. A01k *83/06, 85/00*
U.S. Cl. 43—44.8 **1 Claim**



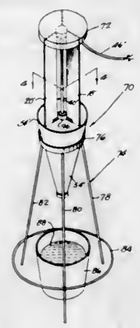
A fishhook that has a cast, arrowhead-shaped, metal element on the shank of the hook which provides opposed auxiliary barbs for better holding artificial bait made from soft resilient plastic material. The converging side edges of the cast element reduce unnecessary tearing as the plastic bait is impaled on the hook and the element can be rotatably adjusted on the shank to better seat the barbs in the material.

3,465,467
BAIT BOX
Wesley M. Allen, 218 County Line Road, Windsor, Mo. 65360
Filed May 12, 1967, Ser. No. 642,635
Int. Cl. A01k *97/04*
U.S. Cl. 43—55 **2 Claims**



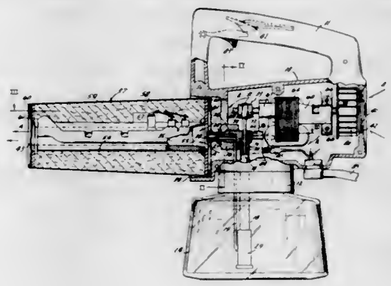
A container with side and end walls, molded in one piece, with lugs on the end walls terminating short of the bottom and top wall edges and with passages through them defined on the lateral sides by oppositely disposed arcuate walls diverging toward the top and bottom. The container is open top and bottom, and is selectively closed at top and bottom by closures having ears projecting at both ends. An elongated coil spring, loosely mounted in the passage in the lug at each end of the container, is connected at both ends of the spring to the ears of both closures, by means of a button on each closure. The container and closure are made of foamed plastic.

3,465,468
RADIANT ENERGY INSECT TRAP
George S. Takamoto, 347 N. Township Road, Yuba City, Calif. 95991
Filed Apr. 28, 1967, Ser. No. 634,752
Int. Cl. A01m *1/04, 1/08*
U.S. Cl. 43—113 **1 Claim**



An insect trap having an elongate vertically oriented ultraviolet lamp supported by three vanes extending radially therefrom and brackets at each end above a funnel and a collection vessel below the funnel for collecting insects which are attracted to the lamp and directed downwardly to the funnel to the collection vessel.

3,465,469
LIQUID VAPORIZER
Floyd E. Winter and Paul L. Heaberlin, Kirksville, Mo., assignors to McGraw-Edison Company, Milwaukee, Wis., a corporation of Delaware
Filed Aug. 5, 1964, Ser. No. 387,729
Int. Cl. A01m *19/00*
U.S. Cl. 43—129 **2 Claims**

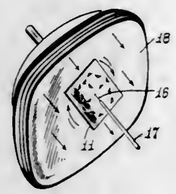


1. A portable insecticide vaporizer, comprising in combination:
(a) a housing having an internal cavity and aligned opposed openings therefrom defining thereby a passageway axially through the housing, and a fluid reservoir connected to the housing between the opposed housing openings;
(b) a pump in the fluid reservoir, an outlet nozzle surrounded by one of the housing openings, conduit means between the pump and nozzle, and drive means for the pump extending into the cavity;
(c) a motor secured to the housing in the cavity and having an output shaft aligned with the housing openings, an eccentric keyed to the shaft at one end thereof adjacent the one housing opening, means connecting the eccentric and pump drive means, and blower means keyed to the shaft at the other end thereof with its suction side adjacent the other housing opening for forcing air through said passageway and out the one housing opening;
(d) a heat tube releasably received snugly within a recess in the housing and having an inner wall defining a through passage axially aligned with said nozzle and communicating with the one housing opening, a heating element for the heat tube inner wall and including exterior probes that fit within receiving sockets in the housing, and terminal clips in the housing releasably engaging the probes,
whereby the spray discharge from the nozzle and the air discharge from the one housing opening admix in the heat tube passage and the heated inner wall vaporizes the mixture for discharge as a fog.

3,465,470
GAME DEVICES
Frank G. Jordan, 3943 Diversey Ave., Chicago, Ill. 60647
Filed Oct. 12, 1964, Ser. No. 403,033
The portion of the term of the patent subsequent to Sept. 9, 1985, has been disclaimed
Int. Cl. A63h *33/00*
U.S. Cl. 46—37 **5 Claims**

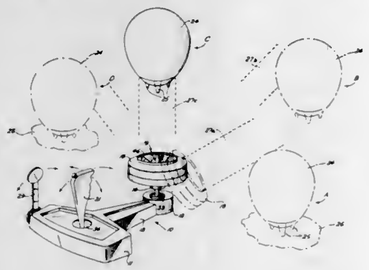
Apparatus for producing the visual effect of the circle or circles of stars, comprised of an opaque card having

transparent areas or holes that are triangular in shape and geometrically arranged in a circle or circles, which



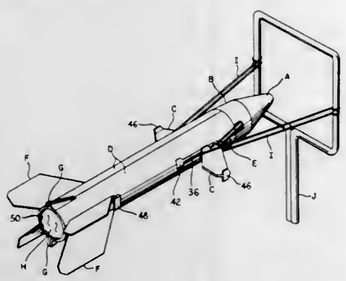
openings cooperate when the card is rotated before an illuminated television tube to generate stars.

3,465,471
AERODYNAMIC TOY
Sol Friedman, Monsey, N.Y., assignor to Topper Corporation, a corporation of Delaware
Filed May 29, 1967, Ser. No. 642,066
Int. Cl. A63h *29/16*
U.S. Cl. 46—44 **8 Claims**



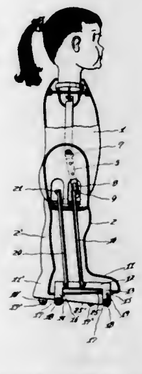
Electric fan directs air stream at a balloon to keep latter afloat. Fan mounted on universal joint linked to handle mounted on another universal joint so that direction of air stream can be varied by manipulating handle. Fan motor energized through rheostat so that velocity of air stream can be varied. Balloon carries legs to support it during lift-off and landing. A housing surrounds fan impeller, housing carrying vanes which minimize rotation of air stream.

3,465,472
AERIAL TOY ROCKET
Raymond John Novotny, 52 Summit Trail, Sparta, N.J. 07871
Filed June 3, 1966, Ser. No. 555,098
Int. Cl. A63h *33/20, 27/14*
U.S. Cl. 46—74 **7 Claims**



A rocket toy catapulted upward into the air having an adjustable pneumatic timer. The timer automatically deploys either a parachute or rotors, from readwardly opening split body housings, at a predetermined time somewhere in its trajectory to slow the rocket's descent. The body sections are held together by lugs on fins which extend through slots in the body sections and move rearwardly in said slots in response to the timer. The rearward portion of each slot is provided with an opening corresponding to the size of the lugs to permit the body sections to open.

3,465,473
WALKING DOLL
Takeshi Nakamura, 112 Honden-cho, Katsushika-ku, Tokyo, Japan
Filed Nov. 22, 1966, Ser. No. 596,274
Claims priority, application Japan, Feb. 28, 1966, 41/17,911
Int. Cl. A63h *3/22, 13/00*
U.S. Cl. 46—150 **2 Claims**



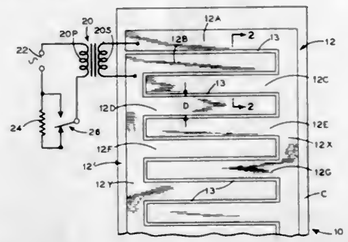
A walking doll wherein hollow legs of the doll are alternately raised and lowered while being swung about a pivot axis, while a pair of substantially parallel rods extending through each of the hollow legs are pivotally connected at the upper ends to the doll body and at the lower ends to a sole frame having a pair of branches extending spaced in direction of advance of the doll from each other through openings in the respective sole plate and turnably carrying rollers at the lower ends thereof, the front one of the rollers being permitted to turn only in direction of advance of the doll.

3,465,474
BOBBING HEAD DOLL
Robert Gardei and Egon Gorsky, Brooklyn, N.Y., assignors to Ideal Toy Corporation, Hollis, N.Y., a corporation of New York
Filed Oct. 18, 1966, Ser. No. 587,579
Int. Cl. A63h *3/36*
U.S. Cl. 46—164 **4 Claims**



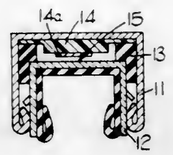
A doll's head universally mounted on a doll body includes a counterbalancing weight at the end of an elongated member rigidly secured to the head and depending into the body so that the doll's head assumes lifelike position as the doll is moved.

3,465,475
ELECTRICALLY OPERABLE TOY VEHICLE AND ELECTRIFIED SURFACE
Lewis Arnow, 33 Bull St., Newport, R.I. 02840
Filed Oct. 21, 1965, Ser. No. 500,396
Int. Cl. A63h *33/26*
U.S. Cl. 46—241 **23 Claims**



An electrically operable toy vehicle movable over an electrified surface presenting two sets of conductors in insulated relation to each other; the toy vehicle having a set of contacts for engaging the two sets of conductors, the contacts having a specific geometric relationship to insure a current carrying arrangement in any position of the vehicle on the conductors; the vehicles also including inertia members operative with changes in speed of the vehicle to change the direction of movement thereof.

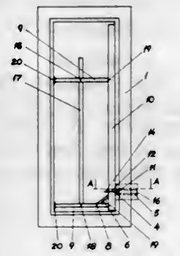
3,465,476
SAFETY ARRANGEMENTS FOR POWER OPERATED WINDOWS IN ROAD VEHICLES
Christopher Stephen Rayner, Kings Norton, Birmingham, and David Thomas, Solihull, England, assignors to Joseph Lucas (Industries) Limited, Birmingham, England, a British company
Filed Nov. 24, 1967, Ser. No. 685,669
Claims priority, application Great Britain, Dec. 5, 1966, 54,255/66
Int. Cl. E05f *15/20, 15/14*
U.S. Cl. 49—28 **4 Claims**



A safety arrangement for a power operated window in a road vehicle includes a switch associated with the fixed frame of the window, so that the switch is actuated in the event that an obstruction is placed between the window and the fixed frame whilst the window is being raised, there being provided means operable upon actuation of said switch for stopping raising of the window.

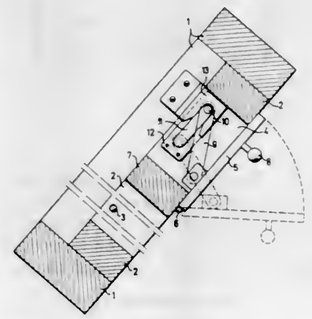
3,465,477
PROTECTIVE DEVICE FOR OPENABLE WINDOWS OF BUILDINGS
Jalmari Virkki, Tuulitie 3, Vantaa, Finland
Filed Nov. 7, 1967, Ser. No. 681,247
Claims priority, application Finland, Nov. 10, 1966, 2,966/66
Int. Cl. A47h *21/00*
U.S. Cl. 49—54 **7 Claims**

A protective device for the window of a building includes vertical and horizontal bars which are so pivoted to the hinge edge of the window frame that they remain out of view when the window is closed and are actuated by



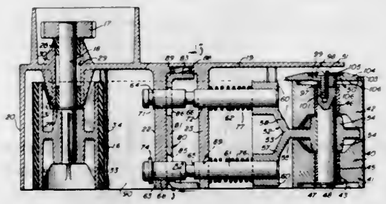
the opening of the window to be swung across the window opening.

3,465,478
WINDOWS
Villium Benedikt Kann Rasmussen, 6 Solystparken, Klampenborg, Denmark
Filed Apr. 24, 1967, Ser. No. 633,040
Int. Cl. E05d *15/48;* **E05f** *11/52*
U.S. Cl. 49—169 **7 Claims**



The invention relates to a window comprising at least one sash, such as a tilting sash, and a ventilation flap mounted therein, said flap being so connected to the sash and its locking means that it may be used as a handle or grip to engage and disengage the locking means and to open and close the window.

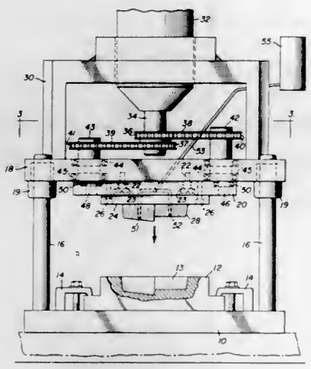
3,465,479
BELT SANDER
Raymond O. Foody, Chicago, and Harold Raymond Botefuhr, Bensenville, Ill., assignors to G. W. Murphy Industries, Inc., a corporation of Texas
Filed July 27, 1966, Ser. No. 568,223
Int. Cl. B24b *21/18*
U.S. Cl. 51—148 **12 Claims**



Surface dressing belt sander with an idler roller having an offset, rotatably mounted belt guide means and resil-

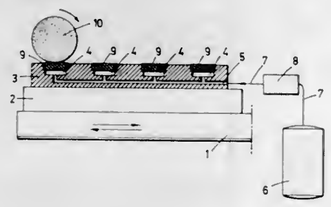
ient means for tensioning the belt. The idler roll is supported by a yoke member which is adapted to be releasably latched in a collapsed position such that a surface dressing belt can be readily inserted over the sander rolls.

3,465,480
APPARATUS FOR SHAPING ELECTRODES
Elmer P. Hausermann, 4N, 224 Hawthorne, Bensenville, Ill. 60106
Filed Mar. 13, 1967, Ser. No. 622,532
Int. Cl. B24b *7/00, 9/00, 25/00*
U.S. Cl. 51—157 **5 Claims**



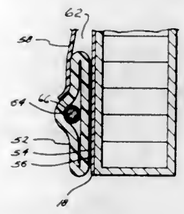
Apparatus for shaping electrodes comprising an abrasive die cavity into which an electrode workpiece is forced and wherein an oscillatory motion is given either the workpiece or the die cavity to thereby form the workpiece into the identical shape and contour of the die member.

3,465,481
METHOD FOR MACHINING A GAS PERMEABLE MATERIAL
Mieczyslaw Szwarcman, 61 Ave. de l'Emeraude, Brussels 4, Belgium
Filed July 6, 1966, Ser. No. 563,116
Claims priority, application Belgium, July 6, 1965, 666,463
Int. Cl. B24b *1/00*
U.S. Cl. 51—324 **4 Claims**



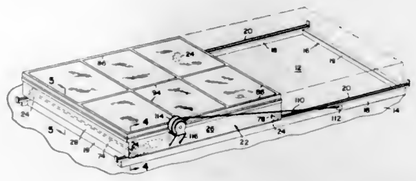
A method for machining at least one gas permeable element including a housing in which said element is mounted and subjected to pressurized gas and means to machine the element downstream of the gas flow simultaneously with the passage therethrough of gas under pressure.

3,465,482
SPACECRAFT RADIATOR COVER
Joseph A. Chandler, Dickinson, Tex., assignor to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration
Filed Dec. 26, 1967, Ser. No. 693,420
Int. Cl. E04b *14/00;* **F42b** *15/10*
U.S. Cl. 52—3 **4 Claims**



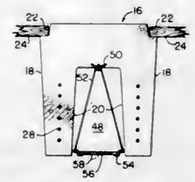
The invention relates to a protective covering for use on a spacecraft where it is necessary to prevent degradation of the thermal control coating during assembly of the spacecraft and prior to and during launch, the invention comprises a cover made of a high strength, high temperature plastic film which is secured to an edge member frame which encircles the radiator surface, the edge member is bonded with a fairly brittle adhesive system to the edge of the radiator surface, in the center of the edge member is an explosive, mild detonating fuse, sized so that when detonated it will expand the edge member, but will not cause it to rupture.

3,465,483
MOVABLE ROOF
David S. Miller, Daly City, Calif., assignor to Rollamatic Roofs, Incorporated, San Francisco, Calif., a corporation of California
Filed Jan. 19, 1968, Ser. No. 699,201
Int. Cl. E04b *7/16*
U.S. Cl. 52—72 **3 Claims**



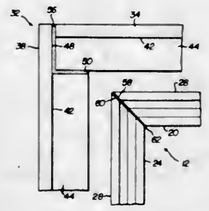
A movable roof or skylight for covering and sealing a roof opening in the closed position and movable to an open position by its own power, includes a frame comprised of hollow, thin-walled members connected at their ends that support and cover wheels which ride in tracks fixed to opposite sides of the roof opening, and mounted within one hollow frame member is a motor-drive unit connected to one pair of driving wheels. The frame members include means for retaining and sealing a plurality of cover panels. A sealing member attached to the outside edge of each track member maintains a seal for preventing an influx of rain when the movable roof is closed. The movement of the roof to the full open, closed or any intermediate position is controllable by a control switch and a single limit switch.

3,465,484
PRESTRESSED CONCRETE BEAM
Othar Zaldastani and Michael J. A. H. Jolliffe, both % Nichols, Norton, and Zaldastani, Inc., 131 Clarendon St., Boston, Mass. 02116
Continuation of application Ser. No. 617,181, Feb. 20, 1967. This application Oct. 22, 1968, Ser. No. 772,466
Int. Cl. E04c *3/26;* **E04b** *5/04*
U.S. Cl. 52—127 **3 Claims**



A precast, prestressed concrete structural beam consists of tension web portions spaced apart by a modular building dimension, integrally combined with a bridging compression flange portion. This generally channel-shaped, laterally stable structure has tapered walls to facilitate casting and subsequent stripping from the mold; it defines an open sided space for acoustical, lighting, ducting or venting purposes, and permits proportional dimensional variations to produce a graded series of beam sections. The flange portion may be extended endwise as a bracket for resting on a supporting girder, thus conserving overhead clearance in the structure.

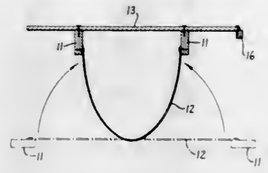
3,465,485
WINDOW FRAME ASSEMBLY
Francis E. Knipper, 299 Connecticut St., Hollywood, Fla. 33020
Filed Feb. 21, 1968, Ser. No. 707,101
Int. Cl. E06b *1/02, 1/12*
U.S. Cl. 52—204 **2 Claims**



A window frame assembly to be placed in an opening in a wall and including a backup frame of precast concrete members having right angle joints at the corners thereof and an ornamental frame also of precast concrete members to be placed directly in front of the backup frame and having mitered joints at the corners thereof so that no straight-through leakage path through both of the joints at any corner exists.

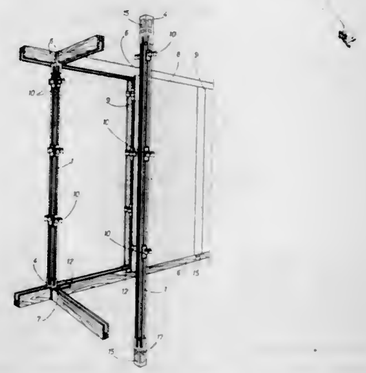
3,465,486
STRUCTURAL UNIT FOR BEAM STRUCTURES AND FLOTATION HULLS AND METHOD OF MANUFACTURE
Etienne D. Rolin, 110 Belvedere St., San Rafael, Calif. 94901
Continuation-in-part of application Ser. No. 556,331, June 9, 1966. This application June 2, 1967, Ser. No. 651,085
Int. Cl. E04b *1/00;* **E04c** *3/02*
U.S. Cl. 52—222 **7 Claims**

A structural unit is formed from a sheet of flexible, high strength material, such as galvanized sheet steel, and one or more sheets of a non-flexible, rigid material, such as plywood. The flexible sheet is first secured along its longitudinal edge portions to longitudinal stringers or support members and then bowed, or otherwise flexed, into a web which is substantially U-shaped in cross-section. The rigid sheets are then secured to and across



the stringers or support members to complete the beam structure. In a modification designed for use as a flotation hull the ends of the U-shaped web are folded inwardly to form a crimped section that closes off the ends without creating any seams.

3,465,487
BUILDING OF WALLS
Albert Rene Fatosme, Herouville-St.-Clair, Calvados, France, and Henri Georges Coste, 3 Place Pereire, Paris, France
Filed Aug. 22, 1967, Ser. No. 662,537
Claims priority, application France, Aug. 23, 1966, 73,886
Int. Cl. E04b *2/78, 2/56*
U.S. Cl. 52—241 **4 Claims**

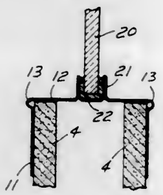


The object of the present invention is to provide a partition system composed of an assembly of simple elements capable of being manufactured industrially, these elements can be easily assembled without special working, without nails or screws, and can be connected to walls, floors, and ceilings without plugged screws or nails and without adding special coverings and fillets, they enable all shapes and dimensions of partions to be made up in buildings in which the distances between bearing walls are a multiple of a given length, which will hereinafter be referred to as the "building module."

3,465,488
DRY WALL STRUCTURE
Peter H. Miller, 338 Wilson Ave., Newark, N.J. 07105
Filed Mar. 29, 1967, Ser. No. 626,886
Int. Cl. E04b *2/72, 2/30*
U.S. Cl. 52—481 **2 Claims**

The invention relates to dry wall structures for use as room dividers or partition walls terminating short of the

ceiling of the room, and resides in providing an inexpensive and attractive finishing cap for such walls which can



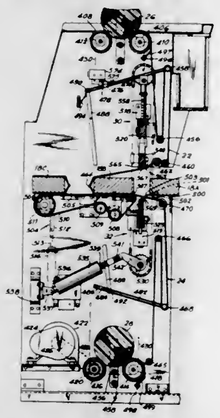
be attached to the top rim of a wall with a minimum of labor.

3,465,489

METHOD AND APPARATUS FOR HEAT SEALING AND CUTTING FILM

Alfred C. Monaghan, Warren Township, Plainfield, N.J., assignor to Weldotron Corporation, Newark, N.J., a corporation of New Jersey

Filed June 30, 1965, Ser. No. 468,331
Int. Cl. B65b *9/02, 51/30*
U.S. Cl. 53—28 **19 Claims**



A packaging machine sequentially seals successive articles between two webs of thermoplastic film as the articles and the webs are advanced along the machine direction axis. Initially the two webs are sealed together between successive articles along the cross web axis, and subsequently the two webs are progressively sealed along the machine direction axis as both the article and the webs advance therealong. This progressive sealing is provided by opposed pairs of cap-blocked roller sprocket chains which grasp the superposed margins of the webs and carry them past a radiant heater. Three species of apparatus for providing the cross-web axis seal are shown: (1) an automatically operated, intermittent feed apparatus; (2) a manually operated, intermittent feed apparatus; and (3) an automatically operated, progressive feed apparatus.

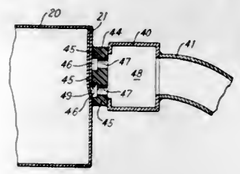
3,465,490

METHOD AND DEVICE FOR BONDING THE SEALING FLAP OF A HINGE-COVER FOLDING BOX

William H. Mahncke, San Mateo, Calif., assignor to Kliklok Corporation, New York, N.Y., a corporation of Delaware

Filed July 6, 1967, Ser. No. 651,406
Int. Cl. B65b *7/20, 51/20*
U.S. Cl. 53—38 **5 Claims**

The present improvements prevent bowing-in of the box body wall panel over which a hinge cover sealing flap is folded and to which it is to be adhesively bonded. This is accomplished by drawing the panel outwardly by suction applied to the outside surface of the wall panel.



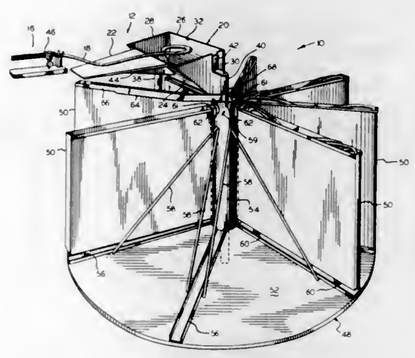
Suction is also applied to the sealing flap. Flap and panel remain flat and the "compression" force on the bonding area is the result of the applied suction.

3,465,491

APPARATUS FOR COLLECTING FLEXIBLE STRANDS

James P. Smithers, Glendale Heights, and Millard J. Hafstad, Park Forest, Ill., assignors to Armour and Company, Chicago, Ill., a corporation of Delaware

Filed Mar. 21, 1966, Ser. No. 535,872
Int. Cl. B65b *63/04, 67/00*
U.S. Cl. 53—116 **13 Claims**



Apparatus for collecting flexible sausage strands which comprises an elongated bank board for successively directing sausage strands thereagainst and a plurality of turntable mounted, open top compartment means adapted to be rotated to a position beneath the bank board for collecting the strands therein. The bank board is substantially laterally coextensive with each of the compartment means whereby the strands directed thereto assume a folded serpentine configuration.

3,465,492

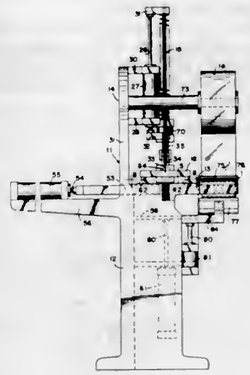
FOLDING DEVICE

Hans A. Jensen, Madison, Wis., assignor to Oscar Mayer & Co., Inc., Chicago, Ill., a corporation of Illinois

Filed Nov. 28, 1966, Ser. No. 597,332
Int. Cl. B65b *9/02, 63/04;* **B65h** *45/18*
U.S. Cl. 53—120 **9 Claims**

Apparatus is provided for folding and packaging sheet-like articles comprising means to form a center fold and a plurality of accordion folds parallel thereto transversely

to the plane of the flat sheet-like article, means to form a central fold transversely to the plane of the accordion-



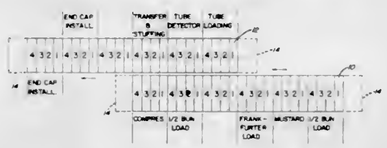
folded article, and means to package the folded article between two webs of packaging material.

3,465,493

PACKAGING MACHINE

Julius W. Sandy, Bensenville, Ill., assignor to Microtherm Limited, London, England, a British company

Filed Aug. 7, 1967, Ser. No. 658,885
Int. Cl. B65b *5/00, 25/22*
U.S. Cl. 53—124 **10 Claims**



The present disclosure concerns a packaging machine peculiarly adapted to package sandwiches, each comprising a frankfurter and a bun, in tubular containers. The containers are automatically loaded, four at a time, onto one conveyor belt, and the sandwiches are manually deposited in cup-like receptacles mounted on a second conveyor belt moving in synchronism with the first belt through a plurality of index positions. The two belts are brought into side-by-side relationship at a transfer station, where the sandwiches are compressed transversely between upper and lower cup-like receptacles in a press, and then rammed longitudinally into the containers. The exit end of the receptacles has a funnel-like surface terminating in a shoulder to receive an end of the tubular container and ensure that it is circular. A pair of similar capping stations place end caps in both ends of the containers after they are filled.

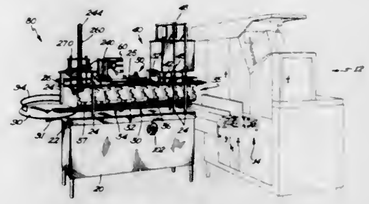
3,465,494

FILLING AND SEALING MACHINE

Howard R. Garrett, Woodstock, Albert F. Rhino, Crystal Lake, and Howard E. Olila, Woodstock, Ill., assignors to Haskon, Inc., Warsaw, Ind., a corporation of Delaware

Filed May 4, 1967, Ser. No. 636,182
Int. Cl. B65b *51/14, 7/14;* **B67b** *3/22*
U.S. Cl. 53—168 **4 Claims**

A machine for filling and closing different sizes of paper cartons and plastic jugs such as used for packaging milk, wherein the filling and closing mechanisms are mounted upon a pair of spaced rods in a plane spaced above and parallel to the trough along which the containers are advanced stepwise, whereby the individual mechanisms can be adjusted endwise along said rods and



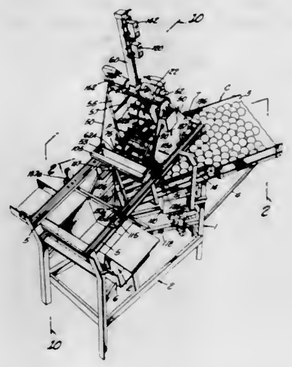
at least one of said mechanisms can be pivoted selectively between an operative and an inoperative position, whereby the machine can be adapted for filling and closing paper cartons or plastic jugs.

3,465,495

APPARATUS FOR BOXING LAYERS OF ARTICLES SUCH AS FRUIT AND THE LIKE

Wayne E. Zwiacher, Ontario, Louis D. Kaser and Maurice V. Johnson, Jr., Upland, Alfred H. Fennell, Chino, and Fred W. Riddington, Ontario, Calif., assignors to Sunkist Growers, Inc., Los Angeles, Calif., a corporation of California

Filed Aug. 16, 1965, Ser. No. 480,021
Int. Cl. B65b *25/00, 35/00*
U.S. Cl. 53—164 **35 Claims**



Citrus fruit to be packed into a box is first formed into staggered longitudinal rows on a feed chute and then rectangular pickup means having rows of vacuum pickup cups is positioned diagonally of the chute to pick up a group to form one layer in the box, the successive groups being of staggered patterns for the successive layers to nest together.

3,465,496

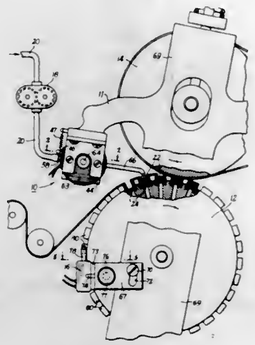
CAPSULE FORMING APPARATUS WITH FLUID METERING VALVE

Lloyd F. Hansen, Campbell Hall, N.Y., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine

Filed Dec. 23, 1966, Ser. No. 604,482
Int. Cl. A61j *3/07;* **B65b** *1/42, 9/04*
U.S. Cl. 53—184 **9 Claims**

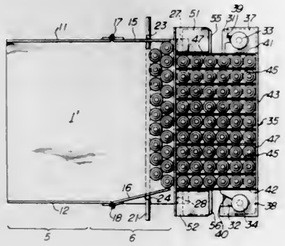
A fluid metering valve which is particularly adapted for use in delivering doses of liquid medicament to the die roll of a gelatin capsuling machine. A rotatable valve core is mounted in a valve block and is actuated by a

rotary solenoid to intermittently open and close the valve passages. The actuation of the rotary solenoid is controlled by a microswitch actuated in response to move-



ment of the cavities in the die roll. The metering valve is mounted adjacent the die roll, and nozzles extending from the valve deliver liquid directly and precisely to each cavity thereof when the valve passages are opened.

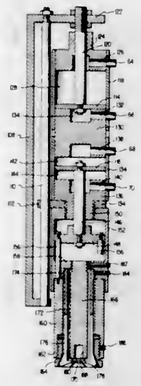
3,465,497
APPARATUS FOR FILLING A CASE WITH A NUMBER OF AMPULES
Hideo Tatibana, 3–5 Nakano, 6-chome, Nakano-ku, Tokyo, Japan
Filed Feb. 6, 1968, Ser. No. 703,302
Claims priority, application Japan, Mar. 18, 1967, 42/16,964
Int. Cl. B65b *35/34*
U.S. Cl. 53—246 **1 Claim**



The present apparatus is adapted to send automatically and smoothly a number of ampules which were fed and set upright at random places on an ampule supplying table, into an ampule receiving case which is located adjacent to the downstream end of said table. The table is provided with a pair of pivotally oscillatable wings adjacent the downstream end thereof in order that the ampules may enter automatically and smoothly into a plurality of channels formed within said case, without stagnating at the entrance thereof.

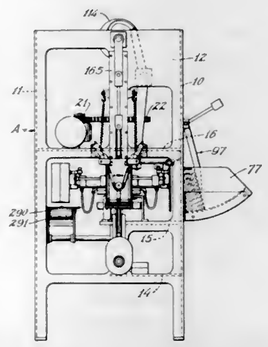
The ampules may be advanced on said ampule supplying table by means of an electromagnetic vibration means or a belt conveyor, said vibration means being secured to the bottom surface of said table, said belt conveyor being positioned within a hole which is made by cutting out square the portion of said table so that it may have its upper surface substantially flush with the upper surface of said table to form a portion of the ampule supplying table.

3,465,498
CLOSURE CRIMPING DEVICE
Herbert Z. Sokol, Atlanta, Ga., assignor, by mesne assignments, to American Lecithin Company, Atlanta, Ga., a corporation of Georgia
Filed Feb. 17, 1965, Ser. No. 433,360
The portion of the term of the patent subsequent to Sept. 9, 1985, has been disclaimed
Int. Cl. B67b *3/08, 3/14, 3/26*
U.S. Cl. 53—348 **4 Claims**



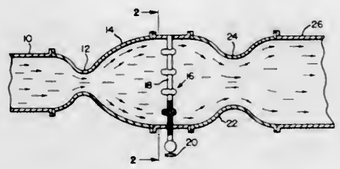
A dual double acting piston and cylinder arrangement for pressing a container cap against a container through the action of one piston-cylinder combination whereafter the other piston-cylinder combination crimps the cap in place. A timer-controlled system supplies pressurized fluid to the piston-cylinder combination.

3,465,499
BAG OPENING APPARATUS
Iver L. Nelson, St. Paul, and Harold V. Dettman, Minneapolis, Minn., assignors to Hoerner Waldorf Corporation, St. Paul, Minn., a corporation of Delaware
Filed Aug. 1, 1966, Ser. No. 569,196
Int. Cl. B65b *43/30*
U.S. Cl. 53—386 **14 Claims**



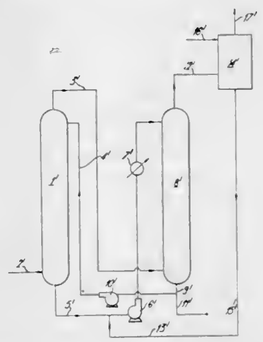
The bag opening device includes a turntable rotatable about a vertical axis and which moves intermittently through four angularly spaced stations. At the first station, a bag is removed from a hopper by suction cups on the turntable. At the second station, the bag is opened up by suction cups engaging the outer surface of the bag, and a mandrel enters the bag to open it fully. At the third station the opened bag is discharged onto a conveyor which delivers the opened bag to other equipment for filling and closing the bags.

3,465,500
METHOD AND APPARATUS FOR SEPARATION OF COMPONENTS FROM GASEOUS STREAMS
John B. Fenn, 120 Everit St., New Haven, Conn. 06511
Continuation-in-part of application Ser. No. 272,592, Apr. 12, 1963. This application Apr. 19, 1968, Ser. No. 725,578
Int. Cl. B01d *57/00*
U.S. Cl. 55—17 **10 Claims**



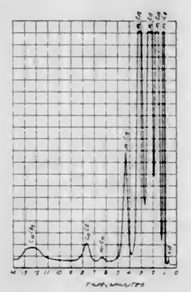
Method and apparatus for separating the components of a gaseous mixture containing heavier and lighter species, comprising accelerating the mixture to form a stream flowing at supersonic velocity, placing either a single hollow probe of suitable shape, or a plurality of hollow probes, distributed throughout a transverse cross-section of the stream, to form shock waves in front of the leading edges of each probe, whereby the heavier species flows forward into the mouth of the probe and the lighter species is deflected so that it flows around the probe, maintaining reduced pressure within the probe (or probes) and withdrawing gas, enriched in the heavier species, from the probe (or probes).

3,465,501
PROCESS FOR THE SEPARATION OF MIXTURES OF ACETYLENE AND VINYL ACETATE
Yvon Conseiller and Maurice Maincon, Paris, France, assignors to Rhone-Poulenc S.A., Paris, France, a French body corporate
Filed May 16, 1968, Ser. No. 729,821
Claims priority, application France, May 22, 1967, 107,259
Int. Cl. C10h *23/00*
U.S. Cl. 55—63 **4 Claims**



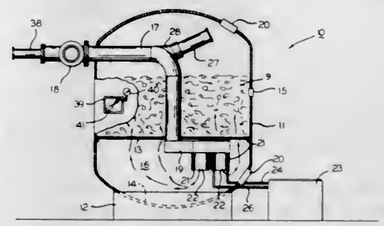
Mixtures of acetylene, vinyl acetate and acetaldehyde, especially that derived from the synthesis of vinyl acetate by the vapour phase reaction of acetylene and acetic acid, are economically separated by washing in three successive zones. In the first zone, the hot gaseous mixture passes in countercurrent contact with a liquid mixture of acetic acid, vinyl acetate and acetaldehyde from the second zone. The acetaldehyde is stripped and passes with the gases to the second zone in which it is absorbed by contact with a liquid mixture of acetic acid and vinyl acetate. The liquid from the first zone is recycled to the second zone with the mixture of acetic acid and vinyl acetate from the third zone. The liquid leaving the second zone is partly withdrawn for work up of its acetic acid, vinyl acetate, and acetaldehyde constituents and partly supplied to the first zone. The gas for the second zone is passed to the third zone where it is washed with fresh acetic acid to remove vinyl acetate. Purified acetylene is withdrawn from the third zone.

3,465,502
METHOD FOR SEPARATING PARAFFIN HYDROCARBONS FROM HALOPARAFFIN HYDROCARBONS
Jerry W. Wimberley, Ponca City, Okla., assignor to Continental Oil Company, Ponca City, Okla., a corporation of Delaware
Filed Sept. 25, 1967, Ser. No. 670,244
Int. Cl. B01d *15/08;* **G01n** *31/08*
U.S. Cl. 55—67 **14 Claims**



A method for separating paraffin hydrocarbons from haloparaffin hydrocarbons, and also for separating monohaloparaffin compounds from polyhaloparaffins, which includes the steps of incorporating small amounts of orthophosphoric acid in a polar liquid substrate which exhibits a preferential chromatographic affinity for paraffin hydrocarbons relative to haloparaffin hydrocarbons, then packing a chromatographic column with the phosphoric acid-carrying polar liquid and a suitable particulate solid substrate, and finally, passing the mixture of hydrocarbons to be separated through the packed column.

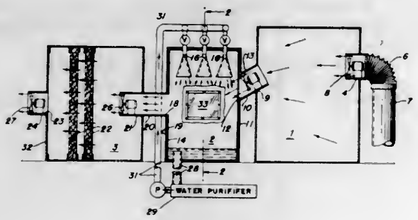
3,465,503
AIR DRYER AND BYPASS STRUCTURE THEREFOR
Joseph H. Henderson, 5400 McDermott Drive, Berkeley, Ill. 60163
Filed May 27, 1968, Ser. No. 732,134
Int. Cl. B01d *53/14, 53/26*
U.S. Cl. 55—163 **5 Claims**



An air dryer having structure for selectively placing the dryer in "on-stream" condition or bypassing the air

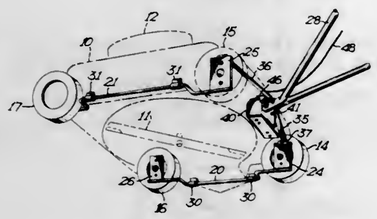
stream around the dryer, valves positioned on the upstream and downstream sides of the dryer for determining whether the dryer is on stream or in bypass condition, air operated motors for operating said valves to on stream or bypass position, and control means for reducing the effort necessary to operate said motors and for preventing a rush of air to a dessicant bed in said dryer when the same is returned from bypass to on stream condition.

3,465,504
AIR PURIFIER DEVICE
Esther Oropeza and Violet E. Oropeza, both of 873 W. Hedding St., San Jose, Calif. 95126
Filed Oct. 26, 1967, Ser. No. 678,254
Int. Cl. B01d *47/16, 47/02*
U.S. Cl. 55—228 **1 Claim**



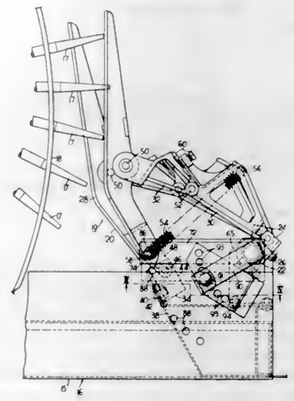
In an air purifier device three chambers connected in series, and fans to draw air through the chambers in sequence. The first chamber is a collection chamber, the second has a spraying system for a fine mist to precipitate tiny particles from the air, and it is lined with plastic; and the third chamber has filters across its passage. The intake of the collection chamber is connected to a stack discharging air containing the waste materials from a plant.

3,465,505
LAWNMOWER
Alvern J. Krinke, 4806 Twin Lake Ave. N., Brooklyn Center, Minn. 55429
Filed Mar. 18, 1968, Ser. No. 713,853
Int. Cl. A01d *35/26, 75/28, 35/28*
U.S. Cl. 56—25.4 **8 Claims**



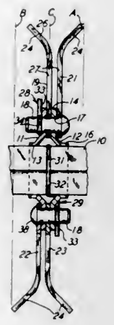
A mower having wheels pivotally connected to the blade housing so that the housing may assume various angles with respect to the wheels. The mower handle is connected to the wheels so that the wheels will remain vertical when the handle is held vertical. Lock means are provided to hold the handle in a desired position. The pivot point between the housing and the wheels is at a plane below the plane of the wheel axles, to minimize unleveling of the motor.

3,465,506
STALK CROWDER ATTACHMENT FOR COTTON HARVESTER
Rector C. Fergason, Gadsen, Ala., assignor to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.
Filed Aug. 11, 1967, Ser. No. 660,121
Int. Cl. A01d *45/20*
U.S. Cl. 56—44 **7 Claims**



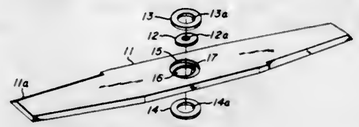
A cotton picker stalk crowder wherein individual crowders are provided and are adjustable, and upper and lower banks of such individual crowders are adjustable as banks.

3,465,507
FLAIL KNIFE ASSEMBLY
Raymond J. Fishaw, Racine, Wis., assignor to Jacobsen Manufacturing Company, Racine, Wis., a corporation of Wisconsin
Filed Feb. 23, 1967, Ser. No. 617,970
Int. Cl. A01d *55/20*
U.S. Cl. 56—294 **5 Claims**



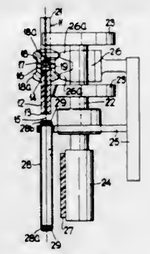
A flail knife assembly for use in crop cutting and having a rotatable shaft supporting knife holders therealong. Knives are pivotally attached to the holders to be pivoted radially outwardly under centrifugal force of rotation, and to be retractable when debris is struck by the knife. Spring clips are used for releasably securing the knives to the holders through the means of pins.

3,465,508
POWER TRANSMITTING MEANS
Charles E. Edwards, Dayton, Ohio, assignor to Dayco Corporation, Dayton, Ohio, a corporation of Delaware
Filed Mar. 24, 1967, Ser. No. 625,737
Int. Cl. A01d *55/26*
U.S. Cl. 56—295 **2 Claims**



A power transmitting means in the form of a universal adapter for lawnmower blades to transmit power from the drive shaft of a rotary lawnmower to the blade. The means consists of a sandwich of three washers; the central one is mounted within an aperture in the adapter or blade to transmit power laterally into the blade, while the outer washers transmit rotational power to the shaft to the central washer.

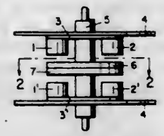
3,465,509
TEXTILE APPARATUS
Walter Parker, Wilmslow, and Philip Forward, Macclesfield, England, assignors to Ernest Scragg & Sons Limited, a British company
Filed Feb. 27, 1967, Ser. No. 618,768
Claims priority, application Great Britain, Feb. 26, 1966, 45,206
Int. Cl. D01h *7/46, 7/92, 13/26*
U.S. Cl. 57—77.45 **13 Claims**



A false twist apparatus adapted to be operated at at least 400,000 revolutions per minute without experiencing substantial loss of tenacity in the travelling yarn in a predetermining path, the combination of a rotatable hollow tubular false twist spindle having an internal diameter of at most 0.04 inch and a snubbing pin located intermediate the ends of said tubular spindle being inclined transversely to the axis of said spindle and having a diameter of between 0.03 and 0.04 inch. Said tubular spindle surrounds one portion of the yarn and there is a further yarn guide tube surrounding another portion of the yarn having an inner cross-sectional area being a multiple of the inner cross-sectional area of the tubular false twist spindle and so selected to preclude contact of said guide tube with the ballooning yarn.

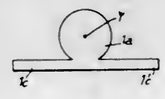
3,465,510
ELECTRIC TIMEPIECE
Roland Jeanmonod, Peseux, Switzerland, assignor to Ebauches S.A., Canton of Neuchatel, Switzerland, a firm
Filed Sept. 26, 1967, Ser. No. 670,653
Int. Cl. G04c *3/04*
U.S. Cl. 58—28 **1 Claim**

An electric timepiece having an oscillating regulator wherein electric and electromagnetic means maintain the oscillations of the regulator. These means comprise at least two magnets and two coils, through which coils an electric current momentarily flows. The relative movement of at least one of the coils, with respect to the magnets, is adapted to produce pulses which keep the regulator going.



The coils form part of an electronic circuit having a transistor and at least one resistance and one condenser.

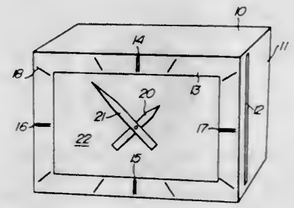
3,465,511
ELECTRONICALLY SUSTAINED CLOCKWORK MECHANISM
Serge Simon Held, 31 Rue de Chazelles, Paris 17eme, France
Filed Aug. 7, 1967, Ser. No. 658,696
Int. Cl. G04c *3/04*
U.S. Cl. 58—28 **14 Claims**



This invention broadly relates to clockwork mechanisms driven by a balance wheel, the oscillation of which is maintained by the reactions produced between magnets and flat coils as they perform relative angular displacements.

The instant invention more particularly relates to a clockwork mechanism wherein the balance wheel is unresponsive even to the close proximity of iron masses or ambient fields.

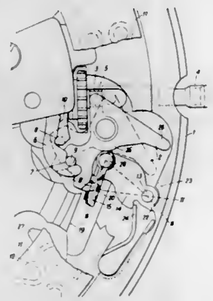
3,465,512
CLOCK CASE
Hiroshi Usui and Takehito Kaminishi, Tokyo, Japan, assignors to Citizen Watch Co., Ltd., Tokyo, Japan, a corporation of Japan
Filed Nov. 9, 1966, Ser. No. 593,204
Claims priority, application Japan, Jan. 27, 1966, 41/5,114
Int. Cl. G04b *37/00*
U.S. Cl. 58—53 **5 Claims**



A clock with an angularly adjustable clock mechanism mounted to allow movement of the clock mechanism about the rotary axis of the hands to allow use of the clock in either of two 90° rotated positions of the clock face. A torque transmitting means using magnets and

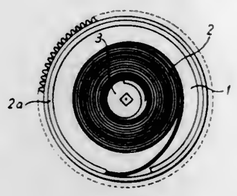
parallel spaced plates of which one is transparent allows pictures placed therebetween to appear on the clock face.

3,465,513
CALENDAR WATCH WITH CORRECTION DEVICE FOR THE DATE RING
Urs Giger, Solothurn, and Edwin F. Jakob-Schild, Grenchen, Switzerland, assignors to Eta A.G. Ebauches-Fabrik, Grenchen, Soleure, Switzerland
Filed May 9, 1968, Ser. No. 728,220
Claims priority, application Switzerland, May 11, 1967, 6,680/67
Int. Cl. G04b *19/24*
U.S. Cl. 58—58 **7 Claims**



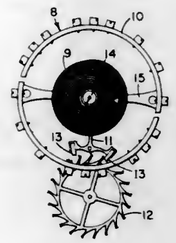
A calendar watch with correction device for the date ring comprising reciprocal movement of the stem which pivots a setting lever which pivots a swing lever which has a drive member biased in engagement with crown toothing on the radial face of said date ring for unidirectional rotation, said biased drive member sliding over crown toothing during return stroke of stem.

3,465,514
MAINSPRING SLIPPING RING FOR A SELF-WINDING TIMEPIECE
Jean Haueter, Geneva, Switzerland, assignor to Vimetal S.A., Geneva, Switzerland, a firm of Switzerland
Filed Jan. 2, 1968, Ser. No. 694,983
Claims priority, application Switzerland, Jan. 24, 1967, 1,118/67
Int. Cl. G04b *1/16*
U.S. Cl. 58—86 **2 Claims**



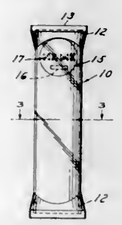
A mainspring for a self-winding timepiece of the type including a barrel comprising, a blade, the blade being extended at its outer extremity to provide an end portion of increased thickness, said end portion being integral with the blade and adapted to bear against the inner wall of the barrel in the manner of a slipping ring.

3,465,515
HIGH-FREQUENCY WATCH MOVEMENT
Francis Jaquet, Le Locle, Neuchatel, Switzerland, assignor to Girard-Perregaux et Cie. S.A., Neuchatel, Switzerland, a Swiss company limited by shares
Filed Oct. 31, 1966, Ser. No. 590,768
Claims priority, application Switzerland, Nov. 3, 1965, 15,170/65
Int. Cl. G04b *17/06*
U.S. Cl. 58—107 **8 Claims**



A watch movement having a balance assembly which oscillates in the range of 31,000 to 60,000 oscillations per hour and which has a moment of inertia of less than 9 mg. cm^2.

3,465,516
TIMING DEVICE
Walter G. Von Meyer, 1504 Port Jefferson Road, Sidney, Ohio 45365
Filed Mar. 25, 1968, Ser. No. 715,654
Int. Cl. G04f *1/06*
U.S. Cl. 58—144 **6 Claims**

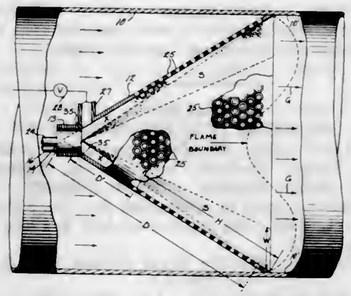


A timing device comprising a transparent tube having end caps for supporting the tube in either upright or inverted positions. The tube is filled with a liquid and a float member is provided in the tube. The float member has indicia means thereon and is proportioned and weight such that when the timing device is inverted, the indicia means rotates and is always readable.

3,465,517
ART OF HEATING AIR FOR GAS TURBINE USE
Montrose K. Drewry, 3019 S. Shore Drive, Milwaukee, Wis. 53207
Filed Dec. 26, 1967, Ser. No. 693,481
Int. Cl. F02k *3/00;* **F02c** *3/06, 3/24*
U.S. Cl. 60—39.06 **14 Claims**

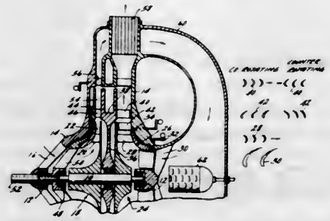
A method of heating air using a gas turbine combustor having an air tube for receiving a flow of compressed air, a conical casing having its downstream end sealed within the tube and having an apex at its other end with an opening of a size that accommodates a nozzle of a type to discharge a hollow conical spray pattern within the conical casing, the external angle of the spray pattern being greater than the internal angle of the cas-

ing and being so directed as to leave a conical clearance space between the conical casing and spray pattern substantially throughout the length of said conical casing, with said clearance space of progressively decreasing size outwardly, and said conical casing having uniformly and closely spaced holes beginning about one-third of the



way outwardly from the nozzle, the arrangement being such that spontaneous ignition continues under adverse circumstances and that uniform air-oil ratios occur throughout and the relatively slow burning hydrocarbons become hydrolyzed to highly combustible alcohols, aldehydes, carbon monoxide and hydrogen.

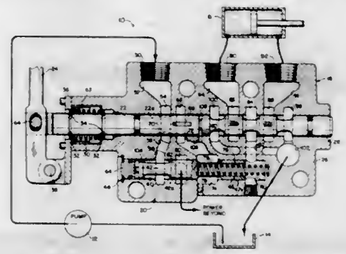
3,465,518
RADIAL OUTFLOW TURBOSHAFT ENGINE
John R. Erwin, Cincinnati, Ohio, assignor to General Electric Company, a corporation of New York
Filed Dec. 14, 1966, Ser. No. 601,669
Int. Cl. F02g *3/00;* **F02c** *7/08, 3/08*
U.S. Cl. 60—39.16 **3 Claims**



A turboshaft engine comprises a radial outflow compressor connected in series flow relationship with a radial outflow turbine. Combustor means are interposed between the compressor and turbine to provide means for generating a hot gas stream. A power turbine, comprising a disc having a circumferential cascade of turbine blades is disposed in the hot gas stream discharge from the radial outflow turbine. The disc is connected to a shaft to provide a power takeoff. Regenerator means are shown in which the hot gas stream, after it passes through the power turbine, preheats the discharge of the compressor before it enters the combustor means.

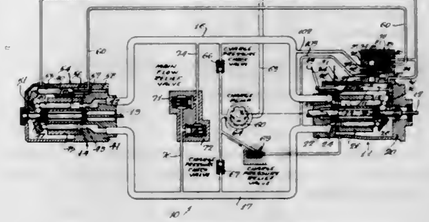
3,465,519
HYDRAULIC FLOW CONTROLLING APPARATUS
John C. McAlvay and Glenn R. Hubbard, Racine, Wis., assignors to Webster Electric Company, Inc., Racine, Wis., a corporation of Delaware
Filed Aug. 18, 1967, Ser. No. 661,657
Int. Cl. F15b *15/02, 11/22;* **F16k** *11/07*
U.S. Cl. 60—52 **19 Claims**

A double acting hydraulic cylinder is controlled by a four way spool valve, and the spool when moved from the idle position controls an adjustable restricted orifice through which fluid flows to the cylinder. A pressure operated priority flow divider valve is controlled by the pressure drop across the orifice to supply the cylinder with a metered, constant flow, the magnitude of which is determined by the manual setting of the spool valve. A metered excess flow is provided for supplying additional apparatus. Several of the valve constructions are



connected in cascade to control several fluid motors in priority relation and independently of one another. Excess flow from the system regulates the pump displacement in accordance with system demand, and the pump displacement is also reduced in the event system pressure exceeds a predetermined value.

3,465,520
HYDROSTATIC TRANSMISSION
Melvin M. Hann, Ottawa, Ill., assignor to Sundstrand Corporation, a corporation of Delaware
Filed Nov. 8, 1967, Ser. No. 681,533
Int. Cl. F16d *33/16*
U.S. Cl. 60—53 **9 Claims**

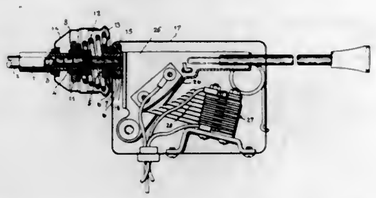


A hydrostatic transmission with a system pressure responsive valve for controlling motor displacement connectable to the normal high pressure one of the conduits interconnecting the pump and motor by a three-way valve which switches the conduit connections to the torque valve only upon a reversal in the displacement of the pump so that as the operator moves the handle toward neutral during braking or the hydraulic motor overruns, and the high pressure line becomes the low pressure line resulting in motoring the engine driven pump, braking is obtained with the motor in minimum displacement thereby reducing the braking effect and providing smooth braking action.

3,465,521
POWER TRANSMISSION CONTROLLING DEVICES
Ingmar K. L. Andrén, Lindesberg, Sweden, assignor to AB Linde International, Lindesberg, Sweden
Filed Nov. 14, 1967, Ser. No. 682,760
Claims priority, application Sweden, Nov. 29, 1966, 16,293/66
Int. Cl. F15b *7/08;* **B60t** *13/66*
U.S. Cl. 60—54.6 **2 Claims**

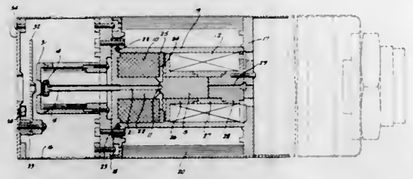
A device for controlling the transmission of power from a hydraulic system to a mechanical means, preferably be-

tween a hydraulic braking system and a coupling mechanism for variably regulating the supply of power to an electric braking system. The device comprises a hydraulically operable cylinder and piston assembly, the piston thereof being adapted to operate the mechanical means. A spring providing a progressively increasing resistance is



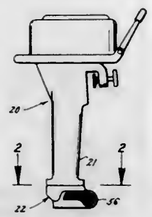
interposed between an abutment associated with the piston and a second abutment which is fixedly arranged in relation to the cylinder, whereby the spring is capable, in spite of a rectilinear or uniform pressure increase in the hydraulic system, of producing a progressive shifting of the piston operating the mechanical means.

3,465,522
ION ROCKET
John Robert Anderson and George A. Work, Malibu, Calif., assignors to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware
Filed Mar. 9, 1965, Ser. No. 438,307
Int. Cl. F02k *9/06;* **F08h** *1/00*
U.S. Cl. 60—202 **10 Claims**



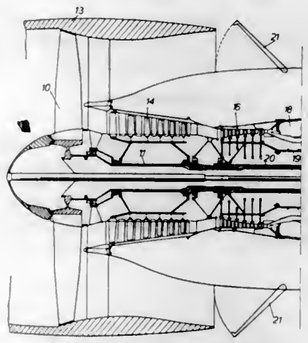
This invention relates to an ion engine, or rocket, and particularly to a contact ion engine using alkali metal vapor, such as cesium, as the propellant.

3,465,523
HYDRAULIC POWER UNIT
John J. Clark, Jr., Rte. 2, Box 313, Pacific, Mo. 63069
Filed Sept. 11, 1967, Ser. No. 666,799
Int. Cl. B63h *11/00;* **F04d** *13/12, 13/02*
U.S. Cl. 72—96 **14 Claims**



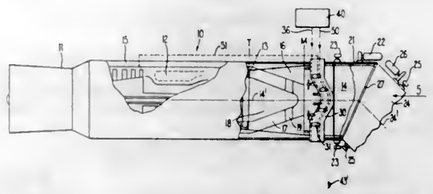
The housing of a hydraulic power unit has a liquid-sealing pumping chamber and a pressure-generating chamber; and the multi-blade impeller of that hydraulic power unit extends into and is disposed within both of those chambers. That liquid-sealing pumping chamber has a surface which inclines toward and communicates with that pressure-generating chamber; and the portions of the blades of that impeller which are disposed within that liquid-sealing pumping chamber will coact with that surface to apply directional forces, to the liquid immediately adjacent that surface, which are large enough to keep the liquid in that pressure-generating chamber from leaking into and through that liquid-sealing pumping chamber. The impeller has a separator of annular form extending upwardly from the upper portions of the blades of that impeller; and that separator defines an inner annular area and an outer annular area for those impeller blades.

3,465,524
FAN GAS TURBINE ENGINE
Geoffrey Light Wilde, Turnditch, and James Alexander Petrie, Derby, England, assignors to Rolls-Royce Limited, Derby, England, a British company
Continuation-in-part of application Ser. No. 533,649, Mar. 11, 1966. This application Jan. 3, 1968, Ser. No. 695,521
Claims priority, application Great Britain, Mar. 2, 1966, 9,056/66
Int. Cl. F02k *3/06, 1/12;* **F02c** *3/06*
U.S. Cl. 60—226 **6 Claims**



A gas turbine ducted fan engine is provided with a fan having a single rotating stage only which is driven by a turbine having multiple rotating stages in order to maximise efficiency. The upstream side of the fan is unobstructed so that the noise produced by the fan is reduced.

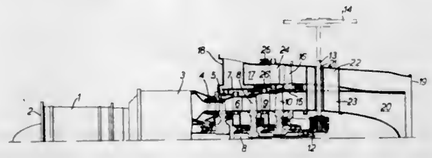
3,465,525
GAS TURBINE BYPASS ENGINES
Sidney Ian Cowley, Derby, Geoffrey Light Wilde, Turnditch, and Alfred John Honey, Derby, England, assignors to Rolls-Royce Limited, Derby, England, a British company
Filed Mar. 10, 1967, Ser. No. 622,121
Claims priority, application Great Britain, Mar. 25, 1966, 13,419/66
Int. Cl. F02k *3/10, 1/02, 3/02*
U.S. Cl. 60—261 **7 Claims**



A gas turbine bypass engine has mixing means in which partial mixing of bypass air with the turbine exhaust gases takes place together with diffusion of the

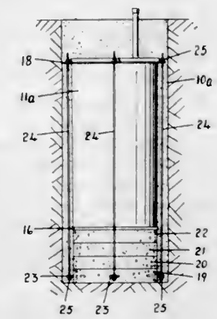
turbine exhaust gases. Reheat combustion equipment is disposed in a jet pipe downstream of the mixing means and adapted to burn reheat fuel in a region of the jet pipe in which the mixing of the turbine exhaust gases and bypass air is substantially incomplete.

3,465,526
GAS TURBINE POWER PLANTS
George Emerick, London, England, assignor, by mesne assignments, to Rolls-Royce Limited, Derby, England, a British company
Filed Nov. 30, 1967, Ser. No. 686,969
Claims priority, application Great Britain, Nov. 30, 1966, 53,715/66
Int. Cl. F02k *3/00;* **F02c** *7/02, 3/10*
U.S. Cl. 60—269 **7 Claims**



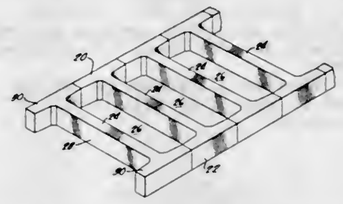
A gas turbine power plant comprising an air compressor arranged to deliver air to combustion apparatus the hot gases from which after passing through a first nozzle ring and acting on a first turbine rotor arranged to drive the compressor, then pass in succession through a second nozzle ring and act on a second turbine rotor constituting a power turbine rotor and then through a third nozzle ring and act on a third turbine rotor also constituting a power turbine rotor, the second and third turbine rotors constitute independent sources of mechanical power and the second and third nozzle rings are adjustable and have associated with them adjusting mechanism arranged to control them simultaneously in a predetermined relationship and thereby vary the relationship between the mechanical power available respectively from the said second and third turbine rotors.

3,465,527
SYSTEM FOR THE UNDERGROUND STORAGE OF LIQUIDS
Richard H. Rohmer, 74 Sandringham Drive, Toronto 12, Ontario, Canada
Filed Mar. 11, 1968, Ser. No. 712,019
Int. Cl. B65g *5/00;* **E21f** *17/16*
U.S. Cl. 61—.5 **4 Claims**



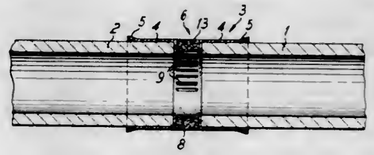
A system for the underground storage of liquids and the easy transfer of the storage means from one location to another in which the storage tank is placed vertically in a shaft.

3,465,528
FLOATING WAVE SUPPRESSOR
Ernest M. Usab, Costa Mesa, Calif. (1229 E. Wakeham Ave., Santa Ana, Calif. 92705)
Filed Apr. 25, 1967, Ser. No. 633,633
Int. Cl. E02b *3/04*
U.S. Cl. 61—5 **9 Claims**



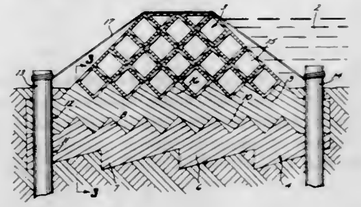
A massive pair of spaced longitudinal members extending for a considerable distance are rigidly connected by a plurality of lateral members. Formed from modules joined by tension members, the longitudinal and lateral members have a concrete exterior shell surrounding a lightweight core so that the structure floats on water to suppress waves.

3,465,529
DOUBLE-ENDED SOCKET COUPLING FOR STONEWARE PIPES
Bernd-Heinz Helle, Paderborn, Germany, assignor to Heinz-Joachim Baar, Oldenburg, Germany
Filed May 31, 1967, Ser. No. 642,565
Claims priority, application Germany, June 2, 1966, H 59,573; July 28, 1966, H 60,083; Aug. 27, 1966, H 60,360
Int. Cl. E02b *11/00;* **B01d** *35/02*
U.S. Cl. 61—11 **9 Claims**



A double-ended socket coupling which connects stoneware pipes to one another is disclosed. The coupling is formed of a pair of extremity sections having a flexible constricted portion therebetween. The intermediate flexible portion is perforated and has a filter located over the perforated portion which serves to filter fluid flowing into the pipes.

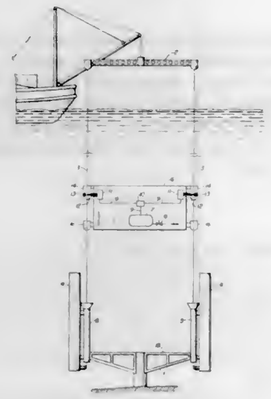
3,465,530
DAM CONSTRUCTION
John C. Renfro, 48 Doheny Park Village, 34202 Del Obispo, Dana Point, Calif. 92629
Filed July 6, 1967, Ser. No. 651,526
Int. Cl. E02b *7/02, 3/10*
U.S. Cl. 61—30 **7 Claims**



A dam construction comprises spaced piers, the piers having recess in their surfaces for the interfitting recep-

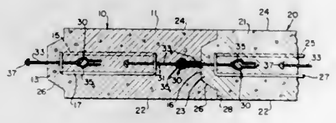
tion of beams extending between and supported by the piers, piles extending through the piers into the earth foundation and cables secured to the piers and to hold down the beams.

3,465,531
SUBSEA BRAKING SYSTEM
Bill S. Burrus, Tulsa, Okla., assignor to Combustion Engineering, Inc., New York, N.Y., a corporation of Delaware
Filed May 2, 1968, Ser. No. 726,120
Int. Cl. E02d *25/00;* **E21b** *33/035, 43/01*
U.S. Cl. 61—46 **4 Claims**



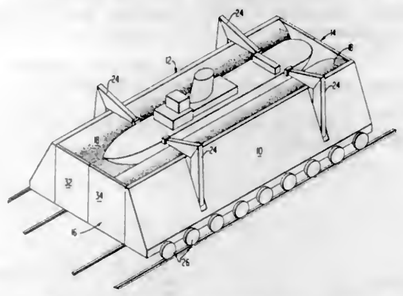
A package, or unitary assembly, of equipment required at the wellhead of a subsea oil well is guided between the subsea location and the surface by sliding contact with a line. A brake shoe on the package engages the guideline to regulate the transfer rate. The brake shoe is actuated by a mechanism responsive to a differential pressure generated by the changes in ambient pressure as the package changes vertical position between the subsea location and the surface.

3,465,532
CONCRETE PILE AND JOINT
Robertson L. Belden, P.O. Box 607, Metairie, La. 70004
Filed Dec. 29, 1967, Ser. No. 694,576
Int. Cl. E02d *5/12, 5/14;* **E04b** *1/68*
U.S. Cl. 61—59 **10 Claims**



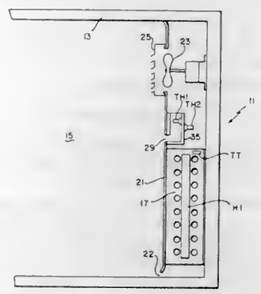
The structure relates to a prestressed concrete pile having a joint sealing means between adjacent piles comprising a plastic member interlocked between piles and being formed of material having stress and corrosion characteristics so as to resist movement between adjacent piles yet maintain a tight seal if some limited movement occurs and having configuration and composition characteristics which facilitate easy installation of the piling yet virtually unaffected by and resistant to detrioration by the surrounding conditions in which used.

3,465,533
CARGO TRANSPORT APPARATUS USING AIR CUSHION SUPPORT
Peter R. Payne, Silver Spring, Md., assignor, by mesne assignments, to Wyle Laboratories, El Segundo, Calif., a corporation of California
Filed Mar. 8, 1968, Ser. No. 711,755
Int. Cl. B63c *3/00, 1/00;* **B61d** *45/00*
U.S. Cl. 61—67 **7 Claims**



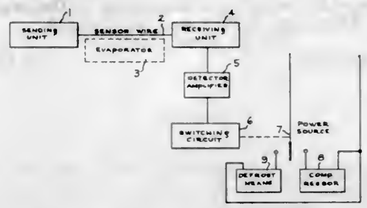
A load lifting and carrying apparatus has a frame and a flexible, inflatable diaphragm suspended between frame side members. An air cushion is maintained below the diaphragm to lift and support a load carried on the diaphragm.

3,465,534
DIFFERENTIAL FLOW SENSING APPARATUS
Walter T. Sutton, Jr., and James D. Broyles, Lexington, and Manfred U. Schweiger, Versailles, Ky., assignors to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware
Filed Oct. 31, 1967, Ser. No. 679,334
Int. Cl. F25d *21/02, 21/08*
U.S. Cl. 62—151 **12 Claims**



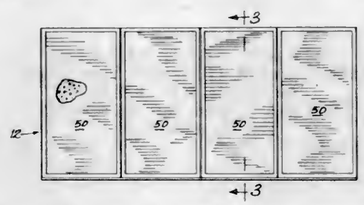
Apparatus is disclosed for defrosting the evaporator of a refrigerator when the flow of air through the evaporator becomes relatively obstructed by frost. The flow of air through the evaporator is measured with respect to the air flow in a reference path which bypasses the evaporator. The flow rates are sensed by a pair of self-heating thermistors, one thermistor being located in each of the paths. The thermistors are constructed of a semiconductor material having a transition temperature above which the resistance of the material rises abruptly. Thus, when current is applied to the thermistors to cause them to self-heat, the abruptly rising resistance characteristic causes the thermistors to be self-regulating at the transition temperature. Accordingly, the power dissipated from and consumed by each thermistor, above a certain threshold in air velocity, varies as a substantially linear function of the air velocity in the respective path and a difference between the respective power consumptions of the two thermistors is then a measure of the difference between the air velocities in the two paths. When this velocity difference exceeds a preselected level a defrosting cycle is initiated.

3,465,535
FROST DETECTOR FOR REFRIGERANT EVAPORATORS
Gerald F. Dodge III, Louisville, Ky., assignor to General Electric Company, a corporation of New York
Filed May 1, 1968, Ser. No. 725,863
Int. Cl. F25d *21/02, 21/06*
U.S. Cl. 62—151 **2 Claims**



A frost detector for detecting the accumulation of frost on a refrigerant evaporator includes a vibration transmitting wire spaced from the surface of the evaporator and means for transmitting vibrations through the wire. A change in the transmitted vibration caused by contact of frost with the wire is used to signal the need for defrosting for the evaporator.

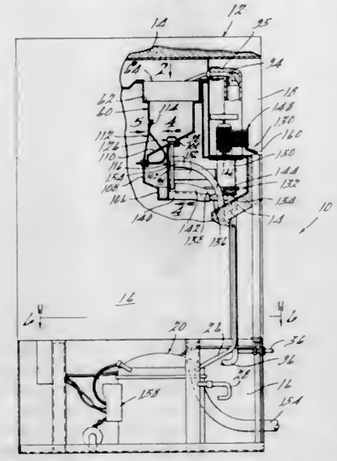
3,465,536
REMOVABLE COVER FOR ACCESS OPENING OF REFRIGERATED CABINET
Robert E. Vogel, Deerfield, Bernard A. Hermanson, Waukegan, and Earl G. Kuykendall, North Chicago, Ill., assignors to Dual Jet Refrigeration Co., Chicago, Ill., a corporation of Illinois
Filed Nov. 18, 1968, Ser. No. 776,449
Int. Cl. G05d *23/32;* **A47f** *3/02*
U.S. Cl. 62—158 **7 Claims**



A removable cover for a refrigerated enclosure of the type defining an open side and having circulating means for moving cold air streams across the open side. The cover is dimensioned to close off the open side and is formed of insulating material to retain cold within the enclosure. The cover is formed in a plurality of sections and includes flexible magnetic sealing means around the periphery of the access opening to provide close engagement between the sections and the walls of the construction while also facilitating insertion and removal of the sections.

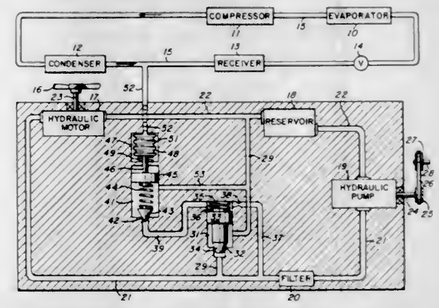
3,465,537
ICEMAKER USING CONDENSER COOLING WATER AS THAWING MEDIUM
Marcus L. Nelson, Albert Lea, Minn., assignor to King-Seeley Thermos Co., Ann Arbor, Mich., a corporation of Michigan
Filed Sept. 12, 1967, Ser. No. 667,117
Int. Cl. F25d *17/02;* **F25c** *5/10, 1/00*
U.S. Cl. 62—181 **14 Claims**

An icemaking apparatus comprising an inverted ice forming mold; a refrigeration system including an evaporator and a condenser comprising a tank containing thawing water in heat transfer relation with the hot gaseous refrigerant line of the refrigeration system; a thawing water retaining compartment adjacent the mold and adapted to contain water in heat transfer relation with respect to the evaporator; a water reservoir disposed below the form; spraying means for directing water wtihin the reservoir toward the form; a water inlet and a water outlet and fluid circuit means communicating the inlet with the tank and the outlet with the reservoir; a pump for pumping water from the reservoir to the fluid spraying means and a motor for driving the pump; conduit means disposed between the motor and the reservoir for communicating water from around the pump shaft back to the reservoir; an auxiliary



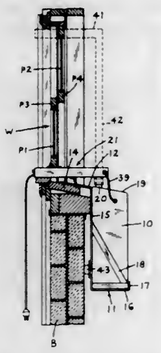
water circulating system communicable with the water inlet and the condenser for supplying additional cooling effect, and means responsive to the refrigerant pressure within the refrigeration system for selectively controlling the flow of water through the auxiliary circuit, the above system being adapted to use a quantity of water as a cooling medium for the condenser during the freezing cycle, wherein such water is heated a predetermined amount, thereafter using that heated water to release the ice from the ice form, and finally use the same water to make up the ice during the next successive freezing cycle.

3,465,538
COOLING SYSTEM FAN HYDRAULIC SPEED CONTROL
John E. Wunder, Dayton, Ohio, assignor to United Aircraft Products, Inc., Dayton, Ohio, a corporation of Ohio
Filed Mar. 27, 1968, Ser. No. 716,391
Int. Cl. F25b *39/04, 27/00*
U.S. Cl. 62—184 **8 Claims**



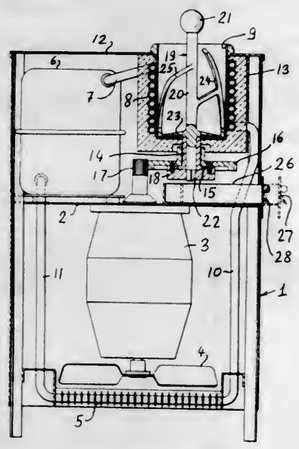
A control system for a hydraulic motor rotating a condenser fan in a vapor cycle cooling system wherein hydraulic fluid is supplied to the motor in amounts varying with variations in condenser head pressure.

3,465,539
WINDOW AIR CONDITIONER UNITS
George E. Kidder Smith, 163 E. 81st St., New York, N.Y. 10028
Filed Feb. 5, 1968, Ser. No. 702,918
Int. Cl. F25d *23/10, 23/12, 17/08*
U.S. Cl. 62—262 6 Claims



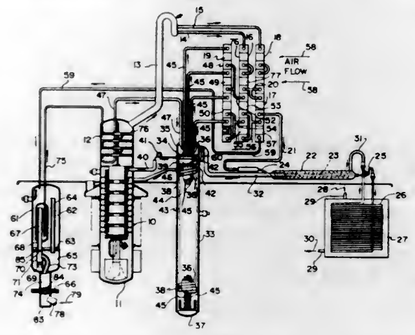
An air conditioning system having an air conditioning unit including a heat exchanger to which gaseous refrigerant is supplied for condensation therein, an evaporating coil in which the condensed refrigerant is expanded for cooling the coil and a blower for directing air through the coil to cool the air, the unit being disposed outside of a building adjacent to a window or other opening therein, and a panel adapted to be disposed in the window or opening and having an inlet therein connected by means of a conduit to the air conditioning unit to supply the cooled air to the interior of the building.

3,465,540
AUTOMATIC ICE CREAM MACHINE
Poerio Carpigiani, Bologna, Italy, assignor to APAW S.A., Fribourg, Switzerland, a joint-stock corporation of Switzerland
Filed Jan. 2, 1968, Ser. No. 695,154
Claims priority, application Italy, Jan. 2, 1967, 6,703/67
Int. Cl. F25c *7/06*; F25d *19/00*
U.S. Cl. 62—343 7 Claims



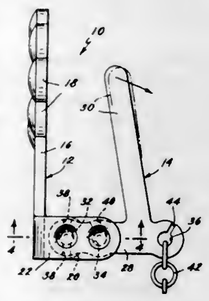
A household ice cream machine having mounted the freezing apparatus and the freezing can-operating means in a cabinet, by which the freezing can has mounted therein a rotatable agitator or dasher driven from outside the can through a hole of the can bottom. This hole, when the dasher is removed, serves as wash water or liquor outlet hole and opens in the channel or spout through which the wash water is discharged.

3,465,541
ABSORPTION REFRIGERATION
John Roeder, Jr., Benton Harbor, Mich., assignor to Whirlpool Corporation, a corporation of Delaware
Filed Apr. 5, 1968, Ser. No. 719,160
Int. Cl. F25b *15/00*
U.S. Cl. 62—476 2 Claims



An absorption refrigeration system in which a pulsating oil flow is used to pump absorption liquid rich in dissolved refrigerant into a generator with the system serving to cool a liquid and in which there is provided a heat exchanger for utilizing flow of the cooled liquid such as return flow from the heat exchanger of an air conditioning system for cooling the oil of the pump so as to maintain high efficiency.

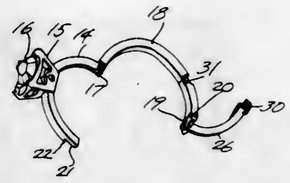
3,465,542
SELF-ADJUSTING EAR CLIP
Ralph Pintarelli, 11 Pleasant View Circle, Greenville, R.I. 02828
Filed Dec. 5, 1966, Ser. No. 599,220
Int. Cl. A44c *7/00*
U.S. Cl. 63—14 2 Claims



An ear clip of the pivotal clamp-arm type wherein no springs are necessary for maintaining the arm in clamping position and wherein the clamping arm is pivotally assembled to the ear clip body without the necessity of using pivot pins or additional parts of a similar nature.

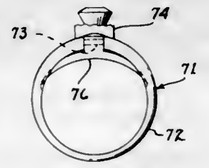
3,465,543
OPENABLE FINGER RING WITH PIVOTED LOCKING ELEMENT
John T. Baker, 47 Main St., Middlebury, Vt. 05753
Filed Mar. 8, 1966, Ser. No. 532,668
Int. Cl. A44c *9/02*; A44b *13/00*
U.S. Cl. 63—15.5 6 Claims

A finger ring having a hinged section. An arcuate latch arm is pivoted to the end of the hinged section and the pivot has an elongated locking arm receivable in a slot in the end of the remaining part of the ring. The locking arm is rotated to locking position transverse to the slot



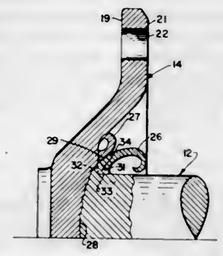
when the latch arm is conformably received on a reduced part of the hinged section. The latch arm has a U-shaped clip element lockingly-engageable with the hinged section.

3,465,544
RING HAVING A HINGEDLY-SECURED, CRESCENT-SHAPED SIZING ELEMENT
Dalton R. Tucker, Scottsdale, Ariz., assignor to Cecil E. Cope, Phoenix, Ariz.
Filed Apr. 1, 1966, Ser. No. 539,346
Int. Cl. A44c *9/02*
U.S. Cl. 63—15.6 1 Claim



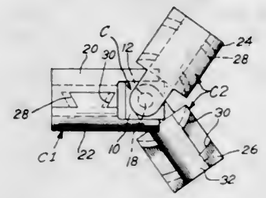
A ring formed of a circlet interrupted by a portion of a smaller cross-sectional diameter and being straight to form a hinge shaft. A crescent-shaped member is hinged to the hinge shaft and may be pivoted into the ring to reduce the opening of the ring. The crescent-shaped member may be "snap-locked" into the plane of the ring for example by providing a recess at the interior surface of the ring into which a corresponding shaped portion of the crescent member may forcibly snap.

3,465,545
FRICTION WELDED DRIVE AXLE SHAFT HAVING AN ANNULAR SECTION OF FLASH METAL
Alex F. Stamm, Rochester, Mich., assignor to Rockwell-Standard Company, Pittsburgh, Pa., a corporation of Delaware
Filed Oct. 17, 1966, Ser. No. 587,070
Int. Cl. F16c *3/02*; B23k *27/00*
U.S. Cl. 64—1 3 Claims



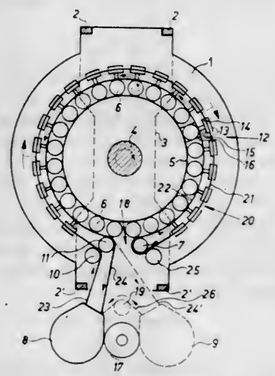
A friction welded drive axle shaft wherein the parent metal is entirely surrounded by an annular section of flash metal.

3,465,546
UNIVERSAL JOINTS
Rudolf A. Spyra, 5344 N. Paulina, Chicago, Ill. 60640
Filed May 20, 1968, Ser. No. 730,297
Int. Cl. F16d *3/40*
U.S. Cl. 64—17 9 Claims



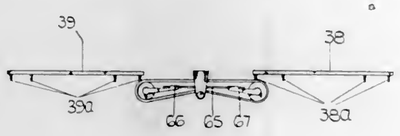
Universal joints which include two-part connector members straddling a cross member, the two parts being connected together by mating dove-tail joints which are generated on a radius from a pivot axis of the cross member. Coacting studs and holes of the cross member and the connector members may be associated with each other while the two parts of the connector member are spread apart, and then the two parts may be assembled by rotating them to an aligned connected position wherein the dove-tails mate with each other, after which the insertion of a shaft into a bore of the two parts of the connector member will retain them against disassembly. The dove-tail feature may be applied to simple universal joints, or those of dual character wherein two connector members are pivoted to two cross members and a link connects the two cross members together.

3,465,547
PATTERNING DEVICES FOR CIRCULAR KNITTING MACHINES
Pierre Joseph, Chambrelien, Neuchatel, Switzerland, assignor to Edouard Dubied & Cie, Societe Anonyme, Neuchatel, Switzerland
Filed Aug. 22, 1967, Ser. No. 662,492
Claims priority, application Switzerland, Aug. 22, 1966, 12,062/66
Int. Cl. D04b *15/76*
U.S. Cl. 66—50 7 Claims



A patterning device for a circular knitting machine has a plurality of selector wheels arranged along the circumference of the machine, and an endless travelling patterning band. Guiding means, such as rollers, for the patterning band are arranged for guiding the patterning band in such manner past the selector wheels that the band does not surround the machine axle in a closed loop.

3,465,548
STRAIGHT BAR KNITTING MACHINES
Raymond Blood, Loughborough, Leicestershire, England, assignor to William Cotton Limited
Filed Dec. 5, 1967, Ser. No. 688,079
Claims priority, application Great Britain, Dec. 8, 1966, 54,905/66
Int. Cl. D04b *9/40*
U.S. Cl. 66—148 **7 Claims**



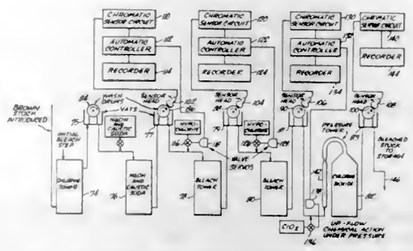
A straight bar knitting machine rib transfer point bar conveyor wherein for driving a train of interlinked carriages for the point bars on a stationary rail between stations at front and rear of the machine, with intermediate dummy carriages for a central non-knitting section of the machine and end dummy carriages, the carriages have spaced projecting pegs for progressive releasable engagement with the middle one of a triple roller chain device whereof the outer chains are motor driven through a brake device.

3,465,549
LAUNDRY MACHINE
Willard L. Wendt, 12000 SW. 69th Court, Miami, Fla. 33156
Filed Feb. 19, 1969, Ser. No. 800,410
Int. Cl. D06f *31/00*
U.S. Cl. 68—10 **7 Claims**

An apparatus and process for laundering articles in discrete batches which includes a frame and a pair of lengths of links in parallel relation and defining a circuitous path along the frame, and perforate containers for holding the batches with means to connect the containers to the lengths for travel between a loading station and an unloading station and through soak, wash, rinse, and extract and drying stations. The stations are arranged in stacked relation so that a minimum amount of space is required for the installation of the machine, such as in a hospital or commercial laundry.

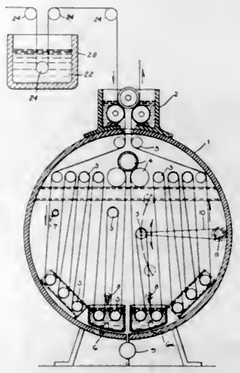
3,465,550
CHROMATIC CONTROL OF BLEACHING PROCESS
John R. Strom, Seattle, and Harvey W. Weyrick, Vancouver, Wash., assignors to Systematix, Seattle Wash., a partnership of Washington composed of John R. Strom and Harvey W. Weyrick
Filed Dec. 3, 1965, Ser. No. 511,479
Int. Cl. D21c *7/12, 3/26;* **H01j** *39/12*
U.C. Cl. 68—13 **9 Claims**

The disclosed system for automatically controlling injection of an additive in a chemical process employs an electronically derived signal representing the color of material being processed in order to vary additive injection. The color signal is advantageously utilized to vary additive injection downstream of the color measurement lo-



cation, and each alteration in the injection rate in response to color changes is automatically based on a reference level representing the immediately preceding setting of the additive injection rate.

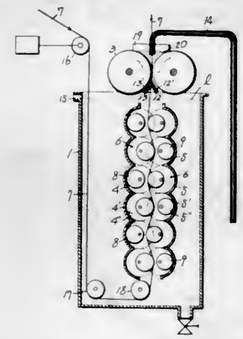
3,465,551
DEVICE FOR CONTINUOUS BLEACHING
Gunther Schiffer and Hans-Georg Ruhm, Krefeld, Germany, assignors to Joh. Kleinewefers Sons, Krefeld, Germany, a corporation of Germany
Continuation of application Ser. No. 262,301, Feb. 28, 1963. This application May 4, 1967, Ser. No. 636,127
Int. Cl. D06f *29/00, 9/00*
U.S. Cl. 68—22 **3 Claims**



The present invention relates to a continuous method of bleaching textiles wherein the textile is subjected to a first impregnating bath of bleaching liquor, transferred to a pressure vessel wherein a second impregnation is effected within the pressure vessel, followed by a squeezing step wherein the textile is squeezed and finally is re-impregnated with additional bleaching liquor. The pressure vessel is maintained at a pressure in excess of 1 atmosphere and at a temperature in excess of 100 degrees C. The invention also relates to an apparatus suitable for accomplishing the above method.

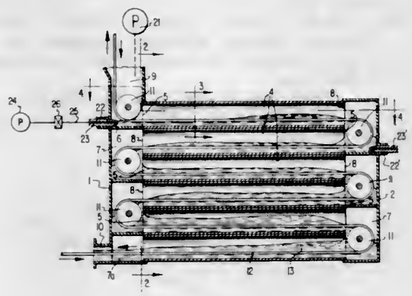
3,465,552
CLOTH RINSING APPARATUS
Narukazu Okazaki Wakayama-shi, Japan, assignor to Wakayama Tetsuko Kabushiki Kaisha, Wakayama-shi, Japan
Filed Mar. 11, 1968, Ser. No. 712,288
Int. Cl. D06f *29/00, 35/00*
U.S. Cl. 68—22 **2 Claims**

Apparatus for continuously rinsing cloth comprising a rinsing chamber having cloth guiding means and sets of eccentrically mounted rollers and cooperating walls on either side of the cloth path by which the cloth is beaten



and forcibly rinsed. Cooperating sprays, squeeze rolls and final bath means are also provided.

3,465,553
APPARATUS FOR THE WET TREATMENT OF TEXTILE MATERIALS IN ROPE FORM
Hermann Georg Muller and Werner Krucker, Herisau, Switzerland, assignors to Aktiengesellschaft Cilander, Herisau, Switzerland, a joint-stock company of Switzerland
Continuation-in-part of application Ser. No. 330,943, Dec. 16, 1963. This application Feb. 13, 1968, Ser. No. 705,223
Claims priority, application Switzerland, Dec. 20, 1962, 14,976/62
Int. Cl. D06f *13/00, 39/08*
U.S. Cl. 68—175 **10 Claims**



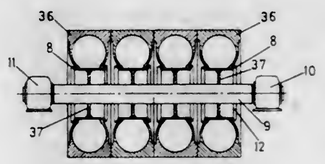
An improved apparatus for the wet treatment of textile materials in rope form. The apparatus comprises a pipe system of at least two superimposed pipe members, the ends of which are open over their entire cross-section, and through which the textile material is drawn countercurrent to a treatment liquid. Compartments are provided communicating each of the pipe members with the next succeeding lower pipe member. Means are disposed in each compartment for conducting a textile material from each pipe member into the next succeeding upper pipe member. Means are provided for feeding treatment liquid into the upper region of the pipe system and for withdrawing same from the lowermost point in the pipe system. The textile material in rope form is fed in through the lowermost end of the pipe system and travels in a zigzag manner upward through successive pipes and out at the upper portion of the pipe system. Treatment liquid feeds in at one or more points in the upper portion of the pipe system and out at the lowermost end of the said system. The amount and velocity of the treatment liquid are regulated in a manner that the pipe cross-section is only partially filled with treatment liquid over substantially the entire length of the pipe system.

3,465,554
CLOTH RETAINING FLANGE FOR DYE BEAM
Richard E. Moyer, 2815 Baird Road, Fairport, N.Y. 14480
Filed Mar. 25, 1968, Ser. No. 715,904
Int. Cl. D06f *37/02*
U.S. Cl. 68—198 **5 Claims**



The flanges disclosed for retaining a roll of cloth on a dye beam during dyeing have channeled hubs in each of which a rubber tube is mounted. The tubes engage the periphery of the beam or shaft, and are filled with compressed air to clamp the flange in abutment with the roll of cloth at one end thereof and against movement on the beam. To prevent wear of the tubes, U-shaped thin metal protectors may be interposed between the tubes and the confronting peripheral surface of the beam.

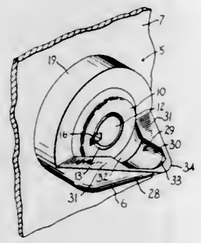
3,465,555
ROLLER PRESSES FOR THE REMOVAL OF WATER FROM CLEAN WET WASHING
Hans Fritz Arendt, 712 Bietigheim, Wurttemberg, Bleichinsel, Germany
Filed Mar. 30, 1966, Ser. No. 538,757
Claims priority, application Germany, Apr. 7, 1965, A 48,863; Nov. 17, 1965, A 50,807; Mar. 16, 1966, A 51,857
Int. Cl. D06f *45/22;* **F26b** *13/30*
U.S. Cl. 68—244 **12 Claims**



A roller press for the removal of water from clean wet washing in which at least one roller, against which the washing is pressed, is rigid and pervious to water. Thus, the excess amount of water which gathers at the point of pressure application in such a roller press is permitted to enter the pervious roller whence it is drained off. In a preferred embodiment the roller press contains two rollers, the top one of which is elastic and the bottom one of which is rigid and perforated. A vacuum may be applied at the point where the washing is exposed to the pressure in order to more efficiently perform the operation. In another preferred embodiment the elastic roller is composed of several juxtaposed compressed air containers in which the compressed air compartments do not communicate with each other. The several juxtaposed compressed air containers have straight cylindrical surfaces along their circumferences and are made such

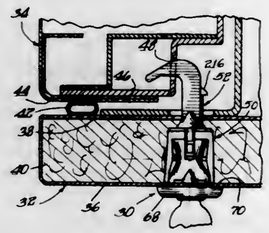
that a smooth cylindrical surface results. Adjustable and controllable conveying means is provided for feeding loads of washing to the nip formed by the two rollers.

3,465,556
AXIAL TUMBLER CYLINDER LOCK WITH PICK GUARD
James McIlvenny, Chicago, Ill., assignor of one-third to Robert Gruber and Bruce Simmons, both of Chicago, Ill.
Filed Oct. 12, 1967, Ser. No. 674,910
Int. Cl. E05b *17/14*
U.S. Cl. 70—423 **3 Claims**



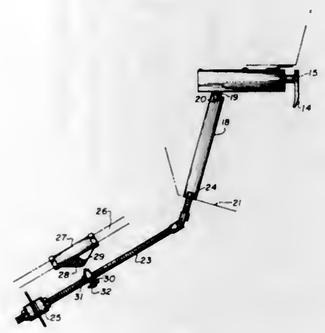
A pick guard on the body of an axial tumbler tubular key cylinder lock, at its front, projects forwardly therefrom at one side of the cylinder axis and has a cavity opening to the other side of said axis to enable a proper short tubular key to be moved sidewise into the cavity to a key inserting position directly ahead of the key slot in the mechanism. The front portion of the guard provides a barrier that precludes the longer tubular shank of a picking tool from the axial alignment with the key slot necessary for insertion of the tool into the slot.

3,465,557
FREEZER LOCK ASSEMBLY
Francis E. Ryder, Des Plaines, Ill., assignor to Illinois Tool Works Inc., Chicago, Ill., a corporation of Delaware
Filed Nov. 15, 1967, Ser. No. 683,171
Int. Cl. E05b *65/06;* **E05c** *19/12*
U.S. Cl. 70—139 **16 Claims**



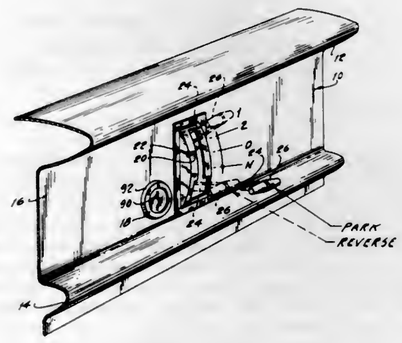
There is disclosed a lock especially suitable for freezers and constructed primarily from plastic or other materials which will minimize any possibility of moisture condensing and freezing within the lock and/or condensing on the outer end of the lock and dripping down the outer surface of the door. The lock assembly has an outer plastic body including resilient shoulders adapted to be snapped through an aperture in the panel door whereby the lock may be assembled entirely from the outside or front of the door. A combined tumbler retaining member and door latch or hook is constructed for partial preassembly with the outer lock body so that the parts may be handled and assembled with a freezer door as a unit.

3,465,558
LOCK FOR A GEAR SHIFT
George W. Boyle, 49 Garden St., Ridgefield Park, N.J. 07660
Filed Mar. 12, 1968, Ser. No. 712,468
Int. Cl. G05g *5/00;* **E05b** *65/12, 63/00*
U.S. Cl. 70—181 **1 Claim**



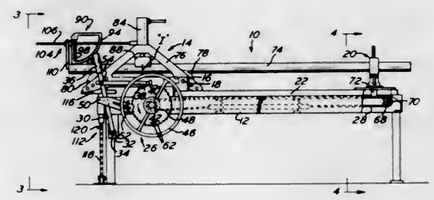
A lock for a gear shift in which the gear shift rod assembly has an orifice positioned to receive a locking pin when the gear shift rod has adjusted the gears to neutral position; a locking lever is movable to shift a pin into engagement with the orifice in the gear shift rod thereby immobilizing the rod against further movement and maintaining the gears in neutral position; a keyed lock in the locking lever secures the locking lever against movement.

3,465,559
REMOTE TRANSMISSION CONTROL AND PARKING BRAKE APPARATUS FOR AUTOMOTIVE VEHICLES
Alex Rhodes, Detroit, Mich., and John E. Edwards, Windsor, Ontario, Canada, assignors to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed Aug. 9, 1967, Ser. No. 659,465
Int. Cl. B60r *25/06;* **E05b** *65/12;* **G05g** *9/02*
U.S. Cl. 70—248 **7 Claims**



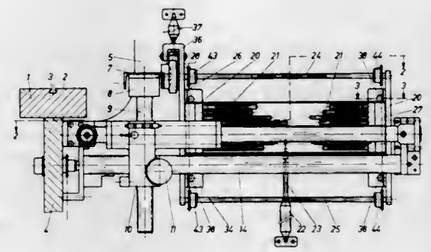
This specification describes an automotive transmission control linkage mechanism having a manually operated control lever for selecting various drive ranges in a multiple ratio automatic driveline and for applying and releasing a transmission parking brake. Each of these functions is accomplished with a separate motion pattern for the lever.

3,465,560
TUBE BENDING APPARATUS
Orville N. Gardner, 1406 Stewart Ave., Levittown, Pa. 19057
Filed Mar. 6, 1968, Ser. No. 710,899
Int. Cl. B21c *51/00;* **B21d** *11/04, 9/05*
U.S. Cl. 72—32 **12 Claims**



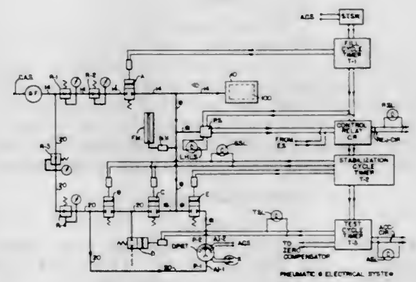
Tube bending apparatus wherein a bender and a tube supporting means are disposed on a frame, and manually operable mechanical actuator means are provided for advancing the tube supporting means and tube therein incrementally with respect to the frame, thereby permitting application of a bending force to the tube by the bender at predetermined intervals along the tube. In one form of the invention, the actuator is a lever having an adjustable throw, and a ratchet wheel coupled to the lever, the tube supporting means being coupled to the ratchet wheel by a sprocket and endless chain.

3,465,561
PLATE-WORKING MACHINE
Eduard Hänni, 10 Rosengartenstrasse, 4800 Zofingen, Switzerland
Filed Mar. 3, 1967, Ser. No. 620,405
Claims priority, application Austria, Aug. 19, 1966, A 7,913/66
Int. Cl. B21b *31/34;* **B21d** *37/02, 43/16*
U.S. Cl. 72—36 **11 Claims**



A plate working machine includes a table which is disposed between spaced vertical side walls and which includes a working space and a cross-bar which is horizontally adjustable at the height of the table surface to permit control of the position of the workpiece in relation to the working space. The crossbar carries a lateral stroke limiting cam at each end. A vertically adjustable stop means is arranged for adjustment in respect to the horizontal plane of the stroke limiting cam and it extends parallel to the table surface. The stop means are located so that the horizontal distance of each stop from the working space is selected so that a stop always comes into the path of travel of the stroke limiting cam which is associated therewith.

3,465,562
ELECTRO-PNEUMATIC POROSITY TEST METHOD AND MEANS
Robert W. Donohoe, 6561 Clarkston Road, Independence Township, Oakland County, Mich. 48016
Filed Oct. 31, 1967, Ser. No. 679,474
Int. Cl. G01m *3/04*
U.S. Cl. 73—40 **6 Claims**

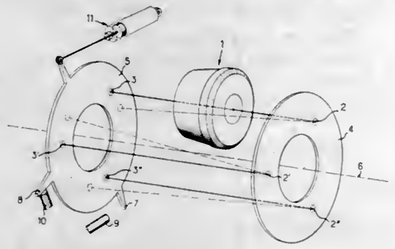


The specification discloses an improved electro-pneumatic porosity test method and means for dry leak testing of cavitied parts at extremely high production rates employing a source of compressed air, a timer controlled Fill Cycle including means applying compressed air under a pressure somewhat greater than a selected test pressure to a test part and to a pneumatic system including a differential pressure gage transducer, a timer controlled Stabilization Cycle including means stabilizing said compressed air in said pneumatic system at a selected test pressure and starting a timer controlled Test Cycle means wherein loss of pressure in said test part actuates the differential pressure gage transduced sensing an unbalance in the pneumatic system responsive to any leakage of part being tested whereby said unbalance in said differential pressure gage transducer indicates mechanically the extent of the unbalance and creates an electrical impulse responsive and proportionate to said unbalance in said pneumatic system, means amplifying said electrical impulse to indicate by a visual signal or otherwise the rejection of a part being leak tested having a leakage greater than a selected leak rate tolerance, zero drift compensating means connected between the said differential pressure gage transduced and said amplifying means operable prior to the initiation of each leak test cycle establishing an electrical zero or null condition in said amplifying means, and a calibrating means including a manually operated valve controlled flow meter in the pneumatic system and a variable attenuation control employed in conjunction with the amplifying means.

3,465,563
TUBE ROLLING MILL FOR PRODUCING THIN WALLED TUBES
Jacques Joseph Verdickt, Malo-les-Bains, France, assignor to Societe Anonyme dite: Vallourec, Paris, France
Filed July 21, 1966, Ser. No. 566,803
Claims priority, application France, July 23, 1965, 25,740
Int. Cl. B21b *19/06*
U.S. Cl. 72—96 **8 Claims**

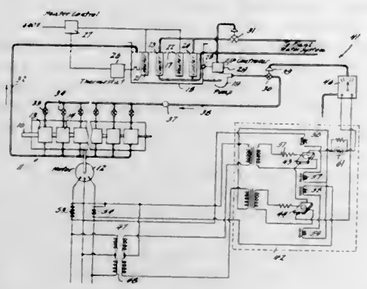
Tube-rolling mill comprising a central mandrel, two axially spaced housings encircling said mandrel, a plurality of rolls positioned between the housings with one end pivotally mounted in each housing, and means for turning one housing about the mandrel so as to alter the angle

between the axes of the rolls and that of the mandrel and produce a greater thickness of tube wall as the trailing end of the tube approaches the mandrel. A tube wall



having a thickness less than $\frac{1}{11}$ of the outer diameter of the tube throughout most of its length is produced.

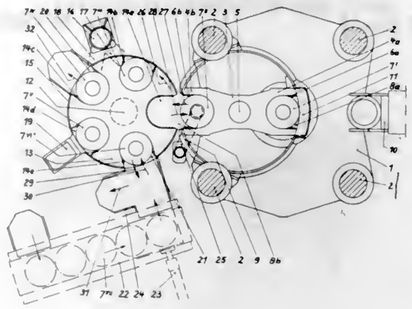
3,465,564
METHOD AND CONTROL SYSTEM FOR MEASURING AND REGULATING THE ROLLING TEMPERATURE OF A ROLLING MILL
Joseph I. Cole, Staten Island, N.Y., and William C. Martin, Naperville, Ill., assignors to Nassau Smelting and Refining Company, Inc., Tottenville, Staten Island, N.Y., a corporation of New York
Filed May 4, 1967, Ser. No. 636,196
Int. Cl. B21b *37/08, 27/06*
U.S. Cl. 72—201 **13 Claims**



The temperature of a power driven rolling mill and of a material being worked by the mill are controlled through the steps of monitoring the power consumed in driving the mill to work the material at a constant value of mass per unit time and variably controlling the temperature of the mill and the material so as to eliminate any changes in the monitored power.

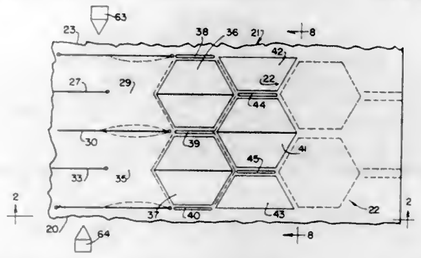
3,465,565
DEVICES FOR PREPARING DIES AND CONVEYING THEM TO THE DIE CARRIER IN EXTRUSION PRESSES
Horst Hans Groos, Metzkausen, Germany, assignor to Schloemann Aktiengesellschaft, Dusseldorf, Germany, a German company
Filed Aug. 8, 1966, Ser. No. 571,104
Claims priority, application Germany, Aug. 17, 1965, Sch 37,564
Int. Cl. B21c *23/00*
U.S. Cl. 72—263 **5 Claims**

In combination with an extrusion press, such as a tube press, means for reconditioning used dies and returning them to the die-carrier of the press, wherein a rotary plate, located beside the die-carrier of the press, is provided with peripheral recesses adapted to receive used dies from recesses in the die-carrier, and to carry them to cleaning, measuring, calibrating and other reconditioning stations arranged around the periphery of the rotary plate before returning them to the die-carrier. The rotary plate is preferably rotatable stepwise,



in such a way that its recesses register with each of the said stations successively. Stations may be included for removing damaged dies and replacing them by fresh dies, and for heating the fresh dies.

3,465,566
METHOD OF FORMING CELLULAR CORE MEMBER FROM FLAT SHEET
John W. Allen, Flossmoor, Ill., assignor to Stanray Corporation, Chicago, Ill., a corporation of Delaware
Filed July 7, 1967, Ser. No. 651,777
Int. Cl. B21d *43/28;* **B21c** *37/02*
U.S. Cl. 72—324 **11 Claims**

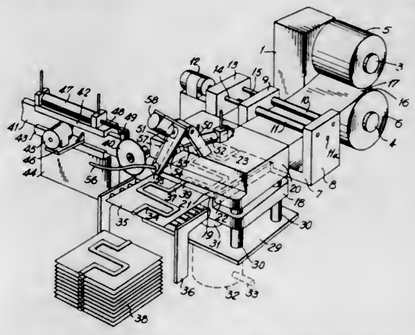


A honeycomb-type cellular core having a plurality of contiguous hexagonal cells integrally formed from a single flat rectangular sheet of metal. The method for so forming such panel includes the first step of slitting the metal in a number of spaced accurately positioned lines extending parallel to each other and to a respective pair of opposite side edges of said sheet, said method further including the steps of placing said slit sheet in a preselected position between a series of oppositely disposed hexagonally-shaped punches and associated metal bending means in a press and then operating said press to bend said sheet into an integral cellular panel.

3,465,567
METHOD OF MAKING TUBES
John J. Park, Springfield, Va., assignor to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration
Filed Dec. 30, 1966, Ser. No. 606,464
Int. Cl. B21d *31/00;* **B21c** *17/06;* **C21d** *7/14*
U.S. Cl. 72—364 **4 Claims**

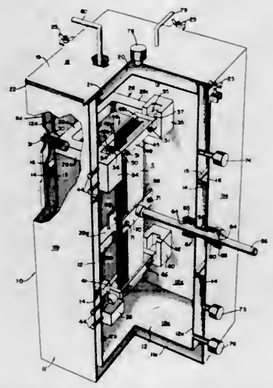
One end of a relatively long thin flat strip of metal is formed into a substantially circular cross section about its long axis. The circular end is then inserted through a glass forming tube so that the metal strip is restrained in the shape of the forming tube. The thusly restrained strip is heated at a sufficient temperature and for an adequate time so that the strip retains a tubular shape about its long axis when unrestrained by the forming tube.

3,465,568
METHOD FOR EMBOSSING REPEATED PATTERNS IN STRIP MATERIAL, PREFERABLY METAL STRIP AND MEANS FOR CARRYING OUT THE METHOD
Karl Gunnar Jonason, Vasteras, Sweden, assignor to Aktiebolaget Svenska Metallverken, Vasteras, Sweden
Filed Feb. 9, 1967, Ser. No. 614,926
Claims priority, application Sweden, Feb. 11, 1966, 1,784/66
Int. Cl. B21d *28/00, 53/00, 43/28*
U.S. Cl. 72—338 **19 Claims**



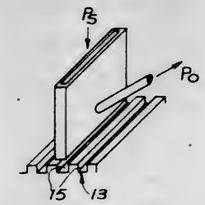
An apparatus and method which enable patterns to be embossed by inflating means in successive portions of a material web. The embossing operation is facilitated by a communicating passage which is pressed out in the web portion immediately following the web portion being embossed, so that when said two portions are separated and opening is exposed in the said following portion, for the nozzle of said inflating means.

3,465,569
LOW TEMPERATURE FLEXURE FATIGUE CRYOSTAT
Orvil Y. Reece, Huntsville, Ala., assignor to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration
Filed Oct. 7, 1965, Ser. No. 493,942
Int. Cl. G01n *25/02*
U.S. Cl. 73—15.4 **1 Claim**



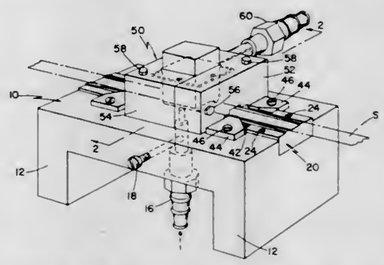
A flexure fatigue cryostat for testing of materials such as honeycomb panels at cryogenic temperatures. A vertically mounted, top-loading Dewar vessel is provided with upper and lower U-shaped yokes attached to the inner walls of the vessel. The ends of the legs of the yokes have opposed loading slots in which clamps are pivotally mounted. The test specimen is supported vertically at its ends by these clamps in a manner such that lateral movement is prevented, but upward movement and pivoting movement during flexure is allowed. Reciprocating flexure movement is imparted to the specimen intermediate its ends by means of a rod penetrating the front wall of the vessel, the end of the rod being clamped to the specimen.

3,465,570
DIGITAL MEASURING SYSTEMS
Robert Sisterson MacLean, Andrew Lindsay Muir McClintock, and Royds Sharp, East Kilbride, Glasgow, Scotland, assignors to National Research Development Corporation, London, England, a British body corporate
Filed Nov. 16, 1967, Ser. No. 683,509
Claims priority, application Great Britain, Jan. 16, 1967, 2,296/67
Int. Cl. G01b *13/08;* **B23q** *17/02*
U.S. Cl. 73—37.5 **13 Claims**



For purposes of digital measuring systems a position indicating transducer comprises a pneumatic gauge as index and a regularly slotted member as scale. The gauge and scale member are so related that the gauge output increases over a slot and decreases over a rib between successive slots. In one form the gauge has a single jet orifice in the form of a slit of closely similar width to the slots, and in another form the gauge has a blower jet orifice and at least one receiver orifice spaced therefrom.

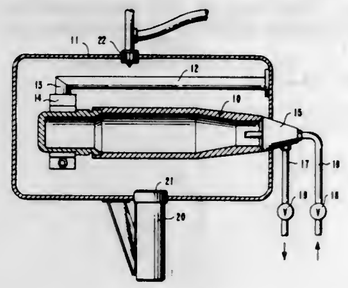
3,465,571
APPARATUS FOR DETECTION OF TRANSVERSE CURVATURE
Joseph Thomas Markey, Providence, R.I., assignor to The Gillette Company, Boston, Mass., a corporation of Delaware
Filed Oct. 14, 1966, Ser. No. 586,874
Int. Cl. G01b *13/04*
U.S. Cl. 73—37.7 **14 Claims**



Apparatus for the detection of transverse curvature (dish) of razor blade stock (0.0015 inch in thickness and 0.193 inch in width) includes two carbide support rails each of which has a flat surface 0.005 inch in width on which the stock is supported. These rails are spaced 0.180 inch apart and define a reference plane. A hold down structure in the form of a 35 gram carbide block is disposed in

an air bearing and has two corresponding rails formed on its lower surface. A nozzle whose outlet is positioned 0.004 inch below the reference plane provides an air gauge for sensing the distance of the center of the strip from the reference plane.

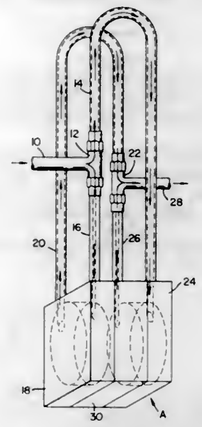
3,465,572
METHOD AND APPARATUS FOR SIMULTANEOUS TESTING OF CONTAINERS FOR ABILITY TO WITHSTAND INTERNAL PRESSURIZATION AND FOR FLUID LEAKAGE
Thomas H. Covert, Downey, Calif., assignor to Aerojet-General Corporation, El Monte, Calif., a corporation of Ohio
Filed Jan. 29, 1968, Ser. No. 701,394
Int. Cl. G01m *3/04*
U.S. Cl. 73—49.2 **10 Claims**



This disclosure concerns a method and apparatus for testing a container, such as a pressure vessel, with respect to two separate factors by a substantially simultaneous procedure, the two factors for which the pressure vessel is to be tested being (1) testing the pressure vessel to determine its ability to successfully withstand a predetermined internal pressure; and (2) testing for fluid leakage through the walls of the pressure vessel. In practicing the method, the pressure vessel is first subjected to an atmosphere of "saturated air" during which the exterior surface of the pressure vessel is coated with a very thin liquid film. The thin liquid film is characterized as being tacky and elastomeric in nature and as having the ability to form and reform small bubbles in areas of fluid leakage from the vessel which it coats. After the vessel has been coated with the thin liquid film, gaseous fluid, such as air, is introduced thereinto to internally pressurize the vessel to the desired pressure. During this stage, the vessel is tested for its ability to withstand a predetermined internal pressure, while also being monitored for any fluid leakage through the walls thereof. An ultrasonic detector is employed to monitor the vessel for fluid leakage which is detected from ultrasonic signals generated by the bursting of film bubbles formed and reformed in the liquid film by fluid leakage escaping from the vessel. The ultrasonic detector converts such ultrasonic signals into electrical signals indicative of the extent of fluid leakage, thereby establishing whether the pressure vessel meets minimum quality standards.

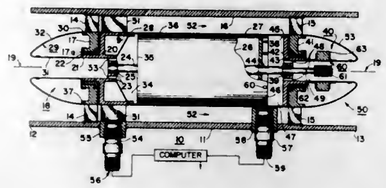
3,465,573
APPARATUS FOR CONTINUOUS MEASUREMENT OF LIQUIFORM PRODUCT CONSISTENCY
Kerry S. Shoemaker, Fremont, Mich., assignor to Gerber Products Company, Fremont, Mich., a corporation of Michigan
Filed June 5, 1967, Ser. No. 643,432
Int. Cl. G01n *11/02;* **G05d** *11/00*
U.S. Cl. 73—54 **4 Claims**

A direct reading continuous consistometer in which the fluid to be measured passes from the intake conduit directly into and through the pressure chambers of a differential pressure measuring device and from the pressure



chambers to the discharge conduit. Output signals from the device are employed to adjust and control the consistency of the fluid.

3,465,574
IN-LINE FLOW POWERED VISCOMETER
Frederick D. Ezekiel, Lexington, and Richard W. Miller, Foxboro, Mass., assignors to The Foxboro Company, Foxboro, Mass., a corporation of Massachusetts
Filed May 1, 1967, Ser. No. 635,025
Int. Cl. G01n *11/00*
U.S. Cl. 73—59 **6 Claims**

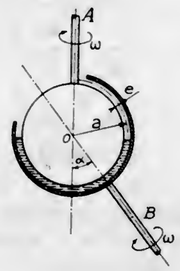


Two concentric drums, each adapted to rotate on their axis, are disposed in a pipe with the axes of the drums on the pipe center line. Vanes on the surface of the outer drum impart rotation thereto from the force of fluid flowing through the pipe. A predetermined restraining torque is applied to the inner drum. As the fluid flows through the pipe, the torque-restrained inner drum will rotate more slowly than the outer drum and the difference in the rotational speeds is inversely proportional to the viscosity of the fluid in the annular space between the drums.

3,465,575
PROCESS AND APPARATUS FOR DETERMINING THE VISCOSITY AND ELASTICITY PROPERTIES OF A SOLID OR LIQUID VISCOELASTIC MEDIUM
André Kepes, Arras, France, assignor to Ethylene-Plastique, Paris, France, a French society
Filed Oct. 11, 1966, Ser. No. 585,959
Claims priority, application France, Oct. 21, 1965, 35,686
Int. Cl. G01n *11/00*
U.S. Cl. 73—60 **10 Claims**

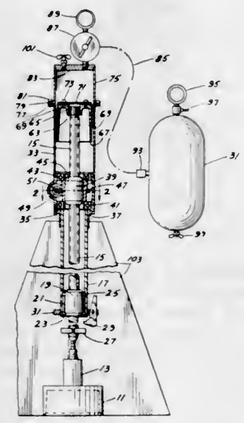
Viscosity and elasticity measuring wherein the material to be measured is placed between opposed surfaces which are then rotated in the same direction at the same speed

about intersecting but non-aligned first and second axes and the reaction torque on the assembly is measured about a third axis in the plane containing the first and



second axes, as a measure of viscosity, then about a fourth axis perpendicular to that plane, as a measure of elasticity.

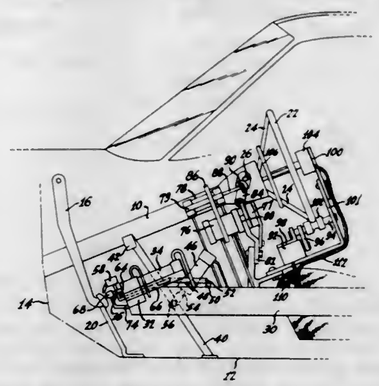
3,465,576
SOIL SHEAR DEFORMATION TESTER
Paul L. Spanski, Bloomfield Hills, Mich., assignor to the United States of America as represented by the Secretary of the Army
Filed Oct. 14, 1966, Ser. No. 588,240
Int. Cl. G01n *3/24*
U.S. Cl. 73—84 **3 Claims**



A device for testing the shearing stress of soils in connection with extending the mobility of off-road type equipment such as tracked vehicles used by the military. The device is able to accurately measure the shearing stress by using fluid power means to exert a uniform force along the principal axis of a vertical shaft while applying a torque to a shear annulus on the shaft.

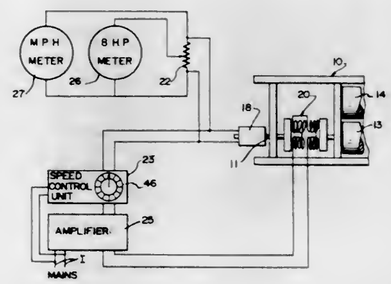
3,465,577
AUTOMOBILE CONTROL MANIPULATING APPARATUS
David A. Donovan, Taylor, Mich., assignor to RCA Corporation, a corporation of Delaware
Filed Sept. 28, 1967, Ser. No. 671,358
Int. Cl. F16d *67/00*
U.S. Cl. 73—116 **6 Claims**

In making various tests on an automobile, the controls thereof must be operated in a predetermined, programmed manner. Apparatus is disclosed for manipulating the accelerator, the brake, the clutch pedal, and the



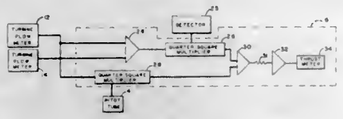
gear shift lever in a programmed manner. Apparatus is also disclosed for manipulating the steering wheel.

3,465,578
CHASSIS DYNAMOMETER
Robert Stoddart Douglas, Parsonage Farm Mottram, Hyde, Cheshire, England
Filed July 5, 1966, Ser. No. 562,817
Int. Cl. G01m *15/00;* **G01l** *3/18*
U.S. Cl. 73—117 **5 Claims**



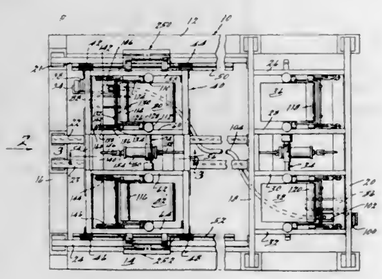
The invention relates to an improved chaisis dynamometer or test bed for determining the efficiency of a vehicle engine by evaluating the brake horsepower produced at a particular speed. In the invention the speed of the vehicle under test is controlled at a pre-selected constant speed in order to provide a measurement of power or driving force at the constant speed. This is achieved by the provision of test bed means drivingly coupled to the driving wheels of the vehicle and sensing means electronically connected to a speed control unit such that when the test bed is in use and a predetermined speed of vehicle wheel rotation is exceeded, electrical impulses are generated to actuate an eddy current brake for retarding the vehicle wheels and returning them to the predetermined speed, thus enabling the torque acting on the brake to be measured and the engine brake horsepower to be evaluated.

3,465,579
SYSTEM FOR INSTANTANEOUSLY MEASURING JET THRUST
Charles M. Cason, 7114 Criner Road SE., Huntsville, Ala. 35802
Filed June 25, 1968, Ser. No. 739,724
Int. Cl. G01m *15/00*
U.S. Cl. 73—117.4 **4 Claims**



A jet thrust measuring system having a gas velocity probe positioned in the exhaust nozzle area for measuring the velocity of exhaust gases from a jet engine and utilizing this measurement along with other parameters, i.e., vehicle velocity, oxidant mass flow, fuel mass flow and acceleration of gravity, to solve a thrust yielding equation through the use of circuitry.

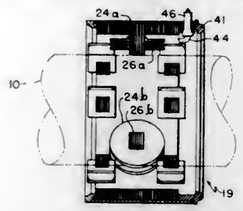
3,465,580
VEHICLE TEST SYSTEM
Mark J. Cady, Detroit, and Dag J. Eidnes, Livonia, Mich., assignors to Lynch Corporation, Detroit, Mich., a corporation of Indiana
Original application Sept. 29, 1964, Ser. No. 400,020. Divided and this application Nov. 23, 1966, Ser. No. 596,543
Int. Cl. G01l *5/28*
U.S. Cl. 73—125 **6 Claims**



A device for measuring the relationships between the braking forces developed between corresponding wheels of a vehicle under dynamic conditions. Toe-in of the wheels may be measured also.

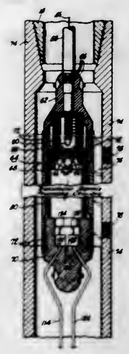
3,465,581
MEANS FOR TEMPERATURE COMPENSATING THE RESPONSE OF AN ELECTROMAGNETIC TORQUEMETER
Rudolph Hohenberg, Trumbull, Conn., assignor to Avco Corporation, Stratford, Conn., a corporation of Delaware
Continuation of application Ser. No. 446,871, Apr. 9, 1965. This application Nov. 20, 1967, Ser. No. 697,252
Int. Cl. G01l *3/02*
U.S. Cl. 73—136 **6 Claims**

The response of an electromagnetic torquemeter including a stationary core transformer surrounding a rotating shaft is affected by changes in temperature. This change is compensated by selecting materials of the shaft



and the core so that the air gap between the core and the shaft decreases with increases in temperature.

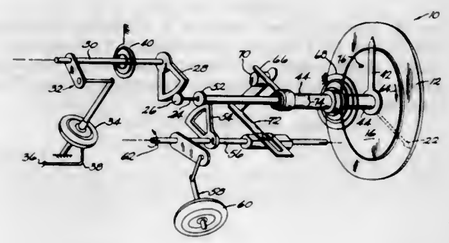
3,465,582
BOREHOLE LOGGING SYSTEM
Albert P. Richter, Jr., and James D. Bruner, Houston, Tex., assignors to Texaco Inc., New York, N.Y., a corporation of Delaware
Filed Dec. 14, 1967, Ser. No. 690,581
Int. Cl. E21b *49/00*
U.S. Cl. 73—152 **1 Claim**



In order to detect gas bearing earth formations traversed by an earth borehole containing drilling fluid, or drilling mud, there is incorporated in a drill string above a drill bit two pressure sensing devices which are vertically spaced apart. Being in contact with the drilling mud at different depths in the borehole, the pressure sensing devices are capable of measuring the pressure or the weight of the drilling mud at the aforesaid different depths in the borehole. In the event that an adjacent gas bearing earth formation is present, the presence of gas in the drilling mud would reduce the density of the drilling mud by a significant amount. Thus the variation of drilling mud pressure or drilling mud weight detected by the pressure sensing devices would indicate the presence of hydrocarbon bearing formations. In addition, during the drilling of the earth borehole such detection and measurement would provide an early warning of "hole trouble" stemming from excessive gas flow.

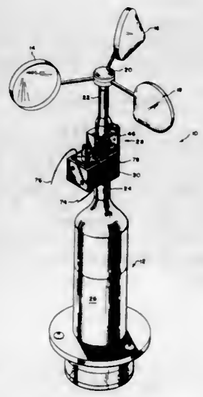
3,465,583
MACH AND AIR SPEED INDICATOR
Edward W. Molis, Davenport, Iowa, assignor to The Bendix Corporation, a corporation of Delaware
Filed Nov. 30, 1967, Ser. No. 686,918
Int. Cl. G01p *5/16;* **G09f** *9/00*
U.S. Cl. 73—182 **10 Claims**

An air speed indicator is provided with a fixed dial having air speed designations, a concentric movable dial having Mach number designations, and an indicated air speed pointer movable relative to the fixed and movable dials for indicating at all altitudes the aircraft speed in terms of both knots and Mach number. A second pointer, hereinafter termed the maximum allowable air speed pointer, moves relative to the dials to indicate speed in



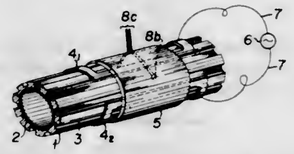
terms of knots and at higher altitudes in Mach number terms. At a preselected altitude determined by the performance characteristics of the aircraft, the movable Mach dial and the maximum allowable air speed pointer move as a unit to provide for the same continuous maximum allowable Mach indication at altitudes higher than the preselected altitude.

3,465,584
ANEMOMETER WITH BRAKING MECHANISM
Robert E. Turner and Dennis W. Camp, Huntsville, Ala., assignors to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration
Filed Aug. 15, 1967, Ser. No. 660,842
Int. Cl. G01w *1/02*
U.S. Cl. 73—189 **6 Claims**



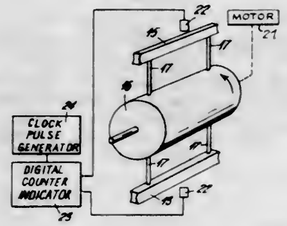
An anemometer having a wind driven member mounted on a shaft journaled for rotation in a cylindrical base, and a braking mechanism positioned on the base for engagement with the shaft to stop movement of the wind driven member. The braking mechanism includes a housing, a brake lever and solenoid mounted on the housing and a linkage connecting the solenoid and brake lever whereby the brake lever can be pivoted to a position of engagement with the shaft journaled for rotation in the base.

3,465,585
FLOW DETECTION SIGNAL GENERATOR FOR ELECTROMAGNETIC FLOWMETERS
Ichiro Wada, Yokohama-shi, Japan, assignor to Tokyo Shibaura Electro Co., Ltd., Kawasaki-shi, Japan, a corporation of Japan
Filed May 25, 1967, Ser. No. 641,349
Claims priority, application Japan, May 31, 1966, (Utility model) 41/50,492
Int. Cl. G01f *1/02*
U.S. Cl. 73—194 **7 Claims**



A flow detection signal generator includes a non-magnetic metal duct having a plurality of symmetrically arranged cuts formed on its outer periphery to reduce eddy currents produced by a magnetic flux which diametrically penetrates the duct, while maintaining the mechanical strength of the duct at a predetermined value.

3,465,586
FLUID FLOW MEASURING APPARATUS
James Stewart Johnston, Bognor Regis, England, assignor to Rosemount Engineering Company Limited, Regis, England, a British company
Filed July 18, 1967, Ser. No. 654,253
Claims priority, application Great Britain, July 21, 1966, 32,794/66
Int. Cl. G01f *1/106*
U.S. Cl. 73—228 **18 Claims**

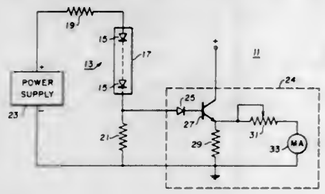


A flow sensor comprises a rotatable or oscillatable carrier with at least one resilient or resiliently mounted blade and fixed means for sensing the passage of the blade. For mass flow measurement, the time difference in the passage of a blade upstream and downstream, due to deflection of the blade is a measure of mass flow. For fluid velocity measurement, the linear speed of movement of a blade may be controlled to give no deflection; the linear speed is then equal to the fluid velocity in the direction of movement of the blade.

3,465,587
DIODE SENSORS FOR LIQUID LEVEL DETECTION
William B. Pierce, Los Altos, Calif., assignor to the United States of America as represented by the United States Atomic Energy Commission
Filed Nov. 20, 1967, Ser. No. 686,002
Int. Cl. G01f *23/00*
U.S. Cl. 73—295 **3 Claims**

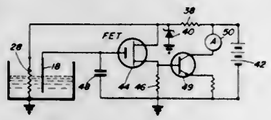
Liquid level indicating device in which a plurality of diode sensors are serially connected along a probe which is vertically oriented in a liquid (cryogen). The change

in conduction of an electrical current by the diodes immersed in the cryogen relative to those above the liquid



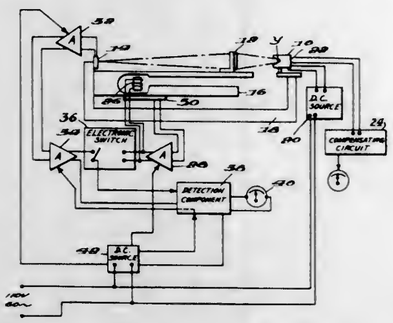
causes a proportionate change in an electrical circuit connected in series which said diodes indicating the surface level along said probe.

3,465,588
FLOATLESS ELECTRICAL FLUID LEVEL GAUGE
Michael Slavin, Baltimore, Md., assignor to The Bendix Corporation, Baltimore, Md., a corporation of Delaware
Filed Sept. 11, 1967, Ser. No. 666,766
Int. Cl. G01f *23/00*
U.S. Cl. 73—304 **14 Claims**



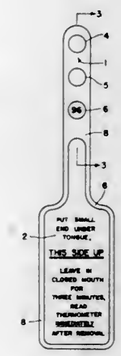
A floatless fluid level gauge has an immersible element for creating a potential gradient in the fluid and an immersible probe adjacent said element which assumes a potential dependent upon the fluid depth or level. Level is indicated by measurement of probe potential.

3,465,589
APPARATUS FOR MEASURING YARN TEMPERATURE
William M. Flook, Jr., Greenville, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed July 15, 1966, Ser. No. 565,429
Int. Cl. G01k *11/00, 5/52*
U.S. Cl. 73—355 **4 Claims**



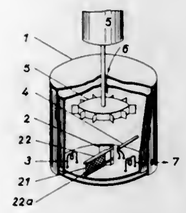
An infrared pyrometer, suitable for non-contacting yarn temperature measurement, which includes optically aligned detection, focusing, and adjustable radiation source elements. A yarn advancing through the source is scanned by mechanical oscillation of the focusing and/or reference elements. Electronic circuitry which includes a phase adjusting amplifier, a synchronous detector with a null meter, adjustable heater, and thermocouple thermometer for the radiation source and electromagnetic driver for the oscillator enable positive or negative meter readings when yarn is hotter or colder than source respectively and adjustment of source temperature to achieve null reading where yarn temperature is equal to indicated source temperature.

3,465,590
THERMOMETER
Lewis A. Kluth, Hilton, Richard J. Melville, Rochester, and Robert D. Thompson, Penfield, N.Y., assignors, by mesne assignments, to Taylor Instrument Consumer Products Division of Sybron Corporation, Arden, North Carolina
Filed Aug. 22, 1960, Ser. No. 50,894
Int. Cl. G01k *11/12*
U.S. Cl. 73—356 **31 Claims**



An oral thermometer having a flat portion to be inserted in the mouth and handle projecting from the flat portion. Mounted on the flat portion are a plurality of pockets, each of which contains a saturated fatty acid mixture which changes state at a specific temperature. By varying the mixture in the various pockets so that each responds at a different temperature, the body temperature may be read.

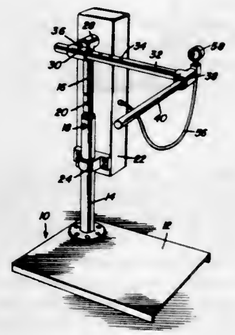
3,465,591
HUMIDITY MEASURING DEVICE
Christian Bachem, 170 Markt, 3424 St. Andreasberg, Germany, Günther John, 1 V.-Langen-Str., 3389 Braunlage, Germany, and Gustav Rust, 2 Schesischestrasse, 3424 St. Andreasberg, Germany
Filed July 13, 1967, Ser. No. 653,081
Int. Cl. G01n *25/56, 25/02*
U.S. Cl. 73—336.5 **10 Claims**



A humidity measuring device, particularly for dew-point measurements. The device comprises a chamber having

an inlet and an outlet so that moist air can pass therethrough. An electrolytic resistor is arranged in the chamber exposed to the air and has a hygroscopic portion whose electrical conductivity varies in proportion to its moisture content. Variable heating means is arranged in the chamber and so positioned that it can heat the hygroscopic portion to varying temperatures to expel moisture therefrom. An operative connection is provided between the resistor and the heating means for varying the amount of heat emanating from the latter and as a directly proportional function of the conductivity of the hygroscopic portion.

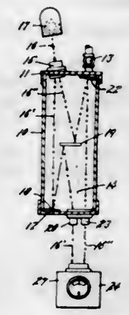
3,465,592
ISOKINETIC EXERCISE PROCESS AND APPARATUS
James J. Perrine, 6299 Broadway, Riverdale, N.Y. 10471
Continuation-in-part of application Ser. No. 383,299, July 17, 1964. This application Sept. 14, 1965, Ser. No. 487,258
Int. Cl. G01l *5/02*
U.S. Cl. 73—379 **36 Claims**



The process and apparatus for isokinetic muscular exercise provides for exercise movement which are initiated and maintained by active muscular forces continuously provided by a person exercising. The speed of an exercise movement is allowed to accelerate essentially unopposed by resistance forces from zero to a pre-set or predetermined rate of speed, and any magnitude of muscular force tending to accelerate the exercise movement beyond the predetermined rate of speed is counteracted by the system, thereby establishing the predetermined rate of speed as the maximum rate of speed attainable and loading the particular muscles in proportion to the force they can develop at such speed.

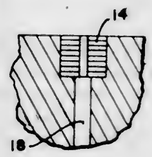
3,465,593
GRAVITY METERS FOR USE IN GEOPHYSICAL EXPLORATION
Douglas N. Stevens, Duane N. Bloom, and Ramon E. Bisque, Golden, Colo., assignors to Earth Sciences, Inc., Golden, Colo., a corporation of Colorado
Filed July 25, 1966, Ser. No. 567,439
Int. Cl. G01m *1/12*
U.S. Cl. 73—382 **2 Claims**

A gravity meter comprises an elongated non-convecting gas-filled container wherein variations in the gravitational field between two masses will be reflected as variations in the density of the molecular concentration of the gas in the container, two beams of light from a light source, and an interferometer which measures the gravity-induced concentration gradient of the molecules of the gas by detecting the phase shift between the two beams of light



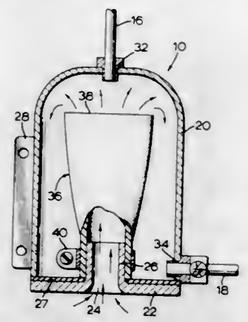
which are reflected by a system of mirrors through separate paths in the container.

3,465,594
PORTS FOR PRESSURE MEASUREMENTS ON ABLATING SURFACES
Aaron Kirpich, Broomall, Pa., assignor to the United States of America as represented by the Secretary of the Air Force
Filed Nov. 5, 1965, Ser. No. 506,917
Int. Cl. G01l *7/00*
U.S. Cl. 73—388 **7 Claims**



Thin wafers or discs of material of high ablation resistance are stacked in a counter-bored hole adjacent the surface of a body whose surface pressure is to be measured. The surface pressure is transmitted through an opening through the center of the stack, and is transmitted to measuring instruments located inside the body.

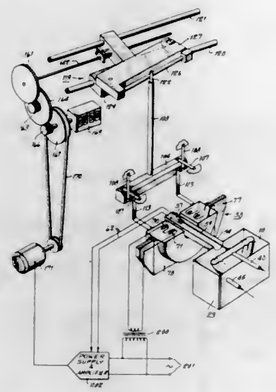
3,465,595
LIQUID SAMPLING DEVICE
John R. Tansony, 188 Markland Drive, Etobicake, Toronto, Ontario, Canada
Filed Mar. 21, 1968, Ser. No. 714,848
Int. Cl. G01n *1/00;* **F16k** *15/00*
U.S. Cl. 73—421 **6 Claims**



A liquid sampling device including a submersible container for receiving samples of liquid from a bath thereof for transmission to a testing station situated externally of

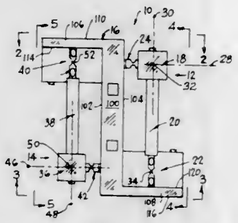
the bath; the container having a duckbill-shaped hose inlet for the liquid functioning both as a one-way check valve and also as a screen to prevent entry of undesirable lumps of solids into the container.

3,465,596
INDICATOR ELEMENT FOLLOWER STRUCTURE
William M. De Mair, Rutherford, N.J., assignor to Wallace & Tiernan Inc., East Orange, N.J., a corporation of Delaware
Filed Oct. 2, 1967, Ser. No. 672,322
Int. Cl. G01f *15/14;* **G01j** *5/02;* **G01k** *1/08*
U.S. Cl. 73—432 **14 Claims**



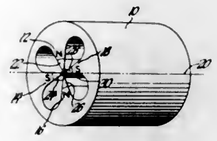
A device for following and indicating the position of a moveable element of a condition responsive device. Means are provided for sensing changes in position of the moveable element and for driving a follower element so that the positional relationship between the moveable element and the follower element remains the same. The drive linkage includes a motor, indicator for registering the extent of movement of the motor, and an adjustable wedge shaped reciprocating cam for adjusting the span of the indicator and for compensating for non-linearity of the overall device.

3,465,597
VIBRATING-COLUMN ACCELEROMETER
Hugh E. Riordan, Wyckoff, N.J., and Leon Weisbord and Jerome M. Paros, New York, N.Y., assignors to Singer-General Precision, Inc., Little Falls, N.J., a corporation of Delaware
Filed May 25, 1965, Ser. No. 458,538
Int. Cl. G01p *15/08*
U.S. Cl. 73—517 **12 Claims**



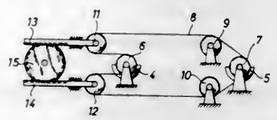
This invention provides an accelerometer comprising a support member with a sensing axis, a proof mass coaxial therewith and displaceable relative thereto in an axial direction, a single-axis guide means interconnecting said proof mass and said support member; and at least one columnar element coaxial with said proof mass and said support member having a connection at one end of said proof mass and having a connection at its other end to said support member for transmission therebetween of an axial component of said acceleration force and for sensing said component. The guide means is a three-sided frame pendulum with a single hinge axis. The element is a vibrating tine with a slender center portion and enlarged end portions, which has a reflector tine or strip supported therefrom with a center portion parallel thereto forming a capacitive unit for use in a combination drive and pickoff means. With this construction, a number of the usual types of instrument errors can be substantially eliminated.

3,465,598
DIAMAGNETIC ACCELEROMETER
Ivan Simon, Belmont, Mass., assignor, by mesne assignments, to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Mar. 5, 1965, Ser. No. 437,402
Int. Cl. G01p *15/08*
U.S. Cl. 73—517 **14 Claims**



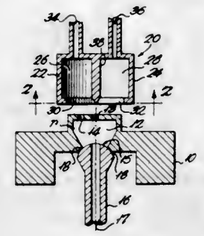
1. An instrument of the class described comprising means for producing a substantially cylindrical magnetic field volume having a longitudinal axis of symmetry and being characterized by relatively rapidly increasing field intensity with radial distance from the axis and relatively constant axial intensity, and an elongated body of non-conductive diamagnetic material disposed within the field volume and coaxial therewith and radially supported by the field.

3,465,599
MECHANISM FOR VARYING THE PHASE RELATION OF TWO ECCENTRIC WEIGHTS
Rudolf Hennecke, 106 Staufenstrasse, 7067 Buoch, near Waiblingen, Germany; Arthur Brander, 15 Morikestrasse, 7311 Bunzwangen, Germany; and Eugen Georgi, 119 Urbanstrasse, 7300 Esslingen, Germany
Filed May 22, 1968, Ser. No. 731,184
Claims priority, application Germany, May 27, 1967, D 53,184
Int. Cl. F16h *33/14*
U.S. Cl. 74—61 **9 Claims**



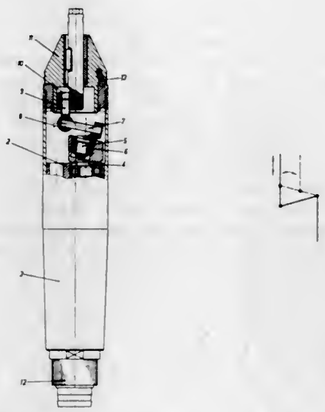
A very simple mechanism for infinitely varying the phase relation of two revolving eccentric weights which are driven in opposite directions to each other by an endless chain or the like which also runs over two reversing wheels which are movable for equal distances in opposite directions so as to increase the length of one stringer of the chain intermediate the wheels carrying the eccentric weights and simultaneously to decrease the length of the other stringer.

3,465,600
GYRO WITH PNEUMATIC PULSE DURATION MODULATION PICK-OFF
Hugh E. Riordan, Wyckoff, Constant John de Cotiis, Cranford, and Harold J. Straut, Wayne, N.J., assignors to Singer-General Precision, Inc., Little Falls, N.J., a corporation of Delaware
Filed Dec. 1, 1966, Ser. No. 598,385
Int. Cl. G01c *19/28*
U.S. Cl. 74—5.6 **7 Claims**



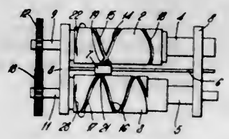
This patent specification discloses a gyro which directly produces a pneumatic pulse duration modulated output signal representing the tilt of the gyro about its input axis. The gyro contains a chamber with an orifice for forming a gas jet when the chamber is pressurized. The jet is parallel to the spin of the gyro and is displaced therefrom. The jet rotates with the gyro rotor and is directed into a plurality of receiving chambers which convert the jet to pressure pulses. When the gyro tilts the duration of the jet traverse over each receiving chamber is altered so that the pressure pulses have durations representing the tilt of the gyro roto. Pneumatic flip-flops are used to detect the output pulses from the receiving chambers.

3,465,601
IMPLEMENT FOR RECIPROCATING A TOOL WITH AN ADJUSTABLE STROKE
Hans Wezel, Maulbronn, and Kurt Schuhmann, Knittlingen, Germany, assignors to Schmid & Wezel, Maulbronn, Germany
Filed Nov. 28, 1967, Ser. No. 686,271
Claims priority, application Germany, Sept. 14, 1967, Sch 41,308
Int. Cl. F16h *21/20;* **B23d** *67/04, 69/00*
U.S. Cl. 74—45 **4 Claims**



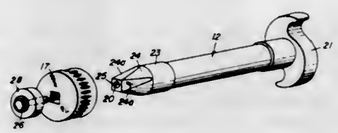
A crank arm is carried at one end of a shaft, which is power-operable to rotate about its axis. A crankpin is rotatably mounted in said crank arm and extends at acute angles to said shaft axis and to the head axis of a reciprocable tool-gripping head. A coupling pin is carried by said crankpin and extends at right angles to the axis of rotation of said crankpin. A bearing eye is axially slidably mounted on the coupling pin and is connected to an eccentric, which is coupled to said tool-gripping head for movement in the direction of said head axis and which is rotatable about said head axis to change the position of said bearing eye on said coupling pin, whereby a rotation of said shaft causes said tool-gripping head to reciprocate to an extent which depends on the position of said bearing eye on said coupling pin.

3,465,602
APPARATUS FOR TRANSFORMING A ROTARY MOTION INTO AN ALTERNATING LINEAR MOVEMENT
Jean Pierre Garaud, Bron, Rhone, France, assignor to Societe Rhodiaceta, Paris, France, a French body corporate
Filed Nov. 20, 1967, Ser. No. 684,222
Claims priority, application France, Nov. 21, 1966, 47,971
Int. Cl. F16h *25/12*
U.S. Cl. 74—58 **9 Claims**



The specification discloses apparatus for producing reciprocatory linear motion, in which a slider is provided with two pins one of which engages in one of two helical grooves of opposite sense on one roller, while the other engages in one of two helical grooves of opposite sense on another roller. The two rollers rotate about the same axis or about parallel axes. If desired a third roller with two similar grooves may be engaged by a third pin on the slider. The roller may be cylindrical or frusto-conical.

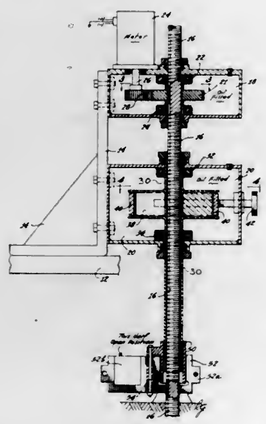
3,465,603
BRAKE ADJUSTING MECHANISM
Kenneth Lindstrom, 1309 N. 8th St., Coos Bay, Oreg. 97420
Filed Nov. 13, 1967, Ser. No. 682,016
Int. Cl. F16h *27/02, 25/02, 29/20*
U.S. Cl. 74—89.14 **4 Claims**



This is a brake adjusting mechanism for adjusting the rotary position of a brake shoe cam shaft with respect to an arm that is coupled to the cam shaft to rotate the same. The cam shaft has its operating arm in the form of a housing which is affixed to an end of the cam shaft and has a portion of the housing projecting transversely to the axis of the cam shaft so as to act as an arm to which a brake applying force is applied such as from a power cylinder. This housing has therein a worm wheel affixed

to the cam shaft end that extends into the housing, and also housed therein is a worm meshing with the worm wheel and having a mounting shaft portion extending out from the housing that has a wrench receiving end so that the worm may be turned to adjust the rotary position of the worm wheel and the cam shaft with respect to the housing. After extended operation, trouble has been experienced in maintaining the worm wheel in tight engagement wtih the cam shaft so that there is no relative motion between worm wheel and cam shaft. The cam shaft in this disclosure has a tapered end tapering to a smaller end size that is square in cross section where it receives the worm wheel. The worm wheel has a like tapered central portion that is successively square in cross section which is received on the square in cross section tapered end of the cam shaft. A cup-like shaped fitting having an aperture in its bottom is received over the end of the cam shaft extending and has its walls pressing against the worm wheel. A cap screw extending through the aperture in the bottom of the cup is threadedly received in an axially extending recess in the shaft so that the worm wheel is forced into a tight fit on the cam shaft end. A removable end plate having an aperture therein fits over the cup-like shaped fitting and is secured to the housing by suitable screws.

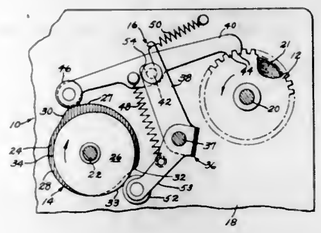
3,465,604
DRIVE MECHANISM FOR DRILLING APPARATUS AND THE LIKE
Harlan Moore, 1523 Harvard, Santa Monica, Calif. 90404
Filed Apr. 20, 1967, Ser. No. 632,399
Int. Cl. F16h *29/20*
U.S. Cl. 74—89.15 **3 Claims**



The disclosure concerns a drive mechanism which finds utility, for example, in oil well drilling apparatus, or the like; and which includes a threaded rod and a coaxial sleeve, intercoupled so that a braking action exerted on the sleeve causes it to function as a lead screw to cause the threaded rod to move in a linear direction.

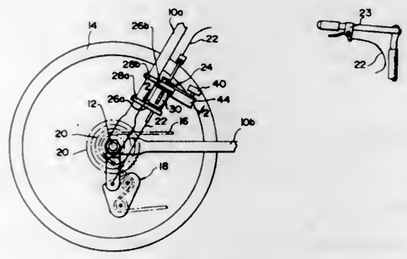
3,465,605
PAWL AND RATCHET MECHANISM
John E. Hylan, Birmingham, Mich., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan
Filed Nov. 15, 1967, Ser. No. 683,187
Int. Cl. F16h *27/02*
U.S. Cl. 74—142 **2 Claims**

The disclosure embodies a ratchet wheel for rotating the platen to line space a record sheet and includes mechanism for positioning the ratchet wheel. The ratchet wheel is intermittently rotated by a pawl, the motion of which is a function of two cyclically and sequentially operable



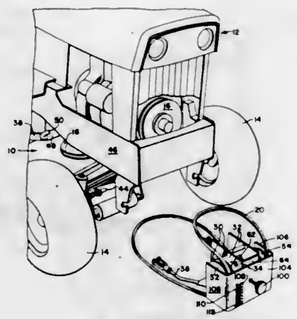
cams. The pawl is mounted to pivot about a first axis and to revolve about a second axis such that the wheel is stopped in the desired indexed position.

3,465,606
GEAR SHIFT
Mark Ashner, 5710 N. St. Louis Ave., Chicago, Ill. 60645
Filed Dec. 8, 1967, Ser. No. 689,067
Int. Cl. F16h *9/24, 11/08;* **B62m** *9/06*
U.S. Cl. 74—217 **11 Claims**



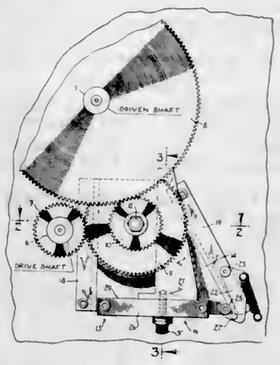
An automatic shift unit for use with a bicycle or like chain driven vehicle which includes a drive means and a change speed gear mechanism for changing the gears by displacement of a sprocket chain transversely from one sprocket to another. The shift unit includes a cylinder which carries a plurality of pawl members extending radially inwardly toward the center of the cylinder. The pawl members are spaced axially and angularly about the interior wall of the cylinder. The cylinder is journalled on a framework for rotational movement relative thereto. A disc-shaped cam member is non-rotatably mounted on the framework for axial movement with the cylinder. The cam has a notch in the periphery thereof through which the pawl members may pass when aligned with the notch as the cam moves axially within the cylinder. The cam is operatively connected to the change speed gear mechanism to effect actuation of the gear mechanism. The pawl carrying cylinder is operatively connected to the drive means of the vehicle for rotation in direct proportion to movement of the drive means. As the cylinder and cam member rotate relative to each other the cam will intermittently move axially within the cylinder from one pawl member to the next and thereby effect intermittent shifting of the gears solely in response to continued movement of the drive means of the vehicle.

3,465,607
BELT DRIVE APPARATUS FOR TRACTOR-MOUNTED IMPLEMENT
Leon Paul Erdman, Beaver Dam, Wis., assignor to Deere & Company, Moline, Ill., a corporation of Delaware
Filed Nov. 7, 1967, Ser. No. 681,168
Int. Cl. F16h *7/12*
U.S. Cl. 74—227 **11 Claims**



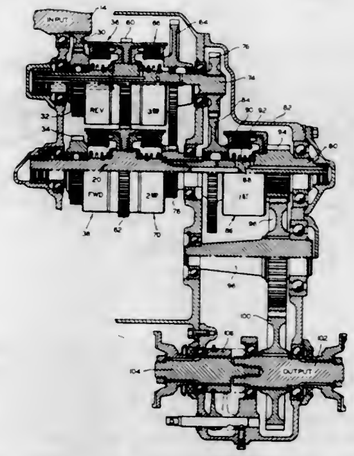
A drive belt assembly for a tractor-mounted implement, the assembly having an improved belt tensioning apparatus which includes means to indicate whether or not it is necessary to retension the belt.

3,465,608
GEAR TRAIN WITH DISMOUNTABLE RATIO-DETERMINING GEAR ASSEMBLY
Robert W. Bachi, Itasca, Ill., assignor to Bachi, Inc., Wood Dale, Ill., a corporation of Illinois
Filed Oct. 2, 1967, Ser. No. 672,199
Int. Cl. F16h *3/20*
U.S. Cl. 74—325 **6 Claims**



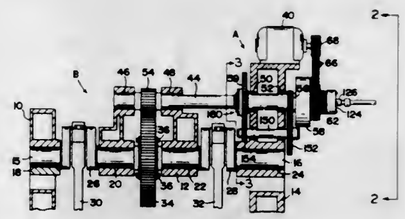
Two adjacent but non-meshing gears of a gear train are drivingly connected by intermediate gearing mounted on a carrier that can slide to an inoperative position at which it can be dismounted and replaced by an identical carrier with different intermediate gearing thereon. Convergent side edge portions on the carrier are engageable with rails that guide the carrier to and define an accurately predetermined operative position of the carrier. The rails cooperate with a releasable latch to hold the carrier against displacement from its operative position. A bearing for the intermediate gearing is adjustable to any desired location on the carrier.

3,465,609
TRANSMISSION
John F. Fisher, Jackson, and Burton S. Zeller, Parma, Mich., assignors to Clark Equipment Company, a corporation of Michigan
Filed Dec. 13, 1967, Ser. No. 690,289
Int. Cl. F16h *3/08*
U.S. Cl. 74—360 **3 Claims**



A multi-speed reversible transmission having a pair of countershafts that are interconnected for opposite rotation and a plurality of gear trains for selectively connecting the countershafts to the output shaft.

3,465,610
DUAL SPEED DRIVE
Anatol Michelson, Glenolden, Pa., assignor to E. W. Bliss Company, Canton, Ohio, a corporation of Delaware
Filed Sept. 29, 1967, Ser. No. 671,855
Int. Cl. F16h *3/10;* **F16d** *47/04, 41/04*
U.S. Cl. 74—368 **1 Claim**

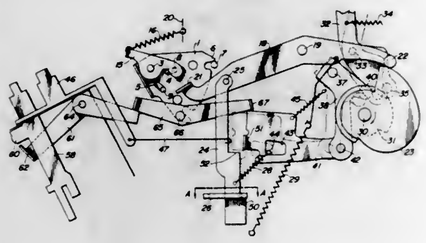


An improved two-speed power transmission especially suited for use in power presses. The transmission includes first and second driven gears; connecting means continuously interconnecting the gears so that they rotate at velocities V1 and V2, respectively; a driven shaft; a first clutch means selectively engageable for drivingly connecting the first gear to the shaft to cause the shaft to rotate at a velocity V3; and, means including an overrunning clutch for interconnecting the second gear and the shaft for rotating the shaft at a velocity V4 when the first clutch means is disengaged. In the preferred embodiment the transmission is arranged so that V1 equals V3, and V2 equals V4.

3,465,611
DUAL TOTALING MECHANISM FOR ADDING MACHINES

Yoshiyuki Nakazima, Sayama-shi, and Ken Kozasa, Tokyo, Japan, assignors to Citizen Watch Co., Ltd., Tokyo, Japan, a corporation of Japan

Filed Oct. 11, 1967, Ser. No. 674,413
Claims priority, application Japan, Oct. 22, 1966, 41/98,035
Int. Cl. F16h *57/00, 1/04*
U.S. Cl. 74—405 2 Claims

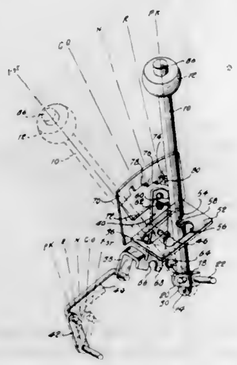


A dual totaling mechanism for an adding machine, comprising two sets for accumulator gears provided between two opposedly disposed supporting plates, one of said two sets of accumulator gears being adapted to be operated to accumulate the amounts set up, and the other to aggregate the totals figured out by said former accumulator gear.

3,465,612
REMOTE CONTROL LINKAGE MECHANISM FOR A MULTIPLE RATIO POWER TRANSMISSION SYSTEM

Bruce K. Letwin, Trenton, and Kenneth J. Sroka, Garden City, Mich., assignors to Ford Motor Company, Dearborn, Mich., a corporation of Delaware

Filed Mar. 8, 1968, Ser. No. 711,549
Int. Cl. G05g *9/06*
U.S. Cl. 74—473 6 Claims

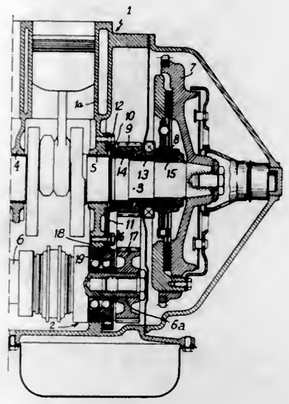


A driver operated transmission ratio selector in an automotive vehicle driveline, including a control lever mounted for movement in an H shift pattern as any one of three forward drive transmission drive ranges or a single reverse drive range is selected. The control lever carries two pawls each of which is selectively engageable with a shift lever operatively connected to the transmission manual valve lever.

3,465,613
ENGINE AND LATERAL GEARBOX UNITS

Edmond Henry-Biabaud, Paris, France, assignor to Societe Anonyme Andre Citroen, Paris, France, a French society

Filed Sept. 26, 1967, Ser. No. 670,623
Claims priority, application France, Oct. 13, 1966, 79,820
Int. Cl. F16h *57/02, 37/08*
U.S. Cl. 74—606 2 Claims

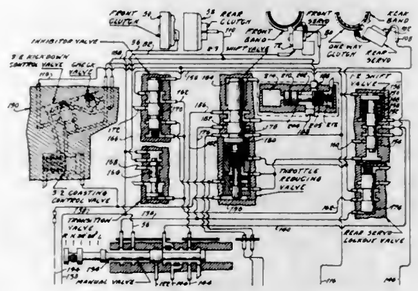


This invention relates to an engine and lateral gearbox unit and consists in the provision of a casing to surround a part of the engine crankshaft, which casing comprises a sill firmly fixed to the outside of the engine casing and at least one centering bearing is located concentrically of the general axis of the crankshaft. A first pinion is mounted on the centering bearing for transmitting the movement of the crankshaft so as to be freely rotatable and the sill is provided with at least one other centering bearing parallel to the first one from which it is spaced by a predetermined amount. The second bearing supports a further pinion of the transmission which connects the crankshaft to the input shaft of the gearbox.

3,465,614
POWER TRANSMISSION CONTROL SYSTEM WITH TEMPERATURE COMPENSATION

Robert L. Reynolds, Detroit, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware

Filed Feb. 2, 1968, Ser. No. 702,638
Int. Cl. F16h *57/10;* F16d *9/00*
U.S. Cl. 74—763 7 Claims

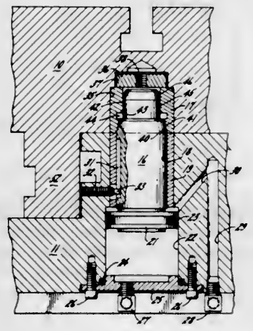


This specification describes a control valve system for an automatic power transmission in an automotive vehicle driveline. The valve system includes a flow control valve that is sensitive to temperature changes as it provides a uniform, calibrated ratio shift pattern regardless of changes in the Reynolds number for the fluid.

3,465,615
PRECISION LOCATING MEANS FOR MACHINE TOOLS

Gordon H. Jones, Vandyne, and Everett E. Hosea, Butte des Morts, Wis., assignors to Giddings & Lewis, Inc., Fond du Lac, Wis., a corporation of Wisconsin

Filed Dec. 29, 1967, Ser. No. 694,465
Int. Cl. B23q *17/00*
U.S. Cl. 74—816 2 Claims

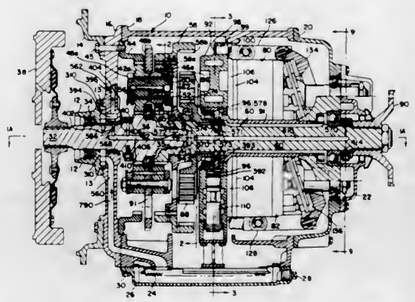


A shot pin assembly is described in which a tapered precision shot pin and bushing are provided with a pilot pin and bore, respectively, whereby the full engagement of the elements is blocked until they are sufficiently close to their final engaged positions that impact damage and frictional wear of the precision locating surfaces are avoided.

3,465,616
VEHICLE DRIVE

Carl E. Schou, Bloomfield Hills, Mich., assignor, by mesne assignments, to Rockwell-Standard Company, Pittsburgh, Pa., a corporation of Delaware

Filed Sept. 1, 1966, Ser. No. 576,696
Int. Cl. B60k *19/14*
U.S. Cl. 74—870 48 Claims

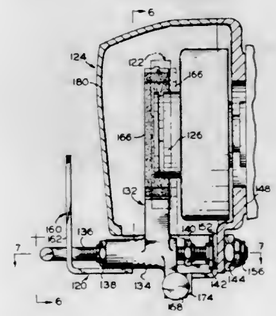


A hydromechanical transmission comprises a split (mechanical and hydraulic) torque transmitting drive between coaxial input and output shafts. The mechanical drive comprises a planetary gearing interconnecting the shafts. The hydraulic drive comprises a swash plate pump driven from the input shaft and driving three variable capacity hydraulic swash plate motors connected to the output shaft. A high pressure hydraulic circuit for the pump and motors includes motor control valves which with their associated passages are disposed in a transverse housing wall. A low pressure control circuit is connected to pressure responsive devices of different capacity to selectively vary the swash plate angles, and contains governors responsive to both input and output shaft speeds for regulating the control pressure. The entire transmission is contained in a compact minimum diameter minimum length housing wherein the transverse wall separates the interior into mechanical drive and hydraulic drive compartments.

3,465,617
QUICK-DETACHABLE SHARPENERS FOR CHAIN SAWS

Kay Silvon, Portland, Oreg., assignor to Omark Industries, Inc., Portland, Oreg., a corporation of Oregon

Filed Nov. 9, 1966, Ser. No. 593,034
Int. Cl. B23d *63/00*
U.S. Cl. 76—25 24 Claims

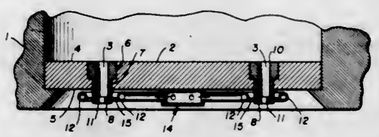


A quick-detachable sharpener which may be installed on existing chain saws. The sharpener is mounted on a carrier which has a handle for moving the sharpener into and out of engagement with the teeth of the chain saw.

3,465,618
METHOD OF MANUFACTURING A MELT-SPINNING SPINNERET

Euell K. McIntosh and Paul T. Howse, Jr., Pensacola, Fla., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware

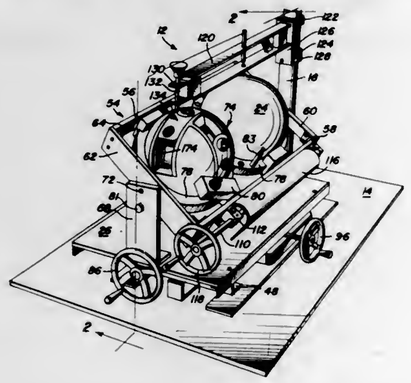
Filed Dec. 23, 1966, Ser. No. 604,287
Int. Cl. B21k *5/20*
U.S. Cl. 76—107 1 Claim



Melt spinning spinnerets are made by forming in a spinneret a hole of two different diameters. A hollow insert is press-fitted in the hole so that the insert extends slightly below the plane of the extrusion face of the spinneret. The insert has a counterbore communicating with a series of small passageways extending to the point of extrusion where the passageways form a pattern adapted to produce a textile filament by the coalescence of a cluster of small streams of polymer at a point below the spinneret face. The resulting filaments have a multitude of lobes and axially extending voids. During employment of the spinneret, rings surrounding the individual filaments can be used to supply a cooling fluid

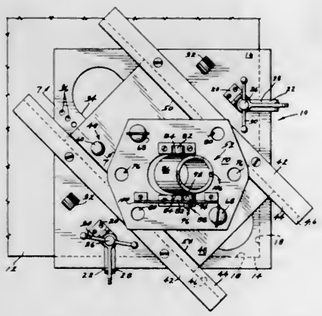
to solidify the filaments in a controlled manner shortly after the emergence of the streams of molten polymer from the spinneret.

3,465,619
BOWLING BALL HOLE GAUGING DEVICE AND DRILLING APPARATUS
David P. Blaker, Elmore City, Okla. (13710 Pebblebrook, Houston, Tex. 77025), and Kenneth J. Conrad, 7387 Broadway, Lemon Grove, Calif. 92045
Continuation-in-part of application Ser. No. 352,450, Mar. 17, 1964. This application Aug. 16, 1966, Ser. No. 572,708
Int. Cl. B23b *41/00, 49/00*
U.S. Cl. 77—5 **15 Claims**



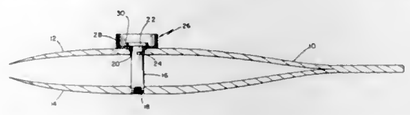
A fitting ball adjusted to certain fingerstall positions is clamped in a gimbal assembly also holding a blank ball to be drilled. Both balls are simultaneously orientated by planar movement of a platen in perpendicular directions, pivotal movement of a frame on the platen and pivotal movement of the two ball holding gimbals relative to the frame in order to align a fingerstall on the fitting ball with a pin or the like mounted in fixed parallel spaced relation to the path of movement of the drilling tool.

3,465,620
FURNITURE JIG
Clarence W. Hilburn, 404 W. 13th St., Loveland, Colo. 80537
Filed July 14, 1967, Ser. No. 653,567
Int. Cl. B23b *49/02*
U.S. Cl. 77—62 **10 Claims**



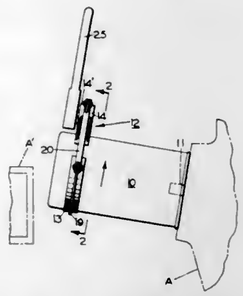
This disclosure relates to a jig for boring holes for furniture legs and supporting the latter while the glue sets. It comprises a bedplate releasably fastenable to the underside of a chair, table or other piece of furniture at a corner thereof. Mounted upon the bedplate are a pair of parallel diagonally-extending tracks that carry a slideblock for diagonal movement toward and away from the corner. A three-position plate releasably fastens to the slideblock and carries a tubular tool guide that is adjustably tiltable relative thereto about a horizontal axis.

3,465,621
LOCKING TWEEZERS
William Alexander Ladd, Burlington, Vt., assignor to Ladd Research Industries, Inc., Colchester Point, Chittenden County, Vt., a corporation of Vermont
Filed Nov. 29, 1967, Ser. No. 686,551
Int. Cl. B25b *9/02*
U.S. Cl. 81—43 **5 Claims**



A pair of tweezers with a slotted pin threadedly secured to the bottom clamping member and passing through a hole in the top clamping member and a cup-like member with a hole in its base plate received on the pin and slidable transversely thereof held in place by a flange at the end of the pin outside the top clamping member, the base plate being arranged to slide into the pin slot when the tweezers are closed to hold the tweezers in the closed position.

3,465,622
MOTOR OIL FILTER WRENCH ASSEMBLY
Linnaeus Winans, Rte. 2, Box 217, Hood River, Oreg. 97031
Filed Aug. 7, 1967, Ser. No. 658,893
Int. Cl. B25b *13/52;* **B67b** *7/14*
U.S. Cl. 81—64 **1 Claim**

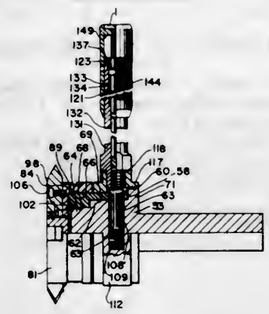


A friction wrench assembly for use on a cylindrical body, particularly a customary motor oil filter, so constructed and arranged that it can be used in locations which would not be readily accessible for other wrenches.

3,465,623
TOOL HOLDER
Harold Huckaby, Cincinnati, Ohio, assignor to Russell Tool Co., Cincinnati, Ohio, a corporation of Ohio
Filed Dec. 26, 1967, Ser. No. 693,526
Int. Cl. B23b *29/00, 29/24;* **B23q** *17/00*
U.S. Cl. 82—36 **6 Claims**

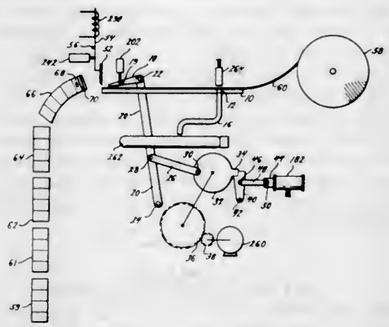
A tool holder for a machine tool which includes a body mounted in a tool post, a head, which carries a plurality of tools, rotatably moutned on the body, a pin received in openings in the head and body for positioning the

head in selected indexed positions, a swinging clamp arranged to clamp the head and body in the indexed positions, and a handle which operates the clamp and carries



a plunger which can release the pin when the handle is moved axially, the plunger engaging the head to index the head when the handle is swung while the pin is released.

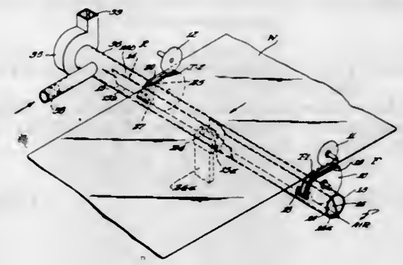
3,465,624
CONTROL SYSTEM FOR FILM CUTTER
Douglas L. Becker, Crestwood, Mo., assignor to Fox-Stanley Photo Products Inc., San Antonio, Tex., a corporation of Texas
Filed Aug. 24, 1967, Ser. No. 663,016
Int. Cl. B26d *3/00, 5/28, 7/00*
U.S. Cl. 83—13 **22 Claims**



A film cutter receives an overall, continuous roll, that is made by splicing together a number of rolls which have indicia-bearing frames at the trailing ends thereof advances the film of that overall, continuous roll in step-by-step fashion, automatically severs equi-length sections from that overall, continuous roll until a light-sensitive element in that film cutter "sees" one of the light-opaque splices on one of the indicia-bearing frames, and then subsequently and automatically severs a further section which has a different length and which includes the indicia-bearing frame.

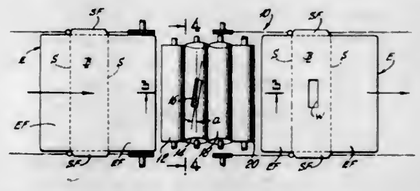
3,465,625
HIGH SPEED TRIM SYSTEM
David A. Daly, Exton, Pa., assignor to Beloit Eastern Corporation, Downingtown, Pa., a corporation of Delaware
Filed May 8, 1967, Ser. No. 636,925
Int. Cl. B26d *1/24;* **B65h** *17/32*
U.S. Cl. 83—100 **15 Claims**

The disclosure incorporates a slitting machine wherein strips are trimmed from each side of a travelling web and delivered downwardly into a conduit means at high speed



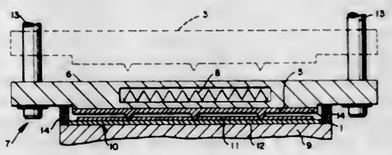
and carried laterally beneath the machine to a discharge chute.

3,465,626
ROTARY PANEL CUTTER
Milton Stovall, Altoona, Pa., assignor to F. L. Smithe Machine Company, Inc., Duncansville, Pa., a corporation of New York
Filed Sept. 12, 1967, Ser. No. 667,212
Int. Cl. B23d *25/02;* **B26d** *7/06*
U.S. Cl. 83—156 **8 Claims**



In a rotary cutting device having a plurality of pairs of rollers for advancing envelope blanks, for example, at least one of the rollers of the first pair of rollers is tilted in a vertical plane with respect to the direction of blank travel. The cutting knife is perpendicular to blank travel but the blank is diverted angularly by the first vertically tilted roller while moving generally longitudinally to provide progressive or shear cutting. A second pair of rollers, with at least one of the rollers of this pair tilted in a vertical plane, relocates the blank along its original path.

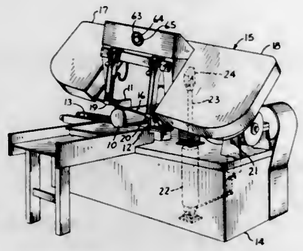
3,465,627
POLYTETRAFLUOROETHYLENE COATED HOT CUTTING DIE
John H. Vigneault, Cleveland, Ohio, assignor to Coated Products, Inc., Middlesex, N.J., a corporation of New Jersey
Filed Sept. 20, 1967, Ser. No. 669,243
Int. Cl. B26d *7/10;* **B26f** *1/14*
U.S. Cl. 83—171 **7 Claims**



A cutting die for cutting through an adhesive-backed thermoplastic film releasably adhered to a release paper, the die being constructed of a material adapted to be heated to a temperature above the melting temperature of the

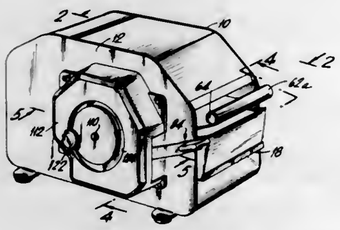
film and having a raised cutting surface coated with polytetrafluoroethylene and configured in the pattern to be cut in the film.

3,465,628
HINGE TYPE HORIZONTAL BAND SAW WITH IMPROVED CONTROL SYSTEM
Henry Komendowski and James E. Whitfield, Jr., Chicago, Ill., assignors to Armstrong-Blum Manufacturing Company, Chicago, Ill., a corporation of Illinois
Filed Sept. 19, 1966, Ser. No. 580,414
Int. Cl. B26d *1/46, 5/12*
U.S. Cl. 83—201.07 **3 Claims**



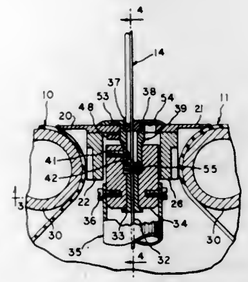
A hinge-type horizontal band saw having a hydraulic drive means to raise and lower the saw head. Automatic means are provided to control the extent to which the saw head will be moved.

3,465,629
MOTOR DRIVEN TAPE DISPENSER
Theodore H. Krueger, deceased, late of Stratford, Conn., by Cecelie M. Krueger and Howard L. Moore, Stratford, and Theodore H. Krueger, Jr., Woodbridge, Conn., and Chemical Bank New York Trust Company, New York, N.Y., executors, assignors to Better Packages, Inc., Shelton, Conn.
Filed July 7, 1967, Ser. No. 658,583
Int. Cl. B26d *5/20;* **B65h** *17/20*
U.S. Cl. 83—205 **15 Claims**



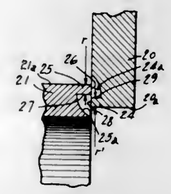
A single embodiment of tape dispenser is described herein which includes an electric motor driven feed for feeding tape from a roll supply contained in a housing of the machine past means for severing the tape and over means for moistening the tape. The feed mechanism includes an upper feed wheel which is rotatably mounted on a fixed motor driven shaft and its periphery overlies the top surface of the tape to be fed. A lower cooperable counter feed roller is mounted on a pivot lever system which is raised during the feeding cycle by the depression of an operating arm or lever to bring it into engagement with the tape against the upper feed roller so that feeding will commence. The depression of the manually operated operating arm also causes the switching on of a motor to drive the upper feed roller, which, because of the upward pressure of the lower feed roller will effect the feeding of the tape.

3,465,630
GAP CLOSER FOR MATERIAL CUTTING MACHINE
Edward C. Burns, Cincinnati, Ohio, assignor to The Cincinnati Milling Machine Co., Cincinnati, Ohio, a corporation of Ohio
Filed May 8, 1967, Ser. No. 636,964
Int. Cl. B26d *7/06*
U.S. Cl. 83—424 **10 Claims**



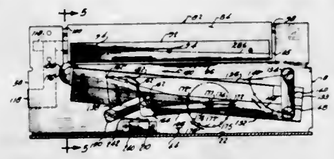
A closure structure for closing a transverse passage, which is formed between endless bands of a material cutting machine, to permit cutting means to move transverse of the material supported on the endless bands. The closure structure includes rotatable drums disposed on opposite sides of the endless bands. Each of the drums has one end of a separate spring tape attached thereto and biased towards the drum. The other end of each of the separate spring tapes is attached to support structure for the cutting means. As the cutting means is moved across the transverse passage by its support means, one of the spring tapes is wound upon its drum while the other is unwound from its drum so that the transverse passage remains closed.

3,465,631
SELF-SHARPENING SLITTER
George E. Reeder, Jr., Newark, Del., assignor to Beloit Eastern Corporation, Downingtown, Pa., a corporation of Delaware
Filed Oct. 6, 1966, Ser. No. 584,734
Int. Cl. B23d *19/04;* **B26d** *1/24*
U.S. Cl. 83—500 **3 Claims**



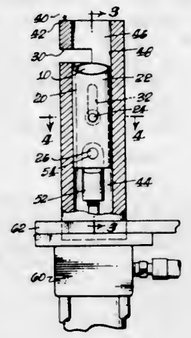
A continuous slitter including a rotatable band and a rotatable blade each of which members has formed on a radial wall thereof an axially projecting annularly shaped cutting profile which overlaps in a radial direction the cutting profile formed on the other member.

3,465,632
PAPER CUTTER FOR FACSIMILE MACHINE
Frank Thomas Bilek, Downers Grove, Ill., assignor to Stewart-Warner Corporation, Chicago, Ill., a corporation of Virginia
Filed Nov. 8, 1966, Ser. No. 592,809
Int. Cl. B26d *5/08*
U.S. Cl. 83—555 **8 Claims**



A paper cutter for transversely cutting paper stock in web form in which a movable blade is caused to move with respect to the fixed blade so as to draw the paper into the point of intersection of the blades.

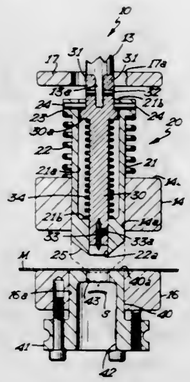
3,465,633
FILM PUNCH
Wilbur F. Reynolds, Scranton, Joseph C. Ruda, Clarks Green, and Bruno W. Marzani, Jr., Clarks Summit, Pa., assignors to Capitol Records, Inc., Hollywood, Calif., a corporation of California
Filed Dec. 21, 1967, Ser. No. 692,600
Int. Cl. B26F *1/14*
U.S. Cl. 83—693 **8 Claims**



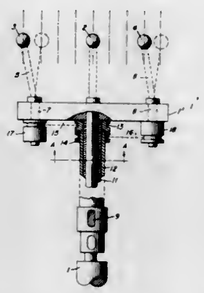
A punch apparatus comprising a housing section defining a slot adapted to receive a workpiece, and a split hollow cylinder piston means having a cutting edge coaxially disposed within the housing section.

3,465,634
PUNCH
Maurice E. Blais, Rumford, R.I., assignor to G. T. Schjeldahl Company, Northfield, Minn., a corporation of Minnesota
Filed Feb. 20, 1967, Ser. No. 617,377
Int. Cl. B26d *7/18;* **B26f** *1/02*
U.S. Cl. 83—695 **3 Claims**

A punch adapted for punching thin flexible materials, including a punch member and a die arranged in axially aligned relationship, means are provided for shifting the punch into engagement with the die for cutting therebetween, the punch surface including a punching face with a plurality of non-die engaging portions whereby areas of attachment are provided between the punched area and the work. As a further feature, the punch is provided with a stripper arranged to be shifted into the area defined by the punch face to break away the attachment areas and remove the punched slug from the work, the stripper member having a pin means which is arranged to pierce the surface of the work prior to the time of engagement between the stripper and the slug.



3,465,635
MULTIHEADED MALLETS
Antal A. Maldacker, 102 Balmoral Ave., Toronto 7, Ontario, Canada
Filed Apr. 22, 1964, Ser. No. 361,664
Claims priority, application Canada, Apr. 25, 1963, 874,045
Int. Cl. G10d *13/00*
U.S. Cl. 84—422 **3 Claims**

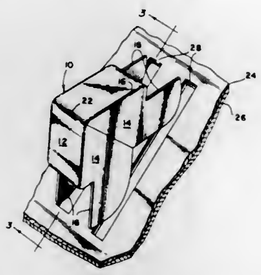


A mallet arrangement for percussion instruments having a plurality of heads of which at least one is rigidly fixed, the remaining heads being movable by selective operation of members affixed to the handle portion of the mallet.

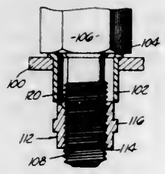
3,465,636
SEPARABLE FASTENER
Paul W. Miessler, Sr., Berea, Ohio, assignor to The Flintkote Company, New York, N.Y., a corporation of Massachusetts
Filed Feb. 15, 1968, Ser. No. 705,757
Int. Cl. F16b *19/04*
U.S. Cl. 85—37 **1 Claim**

A separable fastener is provided for locking together adjoining panels of a fibreboard structure in assembled relationship. The fastener is formed from a blank of

foldable material and includes a rectangular center section and two pairs of flaps that extend downwardly from the sides and beyond the ends of the fastener center section. The fastener is folded and inserted through a pair of aligned openings in the adjoining panels and then unfolded to lock the panels in assembled relationship.



3,465,637
FASTENER
Kenneth V. Cushman, Santa Ana, and Delmar S. Miller, Newport Beach, Calif., assignors, by mesne assignments, to Rex Chainbelt Inc., Milwaukee, Wis., a corporation of Wisconsin
Filed Sept. 26, 1967, Ser. No. 670,711
Int. Cl. F16b *13/04, 33/04*
U.S. Cl. 85—72 **1 Claim**

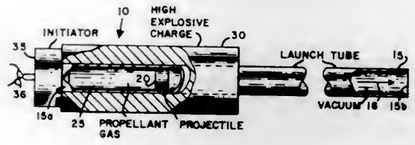


The device of the invention is a one piece threaded blind fastener, or grommet. Preferably, it is initially formed in one piece. It has a tubular body with a head, the fastener or grommet being insertable from one side of the prepared hole and being capable of being set from one side. The tubular body has a skirt and integrally attached to the end of the skirt is a nut part, the joint between the nut part and end of the skirt being frangible or rupturable. The nut part has a threaded bore so that by means of a pulling tool which is threaded into the nut part, it can be pulled up and telescoped into the tubular body part while the head is being held by an anvil.

The nut part is drawn up against the end of the skirt part of the tubular body which is made so that the skirt part bulges or collapses, with the annular shoulder on the nut part, then passing the end of the skirt part and moving into it so that the outwardly bulged part of the skirt part snaps over the annular shoulder of the nut part and holds it against movement in either direction.

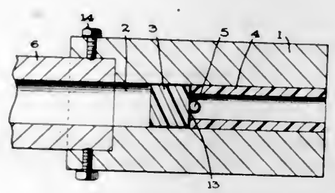
3,465,638
HYPERVELOCITY GUN
Thomas N. Canning, Sunnyvale, Calif., assignor to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration
Filed Aug. 23, 1967, Ser. No. 662,828
Int. Cl. F41f *1/00, 17/00*
U.S. Cl. 89—8 **14 Claims**

The hypervelocity gun of the present invention is an implosion-driven, light-gas gun, which comprises a launching tube that is made of suitable ductile or yieldable material and is closed at one end thereof. Disposed within the launching tube and spaced from the closed end thereof is a projectile to be propelled along the tube and away from the closed end thereof. Contained within the launching tube between the closed end thereof and the projectile to be propelled is a well-known light propellant gas. Surrounding the launching tube commencing at the closed end thereof and extending to the portion of the launching tube intermediate the location of the projectile before firing and the open end of the tube is a suitable high explosive charge. An initiator or detonator is disposed at the closed end of the launching tube to detonate the high explosive charge.



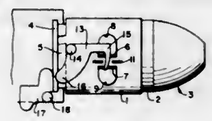
The initiator is fired to cause the high explosive charge to explode progressively a'ong the exterior of the launching tube in the axial direction of the launching tube and away from the closed end of the launching tube to produce a continuously advancing detonation front. This action results in the radial direction implosion of the launching tube that is progressive in the axial direction thereof and toward the open end thereof. As a consequence thereof, the propellant gas is continuously compressed to produce a continuously advancing shock wave front which impinges on the projectile and reflects therefrom to propel the projectile along the launching tube in the axial direction thereof and toward the open end thereof. After the projectile has started to move, the detonation wave and the shock-wave system between the detonation wave and the projectile follow the projectile to substantially the end of the launching tube.

3,465,639
HYPERVELOCITY JET AND PROJECTILE VELOCITY AUGMENTER
William C. Cooley, Bethesda, Md., assignor to Exotech Incorporated, Rockville, Md.
Continuation of application Ser. No. 568,368, July 22, 1966. This application Dec. 5, 1967, Ser. No. 688,266
Int. Cl. F41f *1/00*
U.S. Cl. 89—8 **12 Claims**



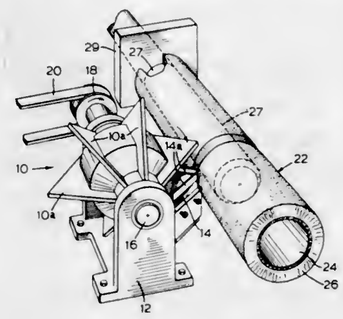
An apparatus for producing a hypervelocity fluid jet by positioning a mass of booster material within an axial bore of a cylindrical casing adjacent to a nozzle and propelling a sabot, which is at least as large as the diametrical dimension of the mass, along the axis of the bore so as to strike the mass and generate a shock wave therein. The booster material then converts to a jet along the axis of the bore.

3,465,640
LINK FOR DISINTEGRATING AMMUNITION BELT
John William Sarvis, P.O. Box 26, Burlington, Vt. 05401
Filed Mar. 7, 1968, Ser. No. 711,378
Int. Cl. F41d *9/00;* **F42b** *39/08;* **F41c** *25/00*
U.S. Cl. 89—35 **9 Claims**



An ammunition belt of the disintegrating type, for rapid fire guns and launchers, wherein the sequential links of the assembled belt are directly interpivoted by latch means pivoted to each link. Pivotal connection of the links is positive; and timely disintegration is reliably effected by coaction between the latch means of each link, in succession, and a part of the gun reciprocating in timed relation with firing thereof.

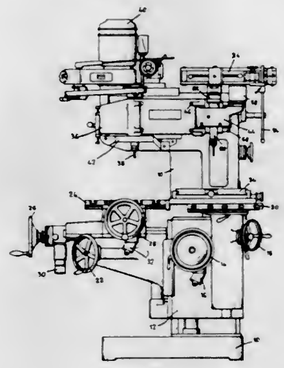
3,465,641
ROLLER COATER CHAMFERING DEVICE
Philip J. Allison, Saint John West, New Brunswick, Canada, assignor to T. S. Simms & Co. Limited, Saint John, New Brunswick, Canada
Filed July 26, 1967, Ser. No. 656,092
Int. Cl. B23c *1/14, 3/02*
U.S. Cl. 90—11 **1 Claim**



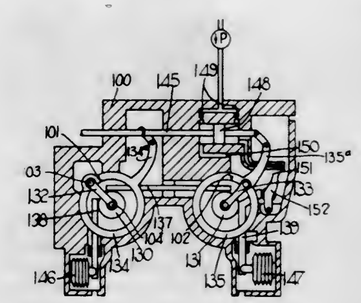
This invention provides a mechanism for bevelling the ends of roller coater refills which essentially consists of a rotating cutter having one or more blades which pass between a pair of backing plates defining a V-shaped cavity so that a V-shaped groove may be cut in the outer periphery of a long length of roller coater core material. The core is subsequently cut at the V-shaped grooves so that the refills defined by the cutting action have bevelled ends.

3,465,642
COPYING MILLING MACHINE
Konrad Bschorer, Wolfratshausen-Waldram, and Johann Muller and Josef Ostler, Munich, Germany, assignors to Friedrich Deckel Prazisions Mechanik und Maschinenbau, Munich, Germany, a firm of Germany
Filed Sept. 19, 1967, Ser. No. 668,832
Claims priority, application Germany, Sept. 21, 1966, D 51,143
Int. Cl. B23c *1/16, 1/18*
U.S. Cl. 90—13.1 **10 Claims**

There is disclosed a copying milling machine in which the relative movements between the workpiece and the milling cutter are controlled by hand, with provision for such movements to be performed either by servo-motors (e.g., in the case of rough milling) or by direct manual force (e.g., in the case of fine finishing milling). In the former case, the milling cutter is held stationary relative to the machine frame, and the relative movements between the milling cutter and the workpiece are performed by moving the work table, and the pattern table which is connected to and moves with the work table. In the second case, where hand power is used to perform the relative movements, the work and pattern tables remain stationary, and the milling cutter moves relative to the machine frame. When servo-motor power is used, a servo-controller is mounted rigidly with respect to the holder of the milling spindle, and the feeler or stylus is supported from the holder of the milling spindle with a slight amount of play and is connected to the control member of the servo-controller so that the relative movements between the stylus and the holder of the milling spindle cause operation of the control member of the servo-controller, to operate the servo-motors to move the workpiece and the pattern in the desired way. For hand power operation, the servo-controller is removed and replaced by a plug which serves to connect the feeler rigidly to the holder of the milling spindle, eliminating the play present when servo-control is used.



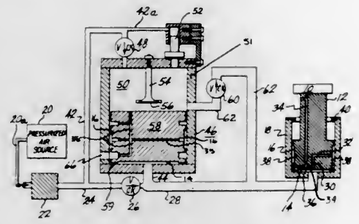
3,465,643
DEVICES FOR TRANSLATING FORCES
Owen Napier Lawrence, Wimbledon, London, England, assignor to Joseph Lucas (Industries) Limited, Birmingham, England, a British company
Filed July 5, 1967, Ser. No. 651,171
Int. Cl. F15b *13/02, 9/10*
U.S. Cl. 91—47 **7 Claims**



A force translating device comprising a first lever acting upon a first element, a second lever acting upon a second element, the two elements being mounted upon a

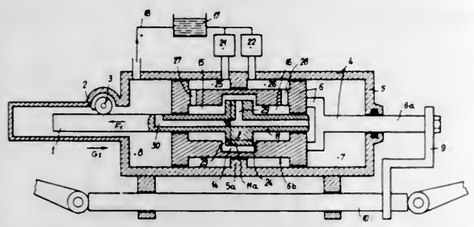
fixed body through respective pairs of arms, a connecting lever pivotally mounted on the body and bearing at its ends upon the elements, the arms also being connected together by an axle.

3,465,644
VERTICAL MOTION POSITIONING SYSTEM
Clarence R. Adams, Kirkland, Wash., assignor to The Boeing Company, Seattle, Wash., a corporation of Delaware
Filed Mar. 9, 1966, Ser. No. 533,029
Int. Cl. F15b *13/06*
U.S. Cl. 91—49 **3 Claims**



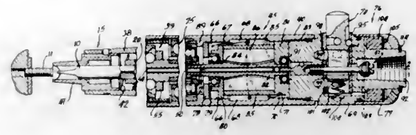
A fluid balanced vertical motion positioning system for supporting an object which cmprises a fast response fluid pressure regulating means which cooperates with conventional regulating means, valves, and interconnecting fluid lines, in a manner such as to maintain continuously constant fluid pressure in a pressure chamber under the object to be supported, thereby maintaining said object precisely at a given elevation after the object has been moved to said elevation by application of an outside force. The fast response regulating means includes a cylinder and a piston which divides said cylinder into two chambers. Each of said two chambers is connected by fluid supply lines to a supply line leading to said pressure chamber under said object.

3,465,645
POWER ASSISTED STEERING SYSTEMS OF AUTOMOTIVE VEHICLES
Alain Mala, Billancourt, France, assignor to Regie Nationale des Usines Renault Billancourt, Hauts de Seine, France
Filed Aug. 14, 1967, Ser. No. 660,363
Claims priority, application France, Sept. 16, 1966, 76,636
Int. Cl. F01b *7/20;* **B62d** *5/08;* **F15b** *9/10*
U.S. Cl. 91—51 **4 Claims**



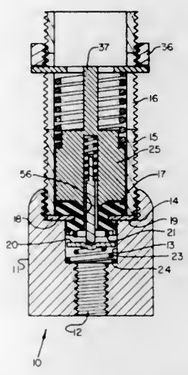
A power-assisted steering system for an automotive vehicle comprising an input shaft connected to a steering wheel, an output shaft or member controlling a steering linkage, and a servo-action motor such as a double-acting actuator having its cylinder secured to the frame of the vehicle and fed by means of two pipe lines respectively for the fluid input and output, said steering system being characterised in that it comprises pipe lines connected to a pair of separate distributors for fluid under pressure and to a pair of ducts of which the opening is adjustable by means of a throttling member secured to said input shaft.

3,465,646
PNEUMATIC MOTOR STRUCTURE
George S. Kiester and R. Stanford Short, Bryan, Ohio, assignors to The Aro Corporation, Bryan, Ohio, a corporation of Delaware
Filed Oct. 5, 1967, Ser. No. 673,212
Int. Cl. F01c *1/00*
U.S. Cl. 91—121 **10 Claims**



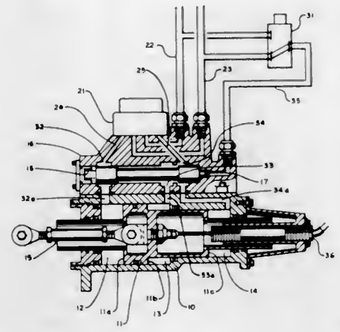
The specification discloses an improved motor and valving assembly for fluid-powered automatic tools particularly useful for driving screws or the like into precision assembly components. A cylinder insert has an eccentric bore which receives a rotor having axially slidable vanes or blades therein. The power fluid porting to and from the motor is through the end plates. A reversing valve assembly in communication with the ports is provided. An alternative embodiment discloses provision for cooling the cylinder exterior.

3,465,647
ADJUSTABLE PRE-SET PRESSURE ACTUATED MECHANICAL PRIME MOVER
Forrest L. Carson, P.O. Box 1594, Borger, Tex. 79007
Filed Nov. 15, 1967, Ser. No. 683,293
Int. Cl. F15b *15/22, 13/042;* **F01b** *11/02*
U.S. Cl. 91—395 **4 Claims**



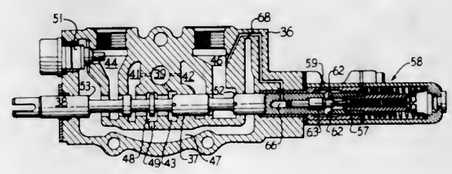
The disclosure involves a snap acting mechanical prime mover which is actuated by a pre-set fluid pressure and can be adjusted to be actuated by any desired pre-set pressure within the range of the prime mover. The prime mover actuator will move outwardly and return when the actuating pressure reaches a pre-set level, even though the actuating pressure is maintained. Upon release of the actuating pressure the prime mover resets for another cycle.

3,465,648
MULTIPLE OUTPUT FLUID CONTROL SYSTEM
Clement L. Conklin, Jr., and Thomas M. Holland, Jr., Orlando, Fla., assignors to Martin Marietta, New York, N.Y., a corporation of Maryland
Filed June 28, 1967, Ser. No. 649,681
Int. Cl. F15b *13/02, 15/17;* **F01b** *7/18*
U.S. Cl. 91—413 **6 Claims**



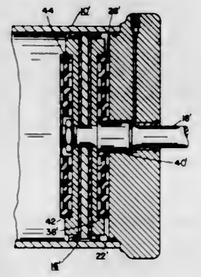
This invention teaches a multiple output actuator usable with fluid control systems, in which the piston of the actuator is provided with a multiplicity of different areas against which fluid pressure can be selectively admitted, so that a force of equal magnitude can be delivered in either direction of piston travel. Advantageously, at least one of the piston areas can be biased on occasion to a pressure different than the pressure to which certain related areas of the piston are biased, thus to bring about on such occasion a lower force output, which output can of course represent higher speed and a higher stroke then was possible at the time the full force was being delivered. Such an actuator is highly desirable for missile work inasmuch as this teaching enables smaller, lighter actuators or reduced power requirements to be used in the missile than was otherwise possible, yet still be effective to handle all of the requirements of an effective actuator in the missile.

3,465,649
DETENT LOCKOUT FOR HYDRAULIC CONTROL VALVES
Robert G. Eggers, Eastlake, and Arthur R. Grant, East Cleveland, Ohio, assignors to Towmotor Corporation, Cleveland, Ohio, a corporation of Ohio
Filed Mar. 29, 1968, Ser. No. 717,122
Int. Cl. F15b *11/02, 15/26;* **F16k** *35/00*
U.S. Cl. 91—426 **6 Claims**



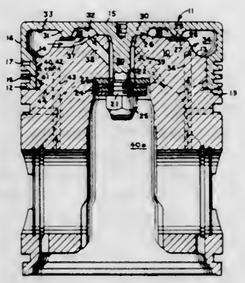
A control valve for a double acting hydraulic jack operative to raise or lower a load having a neutral position for holding the load and high and low speed positions for raising and lowering the load. A pressure responsive detent lockout is operative to prevent shifting of the valve from its low to high speed lowering position. Fluid pressure resisting lowering of the load is communicated to the lockout only when the spool is in its neutral position so that pressure to which the lockout responds is always proportional to the load.

3,465,650
SHOCK ABSORBING MEANS FOR PISTON AND CYLINDER OR THE LIKE
William Gluck, Box 315, Monroeville, Pa. 15146
Filed Jan. 16, 1967, Ser. No. 609,630
Int. Cl. F01b *11/02;* **F16j** *15/56, 1/00*
U.S. Cl. 92—85 **12 Claims**



The shock absorbing means are useful between impacting machine elements such as a piston surface and either end of a cylinder. The shock absorbing means includes a resilient member having pockets or air spaces therein for entrapping fluid between the resilient member and the impacting surface of the machine element. The resiliency of the member permits engagement with the surface of the oncoming machine element to seal the pockets and prevent escape of the fluid. The entrapment of a compressible fluid in these pockets quickly absorbs the momentum of the impacting machine elements and brings the moving element to a stop within a very short distance after first engaging the shock absorbing means without imparting undue shock forces to either machine element. The shock absorbing means can be provided as a single member having pockets on either or both sides or as a plurality of discrete resilient members spaced to form pockets or grooves therebetween for entrapment of the fluid.

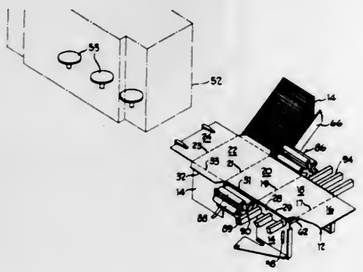
3,465,651
COMPOSITE PISTONS
Frederic C. Tromel, Schenectady, N.Y., assignor to Alco Products, Inc., New York, N.Y., a corporation of Delaware
Filed Feb. 13, 1968, Ser. No. 705,150
Int. Cl. F01b *31/08;* **F02f** *3/22;* **F04b** *39/06*
U.S. Cl. 92—186 **10 Claims**



Composite oil cooled piston to be subjected to high temperature in reciprocating devices wherein the piston has a body portion made of aluminum alloy and the like

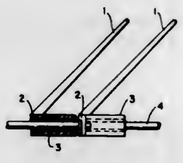
materials and a cap portion of ferrous alloy having a relatively thin crown, the body and cap being provided with connecting means and seating means therebetween so that in assembled position the cap will be stressed and the body portion and cap portion of the piston provided with passages and spaces to efficiently cool the crown of the cap during operation and to facilitate removal of the cap portion from the body portion of the piston.

3,465,652
APPARATUS FOR AND METHOD OF FORMING A MULTIPLE-PIECE CONTAINER
John T. Bell, Lombard, and Theodore D. Jaeger, La Grange Park, Ill., assignors to Container Corporation of America, Chicago, Ill., a corporation of Delaware
Filed Aug. 8, 1967, Ser. No. 659,131
Int. Cl. B31b *17/02, 17/26*
U.S. Cl. 93—55 **16 Claims**



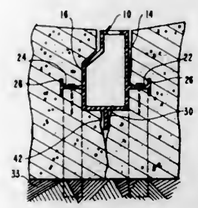
Apparatus for and method of locating and partially securing together separate blanks of paperboard, and thereafter completely securing the separate blanks together to form a multiple-piece container, and for automatically discharging the container when finished.

3,465,653
MEANS PROVIDING A SLIDING SURFACE
Alwin Schipper, 8731 Thulba uber Bad Kissengen, Germany
Filed Oct. 18, 1967, Ser. No. 676,181
Claims priority, application Germany, Oct. 20, 1966, Sch 39,708
Int. Cl. E01c *7/00;* **E04f** *15/00*
U.S. Cl. 94—7 **10 Claims**



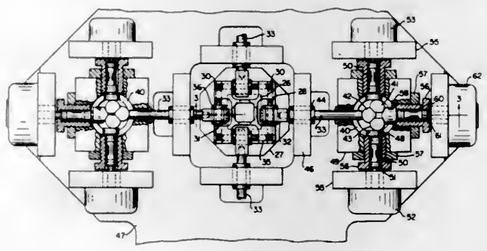
A bed which provides a surface on which objects may slide, in a generally preferred direction, e.g., for use on a ski-slope. The bed is comprised of a number of structural elements arranged in a series of rows, the rows being interconnected one behind the other to form a flexible mat. The structural elements abut each other side-by-side within the rows, and the line of abutment so formed is staggered from row to row. The structural elements are comb-like articles having a number of elastically deformable teeth extending upwardly from a base. The elements also include tubular lugs which extend in the preferred direction from the base through which wires may be passed to interconnect rows of elements.

3,465,654
DRAIN DEVICE
Harry Fox, 988 S. Sterne Drive, Los Angeles, Calif. 90048
Filed July 17, 1967, Ser. No. 659,275
Int. Cl. E01c *11/50;* **F16l** *9/12*
U.S. Cl. 94—33 **6 Claims**



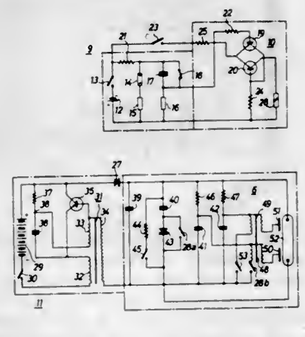
This invention comprises an elongated plastic tube having a flat upper wall, side walls, and a bottom wall with a downwardly projecting rib. The side walls are provided with oppositely extending wings which extend parallel to, but below, the upper wall. The upper wall of the tube is provided with holes or slots disposed in some attractive arrangement. In use, the tube is embedded in the cement with the flat upper wall flush with the surface of the cement. The surface of the cement is gently sloped toward the flat upper wall of the tube so that water falling onto the cement flows onto the upper wall of the tube and from there through the slots into the interior of the tube for drainage. The side wings of the tube serve to prevent water from running down the outer surface of the tube to the ground below the cement. In addition, they provide a means for leveling the tubing so the upper surface of the tube is flush with the cement. The depending or downwardly projecting rib on the lower wall of the tube serves to produce and position a crack in the cement below the tube. This crack serves as a contraction joint for the cement.

3,465,655
POSITIONING APPARATUS
Melvin T. Roudebush, Dayton, Ohio, assignor to The National Cash Register Company, Dayton, Ohio, a corporation of Maryland
Filed Mar. 31, 1967, Ser. No. 627,541
Int. Cl. B41b *17/06*
U.S. Cl. 95—4.5 **5 Claims**



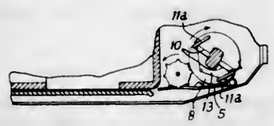
A mechanism for positioning a character-containing printing mask along an *x* and *y* axis. The mask is moved along each of the axes by a pair of solenoid members operating in a push-pull relationship, each of which is selectively positioned by the movement of a plurality of wedge-shaped cam members. Each cam member is moved in relation to the other cam member a distance which corresponds to one of the binary digits 1, 2, or 4.

3,465,656
FLASH INTENSITY REGULATING CIRCUIT FOR FLASH CAMERAS
Richard Wick, Gruenwald, near Munich, Friedrich Biedermann, Unterhaching-Munich, Alfred Winkler, Munich, Friedrich Bestenreiner, Gruenwald, near Munich, Gerd Kiper, Unterhaching-Munich, Gunter Pawlik, Munich, Reinhard von Sybel, Kralling, Erwin von Wasiliewski, Munich, and Karl Wagner, Ottobrunn, Germany, assignors to Agfa-Gevaert Aktiengesellschaft, Leverkusen, Germany
Continuation-in-part of application Ser. No. 562,664, July 5, 1966. This application Oct. 28, 1966, Ser. No. 590,407
Claims priority, application Germany, Oct. 28, 1965, A 50,634
Int. Cl. G01j *1/52, 1/36*
U.S. Cl. 95—10 **12 Claims**



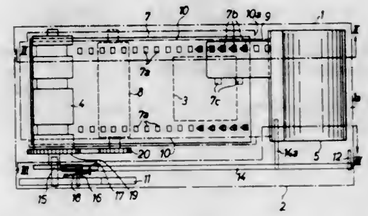
A flash camera arrangement in which the intensity of brightness of the flash is regulated as a function of the ambient light intensity. An electronic triggering circuit initiates a preliminary flash a portion of which is reflected from the object or scene to be photographed. A photoelectric element in the electronic circuit generates a signal as a function of the reflected light from the preliminary flash and the ambient light conditions. When the shutter of the camera becomes released, the main flash of the camera is regulated in intensity as a function of the ambient light intensity and the light reflected as a result of a preliminary flash.

3,465,657
FILM TAKE-UP SPOOL DEVICE FOR CAMERAS
Herbert Welzel and Heinz Bachmann, Dresden, Germany, assignors to VEB Pentacon Dresden Kamera- und Kinowerke, Dresden, Germany
Filed Mar. 14, 1966, Ser. No. 534,075
Int. Cl. G03b *19/04*
U.S. Cl. 95—31 **4 Claims**



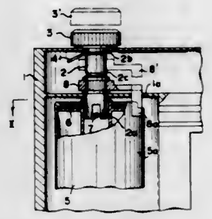
The take-up spool of a camera drivable simultaneously with a film transport sprocket is provided with a stirrup which moves in radial slots provided in the take-up spool flanges. A guide member urges the film end towards the spool core and forms a loop around the stirrup as the latter is rotated together with the take-up spool. The tension applied to the take-up film end causes the stirrup to move along the slots until the film end is pressed against the core.

3,465,658
PHOTOGRAPHIC CAMERA WITH A FILM TAKE-UP SPOOL
Hubert Hackenberg, Munich-Solln, Germany, assignor to AGFA-Gevaert Aktiengesellschaft, Leverkusen, Germany
Filed Apr. 28, 1966, Ser. No. 545,950
Claims priority, application Germany, May 3, 1965, A 23,696
Int. Cl. G03b *19/04*
U.S. Cl. 95—31 **9 Claims**



A photographic camera including a film take-up spool and a film magazine cartridge with a winding band being connected to the spool for seizing the film from the cartridge to permit the film to be transferred to the take-up spool upon rotation of the spool. The camera includes a detecting lever which is biased toward the space normally occupied by the cartridge to detect the presence of a cartridge and to prevent rotation of the take-up spool when there is no cartridge in the camera.

3,465,659
CARTRIDGE CONTROL MEANS ASSOCIATED WITH A HINGE-TYPE CAMERA LID
Akihiko Sato, Tokyo, Japan, assignor to Nippon Kogaku K.K., Tokyo, Japan, a corporation of Japan
Filed Sept. 13, 1966, Ser. No. 579,154
Claims priority, application Japan, Sept. 22, 1965, 40/77,345
Int. Cl. G03b *19/04*
U.S. Cl. 95—31 **3 Claims**

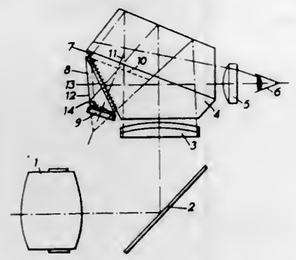


A film cartridge control device for retaining the cartridge in a predetermined position within the camera body. The control device is adapted to engage the film cartridge so that even when the photographers fingers are removed from the cartridge, rotation of the film cartridge within the camera body is prevented.

3,465,660
EXPOSURE MEASURING DEVICE IN PHOTOGRAPHIC MIRROR-REFLEX CAMERAS
Werner Trankner and Rolf Jurenz, Dresden, Germany, assignors to VEB Pentacon Dresden Kamera- und Kinowerke, Dresden, Germany
Filed Jan. 9, 1967, Ser. No. 608,056
Int. Cl. G03b *19/12;* **G01j** *1/00, 1/52*
U.S. Cl. 95—42 **13 Claims**

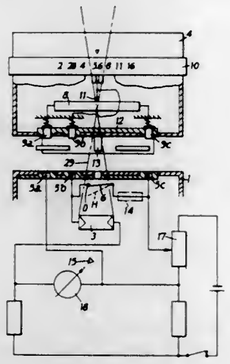
A photographic mirror reflex camera has a pentagonal roof prism provided with a partly permeable image erecting surface against which is located a frusto-conical or

frusto-pyramidal light conductive or collective prism which has a plane surface at one end which removes part of the base of the cone or pyramid which plane is opposite to and approximately the same size as the erecting surface and a plane surface at the other end which cuts off the apex and is opposite to a photoelectric cell. The



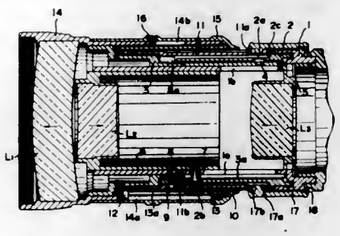
base of the cone or pyramid is approximately parallel to the roof prism edge that is remote from the apex. By this construction the light outlet surface of the collecting prism is much smaller than its light entry surface and the whole of the light flux passing through the erecting surface arrives with a high degree of luminosity and without appreciable loss on the photoelectric cell.

3,465,661
PHOTOGRAPHIC CAMERAS
Werner Hahn and Rolf Noack, Dresden, Germany, assignors to VEB Pentacon Dresden Kamera- und Kinowerke, Dresden, Germany
Filed Mar. 3, 1967, Ser. No. 620,314
Int. Cl. G03b *3/00, 9/02;* **G01j** *1/00*
U.S. Cl. 95—44 **5 Claims**



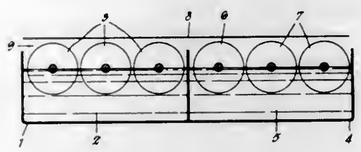
The camera is provided with an interchangeable objective mounted on the camera housing. An exposure measuring device has a photoelectric cell, a galvanometer and a switch arranger within the camera housing and an adjustable resistor arranged within the objective. The objective has opening means which, when the objective is mounted on the housing, open the switch so that the adjustable resistor controls the current through the galvanometer, said adjustable resistor being electrically connected to the galvanometer via cooperating electrical contacts provided on the objective and housing. With the objective mounted on the housing the camera diaphragm can be adjusted until the galvanometer needle is opposite its zero mark. This is termed "dark measuring." With the objective not mounted the switch is closed so that the galvanometer will indicate a reading, the diaphragm remaining completely open for viewing purposes. This is termed "bright measuring."

3,465,662
ZOOM LENS BARREL FOR CAMERAS
Toshio Kashiwase, Zushi-shi, Japan, assignor to Nippon Kogaku K.K., Tokyo, Japan, a corporation of Japan
Filed Sept. 2, 1966, Ser. No. 576,970
Claims priority, application Japan, Sept. 3, 1965, 40/72,290
Int. Cl. G03b *3/02*
U.S. Cl. 95—45 **4 Claims**



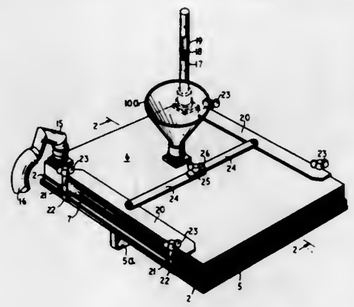
A zoom lens for use in a single lens reflex camera wherein the focussing operation and the focal length varying operation are selectively performed through the use of a single operating ring. The ring is slidable along the optical axis of the lens into one of two positions which determine the parameters to be adjusted. With the ring in its forwardmost position it can be rotated to control the focussing of the lens. When the ring is in its rearwardmost position it can be rotated to change the focal length of the lens. Both settings can be accomplished without the operator moving his hand from one control element to another.

3,465,663
PHOTOGRAPHIC PROCESSING APPARATUS
William John Calder, Ilford, England, assignor to Ilford Limited, Ilford, Essex, England, a British company
Filed Sept. 19, 1966, Ser. No. 580,268
Claims priority, application Great Britain, Sept. 23, 1965, 40,619/65
Int. Cl. G03d *3/12*
U.S. Cl. 95—89 **10 Claims**



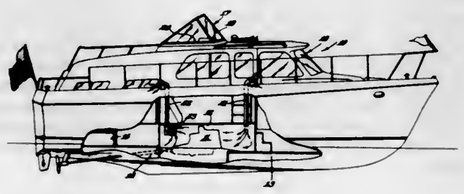
A photographic processing apparatus having a pair of juxtaposed treating vessels containing an activator solution and a stabilizer solution respectively, a plurality of applicator rollers associated with each of the treating vessels for applying the treating solution to a photographic material which comes into tangential contact with the rollers, and a drive mechanism for rotating the rollers. The first applicator roller in the stabilizer vessel is made of a smooth surfaced material and rotates at a peripheral speed which is greater than that of the other rollers in the stabilizer vessel and in a direction which is opposite to the direction of rotation of the other rollers in the vessel. The other rollers are made of a non-smooth surfaced material which serves to transport the photographic material through the treating vessel as well as apply solution thereto.

3,465,664
DEVELOPING TRAY FOR COLOUR POSITIVE PHOTOGRAPHIC PAPERS
Austin Anthony Bochman, Burns Road, Kellyville, New South Wales, Australia
Filed Nov. 8, 1966, Ser. No. 592,817
Claims priority, application Australia, Nov. 29, 1965, 67,160/65
Int. Cl. G03d *13/04*
U.S. Cl. 95—95 **6 Claims**



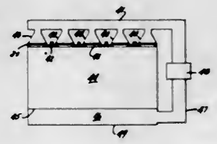
A developing tray for color positive photographic papers has a detachable lid which is provided with inlet and outlet openings, each having light traps, and another opening in which a thermometer is positioned. After the paper is placed in the tray in a darkroom, the tray and lid are clamped together to provide a light tight and fluid tight seal. The tray can then be filled with fluid and the processing steps performed in a lighted area. The tray has positioning lugs thereon which cooperate with plates on the lid to thereby cause the sheet of paper to lie on the bottom of the tray.

3,465,665
SAFETY PILOT SWITCH
Arthur J. O'Day, Lake Geneva, Wis., and Dennis J. Ricker, Dayton, Ohio, assignors of seventy-five percent to Arthur J. O'Day, Lake Geneva, Wis., and twelve and one-half percent each to Dennis J. Ricker and George Gelofcsak, both of Dayton Ohio
Filed Feb. 15, 1968, Ser. No. 705,732
Int. Cl. F24f *11/00*
U.S. Cl. 98—1 **5 Claims**



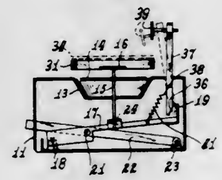
This system is directed to a safety control system for the ventilation of compartments wherein the volume of air in the compartment is susceptible to becoming mixed with a flammable gas, and wherein the compartment contains an electrically energizable device which may inadvertently cause an arc or spark to ignite or explode the gas in the compartment. The control system includes a ventilating fan and a timing device which are initially energized by a fan control switch. The timing device senses a predetermined period of time and thereafter energizes a relay the contacts of which are connected in series with the electrically energizable device in the compartment. Therefore the electrically energizable device within the compartment cannot be energized until the compartment has been sufficiently ventilated.

3,465,666
CLEANROOM FILTERING METHOD
James V. Knab, Grand Rapids, Mich., assignor to Weber Showcase & Fixture Co., Division of Walter Kidde & Company, Inc., Grand Rapid, Mich., a corporation of New York
Continuation of application Ser. No. 640,965, May 24, 1967. This application Dec. 10, 1968, Ser. No. 785,033
Int. Cl. F24f *13/06;* **B01d** *46/10*
U.S. Cl. 98—33 **2 Claims**



A method of supplying air to a cleanroom having a plurality of individual, modular plenum units suspended adjacent the ceiling thereof and opening toward the floor. Each of the units has a highly efficient filter positioned over the room facing outlet thereof. The plenum units are pressurized with pre-filtered, suitably conditioned air and this air passes through the filters and downwardly through the room in generally laminar fashion. The air is then passed through a perforate false floor, collected and recirculated. The filters in the units act to diffuse the air as well as filter it.

3,465,667
APPARATUS FOR HEATING SELF-CONTAINED POPCORN CONTAINERS
Gerald E. Cox and Donald Edward Krup, Elgin, Ill., assignors to Therm-Appliance Mfg. Co., Inc., St. Charles, Ill., a corporation of Illinois
Filed Mar. 18, 1968, Ser. No. 713,829
Int. Cl. A23l *1/18*
U.S. Cl. 99—238.3 **10 Claims**

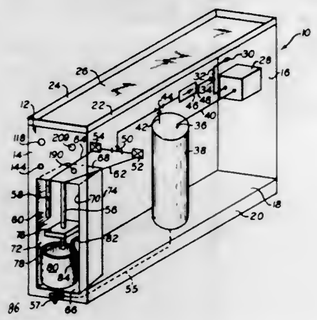


Apparatus for heating a self-contained popcorn container and the like, which includes means to shake the container while heating same and means to shut off the current to the heater element and to lift the container off of the heater element when heating is terminated.

The invention relates to improvements in apparatus for heating self-contained popcorn containers, and is more particularly concerned with electrical heating apparatus including means to automatically cut off electric current

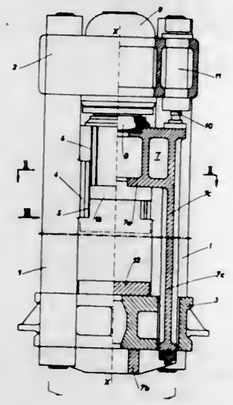
to the heater element and to shaker means therein, and to lift the container clear of the heater element when the contents of the container is "popped."

3,465,668
BEVERAGE DISPENSING APPARATUS
Frank Boscarino, East Northport, N.Y., assignor, by mesne assignments, to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware
Filed Feb. 10, 1966, Ser. No. 526,620
Int. Cl. A47j *31/10, 31/54*
U.S. Cl. 99—282 **11 Claims**



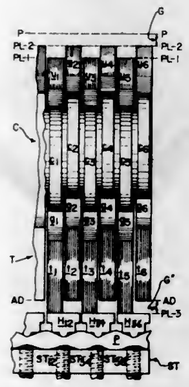
A beverage producing apparatus having a boiler for heating a fluid and means for automatically dispensing the fluid when the same attains a predetermined temperature, with means to alternately dispense fluid manually when the same is desired, and including safety means to prevent the buildup of pressure.

3,465,669
GUIDE FOR THE SLIDE OF A VERTICAL PRESS
Michel Doudet, Chatillon-sous-Bagneux, France, assignor to Presses et Materiels Hydrauliques Morane-Somua, Paris, France, a French company
Filed June 6, 1967, Ser. No. 643,951
Claims priority, application France, June 17, 1966, 65,958
Int. Cl. B30b *15/04;* **F16c** *29/02*
U.S. Cl. 100—214 **4 Claims**



A guide for the ram slide of a vertical press whose frame is formed by the press base and crown interconnected by uprights or columns having slide-guiding elements, wherein the ram slide comprises a tool-carrying cross-member guided in known manner on the press frame uprights or columns; the cross-member is connected to two vertical beams symmetrical of one another in respect to the central vertical plane of the working passage of the press; and the beams extend through the press frame element towards which the slide makes its operative movement, in guides in the latter element.

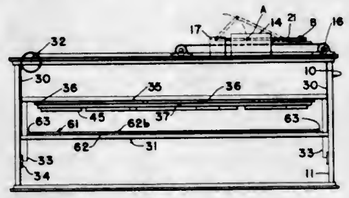
3,465,670
TYPE HAMMER ACTUATING MEANS IN HIGH-SPEED PRINTERS
Ross A. Belson, Natick, and Charles Bickoff, Quincy, Mass., assignors to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware
Filed Jan. 2, 1968, Ser. No. 695,186
Int. Cl. B41j *9/10*
U.S. Cl. 101—93 **8 Claims**



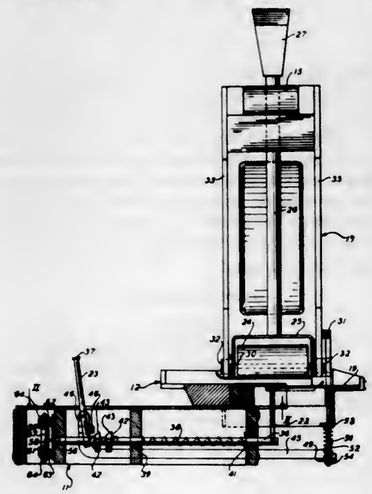
A simplified high-speed printer using a continuously rotating type roll swept past an array of aligned print hammer slugs, the roll being selectively impacted by each slug when an associated (one of a set of) hammer actuator is "fired," the printer being characterized by the actuators, each being "shared" by an associated set of slugs all driven in common thereby, all but one of these "sharing" slugs, in a set, being disabled at any given phase (character-period) of each print-cycle corresponding slugs in each set having a respective "ON" period in every cycle. That is, in a typical embodiment with a conventional "full" complement of print slugs, each independently mounted to correspond with a respective "print position" (column), adjacent pairs of slugs are arranged to be activated by a common, selectively-fired solenoid actuator, each such actuator, being arranged to print-thrust both associated slugs, except that only one slug is "enabled" during each alternate print-cycle, other slug being contemporaneously disabled and out of actuator-contact; and this disablement being synchronized with type roll rotation, preferably by a system of opposed pairs of cam-lobes rotated by a common shaft to alternately "cock" one or the other slug (in each pair) "forward," out of actuator range.

3,465,671
APPARATUS FOR FABRIC CUTTING
Edwin M. McPherson, Baltimore, Md., assignor to J. Schoeneman Incorporated, Owings Mills, Md., a corporation of Delaware
Filed June 16, 1966, Ser. No. 558,076
Int. Cl. B26d *7/10, 5/08*
U.S. Cl. 101—114 **4 Claims**

The invention involves the heat cutting of fabric into selected shapes and sizes under controlled heat and pressure. The various features of the invention include an improved means of loading, improved notching and marking means, and improved means for the continuous die cutting of the fabric.



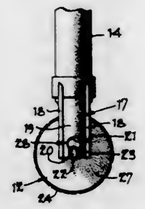
3,465,672
CREDIT CARD VERIFIER AND PRINT ENABLING MEANS IN PRINTING APPARATUS
Kenneth O. Whitfield, 175 Bloomfield Ave., Montclair, N.J. 07042
Filed Feb. 6, 1968, Ser. No. 703,396
Int. Cl. B41f *3/58, 33/00*
U.S. Cl. 101—269 **8 Claims**



A device for verifying the identity of a prospective customer who presents a credit token with a secret number coded as indicia thereon, prior to extending credit in the sale of merchandise, comprising a series of readout pins spring-biased to neutral positions with top end portions upstanding into a pocket of said device, and elements for individually moving said pins from neutral to set positions, corresponding with information given by the customer as to said number, and thereby only when such information agrees with said coded indicia, as confirmed by the matching of the pins with the token, then permit placement of said token in position for printing an invoice therefrom in said pocket.

3,465,673
HAND PAINTING TOY WITH SNAP-IN PRINT WHEEL
Michael J. Oppenheim, Cincinnati, Ohio, assignor to Kenner Products Company, Cincinnati, Ohio, a corporation of Delaware
Filed June 8, 1966, Ser. No. 556,202
Int. Cl. B41k *1/22*
U.S. Cl. 101—328 **2 Claims**

A painting toy for use by children of the type comprising a partially hollow handle, a paint wheel having an axle portion on each side thereof, suspension means for holding the paint wheel in operational relation with the handle, and an ink pad positioned within the hollow handle for abutting the paint wheel during use of the toy. The suspension apparatus is preferably characterized by a relatively rigid yoke providing a throat access



to the bearing structure in combination with relatively flexible axle portions of the paint wheel so that an easy and convenient snap in-snap out relation is established for holding the paint wheel in operational relation with the hollow handle. This permits rapid changing of paint wheels as well as different colored ink pads within the hollow handle by children.

3,465,674
PROCESS FOR GENERATING AN EXPLOSION
Wilhelm E. Walles, Midland, and Donald J. Nagy, Saginaw, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
No Drawing. Filed Oct. 30, 1967, Ser. No. 679,208
Int. Cl. C06b *13/00;* **C06c** *1/04*
U.S. Cl. 102—23 **2 Claims**

N-halo amides react explosively with alkyl sulfoxides and active hydrogen compounds such as certain hydroxy compounds and amines. Delayed explosive decompositions occurring after a predetermined time can be produced by selection of components and variation of their proportions.

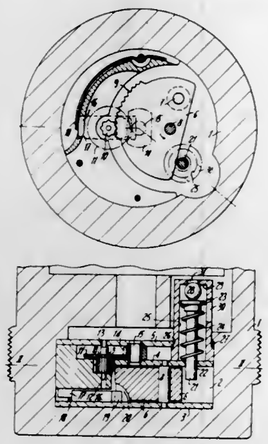
3,465,675
PROCESS OF BLASTING WITH THICKENED SLURRIED INORGANIC OXIDIZER SALT-ALCOHOL-WATER EXPLOSIVE MIXTURES
Jesse B. Bronstein, Jr., Allentown, Pa., assignor, by mesne assignments, to Commercial Solvents Corporation, a corporation of Maryland
Original application Aug. 1, 1966, Ser. No. 569,325, now Patent No. 3,395,056, dated July 30, 1968. Divided and this application Oct. 11, 1967, Ser. No. 681,951
Int. Cl. F42d *3/00*
U.S. Cl. 102—23 **15 Claims**

A process of blasting is provided wherein the explosive mixture employed is made in situ proximate to the blasting site, by mixing an inorganic oxidizer salt, a lower aliphatic alcohol fuel in an amount of at least 75% of the amount required to oxygen-balance the oxidizer, and an alcohol thickening agent with sufficient water to slurry the mixture. The thickened slurry is then delivered to the blasting site, confined, such as by depositing the slurry in a bore hole, and detonated.

3,465,676
SAFETY SYSTEM FOR THE FUSE OF A GYRATORY MISSILE
Robert Simmen, Geneva, Switzerland, assignor to Mefina S.A., Fribourg, Switzerland, a company of Switzerland
Filed Nov. 27, 1967, Ser. No. 685,919
Claims priority, application Switzerland, Oct. 5, 1967, 13,994/67
Int. Cl. F42c *15/26*
U.S. Cl. 102—80 **4 Claims**

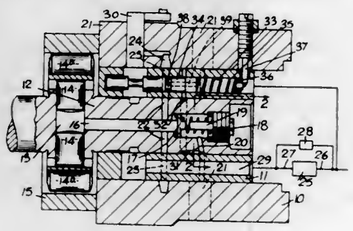
A safety system for the fuse of a gyratory missile allowing a primer-carrying member to enter its operative

position facing a striker, for instance, only when both following conditions are associated: (a) the centrifugal force produced upon firing of the missile out of a rifled gun has released first locking means such as a transverse bolt, urged by a spring inwardly against said primer-carrying member, and (b) the axial acceleration at the start has released second locking means such as a longi-



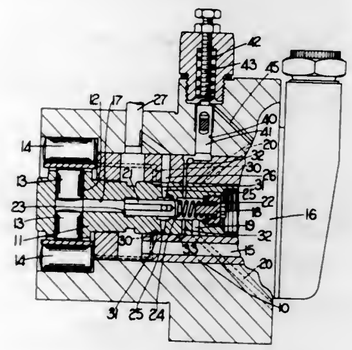
tudinal bolt holding the primer-carrying member against movement; said last release is obtained in two stages, to wit: a receding stage produced by the actual acceleration and releasing of a blocking means such as a ball or similar movable member opposing the releasing movement of the second locking means and a forward stage actually releasing the primer-carrying member at the end of the initial acceleration of the missile.

3,465,677
LIQUID FUEL PUMPING APPARATUS
Graham Albert Flemming Clarke, Ruislip, England, assignor to C.A.V. Limited, London, England, a British company
Filed Oct. 4, 1967, Ser. No. 672,754
Claims priority, application Great Britain, Oct. 6, 1966, 44,682/66
Int. Cl. F04b *13/02;* **F04d** *29/50*
U.S. Cl. 103—2 **8 Claims**



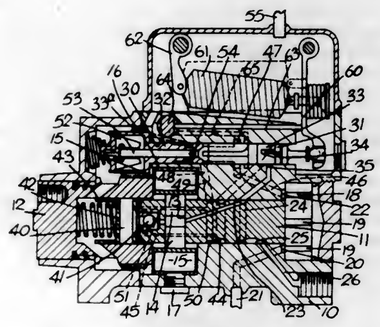
A liquid fuel pumping apparatus for supplying fuel to an internal combustion engine and including an injection pump which supplies fuel through a delivery passage formed in a rotary distributor member, the delivery passage being arranged to register in turn with delivery ports, there being provided a groove positioned to register with the delivery port as soon as the delivery passage has moved out of register therewith, the groove communicating with a restricted leakage path and means being provided to prevent the flow of fuel from the outlet port to the injection pump at the end of the delivery of fuel through said port.

3,465,678
LIQUID FUEL PUMPING APPARATUS
Michael George Mowle, Kenton, England, assignor to C.A.V. Limited, London, England
Filed Oct. 10, 1967, Ser. No. 674,230
Claims priority, application Great Britain, Oct. 21, 1966, 47,246/66
Int. Cl. F04b *13/02, 49/00*
U.S. Cl. 103—2 **10 Claims**



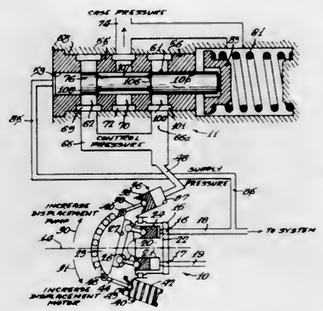
A liquid fuel pumping apparatus for supplying fuel to an internal combustion engine and including an injection pump driven in timed relationship with the engine, the injection pump being arranged to deliver fuel to an outlet port during an injection stroke thereof and a one way valve disposed intermediate the injection pump and said port, the valve being arranged to be closed after the delivery of fuel to the port has ceased and means for relieving the pressure on the opposite sides of said valve after injection has ceased.

3,465,679
LIQUID PUMPING APPARATUS
Anthony John Adey, Ruislip, and Paul Edgar Glikin, Hendon Way, London, England, assignors to C.A.V. Limited, London, England
Filed Sept. 28, 1967, Ser. No. 671,278
Int. Cl. F04b *23/04, 11/00*
U.S. Cl. 103—5 **6 Claims**



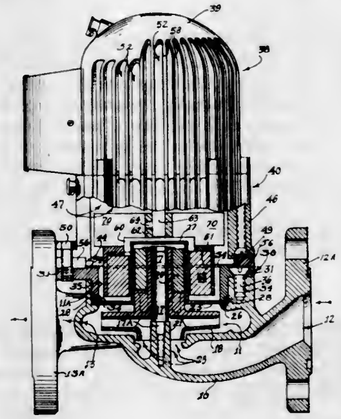
A liquid fuel pumping apparatus of the kind including a pressure pump to which fuel is supplied intermittently from a feed pump, the feed pump outlet being in communication with a variable capacity reservoir, the apparatus also including a centrifugal regulator including a variable orifice, and a pressure responsive piston which effects a control over the pressure pump, the pressure responsive piston together with the centrifugal regulator being in communication with the outlet of the feed pump by way of a restrictor whereby fluctuations in the output pressure of the feed pump due to the intermittent flow to the pressure pump are smoothed before application to the pressure responsive piston.

3,465,680
HYDRAULIC PUMP OR MOTOR UNIT
Tauno Saila, Los Angeles, Calif., assignor to Sundstrand Corporation, a corporation of Delaware
Filed May 31, 1967, Ser. No. 642,426
Int. Cl. F04b *1/02, 49/00*
U.S. Cl. 103—38 **10 Claims**



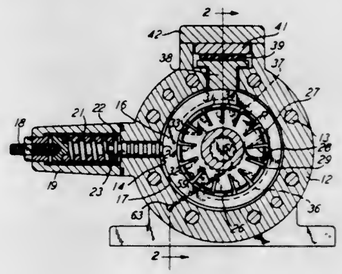
A hydraulic pump or motor unit of the variable displacement type having a pressure compensating valve responsive to system pressure for varying the displacement of the unit, the compensator valve also providing leakage flow as a function of system pressure for increasing the damping ratio of the compensator valve to minimize hunting of the control.

3,465,681
MAGNETICALLY-COUPLED PUMP WITH DETACHABLE MOTOR
Frederick N. Zimmermann, Deerfield, Ill., assignor to March Manufacturing Company, Glenview, Ill., a corporation of Illinois
Filed Aug. 24, 1967, Ser. No. 663,161
Int. Cl. F04d *13/06, 29/40;* **H02k** *5/10*
U.S. Cl. 103—87 **14 Claims**



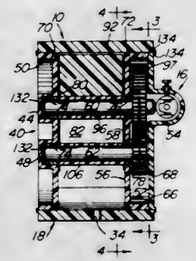
In a magnetically-coupled pump the pump body has an open side through which a driven coupling magnet attached to the impeller is exposed, such side being closed by a plate having a magnet well and held in position by a collared clamping ring which is held to the body by screws; and a driving motor having a head structure fitting against the ring, either directly or with an intermediate heat-barrier collar, is bolted to the body with a driving magnet surrounding the well, the construction being such that the screws holding the clamping collar cannot be accidentally removed to open the pump, but the motor must first be removed, along with the heat barrier before the clamp-ring screws are accessible.

3,465,682
VARIABLE VOLUME PUMP
Philip Hartmann, Racine, Wis., assignor to Koehring Company, Milwaukee, Wis., a corporation of Wisconsin
Filed Oct. 26, 1967, Ser. No. 678,385
Int. Cl. F04c *15/04, 1/00*
U.S. Cl. 103—120 **5 Claims**



A variable volume pump with a rotor rotatably mounted in a housing, and with a ring surrounding said rotor and movable with respect thereto for altering the pumping capacity of the pump. The rotor has a shaft drivingly related thereto but without inducing any axial thrust between the two, and the rotor is free to seek its own axial position in the housing, and it is hydraulicly balanced against the force created in the working chamber.

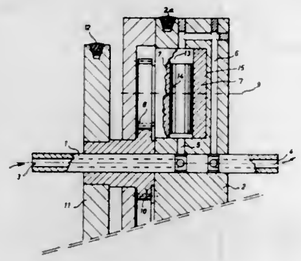
3,465,683
ROTARY FLUID DISPLACEMENT DEVICE
Oscar C. Blomgren, Lake Bluff, Ill., assignor to Liquid Controls Corporation, Chicago, Ill., a corporation of Illinois
Filed Mar. 24, 1967, Ser. No. 625,777
Int. Cl. F04c *1/00, 3/00;* **F04b** *21/08*
U.S. Cl. 103—125 **5 Claims**



A plastic meter or pump having parts that are standardized and easily formed and assembled. The housing is tubular with integrally formed inlet and outlet ports and is closed by end plates with integrally formed bearing bosses for supporting the bearings and shafts of the rotors. The parts may be easily assembled one into the other with in-

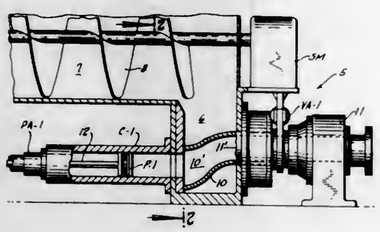
serts to accommodate for different clearances between parts so as to permit standardized parts in meters or pumps requiring different clearances.

3,465,684
PISTON PUMP
Robert Moll, Rue du Vidollet 9b, Geneva, Switzerland
Filed June 28, 1968, Ser. No. 740,912
Claims priority, application Switzerland, July 1, 1967, 9,439/67
Int. Cl. F04b *19/02, 1/04, 1/20*
U.S. Cl. 103—160 **6 Claims**



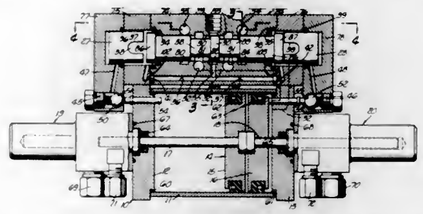
A piston pump includes a rotatable body provided with at least one rotatable satellite body disposed eccentrically relative to the axle on which the pump body is mounted. Within the satellite body is a chamber with a freely slidable piston confined therein. Fluid inlet and outlet conduits are provided within the pump axle and communicate with opposite ends of the chamber containing the free piston. Drive means are provided for rotating the pump body and means are also provided for independently rotating the satellite body. Upon rotation of both of said bodies, centrifugal force thrusts the piston outwardly and it is brought back toward the center of the body due to the twofold motion of the satellite body. This action results in suction of fluid through the inlet conduit and ejection of fluid under pressure through the outlet conduit.

3,465,685
SELF-CLEARING ROTATING CONVEYOR
Eugene L. Sherrod, Brookfield, Wis., assignor of one-half interest to Robert T. Sherrod, Milwaukee, Wis.
Original application Feb. 3, 1966, Ser. No. 524,675. Divided and this application Feb. 21, 1968, Ser. No. 707,115
Int. Cl. F04b *17/00;* **B65g** *43/00*
U.S. Cl. 103—49 **3 Claims**



A screw or similar rotating conveyor for feeding concrete and the like is driven by a reversible fluid motor fed from a hydraulic pump and controlled by a two-way valve that is normally maintained in its position to effect forward conveyor rotation. Jamming of the conveyor causes a rise in fluid pressure which actuates a pressure responsive instrumentality that shifts the valve to its motor reversing position. The valve automatically shifts back to its position for forward conveyor rotation when fluid pressure returns to normal.

3,465,686
AIR OPERATED HYDRAULIC PUMP
Francis A. Nugier, 547 Capala Drive, Pacific Palisades, Calif. 90272
Filed Oct. 16, 1967, Ser. No. 675,658
Int. Cl. F04b *17/00;* **F01l** *25/08*
U.S. Cl. 103—51 **11 Claims**



An air operated hydraulic pump and shuttled valve assembly therefor. An air piston mounted within a cylinder reciprocates back and forth under air pressure to operate an oil plunger. Reciprocation of the piston is controlled by a shuttle valve assembly which causes air to be alternately supplied to opposite sides of the piston. Differential air pressure and magnets in the shuttle valve assembly cause the shuttle thereof to positively move to one position or another.

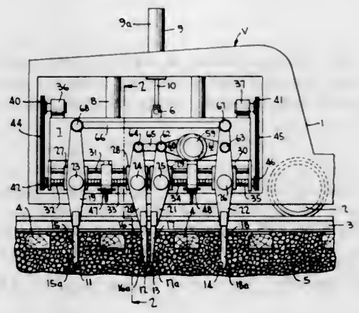
3,465,687
RAIL POSITIONING SYSTEM
Max E. Kerns, Greenwich, Conn., assignor to The New York Central Railroad Company, New York, N.Y., a corporation of Delaware
Filed Nov. 18, 1966, Ser. No. 595,498
Int. Cl. E01b *29/16*
U.S. Cl. 104—2 **35 Claims**



A method and apparatus for laying continuous welded railroad rail which includes means for transferring continuous rails disposed outboard of the active rails along a railroad roadbed laterally inwardly to a position wherein the continuous rails provide a small gauge track interiorly of the active rails; the apparatus consisting of a series of rail positioning cars and a main positioning vehicle adapted to drive the cars along the roadbed, with the various cars including guide means for successively threading and feeding the continuous rails to the positions described above.

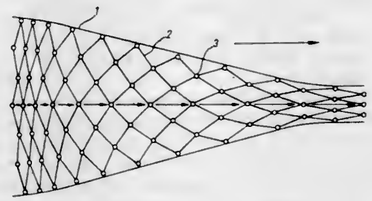
3,465,688
RAILWAY TRACK BALLAST TAMPING MACHINE
Gerard Sauterel, Pully, Switzerland, assignor to Matisa Materiel Industriel S.A., Crissier, near Lausanne, Switzerland, a corporation of Switzerland
Filed Oct. 2, 1967, Ser. No. 672,088
Claims priority, application Switzerland, Oct. 6, 1966, 14,430/66
Int. Cl. E01b *27/00*
U.S. Cl. 104—12 **6 Claims**

A railway track ballast tamping machine of the type comprising a plurality of tamping tools arranged to carry out simultaneous packing of the ballast beneath two successive crossties so that the ballast tamping machine can be forwardly displaced in one feed stroke through a distance approximately corresponding to the spacing of two crossties. The aforementioned plurality of tamping tools incorporate a first double tamping tool arrangement which opens and serves for carrying out a tamping operation between two successive crossties and a second double tamping tool arrangement which closes and serves for carrying out a tamping operation while straddling



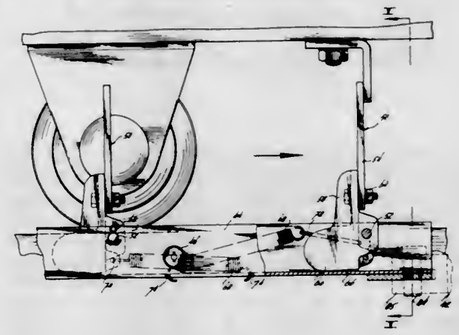
said two successive crossties. Further, means are provided for vibrating the working end portions of the tamping tools of the first double tamping tool arrangement so as to be in phase with one another and for also vibrating the working end portions of the tamping tools of the second double tamping tool arrangement to be also in phase with one another, but wherein the vibrational phases of the working end portions of the first double tamping tool arrangement are always opposite to the vibrational phases of the working end portions of the second double tamping tool arrangement.

3,465,689
MOVING SIDEWALK
Robert Underwood Ayres, Croton-on-the-Hudson, N.Y. (2853 Ontario Road NW., Washington, D.C. 20009), and Richard Phillip McKenna, Miami, Fla. (5409 Huntington Parkway, Bethesda, Md. 20014)
Filed Jan. 17, 1967, Ser. No. 609,864
Int. Cl. B63b *13/00;* **B65g** *15/06, 15/28*
U.S. Cl. 104—25 **2 Claims**



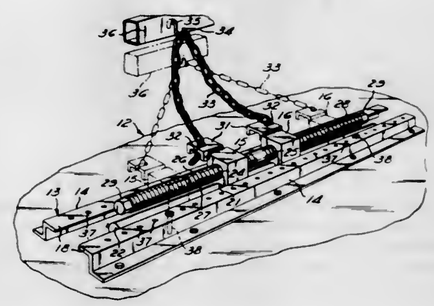
This invention relates to moving sidewalks and entry and exit means for such sidewalks, including means whereby a mesh belt is constructed to vary in width as it moves so that the speed of the belt at one locus may be substantially more than walking speed, while being of the order of magnitude of walking speed at a second locus.

3,465,690
LINEAR ADVANCING MECHANISM
Robert G. Landry, Lewiston, and Sherman R. Jenney, Auburn, Maine, assignors to Diamond Machinery Company, Lewiston, Maine, a corporation of Maine
Filed Oct. 31, 1967, Ser. No. 679,359
Int. Cl. B61b *13/00;* **F27b** *9/24*
U.S. Cl. 104—162 **4 Claims**



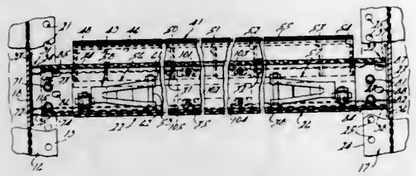
A reciprocating, linear advancing mechanism of the type used for advancing a rack or pallet through a drying or treating area, the advancing mechanism consisting of a reciprocating wheeled guide, having a plurality of depressible, vertically extending plates.

3,465,691
TIEDOWN SYSTEM
Lawrence C. Simmons, Cleveland, Ohio, assignor to Cleveland Technical Center, Inc., Cleveland, Ohio, a corporation of Delaware
Filed Aug. 3; 1966, Ser. No. 570,018
Int. Cl. B61d *3/16, 45/00*
U.S. Cl. 105—368 **10 Claims**



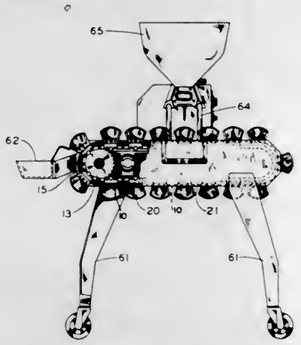
A tiedown system for securing a vehicle to a carrier. At each of four locations on the body of the vehicle are provided two lengths of strand material extending in opposite directions longitudinally of the vehicle. The lower ends of the strand lengths are separated while the upper ends of the strand lengths approach each other and are affixed to the vehicle body. The lower ends of the strand lengths are affixed to separate block means movable longitudinally in guide means. Means are provided for positively moving the block means away from each other and toward each other to tighten or loosen the strand lengths.

3,465,692
FREIGHT BRACING DEVICE
Floyd A. Hyatt, Birmingham, Mich., assignor to Evans Products Company, a corporation of Delaware
Filed Oct. 25, 1966, Ser. No. 589,389
Int. Cl. B61d *45/00*
U.S. Cl. 105—369 **4 Claims**



A railway coil car for carrying coils of sheet metal and including crossbar assemblies for bracing the coils against movement. Each of the crossbar assemblies is comprised of an elongated body member having endfittings at its opposite ends for coacting with supporting components of the car to support the crossmembers for longitudinal movement along the car and to lock the crossmembers in preselected positions. The crossmember also includes elongated bearing members that coact with the sides of the car to preclude cocking of the bar during its longitudinal movement.

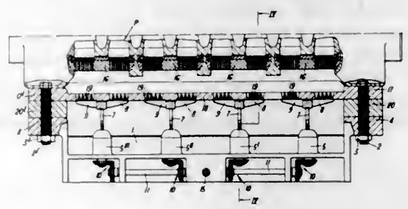
3,465,693
METHOD AND APPARATUS FOR FILLING SOFT-BAKED GOODS
Ira L. Lopata, 35 Sutton Place, New York, N.Y. 10022
Filed Aug. 28, 1967, Ser. No. 667,318
Int. Cl. A23g *3/20*
U.S. Cl. 107—1 **11 Claims**



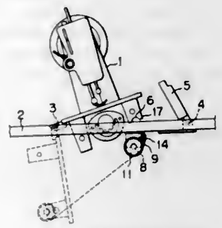
Filling soft-baked goods wherein a plurality of items are gently held between inflated diaphragms during the injection of a filling; the items are transported to a filling station, raised from a transport mechanism to receive a filler spout, and then returned to the transport mechanism.

3,465,694
SHORT PASTA CUTTING APPARATUS
Amerigo Benedettelli, Piazza Umberto 8, Bari, Italy
Filed Mar. 3, 1967, Ser. No. 620,433
Claims priority, application Italy, Mar. 5, 1966, 15,238/66
Int. Cl. A21c *11/10;* **B26d** *3/24*
U.S. Cl. 107—69 **8 Claims**

An apparatus for cutting short pasta coming out of the dies of an aligned multiple press machine including knives rotating in the plane of the dies or in the plane of a compensating plate applied to the dies. The knives are mounted on one end of the shafts supported in a member mounted on the machine and are rotated by a transmission shaft also mounted in the member. Bevel gears transmit movement from a driving shaft to the transmission shaft and from the latter to each knife bearing shaft.



3,465,695
APPARATUS FOR LOWERING MACHINE INTO TABLE
Hiroshi Tomuro, 695 2-chome, Tamagawa Den-en-Chofu, Setagaya-ku, Tokyo, Japan
Filed Aug. 29, 1967, Ser. No. 664,146
Claims priority, application Japan, Sept. 5, 1966, 41/58,163
Int. Cl. B25h *1/00;* **D05b** *75/06;* **A47b** *29/00*
U.S. Cl. 108—161 **6 Claims**

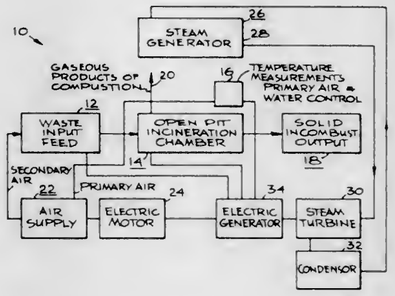


Apparatus for lowering a machine, such as a sewing machine, a typewriter or the like, into a machine table, which employs a balancing spiral spring which decreases its tension as it is drawn out, in order to substantially balance the actual weight of the machine which gradually decreases as the machine is lowered into the machine table.

3,465,696
OPEN PIT VORTEX INCINERATION ARRANGEMENT
Howard R. Amundsen, 6782 Homer St., Westminster, Calif. 92683
Filed Feb. 26, 1968, Ser. No. 715,115
Int. Cl. F23g *3/00, 7/00;* **F23b** *1/38*
U.S. Cl. 110—8 **8 Claims**

There is disclosed herein an open pit incineration arrangement for heterogeneous waste and refuse such as that collected through the world by various municipalities and private organizations for disposal. In this incineration arrangement the heterogeneous refuse is fed into an open pit incineration chamber where it is transferred throughout the length thereof by an oscillating hearth. Solid materials not converted into gaseous products of combustion in this first traversal are recirculated within the open pit incineration chamber in the opposite directon by a second oscillating hearth and automatically returns to the first oscillating hearth adjacent the input to the incineration chamber. Such continuous recirculation continues until the material is substantially rendered into a

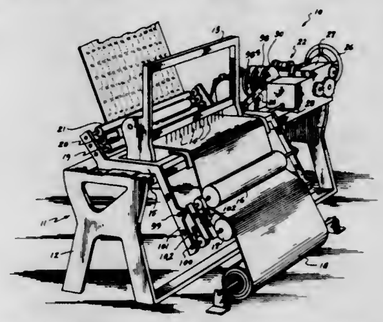
state of incombustible solids. Grates or other waste removal devices are provided within the incineration chamber to allow removal of the solid incombustible materials left in the incineration chamber. Thermodynamic control is exercised to measure the flame temperature within the open pit incineration chamber. The flame temperature is controlled so that a gas producer zone is provided adjacent to the oscillating hearths, wherein the waste is, in general, burned to products of incomplete combustion. Primary air is directed into the open pit incineration chamber from regions adjacent to top thereof to establish a vortex having an axis substantially parallel to the direction of the travel of the waste on the oscillating hearth by a plurality of individually controlled air nozzles. A plurality of thermocouples or other temperature sensing devices are also provided to monitor continuously the flame temperature adjacent to each nozzle and through appropriate control means the air flow to maintain the flame temperature within a predetermined temperature range is controlled. As products of incomplete combustion from the gas producer zone move upwardly in the vortex to the furnace zone within and above the air jets they are burned to products of complete combustion. Secondary air flow is also provided through the feed mechanism in directions parallel to the axis of the vortex so that materials having a large surface area to mass ratio may be burned with great rapidity to products of complete combustion and/or gasify with increased rate into other carbon and hydrogen reactions. Many materials in this category will contain oxygen up to 30 percent.



Water spray through nozzles are used as auxiliary flame temperature control and are located adjacent to the primary air nozzles to provide a dousing stream of water for lowering the flame temperature in the event that the flame temperature should suddenly rise to a value greater than the predetermined temperature range. The heat of flame is diluted in the conversion of water to steam. The heated gases of the products of complete combustion may be utilized as the heat source in a conventional steam generator-steam turbine power plant for providing electrical energy to drive the air compressor for the primary and secondary air flows as well as the mechanical power necessary for the feed and transfer mechanisms.

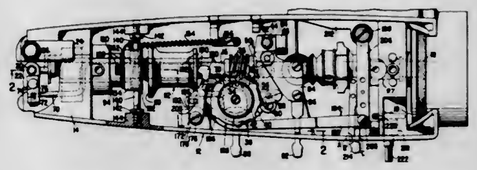
3,465,697
QUILTING MACHINE
Leif Gerlach and Eugene C. Platt, Brooklyn, N.Y., assignors to Platt Brothers Machine Corp., Brooklyn, N.Y., a corporation of New York
Filed Nov. 14, 1967, Ser. No. 682,916
Int. Cl. D05b *11/00, 35/00*
U.S. Cl. 112—118 **12 Claims**

A quilting machine having a row of reciprocated needles in a frame to stitch fabric plies and interposed batting fed past the needles on a cam actuated carriage movable in the direction of the needle row, pinch rollers on the carriage at one side of the needles for controlling the feed of the plies normal to the needle row and shafts at the other side of the needles holding supply rolls from which the fabric plies are unwound upon pulling of the plies by the pinch rollers, is provided with a reversible drive for selectively rotating the pinch rollers in one direction or the other under the influence of a cam actuated control,



and with devices connected to the supply roll carrying shafts for yieldably resisting unwinding of the rolls and thereby tensioning the plies during rotation of the pinch rollers in the direction pulling the plies and being energized, as by torsional loading of a spring, in response to unwinding of the respective roll, to effect rewinding of such roll upon a subsequent rotation of the pinch rollers in the opposite direction for substantially maintaining the tension in the plies.

3,465,698
SKIP-STITCH MECHANISM FOR HOUSEHOLD SEWING MACHINES
Hans W. Hacklander, Huntsville, Ark., assignor to The Singer Company, New York, N.Y., a corporation of New Jersey
Filed Oct. 6, 1967, Ser. No. 673,429
Int. Cl. D05b *3/02, 69/02*
U.S. Cl. 112—158 **9 Claims**

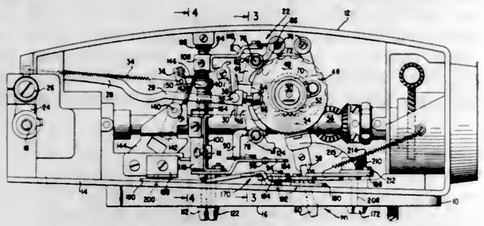


A zigzag sewing machine equipped with cam actuated skip-stitch mechanism which provides for skipped stitches by disconnecting a driving sleeve, mounted on the main shaft for rotation therewith. Movement of a train of mechanical elements which reciprocates the needle-bar in response to rotation of the sleeve, may thus be interrupted at predetermined intervals dependent upon the contour of the cam that actuates the mechanism.

3,465,699
NEEDLE RESETTING DEVICES FOR ZIGZAG SEWING MACHINES
James E. Van Hart, Jr., Morristown, and Kenneth R. Rea, Rockaway, N.J., assignors to The Singer Company, New York, N.Y., a corporation of New Jersey
Filed Apr. 19, 1967, Ser. No. 631,939
Int. Cl. D05b *3/02*
U.S. Cl. 112—158 **10 Claims**

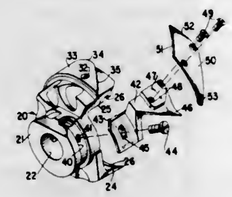
This disclosure relates to a needle resetting device for a zigzag sewing machine. More particularly the disclosure

relates to a device the operation of which will cause release of the cam followers from their selectively ad-



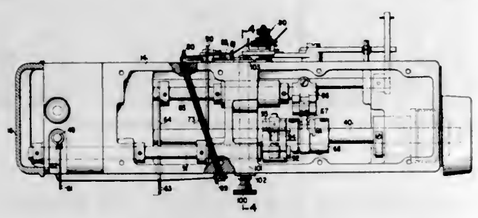
justed positions simultaneous to the centering of the bight or lateral vibratory amplitude selector whereby the needle will be reset to the centered straight stitch position.

3,465,700
LOOP TAKERS FOR SEWING MACHINES
Ludwig J. Kuhar, Clark, N.J., assignor to The Singer Company, New York, N.Y., a corporation of New Jersey
Filed Feb. 14, 1968, Ser. No. 705,514
Int. Cl. D05b *57/14*
U.S. Cl. 112—228 **4 Claims**



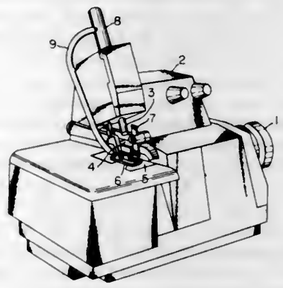
A rotary loop taker for a sewing machine having a needle thread seizing beak is provided with means not only for removably connecting the beak to the loop taker, but also with means for adjusting the beak about the circumference of the loop taker to effect adjustment of the angular position of the beak relatively to the loop taker.

3,465,701
CONTROLLED LOOSE STITCHING MECHANISM FOR CHAINSTITCH SEWING MACHINES
Francis L. Walling, Lincroft, N.J., assignor to The Singer Company, New York, N.Y., a corporation of New Jersey
Filed July 28, 1967, Ser. No. 656,864
Int. Cl. D05b *40/02*
U.S. Cl. 112—245 **4 Claims**



A two thread chainstitch sewing machine is disclosed having a needle thread metering and controlling mechanism for providing preselected amounts of looseness in the stitches while at the same time preserving an orderly arrangement of thread concatenation against the work fabrics being stitched.

3,465,702
METHOD AND APPARATUS FOR TREATING CLOTH-END THREADS IN A SEWING MACHINE
Tetsuo Iizuka, Tokyo, Japan, assignor to Tokyo Juki Kogyo Kabushiki Kaisha, Tokyo, Japan
Filed Aug. 22, 1967, Ser. No. 662,540
Claims priority, application Japan, Sept. 3, 1966, 41/58,087, 41/58,088
Int. Cl. D05b *65/06, 37/06*
U.S. Cl. 112—252 **1 Claim**

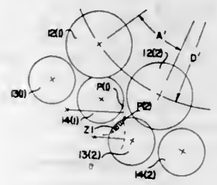


An apparatus for treating cloth-end thread in a sewing machine which is stitching cloth fed along a linear line, by feeding cloth with air flow so that the seam crosses the thread cutting position rearward of the stitching position, and guiding it out of the machine. The apparatus has a feeding mechanism feeding cloth intermittently, a thread cutting mechanism and a guide tube open at one end toward the thread cutting mechanism and at the other end opening out of the machine so that the seam thread is continuously projecting at the fore and aft ends in the cloth feeding direction and crossing the thread cutting mechanism.

ERRATUM

For Class 113—1 see:
Patent No. 3,466,661

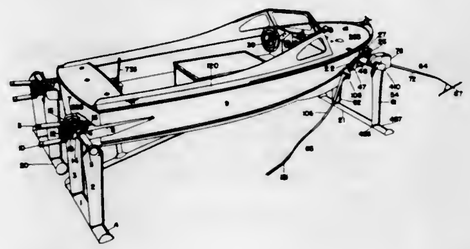
3,465,703
DOUBLE-SEAMING METHOD AND APPARATUS FOR CAN CLOSING MACHINE
Clyde E. Jantze, Riverside, Edward A. Arnott, Blue Island, and Earl V. Scott, La Grange Highlands, Ill., assignors to Continental Can Company, Inc., New York, N.Y., a corporation of New York
Filed Oct. 31, 1967, Ser. No. 679,319
Int. Cl. B21d *19/00, 51/44, 51/26*
U.S. Cl. 113—30 **12 Claims**



Arrangement and sequencing of seaming rolls for a high-production can closing machine with double-seaming operation. The machine is of the turret type with a number of seaming stations spaced around the turret, sets of closely spaced seaming rolls rotating with the seaming chucks as the turret revolves. A stationary cam ring controls pivoting of the rolls to and from the chucks. Second operation rolls describe paths which intersect the paths

of first operation rolls in adjacent stations. The roll travel is so programmed that the second operation roll follows the first operation roll of adjacent station through the zone of potential interference, then advances to seaming position, whereafter the contiguous first operation roll retracts through the interference zone in advance of the retracting second operation roll.

3,465,704
HYDROFOIL SYSTEM FOR BOATS
John Gordon Baker, Evansville, Wis. 53536
Continuation of application Ser. No. 409,103, Nov. 5, 1964. This application Apr. 8, 1968, Ser. No. 719,764
Int. Cl. B63b *1/30*
U.S. Cl. 114—66.5 **76 Claims**



The first principal embodiment is represented by a boat named "High Tail" which has:

(1) Three fully submerged hydrofoils, two aft and one forward, the latter being rotated about an upright axis for steering,

(2) Three planing ski sensors, one forward of each hydrofoil, which with other factors determine the pitch, elevation and roll of the boat,

(3) Loading on each sensor that increases with increase in water speed to reduce the change in sensor penetration of the water surface with a given change in water speed,

(4) Pitch and elevation control parameters that are near optimum or are readily adjustable to near optimum for a given wave length and heading, to minimize vertical accelerations of the boat in waves for a given hydrofoil strut length,

(5) Automatic elevation regulation during changes in course and speed,

(6) Automatic inward banking during changes in course,

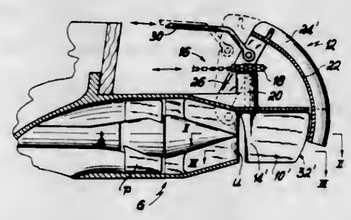
(7) Automatic control sequencing during changes in speed,

(8) Hydrofoils with hinge axes located such that the hydrodynamic hinge moment on any hydrofoil is determined by the water speed and independent of the load on or angle of attack of the hydrofoil to permit use of the hydrodynamic moment as a water speed signal in connection with (2) through (7) above.

The use of alternative elevation sensing, alternative roll sensing, and alternative water speed sensing permitting alternate hinging of the hydrofoils and alternate control surface rotation and actuation, are described herein.

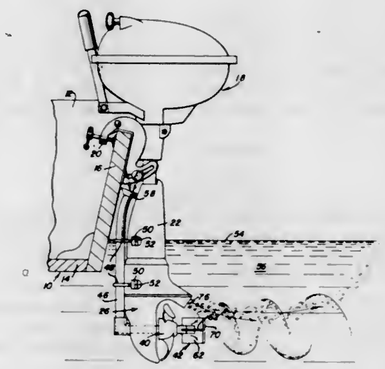
The second principal embodiment has or may have features 1, 3, 5, 6, 7 and 8 listed above for the High Tail system. Referring to feature (2) the second principal embodiment has three sensing hydrofoils instead of planing ski sensors as on High Tail. Thus, the second principal embodiment is a hydrofoil boat with hydrofoil sensing. The control parameters of the second principal embodiment are not optimum. On this account, the performance of the second principal embodiment is critical waves, that is, waves of wave length two to four times the fore and aft spacing of the hydrofoils, is inherently inferior to the performance of the first principal embodiment. On the other hand, the second principal embodiment is simpler than the High Tail system yet comparable in performance for wave lengths substantially shorter or longer than critical waves.

3,465,705
WATER JET PROPELLING APPARATUS FOR BOATS
Luigi Castoldi, 161 Viale Mazzini, 20081 Abbiategrasso, Italy
Filed Mar. 20, 1968, Ser. No. 714,473
Claims priority, application Italy, Mar. 29, 1967, 14,288/67
Int. Cl. B63h *11/02*
U.S. Cl. 115—12 **6 Claims**



A water jet propelling apparatus, for boats, comprising a water pump to force water through a nozzle directed astern of the boat for propelling the boat in a straight forward course, rudder blades located at either sides of the jet for laterally deviating same under steering control, and a jet reversing gate which can be lowered under reverse control for reversing the thrust, said gate having laterally deflecting parts associated to its sides and positioned so that a portion of the jet, when laterally deviated by steering of said rudder blades, impinges on said deflecting part, forms a lateral jet projected toward the side at which said rudder blades have been steered, and provides a lateral thrust causing the boat to rotate about its yawing axis and boosting the steering control thereof.

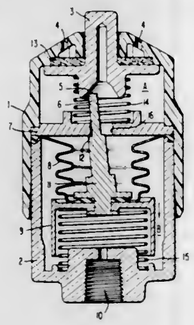
3,465,706
APPARATUS FOR INJECTING FRESH AIR INTO OUTBOARD MOTOR UNDERWATER EXHAUST
Steve J. Gwidt, P.O. Box 327, Rhinelander, Wis. 54501
Filed Feb. 5, 1968, Ser. No. 702,933
Int. Cl. B63h *21/26*
U.S. Cl. 115—17 **7 Claims**



An addition to an outboard drive unit of the type including an upstanding leg in whose lower portion a hori-

zontal propeller shaft is journaled having a propeller thereon and which also includes an underwater exhaust outlet disposed in the area of the propeller but rearwardly thereof and at a point spaced laterally of the axis of rotation of the propeller, the addition including means whereby air under atmospheric pressure is supplied to the area disposed immediately behind the propeller and in alignment with its axis of rotation and thus may be discharged into the ambient water in order to aerate the same, dilute the exhaust gases being discharged from the exhaust gas outlet and buoy up the exhaust gas contaminants for dispersal into the ambient atmosphere above the water.

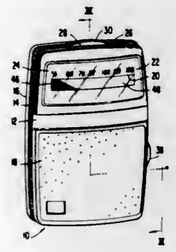
3,465,707
CLOGGING INDICATOR FOR AIR CLEANERS
Yukio Kashiwaba, Tokyo, Japan, assignor to Tsuchiya Manufacturing Company Limited, Tokyo, Japan
Filed Apr. 23, 1968, Ser. No. 723,521
Claims priority, application Japan, Mar. 5, 1968, 43/16,690
Int. Cl. G01l *19/12;* **B60c** *23/02*
U.S. Cl. 116—70 **5 Claims**



A clogging indicator comprising an opaque upper body and a transparent lower body defining two chambers therein. Said lower body acts as a visual indicating window in which a bellows separating the two chambers is provided with a warning indicating piston. A pin extending in an eccentric direction with respect to the axis of the body is provided by securing one end thereof to the center of the bellows. This pin acts to lock the position of the indicating piston by a mechanical engagement with its shoulder against an edge of a partition provided between the two chambers, which engagement can easily be unlocked by pressing a push button provided at top of the upper body and thus bringing the position of the pin to coincide with the axial direction by means of a funnel like reentrant recess provided at lower end of the push button.

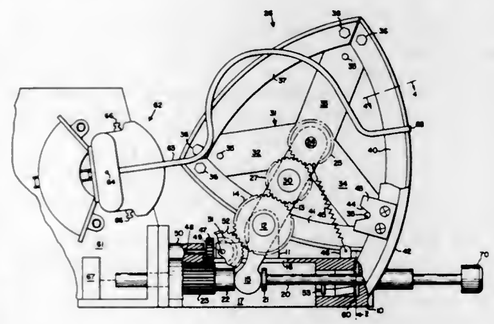
3,465,708
TUNING INDICATOR
Robert M. Linz, New Hartford, N.Y., and Frederick P. Bednarczuk, Burbank, Calif., assignors to General Electric Company, a corporation of New York
Filed Jan. 2, 1968, Ser. No. 694,940
Int. Cl. H03j *1/02*
U.S. Cl. 116—124.1 **7 Claims**

A tuning indicator for apparatus such as a radio comprising a front plate having an aperture therein and a calibrated dial scale located adjacent the aperture and a tuning disc having contrasting regions on one face thereof so as to produce an indication line visible through the aperture. The disc is rotatably positioned behind the front plate with a portion of the disc protruding from the edge of the front plate so that the indication line



may be manually moved along the scale with a vernier-like effect.

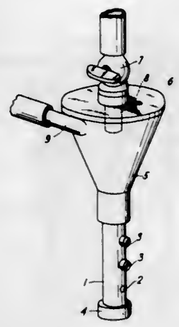
3,465,709
CONTROL APPARATUS
Gregory J. Ganley, Minneapolis, Minn., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware
Filed Oct. 7, 1965, Ser. No. 493,778
Int. Cl. G01r *1/38, 15/10;* **G09f** *9/00*
U.S. Cl. 116—129 **9 Claims**



A scale change mechanism, for an instrument having an index moveable at a first radius, including a plurality of scales each configured to the first radius together with means mounting the scales for unitary rotation about a center which is closer to the scales than the length of the first radius, the path of the rotation being generally aligned with the direction of movement of the index, and together with mechanical means for causing the rotation and also causing unitary translation of the scales with respect to the center.

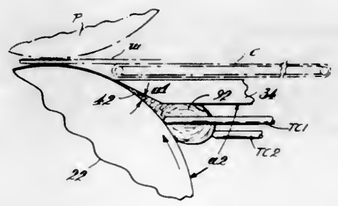
3,465,710
HYDRODYNAMIC GENERATOR
Igor Travěnec, Nove Mesto nad Vahom, Czechoslovakia, assignor to Vyskumny ustav mechanizacie a automatizacie, Nove Mesto nad Vahom, Czechoslovakia
Filed Feb. 7, 1967, Ser. No. 614,497
Int. Cl. G10k *5/00*
U.S. Cl. 116—137 **7 Claims**

A hydrodynamic generator having an elongated hollow resonance tube which is closed at one end and open at its opposite end and which is formed between these ends with at least one resonance aperture passing through a wall portion of the tube. A hollow frustoconical attachment has opposed large and small ends and is removably connected at its small end to the open end of the tube. This attachment is open at its small end and closed at its large end by a closure wall. This latter wall carries an equalizing valve which communicates with the interior of the hollow attachment, and this wall also carries a hollow cylindrical projection which extends from the latter wall into the interior of the hollow attachment coaxially with the resonance tube. A feed conduit feeds tangentially into



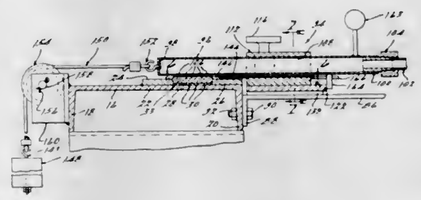
the interior of the hollow attachment in the region of its large end, communicating with the space which surrounds the cylindrical projection, so that a fluid, such as suitable liquid, can be introduced tangentially into the hollow frustoconical attachment at its large end to form a rotating body of liquid which moves from the interior of the attachment into the resonance tube to impinge on the resonance aperture thereof.

3,465,711
ADHESIVE-APPLYING APPARATUS
Charles K. Woodman, Waltham, Mass., assignor to Campo Industries, Inc., Waltham, Mass.
Filed June 22, 1967, Ser. No. 648,148
Int. Cl. B05c *1/08, 11/04*
U.S. Cl. 118—5 **6 Claims**



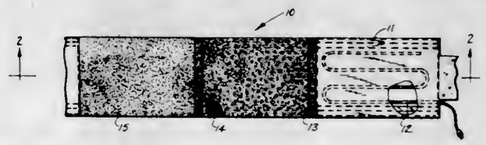
Apparatus for applying hot melt adhesive to workpiece moved over its surface, and a doctor blade for controlling the thickness of the adhesive. The doctor blade forms an angle with the upwardly moving surface of the roll into which the adhesive is supplied by gravity or by a pump and from which adhesive is carried upwardly between the surface of the roll and the edge of the doctor blade. Sensing devices are provided, one of which senses the presence or absence of the adhesive in the angle, and in the absence of adhesive effects operation of a valve or a pump to add adhesive thereto, and the other of which is operative to maintain the roll at an optimum temperature.

3,465,712
APPARATUS FOR APPLYING ADHESIVES OR THE LIKE TO IRREGULARLY SHAPED OBJECTS
Franklyn C. Ferris, Jackson, Mich., assignor to Kelsey-Hayes Company, Romulus, Mich., a corporation of Delaware
Filed Dec. 10, 1964, Ser. No. 417,432
Int. Cl. B05c *11/10, 5/02*
U.S. Cl. 118—8 **7 Claims**



A method and apparatus for applying a fluid material to a series of irregularly shaped workpieces including, a conveyor for carrying a plurality of workpieces along a preselected path, a dispensing mechanism extending above the path and adapted to dispense fluid material therefrom onto the workpieces as they are conveyed along the path, means supporting the dispensing mechanism for laterally sliding movement, a follower engageable with the workpieces as they are conveyed along the path, the follower being operatively connected to the dispensing mechanism in a manner such that the mechanism will be biased laterally of the path in response to the conformation of the workpieces, with the result that the dispensing mechanism is always disposed directly above the workpieces as they move along the path.

3,465,713
TIRE SANDERIZER
Jacob Wiebe, 819 Chesterfield Ave., North Vancouver, British Columbia, Canada
Filed May 11, 1967, Ser. No. 637,700
Int. Cl. B05c *3/10;* **B60c** *11/00*
U.S. Cl. 118—59 **2 Claims**

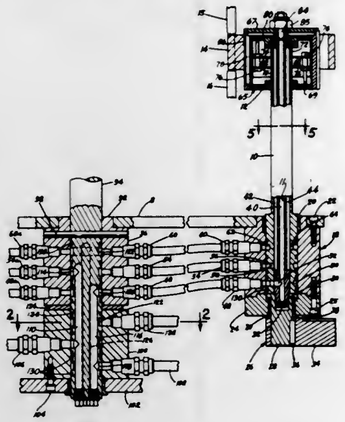


A tire sanding device to prevent skidding upon icy roads with a guide strip, a hot plate for heating the tire of a vehicle, a pan containing a tough bondable cement and a sand area for applying sand to the tire, the sand forming a rough grit surface in order to prevent the vehicle from skidding.

3,465,714
COATING MACHINE WITH IMPROVED WORK HOLDER
Gordon V. Mommsen, Minneapolis, Minn., assignor to Possis Machine Corporation, Minneapolis, Minn., a corporation of Minnesota
Original application Oct. 21, 1964, Ser. No. 405,336, now Patent No. 3,367,789, dated Feb. 6, 1968. Divided and this application Mar. 13, 1967, Ser. No. 622,537
Int. Cl. B05c *11/14*
U.S. Cl. 118—69 **11 Claims**

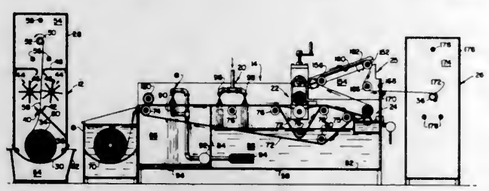
A machine for applying an insulating coating of thermosetting resin to selected portions of a heated workpiece, having a hollow mandrel on which the workpiece is

supported during the coating operation. Air passages in the side wall of the mandrel having vents opening to the exterior of the mandrel to direct air adiabatically discharged therefrom, onto the surfaces of the heated work-



piece from which the coating is to be excluded. The mandrel is cooled by the adiabatically discharging air and by a liquid coolant circulated through the interior of the mandrel.

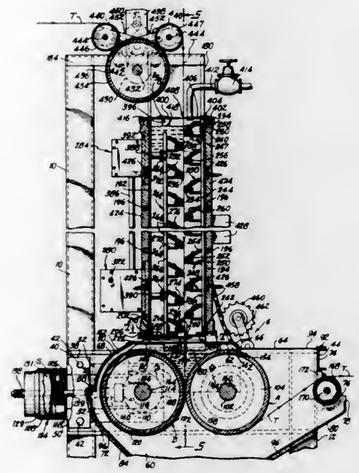
3,465,715
FILTER CLEANING AND COATING APPARATUS
William J. Lynch, Streetsboro, Ohio, and Frank C. Kunc, Springfield, Pa., assignors to North American Rockwell Corporation, a corporation of Delaware
Filed Nov. 10, 1966, Ser. No. 593,357
Int. Cl. B05c *1/12, 11/11;* **B08b** *3/02*
U.S. Cl. 118—70 **5 Claims**



Apparatus for cleaning and coating a filter web including soaking, washing, rinsing, press roller extracting, and adhesive coating stations. A conveyor carries the web through the stations, but is diverted away from the press rollers which function only on the filter web. The relative position of the press rollers is adjustable to vary the pressure applied to the web. The adhesive coating is applied to the web by upper and lower rollers, the latter one being immersed in a liquid bath and having a continuous surface to apply a uniform coating, the thickness of which is controlled by an adjustable doctor blade.

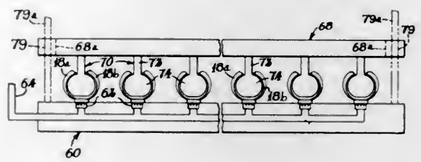
3,465,716
APPARATUS FOR TREATING TEXTILE MATERIALS
Donald A. Barnes, Rte. 1, Templeton Road, Mooresville, N.C. 28115
Filed May 13, 1966, Ser. No. 549,894
Int. Cl. B05c *3/02*
U.S. Cl. 118—405 **13 Claims**

1. Apparatus for applying a treating liquid to textile material, comprising: a vertically arranged saturator unit including a saturator tank for receiving treating liquid and through which textile material to be treated is moved, said tank having inlet and outlet openings for passing textile material therethrough, said outlet comprising a pair of plates which define the bottom of said tank, said plates being adjustable relative to one another, whereby to define an outlet slot; pluralities of relatively adjustable rod means arranged within said tank to engage therebetween textile material moving through the tank; a pressure unit spaced from said saturator unit and including: a pair of



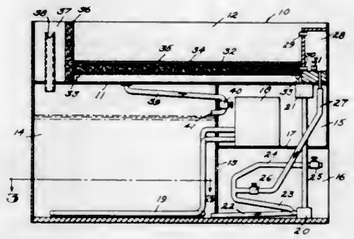
confronting rolls comprising reservoir means for receiving and containing a predetermined volume of treating liquid discharged through said tank outlet, the textile material passing through said reservoir and between said pressure rolls; feed means interconnecting said units arranged to move textile material first through said saturator unit under tension and then through said pressure unit; and means to receive excess treating liquid from said tank and reservoir means.

3,465,717
IMMERSION MEANS INCLUDING WORK HOLDER
Gary L. Hein, Decatur, Ill., assignor to Lincoln Laboratories, Inc., Decatur, Ill., a corporation of Illinois
Filed Mar. 4, 1965, Ser. No. 437,206
Int. Cl. B05c *3/00, 11/14;* **B23q** *1/00*
U.S. Cl. 118—429 **5 Claims**



Apparatus, to dip multiple-point intradermal inoculators to effect uniform loading thereon, includes a plurality of elongated immersion tanks associated with means to circulate biological coating material and in combination with a work holder comprising bar means to slidingly receive the inoculators thereon and said bar means including rail elements to angularly retain said inoculators.

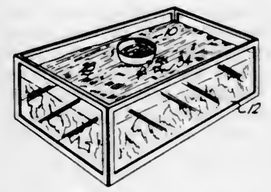
3,465,718
TANK FOR CULTURE OF MARINE LIFE
Stanley L. Handman, Peabody, and Arthur Rosenberg, Woburn, Mass. (both of 678 Washington St., Lynn, Mass. 01901)
Filed June 1, 1967, Ser. No. 642,799
Int. Cl. A01k *61/00, 63/00, 64/00*
U.S. Cl. 119—2 **4 Claims**



An aquarium for culture of small marine animals and organisms, primarily for research purposes. The aquarium has a display tank and a water reservoir large enough to hold all the fluid in the system, so that separate aeration surfaces are provided in both the tank and the reservoir. A perforated shelf in the display tank supports a filter of calcareous gravel and calcite extending across the entire tank. The animals are placed directly on the filter or on a perforated plastic sheet over the filter.

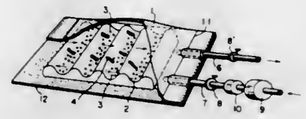
Water is supplied at a controlled rate from the reservoir into an inlet box which has two openings, one above and one below the water level in the display tank. Water passes through the filter to a drain which discharges into the reservoir and has a control valve to regulate the rate of filtration. An overflow pipe extends to a desired maximum level of fluid in the tank. The drain and the overflow provide parallel flow paths from the tank to the reservoir, both being large enough to discharge the full rate of supply to the tank, so that the portion of the discharge which is filtered can be controlled from 0 to 100% without interfering with the maintenance of predetermined levels in the tank and the reservoir.

3,465,719
APPARATUS FOR AUTOMATICALLY FEEDING FISH
Edward F. Holden, 602 Eberwhite Blvd., Ann Arbor, Mich. 48103
Filed June 7, 1967, Ser. No. 644,359
Int. Cl. A01k *61/02, 63/00, 64/00*
U.S. Cl. 119—5 **5 Claims**



A fish feeding device in which a floatable container for five fish food is equipped with a wick so that when the container is floated in an aquarium, water from the aquarium slowly enters the container through the wick so that the container gradually descends in the aquarium at a predetermined rate. The container is provided in one side wall with an opening so that when the container has descended to a level at which the water therein communicates with the side wall opening, the live food within the container can travel out of the container through the opening for consumption by the fish in the aquarium.

3,465,720
METHOD FOR GERM-FREE REARING OF SILKWORMS BY USING PLASTIC ISOLATOR
Homare Miyazawa and Shoichi Tarui, Kyoto-fu, and Masaki Kamada, Osaka, Japan, assignors to Gunze Limited, Kyoto-fu, Japan, and Takeda Chemical Industries, Ltd., Osaka, Japan
Filed July 7, 1967, Ser. No. 651,850
Claims priority, application Japan, July 11, 1966, 41/44,928
Int. Cl. A01k *47/06;* **A23k** *1/00*
U.S. Cl. 119—6 **14 Claims**



An improved method of germ-free rearing silkworms with artificial diet, comprising rearing germ-free silkworms in a flexible bag which is made of air-tight plastic film having one or more air inlets and outlets with the interior sterilized. Sterile air is introduced into said air inlet so as to maintain the internal air pressure higher than normal, the relative humidity of the internal air is held substantially within the range of 60 to 100% and the CO_2 concentration of the internal air is kept lower than 3% by volume relative to the total amount of the internal air.

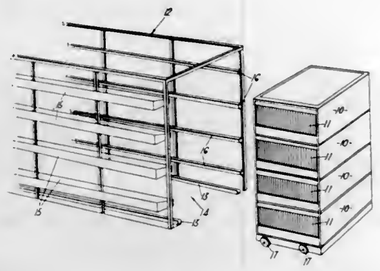
3,465,721
METHOD FOR REARING SILKWORMS
Homare Miyazawa and Shoichi Tarui, Ayabe, Masaki Kamada, Osaka, and Hiroshi Masuda, Sakai, Japan, assignors to Gunze Limited, Kyoto-fu, Japan, and Takeda Chemical Industries, Ltd., Osaka, Japan
No Drawing. Filed Oct. 13, 1967, Ser. No. 675,062
Claims priority, application Japan, Oct. 14, 1966, 41/67,765; June 12, 1967, 42/37,455
Int. Cl. A01k *67/04;* **A23k** *1/00*
U.S. Cl. 119—6 **7 Claims**

Silkworms of the fourth and fifth stages are fed 2 to 4 times a day at about equal intervals such a restricted amount of shaped artificial diet as is consumed in about 3 to 5 hours, whereby high feed efficiency, far less labor force and uniform growth of the silkworms are realized.

3,465,722
BATTERY CAGES
Samuel Duff, "Glen-Airley," Killaghy, Donaghadee, County Down, Northern Ireland
Filed Nov. 9, 1966, Ser. No. 593,205
Claims priority, application Great Britain, Nov. 9, 1965, 47,344/65
Int. Cl. A01k *31/06, 31/18*
U.S. Cl. 119—18 **7 Claims**

A poultry cage system having a series of upright parallel transversely spaced frames between which horizontally aligned cages are positionable within the space between the frames so that poultry within the cages can feed from troughs attached to the exterior sides of the frame. The cages may be stacked and wheeled on the ground or they may be individually mounted in the

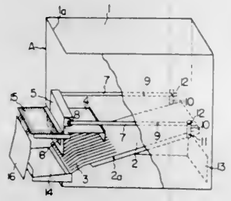
space between the two frames so that successive adjacent cages can be inserted between the frames by horizontal movement inwardly from a position adjacent the ends of the frames.



3,465,723
AUTOMATICALLY OPERATING LAYING NEST BOX FOR POULTRY

Yasuhiko Matunaga, 950 Maejima, Shizuoka-ken, Fujieda-shi, Japan

Filed Sept. 11, 1967, Ser. No. 666,868
Claims priority, application Japan, Sept. 21, 1966, 41/62,523
Int. Cl. A01k *31/16*
U.S. Cl. 119—48 **3 Claims**



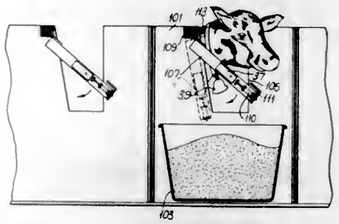
A laying nest box for hens is provided with a tiltable floor plate which is tilted level by the weight of a hen laying an egg and tilts forward into an unloaded position to cause the egg to roll forward toward a collecting tray. The floor plate is linked to a gate permitting only one hen to occupy the box at one time and functioning additionally to brake and temporarily hold the egg as well as to release the egg during the succeeding cycle of operation, permitting it to roll further into the collecting tray.

3,465,724
RECORDING AND/OR CONTROL OF THE FEEDING OF LIVESTOCK

Peter Jack Broadbent, Echt, Scotland, assignor to National Research Development Corporation, London, England, a British corporation

Filed Apr. 18, 1967, Ser. No. 631,738
Claims priority, application Great Britain, Apr. 21, 1966, 17,531/66
Int. Cl. A01k *5/02*
U.S. Cl. 119—51 **12 Claims**

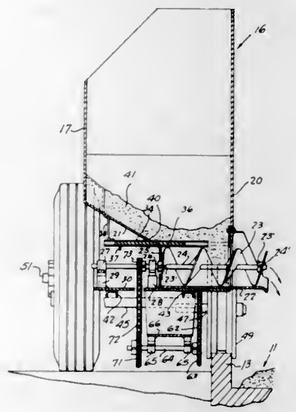
The access of livestock penned in a group to a plurality of feed spaces is controlled by barrier means which are rendered ineffective by the interaction of identification means carried by each animal and complementary identification means associated with the barrier means. In this manner selected animals can be allowed access to food in selected feed spaces, so that different animals can be fed on different diets or their inputs of a common diet measured.



3,465,725
STOCK FEED LOADER FOR FEEDING BUNKS

Holmes B. Maclay, Florence, Mont. 59833

Filed Oct. 13, 1967, Ser. No. 675,181
Int. Cl. A01k *5/00*
U.S. Cl. 119—52 **10 Claims**

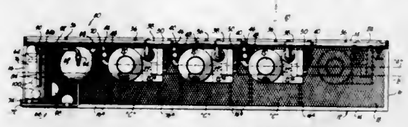


A system for delivering feed from a stationary central bin through a wheeled hopper to a feed bunk. The wheeled hopper has a delivery auger moving the feed through a discharge chute at the bottom of the hopper overlying the feed bunk. The auger is guided by flanged wheels on the hopper engaging a rail extending along and forming the outer wall of the feed bunk. One hopper-supporting wheel is drivingly coupled to the auger by sprocket chains. The wheeled hopper is moved along the rail by a rope having its ends connected to opposite ends of the hopper and passing over pulleys, one of which is driven by a reversible electric motor. The loaded wheeled hopper is moved along the rail and is discharged, after which the motor is reversed and the hopper is returned to the central bin for reloading. The feed auger is driven through a pawl and ratchet which allows the hopper to return to the loading position without rotating the auger. The ratchet can be set, at times, in a position disengaged from the pawl to allow forward movement of the hopper without feeding action. The motor can be energized through a timed reversing switch.

3,465,726
PREFABRICATED STEAM GENERATING PACKAGE

Paul R. Gerst, 1819 N. Lockwood Ave., Chicago, Ill. 60639

Filed May 13, 1968, Ser. No. 728,655
Int. Cl. F22b *33/00*
U.S. Cl. 122—1 **9 Claims**

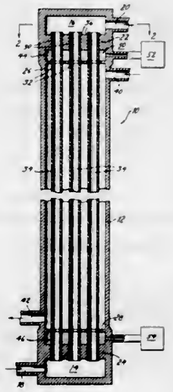


A prefabricated, steam generating unit or package adapted for easy transit to a jobsite and rapid installation for operation thereat, comprising an elongated, rectangular, permanent support base structure, one or more separate steam generators permanently mounted on said base structure in a row parallel and eccentric of a longitudinal center axis of base structure, each of said steam generators having controls facing one side and an opposite back side and a width between said sides less than the width of said base structure. Said generators are positioned on the base with the back sides thereof adjacent one longitudinal edge of the base structure and the control sides are spaced inwardly of the opposite longitudinal side of the base structure providing an elongated aisle space for permitting direct access to the controls on the generators. A plurality of vertically stacked, horizontally extending headers, including at least a steam and feed water header, are permanently mounted along said one longitudinal side of the base structure outwardly of the back sides of the generators and permanently connected up therewith ready for operation, the headers affording protection for the unit or package from damage during transit and installation at the jobsite.

3,465,727
STEAM GENERATOR AND METHOD OF MAKING THE SAME

Robert A. Tidball, Swarthmore, Pa., assignor to Baldwin-Lima-Hamilton Corporation, Philadelphia, Pa., a corporation of Delaware

Filed Mar. 4, 1968, Ser. No. 710,177
Int. Cl. B23p *15/26;* **F22b** *7/00*
U.S. Cl. 122—32 **8 Claims**

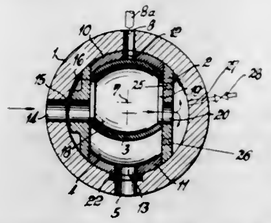


A steam generator wherein tubular members are secured by welding to spaced primary and secondary tube sheets, the welds joining the tubular members to the respective tube sheets preferably extending around the entire periphery to eliminate crevices; and a method of making a steam generator comprising the steps of providing a shell member having spaced primary and secondary tube sheets therein, securing tubular members in openings in the primary tube sheet, and securing the tubular members to openings in the secondary tube sheet in alignment with those of the primary tube sheet by welding through the walls of the tubular members.

3,465,728
COOLING SYSTEM FOR ROTARY PISTON ENGINES

Walter Franke, Maschen, District Harburg, Germany

Filed Mar. 9, 1967, Ser. No. 621,905
Int. Cl. F02b *53/00, 55/06*
U.S. Cl. 123—8 **15 Claims**

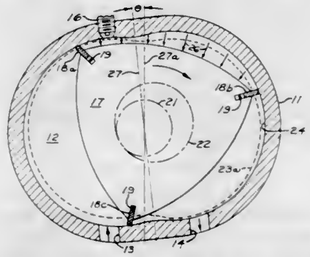


A rotary piston internal combustion engine wherein a housing accommodates a rotary cylinder having a diametrically extending combustion chamber for a reciprocable hollow piston coupled to the housing in such a way that the cylinder rotates in response to reciprocation of the piston on repeated ignition of a fuel-air mixture in the combustion chamber. The cooling system of the engine comprises a compressor which is operated by the cylinder and supplies gaseous coolant through inlets provided in the housing and cylinder, such coolant flowing through the hollow piston and exchanging heat with combustion products. The thus preheated coolant can be evacuated into the atmosphere or, and provided the coolant is air, it is mixed with fuel in the combustion chamber to form a preheated combustible mixture. If the coolant is a fuel-air mixture, the engine can be operated without direct admission of pure fuel into the the combustion chamber.

3,465,729
ROTARY ENGINE CORRECTED FOR OPERATING DEVIATIONS

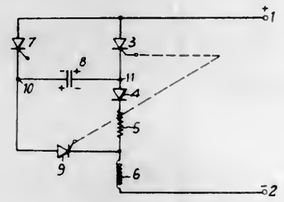
Charles Jones, Hillsdale, N.J., assignor to Curtiss-Wright Corporation, a corporation of Delaware

Filed Apr. 1, 1968, Ser. No. 717,569
Int. Cl. F02b *53/00, 55/00*
U.S. Cl. 123—8 **8 Claims**



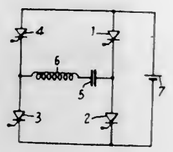
In a rotary engine of the trochoidal type, bearing clearances and minor deflections of the shaft and rotor parts may cause apex seal wear and loss of pressure at portions of the operating cycle. This condition is corrected by mutually indexing the trochoidal housing and the rotor slightly out of phase.

3,465,730
ELECTRONIC CONTROL CIRCUIT FOR ELECTRO-HYDRAULIC TRANSDUCERS
Jacques Bassot, Paris, and Louis Monpetit, Etang-la-Ville, France, assignors to Societe des Procedes Modernes d'Injection Sopromi, Boulogne, France
Filed Sept. 28, 1967, Ser. No. 671,502
Claims priority, application France, Sept. 29, 1966, 78,096
Int. Cl. F02d *1/06, 7/00*
U.S. Cl. 123—32 **9 Claims**



At injection start, starting thyristors cause current flow through injector coil from voltage source and from a capacitor charged during previous cycle. Firing of extinction thyristor connects oscillating circuit including coil and capacitor across line, thus charging capacitor and extinguishing all thyristors. Also an arrangement for supplying injection start and stop control signals to appropriate thyristors.

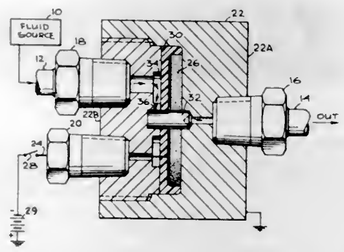
3,465,731
ELECTRONIC CONTROL FOR ELECTRO-MAGNETIC INJECTION SYSTEMS
Jacques Bassot, Paris, and Louis Monpetit, Etang-la-Ville, France, assignors to Societe des Procedes Modernes d'Injection Sopromi, Societe Anonyme, de Nationalite Francaise, Boulogne, France
Filed Sept. 28, 1967, Ser. No. 671,504
Claims priority, application France, Sept. 30, 1966, 78,306
Int. Cl. F02d *1/06, 7/00*
U.S. Cl. 123—32 **13 Claims**



An oscillating circuit containing at least a capacitor and the coil of the electromagnetic injector. Switches for allowing current flow through the oscillating circuit. A half period of oscillation for each switching. Two switches operated alternately so that the polarity of the oscillation changes with each interruption. Frequency of occurrence and amplitude of the oscillations controlled as a function of the quantity of liquid to be injected.

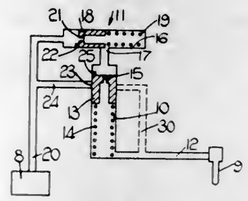
3,465,732
PIEZOELECTRIC CONTROL VALVE
Nicholas Kattchee, Berkeley, Calif., assignor to Physics International Company, San Leandro, Calif., a corporation of California
Filed Oct. 19, 1967, Ser. No. 676,458
Int. Cl. F02b *3/00;* **F02m** *39/00*
U.S. Cl. 123—32 **3 Claims**

A piezoelectric control valve is provided which comprises a piece of piezoelectric material arranged to provide an opening which has an insert therein such that when the piezoelectric material is not under the influence of an applied electrical field, or is not excited, there is no space between the piezoelectric material and the material of the insert. Upon the application of a potential across the PZ material there is a radial expansion wherein the opening is enlarged to compensate for the radial expansion. If a fluid under pressure is applied to one side



of the PZ material and insert, no passage to the other side is permitted until an exciting electrical field is applied to the piezoelectric material. At this time, fluid can pass. The amount of fluid which can pass is determined by the size of the opening, which can be made variable responsive to the amplitude of the voltage applied, the pressure under which the fluid is applied to the valve, and the duration of the electrical potential applied to the piezoelectric material.

3,465,733
LIQUID FUEL SUPPLY SYSTEMS FOR INTERNAL COMBUSTION ENGINES
John Charles Powell Thornber, London, England, assignor to C.A.V. Limited, London, England
Filed Oct. 31, 1967, Ser. No. 679,434
Claims priority, application Great Britain, Nov. 11, 1966, 50,655/66
Int. Cl. F02b *3/00;* **F02m** *39/00*
U.S. Cl. 123—32 **6 Claims**

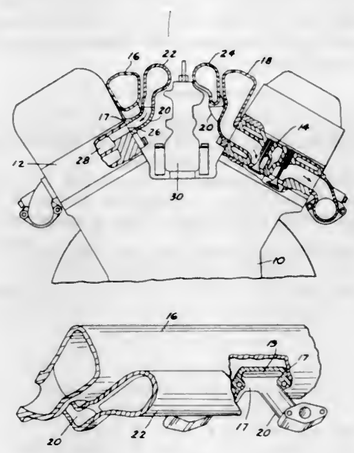


A fuel supply system for an internal combustion engine including a pump and a nozzle there being associated with the nozzle a device including a flow controller and valve member slidable within a cylinder, the valve member being arranged to uncover a by-pass port after it has moved a predetermined extent thereby to allow unrestricted flow of fuel to the nozzle.

3,465,734
INTAKE MANIFOLD FOR INTERNAL COMBUSTION ENGINES
James D. Moore, East Peoria, and Roy T. Paluska, Washington, Ill., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Army
Filed Nov. 9, 1967, Ser. No. 681,690
Int. Cl. F02b *75/18;* **F02f** *1/36*
U.S. Cl. 123—41.28 **2 Claims**

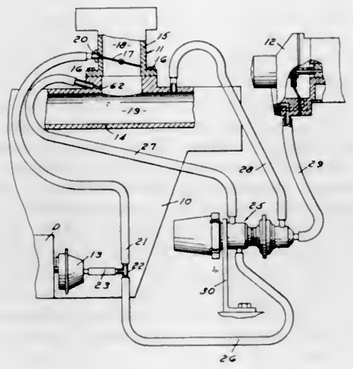
An intake manifold having water passages cast integrally therewith for mating with a water manifold for

internal combustion engines to overcome the problem where there is not sufficient space between the inlet ports



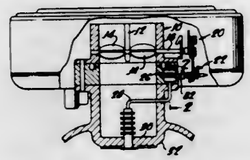
of the inlet manifold to attach the water manifold directly to the cylinder head.

3,465,735
AIR FLOW CONTROL SYSTEM FOR INTERNAL COMBUSTION ENGINE
Joseph E. Francis, Utica, and Arnold L. Amey, Flint, Mich., assignors to F & E Manufacturing Company, Flint, Mich., a corporation of Michigan
Filed Jan. 8. 1968, Ser. No. 696,226
Int. Cl. F02p *5/04*
U.S. Cl. 123—117 **12 Claims**



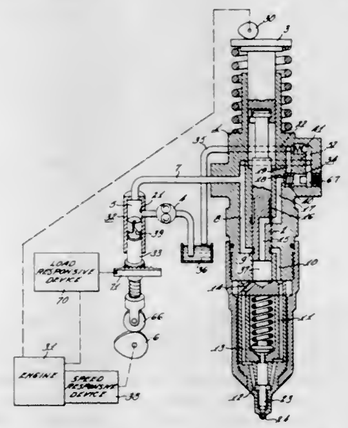
The air flow control system for internal combustion engines disclosed herein comprises a first valve which is responsive to differential pressure for providing communication between a point of low pressure on the engine and a motor which is operated by differential pressure. A first conduit extends from a vacuum point on the carburetor of the engine to a spark advance device and a second conduit extends from the first conduit to the first valve for operating the first valve. A second valve is provided which is also responsive to differential pressure and is connected by a third conduit to a point of vacuum on the engine which increases in vacuum during de-acceleration of the engine. The second valve is operable to apply vacuum to the first valve during de-acceleration to actuate the first valve so that the motor is connected to the low pressure during the de-acceleration.

3,465,736
EXHAUST RECYCLE CONTROL MECHANISM
Harold D. Daigh, Rolling Hills, and Clifford H. Collins, Monterey Park, Calif., assignors to Atlantic Richfield Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed Oct. 9, 1967, Ser. No. 673,843
Int. Cl. F02m *7/00*
U.S. Cl. 123—119 **6 Claims**



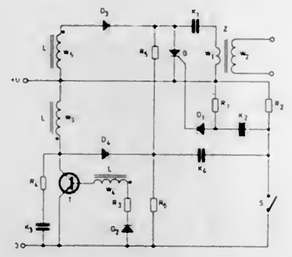
This application discloses an exhaust recycle valve control mechanism for use with internal combustion engines. The mechanism permits full opening of the exhaust recycle valve in correlation with the throttle valve accelerator mechanism position and enables the recycle valve to be maintained in full-open position for various positions of the accelerator mechanism up to and including wide-open or detent throttle position. At floor-board position, the control mechanism immediately closes the recycle valve for full power without exhaust dilution of the air-fuel mixture. The present mechanism includes an overcenter device comprising a throttle lever arm, a recycle control lever arm, and an overcenter lever arm disposed on the throttle shaft and connected to the recycle control valve so that the recycle control valve is opened with the throttle at part-throttle positions of the accelerator mechanism and snaps closed at floor-board position.

3,465,737
FUEL INJECTION SYSTEM
Alexander Dreisin, Olympia Fields, Ill., assignor to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.
Filed Mar. 26, 1968, Ser. No. 716,107
Int. Cl. F02m *39/00, 45/00;* **F04b** *17/00*
U.S. Cl. 123—139 **10 Claims**



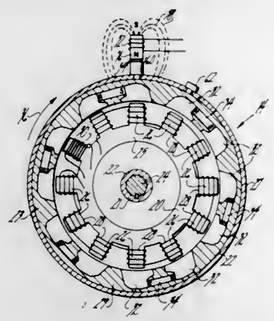
A fuel injection system having a mechanically operated fuel injection pump and control pump and hydraulically controlled fuel injection timing and metering of fuel quantity.

3,465,738
ELECTRONIC IGNITION CIRCUIT FOR MOTOR VEHICLES
Albrecht Gerlach, Emmendingen, and Manfred Habicht and Edgar Richter, Freiburg, Germany, assignors to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware
Filed Oct. 27, 1967, Ser. No. 678,580
Claims priority, application Germany, Nov. 4, 1966, D 51,471
Int. Cl. F02p *1/00*
U.S. Cl. 123—148 **4 Claims**



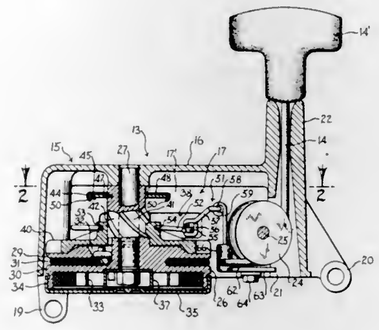
The invention relates to an electronic circuit for providing the ignition energy for an internal combustion engine. An ignition condenser, an electronic switch, and the primary winding of the ignition coil are connected in series. The condenser stores energy which is then used as a source of ignition pulses. A separate pulse generator recharges this condenser after each discharge caused by an ignition. The pulse generator is triggered by a voltage spike appearing in the circuit after each ignition.

3,465,739
INDUCTIVELY TRIGGERED BREAKERLESS IGNITION SYSTEM WITH AUTOMATIC SPARK ADVANCE
Bob O. Burson, East Longmeadow, Mass., assignor to R. E. Phelon Company, Inc., East Longmeadow, Mass., a corporation of Massachusetts
Filed Oct. 16, 1967, Ser. No. 675,429
Int. Cl. F02p *1/00*
U.S. Cl. 123—149 **14 Claims**



An ignition system for use with a spark ignited engine includes a condenser discharge circuit using a silicon controlled rectifier for controlling the charging and discharging of the condenser, the condenser when discharged being discharged through the primary winding of a step-up transformer having its secondary winding connected to the spark plug of the engine. Triggering signals for the silicon controlled rectifier are provided by a magnet and coil assembly mounted adjacent a rotating part of the engine. A series of pins, ribs or other irregularities on the rotating part cooperate with the coil and magnet assembly to provide an air gap the reluctance of which changes in such a manner, as the rotating part is rotated in its forward direction, that a triggering signal is induced in the coil which reaches the triggering level of the silicon controlled rectifier at different positions of the rotating part at different speeds of such part.

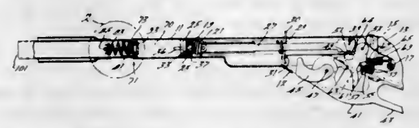
3,465,740
PULL ROPE TYPE STARTER FOR VERTICAL SHAFT ENGINES
Joseph R. Harkness, Germantown, and Leo J. Lechtenberg, Elm Grove, Wis., assignors to Briggs & Stratton Corporation, Milwaukee, Wis., a corporation of Delaware
Filed Feb. 13, 1968, Ser. No. 705,100
Int. Cl. F02m *1/00*
U.S. Cl. 123—185 **12 Claims**



A single cylinder vertical shaft internal combustion engine with a ring gear on its flywheel has a rewind type pull rope starter mounted on the side thereof. The starter has a gear mounted on the hub of a spool that is journalled on a vertical spindle. A screw threaded connection between the hub of the spool and the gear propels the gear upwardly into mesh with the ring gear upon rotation of the spool in one direction by a pull on the starting rope which is wound on the spool. Continued rotation of the spool imparts engine-starting rotation to the gear and the ring gear with which it meshes. The entire starter mechanism is enclosed in a housing which is bolted to the side of the engine crankcase and which has a flat top wall from which the vertical spindle depends. A tubular boss projecting upwardly from the top wall of the housing has the free end portion of the starting rope extending therethrough, the handle attached to the end of the rope being seated on the top of the boss to facilitate its being grasped in preparation to applying a direct upward engine-starting pull of the rope.

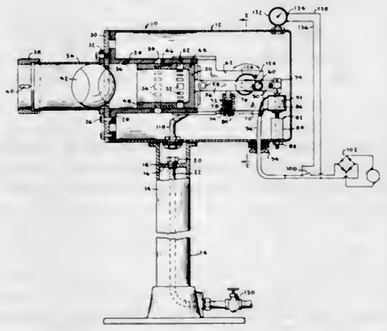
3,465,741
POPGUN WITH EXTENDED BARREL FOR PROJECTING PUFF OF AIR
Richard I. Daniel and Robert O. Wesley, Rogers, Ark., assignors to Daisy Manufacturing Company, Rogers, Ark., a corporation of Nevada
Filed June 15, 1965, Ser. No. 464,061
Int. Cl. F41b *11/00, 7/08*
U.S. Cl. 124—1 **6 Claims**

1. A popgun comprising a barrel having a muzzle end, a chamber in said barrel, a valve assembly at one end of said chamber nearest said muzzle end, a central opening in said valve assembly, a valve member having a lateral dimension smaller than said barrel overlying said opening, spring means normally biasing said valve member toward said opening, a plunger in said chamber, means propelling said plunger toward said one end thereby compressing air within said chamber and moving said barrel being substantially non-perforate between said muzzle end and said valve assembly, said valve member away from said open-



ing, said valve assembly being spaced from the muzzle end a distance equal to several times the barrel diameter to that upon releasing said valve assembly, a ring of air is propelled out said muzzle end, and causes an impact to be registered on a target spaced therefrom.

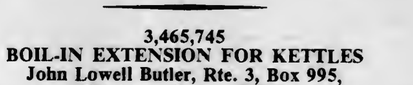
3,465,742
AIR PRESSURE OPERATED BALL PITCHING DEVICE
Theodore R. Herr, Lake County, Ind. (4564 Pennsylvania St., Gary, Ind. 46409)
Filed Nov. 3, 1966, Ser. No. 591,880
Int. Cl. A63b *69/30, 65/12*
U.S. Cl. 124—11 **7 Claims**



A ball pitching apparatus having a housing for containing air under pressure. An opening in the forward end of the housing for exhausting the air. A cylinder in the housing connected to the forward end of the housing circumscribing the opening therein. Means exterior of the housing at the opening for supporting the ball to be propelled. A piston movable by air pressure in the cylinder for registering passageways in the cylinder and piston for providing a quick and voluminous release of air from the housing to the opening for propelling the ball. Resilient means for returning the piston, piston rod and crank shaft to a start dead center position, and a kick device for moving the piston rod and crank shaft from dead center position to permit the piston to be moved by the air pressure.

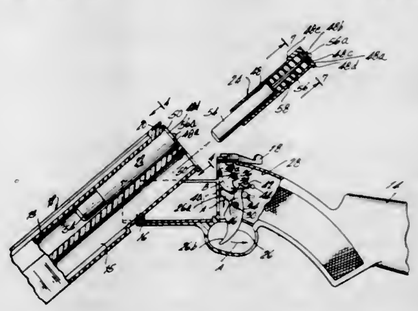
3,465,743
TWO-PART SELF-DISCHARGING WIRE
William J. Gilmore, Manitou Beach, Mich., and Vincent C. J. Peterson, Huntingdon Valley, Pa., assignors to American Chain & Cable Co. Inc., New York, N.Y., a corporation of New York
Continuation-in-part of application Ser. No. 274,896, Apr. 17, 1963, which is a continuation-in-part of application Ser. No. 203,979, June 20, 1962. This application Sept. 5, 1963, Ser. No. 307,284
Int. Cl. F41h *11/10;* **F41b** *7/00*
U.S. Cl. 124—18 **13 Claims**

8. A package of dischargeable flat wire comprising:
(a) at least first and second flat strips separably superimposed compressively together and wound into a multi-layered winding,



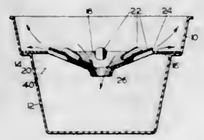
(b) a plurality of elements on at least said first strip resiliently flattened by said second strip in said winding and tending to spring outwardly from said first strip, whereby when said winding is unwound said strips separate to allow said elements to spring outwardly.

3,465,744
TOY DOUBLE-BARRELED SHOTGUN
Edwin A. Nielsen, Oceanside, N.Y., assignor to Ideal Toy Corporation, Hollis, N.Y., a corporation of New York
Filed Jan. 3, 1967, Ser. No. 606,896
Int. Cl. F41b *7/08*
U.S. Cl. 124—27 **6 Claims**



A toy double-barreled shotgun and cooperating spring loaded cartridges are constructed to permit the cartridges to be loaded into the rear opening of each shotgun barrel and to be released sequentially by one continuous stroke of the shotgun trigger. Each of the cartridges includes a projectile having a latching member extending through the rear wall of the cartridge. A member is moved by the trigger during a portion of its operating stroke releases the latching member of one projectile and a projection on the trigger releases the latching member of the other projectile during another portion of the trigger operating stroke.

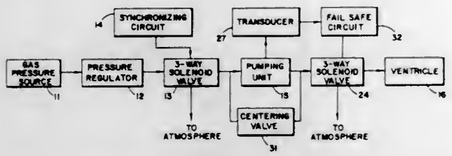
3,465,745
BOIL-IN EXTENSION FOR KETTLES
John Lowell Butler, Rte. 3, Box 995, Gresham, Oreg. 97030
Continuation-in-part of application Ser. No. 683,640, Nov. 16, 1967. This application July 29, 1968, Ser. No. 767,010
Int. Cl. A47j *27/58*
U.S. Cl. 126—384 **12 Claims**



A circumferential upright side wall portion has an open top and forms an upper extension for kettles or lids to prevent boiling over onto the stove. In one embodiment, the circumferential side wall portion is an integral part of the kettle, and in another embodiment such side wall

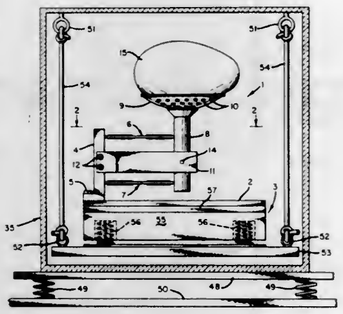
portion is a separate member and is usable either with existing kettles or special kettles. In some of the embodiments a removable baffle plate is supported by a shoulder in the side wall portion and in another embodiment the baffle plate is integral with the upright side wall portion. All embodiments have steam outlets and a central drain inlet for returning condensed steam and any boiled over liquid to the kettle. In still another embodiment, the extension is associated with an inverted container having a spout extending therethrough and arranged to project into a kettle. The container holds a supply of water and the spout furnishes water from the container to a kettle to prevent the latter from boiling dry.

3,465,746
MONITOR FOR HEART PUMP APPARATUS
Henry R. Guarino, Revere, Mass., assignor to Avco Corporation, Cincinnati, Ohio, a corporation of Delaware
Filed Mar. 2, 1966, Ser. No. 531,281
Int. Cl. A61b *19/00;* **A61f** *1/00*
U.S. Cl. 128—1 **9 Claims**



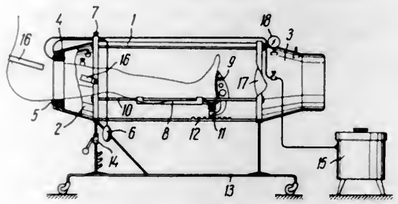
There is described means for preventing continuous application of pressure to a blood pumping unit such as an auxiliary ventricle or a thoracic balloon wherein an electrical signal is obtained proportional to the volumetric displacement of an actuating unit to prevent the continuous application of pressure to the blood pumping unit. The aforementioned electrical signal is utilized to effect venting of the blood pumping unit when the level of the signal drops below a predetermined level representative of the desired minimum volumetric displacement of the actuating unit.

3,465,747
BALLISTOCARDIOGRAPH
Vernon L. Rogallo, 539 Los Ninos Way, Los Altos, Calif. 94022
Filed Nov. 17, 1964, Ser. No. 411,943
Int. Cl. A61b *5/02, 5/04*
U.S. Cl. 128—2.05 **12 Claims**



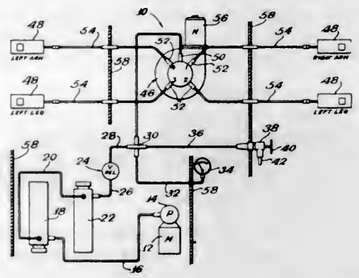
An ultrasensitive transducer capable of measuring the heartbeat of research biological organisms. The transducer comprises a pair of cantilever supported piezoelectric beams to the free ends of which is attached a support stem. The support stem carries a container in which the test organism is placed. For example, in testing an avian embryo the support stem carries a basket in which an egg may be placed. The force reaction of a heartbeat or other muscular movement in the test organism causes the piezoelectric beams to deflect and therefore generate an electrical voltage output. The frequency of this output is exactly the same as the frequency of the heartbeat or other motion, and the amplitude of the output is a measure of the strength of the heartbeat or other motion. Suitable electronic circuitry is provided to amplify and filter the piezoelectric output and put it in a form suitable for visual or audio study and recording.

3,465,748
DEVICE AND METHOD FOR TREATING VASCULAR AND OTHER DISEASES OF EXTREMITIES
Vasily Afanasievich Kravchenko, Ulitsa Bozhenko 14, korp. 4, kv. 25, Moscow, U.S.S.R.
Filed Oct. 25, 1966, Ser. No. 589,327
Int. Cl. A61h *1/00*
U.S. Cl. 128—24 **5 Claims**



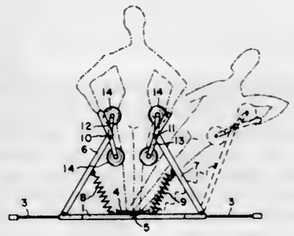
An active arterial hyperemia is produced in an affected extremity contained in a pressure chamber by the production of a negative barometric pressure inside the chamber within the range of 400 to 600 mm. Hg for a period of 10 to 25 minutes for each treatment, thus precluding conversion of the active hyperemia to the passive state. An intensified gas exchange in the cells of hypoxic tissues of the affected extremity is produced by saturating the blood with oxygen through inhalation thereof.

3,465,749
ROTATING TOURNIQUET SYSTEM
Stephen T. Moreland, Grosse Pointe Woods, and Walter S. Kazmierczak, Detroit, Mich., assignors to R. P. Scherer Corporation, a corporation of Michigan
Filed June 16, 1967, Ser. No. 646,617
Int. Cl. A61b *17/12*
U.S. Cl. 128—24 **2 Claims**



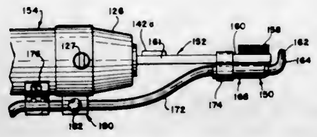
A rotating tourniquet system that has an air compressor, four pressure cuffs to be secured around each arm and each leg of a patient, a valve for properly distributing the air pressure to the pressure cuffs from the air compressor, and a valve for adjusting the pressure in the cuffs to a desired level. The improvement involves providing a pressure relief valve between the air compressor and the distributor valve, and the relief valve is preset to relieve the air pressure in the system when the air pressure exceeds a predetermined desired level.

3,465,750
BODY EXERCISER APPARATUS FOR THE HOME
Albert Schawalder, Brachmatt, Switzerland, assignor to Monty MacLevy, New York, N.Y.
Filed July 19, 1967, Ser. No. 654,565
Claims priority, application Switzerland, July 28, 1966, 10,921/66
Int. Cl. A61h *15/00, 1/02;* **A63b** *21/02*
U.S. Cl. 128—57 **6 Claims**



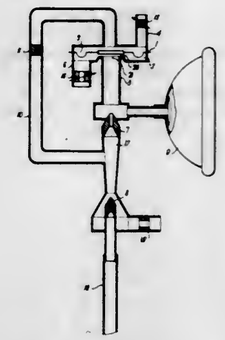
Exercising or massaging apparatus comprising a support on which a stand for the user is mounted, on opposite sides of which are arranged two pivotable hand bars biased toward one another. The hand bars support projecting rollers which can be brought into massaging contact with the user.

3,465,751
DENTAL CLEANING AND GUM MASSAGING DEVICE
Milton A. Powers, 655 Bedford Lane, Grosse Pointe Park, Mich. 48230
Filed June 21, 1966, Ser. No. 559,173
Int. Cl. A61c *17/02;* **A61h** *9/00;* **A61m** *11/02*
U.S. Cl. 128—66 **20 Claims**



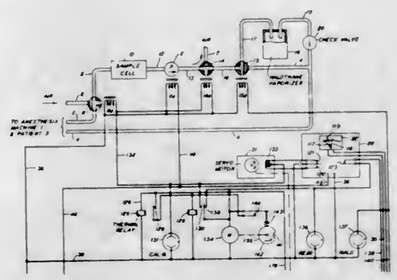
A dental cleaning and gum massaging device particularly adapted to the form of an attachment for a power toothbrush or other drive device having a motor driven stem. A nozzle forming a part of the device and driven in a continuous path by the motor driven stem is connected to a source of pressurized liquid for directing a jet of the liquid onto teeth and gum surfaces to be treated. The dental cleaning and gum massaging device may be constructed for use in place of the usual power driven toothbrush element or it may include a toothbrush element for brushing the teeth as the teeth and gum surfaces are simultaneously treated by the jet of liquid. In the latter case, the nozzle may be formed in the toothbrush stem or it may be mounted on the toothbrush stem.

3,465,752
APPARATUS FOR THE CONTROL OF PRESSURE RESPIRATOR
Ondrej Brychta, Josef Tlucko, Ondrej Kolik, and Miroslav Capla, Trencin, Czechoslovakia, assignors to Chirana, Zavody zdravotnickej techniky, odborovy podnik, Stara Tura, Czechoslovakia
Filed Sept. 23, 1966, Ser. No. 581,475
Claims priority, application Czechoslovakia Sept. 27, 1965, 5,856/65
Int. Cl. A62b *7/00*
U.S. Cl. 128—145.8 **5 Claims**



A pressure respirator in which a pneumatic amplifier chamber is divided into two compartments by a flexible diaphragm movable toward and away from a position in which the diaphragm closes an orifice in one of the compartments. Oxygen or air under pressure may be supplied to the orifice through a series arrangement of a first ejector, a mixing chamber, a second ejector, and the nozzle which terminates in the orifice. The mixing chamber and the two compartments communicate with the atmosphere through venting conduits equipped with throttles, the mask of the respirator communicates with the nozzle, and the other compartment is connected with the mixing chamber through a throttled conduit. When the throttles are properly set, the supply of breathing mixture is automatically synchronized with the spontaneous breathing of the patient wearing the mask.

3,465,753
GAS ANALYZER-CONTROLLER EQUIPMENT
Donald Levy, Spring Valley, N.Y., Tibor Rusz, Pittsfield, Mass., and Steven M. Szekely, Union, N.J., assignors to Milab Incorporated, Elizabeth, N.J., a corporation of New Jersey
Filed Feb. 18, 1966, Ser. No. 528,655
Int. Cl. A61m *17/00*
U.S. Cl. 128—188 **29 Claims**



A closed loop anesthesia system is disclosed having equipment that receives a sample of anesthesia gas administered to a patient and analyzes it to determine

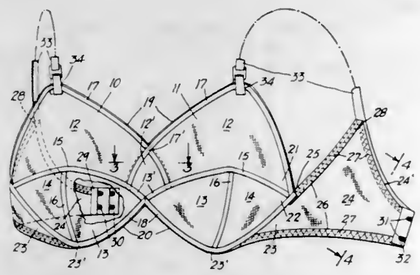
whether a halothane concentration therein is below or at a prescribed level. A vaporizer and controller circuitry are utilized for automatically adding halothane vapor to the exhalation path from the patient for processing through an anesthesia machine. Sample cells, ultriviolet sources, wavelength conversion devices and electrical circuits together with valves and couplers used automatically to operate and calibrate the analyzer and controller equipment to maintain a preset volume of halothane in the inhaled anesthesia.

3,465,754
BRASSIERE
Leona Lockwood, Hotel Roger Williams, 20 E. 31st St., New York, N.Y. 10016, and Harriet Tolk, 130 Devonshire Road, Larchmont, N.Y. 10538
Filed Apr. 7, 1967, Ser. No. 629,251
Int. Cl. A41c *3/00*
U.S. Cl. 128—425 **9 Claims**



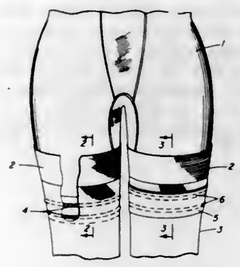
A brassiere which does not have any front connection between its brassiere cups. In a preferred embodiment, this is achieved with two loops respectively supporting each brassiere cup and each of which is worn in a sling-like position over one of the wearer's shoulders. As an optional feature, front and rear pairs of straps are worn to aid in holding the brassiere cups in position and are at a location which do not adversely affect the wearer's appearance when wearing garments with a low-cut front and rear neck line.

3,465,755
BRASSIERE
Simon Grishman, Yonkers, N.Y., assignor to William Gluckin & Company, Inc., New York, N.Y., a corporation of New York
Filed Aug. 16, 1967, Ser. No. 660,984
Int. Cl. A41c *3/00, 1/06*
U.S. Cl. 128—425 **9 Claims**



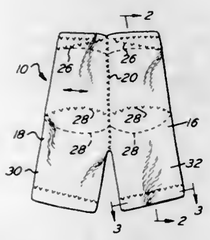
A brassiere wherein each side of the garment is formed principally of a one-piece panel having a contracted end extending to the lower center of the adjacent cup and a part of each cup forming the remainder of each side, said part, in combination with the panel, forming a V-shaped underarm recess. Further, each panel includes an upwardly contracted shoulder strap attaching end, preferably higher than the low center of the adjacent cup.

3,465,756
HOSE SUPPORT
Thomas R. Inman, Southampton, Mass., assignor to J. P. Stevens & Co., Inc., New York, N.Y., a corporation of Delaware
Filed Jan. 26, 1967, Ser. No. 611,911
Int. Cl. A41c *9/04;* **A41b** *11/04*
U.S. Cl. 128—519 **8 Claims**



A foundation garment having external ridges near the bottom of the leg portions thereof and garters having corresponding internal ridges. Stocking support is effected by pulling up the stockings over the leg portions containing the external ridges and then fastening the garters over the stockings with their internal ridges clamping the stockings between them and the external ridges of the foundation garment legs.

3,465,757
GIRDLE
Herbert Barg, Merion, Pa., assignor to True Form Foundations, Inc., Darby, Pa., a corporation of Pennsylvania
Filed Mar. 8, 1967, Ser. No. 621,516
Int. Cl. A41c *1/00*
U.S. Cl. 128—535 **8 Claims**

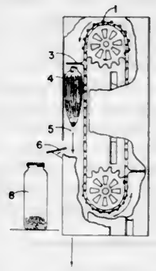


A girdle is provided with a ribbed friction surface at the terminal portion of the legs for frictionally engaging the welt of ladies' hosiery to thereby perform the function of supporting the hosiery.

3,465,758
EAR CORN SAMPLER
Proctor W. Gull, Kansas City, Mo., assignor to Gulf Research & Development Company, Pittsburgh, Pa., a corporation of Delaware
Filed Apr. 21, 1966, Ser. No. 544,273
Int. Cl. A01f *11/06;* **A47j** *17/02*
U.S. Cl. 130—9 **3 Claims**

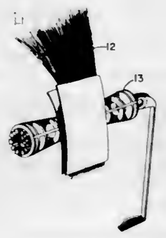
A power-driven ear corn sampler which is safe to operate and consistently yields representative samples drives ears of corn downward through a tubular passage by means of a chain conveyor, one or two rows of kernels being stripped from the ear by a projection on the wall

of the tubular passage as the ear passes through, the stripped kernels being conducted to a sample container and



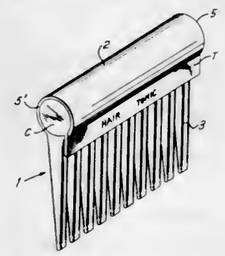
the ears dropping from the bottom of the tubular passage after sampling.

3,465,759
KERATIN MODIFICATION
John W. Haefele, Mount Healthy, Ohio, assignor to The Procter & Gamble Company, Cincinnati, Ohio, a corporation of Ohio
Filed Sept. 30, 1965, Ser. No. 491,816
Int. Cl. A45d *2/00*
U.S. Cl. 132—7 **5 Claims**



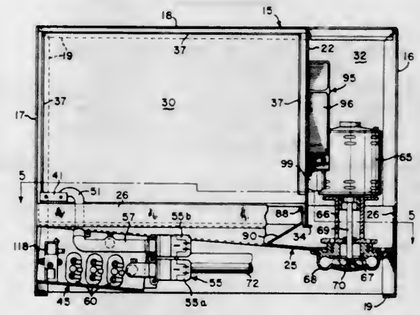
A flexible wrap comprising a wafer of impermeable plastic foam of specific size, shape, thickness, resiliency, density and average pore incidence employed to protect selected hair segments from exposure to keratin-modifying solutions and to facilitate the winding of hair tresses on curlers in the cold permanent waving of hair, and a permanent waving process in which the hair tresses are wound upon curlers with the aid of such wraps preventing exposure of selected segments of the hair to keratin-modifying solutions.

3,465,760
COMB ADAPTED FOR RETAINING AN INSERT
Leonard H. Sobel, 452 Beach, 138th St., Rockaway Park, N.Y. 11694
Filed Apr. 3, 1967, Ser. No. 628,122
Int. Cl. A45d *24/04, 24/12, 24/22*
U.S. Cl. 132—147 **11 Claims**



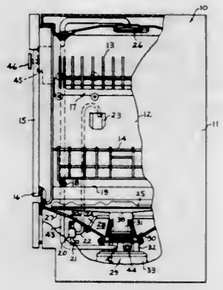
A comb is provided with a bridge portion having a cavity with an open end through which an insert containing a cosmetic substance or the like can be inserted and retained in the comb and subsequently removed for use. The insert has a tearable tab by which the container can be opened, the tab serving as a manually engageable handling means for the container by being insertable in a slot formed in the bridge portion.

3,465,761
APPARATUS FOR WASHING GLASSES, DISHES AND THE LIKE
David A. Meeker, Ernst Grunewald, and Ben J. Vallor, Troy, Ohio, assignors to The Hobart Manufacturing Company, Troy, Ohio, a corporation of Ohio
Filed Jan. 5, 1968, Ser. No. 695,908
Int. Cl. A47l *15/46, 15/22*
U.S. Cl. 134—58 **11 Claims**



A generally rectangular cabinet has a cleansing chamber and a motor chamber separated by an intermediate vertical wall having a lower edge portion spaced above a sloping bottom wall to provide for drainage of water distributed by a reaction spray arm within the cleansing chamber to a pump positioned below the bottom wall and driven by a motor located within the motor chamber. A strainer is removably mounted on the lower edge portion of the intermediate wall which also supports a dispenser for a treating agent, and a water heating tank is mounted on the underneath surface of the bottom wall for heating both water within the cleansing chamber and water which is subsequently displaced into the cleansing chamber.

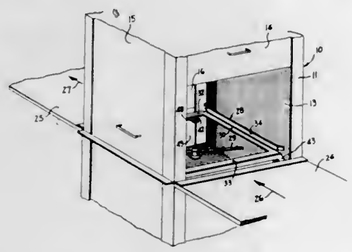
3,465,762
DISHWASHING MACHINE
Lauren W. Guth, Louisville, Ky., assignor to General Electric Company, a corporation of New York
Filed May 1, 1968, Ser. No. 725,612
Int. Cl. A47l *15/46, 15/16*
U.S. Cl. 134—58 **9 Claims**



An automatic dishwasher comprising a washing enclosure for receiving and containing articles to be washed therein, means for supplying liquid to the enclosure, first and second spray means within the enclosure for affecting a washing action on the articles by respectively ejecting

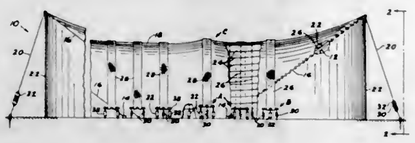
pressurized liquid generally upwardly and downwardly thereon, and circulating means for circulating liquid from the enclosure to the spray means. The circulating means includes concurrently operable first and second pump means. The first pump means has an inlet connected to the enclosure and an outlet connected to the upwardly ejecting first spray means. The second pump means has an inlet connected to the enclosure at an elevation lower than that of the inlet of the first pump means and has an outlet connected to the downwardly ejecting second spray means. Control means are provided for periodically limiting liquid supplied to the enclosure by the supply means to an amount such that only the second pump means is primed thereby and concurrent operation of the two pump means will then cause liquid to be ejected only downwardly on the articles.

3,465,763
DISHRACK TRACK ASSEMBLY FOR A DISHWASHING MACHINE
Roger L. Hoffman, Pequannock, N.J., assignor to General Electric Company, a corporation of New York
Filed Dec. 26, 1967, Ser. No. 693,643
Int. Cl. B08b *3/00*
U.S. Cl. 134—154 **10 Claims**



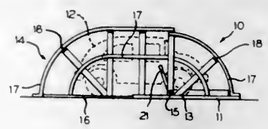
A track assembly for supporting dishracks in a dishwasher is convertible for use in either an "in-line" or a "corner" type dishwasher installation. The track assembly is a unitary structure including four tracks disposed in a rectangle and two guide rails one of which is fixed on one of the tracks. The track assembly includes means for detachably mounting the other guide rail on either of two different tracks so that the two guide rails can be associated with either two parallel tracks or two perpendicular adjacent tracks. The track assembly includes mounting feet depending from its corners permitting releasable mounting of the assembly, and carries a plurality of splash baffles for shielding the dishwasher doors from water spray during the washing operation.

3,465,764
DAMPING MEANS FOR PORTABLE STRUCTURE
Carl F. Huddle, 3 Kenberton Drive, Pleasant Ridge, Mich. 48069
Filed July 19, 1967, Ser. No. 654,425
Int. Cl. A45f *1/00;* **E04b** *1/347*
U.S. Cl. 135—1 **5 Claims**



A portable semi-rigid structure including a pair of arches inclined from a common base and pivotably tilted outward from each other, a flexible membrane attached to and stretched between the arches, longitudinal tension members secured to the arches to support the membrane, inverted tension members operatively connected to the longitudinal tension members and/or to the membrane to prevent ballooning thereof, and vibration damping means including at least one of the following: (A) spring-loaded dash-pots connected between the inverted tension members and the base; (B) springs connected between the inverted tension members and the base; (C) bands connected between the base and the membrane in series with spring-loaded dash-pots; and (D) bands connected between the base and the membrane in series with springs.

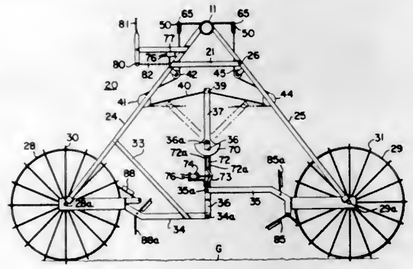
3,465,765
SHELTERS
Henry Dietz, Shorewood, Wis. (5684 N. Milwaukee River Parkway, Glendale, Wis. 53209)
Filed Dec. 13, 1967, Ser. No. 690,119
Int. Cl. A45f *1/16, 1/00;* **E04b** *1/347*
U.S. Cl. 135—3 **3 Claims**



An easily transportable tent-like garage or storage shelter for vehicles or boats.

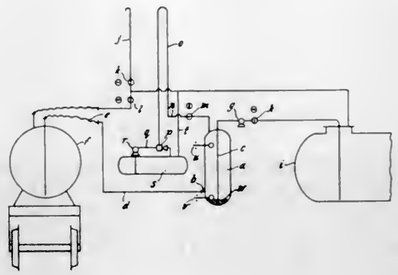
The shelter comprises a stationary portion and a movable portion. The movable portion has a closed position and an open position. The movable portion has a peripheral bottom piece that is contiguous to the ground in the closed position and is substantially normal to the ground in the open position. The stationary portion comprises an arcuate section that fits completely within the movable portion in the open position.

3,465,766
AMBULATORY IRRIGATING DEVICE
Louie P. Siebert, Henderson, Nebr., assignor to Cropland Industries, Inc., Henderson, Nebr., a corporation of Nebraska
Filed Apr. 28, 1967, Ser. No. 634,638
Int. Cl. A01g *25/02;* **B60p** *3/30;* **B05b** *15/06*
U.S. Cl. 137—1 **13 Claims**



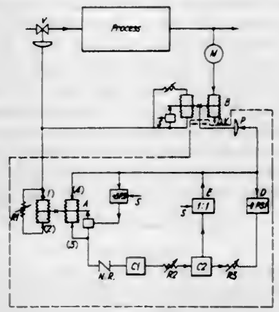
An ambulatory irrigating apparatus in which the towers for supporting the irrigation conduit include a pair of legs which are adapted to move across the ground by changing the spacing between the ground engaging foot portions on the legs.

3,465,767
METHOD AND APPARATUS FOR LIQUID TRANSFER
Robert L. Peres, Neuilly-sur-Seine, France, assignor to The Associated Octel Company Limited, London, England, and Octel S.A., Paris, France, jointly
Filed Apr. 20, 1967, Ser. No. 632,442
Claims priority, application Great Britain, Apr. 27, 1966, 18,466/66
Int. Cl. F04f *1/14*
U.S. Cl. 137—2 **8 Claims**



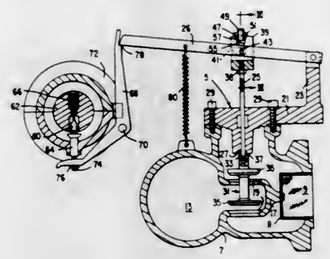
The invention concerns an apparatus and method for the transfer of liquid. The liquid is first withdrawn by suction into priming vessel to create a head of liquid. Once the head of liquid is established, the liquid is discharged from the priming vessel and simultaneously fresh liquid is withdrawn from the source to maintain the head of liquid in the priming vessel. Preferably the whole operation is automatically controlled by float switches operated by the liquid level in the priming vessel.

3,465,768
GAIN-ADAPTIVE CONTROL SYSTEM
Ernest Norman Martin, Norton-on-Tees, England, assignor to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain
Filed Aug. 11, 1967, Ser. No. 660,061
Claims priority, application Great Britain, Aug. 16, 1966, 36,634/66
Int. Cl. F17d *3/00;* **F15b** *5/00;* **G05d** *16/00*
U.S. Cl. 137—14 **15 Claims**



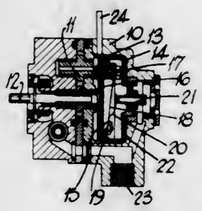
A closed process control loop is caused to generate its own test signal which is continuously sensed by a gain-adaptive control which uses any durations therein to adjust the controller gain.

3,465,769
GOVERNOR TRIP VALVE WITH TEMPERATURE COMPENSATION MEANS
Charles Shulock, Jeannette, and William A. Straslicka, Norvelt, Pa., assignors to Carrier Corporation, Syracuse, N.Y., a corporation of Delaware
Filed Oct. 2, 1967, Ser. No. 672,191
Int. Cl. G05d *13/04;* **F01b** *25/06*
U.S. Cl. 137—31 **1 Claim**



A trip valve for use with a steam turbine for shutting off the steam supply in response to a machine malfunction such as overspeed in which the linkage associated with the trip mechanism includes means assuring a predetermined force against the valve stem despite variations in growth of the parts due to thermal expansion.

3,465,770
SPEED RESPONSIVE GOVERNORS
Dorian Farrar Mowbray, Burnham, England, assignor to Joseph Lucas (Industries) Limited, Birmingham, England
Filed Mar. 6, 1967, Ser. No. 620,956
Int. Cl. G05d *13/14*
U.S. Cl. 137—56 **1 Claim**

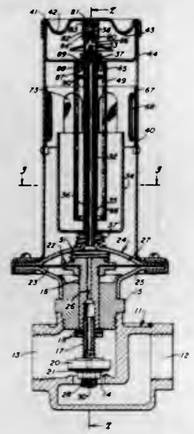


A speed responsive governor comprising a body, a rotor, the rotor having an off-set orifice, a closure member carried by the rotor and associated with the orifice to control flow therethrough, and a weight carried by the rotor and arranged in response to speed to act upon the closure member.

3,465,771
WATER CONTROL DEVICE
Richard Tishler, 3650 Willow Crest Ave., North Hollywood, Calif. 91604
Filed Sept. 16, 1966, Ser. No. 580,069
Int. Cl. A01g *25/00*
U.S. Cl. 137—78 **12 Claims**

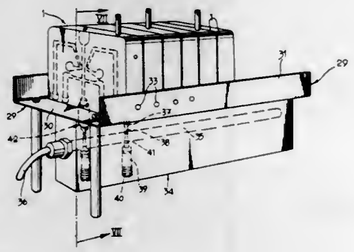
An automatic water regulator in which a main valve is operable by a diaphragm located in a chamber which communicates with the interior of a tubular post having an orifice therein. A water collector is movable along the post but is normally yieldably held in its upper position

wherein a control valve carried thereby is held open to permit water from the main valve inlet to flow at a metered rate into the collector. When the collector lowers due to accumulations of water therein, the control valve



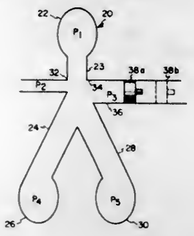
is closed to enable water pressure to actuate the valve diaphragm, thus closing the main valve. Wick means is provided to remove water from the collector at a relatively slow rate.

3,465,772
FLUID AMPLIFIER SYSTEM
Michele Monge and Angelo Abbate Daga, Turin, Italy, assignors, by mesne assignments, to I-T-E Imperial Corporation, Philadelphia, Pa.
Filed Oct. 10, 1966, Ser. No. 585,604
Claims priority, application Italy, Nov. 3, 1965, 24,673/65
Int. Cl. F15c *1/06*
U.S. Cl. 137—81.5 **22 Claims**



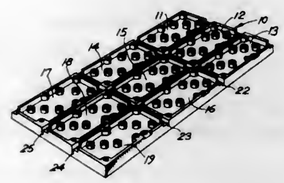
A fluid amplifier system comprising a plurality of planar fluidic components each having fluid inlet and outlet fittings with an elongated supporting member for the components along with releasable snap holding connections between each component and the supporting member, and a pressure fluid manifold carried by the supporting member and including a main conduit connected at one end with a fluid pressure source and provided along its length with branches connected with the fluid inlet fittings of the fluidic components, and independent means for adjusting the fluid pressure in the branch conduits.

3,465,773
FLUID STATE DEVICES
Charles J. Ahern, Detroit, Mich., assignor to The Bendix Corporation, a corporation of Delaware
Filed Feb. 4, 1966, Ser. No. 525,094
Int. Cl. F15c *1/08, 1/12, 1/14*
U.S. Cl. 137—81.5 **14 Claims**



A fluid flip-flop device is shown having a variable chamber along one leg thereof which is evacuated by the fluid stream passing thereby, causing a switch in fluid flow from the other leg to the one leg and means to pressurize the chamber to cause the fluid stream to switch from the one leg to the other leg. This disclosure also shows various pulse shaping and pulse delaying circuits which make use of the above device.

3,465,774
SEMI-INTEGRATED (FLUIDIC) LOGIC SYSTEM
Wilbert G. Kautz, West Unity, and Donald M. Florence, Bryan, Ohio, assignors to Aro Corporation, a corporation of Delaware
Filed Mar. 10, 1967, Ser. No. 622,122
Int. Cl. F15c *1/12*
U.S. Cl. 137—81.5 **6 Claims**

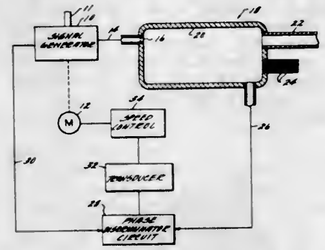


A modular "fluidic" (fluid logic) system which includes multiple fluidic devices. Each fluidic device, regardless of its function, takes the form of a standardized, modular element or "building block" having port locations positioned to mate with the interconnecting passageways in a mounting assembly. Access ports are provided at both the top and the bottom of each modular element so that a three dimensional, stacked array of elements may be formed. Ports may be exposed, allowing the operation of the apparatus to be altered by manipulating interconnecting conduits, sealing plugs, and the like.

3,465,775
TEMPERATURE-INSENSITIVE FLUID CONTROL CIRCUITS AND FLUERIC DEVICES
Robert K. Rose, Burnt Hills, N.Y., assignor to General Electric Company, a corporation of New York
Filed Nov. 24, 1967, Ser. No. 685,552
Int. Cl. F15c *1/08, 1/12, 1/14*
U.S. Cl. 137—81.5 **5 Claims**

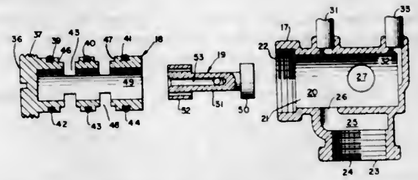
The disclosure shows a control circuit for maintaining a constant output from a fluidic signal generator. The signal generator provides an input to a flueric resonator,

comprising a chamber having an open-ended tube projecting therefrom and a plurality of open-ended capillary tubes, also projecting therefrom. An output derived from the resonator is fed to phase-discriminator means which also have an input from the signal generator. When the signal generator is not operating at the resonant frequency of the resonator, an output from the phase-discriminator means is employed to change the speed of



the mechanical input to the signal generator to change the frequency of the pressure variations of the signal generator to match the resonant frequency of the resonator. The capillary tubes are sized to maintain the resonant frequency of the resonator substantially constant over at least a given temperature range so that the frequency of the signal from the signal generator is likewise maintained constant.

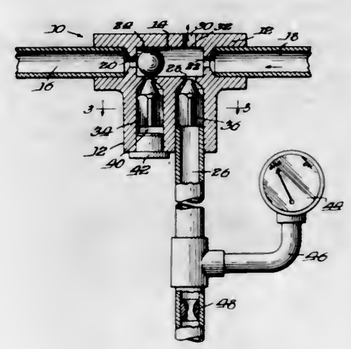
3,465,776
ADD-ON BALANCED PRESSURE UNIT
John G. Pecis, Wilmington, and Arthur A. Fiorentino, Newark, Del., assignors to Speakman Company, Wilmington, Del., a corporation of Delaware
Filed Mar. 31, 1965, Ser. No. 444,144
Int. Cl. G05d *11/00;* **F16k** *31/143, 31/163*
U.S. Cl. 137—100 **6 Claims**



Flow control apparatus for continually equalizing discharge temperature of fluid derived from hot and cold pressurized fluid sources and discharged from common mixing outlet comprises independent pair of flow control units each having regulating cavity with inlet port connected to one of fluid sources and outlet port connected to common outlet. Free floating valve member within each cavity has face portion defining with one wall of cavity variable volume static fluid chamber and skirt portion for modulating flow from inlet port through cavity to outlet port. Static fluid passages interconnect static fluid chamber of each cavity with inlet port of other cavity so that pressure differentials in one fluid source shift valve member to modulate flow from other fluid source.

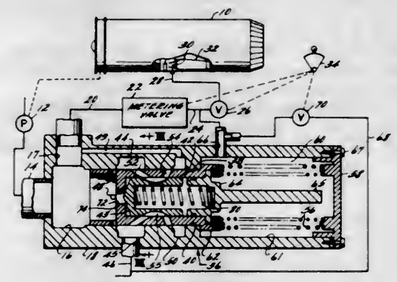
3,465,777
FLUIDIC MEMORY ELEMENT
David H. Thorburn, Oak Park, Ill., assignor, by mesne assignments, to Powers Regulator Company, Skokie, Ill., a corporation of Delaware
Filed Apr. 3, 1968, Ser. No. 718,395
Int. Cl. F15c *3/06;* **F16k** *11/10*
U.S. Cl. 137—112 **6 Claims**

The invention provides a bistable fluidic memory element comprising a memory element body having an internal chamber, preferably cylindrical in shape. The chamber has control pressure inlet and outlet openings at longitudinally opposite ends and a magnetically conductive flow restricter, preferably spherical, longitudinally movable within the chamber. Magnets are located at opposite ends of the chamber, tending to retain the sphere adjacent to one or the other control pressure openings. A sensing pressure passage communicates with the chamber at the side, and is designed so that the sphere will



restrict flow and provide a back pressure in the sensing pressure passage when the sphere is adjacent to one of the control pressure openings, but will provide substantially less back pressure when the sphere is adjacent to the opposite control pressure opening and does not restrict flow. The position of the sphere can thus be determined by passing a fluid through the sensing pressure opening and measuring the amount of pressure in the sensing pressure inlet passage. The device is adaptable for use with both liquids and gases.

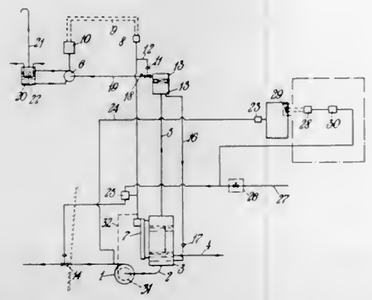
3,465,778
COMBINED PRESSURE CONTROL VALVE AND PRESSURE RELIEF VALVE HAVING A FLAT PRESSURE-FLOW CHARACTERISTIC
Howard B. Kast, Fairfield, Ohio, assignor to General Electric Company, a corporation of New York
Filed Aug. 8, 1966, Ser. No. 571,069
Int. Cl. F15b *5/00*
U.S. Cl. 137—117 **9 Claims**



A compact combined pressure control and pressure relief valve is disclosed in which the pressure relief piston is contained within a differential pressure regulating piston. The valve includes means for balancing dynamic flow forces on the regulating piston. The pressure relief valve series flow path comprises a primary orifice, a continuously variable area secondary discharge orifice,

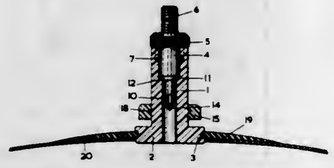
and a pressure chamber intermediate the said orifices which structure provides a flat pressure-flow characteristic. Additionally a continuously variable area damping orifice is provided to stabilize operation of the relief valve piston.

3,465,779
LIQUID PUMPING SYSTEMS
Jack Ronald Marsland, Newark, and Alexander Stirling Malloch, Newark-on-Trent, England, assignors to Worthington-Simpson Limited, Newark-on-Trent, England, a British company
Filed June 14, 1965, Ser. No. 463,843
Claims priority, application Great Britain, Aug. 25, 1964, 34,807/64
Int. Cl. G05d *11/00;* **F04b** *21/00;* **F17c**
U.S. Cl. 137—118 **4 Claims**



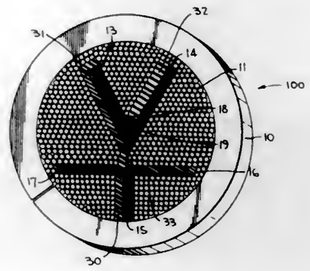
A system for installation in a tanker ship having liquid cargo tanks adapted to be stripped of liquid comprising a pump, a vapor separating chamber connected to the inlet side of the pump, a vacuum breaker operably related to the vapor separating chamber, and a device responsive to the diminishing level of liquid in the separating chamber successively to vent the chamber, operating means for withdrawal accumulated gas or air vapor from the separating chamber to maintain a working level of liquid therein and then to control the rate of discharge of the liquid from the separating chamber by the pump to maintain the level of liquid in the separating chamber above the pump inlet.

3,465,780
VALVE, MAINLY FROM SYNTHETIC MATERIAL SUCH AS PLASTIC, FOR AIR TUBES AND METHOD OF MANUFACTURING OF THE SHAFT OF SUCH A VALVE
Jacobus Henricus Duymelinck, 1 Dr. Arienslaan, Helmond, Netherlands, and Rients Schootstra, 430 Keppelseweg, Doetinchem, Netherlands
Filed Feb. 27, 1967, Ser. No. 618,805
Int. Cl. F16k *15/20*
U.S. Cl. 137—234.5 **4 Claims**



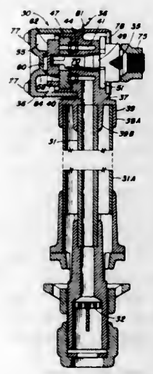
A valve for an air tire or inner tube and method for manufacturing the shaft thereof. The valve is essentially made from a synthetic material such as plastic. The valve nipple constitutes one part with a manually engageable flange or the like replacing the usual ring nut. The nipple engages by a bayonet joint in the interior of the valve shaft and the rim nut engages by a bayonet joint around the shaft. In the method a plaster to be bonded to the air tube is used as part of a mold for making the shaft.

3,465,781
FLUID AMPLIFIER COMPONENT ADJUSTABLE TO PROVIDE A VARIETY OF CONFIGURATIONS
Eugene G. Flester, Jr., Falls Church, Va., and Silas Katz, Silver Spring, Md., assignors to the United States of America as represented by the Secretary of the Army
Filed June 15, 1967, Ser. No. 646,805
Int. Cl. F15d *1/04;* **F15c** *1/04*
U.S. Cl. 137—271 **3 Claims**



A plurality of thin wire rods are enclosed in a split ring. The thin wire rods can be moved transversely to the split ring axis to simulate the geometry in a pure fluid amplifier without the necessity of going to the expense of building said pure fluid amplifier.

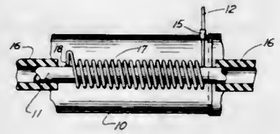
3,465,782
FLOAT ACTUATED ROTARY VALVE
Richard G. Parkison, Louisville, Ky., and Edward W. Forth, New Canaan, Conn., assignors to American Standard Inc., a corporation of Delaware
Filed Sept. 23, 1964, Ser. No. 398,646
Int. Cl. E03d *1/32, 9/14*
U.S. Cl. 137—315 **21 Claims**



1. In a valve comprising a housing having an inlet and an outlet, a seat member within said housing between said inlet and outlet, said seat member having a port opening and a stem opening, a rotary member in said housing abutting said seat member, said rotary member having a port opening, a stem having one of its ends connected to a float by means of a float arm and its other end extending through said stem opening in said seat member

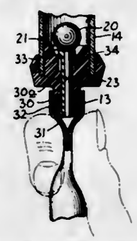
to engage said rotary member for rotating the later relative to the seat member to communicate said port openings when said float moves a specified distance, means in said housing defining a channelway generally coaxial with said stem opening, resilient means arranged in said housing to urge said seat member against said rotary member and to provide a water tight seal between said housing and said seat member to isolate said channelway from the fluid passage in the valve, said stem extending through said channelway whereby said stem is isolated from fluid flowing through the valve.

3,465,783
BRANCH CONDUIT CONNECTION FOR FLUID DISTRIBUTION SYSTEMS
David Unger, Chicago, and Ronald A. Sabala, Elmwood Park, Ill., assignors to Midwesco-Enterprise, Inc., Chicago, Ill., a corporation of Illinois
Filed Dec. 12, 1966, Ser. No. 601,188
Int. Cl. F16l *51/04, 7/00*
U.S. Cl. 137—375 **3 Claims**



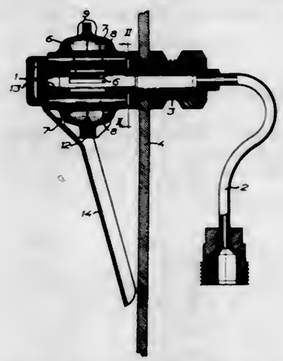
In a fluid distribution system of the type intended to be buried in the ground, there is provided an outer tubular casing with a main conduit extending through the casing and branch conduits for delivering fluid from the main conduit to individual points of consumption. The improvement in the system includes a coupling means that secures one end of the branch conduit to the tubular casing, and an elongated third conduit is located within the casing and has one end connected to the coupling means and the other end connected to the main conduit and the third conduit is provided in the form of a helix surrounding the main conduit and being more flexible than the main conduit so as to stretch or compress to accommodate relative lengthwise movement of the main conduit relative to the casing.

3,465,784
CHECK VALVE FOR INTRAVENOUS ADMINISTRATION OF LIQUIDS
Robert D. Cofoid, La Salle, Ill., assignor to General Time Corporation, Stamford, Conn., a corporation of Delaware
Filed May 8, 1967, Ser. No. 636,809
Int. Cl. F16k *31/18, 21/04, 39/00*
U.S. Cl. 137—390 **5 Claims**



A float-type check valve for use in intravenous administration of liquids. A release mechanism is included in the bottom of the check valve for the purpose of forcing the float valve member up off its valve seat after the valve has been closed and subsequently attached to a fresh liquid supply vessel. The release mechanism overcomes the forces which normally tend to hold the floating valve element tightly seated due to the suction of a downstream pump or simply due to the column of liquid in the downstream feed tube. The release mechanism is in the form of a plunger slidably mounted in the valve structure adjacent the valve seat so that advancing movement of the plunger unseats the floating valve element from the valve seat to expose it to the buoying action of the incoming fluid. The plunger may be retracted manually, or by gravitational forces, fluid forces, and/or a biasing spring.

3,465,785
VALVES
Frans Harry Karlsson, Bredgatan 13, Lund, Sweden
Filed Apr. 12, 1967, Ser. No. 630,234
Claims priority, application Sweden, Apr. 25, 1966, 5,569/66
Int. Cl. F16k *31/18;* **F17d** *3/00*
U.S. Cl. 137—447 **11 Claims**

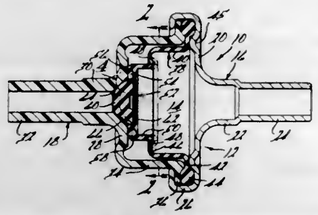


A valve having a cylindrical hollow body with a throughflow passage therein piercing one surface thereof, a supporting member mounted for rotation on the hollow body, at least one roller in said supporting member bearing against the surface of the hollow body and movable in relation to said surface to open and close the valve, said roller, when moved in relation to said surface, rolling thereon and at closed valve totally covering and closing the throughflow passage in said surface by means of a small part of its circumference. The valve is intended primarily for use as a float-controlled valve for the automatic refilling of the flushing water tank of a water closet, the float in said tank being arranged to actuate the rotatable supporting member to cause the roller or rollers to roll on said surface of the cylindrical hollow body to open or close the valve.

3,465,786
VACUUM CHECK VALVE
Edward G. Spisak, Wayne, Mich., assignor to Gar Wood Industries, Inc., Ypsilanti, Mich., a corporation of Michigan
Filed Sept. 8, 1966, Ser. No. 583,145
Int. Cl. F16k *15/00, 17/00, 21/04*
U.S. Cl. 137—516.27 **5 Claims**

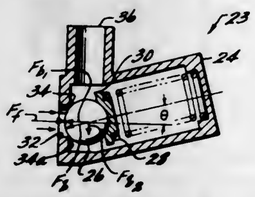
In a vacuum check valve mechanism, a housing defining a valve chamber and first and second passage means communicable with the chamber, means defining first and second valve seats in the chamber, and a valve member disposed in the chamber between the passages, the valve member comprising a perforate section, a valve section having first and second valve portions and means providing for relative movement of the valve portions toward and away from engagement with the valve seats, the valve portions being movable in one direction in response to the vacuum level in the first passage exceeding the vacuum level in the second passage to a position out of sealing engagement with the valve seats, whereby the first and

second passages are communicable through the chamber and the perforate section of the diaphragm means, the valve portion being movable in another direction in re-



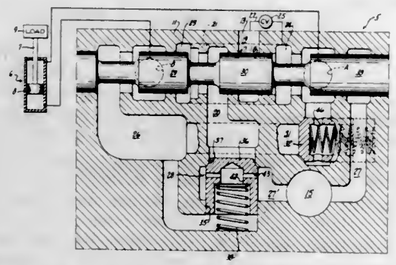
sponse to the vacuum level in the second passage exceeding the vacuum level in the first passage to a position sealingly engaging the valve seats, whereby to block communication between the first and second passages.

3,465,787
SPRING-BIASED VALVE WITH ANTI-CHATTERING FEATURE
William K. Gulick, Cincinnati, Ohio, assignor to General Electric Company, a corporation of New York
Filed Apr. 12, 1967, Ser. No. 630,370
Int. Cl. F16k *1/14, 15/04*
U.S. Cl. 137—539.5 **10 Claims**



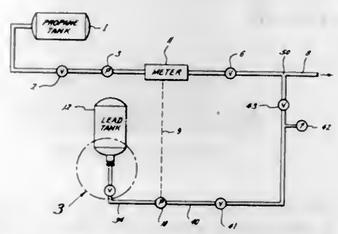
A spring-biased valve wherein chattering is minimized by having the spring biasing force on the closure member at an angle to the center line of the valve seat. When fluid acts on the closure member the angle of the spring biasing force causes the closure member to pivot when opening or closing. For relatively large valves a low mass closure may also be employed to help reduce chatter.

3,465,788
HYDRAULIC CONTROL VALVE WITH VOID PREVENTION MEANS
Francis H. Tennis, Oconomowoc, Wis., assignor, by mesne assignments, to Koehring Company, Milwaukee, Wis., a corporation of Wisconsin
Filed Sept. 1, 1967, Ser. No. 665,054
Int. Cl. F15b *11/16;* **F16k** *11/07*
U.S. Cl. 137—596 **10 Claims**



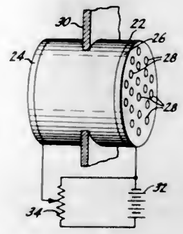
In the "float" position of a control valve for a double acting cylinder, return fluid from the cylinder is load pressurized upstream from a restriction through which it must flow to a vent, and such load pressurized fluid is fed to the expanding end of the cylinder through a feedback passage containing an anti-void check valve. Pressure responsive valve means that controls flow of pump fluid to the vent has one side exposed to such return fluid, its other side to pump fluid. High return fluid pressure, due to rapid piston descent, causes the valve means to close and divert pump fluid to the expanding end of the cylinder.

3,465,789
METHOD AND APPARATUS FOR ADDING TETRAMETHYL LEAD TO HYDROCARBON FUELS
Frank A. Suess, 3731 Portsmouth, Houston, Tex. 77027
Filed Oct. 21, 1966, Ser. No. 588,468
Int. Cl. F17d *1/00*
U.S. Cl. 137—604 **5 Claims**



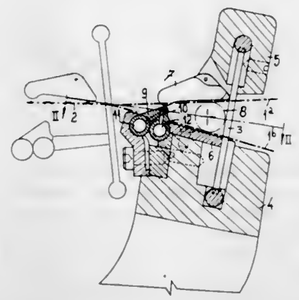
Apparatus is provided which allows for on-site blending of tetramethyl lead and a hydrocarbon fuel. Included are a tank and flow line for containing the hydrocarbon fuel, and a special tank and flow line for the tetramethyl lead. The flow lines of the two tanks are joined in a mixing chamber for mixing in desired proportions the lead and fuel. The special lead tank includes two separate openings, one of which is used for filling the tank and the other of which is used as an outlet. The outlet opening includes a removable plug for ordinary use, and a special connection for use when lead is being withdrawn. The special connection includes a lance member which is adapted to pierce a flexible seal in the tank interior, and an apertured portion which mates with the outlet opening, thus assuring that leakage does not occur.

3,465,790
ELECTRICALLY OPERATED THROTTLE DEVICE
Fredric U. Everhard, Pelham, N.H., assignor to RCA Corporation, a corporation of Delaware
Filed Aug. 24, 1967, Ser. No. 663,128
Int. Cl. F15d *1/08;* **F15c** *1/08, 1/14*
U.S. Cl. 138—45 **5 Claims**



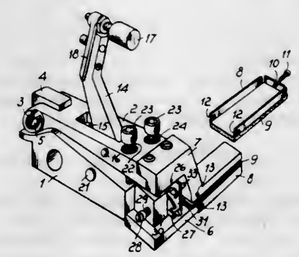
Throttle devices for a viscous fluid are disclosed, each comprising one or more tubes whose cross-sectional areas and lengths are varied by application thereto of a magnetic or an electrostatic field.

3,465,791
APPARATUS FOR ASSISTING THE JET INSERTION OF A WEFT THREAD INTO THE SHED OF A LOOM
Hubert Peter van Mullekom, Deurne, Netherlands, assignor to N.V. Machinenfabriek L. te Strake, Deurne, Netherlands, a Dutch company
Filed July 18, 1967, Ser. No. 654,222
Int. Cl. D03d *47/34, 47/00*
U.S. Cl. 139—127 **1 Claim**



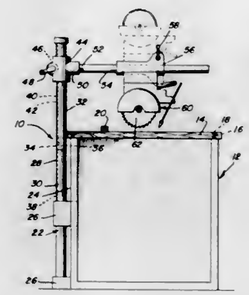
This apparatus is used in a loom having warp sheets which are maintained momentarily in diverging warp planes, and having a reed which is movable between a beating position and a retracted position. In such a loom, the warp sheets when maintained in said diverging warp planes, together with the reed when in its retracted position, form a shed which is substantially triangular in cross-section. The apparatus is used for controlling and assisting the movement of a weft thread which is jet-inserted into the shed in a path that is substantially equally distant from the warp planes and from the retracted reed. The apparatus comprises a plurality of jet nozzles, each of which is arranged to extend into the shed adjacent to a corner of the triangular cross-section, and each of which has an orifice for discharging a jet of fluid. Each orifice is directed to discharge fluid substantially longitudinally of the shed, and the distance of the orifice from the center of a circle inscribed in the triangular cross-section of the shed is substantially as great as the radius of the circle.

3,465,792
FABRIC LOOM TEMPLE
Carlo Masolo, Via Galilei 25, Desio, Italy
Filed Sept. 11, 1967, Ser. No. 670,512
Claims priority, application Italy, Nov. 12, 1966, 29,863/66
Int. Cl. D03d *45/50*
U.S. Cl. 139—266 **2 Claims**



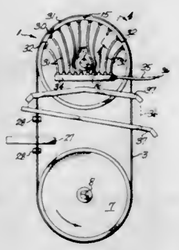
A temple for looms comprising a jaw fixed on the structure of the loom and a movable jaw pivoted on the fixed jaw, the jaws having cooperating free ends provided with plate elements coated with deformable material, spring means for maintaining the movable jaw in its closed position and lever means for opening the movable jaw.

3,465,793
CONVERTIBLE SAW
Peter Zuk, Cressona, Pa.
(R.F.D. 3, Pottsville, Pa. 17901)
Filed Aug. 17, 1966, Ser. No. 573,119
Int. Cl. B27b *15/06, 27/06, 5/18*
U.S. Cl. 143—1 **12 Claims**



A convertible saw including a table top having a blade receiving opening therethrough. An upright is supported adjacent and projects above the table top and has a follower mounted thereon for movement therealong including a horizontal arm having an outer end portion disposed above the table top along which a mounted circular saw is movable. The circular saw is shiftable, independent of removal of the arm from the follower and the circular saw from the arm, from above the table top to a position therebelow with the blade of the saw projecting upwardly through the blade receiving opening.

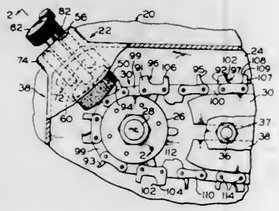
3,465,794
BAND MILL
Thomas A. McLauchlan and Eugene W. Arnold, Longview, Wash., assignors to Weyerhaeuser Company, Tacoma, Wash., a corporation of Washington
Filed Feb. 23, 1966, Ser. No. 529,302
Int. Cl. B27b *13/12*
U.S. Cl. 143—17 **7 Claims**



A band saw apparatus having an improved supporting bearing structure which reduces vibration of the saw blade, allows a decrease in the overall height of the apparatus, reduces the tensioning reaction time, and reduces the unsupported length of the band saw. The improved bearing structure comprises a non-rotatable, curvilinear

support having a low friction surface material over which the saw blade is trained, the saw blade being maintained substantially out of contact with the surface material by a fluid film distributed under pressure over the surface material through fluid passageways.

3,465,795
EASILY DRESSED SHARPENER
Myron D. Tupper, Portland, Oreg., assignor to Omark Industries, Inc., Portland, Oreg., a corporation of Oregon
Filed Nov. 9, 1966, Ser. No. 593,019
Int. Cl. B27b *17/00;* **B23d** *63/00*
U.S. Cl. 143—32 **12 Claims**



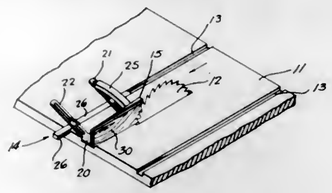
An annular, cupped, abrasive member is mounted for rotation on an axis intersecting the drive sprocket of a chain saw at the axis of rotation of the sprocket. The abrasive member is rotated by contact with the saw chain to dress itself, and is spring urged toward the saw chain.

3,465,796
SAW AIMING DEVICE
Clarence H. Schwankl, 400 4th St., International Falls, Minn. 56649
Filed June 19, 1967, Ser. No. 647,089
Int. Cl. B27b *17/02, 5/38*
U.S. Cl. 143—32 **8 Claims**



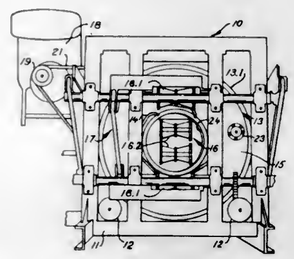
The portable self-powered saw shown is characterized by a self-contained power unit carrying a forwardly projecting saw having the usual elongated plate or bar marginally equipped with an endless chain-type saw operatively connected with the power source. The handgrip at the rear accommodates a sawyer's right hand and the rectangular frame at the front provides a handlebar for the left hand. This saw is improved by adding unique pointer-type aiming means which eliminates guesswork, promotes exacting felling, assures safety, and other advantageous results.

3,465,797
WEDGE-CUTTING FIXTURE FOR A TABLE SAW
Melvin R. Kimber, 1701 Aspen St., Fort Collins, Colo. 80521
Filed July 7, 1967, Ser. No. 651,724
Int. Cl. B27b *27/08*
U.S. Cl. 143—169 **6 Claims**



A wedge-cutting fixture for a table saw. The fixture consists of a vertical abutment wall recessed to receive the corner of a block. The wall has a horizontal bottom flange provided with a pair of parallel longitudinally slotted arms. The arms are adjustably secured by bolts and wing nuts on a crossbar, which is slidably receivable in a fence groove of a table saw. The abutment wall has a horizontally outwardly projecting handle for moving the fixture in a direction to push a block on the saw table against the associated circular saw blade and thus cut a wedge.

3,465,798
RING BARKER
Frank J. Cameron, North Vancouver, British Columbia, Canada, assignor, by mesne assignments, to Kal-Pac Engineering Ltd., Vancouver, British Columbia, Canada, a corporation of British Columbia
Filed Sept. 25, 1967, Ser. No. 670,371
Claims priority, application Great Britain, Sept. 28, 1966, 43,273/66
Int. Cl. B27l *1/00*
U.S. Cl. 144—208 **16 Claims**

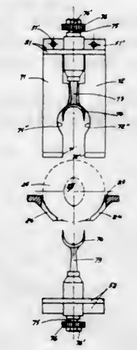


A rotating ring log barker with pneumatic cylinders operating the abrader arms, supply air from an epicycically driven ring mounted rotary pump. An idle air circuit controlled by a one way relief valve opening at a determinate pressure. A ring mounted oil tank with centrifugal oil supply for sealing the pump, and a centrifugal oil separator removing oil from the air supply returning it to the tank. Remote control of the abrader arms and of the determinate pressure opening the relief valve.

3,465,799
DEVICE FOR REMOVING FRUIT STONES AND CUTTING PEACHES AND SIMILAR FRUITS
Giordano Tomelleri, Via Montorio 22, Verona, Italy
Filed May 16, 1967, Ser. No. 638,873
Int. Cl. A01f *37/14;* **A23n** *3/00*
U.S. Cl. 146—28 **2 Claims**

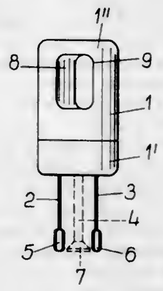
This invention relates to an improvement in a device for use in the canning industry and to the simultaneously cut-

ting and destoning of peaches and similar fruits regardless of whether the fruits are properly oriented without in



any way endangering the cutting blades for cutting the fruit and the seed or stone removal blades in their operation.

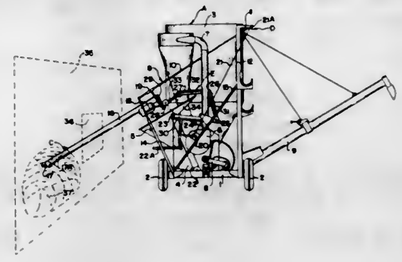
3,465,800
ELECTRICALLY DRIVEN KITCHEN IMPLEMENT
Manfred Michaelis, Langen, Germany, assignor to Braun Aktiengesellschaft, Frankfurt, Germany
Filed Nov. 14, 1967, Ser. No. 682,861
Claims priority, application Germany, Nov. 15, 1966, B 89,830
Int. Cl. B02c; B01f *7/00, 9/00*
U.S. Cl. 146—68 **12 Claims**



A portable electrically driven kitchen implement which is provided with at least two driven shafts projecting beyond one end of the housing of the implement and extending parallel to the drive shaft of an electromotor in the housing and connected to the drive shaft by gear transmission including a gear on each driven shaft and pinion means on the drive shaft meshing with at least one of the gears and having at most four gear teeth.

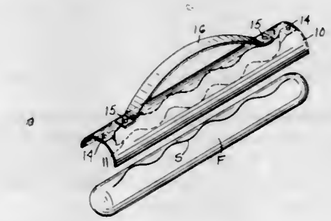
3,465,801
COMBINED FEED MILL AND FEED AUGER
John R. Forster, Killam, Alberta, Canada
Filed Feb. 13, 1967, Ser. No. 619,508
Int. Cl. B02c *9/04, 23/02;* **B02b** *5/02*
U.S. Cl. 146—107 **2 Claims**

A combined feed mill and feed auger wherein the auger is supported on an inclined track mounted transversely on the feed mill. The auger may be operated on the track from a raised carrying position to a lowered feed pickup position. In the lowered feed pickup position, the auger will pick up feed at one side of the mill and deliver such feed to the mill. Means is provided to operate the auger



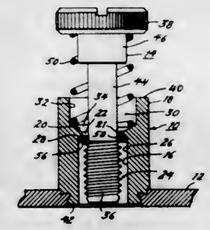
throughout a portion of its travel between the lowered feed pickup position and the raised carrying position.

3,465,802
FRANKFURTER SLITTER
John F. Alea, 39 Myrtle Ave., Ansonia, Conn. 06401
Filed May 16, 1967, Ser. No. 638,930
Int. Cl. A47j *43/04;* **B26b** *27/00*
U.S. Cl. 146—203 **5 Claims**



A frankfurter slitter comprising an elongated member defining a semi-cylindrical recess adapted to longitudinally receive a frankfurter therein with the member further having one or a plurality of slitting blades carried within the recess so that the device may be positioned over a frankfurter on a flat surface and moved vertically downward thereon to hold the frankfurter in position while the blade is forming slits therein.

3,465,803
CAPTIVE SCREW DEVICE AND A METHOD FOR SECURING TOGETHER THE PARTS THEREOF
Richard B. Ernest, Richboro, and Kenneth A. Swanstrom, Doylestown, Pa., assignors to Penn Engineering & Manufacturing Corp., Doylestown, Pa., a corporation of Delaware
Filed July 26, 1967, Ser. No. 656,239
Int. Cl. F16b *41/00, 39/22*
U.S. Cl. 151—69 **2 Claims**



A captive screw fastener is provided having a screw which is restrained from being fully withdrawn by a lock-

ing element trapped between an abutment carried by the fastener's retainer and the threaded part of the screw. Also, a force is applied to the screw which in turn transfers the force to the retainer to clinch the retainer to a plate.

3,465,804

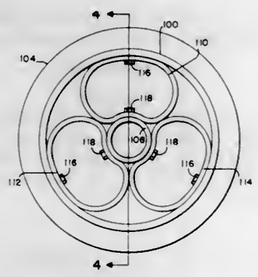
CUSHIONED WHEEL

Edwin V. Dupre, 440 J Ave., Coronado, Calif. 92118

Continuation of application Ser. No. 499,103, Oct. 20, 1965. This application Sept. 20, 1967, Ser. No. 669,077

Int. Cl. B60b *9/02*

U.S. Cl. 152—11 **6 Claims**



A rotatable wheel that has resilient elements disposed within the confines of the wheel to provide a shock absorbing structure in the wheel itself. Such resilient elements are structurally composed of either cylindrical rubber plugs or oval shaped springs.

3,465,805

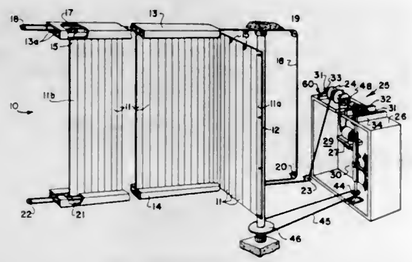
DRIVE MEANS FOR PARTITIONS AND THE LIKE

Hugh M. Lyman, 2352 Oakcrest Lane, Salt Lake City, Utah 84121

Filed Mar. 29, 1968, Ser. No. 717,338

Int. Cl. E06b *9/08;* **E05f** *15/14*

U.S. Cl. 160—23 **9 Claims**



A drive means, wherein a toothed drive member slides between meshing engagement with two spaced, toothed, driven members, each of which is adapted to be rotated with the drive member in one direction when the drive member is in engagement therewith and is turned in the one direction, and to repel the drive member and to force it into driving engagement with the other driven member when the direction of rotation of the drive member is reversed. The spaced driven members are each mounted to be rotatable independently of the drive member and are constructed to perform a desired mechanical function.

3,465,806

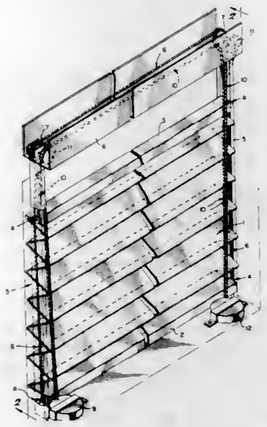
PLEATED BLIND ASSEMBLY

Emanuel M. Sulkes, Detroit, Mich., assignor to Decor Specialties, Inc., Detroit, Mich., a corporation of Michigan

Filed Apr. 19, 1968, Ser. No. 722,698

Int. Cl. E06b *9/262, 9/266, 9/386*

U.S. Cl. 160—84 **5 Claims**



A pleated blind assembly having operating cords connected to the top and bottom weight bars thereof whereby the blind may be selectively lowered from the top of a window or raised from the bottom of the window. The free ends of the operating cords are connected to take-up spools which not only provide storage reels for the operating cords but also provide a constant tension on the operating cords which actuate automatic cord grippers carried in the blind head bar or cornice whereby the pleated blind is held in a selected open position.

A portion of the operating cords are concealed within guide channels mounted on the sides of the window, and in window installations wherein the windows are pivotally mounted to the window frame to facilitate the cleaning thereof. The pleated blind may be folded to inoperative position into a storage compartment adjacent the window.

3,465,807

RETRACTABLE RIG FOR OPERATING HATCH COVERS

Urban J. Beas, Scotch Plains, N.J., assignor to MacGregor-Comarain, Incorporated, New York, N.Y., a corporation of New York

Continuation-in-part of application Ser. No. 608,870, Jan. 12, 1967. This application Dec. 26, 1967, Ser. No. 701,803

Int. Cl. E05f *11/54, 15/00*

U.S. Cl. 160—188 **18 Claims**

A retractable rig for operating hatch covers on cargo vessels, barges, or the like. The rig comprises a boom and linkage which are retractable when not in use. In a preferred embodiment, the rig is retractable into a channel in the hatch cover such that in the retracted position, the rig does not project above the surface of the hatch cover. A winch is provided to operate the boom and linkage and the winch is also preferably retractable below the surface of the hatch cover. Increased mechanical

advantage is obtained by locating the effective axis of rotation of the boom forward of the axis of rotation of



the hatch cover and by using a rope and pulley arrangement as the linkage between the winch and boom.

3,465,808

PLASTIC PATTERN METHOD FOR INVESTMENT CASTING

Stuart Z. Uram, Canton, Ohio, assignor to TRW Inc., Cleveland, Ohio, a corporation of Ohio

No Drawing. Filed Sept. 7, 1966, Ser. No. 577,786

Int. Cl. B22e *9/04;* **B22c** *7/02;* **B22d** *29/00*

U.S. Cl. 164—36 **2 Claims**

The disclosure relates to a method of forming a shell mold using a pattern composed of a mixture of polystyrene and a water soluble ethylene oxide polymer and removing the pattern after formation of the shell mold by treatment with steam under pressure.

3,465,809

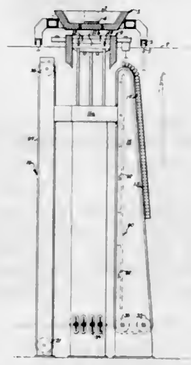
PROCESS FOR CASTING SLAB TYPE INGOTS

Niels H. Jensen, Glen Moore, and Hubert C. Smith, West Chester, Pa., assignors to Lukens Steel Company, Coatesville, Pa., a corporation of Pennsylvania

Original application Jan. 20, 1966, Ser. No. 521,847, now Patent No. 3,433,286, dated Mar. 18, 1969. Divided and this application Jan. 28, 1969, Ser. No. 794,572

Int. Cl. B22d *11/06, 11/12*

U.S. Cl. 164—82 **7 Claims**



A method for pouring a slab or ingot by pouring molten metal on a movable stool within a mold through a casting floor and moving the stool down as the molten metal is being poured. The sides of the slab are supported by downwardly moving supports. After the desired slab or ingot length is obtained, the downward movement of the side supports and the stool is reversed and, by their upward movement, the slab is raised and simultaneously stripped or exposed free of the mold components at the casting floor.

3,465,810

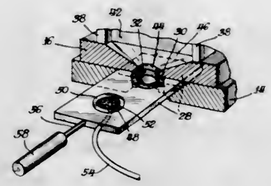
APPARATUS FOR CASTING METAL

Edmund Quincy Sylvester, Shaker Heights, Ohio (% Sylvester Enterprises, Inc., 850 Hanna Bldg., Cleveland, Ohio 44115)

Filed Dec. 4, 1967, Ser. No. 687,775

Int. Cl. B22d *27/00, 21/02*

U.S. Cl. 164—259 **2 Claims**



Molten metal is poured into a mold and during solidification of the metal within the mold an inert gas, such as argon, is bubbled upwardly through the metal.

3,465,811

PLANTS FOR THE CONTINUOUS CASTING OF STEEL

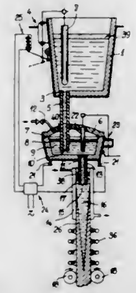
Gaëtan de Coye de Castelet, Billancourt, France, assignor to Societe des Aciers Fins de l'Est, Billancourt, Hauts de Seine, France

Filed May 26, 1966, Ser. No. 553,121

Claims priority, application France, Nov. 15, 1965, 38,400

Int. Cl. B22d *11/12, 11/14;* **C04b** *35/14*

U.S. Cl. 164—281 **4 Claims**



A plant for continuous casting of steel comprising a steelwork teeming ladle discharging through a refractory pipe feeding an intermediate vessel having at least one refractory nozzle disposed in the bottom of the vessel to thereby feed at least one cooled tubular ingot mold. A separate control device for starting and stopping the teeming is associated with the ladle and the vessel. The length of the pipe and each nozzle is sufficient to cause the free end to extend through a slag layer covering the liquid steel bath.

3,465,812

HEATER BAR SYSTEM

William I. Dieters, Arlington Heights, and Bernard H. Paddock, Wheeling, Ill., assignors to Martin-Marietta Corporation, New York, N.Y., a corporation of Maryland

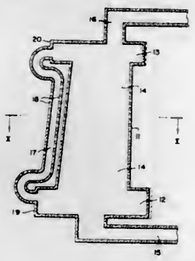
Filed Sept. 23, 1965, Ser. No. 489,474

Int. Cl. B22d *15/00;* **B22c** *9/22, 9/08*

U.S. Cl. 164—361 **3 Claims**

A mold and process of casting wherein metal cast into

a mold is frozen simultaneously with additional portions of the metal in walled passages positioned external to the mold and in heat transfer relationship to portions of the



mold bounding volumes of small effective section size. By this means uniform grain sizes can be provided across varying sized sections of the cast object.

3,465,813

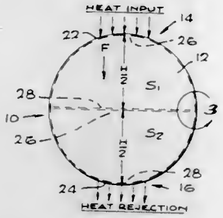
METHOD OF AND MEANS FOR INCREASING THE HEAT TRANSFER CAPABILITY OF A HEAT PIPE

Robert Bromberg and Fred E. Romle, Palos Verdes Estates, Calif., assignors to TRW Inc., Redondo Beach, Calif., a corporation of Ohio

Filed July 26, 1967, Ser. No. 656,126

Int. Cl. F28d *15/00*; **F25d** *15/00*

U.S. Cl. 165—1 **3 Claims**



A multi-stage capillary heat pipe for operation in a body force field, the pipe having a number of separate heat transfer stages arranged in such a way that the effective height of the capillary liquid column within each stage in the direction of the body force vector is but a fraction of the overall length of the heat pipe, the hydrostatic resistance to capillary liquid flow produced by the force is decreased, and the heat transfer capability of the heat pipe is increased. A method of heat transfer involving the multi-stage heat pipe.

3,465,814

AIR CONDITIONING TERMINAL

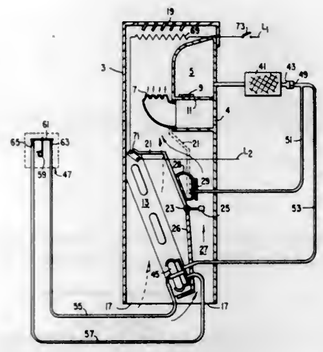
William C. Heck, De Witt, and Daniel A. Fragnito, Solvay, N.Y., assignors to Carrier Corporation, Syracuse, N.Y., a corporation of Delaware

Filed Mar. 12, 1968, Ser. No. 712,420

Int. Cl. F25b *13/00, 29/00*; **F24f** *3/00*

U.S. Cl. 165—2 **5 Claims**

A room terminal having self-contained controls adapted to receive chilled or heated water for heating or cooling an area to be conditioned provided with an electric resistance heating element indirectly responsive to the controls



to provide heat to the conditioned area, if necessary, only when the room terminal is supplied with chilled water.

3,465,815

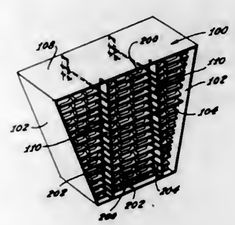
HEAT EXCHANGER ASSEMBLY FOR AIR PREHEATER

Max R. Wheeler, Lynwood, Calif., assignor to Power Replacements, Inc., Costa Mesa, Calif., a corporation of California

Filed Jan. 5, 1968, Ser. No. 695,904

Int. Cl. F28d *19/00, 17/00*; **F23l** *15/02*

U.S. Cl. 165—10 **2 Claims**



The following specification describes an improved heat exchanger assembly for a rotary regenerative air preheater, and the like. The improved heat exchanger assembly of the invention includes a rotor basket, and a plurality of heat transfer elements supported within the basket. The heat transfer elements, in accordance with the invention. are supported in the basket in a manner to eliminate abrasive movements between the elements, so as to increase the operational life of the assembly.

3,465,816

COMBINATION HEATING AND COOLING UNIT WITH CONDENSER FAN FLUE PRODUCT EXHAUSTION MEANS

James O. Fichtner, Greendale, Wis., assignor to Worthington Corporation, Harrison, N.J., a corporation of Delaware

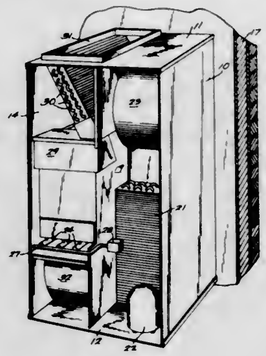
Filed Mar. 1, 1968, Ser. No. 709,690

Int. Cl. F25b *29/00*

U.S. Cl. 165—48 **10 Claims**

A side-by-side forced air furnace and a cooling unit separated by a vertical ported partition within a unitary casing wherein the condenser section of the cooling unit serves as chimney and houses the condenser blower fan

which, in addition to its operation during the cooling cycle, also operates during the heating cycle to evacuate



to the outside atmosphere the collected products of combustion.

3,465,817

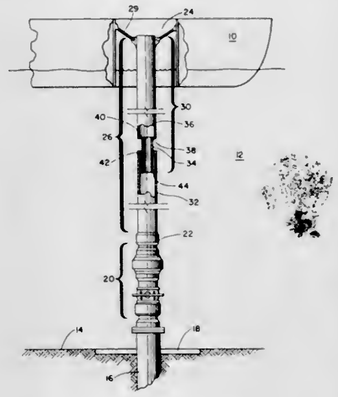
RISER PIPE

Renic P. Vincent, Tulsa, Okla., assignor to Pan American Petroleum Corporation, Tulsa, Okla., a corporation of Delaware

Filed June 30, 1967, Ser. No. 650,314

Int. Cl. E21b *43/01, 7/12, 15/02*

U.S. Cl. 166—.5 **14 Claims**



This invention concerns a riser pipe for use in drilling wells from a vessel floating on a body of water. The riser pipe extends from the ship to an anchored well head assembly on the ocean floor. Typical diameters for the riser pipe are 16", 20" and 24". A drill bit and drill string are guided down through the inside of the riser pipe and the anchored well head assembly to perform drilling operations in the ocean floor. The riser pipe of this invention is typically of a fairly large diameter, e.g., 20", and at the very lower end it is reduced down to have an extension of lesser diameter, e.g., 16". There is an annular shoulder between the large diameter pipe and the smaller diameter extension. Differential pressure caused by the weight of the drilling mud (which is heavier than the sea water) acts downward on this annular shoulder. The slip joint is at the lower end. In one embodiment, the extension is slideably and sealingly fitted within a lower joint of pipe which is connected through a flex joint to a well head assembly. The thickness of the wall of the extension of the riser pipe can be made greater than the thickness of the large diameter pipe so that the bending moment will be decreased. In another embodiment an annular shoulder is attached to the larger diameter riser pipe and a sliding and sealing engagement is made between the annular member and a stub of pipe extending up from the flex joint. This system does not require a shipboard tensioning device.

3,465,818

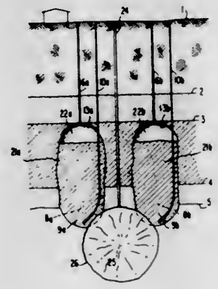
UNDERCUTTING OF NUCLEARLY DETONATED FORMATIONS BY SUBSEQUENT NUCLEAR DETONATIONS AT GREATER DEPTH AND USES THEREOF IN THE RECOVERY OF VARIOUS MINERALS

Rod P. Dixon, Salt Lake City, Utah, assignor to American Oil Shale Corporation, Salt Lake City, Utah, a corporation of Utah

Continuation-in-part of applications Ser. No. 541,810, Apr. 11, 1966; Ser. No. 547,672, May 4, 1966; Ser. No. 615,444, Feb. 13, 1967. This application Nov. 7, 1967, Ser. No. 681,146

Int. Cl. E21b *43/26, 43/24*

U.S. Cl. 166—247 **16 Claims**



By detonating a large size nuclear device below a column of broken mineral rubble created by an earlier nuclear detonation, the rubble is crushed to a fined average particle size while the overall permeability of the broken formation is increased as the column of broken material settles into the cavity created by the subsequent nuclear detonation. When using this technique in an oil shale formation, a hot retort gas may be passed through the broken formation either before or after, or both before and after, the second detonation to distill hydrocarbons from the detonated formation. In metal ore formations an extractive liquid solvent or a liquid flotation medium may be injected into the formation between the two consecutive detonations whereby the second detonation forces the injected treating liquid upwardly through the broken formation, increases the permeability of the latter, and facilitates in situ extraction or flotation.

3,465,819

USE OF NUCLEAR DETONATIONS IN PRODUCING HYDROCARBONS FROM AN UNDERGROUND FORMATION

Rod P. Dixon, Salt Lake City, Utah, assignor to American Oil Shale Corporation, Salt Lake City, Utah, a corporation of Utah

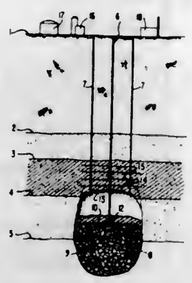
Continuation-in-part of application Ser. No. 547,672, May 4, 1966. This application Feb. 13, 1967, Ser. No. 615,444

Int. Cl. E21b *43/26, 43/24*

U.S. Cl. 166—247 **10 Claims**

Nuclearly detonated formations are generally very extensive in scope and therefore it is difficult to drive hydrocarbons therefrom without channeling. When under-

ground retorting of the nuclear rubble is resorted to in order to improve product recovery, residual heat is wastefully left behind. The present invention limits and controls the extent of caving of the hydrocarbon bearing stratum and thereby avoids or substantially reduces the problem of channeling. In another aspect, the present in-

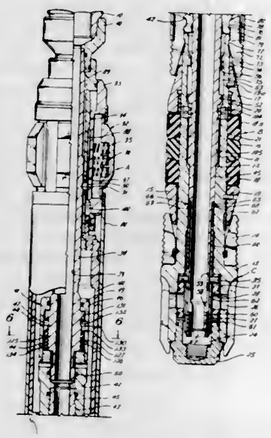


vention maximized the utilization of the thermal energy released in retorting by caving portions of untreated hydrocarbon bearing stratum onto the hot ash left from a previous retorting step and using the heat in the ash to distill hydrocarbons from the as yet untreated portions.

3,465,820
RETAINER PACKERS HAVING A ROTATING VALVE

James W. Kisling III, Houston, Tex., assignor to Schlumberger Technology Corporation, Houston, Tex., a corporation of Texas

Filed Oct. 5, 1967, Ser. No. 673,190
Int. Cl. E21b *33/12*
U.S. Cl. 166—128 **13 Claims**

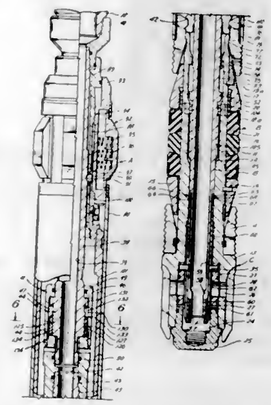


The particular embodiment described herein as illustrative of one form of the invention is a well packer having a body with anchor and packing means to provide an anchored pack off in a well bore. The body has a flow passage which can be selectively opened and closed by a valve sleeve which is mounted for rotational movement in the flow passage between positions opening and closing same. Valve actuating means coupled to a running-in string is extendible into the flow passage and is coupled to valve sleeve for rotating it. Coengageable means between the actuating means and body is arranged to rotate the actuating means and thus the valve sleeve between open and closed positions in response to upward and downward movement of the running-in string.

3,465,821
VALVE SYSTEM FOR A WELL PACKER APPARATUS

William O. Berryman, Houston, Tex., assignor to Schlumberger Technology Corporation, Houston, Tex., a corporation of Texas

Filed Oct. 5, 1967, Ser. No. 673,175
Int. Cl. E21b *33/12, 23/06;* **F16d** *13/00*
U.S. Cl. 166—237 **6 Claims**



The particular embodiment disclosed to illustrate the principles of the present invention is a well packer apparatus including a mandrel having a flow passage, rotary valve means for opening and closing the flow passage, and means to enable running the well packer into the well with the valve means in either open or closed condition. A safety coupling is also disclosed having a clutch member which can be engaged in response to rotation in one direction of the tubular string to permit unthreading of a joint by further rotation in the same direction.

3,465,822
THERMAL OIL STIMULATION PROCESS

Frederick A. Klein, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

No Drawing. Filed Oct. 2, 1967, Ser. No. 671,980
Int. Cl. E21b *43/24, 43/16*
U.S. Cl. 166—256 **8 Claims**

An oil stratum around a well is opened up to increase oil flow and oil is produced therefrom by driving a combustion zone from adjacent the well radially into the stratum, followed by injection of water and injection of inert gas, sequentially, and thereafter opening up the well to flow of fluids, including oil.

3,465,823
RECOVERY OF OIL BY MEANS OF ENRICHED GAS INJECTION

Robert H. Jacoby, Tulsa, Okla., Earl E. Morris, Fort Worth, Tex., and Robert L. Robinson, Jr., Stillwater, Okla., assignors to Pan American Petroleum Corporation, Tulsa, Okla., a corporation of Delaware

No Drawing. Filed Aug. 29, 1966, Ser. No. 575,514
Int. Cl. E21b *43/25*
U.S. Cl. 166—263 **8 Claims**

A single-well injection-production scheme is used to reduce heavy oil or tar viscosity with propane-methane mixtures. Propane concentration is kept below the asphalt-precipitation level. Propane is kept close to the well so as to minimize losses and increase flow in this critical region. Injection cycles of propane injection and oil production can be staggered so that gas produced from one well may be injected into another. A hydrocarbon well wash may be used prior to injection of propane-methane. Butane may be used. Field data are given showing increased production and viscosity reduction.

3,465,824
AQUEOUS CEMENTING COMPOSITION AND METHOD OF USE

Clare H. Kucera, Tulsa, Okla., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Nov. 7, 1966, Ser. No. 592,266
Int. Cl. E21b *33/14;* **C04b** *7/02, 7/12*
U.S. Cl. 166—293 **6 Claims**

A new well cementing composition, comprising an aqueous hydraulic cement slurry containing a small but effective amount of a bisulfite-modified phenol-formaldehyde condensation product which serves as a turbulence inducer to the slurry while being moved in a confined passageway and the method of cementing in an underground formation employing said composition.

3,465,825
AQUEOUS CEMENTING COMPOSITION ADAPTABLE TO HIGH TURBULENT FLOW AND LOW FLUID LOSS TO POROUS CONTACTING SURFACES, AND METHOD OF CEMENTING A WELL USING SAME

Fred E. Hook and Clare H. Kucera, Tulsa, Okla., and L. J. Scott, Jr., Dallas, Tex., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

Filed Dec. 2, 1966, Ser. No. 598,664
Int. Cl. E21b *33/138;* **C04b** *7/02, 7/12*
U.S. Cl. 166—293 **14 Claims**

(1) An aqueous cement slurry containing a turbulence inducing agent which imparts to the slurry the capacity of attaining a state of turbulence, while in motion in a conduit, at a slower rate of movement and with less expenditure of energy than is necessary for such attainment, in the absence of said agent, which comprises, by weight, 100 parts of an hydraulic cement, between about 35 and about 65 parts of water, a turbulence inducer which is the lithium salt or the lithium-sodium mixed salt of the condensation product of mononaphthalene sulfonic acid and formaldehyde and optionally a fluid-loss control agent, of which water-soluble cellulose ethers are especially effective, and

(2) The method of cementing, in a geologic formation penetrated by a wellbore, comprising injecting said slurry down the wellbore and emplacing the slurry at the desired locus in the formation.

3,465,826
HIGH-TEMPERATURE WATER INJECTION

Paul L. Terwilliger, Fox Chapel Borough, Pa., assignor to Gulf Research & Development Company, Pittsburgh, Pa., a corporation of Delaware

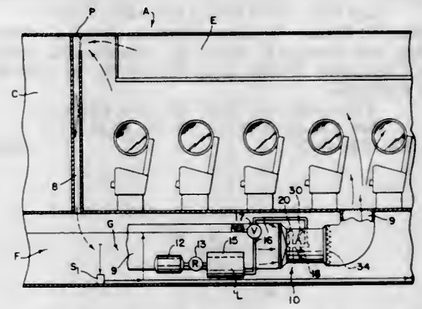
No Drawing. Filed Oct. 19, 1967, Ser. No. 676,612
Int. Cl. E21b *43/24, 43/26*
U.S. Cl. 166—303 **4 Claims**

A method of heating an oil-bearing subsurface formation to increase the rate of flow of oil therefrom in which water at a temperature of 500° to 700° F. is displaced down a well and into the formation at a rate causing fracturing of the formation. The pressure on the hot water is maintained at a level which will maintain the water in the liquid phase while it is in the well. Larger quantities of heat can be delivered to the formation by the hot water at the conditions specified than by steam.

3,465,827
ON BOARD VEHICLE FIRE PROTECTION SYSTEM

Murray N. Levy, Hatfield, Marvin S. Shinbaum, Springfield, and John S. Strance, Drexel Hill, Pa., assignors to E. W. Bliss Company, Canton, Ohio, a corporation of Delaware

Filed Oct. 20, 1966, Ser. No. 588,159
Int. Cl. A62c *3/08, 35/44*
U.S. Cl. 169—2 **6 Claims**



A fire protection system especially suited for use on passenger vehicles. The system includes a foam generating apparatus comprised of an air duct opening into the passenger compartment and having a foam generating perforated means extending across its free passage area. Additionally, fan means and reaction motor means including spray nozzles are provided to introduce a spray of foam solution onto the perforated means and produce an air flow through the duct and perforated means. The fan means and spray nozzles are actuated and supplied with foam solution from a closed, self-contained pressure vessel system including container means for containing a predetermined quantity of foam solution, a pressurized gas sufficient to conduct the solution through the reaction motor means to generate foam on the perforated means.

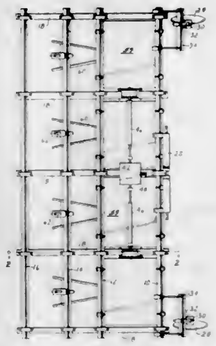
ERRATUM

For Class 170—160.58 see:
Patent No. 3,465,831

3,465,828
POWER DRIVEN CULTIVATOR

Harold D. Harris, Lubbock, Tex., assignor to Harris and Thrush Manufacturing Company, Lubbock, Tex., a corporation of Texas

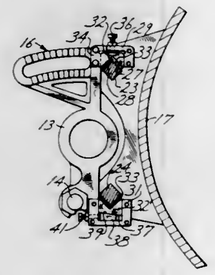
Filed Apr. 14, 1967, Ser. No. 630,859
Int. Cl. A01b *49/02, 33/16, 33/10*
U.S. Cl. 172—70 **4 Claims**



The cultivator has a plurality of earth working reels with at least one reel for each bed of the land. The

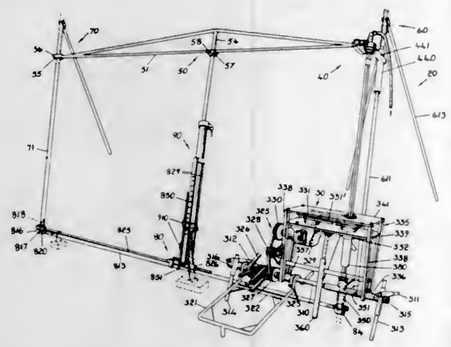
reels are rotated from the power take off of the tractor rather than solely by contact with the soil. A planting attachment may be connected to the cultivator behind the reels. If the cultivator is used to cultivate growing crops, a space is provided on the cultivator for the drill and shields prevent dirt from covering the growing crops.

3,465,829
ADJUSTABLE SLIDE BEARINGS FOR MOTOR GRADER MOLDBOARD MOUNTING
William F. Fisher, Decatur, James L. Hughes, Warrensburg, and Thomas F. McCarthy, Decatur, Ill., assignors to Caterpillar Tractor Co., Peoria, Ill., a corporation of California
Filed June 29, 1967, Ser. No. 650,012
Int. Cl. A01b *35/20, 15/20;* **E02f** *3/12*
U.S. Cl. 172—743 **3 Claims**



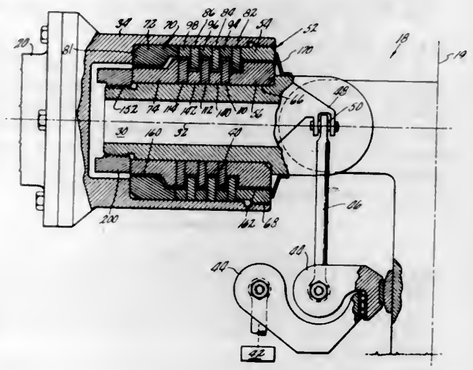
Adjustable slide bearing mountings, for grader blades, which are of simplified construction and facilitate adjustment to eliminate blade play resulting from wear in the bearings. Square sideshift rails are angularly disposed on the blade. A V-shaped slide bearing is disposed at each juncture of the rails and brackets which support the rails and blade. A single adjusting screw is associated with each bearing to move it against two oppositely inclined surfaces of the rail.

3,465,830
PORTABLE DIAMOND DRILL RIG
Vaughan Thompson, 290 Kerrybrook Drive, Richmond Hill, Ontario, Canada
Filed Mar. 13, 1967, Ser. No. 622,494
Int. Cl. B23b *39/10;* **E21c** *5/10*
U.S. Cl. 173—152 **13 Claims**



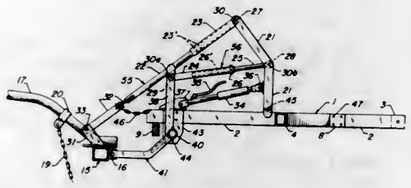
A portable apparatus for diamond drilling earth formations including a drill support structure, means for rotating a drilling member and fluid-powered means for applying an axial force to the drilling member independently of the operation of the drill member rotating means.

3,465,831
HELICOPTER ROTOR STACK BEARING
Donald L. Ferris, Newtown, and Bernard Zisman, Stratford, Conn., assignors to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware
Filed Mar. 19, 1968, Ser. No. 714,271
Int. Cl. B64c *27/48*
U.S. Cl. 170—160.58 **10 Claims**



A stack bearing supporting a helicopter blade and sleeve from the helicopter rotor spindle and absorbing centrifugal loads therebetween including a first plurality of spaced washers mounted for pitch-change rotation with blade and sleeve and a second plurality of spaced washers interleaved between the washers of the first plurality and having a sheet of solid lubricant positioned between and engaging the bearing surfaces of adjacent washers to provide friction-free relative rotation therebetween.

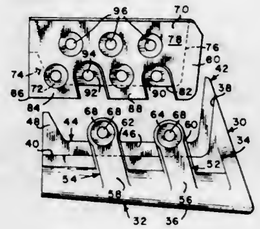
3,465,832
FARM IMPLEMENT LIFT ASSEMBLY AND DRAWBAR COMBINATION
Gerald L. De Larm, Rte. 2, Wyoming, Iowa 52632
Filed Dec. 27, 1966, Ser. No. 604,713
Int. Cl. A01b *63/10, 63/14, 63/32*
U.S. Cl. 172—491 **5 Claims**



An apparatus for use with farm implements broadly classified as "ground-working" tools, carts and tractors. A combination drawbar and automatic (hydraulic) lift assembly permits raising the implement while in ground-working position, thereby freeing the same from various debris which has collected at its leading edge. To facilitate

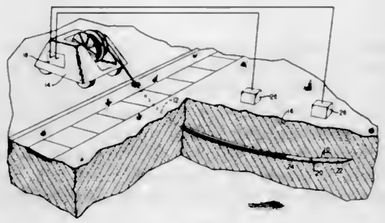
changing from one implement to another, the drawbar is sectioned.

3,465,833
BULLDOZER CORNER BIT
Kenneth V. Lutz, 10081 Carmen Road, Cupertino, Calif. 95014
Filed May 17, 1966, Ser. No. 550,726
Int. Cl. A01b *35/20, 39/20;* **E02f** *3/76*
U.S. Cl. 172—719 **3 Claims**



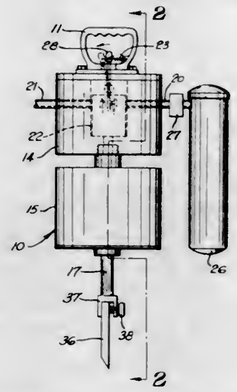
A bulldozer blade corner bit assembly with a bit constructed of a plurality of legs forming an upright side edge and a lower cutting edge, each leg being formed with a seating section located opposite the respective leg edge. An adapter is provided, mountable on a bulldozer blade for co-operation with such blade to form a seat for each seating section of the bit. Means are provided for locking the bit to the adapter, with each seating section in seated position. The locking means serve to restrict relative movement between the bit and the adapter.

3,465,834
GUIDED SUBTERRANEAN PENETRATOR SYSTEMS
Hamilton Southworth, Jr., New York, N.Y., assignor to Bell Telephone Laboratories, Incorporated, Murray Hill and Berkeley Heights, N.J., a corporation of New York
Filed Mar. 18, 1968, Ser. No. 713,602
Int. Cl. E21c *11/00;* **B25d** *9/12;* **E21b** *7/04*
U.S. Cl. 173—2 **15 Claims**



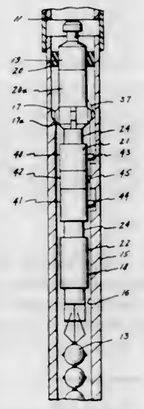
A subterranean penetrator is propelled in either the forward or rearward direction by repeatedly striking an interior forward or rear anvil with a hollow, cylindical, hydraulically operated hammer within the penetrator. The hammer slides on a central arm. It is actuated by guiding pressurized fluid from outside the penetrator to one of two chambers formed inside the hammer by a dividing wall fixed to the arm. The hammer stroke is regulated by controlling the onset of striking pressure on the basis of the hammer's position. A hydraulically operated ball joint between the penetrator's nose and tail permits it to be steered.

3,465,835
PIN-DRIVING DEVICE
Lawrence R. Krivit, Highway 17M, Monroe, N.Y. 10950
Filed Dec. 5, 1967, Ser. No. 688,249
Int. Cl. B27c *3/08;* **B23b** *45/06*
U.S. Cl. 173—170 **1 Claim**



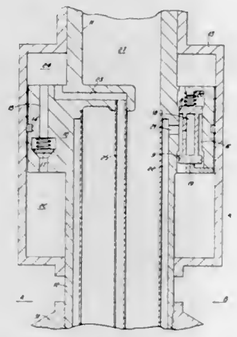
A device used for drilling, chiseling, hammering, sawing and driving pins into a bone or other material is actuated by a portable gas cylinder. The device can be set for single and automatic operation. Means may be provided for rotating the pin while it is being inserted.

3,465,836
TOOL ORIENTING SYSTEM
Roger Q. Fields, Houston, Tex., assignor to Schlumberger Technology Corporation, Houston, Tex., a corporation of Texas
Filed Nov. 15, 1967, Ser. No. 683,195
Int. Cl. E21b *43/119, 43/117*
U.S. Cl. 175—4.51 **16 Claims**



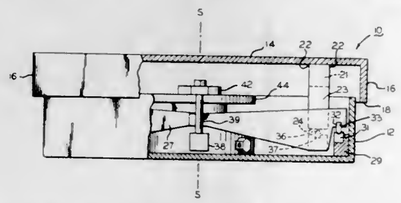
The present invention is embodied in a self-contained set of tools for pumping through a tubing which include a perforator, a pressure switch, an orienting and control switch, a battery and a pump-down device for use in a flow-line operation. Specifically, the orienting control device includes rotational parts which will operate only when properly seated in an orienting pocket in a well bore.

3,465,837
FLUID PRESSURE OPERATED APPARATUS
John Frank Saunders and Geoffrey Lionel Ryder, Filton, Bristol, England, assignors to Bristol Siddeley Engines Limited, Filton, Bristol, England, a British company
Filed Nov. 6, 1967, Ser. No. 680,856
Claims priority, application Great Britain, Nov. 15, 1966, 51,212/66
Int. Cl. E21b *1/08, 3/12*
U.S. Cl. 175—26 7 Claims



A downwardly-extensible ram piston between upper and lower chambers, each with fluid supplying ducting, a first valve which under rising pressure in the lower chamber closes off a lower chamber from a pressure-sensitive element elsewhere in the fluid supply system, and a second valve which under falling pressure in the upper chamber opens the upper chamber to the supply ducting of the lower chamber.

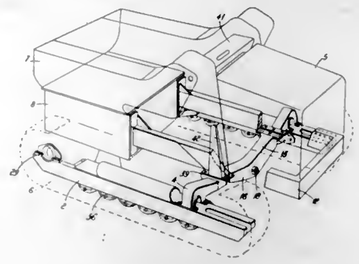
3,465,838
PORTABLE PLATFORM SCALE
John F. Kienzle, 8241 S. Lamon Ave., Oaklawn, Ill. 60459, and Maurice J. De Bo, R.R. 1, Box 198M, Belvidere, Ill. 61008
Continuation-in-part of application Ser. No. 608,553, Jan. 11, 1967. This application June 7, 1967, Ser. No. 649,783
Int. Cl. G01g *21/08*
U.S. Cl. 177—256 4 Claims



A portable platform scale having load transfer arms capable of properly determining the load irrespective of the eccentricity of the load placed on the platform, and characterized by structure which is essentially symmetrical about a plane normal to the scale platform.

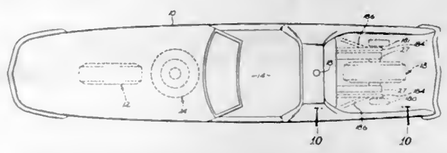
3,465,839
FRAMEWORK FOR A CRAWLER VEHICLE
Pietro Pensa, Milan, Italy, assignor to Massey-Ferguson Services N.V., Curacao, Netherlands Antilles
Filed Feb. 19, 1968, Ser. No. 706,331
Claims priority, application Italy, Feb. 28, 1967, 13,180A/67, Patent 791,066
Int. Cl. B62d *55/10, 55/26*
U.S. Cl. 180—9.54 11 Claims

According to the present invention, there is provided a framework for a crawler vehicle comprising a main frame for supporting an engine and transmission assembly, side frames pivotally mounted at one end thereof on the main frame for angular movement about a horizontal axis and a transverse frame member spaced longitudinally from the axis, pivotably connected at its mid-point to the



main frame, and rigidly secured to the side frames at their ends, a high rate spring provided resiliently to resist angular movement between the main frame and the transverse frame member, and a positive stop device to provide solid abutment and limit angular movement between the main frame and the transverse frame member.

3,465,840
GYRO STABILIZED CENTER TRACKING VEHICLE
Thomas O. Summers, 1536 Fairway Drive, Camarillo, Calif. 93010
Continuation-in-part of application Ser. No. 583,776, Oct. 3, 1966. This application Mar. 14, 1967, Ser. No. 632,871
Int. Cl. B62d *61/00, 37/06*
U.S. Cl. 180—30 28 Claims

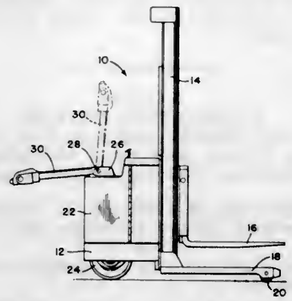


A tandem wheeled steerable automobile having outrigger parking gear is stabilized against roll by a large brute force gyro having a lateral spin axis and a vertical gimbal axis. Roll equilibrium is maintained by application of a vehicle righting gimbal torque as a function of gimbal precession rate. Gimbal drift resulting in gimbal displacement is erased by application of a drift correcting gimbal torque in the direction of the displacement.

3,465,841
REVERSIBLE ELECTRIC MOTOR SPEED CONTROL
Gerald S. Pulskamp, New Bremen, and William E. Harshbarger, Anna, Ohio, assignors to Crown Controls Corporation, New Bremen, Ohio, a corporation of Ohio
Filed Oct. 11, 1967, Ser. No. 674,485
Int. Cl. B60k *1/04;* B62d *51/04*
U.S. Cl. 180—65 6 Claims

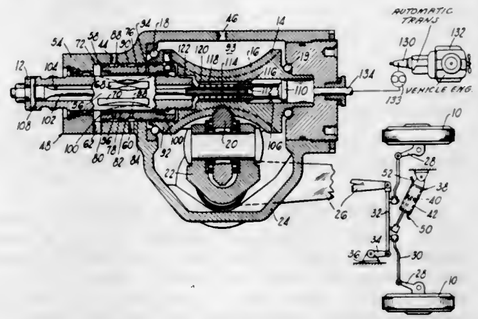
A vehicle incorporates a reversible variable speed electric motor and a control including control grip structure wherein rotation of the grip actuates a speed control with a non-linear relationship between grip rotation and control of the speed control means. Initial rotation of the control grip moves the speed control only slightly

so that fine speed control in the lower speed ranges is assured. The grip always operates the speed control in



the same direction although the handle can rotate from a dead center or neutral position in either direction for reversal control.

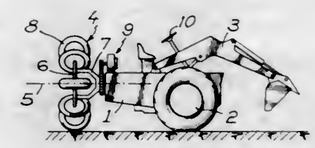
3,465,842
POWER STEERING MECHANISM
Howard E. Hruska, South Bend, Ind., assignor to The Bendix Corporation, a corporation of Delaware
Filed Dec. 29, 1967, Ser. No. 694,546
Int. Cl. B62d *5/00;* F15b *15/18, 9/10*
U.S. Cl. 180—79.2 14 Claims



The following relates to a power steering system wherein the sensitivity or response thereof is reduced for high speed highway driving. More specifically, in a power steering system for an automotive vehicle having a manually operable steering member, a steerable wheel operatively coupled to the steering member, and reaction means, such as a torsion bar, operatively connected to the steering member for providing a resistance to movement of the steering member, a mechanism responsive to the speed of the vehicle is operatively connected to the torsion bar for increasing the amount of resistance to movement of the steering member exerted by the torsion bar, as the speed of the vehicle increases. The amount of resistance to movement exerted by the torsion bar is increased by decreasing the effective length of the torsion bar.

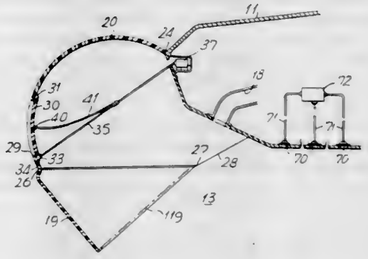
3,465,843
VEHICLE WITH IMPROVED STEERING DEVICE
Gabriel L. Guinot, Le Plessis-Belleville, France, assignor to Societe Anonyme Poclain, Le Plessis-Belleville (Oise), France, a French society
Filed Feb. 26, 1968, Ser. No. 708,129
Claims priority, application France, Apr. 27, 1967, 104,410
Int. Cl. B62d *5/00, 1/00*
U.S. Cl. 180—79.3 6 Claims

A vehicle incorporating a steering device mounted on the vehicle chassis for rotation in a substantially vertical plane transverse to the vehicle, the steering device having a plurality of carrier elements all having at least a portion



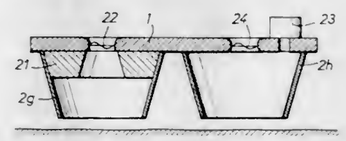
of circular section and being pivotally mounted on respective axes transverse to the axis of rotation of the steering device.

3,465,844
GAS CUSHION VEHICLES
Reginald Bannerman Page, Tonawanda, N.Y., and Anthony Grahame Loriston-Clarke, Brockenhurst, England, assignors to Hovercraft Development Limited, London, England, a British company
Filed June 13, 1967, Ser. No. 645,781
Claims priority, application Great Britain, June 14, 1966, 26,566/66
Int. Cl. B60v *1/16*
U.S. Cl. 180—118 13 Claims



A gas cushion vehicle using gas outlet ports to moderate changes in cushion pressure tending to occur when the vehicle passes over a surface irregularity, and/or to provide the vehicle with lateral thrusts e.g. for aiding steering.

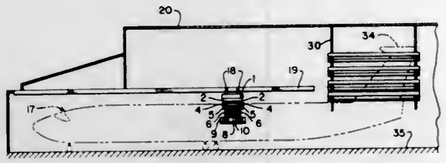
3,465,845
FLUID CUSHION CONFINING SYSTEM FOR GROUND EFFECT MACHINES
Jean Henri Bertin, Neuilly-sur-Seine, France, assignor to Bertin & Cie, Plaisir, France, a company of France
Continuation-in-part of application Ser. No. 498,314, Oct. 20, 1965, which is a division of application Ser. No. 165,634, Jan. 11, 1962, now Patent No. 3,263,764. This application June 19, 1967, Ser. No. 646,964
Claims priority, application France, Jan. 17, 1961, 849,877; June 30, 1961, 866,604
Int. Cl. B60v *1/04*
U.S. Cl. 180—121 4 Claims



A ground effect machine operating on pressure fluid cushions formed against a bearing surface and defined by a plurality of skirts which are so designed, sized and

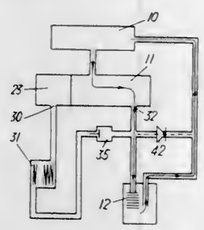
arranged in relation to the rest of the machine and to the bearing surface, as to bound, in operation, substantially different fluid cushion volumes.

3,465,846
INSTALLATION FOR APPROACHING PORTIONS OF AN AIRPLANE
Amnon Jacobson, Tel Aviv, Israel, assignor to Koor Industries and Crafts Co. Ltd., Tel Aviv, Israel
Filed July 10, 1967, Ser. No. 652,126
Int. Cl. E04g *3/14, 1/12*
U.S. Cl. 182—36 **9 Claims**



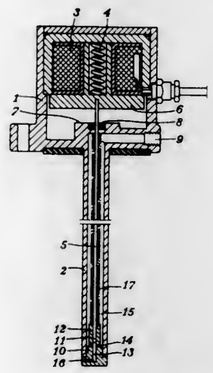
Installation for approaching portions of an airplane, including side and top portions thereof, and particularly its body and its tail, for purposes of maintenance, cleaning and/or repair. In their common aspects, the two preferred embodiments provided for these specific purposes comprise supporting means straddling from above portions of the airplane, means for connecting the supporting means to an overhead structure of a hangar and the like, platform means allowing people to approach the airplane and perform work on the straddled side and top portions thereof, and actuating means for selectively moving the supporting means with respect to the overhead structure and the platform means with respect to the airplane portions in question. As to their specific features, the two disclosed embodiments of the installation comprise structural means for respectively approaching the body and the tail of the airplane on which work is to be performed.

3,465,847
INTERNAL COMBUSTION ENGINE OIL LUBRICATION SYSTEMS
Siegfried Donath, Frankfurt am Main, and Werner Gahler, Russelsheim, Germany, assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Mar. 23, 1966, Ser. No. 536,712
Claims priority, application Germany, Apr. 10, 1965, O 10,784
Int. Cl. F01m *1/02;* **F16n** *13/22*
U.S. Cl. 184—6 **3 Claims**



An internal combustion engine lubrication system has a distributor and connector member supporting a replaceable oil filter and including internal passages connecting with the filter and an oil cooler. A plurality of control devices within the distributor and connector member control oil flow to the oil cooler and filter and provide for shutting off oil pressure to the cooler when the engine is cold as well as bypassing oil around a plugged filter. Alternative embodiments provide various locations for the control devices.

3,465,848
LUBRICATING DEVICES
Yngve Lennart Johansson and Sven Erik Willner Orte, Goteborg, Sweden, assignors to Aktiebolaget Svenska Kullagergabriken, Goteborg, Sweden, a corporation of Sweden
Filed June 21, 1966, Ser. No. 559,236
Claims priority, application Sweden, June 28, 1965, 8,478/65
Int. Cl. F16n *11/08, 13/10;* **B67d** *5/04*
U.S. Cl. 184—27 **6 Claims**

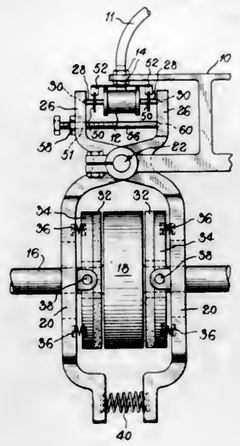


A lubricating device comprising a housing, an elongated tubular member depending from said housing, a nozzle mounted in the lower terminal end of said tubular member remote from said housing and having a channel therein of predetermined cross-section terminating in a discharge orifice of smaller cross-section, an elongated piston rod having its lower terminal and engageable in said channel and spaced from the inner wall of said tubular member to define a lubricant chamber adapted to be filled with lubricant under pressure, said nozzle having an extension projecting into said tubular member of smaller cross-section to define an annular space between the extension and inner wall of the tubular member, means defining at least one bore providing fluid communication between the channel and lubricant chamber, means in said housing for normally maintaining said piston rod in a first rest position wherein the lower terminal end of the piston rod is disposed below said bore to prevent discharge of lubricant through the discharge orifice and means for raising said piston rod to a second retarded position wherein the lower terminal end is disposed above the bore to permit lubricant to enter said channel and be discharged under great velocity and pressure upon return to the first position.

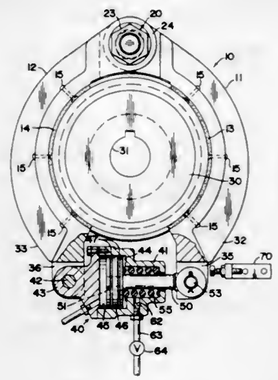
3,465,849
ALLIGATOR CLAMP DISC BRAKE
Moe M. Bernfeld, New York, N.Y. (3353 Barker Ave., Bronx, N.Y. 10467), and Sheldon Ziss, New York, N.Y. (2675 W. 36th St., Brooklyn, N.Y. 11218)
Filed Mar. 15, 1968, Ser. No. 713,497
Int. Cl. F16d *65/84, 55/224, 65/44*
U.S. Cl. 188—72 **12 Claims**

A disc brake in which two annular discs of friction material are applied to opposite sides of a rotating disc.

Each annular pressure plate is mounted upon the inside of a clamp of an alligator type of jaw apparatus. The annular friction discs are applied to the rotating disc by closing the alligator jaw assembly.

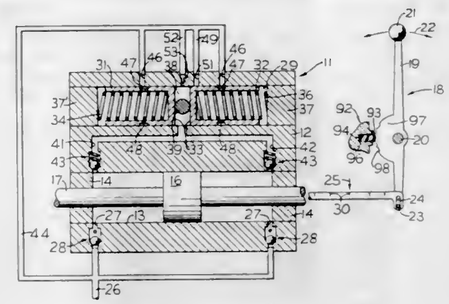


3,465,850
AIR BOOSTER FOR CLAM-TYPE DRUM BRAKE
Harvey E. Sexton, Hastings, Mich., assignor to E. W. Bliss Company, Canton, Ohio, a corporation of Delaware
Filed Sept. 1, 1967, Ser. No. 665,149
Int. Cl. F16d *51/22, 51/24, 63/72*
U.S. Cl. 188—75 **5 Claims**



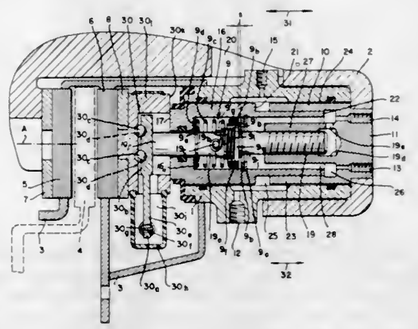
A clam-type drum brake having an actuator with a double acting fluid cylinder spring loaded and subject to air pressure on the torque side and a constant air pressure on the releasing side. A variable valve is used to control the air pressure on the torque side of the cylinder which constitutes the major applied force for obtaining the required torque and also provides an adjustment means to compensate for brake lining wear.

3,465,851
TRANSMISSION OVERSHIFT INHIBITOR
William A. Callegari, Gregory, Mich., Ralph W. Matthews, Franklin, Wis., and David S. Ohaver, Farmington, Shairyl I. Pearce, East Peoria, and Gerald D. Rohweder, Peoria, Ill., assignors to Caterpillar Tractor Co., Peoria, Ill., a corporation of Illinois
Filed Feb. 20, 1967, Ser. No. 617,248
Int. Cl. G05g *9/00;* **F16d** *57/06*
U.S. Cl. 188—97 **2 Claims**



A piston within a hydraulic cylinder is coupled to the shift linkage of a vehicle transmission to exert an increased resistance to linkage motion as a single step shift approaches completion. The initial piston motion acts against a readily yieldable element which seats after a limited amount of travel while continued movement causes hydraulic fluid to react against a greater resistance. The mechanism resets automatically, following each shift, at any of the different positions of the shift linkage.

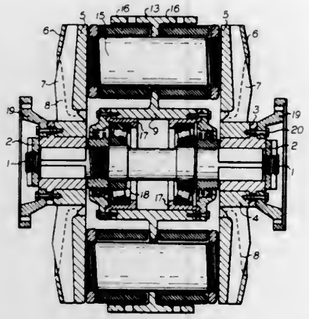
3,465,852
FLOATING-YOKE DISK BRAKE FOR DUAL-NETWORK VEHICLE BRAKE SYSTEM
Juan Belart, Walldorf, Germany, assignor to Alfred Teves G.m.b.H., Frankfurt am Main, Germany, a corporation of Germany
Filed Feb. 12, 1968, Ser. No. 704,790
Claims priority, application Germany, Feb. 15, 1967, T 33,208
Int. Cl. B60t *11/24;* **F16d** *65/14*
U.S. Cl. 188—152 **7 Claims**



A floating-yoke disk brake in a dual-network system in which the hydraulic fluid transmitted by each network is supplied to only one pressure-responsive, separate and independent surface area of the wheel-brake piston. A self-

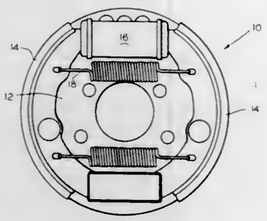
adjusting mechanism resets the position of the piston relative to the brakeshoe whenever there has been significant wear of the brake lining.

3,465,853
ELECTRIC BRAKES
Telesforo G. Zabalbeitia, Dr. Areilza 44, Bilbao, Spain
Filed May 10, 1967, Ser. No. 637,529
Claims priority, application Spain, Sept. 21, 1966, 331,462
Int. Cl. B60l *7/00;* **B60t** *1/06;* **F16d** *65/84*
U.S. Cl. 188—163 **5 Claims**



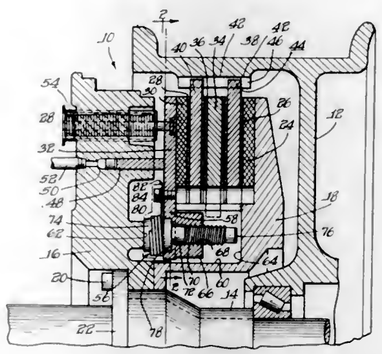
An electric brake comprising two pan shaped end members each operatively connected at the respective ends of the brake axle. Each member includes an inwardly directed annular rim disposed against the outer face of a radially extending flange of a coupling sleeve mounted on the brake axle. The hub of the brake disc is disposed on the inner face of the flange and all members are connected by a bolt means passing therethrough.

3,465,854
BRAKE ADJUSTER
Richard E. Kolecki, Niles, Mich., assignor to Clark Equipment Company, a corporation of Michigan
Filed Dec. 22, 1967, Ser. No. 692,895
Int. Cl. F16d *65/38, 51/00*
U.S. Cl. 188—196 **2 Claims**



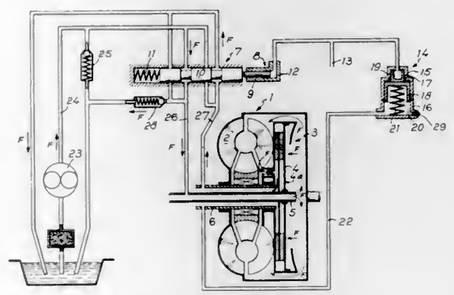
An expandable internal shoe brake with a fluid actuator for expanding the shoes. Disposed in the actuator is a wear adjuster which limits retraction of the shoes. A helical compression spring is provided between the pistons of the actuator, the spring having a first portion with a given spring rate to accommodate lost motion in the slack adjusting operation, and a second portion with a spring rate lower than the given spring rate. A helical torsion spring encircles and biases the second spring portion to extend on slack adjustment movement.

3,465,855
AUTOMATIC ADJUSTER FOR A DISC BRAKE
Richard M. Kramer, Stevensville, Mich., assignor, by mesne assignments, to Lambert Brake Corporation, St. Joseph, Mich., a corporation of Michigan
Filed Jan. 2, 1968, Ser. No. 695,232
Int. Cl. F16d *65/52, 55/14*
U.S. Cl. 188—196 **6 Claims**



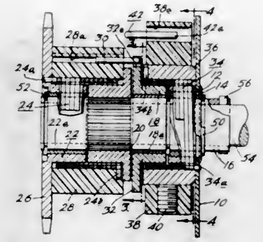
There is disclosed an automatic adjuster mechanism for a disc brake comprising a screw threadedly engaging and carried by an axially shiftable stator member and engageable with an abutment for limiting return movement of the stator member. A spring having one end anchored and an opposite end wound round the screw is provided for gripping and locking the screw against retrograde rotation and releasing the screw for adjusting rotation during energizing of the brake.

3,465,856
APPARATUS FOR ACCELERATING THE DISENGAGEMENT OF A MECHANICAL CLUTCH MEMBER INCORPORATED IN A HYDROKINETIC TORQUE CONVERTER
Edmond Henry-Biabaud, Paris, France, assignor to Societe Anonyme Andre Citroen, Paris, France, a French society
Filed Dec. 13, 1966, Ser. No. 601,514
Claims priority, application France, Dec. 17, 1965, 42,834
Int. Cl. F16d *37/00, 21/00*
U.S. Cl. 192—3.33 **3 Claims**



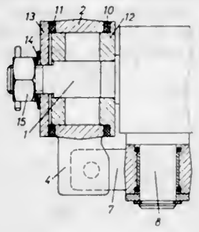
Means and apparatus for hydraulically accelerating the disengagement of a mechanical clutch member incorporated in a torque converter supplied by a hydraulic circuit having two directions of fluid flow consisting of introducing a supplementary volume of fluid under pressure into the circuit when the direction of the flow of the fluid is reversed in order to disengage the clutch.

3,465,857
CLUTCH AND ACTUATOR SYSTEM
John S. Baer, Medford Lakes, N.J., assignor to Precision Specialties, Inc., Huffville, Pitman, N.J.
Filed Apr. 9, 1968, Ser. No. 719,917
Int. Cl. F16d *13/04, 41/20, 43/00*
U.S. Cl. 192—36 **14 Claims**



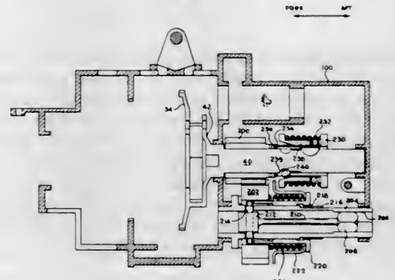
A clutch having a helical drag spring to impede rotation of a clutch control member to which one end of a helical clutch spring is affixed. The other end of the normally disengaged clutch spring is fixed to the input hub so that the clutch spring and clutch control member normally rotate with the input hub. When the rotation of the clutch control member is impeded by the helical drag spring, the helical clutch spring tends to wrap down on the input and output hubs so that the output hub is driven by the input hub through the clutch spring.

3,465,858
FREE WHEEL CLUTCH
Erich Reinecke, Hannover, Germany, assignor to Westinghouse Bremsen- und Apparatebau G.m.b.H., Hannover Germany
Filed Apr. 12, 1968, Ser. No. 720,823
Claims priority, application Germany, Apr. 21, 1967, W 39,583
Int. Cl. F16d *23/00, 43/00, 13/04*
U.S. Cl. 192—45.1 **2 Claims**



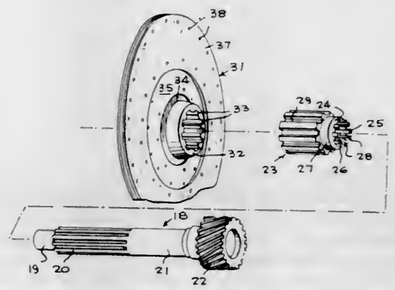
A free-wheel clutch in which an annular member is supported concentrically relative to a shaft by disc-shaped shaft followers axially displaceable on the shaft, the annular member being rotated by a lever in a first direction about its axis to pivot clamping bodies into engagement with the shaft to thereby lock the shaft to the annular member for rotation together, and rotated in the reverse direction by the lever to reversely pivot the clamping bodies to unlock the annular member relative to the shaft and enable reverse rotation of the annular member without rotating the shaft; the rotation of the annular member relative to the shaft is adjustably frictionally impeded by a nut and spring washer on the shaft engaging one of the axially movable shaft followers to axially compress annular friction members between the followers and the opposite ends of the annular member, thereby preventing undesired rotation of the annular member relative to the shaft due to shock and vibration when the annular member is disengaged from the operating lever during free play relationship therebetween, the annular friction members also serving to seal the clutch to prevent ingress of dirt.

3,465,859
POWER AMPLIFIER TORQUE RESPONSIVE DISCONNECT
Henry Troeger, Cooperstown, N.Y., assignor to The Bendix Corporation, a corporation of Delaware
Original application June 14, 1966, Ser. No. 557,434, now Patent No. 3,407,677, dated Oct. 29, 1968. Divided and this application Aug. 2, 1968, Ser. No. 749,728
Int. Cl. F16d *23/00, 7/02, 43/20*
U.S. Cl. 192—56 **4 Claims**



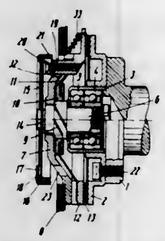
An overtorque responsive disconnect which decouples the output gear from its shaft upon axial movement of a coupling sleeve. Movement of the sleeve is triggered by movement of any one of a plurality of latches or spring retainers. The latches are restrained from triggering the sleeve by being affixed to an outer sleeve which is immobilized by mismatched splines thereby compressing a spring means. Overtorque produces a rotational displacement between ends of a shaft which displacement aligns the splines to initiate the disconnect.

3,465,860
DUAL SPLINED SHAFT ASSEMBLY FOR A CLUTCH
Wayne Paul Gingery, La Puenta, Calif., assignor to Clutch Research and Development Co., Los Angeles, Calif., a partnership
Filed May 31, 1967, Ser. No. 642,363
Int. Cl. F16d *13/58, 13/52*
U.S. Cl. 192—70.16 **1 Claim**



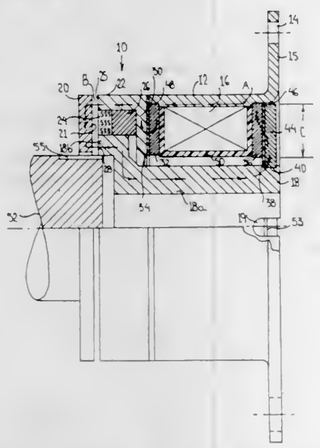
A dual splined sleeve which will protect the original shaft from damage due to high engine torque, and wherein greater lateral resistance is provided.

3,465,861
THERMOSTATIC CLUTCHES FOR FANS
Gerd W. Seifert, Seestrasse 190, Unterschondorf (Ammersee), Germany
Filed Apr. 4, 1968, Ser. No. 718,684
Claims priority, application Germany, Apr. 5, 1967, S 109,210
Int. Cl. F16d *19/00, 43/25*
U.S. Cl. 192—82 6 Claims



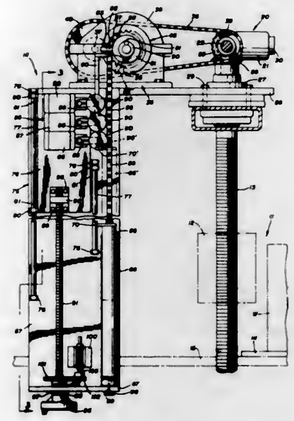
The specification describes improvements in thermally triggered friction clutches for IC engine cooling fans of the type in which clutch plates are initially brought into contact by a bimetallic element and are then pressed together by means of relative turning between screw parts. In accordance with a principal improvement access to the rear of such a construction is arranged to be obtained through at least one hole in the bimetallic element which is or can be brought into alignment with at least one hole in a hub carrying the fan blades or impellor.

3,465,862
STATIONARY COIL ELECTROMAGNETIC CLUTCH OR BRAKE
Fred R. Birdsall, Sayre, Pa., assignor to The Bendix Corporation, a corporation of Delaware
Continuation-in-part of application Ser. No. 587,106, Oct. 17, 1966. This application Apr. 15, 1968, Ser. No. 725,252
Int. Cl. F16d *37/02*; F16c *27/00*
U.S. Cl. 192—84 4 Claims



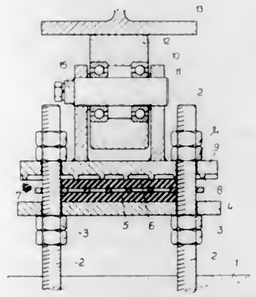
An electromagnetic clutch or brake having a stationary electromagnetic coil in which flux transfer between the stationary magnet body and the rotary components only occurs in a substantially axial direction. By providing large area flux transfer means at either side of the electromagnetic coil, flux is allowed to transfer from stationary to rotary components without experiencing the losses normally associated with stationary coil electromagnetic clutches or brakes.

3,465,863
INDEXING APPARATUS
Richard M. Kuts, Cuyahoga Falls, and John L. Rehman, Barberton, Ohio, assignors to The Falls Engineering & Machine Company, Cuyahoga Falls, Ohio, a corporation of Ohio
Filed Apr. 3, 1968, Ser. No. 718,631
Int. Cl. F16d *67/00, 71/00, 23/00*
U.S. Cl. 192—143 12 Claims



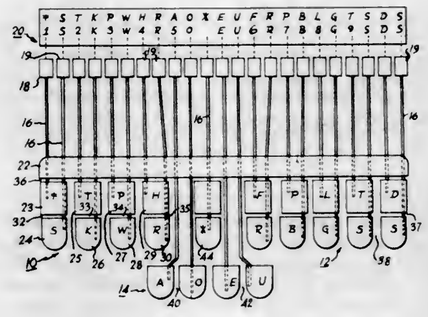
A device for providing accurate indexing of machine elements through a preselected distance having a carriage mechanism selectively linearly positioned along a frame, a motor intermittently energized to linearly drive the machine elements during indexing and to linearly and proportionally displace an actuator through a clutch to engage switches mounted on the carriage which stop the motor, energize a brake on the motor, and disengage the clutch to recycle the actuator to its reference position for the subsequent indexing operation.

3,465,864
SUPPORTING ROLLER ARRANGEMENT FOR A RACK, PARTICULARLY A LARGE-CAPACITY RACK
Alois Lödige, Frankfurterweg 13, Paderborn, Germany
Filed Jan. 5, 1968, Ser. No. 696,019
Claims priority, application Germany, Jan. 7, 1967, L 55,451
Int. Cl. B65g *13/00*
U.S. Cl. 193—35 5 Claims



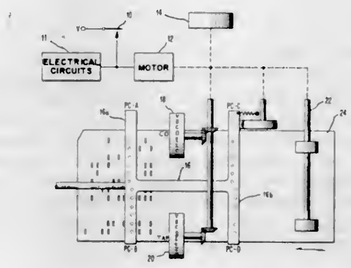
An arrangement for maintaining evenly disposed racks of great weight on rollers by automatic compensation of the heights of the individual rollers in which the compensation is achieved by pre-compressed springs adjustable as to height and pre-compression.

3,465,865
STENOGRAPHIC TYPEWRITER WITH MNEMONIC MEANS
David J. Parker, P.O. Box 177, Brentwood, Md. 20722
Filed Oct. 5, 1967, Ser. No. 673,045
Int. Cl. B41j *3/26, 3/10*
U.S. Cl. 197—9 4 Claims



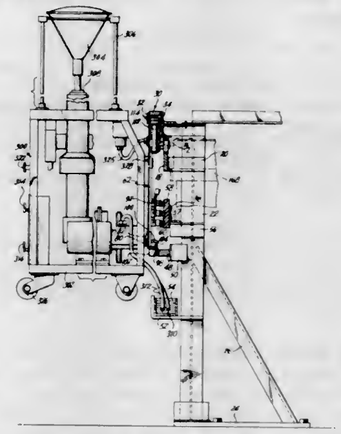
A keyboard for a stenographic typewriter is provided with one or more non-phonetic keys for use as mnemonic symbols, which are selectively and simultaneously operable with all of the phonetic keys in any desired combination by the operator's fingers in normal stenographic usage.

3,465,866
STRUCTURE PROVIDING PRINTED TRANSLATION OF CODED INFORMATION ON CODED MEMBER
Arthur J. Gehring, Fort Washington, and Henry J. Gardner, Lansdale, Pa., James L. Braxton, Moorestown, N.J., and Edwin W. Crellin, North Wales, Pa., assignors to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed Nov. 15, 1965, Ser. No. 507,917
Int. Cl. B41j *5/36*; G06k *1/04, 3/02*
U.S. Cl. 197—20 16 Claims



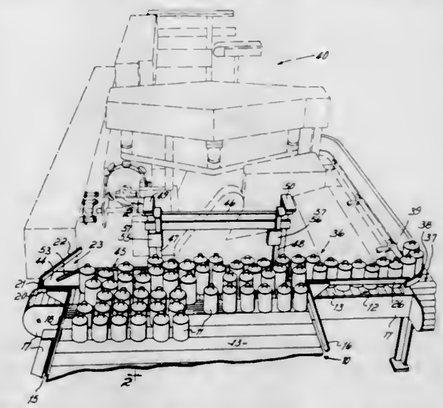
There is disclosed an interpreter device for a unit record, which stores information in both an upper and lower half, thereby increasing its storage capacity. Interpreting is done "on the fly" in that the unit record, the sensing means and the print means are all moving at the same time. Printing of the information recorded in the columns of the upper half of the unit record occurs on the top line and printing of information recorded in the columns of the lower half occurs on the bottom line.

3,465,867
CHAIN AND INDEXING DRIVING MECHANISM
Stanley J. Gartner, John J. Regec, Henry W. Roeber, and James M. Smith, Emporium, Pa., assignors to Sylvania Electric Products Inc., a corporation of Delaware
Filed June 14, 1967, Ser. No. 646,009
Int. Cl. B65g *17/38*
U.S. Cl. 198—19 8 Claims



An endless chain of articulated frames is driven intermittently by a drive mechanism operating in a very general sense like the four motion cloth feed bar of a sewing machine. The runs of the chain are in a horizontal plane while the frames themselves are arranged vertically. The frames are at such an elevation as to support carts carried thereby off the floor level, these carts supporting mechanisms to perform various operations on articles, such as cathode ray tubes supported on the carts and while the tubes are transported through processing areas. The carts themselves are detachably hung on the frames and supplied with casters so that when removed from the frames they may be rolled away, as for servicing them.

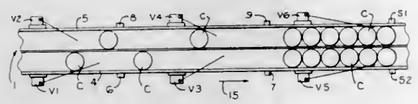
3,465,868
SINGLE FILE COLUMN FORMING APPARATUS
Edmund B. Donner, Washington, Pa., assignor to Solar Engineering & Equipment Company, Beaver, Pa., a corporation of Pennsylvania
Filed Sept. 18, 1967, Ser. No. 668,327
Int. Cl. B65g *47/30*
U.S. Cl. 198—30 9 Claims



An apparatus for feeding bottles in a single file column from a group of randomly arranged bottles on a bulk

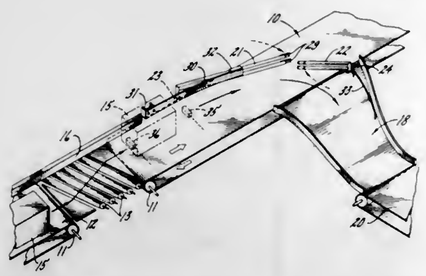
feed conveyor. The bulk feed conveyor is controlled for automatic or demand feeding of the bottles onto an output conveyor on which the bottles are fed through a tapered throat and thus formed into a single file column. A combination backstopping bar and bottle guide controls the feed of bottles onto the output conveyor and, through its displacement, relieves bottle jams which occur during the forming of the bottles into a single file column on the output conveyor.

3,465,869
CONTROL SYSTEM
Victor Benatar, Atlanta, Ga., assignor to The Mead Corporation, a corporation of Ohio
Filed May 31, 1967, Ser. No. 642,530
Int. Cl. B65g *43/08*
U.S. Cl. 198—110 **6 Claims**



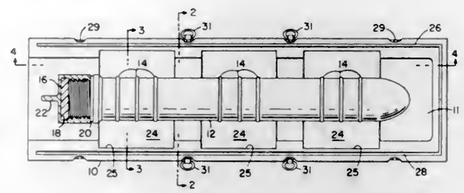
A control system utilizing pneumatic principles may be utilized to control the speed of a machine in coordination with variations in the rate of supply and backlog of incoming items to be processed through the machine. The term "backlog" is used to denote items which are in physical contact with each other and awaiting further processing. More specifically, a plurality of pneumatic valves having elongated feeler elements disposed for engagement by incoming items are arranged to supply pressure fluid to a pressure averaging relay during intervals when the feeler elements are in contact with incoming items and during which time the sensing valves are open. If no item is in engagement with a feeler element, the sensing valve is closed and a metered exhaust port is effective to modify the output pressure of the averaging relay. Pressure from the averaging relay is supplied through a suitable selector and solenoid control valve to a pneumatic control device which in turn varies the speed of the driven machine.

3,465,870
DIVERTER FOR CONVEYOR SYSTEMS
John D. Paulsen, Naperville, Ill., assignor, by mesne assignments, to Ermanco Incorporated, Grand Haven, Mich., a corporation of Michigan
Filed Oct. 11, 1967, Ser. No. 674,466
Int. Cl. B65g *47/34*
U.S. Cl. 198—188 **6 Claims**



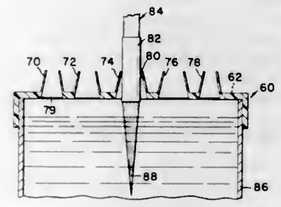
A diverter for conveyor systems is described in which two arm segments pivoted on opposite sides of the conveyor swing together and join to divert an object from the conveyor into a diversion station, and in which a resilient catcher plate is provided to cushion the initial stages of the diversion sequence.

3,465,871
MISSILE PLASTIC CONTAINER
Charles E. Lyons and Donald M. McDaniel, Guntersville, and Jack R. Wade, Jr., Decatur, Ala., assignors to the United States of America as represented by the Secretary of the Army
Filed May 6, 1968, Ser. No. 726,894
Int. Cl. F42b *37/00, 39/00;* **B65d** *85/30*
U.S. Cl. 206—3 **9 Claims**



An improved transportation and storage container for a missile or projectile, made entirely of closed-cell plastic material and including two identical outer halves adapted to be supported by banding when meshed together, a sealable inner container, and a suspension media for supporting the inner container. The breech end of the inner container extends out into a hollow portion between the two outer halves and is adapted for receiving an air and moisture proof closure cap.

3,465,872
RECEPTACLE COVER
Edward J. Stapleton, 810 SE. 7th Ave., Pompano Beach, Fla. 33060
Filed Feb. 28, 1968, Ser. No. 709,116
Int. Cl. B65d *51/00*
U.S. Cl. 206—15.1 **8 Claims**

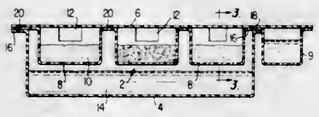


A closure for a container with elongated apertures provided with grippers for holding the broad bristle receiving portion of ordinary paint brushes. Brushes may be inserted into the apertures from the underside of the closure and the grippers will automatically grip the brushes. The closure may then be applied to a container with solvent therein and will suspend the bristles in the solvent. A brush may be removed from the closure without removing the closure from the container by merely pulling the brush out of the aperture.

3,465,873
COMBINATION FOOD PACKAGE, SERVING TRAY AND SHIPPING AND DISPLAY CONTAINER
Otto John Munz, Harness Creek, Annapolis, Md. 21403
Filed Oct. 22, 1965, Ser. No. 501,875
Int. Cl. B65d *79/00*
U.S. Cl. 206—47 **5 Claims**

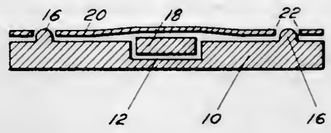
A hermetically sealed package comprising a cover overlying one or more compartments containing dehydrated food, medical supplies or the like to be treated by a vapor,

in which the compartments all depend into a single reservoir or independent reservoirs for each compartment and the reservoir or reservoirs contain a vaporizable fluid, when heated, which can comprise a potable water,



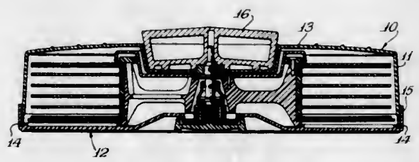
and in which the compartment or compartments include a vapor-rupturable wall portion exposed to the fluid in the reservoir and the vapor in the reservoirs will substantially surround the compartment depending therein.

3,465,874
CARRIER FOR SEMICONDUCTOR DEVICES
Frances Hugle, Santa Clara, and William Perrine, Sunnyvale, Calif.; said Hugle assignor to Frances Hugle as trustee of Frances Hugle Trust
Filed June 12, 1967, Ser. No. 645,459
Int. Cl. B65d *83/00*
U.S. Cl. 206—56 **3 Claims**



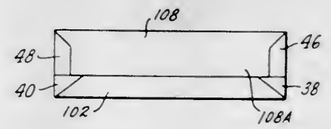
A flexible strip has a centrally disposed row of uniformly spaced depressions of essentially square or inverted truncated pyramidal shape; also a row of indexing holes adjacent to each edge of the strip for moving the same and for providing an index of position for testing a semiconductor chip residing in an adjacent depression. Additionally, a cover strip may be employed for shipping or storing, in which case the flexible strip has a row of bumps adjacent to each edge and the cover strip has a row of holes mating with the bumps for detachably fastening the two strips together.

3,465,875
DISC PACK LOCKING MECHANISM
Andrew McKelvey, Jr., La Grange Park, Ill., assignor to Amerline Corporation, a corporation of Illinois
Filed Apr. 15, 1968, Ser. No. 721,395
Int. Cl. B65d *85/30, 85/67*
U.S. Cl. 206—62 **5 Claims**



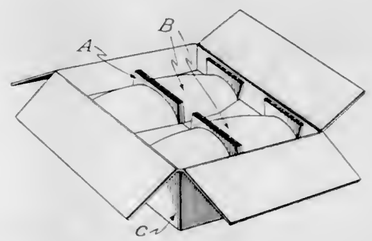
A locking mechanism for locking the top and bottom parts of a complete disc pack container. The locking mechanism includes a male segment which extends from the top part and is adapted to slidably engage a female segment extending from the bottom part. The male segment includes a spring biased cam pin which is engaged and displaced by a relatively fixed second pin extending from the female segment. Retaining elements projecting from the male segment are forced by the displaced cam pin into locking engagement to a retaining ring of the female segment to hold the parts together. To disconnect the segments, the second pin is disengaged from the cam pin which, in turn, disengages the retaining elements thereby allowing the retaining elements to disengage the retaining ring.

3,465,876
PACKAGE
Oliver R. Titchenal, Upper Saddle River, N.J., Fred Jark, Blauvelt, N.Y., William S. Coombes, Somerset, Mass., and Walter Ruf, Spring Valley, N.Y., assignors to St. Regis Paper Company, New York, N.Y., a corporation of New York
Original application Oct. 8, 1964, Ser. No. 402,483, now Patent No. 3,383,825, dated May 21, 1968. Divided and this application Sept. 22, 1967, Ser. No. 688,285
Int. Cl. B65d *71/00, 65/00, 75/00*
U.S. Cl. 206—65 **9 Claims**



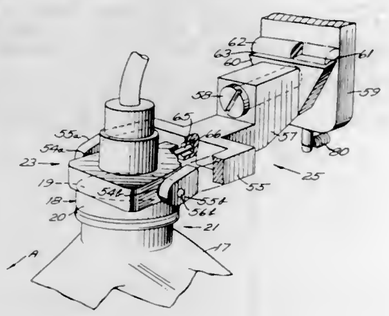
This invention relates to a package comprising a plurality of individual packets arrayed in proximate touching relation to define a cellular bundle and compressed under forces acting along the various dimensions of the bundle; a novel flexible overwrap is provided about the bundle for maintaining the packages in the touching and compressed states and has joined edges sealing the bundle at least on one side of the bundle.

3,465,877
GLASS PACKING PAD
Daryl T. Martin, St. Paul, Minn., assignor to Hoerner Waldorf Corporation, St. Paul, Minn., a corporation of Delaware
Filed Mar. 1, 1968, Ser. No. 709,746
Int. Cl. B65d *25/04*
U.S. Cl. 206—65 **3 Claims**



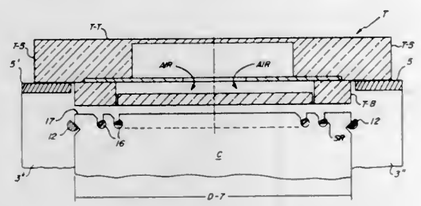
The invention discloses a packaging pad for glasses and similar objects of generally circular cross-section. The pad includes a bottom panel, to opposite sides of which are hinged straps one more in number than the objects being packed (three straps for two such objects). Top panels are hinged to the upper ends of the straps and are folded to overlie the objects. The straps are spaced apart a distance less than the diameter of the objects in order to hold the objects contained. Tabs project laterally from the bottom panel between the straps to extend beyond the diameters of the objects. The top panels are provided with similar projecting tabs.

3,465,878
VACUUM DETECTING APPARATUS FOR SEALED CONTAINERS
Charles S. Ochs, Lancaster, Ohio, assignor to Anchor Hocking Glass Corporation, Lancaster, Ohio, a corporation of Delaware
Filed Mar. 7, 1967, Ser. No. 621,281
Int. Cl. B07c *5/08*
U.S. Cl. 209—80 **15 Claims**



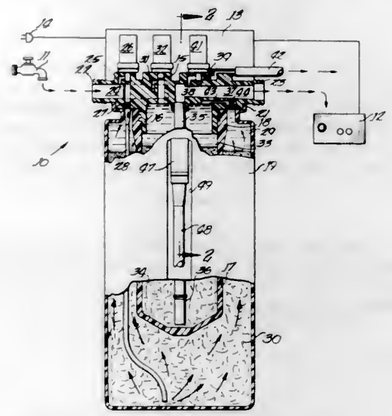
A plastic sensing device has a coil of the air core type for inspecting the top panels of closures having good electrical conductive characteristics to determine if a proper vacuum has been formed. The sealed containers or packages on a conveyor are moved successively beneath the sensing device for inspection. Mounting means supports the sensing device with a limited universal movement of the sensing device to seat evenly on the closure over deviations of the closure from the horizontal.

3,465,879
UNIT RECORD FILE SEPARATOR
Victor H. Jonas, Winchester, Mass., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware
Filed Dec. 28, 1966, Ser. No. 605,324
Int. Cl. B42b *21/12;* **G60k** *21/02*
U.S. Cl. 209—80.5 **2 Claims**



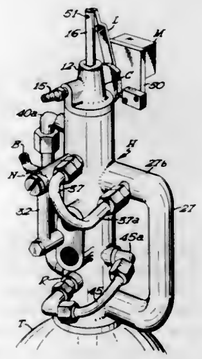
A unit record storage magazine for storage of mass memory strips, together with record abstraction mechanism adapted for controlled strip selection (e.g. random access) by indexing of prescribed rods in strip notches, a strip returning mechanism and a strip separating assembly for continually directing a pressurized gas flow through the massed pack of strips so as to maintain them separated by a minute, uniform separation. The separating assembly is adapted to assume a removable, cover-like relation on the box-like magazine to maintain a constant, minute interstrip separation and keep the strips in flat, stable alignment even during jostlings such as occur in the course of random accessing when individual strips are subject to almost continual removal from, and then return to, the pack.

3,465,880
COMPACT WATER SOFTENER AND BRINE STORAGE TANK
Charles E. Lyall, Deerfield, Ill., assignor to Culligan, Inc., Northbrook, Ill., a corporation of Delaware
Filed May 2, 1966, Ser. No. 546,643
Int. Cl. B01d *29/08, 29/36*
U.S. Cl. 210—136 **6 Claims**



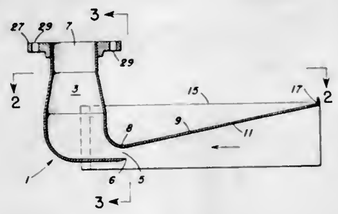
A compact water softener and brine storage tank having a housing for water softening material generally concentrically positioned within a brine storage tank with both the housing and the container sealingly secured to a unitary cover; which cover also provides the flow passages and connections to the raw water inlet, the treated water outlet, the drain outlet, and the housing and container. The cover includes a raw water inlet with communicating passages to the water softener housing and the brine storage tank, a treated water outlet communicating with the water softener housing and having a branch drain passage, a brine passage leading from the brine storage tank to the housing, and timer actuated solenoid valves controlling flow from the inlet to the brine storage tank and the softener housing and from the housing to the drain passage.

3,465,881
CONTROL MECHANISM FOR WATER SOFTENING SYSTEMS
Gerald H. Rogers, Elmore, Minn. 56027
Filed June 27, 1967, Ser. No. 649,286
Int. Cl. C02b *1/22, 1/76*
U.S. Cl. 210—143 **8 Claims**



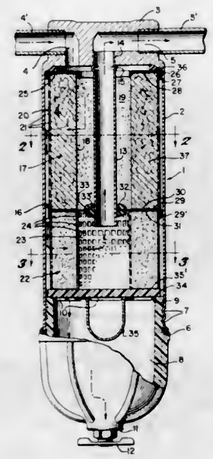
A control mechanism which may be mounted in and upon a unitary housing medium, and wherein all of the various flow cycles are controlled by predetermined, relative movements of a single elongated plunger element.

3,465,882
SKIMMER
Harold W. Bowersox, Dearborn, Mich., assignor to Wyandotte Chemicals Corporation, Wyandotte, Mich., a corporation of Michigan
Filed Dec. 12, 1966, Ser. No. 600,978
Int. Cl. B01d *43/00, 33/00*
U.S. Cl. 210—154 **4 Claims**



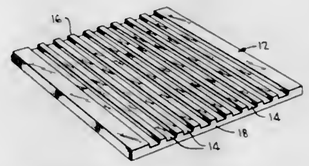
This invention is directed to skimmers and skimming systems for removing floating and suspended material from the surface of a flowing stream of liquid and, more particularly, for removing oil and solids floating on the surface of the waste effluent from manufacturing facilities. The skimming device embodying the principle of this invention comprises an interceptor having a chamber defined therein, provided with an inlet and an outlet. The inlet has an elongated, rectangular opening, the lower boundary of which is formed by the lower horizontal edge of the interceptor. An extension member, the width of the inlet and joined to the interceptor at the upper boundary of the opening of the inlet, is providing having a lower surface extending upward and away from the inlet.

3,465,883
FUEL-WATER SEPARATOR AND FILTER
Henry M. Jumper, Gastonia, N.C., assignor to Wix Corporation, Gastonia, N.C., a corporation of North Carolina
Filed July 25, 1967, Ser. No. 655,915
Int. Cl. B01d *35/16, 27/06*
U.S. Cl. 210—307 **6 Claims**



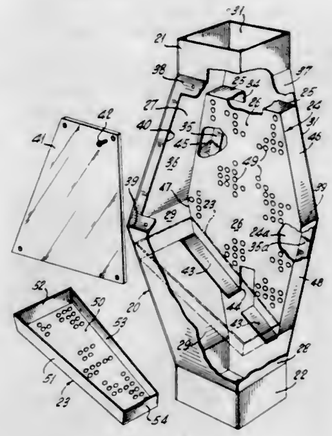
A fuel-water separator and filter wherein a coalescer is used to coalesce the water in the fuel and also have some filtering action, the fuel and drops of water then passing through a separator and filter, there being no counterflow of fuel with respect to the water in the flow to the separator-filter.

3,465,884
CHANNEL LAYER CHROMATOGRAPHY
Mederic J. Matherne, Jr., New Orleans, La., assignor to the United States of America as represented by the Secretary of the Department of Health, Education, and Welfare
Filed Sept. 25, 1967, Ser. No. 670,131
Int. Cl. B01d *23/10, 15/08*
U.S. Cl. 210—323 **7 Claims**



Channel layer chromatography wherein a common support element having a plurality of channels filled with a chromatographic adsorbent material is utilized for simultaneous multiple separations. The technique provides for the product capacity of column chromatography with the speed of thin layer chromatography. Particular applicability as a cleanup procedure for pesticide residue analysis is shown.

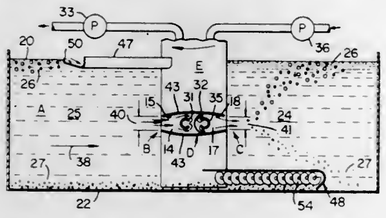
3,465,885
DEBRIS COLLECTOR FOR WATER DRAINAGE PIPES
George Samuel Trump, 6100 Madison St., West New York, N.J. 07093
Filed May 22, 1967, Ser. No. 640,058
Int. Cl. B01d *23/20, 23/00*
U.S. Cl. 210—447 **2 Claims**



The combination of a debris collector and water drainage means, such as a downspout gutter arrangement, for collecting leaves and the like and permitting the discharge of water. A casing is connected with the bottom of the downspout, the casing having a removable inclined perforated base to receive the debris and serving as a primary water passageway, there being an enclosed com-

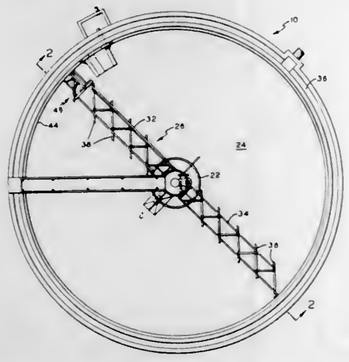
partment within the casing having perforated walls and serving as a secondary water passageway, the top of said casing and bottom of said downspout forming an overflow passageway.

3,465,886
COLLECTION AND INPUT APPARATUS FOR A BATH UNDERGOING GRAVITATIONAL CLASSIFICATION
Karol Pilarczyk, Morrisville, Pa., assignor to De Laval Turbine, Inc., Trenton, N.J.
Filed June 14, 1967, Ser. No. 645,914
Int. Cl. B01d *33/02*
U.S. Cl. 210—520 **15 Claims**



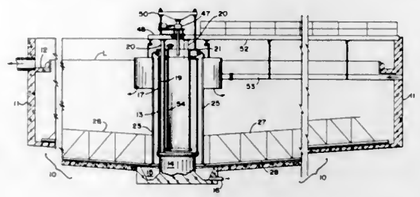
For use with a bath containing a mixture of liquid and pollutants for gravitational classification, an apparatus for inserting nonclassified mixture interior of the bath in a first horizontal plane and withdrawing classified fluid from interior of the bath in a second horizontal plane without disturbing the gravitational classification of the fluid not being withdrawn. The classified fluid is withdrawn from the bath by a collector moving relative to the fluid undergoing gravitational classification while mixed fluid is inserted interior of the bath by an input also moving relative to the fluid of the bath. The collector and input are each contained in a streamlined housing shaped and disposed so as to produce minimum turbulence when passing through the fluids of the bath.

3,465,887
TORSION BAR SKIMMER
Ernest W. Cookney, Clearwater, Fla., assignor to Dorr-Oliver Incorporated, Stamford, Conn., a corporation of Delaware
Continuation-in-part of application Ser. No. 666,059, Sept. 7, 1967. This application Jan. 3, 1969, Ser. No. 796,941
Int. Cl. B01d *21/06*
U.S. Cl. 210—525 **19 Claims**



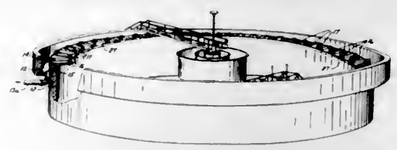
A rotating skimmer device cooperating with the peripheral scum baffle in a settling tank, wherein the radially extending skimmer blade has one or more arms connecting it to a horizontal rotating support arm, so that the skimmer blade and arms are swingable about a horizontal axis which connecting arm or arms are horizontally resiliently deflectable for maintaining the skimmer blade in contact with the scum baffle during the rotation of the supporting arm.

3,465,888
SEDIMENTATION TANK WITH LIFTING DEVICE FOR PIER-SUPPORTED RAKING MECHANISM
Theodore M. Jablon, Stamford, Conn., assignor to Dorr-Oliver Incorporated, Stamford, Conn., a corporation of Delaware
Filed Jan. 26, 1967, Ser. No. 611,851
Int. Cl. B01d *21/12, 21/00*
U.S. Cl. 210—531 **38 Claims**



A sedimentation tank with center-pier supported rotary rake structure and rake lifting means, wherein the raising and lowering of the rake structure is guided by vertical tracks provided by at least three columns spaced evenly about the axis of rotation of the rake structure.

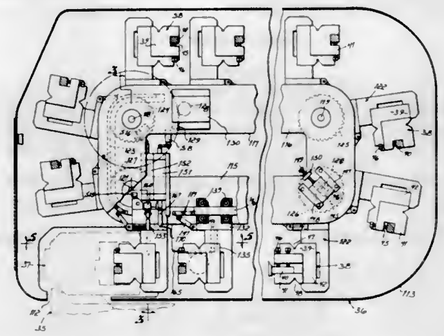
3,465,889
LIQUID CLARIFIER WEIR CONSTRUCTION
Frederick L. Young, Jr., Dallas, Tex., assignor to F. B. Leopold Company, Inc., Zelienople, Pa., a corporation of Delaware
Filed June 24, 1968, Ser. No. 739,364
Int. Cl. B01d *43/00*
U.S. Cl. 210—538 **10 Claims**



Weir construction for use with a liquid offtake trough of a liquid clarifier including a plurality of weir devices arranged in a series along the trough and each comprising a pan having one open side and side walls at its other sides, the side walls having a plurality of weir notches, and the side walls of the weir devices having end portions meeting each other from one device to the next in the series and jointly forming a sinuous notched weir wall of total length substantially greater than the length of the offtake trough with which the devices are associated.

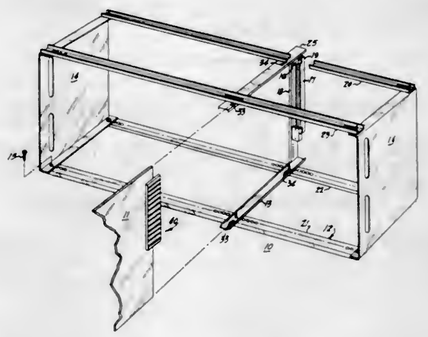
3,465,890
TOOL STORAGE AND HANDLING MECHANISM
Timothy A. Wakefield and Preston R. Foley, Jr., Cincinnati, Ohio, assignors to R. K. Le Blond Machine Tool Company, a corporation of Ohio
Filed Apr. 19, 1967, Ser. No. 631,931
Int. Cl. A47f *3/08;* **B23g**
U.S. Cl. 211—1.5 **27 Claims**

A tool storage magazine and mechanism for transporting tools between the magazine and a tool holder of a machine tool. The magazine comprises a series of conveyorized tool storage modules, each module of which supports one tool. The mechanism for inserting and removing tools from the magazine comprises a motor actu-



ated gripper mounted upon a movable slide and having arms engageable with the tools to clamp them therein for movement to and from the tool holder of a machine tool.

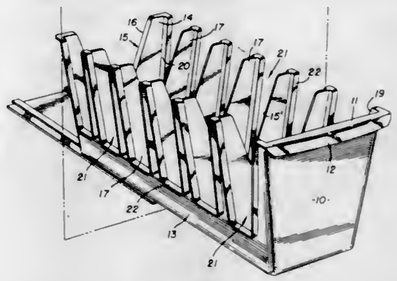
3,465,891
PRINTED CIRCUIT BOARD LIBRARY RACK
Ralph A. De Rose, Villa Park, Ill., assignor to International Telephone and Telegraph Corporation, a corporation of Delaware
Filed June 23, 1967, Ser. No. 648,336
Int. Cl. A47g *19/08;* **A47f** *5/00*
U.S. Cl. 211—41 **2 Claims**



A library rack is made from pieceparts cut from stock metal having only two standard shapes. One such part is a simple strut member having a row of holes placed close enough together so that it may be cut into any length. The other part serves the dual function of providing both a strut and a guideway for the printed circuit board. There are no tapped holes, special brackets, nuts and bolts, or the like. While the entire rack may be made from these two parts, it is not rigidly limited thereto. Almost any part may be added according to the user's needs.

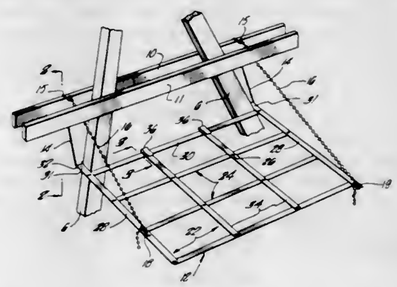
3,465,892
SLIDE-OUT LID RACK
William D. Taylor, Wooster, Ohio, assignor to Rubbermaid Incorporated, Wooster, Ohio, a corporation of Ohio
Filed Nov. 13, 1967, Ser. No. 682,009
Int. Cl. A47g *19/08*
U.S. Cl. 211—41 **10 Claims**

A molded plastic lid rack comprising a drawer-like structure having a closed end wall and a plurality of compartments formed by longitudinally spaced transverse partition walls reinforced at their outer edges by flanged



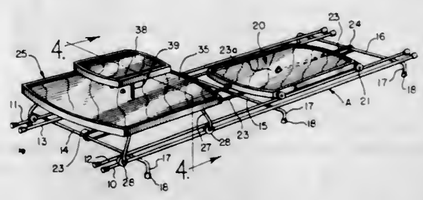
side walls forming U-shaped openings between said partition walls.

3,465,893
ARTIST'S PALLET HOLDER
Lloyd J. Kinney, 14334 E. Chestnut St., Whittier, Calif. 90605
Filed Apr. 24, 1967, Ser. No. 633,065
Int. Cl. A47f *5/00, 5/08*
U.S. Cl. 211—86 **5 Claims**



A collapsible supporting rack having a hanger secured to a platform to attach the platform to a supporting structure, such as an artist's easel, and an adjustable elongated bar or chain secured to the hanger and the platform to retain the platform in a horizontal position.

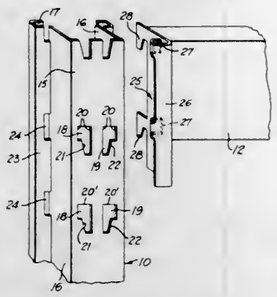
3,465,894
PORTABLE FOOD SERVICE DEVICE FOR TABLES AND THE LIKE
John C. Setecka, 1931 S. Austin Ave., Cicero, Ill. 60650
Filed Feb. 15, 1968, Ser. No. 705,742
Int. Cl. A47f *3/14, 5/00;* **A47j** *47/00*
U.S. Cl. 211—129 **8 Claims**



A portable adjustable apparatus or device, positionable on a serving table having a plurality of carriages or trays with rollers rollable on separate sets of longitudinal

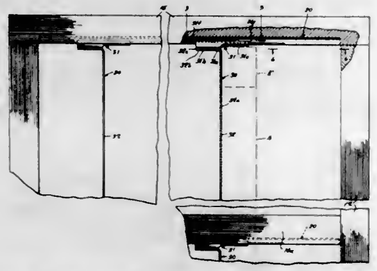
adjustable tracks or rails to provide for selective movement and positioning of food containing receptacles at varying locations relative to said tracks and relative to a supporting table.

3,465,895
STORAGE RACK
Hyman Miller, 2039 Homecrest Ave., New York, N.Y. 11229
Filed Sept. 20, 1966, Ser. No. 580,798
Int. Cl. A47f *5/10;* **F16b** *1/00, 5/00, 7/00*
U.S. Cl. 211—176 **1 Claim**



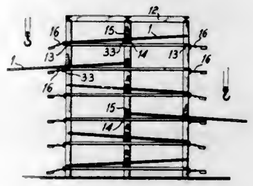
A storage rack has a shelf stringer with firmly connected end plates. The front portion of an end plate has two spaced hooks located one above the other and bent at about 180 degrees to extend back toward the stringer. The shelf stringer is attached to a post which is U-shaped and has apertures for the hooks. These apertures have larger rectangular upper portions for the entry of the hooks and narrower, mostly rectangular lower portions. When the hooks are seated in the lower aperture portions, the hooks bear against the inner front wall of the post in the same area in which the front portion of the end plate of the stringer bears against the outer wall close to the corner of the post, thereby providing a very rigid connection.

3,465,896
BOOKSHELF AND BOOK SUPPORT
Vincent J. Cafiero, Hartsdale, and William I. Sohl, Chappaqua, N.Y., assignors to Art Metal-Knoll Corporation, a corporation of Delaware
Filed July 7, 1966, Ser. No. 589,477
Int. Cl. A47f *5/10;* **A47b** *57/28*
U.S. Cl. 211—184 **4 Claims**



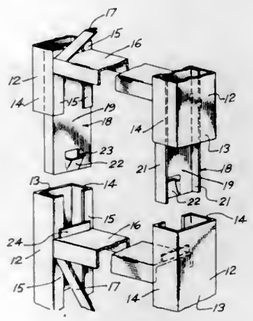
Apparatus including a slidably adjustable book support and means for mounting the book support in a bookshelf wherein the means for mounting the book support includes a channel with flanges secured to the undersurface of the bookshelf and a broad channel-shaped slider support adapted to be slidably received in the channel, the slider support having a pair of laterally extending flanges adapted to be received within the channel and to ride upon the upper surfaces of the flanges of the channel and the book support includes a book follower which depends from the slider support. In an alternative embodiment the book follower is pivotable between horizontal and vertical positions.

3,465,897
STORAGE ARRANGEMENT
Eduard Schumann, Salzgitter-Bad, and Heinz Horn, Salzgitter-Lebenstedt, Germany, assignors to Salzgitter Stahlbau G.m.b.H., Salzgitter-Watenstedt, Germany
Filed July 25, 1966, Ser. No. 567,704
Claims priority, application Germany, July 29, 1965, S 98,519; Sept. 1, 1965, S 99,184
Int. Cl. A47f *5/00*
U.S. Cl. 211—151 **4 Claims**



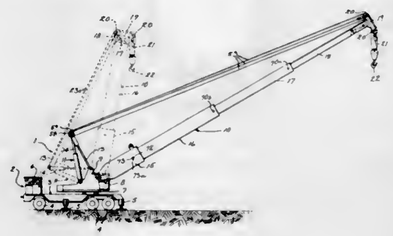
In a storage arrangement, a rack having spaced opposite sides supports a plurality of vertically superposed pallets, each of which is movable independently of the others between a central position in which it is located wholly within the confines of the rack, and two end positions in each of which it partially extends beyond one of the opposite sides of the rack. A guide arrangement guides the pallets for movement, and drive means provides the motive power for their movements.

3,465,898
CONNECTIONS FOR TIERED STORAGE RACK UNITS
Herbert H. Klein, Arlington Heights, Ill., assignor to Unarco Industries, Inc., Chicago, Ill., a corporation of Illinois
Filed May 19, 1967, Ser. No. 639,695
Int. Cl. A47f *5/10;* **F16b** *1/00,*
U.S. Cl. 211—177 **3 Claims**



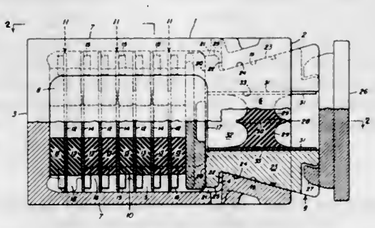
A storage rack is formed by similar rack units that each include vertical hollow posts with an improved connector between the mating posts of adjacent rack units. Pairs of posts in each rack unit have elongated slots therein facing each other, and a perpendicular cross-member serves both as a brace between the posts and also to provide retaining shoulders spaced from the terminal ends of the posts and bridging the posts' slots for cooperation with connector shoulders defined on connector tongues that project from the posts on an adjacent rack unit. The connectors rigidify the ends of the posts on one rack unit and are arranged to be sprung past the retaining shoulders on the other rack unit during tiering assembly of a pair of rack units.

3,465,899
TELESCOPING BOOM FOR HYDRAULIC CRANE
Gottfried Reuter, South Milwaukee, and Julian K. Plymale, Racine, Wis., assignors to Bucyrus-Erie Company, South Milwaukee, Wis., a corporation of Delaware
Filed Aug. 3, 1967, Ser. No. 658,088
Int. Cl. B66c *23/06, 23/62*
U.S. Cl. 212—55 **6 Claims**



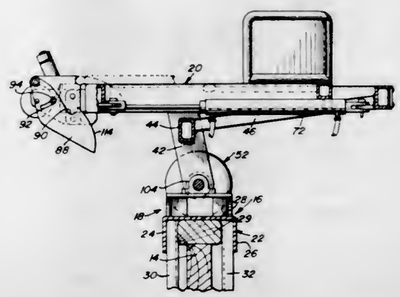
A crane with a four-section, telescopic boom uses cables to operate it. Stretch and suspension cables form block-and-tackles between the top of each section and the bottom of the next upper section. The suspension cable also supports the boom top from an adjustable A-frame. A shrink cable fastened to a second intermediate section passes around pulleys at the bottom of the first intermediate section and the top of a sleeve section. A control cable mounted about pulleys in the ends of the second intermediate section is fastened to the first intermediate and top sections.

3,465,900
FRICTION-POLYURETHANE RUBBER DRAFT GEAR
Geoffrey W. Cope, Williamsville, and Fred G. Suckow, Bowmansville, N.Y., assignors to Symington Wayne Corporation, Depew, N.Y., a corporation of New York
Filed Aug. 30, 1966, Ser. No. 576,079
Int. Cl. B61g *9/06*
U.S. Cl. 213—22 **6 Claims**



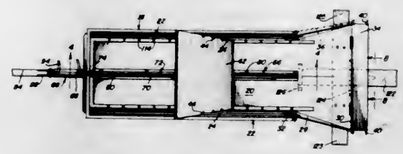
A housed friction-polyurethane rubber draft gear having front friction and rear polyurethane rubber cushioning units arranged in tandem, the friction unit including a pair of wedges releasably interlocked at the front with a plunger and urged apart by a polyurethane wedge spring unit, the wedges normally projecting forwardly from and under compression being retractable inside the housing.

3,465,901
APPARATUS FOR LANDING OVERBOARD GEAR
Edwin T. Grabowski, 5666 Pleasure Point Lane, Bellevue, Wash. 98004
Filed Nov. 20, 1967, Ser. No. 684,133
Int. Cl. B63b *27/00, 23/00*
U.S. Cl. 214—15 **7 Claims**



An overboard gear engaging landing and inverting structure for support from a side or stern portion of a boat for swinging movement about a horizontal axis extending along that portion of the boat and also including means for engaging, releasably locking onto and fully supporting gear hoisted upwardly toward said structure from an overboard position, said structure, after engaging said gear, being thereafter swingable upwardly and inwardly of said boat portion in a manner to invert and inwardly displace the gear supported thereby.

3,465,902
CANE PLANTING APPARATUS
Joseph J. Colletti, 2907 Main St. W., Jeanerette, La. 70544
Filed Sept. 28, 1967, Ser. No. 671,251
Int. Cl. B60p *1/00;* **A01c** *11/02*
U.S. Cl. 214—82 **9 Claims**

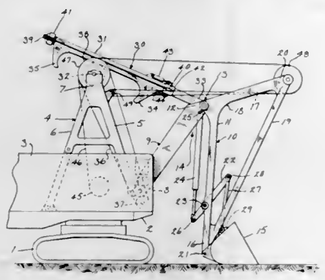


A wagon which receives sugar cane stalks loaded thereon against a discharge panel which is mounted for selective longitudinal movement along the wagon from the front to the rear end thereof so as to effect a rearward movement of the cane as the cane is manually removed from the rear of the wagon for planting. A ratchet bar controlled by a double-acting power cylinder reciprocates so as to selectively advance the discharge panel.

3,465,903
EXCAVATOR SHOVEL APPARATUS
Ellis C. Wilson, South Milwaukee, Wis., assignor to Bucyrus-Erie Company, South Milwaukee, Wis., a corporation of Delaware
Filed Aug. 11, 1967, Ser. No. 659,970
Int. Cl. E02f *3/00*
U.S. Cl. 214—138 **11 Claims**

In both quarry shovel embodiments, the boom is pivoted on the revolving frame, and the crowd handle, mast and bucket handle are pivoted to the boom. The crowd handle

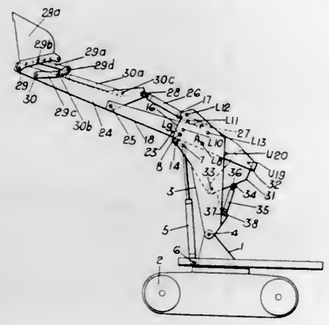
operates from the top of the A-frame to effect a toggle action crowd, and a hoist cable operates the mast that is linked to the bucket handle. A hydraulically controlled bucket is pivoted on the bucket handle. In the first embodiment, the bucket handle, mast and link form an integral triangular framework. In the second, the mast and bucket handle are separately pivoted to the boom and linked by a cable.



3,465,904
ADJUSTABLE BOOM FOR MATERIAL HANDLING EQUIPMENT

Pietro Pensa, Milan, Italy, assignor to Massey-Ferguson Services N.V., Curacao, Netherlands Antilles

Filed Nov. 13, 1967, Ser. No. 682,253
Claims priority, application Italy, Nov. 18, 1966, 30,143A/66; Sept. 8, 1967, 20,292A/67
Int. Cl. E02f *3/00*
U.S. Cl. 214—138 **16 Claims**



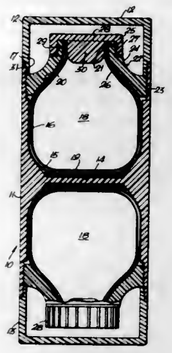
A material handling device having a multi-element boom assembly with interconnecting means between the elements for providing a plurality of operative configurations of the boom assembly with power means for adjusting the relative positions of the elements so as to change the configuration. Power means are provided to move the elements relative to each other to change configuration and locking means hold the elements in fixed relationship during operation.

3,465,905
MULTIPLE VACUUM BOTTLE CONTAINER

Martin Schottanes, 172 Linda Vista Ave., North Haledon, N.J.

Filed June 22, 1967, Ser. No. 647,971
Int. Cl. B65d *1/04, 11/16*
U.S. Cl. 215—6 **2 Claims**

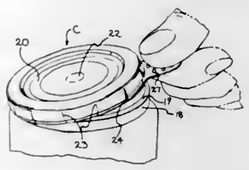
A multiple vacuum bottle container construction including a body member integrally molded of a synthetic plastic and provided with a plurality of deep recesses received within which are vacuum bottles or jars having reduced diameter necks including collar members threadable with the outer ends of the body member recesses and adapted to retain the vacuum bottles in place, the collars having threaded outer end portions for receiving stopper caps arranged and adapted to seal off the contents of an associated vacuum bottle.



3,465,906
CLOSURE CAP HAVING FLEXIBLE SEAL AND OPENER

Warren L. Wagner, Temperance, Mich., and Jack M. Wheaton, Toledo, Ohio, assignors to Owens-Illinois, Inc., a corporation of Ohio

Filed Oct. 3, 1968, Ser. No. 764,727
Int. Cl. B65d *41/46, 41/40*
U.S. Cl. 215—40 **9 Claims**



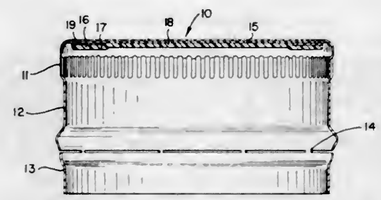
A readily removable aluminum or sheet metal closure cap for glass containers including a transversely scored attaching skirt and a pull-tab carrying sealing ring within the cap shell to which it is bonded only at the top and/or corner, leaving the remainder of the ring free to stretch and move relative to the cap skirt and aid in cap removal due to its pressing against the skirt incident to manipulation of the pull-tab.

3,465,907
CLOSURE SEAL FOR CONTAINERS HAVING SCREW THREADED NECKS

Henry J. Dorn, Pottsville, Pa., and Halford E. Brockett, Elmhurst, Ill., assignors to Continental Can Company, Inc., New York, N.Y., a corporation of New York

Filed Sept. 10, 1968, Ser. No. 758,870
Int. Cl. B65d *53/00*
U.S. Cl. 215—40 **5 Claims**

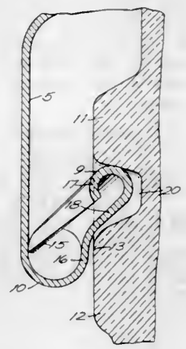
A container closure of the type having an interior lacquer layer and a sealing liner secured therein, the liner having an outer peripheral annular sealing area and an inner central non-sealing area, the lacquer having applied thereto which contacts the liner in the annular sealing area and creates a low order of adhesion between the liner surface and the lacquer layer so that the liner is strongly adherent to the interior surface of the crown in the non-sealing area and poorly adherent to the interior of the crown in the seal area.



3,465,908
CLOSURE CAP AND SEALED PACKAGE

Daniel D. Acton, Lancaster, Ohio, assignor to Anchor Hocking Corporation, Lancaster, Ohio, a corporation of Delaware

Filed Feb. 27, 1967, Ser. No. 618,928
Int. Cl. B65d *41/04*
U.S. Cl. 215—44 **8 Claims**



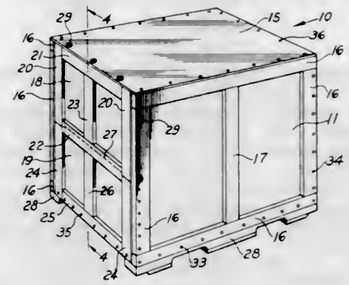
A sealed package comprising an improved closure cap and an improved container finish where the package is sealed by twisting lugs on the closure cap into engagement with lug engaging members on the container and where the lower portion of the closure cap skirt, including the improved lugs, is constructed for fitting snugly about an outwardly facing ledge and about the improved glass finish on the container for forming a barrier to prevent insect infestation or the entrance of other undesirable matter under the closure cap skirt after the package is sealed.

3,465,909
PACKING BOX

John W. Toman, Framingham, and Michael L. Iadarola, Milford, Mass., assignors to the United States of America as represented by the Secretary of the Army

Filed Aug. 10, 1967, Ser. No. 660,887
Int. Cl. B65d *9/06, 19/08*
U.S. Cl. 217—5 **1 Claim**

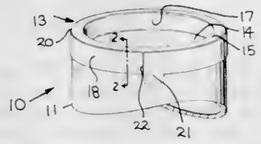
A packing box made of sheet material reinforced by cleats attached to the sheet material having a transversely split end panel, the upper part panel of which is easily removable for loading and unloading the box. The upper part panel abuts the lower part panel along a transverse abutment line which is covered by a transversely extending cleat fastened to the upper part panel and overlapping the lower part panel. The upper and lower part panels are provided with vertically extending cleats spaced from the sides of the part panels and abutting the transversely extending cleat.



3,465,910
CONTAINER CLOSURE HAVING INTEGRAL STRIP OPENING MEANS

Carlton A. Richie, Toledo, Ohio, assignor to Owens-Illinois, Inc., a corporation of Ohio

Filed Oct. 2, 1967, Ser. No. 672,038
Int. Cl. B65d *17/20*
U.S. Cl. 220—54 **2 Claims**

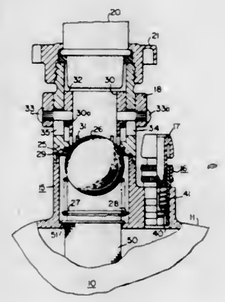


A novel closure for open-mouth container comprising a top panel and a depending attaching skirt which skirt is provided with a removable tear strip.

3,465,911
VALVED CONTAINER

Augustine L. Colarusso, Boston, Mass., and Frederick Hushen, Amherst, N.H., assignors to Van Brode Milling Co., Inc., Clinton, Mass., a corporation of Massachusetts

Filed May 8, 1968, Ser. No. 727,621
Int. Cl. B65d *25/38*
U.S. Cl. 220—86 **7 Claims**



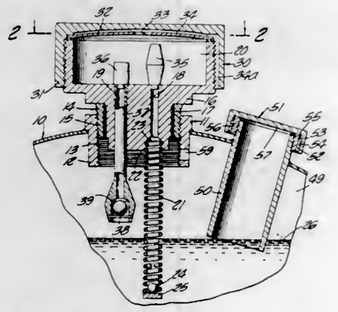
A self-closing liquid container in which a wall of the container body is provided with a necked opening having a normally closed resilient main valve in an arrangement

that may be opened either manually or by insertion of a fitting nozzle in the opening neck. A normally closed vent valve is positioned in the container wall adjacent the necked opening and interconnected with the main valve to be opened whenever the main valve is opened.

3,465,912
SAFETY VENT AND FILLER CAP FOR VEHICLE GASOLINE TANK

Robert I. Fleming, Newport Beach, and Howard M. Froby, Lynwood, Calif., assignors to Fleming Metal Fabricators, Los Angeles, Calif., a corporation of California

Application Dec. 2, 1966, Ser. No. 598,652, now Patent No. 3,385,468, dated May 28, 1968, which is a continuation-in-part of application Ser. No. 472,268, July 15, 1965. Divided and this application Dec. 1, 1967, Ser. No. 714,374
Int. Cl. B65d *25/20, 51/16*
U.S. Cl. 220—89 **5 Claims**

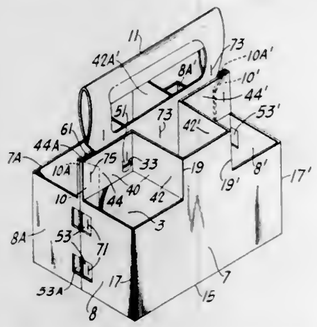


A thin annular band of fusible alloy joins a body member to a threaded ring element, and the latter is threadedly engaged with a tubular member communicating with the interior of a fuel tank. When the temperature of the fusible alloy reaches its melting point, the body member may separate axially from the ring element to permit venting of the tank to atmosphere.

3,465,913
COLLAPSIBLE BOTTLE CARRIER

Peter A. Zorn and George R. Scheuring, Pittsburgh, Pa., assignors to Sinclair-Koppers Company, a partnership of Delaware

Filed June 17, 1968, Ser. No. 737,536
Int. Cl. B65d *75/00, 5/46, 5/48*
U.S. Cl. 220—111 **8 Claims**

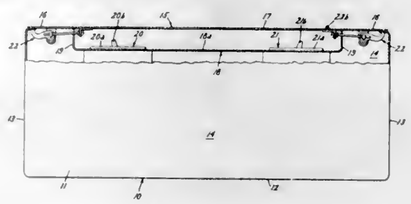


A collapsible bottle carrier is formed from a single sheet of flexible material, such as polyethylene, the carrier having a reinforced central partition and a plurality of bottle compartments. The carrier is locked into upstanding position by the use of a slot in the partition and locking tabs formed from portions of the end walls of the container, and is readily collapsed to a lay flat position for shipment when empty.

3,465,914
CONCEALED TRIM CLAMP FOR ELECTRICAL PANELBOARDS AND TELEPHONE CABINETS

William D. Pierson, Jr., deceased, late of West Hartford, Conn., by Rilla May Curtis Pierson, administratrix, West Hartford, Conn., assignor to General Electric Company, a corporation of New York

Filed June 24, 1968, Ser. No. 740,447
Int. Cl. B65d *51/00;* **H05k** *5/03;* **E05c** *3/00*
U.S. Cl. 220—24.3 **7 Claims**

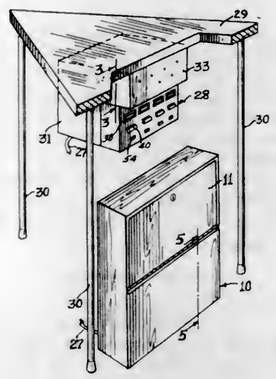


A concealed trim clamp for electrical panelboards and telephone cabinets including a clamp member pivotally mounted on a bracket on the inside of a "trim" or box front cover and having a nut pivoted thereon which receives the end of an elongated screw, the head of the screw being accessible for operation only when the door in the "trim" is open.

3,465,915
LIQUID METERING AND DISPENSING APPARATUS

Robert de Harde, 6331 Navajo Ave., Chicago, Ill. 60646

Filed Aug. 11, 1966, Ser. No. 571,746
Int. Cl. B67d *5/16, 5/22, 3/00*
U.S. Cl. 222—66 **1 Claim**

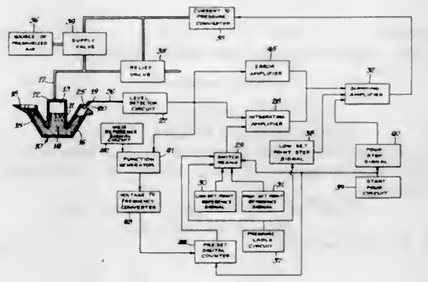


An electrically controlled apparatus, including a pump and solenoid actuated valve for dispensing a metered volume of liquids from a supply vessel with each successive disbursement being uniform in volume, and a circuit control for deenergizing the apparatus' operation when the liquid in the supply vessel attains a predetermined low level of volume.

3,465,916
METHOD AND SYSTEM FOR POURING LIQUID METAL BY MEASURED VOLUME

William D. Hibbard, Wauwatosa, James E. Clark, Menomonee Falls, and Bernard R. Rapp, Port Washington, Wis., assignors to Modern Equipment Company, Port Washington, Wis., a corporation of Wisconsin

Filed Feb. 23, 1968, Ser. No. 707,673
Int. Cl. B67d *5/08*
U.S. Cl. 222—70 **14 Claims**



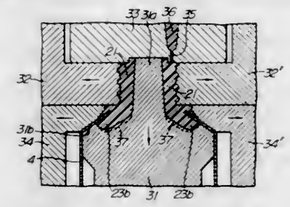
The liquid to be poured is contained in an interior chamber of a sealed ladle. Gas under pressure is introduced into the chamber to displace the liquid and force it over a weir in a discharge spout communicating with the bottom of the ladle. A level detector generates an electrical signal representative of the liquid level in the spout. This signal is fed to an integrating amplifier having a rate of change of output signal which is a function of the difference between the level signal and a reference signal. To bring this system to an operative state, a first electrical step signal is introduced into the control loop for abruptly increasing the pressure in the ladle and the reference signal of the integrating amplifier is a first signal for maintaining the liquid at a constant level below the weir. When it is desired to pour, a second step signal is introduced into the control loop for generating a second abrupt increase in ladle pressure to force the liquid over the weir; and at the same time, the reference signal of the integrating amplifier is switched to a second signal for maintaining the liquid at a constant level above the weir thereby insuring a constant flow rate during pouring. A function generator receives the level signal and generates a signal representative of the actual pouring rate. This rate signal, in turn, feeds a voltage-to-frequency converter having an instantaneous frequency representative of the liquid flow rate. A preset digital counter receives this converter output signal; and when the preset count (indicative of a desired volume) is reached, it switches the reference signal input to the integrating amplifier to the first signal level thereby causing the liquid level in the spout to fall below the weir and terminate the pour.

3,465,917
METHOD FOR THE PRODUCTION OF PLASTIC TUBES

Fumio Saeki, Osaka, Japan, assignor to Taisei Kako Kabushiki Kaisha, Osaka, Japan, a corporation of Japan

Filed Mar. 31, 1967, Ser. No. 627,414
Claims priority application Japan, June 29, 1966, 41/42,553; Dec. 3, 1966 (utility model), 41/110,774
Int. Cl. B65d *35/14;* **B29d** *3/00, 23/02*
U.S. Cl. 222—107 **17 Claims**

A plastic tube consisting of a tubular body section and a lid section formed on one end of said tubular body section by injection molding with the edge portion of

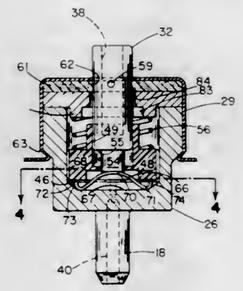


that end of the tubular body embedded therein and rigidly connected thereto by melt bonding.

3,465,918
DISPENSING VALVE

Milo Edward Webster, Braintree, Mass., assignor to The Gillette Company, Boston, Mass., a corporation of Delaware

Filed Dec. 7, 1967, Ser. No. 688,751
Int. Cl. B67d *5/56;* **F16k** *11/04, 19/00*
U.S. Cl. 222—136 **22 Claims**



A pressure delivery device has inner and outer compartments, each storing a separate ingredient. A valve assembly includes a mixing chamber having an outlet passage, an inlet passage from the outer compartment of 0.017 inch inner diameter and an inlet passage from the inner compartment of 0.030 inch inner diameter. A nylon valve plug in the mixing chamber is biased by a compression spring to normally seal both inlet passages. An actuator stem is slidably received in a coaxial bore of the valve plug and extends through outlet passage. The stem has a bore which defines a discharge passage and ports in its walls are moved into communication with the mixing chamber when the stem is depressed. A leaf spring having a convex central portion and two concave end portions is disposed in the mixing chamber below the valve plug. When the stem is depressed, it flexes the leaf spring and the end portions of that spring lift the plug to open the inlet passages so that the two ingredients flow into the chamber for mixing and then are dispensed through the discharge passage.

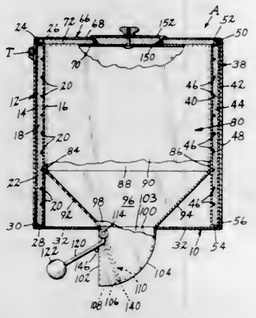
3,465,919
DEVICE FOR STORING AND DISPENSING HOT FOOD

William C. Sizer, Milwaukee, Wis. (Box 832, Minneapolis, Minn. 55440)

Filed Aug. 30, 1967, Ser. No. 664,417
Int. Cl. B65d *47/00;* **B67d** *5/62*
U.S. Cl. 222—146 **2 Claims**

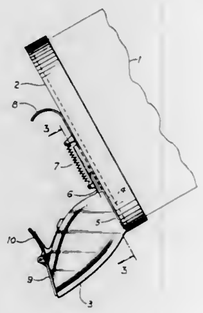
The disclosure includes a housing for the storage and dispensing of hot food, the housing including separate insulated compartments each having a hopper bottom and a

wide mouthed tap valve at the lower end of the hopper for dispensing of desired amounts of the food. The compartments are heated whereby the food is kept warm.



The housing is provided with front and rear removable plate portions for replacement of parts if necessary. Each compartment is provided with a cover for filling and cleaning the compartment.

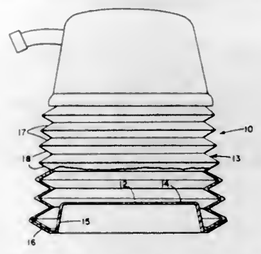
3,465,920
COFFEE DISPENSER
Elmer B. Brumfield, 1136 W. Long St., Stephenville, Tex. 76401
Filed May 10, 1968, Ser. No. 728,177
Int. Cl. B67d *5/38;* **G01f** *11/28;* **B65d** *47/00*
U.S. Cl. 222—154 **1 Claim**



A friction type cover formed of molded plastic material, for application to a cylindrical container, such as a coffee can, having incorporated therein dispensing means comprising an upstanding, transparent measuring and pouring spout, positioned adjacent one side of the cover, having a spring biased sliding gate normally closing its inner end and a spring tensioned hinged closure normally closing its outer end.

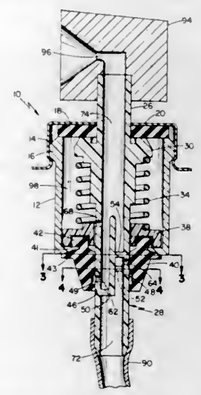
3,465,921
CONTAINER
Joseph Mullan, 217 Northway, Baltimore, Md. 21218
Continuation-in-part of application Ser. No. 486,020, Sept. 9, 1965. This application Oct. 23, 1967, Ser. No. 677,145
Int. Cl. B65d *35/48*
U.S. Cl. 222—212 **3 Claims**

A device for dispensing liquid or paste like substances which consists of a collapsible container, an outlet opening at the top of the container and a closure and valve mechanism at the outlet opening operable by manual pressure on the closure to open the valve and simul-



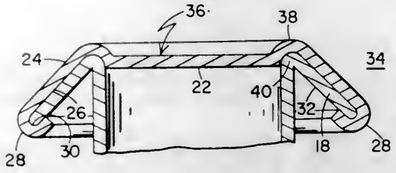
taneously to collapse the container to effect discharge of the contents through the outlet opening.

3,465,922
PRESSURIZED SPRAY DEVICE
Milo Edward Webster, Braintree, Mass., assignor to The Gillette Company, Boston, Mass., a corporation of Delaware
Filed Dec. 13, 1967, Ser. No. 690,157
Int. Cl. B65d *83/14*
U.S. Cl. 222—402.18 **14 Claims**



Pressurized spray device in which small amount of propellent is accumulated in auxiliary compartment during spraying, and discharges from auxiliary compartment to purge spraying orifice when valve is closed. Flow is controlled by seal surrounding stem, orifices through stem wall, and internal stem baffling.

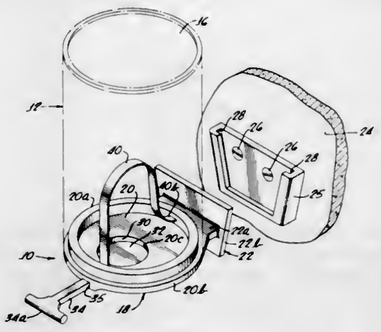
3,465,923
SEALING ASSEMBLIES FOR CONTAINERS
Robert S. Konefal, Nashua, N.H., assignor to Improved Machinery, Incorporated, Nashua, N.H., a corporation of Delaware
Filed Oct. 28, 1966, Ser. No. 590,253
Int. Cl. B65d *5/72, 41/16*
U.S. Cl. 222—498 **4 Claims**



A throated container having an extending lip, and a cap for closing the throat having an extending wall, said

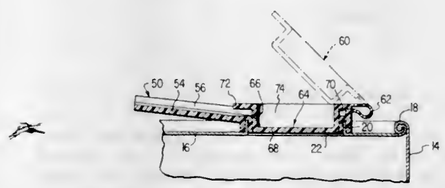
wall and lip having stable over-center positions when extending diagonally of the throat axis, and flexible, in toggle-like action, between upward and downward diagonally-extending, stable, over-center positions.

3,465,924
SOAP DISPENSER
John Michaels, San Pedro, Calif., assignor to United States Borax & Chemical Corporation, Los Angeles, Calif., a corporation of Nevada
Filed Sept. 27, 1967, Ser. No. 670,884
Int. Cl. B67d *3/00;* **G01f** *11/40*
U.S. Cl. 222—511 **3 Claims**



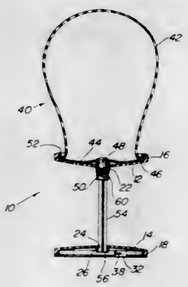
A disposable soap dispenser is supported by a wall mounted lid on its lower end. A flexible flat spring loop extends across a dispensing opening in the lid and urges a sildeable closure to block the opening. When the closure is slid away from the opening, the spring is flexed across the lower portion of the container to agitate the contents.

3,465,925
COMBINED PLASTIC CLOSURE AND POURING SPOUT
Alberto Bertolli, Lucca, Italy, assignor to Francesco Bertolli S.p.A., Lucca, Italy, a corporation of Italy
Filed May 25, 1967, Ser. No. 641,286
Claims priority, application Italy, Feb. 1, 1967, 15,723/67, 15,772/67
Int. Cl. B65d *47/28*
U.S. Cl. 222—536 **5 Claims**



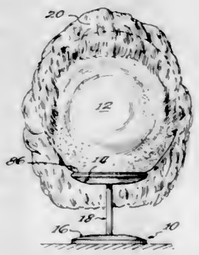
A combined plastic closure and pouring spout in one single piece which frictionally fits over the upstanding neck of a metal container. The body of the closure has a central opening therethrough and a cover carries a depending plug portion which can resiliently seal the central opening when the cover is in closed position. A plastic ribbon integrally connects the cover to the body of the closure to form an attaching hinge means.

3,465,926
COLLAPSIBLE WIG STAND
Natalie Pels Schwartz and Norman L. Voller, Chicago, Denver C. Hamman, Palatine, and Robert D. Chapman, Des Plaines, Ill., assignors, by mesne assignments, to Countess Natalie, Inc., Chicago, Ill., a corporation of Illinois
Filed Mar. 29, 1968, Ser. No. 717,108
Int. Cl. A45d *44/14*
U.S. Cl. 223—67 **10 Claims**



A pair of dish-shaped members releasably cooperates to afford a pocket-size container for retaining therein a collapsed, inflatable head form and a rigid standard. The head form carries its own valve means and is removably attached to one of the body members. The standard is engageable between the separated body members to afford an erected wig stand in which the lower body member functions as a base and the upper body member has the attached thereto inflated head form projecting upwardly therefrom.

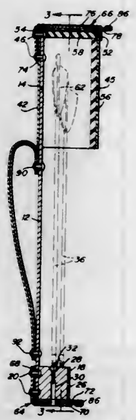
3,465,927
WIG STAND
Paul Belokin, Jr., Brookfield, Ill., assignor, by mesne assignments, to Countess Natalie, Inc., Chicago, Ill., a corporation of Illinois
Continuation of application Ser. No. 633,010, Apr. 24, 1967. This application Oct. 24, 1968, Ser. No. 777,967
Int. Cl. A45d *44/14*
U.S. Cl. 223—67 **9 Claims**



A wig support structure capable of assuming an attractive pocket-sized carrying condition wherein a pair of dish-shaped members cooperate frictionally to form a container. An inflatable head form is connected to one of the members and the assembled container accommodates therein an elongated standard as well as the deflated head form. To erect the wig support, the members are separated and inverted so that one member functions as a base which supports the upright standard and the head form-carrying cover member mounted on the

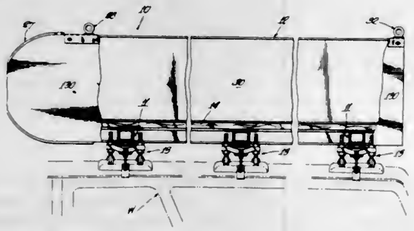
top of the standard. The erected support has unusual mechanical stability and the inflated head form is elevated considerably from the base.

3,465,928
ARROW QUIVER AND BOW HOLDER
Charles D. Osterholm, 2006 Earl St., Centralia, Wash. 98531
Filed Nov. 15, 1967, Ser. No. 683,403
Int. Cl. F41b *5/06;* **A45f** *3/00*
U.S. Cl. 224—1 **5 Claims**



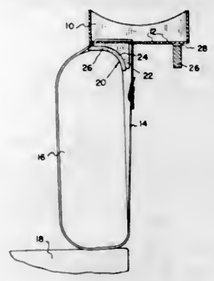
An elongated upstanding support assembly including a lower horizontal portion provided with upwardly opening recess means adapted to downwardly receive therein the arrow head ends of a plurality of upstanding arrows, the support assembly further including an upper downwardly opening portion adapted to upwardly telescopingly receive therein the upper fletched ends of the arrows supported from the support assembly and the latter including shoulder harness means adapted to support the upstanding support assembly on the back of a bowman with the lower horizontal portion of the support assembly disposed slightly below the waist of the bowman and the support assembly projecting slightly above the shoulders of the bowman.

3,465,929
CAR TOP CARRIERS
Andro J. Chorey, 8315 Gibson Road, Canfield, Ohio 44406
Filed Apr. 4, 1967, Ser. No. 628,487
Int. Cl. B60r *7/00, 9/00, 11/00*
U.S. Cl. 224—42.01 **4 Claims**



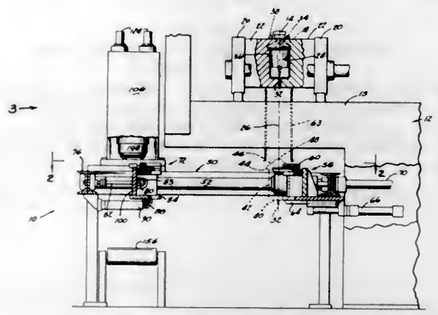
A car top carrier adapted to be removably secured to the roof of an automotive vehicle which includes a weather-tight box having a floor, front rear and side walls, and a top. The top and all of the walls are removable from the floor when the latter is to be used alone and the floor is extensible to overhang the sides of the vehicle. When its area is to be temporarily increased, for example, to provide for erection of a tent thereover for camping purposes.

3,465,930
DEVICE FOR CARRYING AND SUPPORTING PETS IN MOTOR VEHICLES
Francis A. La Croix, 436 Pearl St., Marine City, Mich. 48039
Filed Nov. 6, 1967, Ser. No. 680,714
Int. Cl. B60r *7/00, 9/00*
U.S. Cl. 224—42.42 **2 Claims**



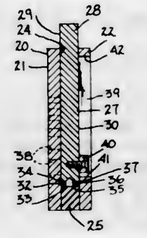
A pet platform detachably mountable on the front seat of a motor vehicle which may also serve as a pet carrying basket when it is detached from the vehicle seat.

3,465,931
METHOD OF AUTOMATICALLY TRIM FINISHING BLOW MOLDED PLASTIC ARTICLES
Samuel J. Rupert, Ann Arbor, Mich., assignor to Hoover Ball and Bearing Company, Saline, Mich., a corporation of Michigan
Original application Nov. 6, 1964, Ser. No. 409,384, now Patent No. 3,351,981, dated Nov. 14, 1967. Divided and this application July 17, 1967, Ser. No. 653,790
Int. Cl. B26f *3/00, 3/02;* **B65h** *35/00*
U.S. Cl. 225—1 **3 Claims**



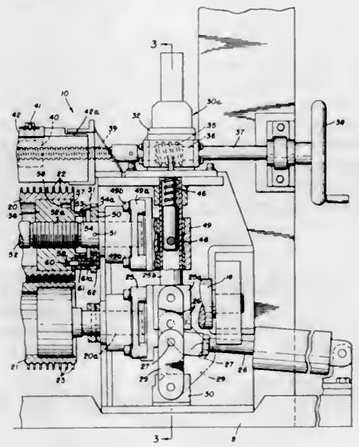
A method of and an apparatus for initially blow molding a plurality of hollow plastic articles and thereafter trimming the articles so that the top walls and tails thereof formed in the blow molding operation are removed. Each of the molds has a cavity for defining the blown article so that it has an annular bulbous projection adjacent to the top wall, and each mold has a notch at the bottom parting line so that the tail is an extension in a vertical plane containing the axis of the blown article. The trim apparatus includes a transfer bracket positioned below the molds to receive the articles discharged therefrom. The articles are supported by resting the bulbous projections on portions of the transfer bracket, and the articles are moved by the transfer bracket horizontally in a direction perpendicular to the vertical plane of the tail to locating brackets which cooperate with the supporting portions of the transfer bracket to define annular nesting portions for the articles. During movement, the tails on the articles are moved across a stripper bar which tears the tails off the articles. In the final position of the transfer bracket, each article is vertically aligned with an annular cutter which on downward movement trims off the top of the article and part of the bulbous projection leaving an outwardly flared lip.

3,465,932
BOLT CUTTING DEVICE
Richard B. Freeman, 3354 Dorchester Road, Shaker Heights, Ohio 44120
Filed Dec. 15, 1966, Ser. No. 602,059
Int. Cl. B65h *35/10;* **B26f** *3/02;* **B26d** *3/00*
U.S. Cl. 225—2 **17 Claims**



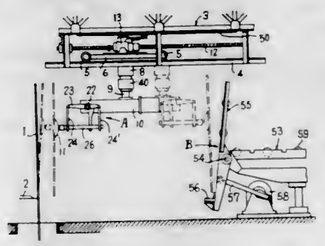
An impact bolt cutting device having a cutting edge for diametrically shearing a bolt portion and having a tensioning abutment spaced from the shearing edge for applying a diametrical force to the bolt outwardly of the cutting area and in the same direction for separating the sliced surfaces and placing the cutting area under tension during the cutting action.

3,465,933
PICK BREAKING APPARATUS
Everett D. George, 2446 Chestnut Blvd., Cuyahoga Falls, Ohio 44223
Continuation-in-part of application Ser. No. 444,663, Apr. 1, 1965. This application Dec. 10, 1965, Ser. No. 515,803
Int. Cl. B26f *3/00, 3/02;* **B65h** *35/00*
U.S. Cl. 225—97 **10 Claims**



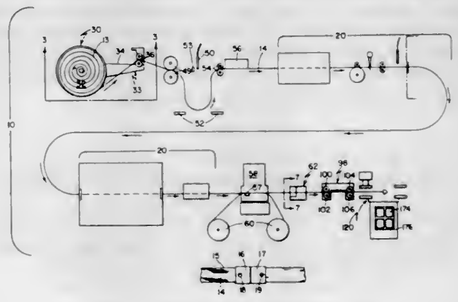
Apparatus for breaking the pick threads of tire cord fabric is disclosed, including a pair or pairs of rolls having mutually interfitting grooves and flanges, one roll of a pair and/or one of a plurality of pairs are adjustably positioned with respect to the other thereof to alter the degree of interaction between the flanges of cooperating rolls.

3,465,934
APPARATUS FOR AUTOMATICALLY CRACKING OFF A GLASS SHEET AND TAKING OFF CRACKED OFF GLASS PLATES
Shigeo Ono, Seiichi Kayano, and Ryoichi Negishi, Yokohama, Japan, assignors to Asahi Glass Co., Ltd., Tokyo, Japan
Filed Oct. 16, 1967, Ser. No. 675,661
Claims priority, application Japan, Oct. 18, 1966, 41/68,078; Nov. 30, 1966, 41/78,044
Int. Cl. B26f *3/00, 3/02;* **B65h** *35/00*
U.S. Cl. 225—103 **5 Claims**



A taking off device provided with chucks capable of adhering to a glass sheet by suction is located by the side of a continuously rising glass ribbon so as to be able to move forwardly and backwardly to said glass ribbon. The vacuum chucks are caused to adhere to the surface of the continuously rising glass ribbon by suction and the glass sheet ribbon can be risen positively by the power of cylinder. An external force is acted on the scored glass sheet in the direction perpendicular to the surface of the glass sheet while the glass sheet being positively raised by the power of cylinder, whereby said glass sheet ribbon is cracked off along scored lines and the cracked off glass plate is broken apart from the said rising glass sheet ribbon.

3,465,935
STRIP HANDLING SYSTEM
Frank Samuel Martin, Wenham, Mass., assignor to The Gillette Company, Boston, Mass., a corporation of Delaware
Filed Oct. 14, 1966, Ser. No. 586,713
Int. Cl. B26f *3/00;* **B23d** *25/00*
U.S. Cl. 225—103 **19 Claims**



Apparatus for inspecting and segmenting sharpened steel razor strip stock into a series of razor blade lengths includes a supply station which holds a coil of razor blade

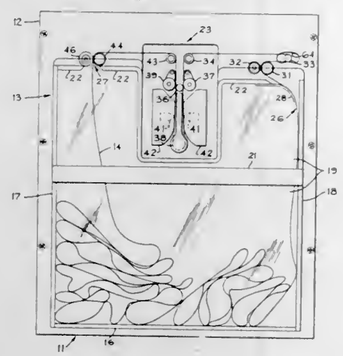
stock; a pair of pullout rollers and a tension and brake control responsive to the operation of the pullout rollers; a vacuum tension control block for applying a controlled amount of tension to the strip stock; a series of inspection stations which sense defects in the sharpened strip; apparatus for placing pairs of U-shaped tabs on the inspected strip; tab detector apparatus for checking the proper placement of the tabs; a segmenting station at which the strip is snapped into razor blade lengths between the tabs of each pairs; and a loading station where the good razor blade lengths are deposited into a tray and the defective blade lengths are discarded.

3,465,936

TAPE TENSIONING APPARATUS

Harold T. Wright, Belmont, Calif., assignor to Ampex Corporation, Redwood City, Calif., a corporation of California

Filed May 2, 1966, Ser. No. 546,924
Int. Cl. B65h *23/18, 24/04;* **G03b** *1/46*
U.S. Cl. 226—39 **3 Claims**



To tension magnetic tape coming from a folded-storage bin and across transducing heads to a capstan, a drag idler and pinch roller is provided between the bin and heads. The drag idler is provided with a spring-tensioned brake band, which establishes the hold-back and tensioning force applied to the tape, and ensures that all frictional slippage takes place not between the tape and idler, where damage would result to the tape, but rather between the idler and the brake band. The tape between the idler and capstan is looped around a roller that is mounted at the end of a pivoted tension-sensing lever, which in turn is connected to the brake band so as to relieve the braking force when the tape tension exceeds a predetermined value. Thus the tape tension is automatically maintained precisely at this value.

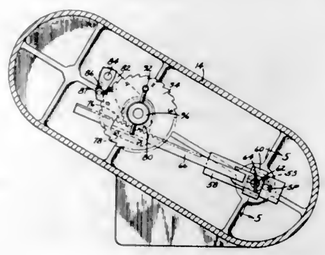
3,465,937

DEVICE FOR INTERMITTENTLY FEEDING STRIP MATERIAL

John H. Gruver, Cleveland, and Hal K. Moe, Willowick, Ohio, assignors to Addressograph Multigraph Corporation, Cleveland, Ohio, a corporation of Delaware

Filed June 30, 1967, Ser. No. 650,321
Int. Cl. G03b *1/24;* **B65h** *17/40*
U.S. Cl. 226—76 **9 Claims**

A strip feeding device for use with an imprinting machine forwards a strip containing marginally spaced holes and advances it intermittently in equal steps by pin wheels which engage the holes. The strip may contain an image to be transferred to a record form or it may itself receive



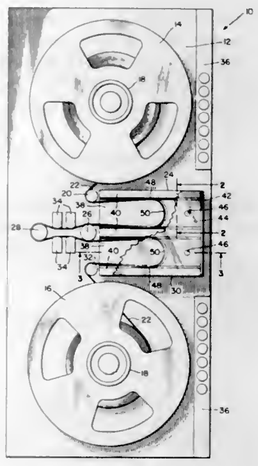
an imprint, depending on the imprinting process employed.

3,465,938

STABILIZING APPARATUS FOR A THIN FLEXIBLE MEMBER

Robert F. McCammon and Darrell D. Parker, Denver County, Colo., assignors to Honeywell Inc., Minneapolis, Minn., a corporation of Minnesota

Filed Jan. 2, 1968, Ser. No. 695,157
Int. Cl. B65h *23/34, 17/32*
U.S. Cl. 226—88 **2 Claims**



A vacuum column or tape bin for edge guiding magnetic tape having side walls inwardly sloped for affecting the tape as it travels through the vacuum column by urging the tape against the base and cover of the column.

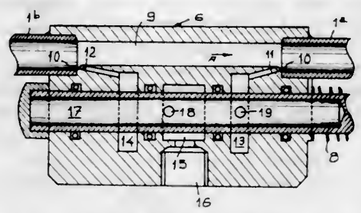
3,465,939

DEVICE FOR GUIDING A THREAD

Hubert Peter van Mullekom, Deurne, Noord-Brabant, Netherlands, assignor to N.V. Machinefabriek L. Te Strake, Deurne, North Brabant, Netherlands, a Dutch company

Filed July 17, 1967, Ser. No. 653,756
Claims priority, application Netherlands, July 19, 1966, 6610174
Int. Cl. B65h *17/32, 23/08*
U.S. Cl. 226—97 **4 Claims**

This device for guiding a thread includes a guiding channel for the thread which is provided with at least two orifices for discharging a fluid between the ends of the channel. Two of the orifices are so arranged relative to the channel as to discharge fluid in opposite directions such that the fluid discharged from one orifice leaves the



channel at one end and the fluid streaming out of the other orifice leaves the channel at its other end.

ERRATUM

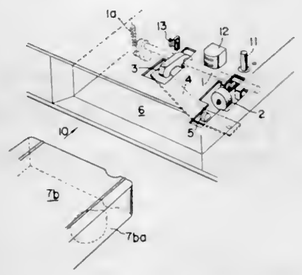
For Class 226—160 see:
Patent No. 3,466,660

3,465,940

INTERCHANGEABLE FOUR-TRACK AND EIGHT-TRACK MAGNETIC RECORDING AND REPRODUCING DEVICE

Susumu Kuwabara, Tokyo-to, Japan, assignor to Beltek Kabushiki Kaisha, Tokyo-to, Japan, a joint-stock company of Japan

Filed Dec. 5, 1967, Ser. No. 688,089
Claims priority, application Japan, Dec. 10, 1966, 41/112,213
Int. Cl. B65h *17/20;* **G11b** *5/00*
U.S. Cl. 226—176 **4 Claims**



Four-track and eight-track tape cartridges are distinguished by the difference of one type having an aperture and the other type not having an aperture into which a lug of a mechanism in a magnetic recording and reproducing device can enter when the cartridge with the aperture is inserted, thereby causing a pinch roller of the device to swing into operational position against the tape and a capstan. The type of cartridge without the aperture does not actuate the pinch roll of the device but has a built-in pinch roller for direct contact with the tape against the capstan. The two types of cartridges can be used interchangeably for automatically interchanged operation.

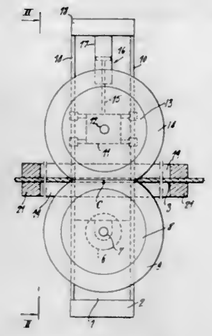
3,465,941

CABLE HAULING AND RELEASING DEVICE

Gilbert Fournier, Le Havre, France, assignor to Ateliers et Chantiers du Havre Duchesne & Bossiere et Augustin-Normand Reunis, Le Havre, France

Filed Dec. 1, 1966, Ser. No. 598,358
Int. Cl. B65h *17/20*
U.S. Cl. 226—177 **2 Claims**

Apparatus for hauling and slipping of cables having a set of wheels in vertical alignment engaging the cable with a power converting means rotatively engaging one wheel and a vertical jack connected to the shaft of the



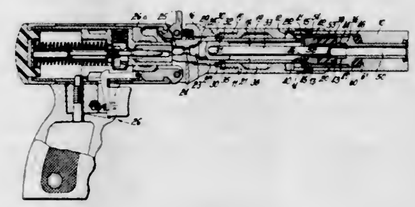
other wheel to control both the speed of rotation of the one wheel and the amount of pressure exerted on the cable by the other wheel.

3,465,942

FASTENER DRIVING TOOL

Karl Diehl, Wuppertal-Elberfeld, Germany, assignor to Carl Bauer, Wuppertal-Cronenberg, Germany

Filed Nov. 8, 1966, Ser. No. 592,770
Claims priority, application Germany, Nov. 11, 1965, B 84,456; Nov. 26, 1965, B 84,708
Int. Cl. B25c *1/12, 1/14*
U.S. Cl. 227—10 **7 Claims**



An explosion-actuated fastener driving tool in which a piston reciprocably arranged in a housing is propelled forwardly in response to firing of a charge in a firing chamber in the housing to drive a fastener from the front end of the housing into a workpiece, and wherein means are provided in the housing for braking forward movement of the piston to dissipate such surplus of energy which is not required for satisfactory introduction of the fastener into the workpiece.

3,465,943

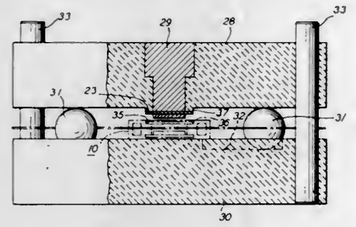
APPARATUS FOR MAKING ENCAPSULATIONS

James E. Clark, Coopersburg, Pa., and Ian M. Ross, Bethesda, Md., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Original application Mar. 16, 1965, Ser. No. 440,163. Divided and this application Mar. 31, 1967, Ser. No. 646,778
Int. Cl. B23k *1/00, 31/02, 5/22*
U.S. Cl. 228—4 **6 Claims**

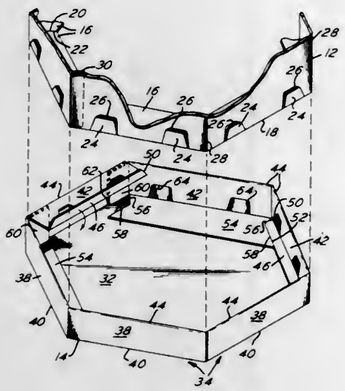
An integrated circuit encapsulation comprises two substantially identical ceramic body portions having corresponding peripheral troughs for containing a glass sealant which hermetically seals the body portions to leads ex-

tending into the enclosure. When sealed, side walls of the troughs clamp on opposite sides of the leads to provide reinforcement. During fabrication, a flat cover is soldered on a cover seat of one of the ceramic body portions by the following steps: placing a solder sealing element along



the cover seat; displacing the cover a short distance above the cover seat by means of a magnet mounted in an upper mounting member; bracing the upper mounting member in position by a plurality of solder support members; and heating the assembly to melt the solder.

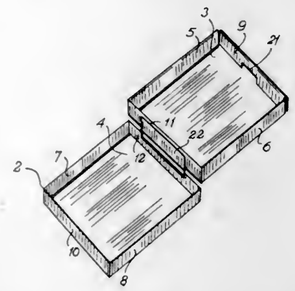
3,465,944
BOX CONSTRUCTION
Herman E. Robinson, Wynnewood, Pa., assignor to Boas Box Company, Ardmore, Pa., a corporation of Pennsylvania
Filed Apr. 1, 1968, Ser. No. 717,548
Int. Cl. B65d *3/12, 5/12*
U.S. Cl. 229—5.5 **6 Claims**



A box construction comprising a tubular body portion and at least one end closure member, the end closure member being constructed from a flat blank and having a peripheral lip made up of a plurality of lip segments, locking flanges on the lip segments to maintain the end closure in assembled relation, and tab elements on the body portion for retaining the end closure in contact with the body portion.

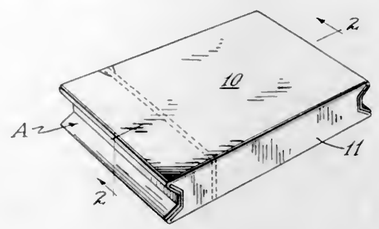
3,465,945
CARDBOARD BOX
Knud Roeland Reenberg, 20 Ryparken, Copenhagen, Denmark
Filed Feb. 28, 1968, Ser. No. 708,920
Int. Cl. B65d *5/22*
U.S. Cl. 229—34 **2 Claims**

A carton assembly produced from paperboard in which a cover is hingedly connected to the body forming portion, and in which both cover and body are produced as separate elements and incorporate outer base walls bordered at opposite sides by side walls having inwardly directed lock tabs; outer end walls having inwardly folded lock panels. in which one of the lock panels has an inner wall positionable within the carton body or cover, and in which one of the members has a handle forming portion comprising a slit formed intermediately and through the outer wall panel at its base or hinge line, and the lock



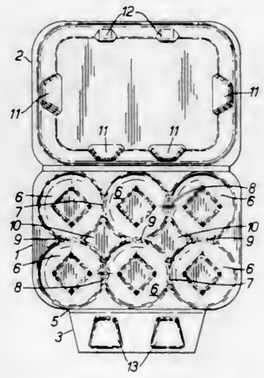
panel has formed at the hinge line between the inner wall and the lock panel element a struck-out handle tab which is extendable through the slit; and in which the other member includes at the end opposite that which the handle-forming portion is provided, a glue tab cut from the inner lock panel elements and hingedly connected to the upper edge thereof and secured to the adjacent end wall of the other member in which the handle-forming portion is provided.

3,465,946
RECESSED END CONTAINERS
Ronald V. Johnson, Bloomington, Minn., assignor to Hoerner-Waldorf Corporation, St. Paul, Minn., a corporation of Delaware
Filed Oct. 26, 1967, Ser. No. 678,386
Int. Cl. B65d *5/14, 65/22*
U.S. Cl. 229—40 **9 Claims**



This invention relates to a recessed end container comprising a rectangular tubular sleeve having a pair of parallel main panels marginally connected by a pair of side wall panels. Flap structures are hingedly connected to the ends of the main panels. Each flap structure includes three rectangular flanges connected by a pair of fold lines which are parallel to the fold lines connecting the flap structures to the main panels. The flanges comprise, in series, a first spacer flange hinged to the main panel, a partition panel, and a second spacer flange. The three flanges are folded into channel-shaped form, with the spacer flanges diverging from the edges of the partition flange. The partition flange of the inner flap structure is provided with opposed vertically projecting ears which extend substantially their full height of the interior of the container to hold the partition flanges centered between the main panels. The container side walls are notched to accommodate the ends of the channel-shaped flap structures.

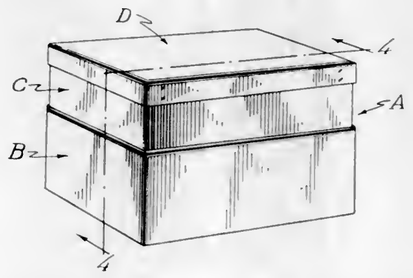
3,465,947
CONTAINERS
Kenneth Ernest Andrews and Kevin Westman, Gloucester, England, assignors to The British Petroleum Company Limited, London, England, a corporation of Great Britain
Filed Mar. 5, 1968, Ser. No. 710,573
Claims priority, application Great Britain, Mar. 8, 1967, 10,825/67
Int. Cl. B65d *5/64, 3/24*
U.S. Cl. 229—44 **10 Claims**



An egg box incorporates a novel closing device which comprises a locking flap containing a recess which forms a re-entrant with a corresponding projection on the lid of the box when the box is closed. The re-entrant is destroyed by distorting the lid by prising its front surface away from the flap. When this is done, the box opens easily.

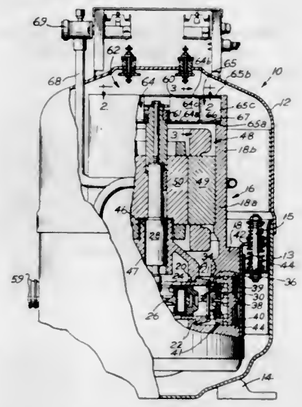
The box is thermoformed from foamed polystyrene sheeting.

3,465,948
DISPOSABLE COOLER
Gary W. Boyer, Sand Springs, Okla., assignor to Hoerner-Waldorf Corporation, St. Paul, Minn., a corporation of Delaware
Filed Oct. 3, 1967, Ser. No. 672,563
Int. Cl. B65d *5/56, 5/48, 5/58, 5/62*
U.S. Cl. 229—14 **8 Claims**



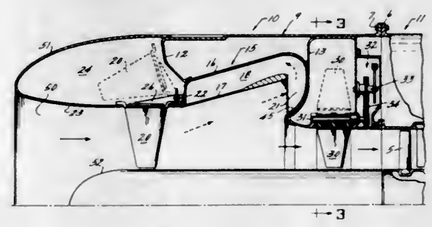
The invention comprises a disposable cooler for bottled or canned beverages and the like. The cooler includes a base unit, a cooler unit, and a cover. The base unit comprises an open ended sleeve arranged vertically on the ground or floor. A filler extends a portion of the height of the sleeve to support the cooler unit. The cooler unit comprises a water tight tray telescoped into the upper end of the sleeve for support by the filler. The cooler unit is designed to accommodate the cans or bottles, and ice. The cover is telescoped onto the tray to close the cooler.

3,465,949
PRESSURIZING ARRANGEMENT FOR A COMPRESSOR
Richard E. Cawley, Hurst, Tex., assignor to Lennox Industries Inc.
Filed Oct. 23, 1967, Ser. No. 677,373
Int. Cl. F04b *35/04, 39/06*
U.S. Cl. 230—58 **2 Claims**



A refrigerant compressor including a fan for pressurizing the suction gas supplied to the cylinder means in such compressor. In a refrigerant compressor having an upright crankshaft with an electric motor secured to said drive shaft adjacent the upper end thereof, the fan is secured to the motor so as to pressurize refrigerant gas passing over the motor into the cylinder means to substantially eliminate the adverse effect caused by a suction gas pressure drop as the suction gas passes through the electric motor.

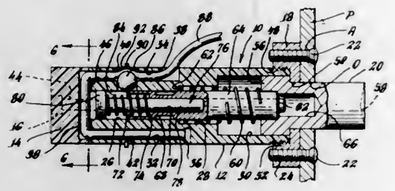
3,465,950
SEPARATOR
Wilbert Bernard Freid, Swampscott, Robert Joseph Duffy, Ipswich, and Donald Farley Sargisson, Marblehead, Mass., assignors to General Electric Company, a corporation of New York
Filed Jan. 22, 1968, Ser. No. 699,631
Int. Cl. F02c *7/04*
U.S. Cl. 230—132 **4 Claims**



A separator with an axially extending passageway having means adjacent its inlet for imparting swirl motion to an incoming fluid stream. As a result of the swirl imparted to the fluid stream, particles of extraneous matter are

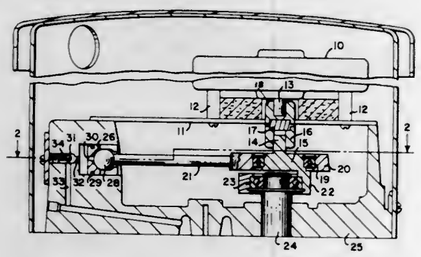
forced into a collection chamber and thereafter means are provided downstream for removing the swirl. The swirl imparting members or vanes are located inside the leading edge of the bellmouth and are retractable when not being used. The deswirl members or vanes located downstream from the swirl members which are used to straighten the flow of air by removing the radial component prior to the air flow passing into a compressor means are also capable of being removed from the airstream thereby increasing engine efficiency.

3,465,951
BUBBLE INJECTOR
Kenneth J. Gildner, Bridgeport, Conn., assignor to Picker Chromatography, Inc., Monroe, Conn., a corporation of Delaware
Filed Mar. 8, 1968, Ser. No. 711,563
Int. Cl. F04b *45/00, 39/08*
U.S. Cl. 230—160 **10 Claims**



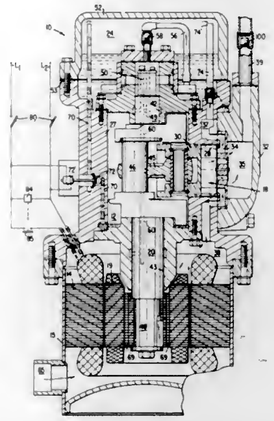
An air bubble injector having a body enclosing a portion of a flexible tube normally pinched closed at a point intermediate its ends, one end of which is in communication with the atmosphere and the other with a flowing liquid, and a selectively operable plunger to isolate a section of the enclosed tube between its atmosphere communicating end and the normally pinched portion, to compress the air in that section, and to release the compressed air into the flowing liquid.

3,465,952
PISTON AND CONNECTING ROD STRUCTURE FOR AIR COMPRESSORS
Dresden G. Smith, San Jose, and Phillip T. Jones, Los Altos, Calif., assignors to Jonesmith Company, Inc., a corporation of California
Filed Mar. 26, 1968, Ser. No. 716,191
Int. Cl. F04b *39/10, 21/08*
U.S. Cl. 230—190 **3 Claims**



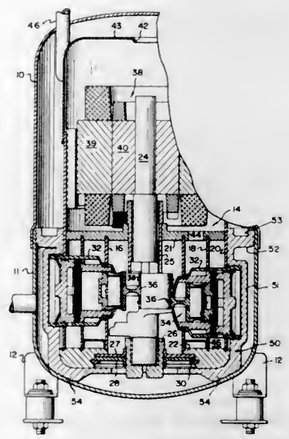
A piston and connecting rod structure for an oilless air compressor. The piston is of plastic material having good flexibility and lubricity properties, and the connecting rod is of metal provided with a ball end which is snapped into the piston by deforming the flexible flanged end of the piston skirt. The ball end of the piston rod is held assembled with the piston by said flange as the piston is reciprocated in the compressor cylinder by a rotating eccentric mechanism. The ball end of the piston rod also controls the air intake port so that the need for a separate intake valve is eliminated and also the need for a separate wrist pin is eliminated.

3,465,953
COMPRESSOR LUBRICATION ARRANGEMENT
David N. Shaw, Liverpool, N.Y., assignor to Carrier Corporation, Syracuse, N.Y., a corporation of Delaware
Filed Oct. 28, 1966, Ser. No. 590,289
Int. Cl. F04b *39/02, 35/04*
U.S. Cl. 230—206 **9 Claims**



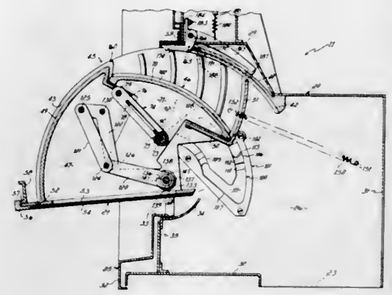
A lubrication arrangement for a reciprocating compressor in which the oil sump is separate from the compressor crankcase and means are provided to control pressures in the crankcase and oil sump to insure return of oil from the crankcase to the sump.

3,465,954
COMPRESSOR SUPPORTING MEANS
Charles B. Ellis, Fort Worth, Tex., assignor to Lennox Industries Inc., a corporation of Iowa
Filed Aug. 11, 1967, Ser. No. 660,051
Int. Cl. F04b *39/00, 35/04*
U.S. Cl. 230—235 **5 Claims**



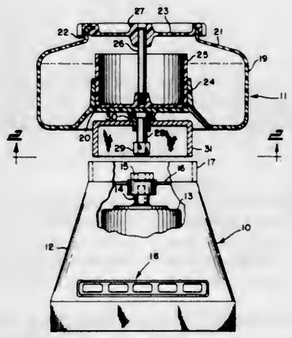
A unitary cup-shaped mounting and heat shield disposed about compression mechanism in an upright hermetic refrigerant compressor for resiliently supporting the compression mechanism within the outer housing and for minimizing heat transfer between the relatively hot discharge gas in the annular discharge gas cavity in the compression mechanism and the relatively cool suction gas in the space between the compression mechanism and the outer housing.

3,465,955
NIGHT DEPOSITORY
Hendrik J. de Boer, Fairfield, and Robert E. Gettle, Hamilton, Ohio, assignors to The Mosler Safe Co., Hamilton, Ohio, a corporation of New York
Filed Sept. 11, 1967, Ser. No. 666,886
Int. Cl. B65g *11/04;* **B65d** *91/00*
U.S. Cl. 232—44 **22 Claims**



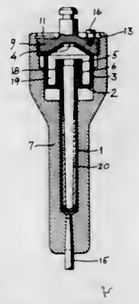
A bank depository having a movable plunger forming the bottom of the depository receptacle. The plunger is withdrawn upon opening of the depository and is extended to positively eject the contents of the receptacle when the depository is closed. An improperly located envelope in the depository actuates a lock to prevent closing of the depository and tearing or shredding of the envelope.

3,465,956
DOMESTIC CENTRIFUGAL SEPARATOR
Verna M. Beard, 436 Hurst Drive, Bay Village, Ohio 44140
Filed July 10, 1967, Ser. No. 652,239
Int. Cl. B04b *9/00, 1/00, 3/00*
U.S. Cl. 233—23 **1 Claim**



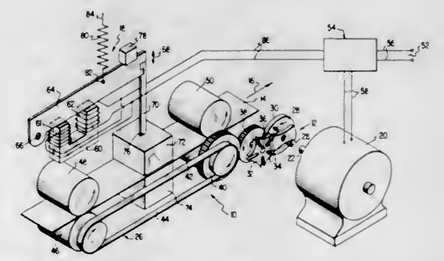
A two-part centrifugal separator, with a motor containing base part and a centrifuging vessel part removably supported on the former for drive by the motor through rotary couplers. The vessel includes a separable collector cup at the center interior which receives the fat separated by being forced inwardly to the center when the vessel rotates at centrifuging speed. The inner surfaces of the vessel and the cup surfaces are preferably made of plastic or coated with a nonstick finish for easy cleaning.

3,465,957
CENTRIFUGAL SEPARATOR
Gunnar Walter Brandt, Nykoping, Sweden, assignor to LKB-Produkter AB, Stockholm-Bromma, Sweden, a company of Sweden
Filed Oct. 20, 1967, Ser. No. 676,777
Claims priority, application Sweden, Oct. 27, 1966, 14,728/66
Int. Cl. B04b *9/12;* **B01d** *21/26*
U.S. Cl. 233—26 **9 Claims**



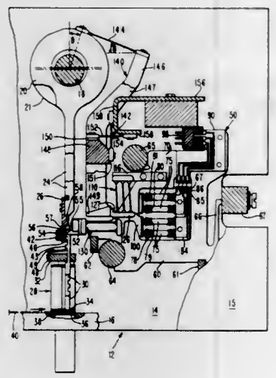
A small volume of a liquid to be centrifuged to separate a heavier phase from a lighter phase is placed in a tube. A receptacle is releasably fastened to the upper open end of the tube. The receptacle has generally a larger diameter than the tube, but has a narrow portion having a smaller diameter than the tube. The tube-receptacle unit is rotated at a high speed around the axis of the tube. The lighter phase flows over said narrow portion into the receptacle, whereas the heavier phase is retained in the tube by said narrow portion.

3,465,958
MAGNETIC PUNCH SYSTEM
Paul E. Gunderson, Robert W. Kulterman, and Norman S. Stockdale, Rochester, Minn., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed Sept. 7, 1967, Ser. No. 666,056
Int. Cl. G06k *1/05;* **B26f** *1/04;* **B26d** *5/20*
U.S. Cl. 234—108 **6 Claims**



A system including an alternating current synchronous motor for incrementally moving a document and an alternating current energized punch coil operated in synchronism therewith, but out of phase, such that the punch operates when the document feed ceases.

3,465,959
PUNCH SELECTOR MECHANISM
Paul R. Hoffman, Farmington, Mich., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan
Filed Mar. 20, 1967, Ser. No. 624,363
Int. Cl. G06k *1/05*
U.S. Cl. 234—114 **5 Claims**

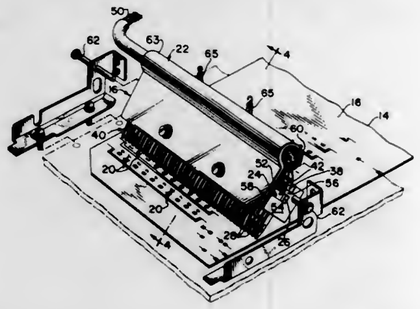


A punch selector mechanism having a spring flexure mounted, magnetically controlled and mechanically resettable interposer positionable between a continuously driven reciprocating punch drive bail and a punch tool element to form part of the drive train depending upon the position of the interposer as controlled by the selector.

ERRATUM

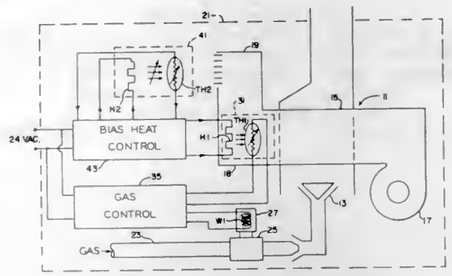
For Class 235—60.11 see:
Patent No. 3,466,429

3,465,960
MULTI-STYLUS ASSEMBLY
Oscar W. Swenson, Cedar Grove, N.J., assignor to The Western Union Telegraph Company, New York, N.Y., a corporation of New York
Filed Apr. 5, 1965, Ser. No. 445,481
Int. Cl. G06k *7/06*
U.S. Cl. 235—61.11 **8 Claims**



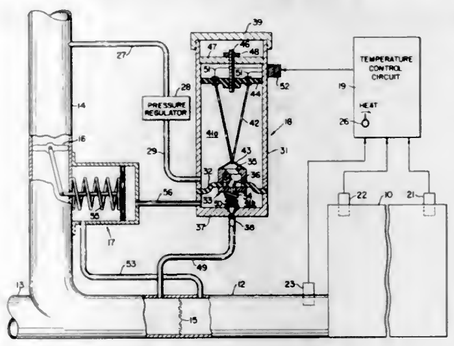
The invention consists amongst other things, of a multi-stylus arrangement wherein a number of stylus assemblies each embody two or more styluses or flat laminations of unique contour. The laminations are provided with separators so that as the stylus assemblies travel over a data card in the reading thereof, double contact is made with the markings on the card.

3,465,961
TEMPERATURE CONTROL APPARATUS
Lyle E. McBride, Jr., Norton, Mass., assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware
Filed July 14, 1967, Ser. No. 653,428
Int. Cl. F23n *5/02;* **G05d** *23/24, 23/30*
U.S. Cl. 236—9 **9 Claims**



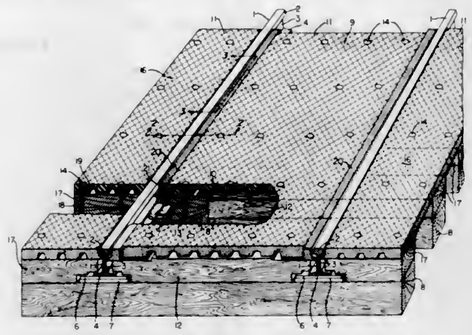
The apparatus disclosed herein controls the operation of a gas-fired, forced hot air furnace to maintain the temperature in a given zone at a preselected level. The flow of gas to the furnace burner is turned on and off under the control of a first temperature sensing thermistor which is located in the plenum of the furnace. The temperature in the zone being controlled is sensed by a second thermistor. This second thermistor controls means for applying a biasing heat flow to the thermistor in the plenum to vary the duty cycle or proportion of time during which the burner is on and thereby maintain the temperature in the given zone at the preselected level.

3,465,962
ELECTRO-PNEUMATICALLY CONTROLLED AIR CONDITIONING SYSTEM
Dan S. Matulich, Rolling Hill Estates, and Harold S. Skinner, Los Angeles, Calif., assignors to The Garrett Corporation, Los Angeles, Calif., a corporation of California
Filed Mar. 29, 1968, Ser. No. 717,141
Int. Cl. G05d *11/16, 23/28, 23/13*
U.S. Cl. 236—13 **8 Claims**



An air conditioning system having an electro bleed valve controlled by an electrical current heating a resistor so that a pneumatic pressure is produced that is proportional to the electrical heating current. The pneumatic pressure is used to operate a valve to vary the flow ratio between a hot and cold air source. In addition, the valve is operated to increase the amount of hot air with respect to the amount of cold air in response to any pressure differential developed across an ice collection screen.

3,465,963
CROSSING STRUCTURE
Eugene Caillet and Byron L. Fishbaugh, St. Marys, Ohio, assignors to The Goodyear Tire & Rubber Company, Akron, Ohio, a corporation of Ohio
Filed Dec. 29, 1967, Ser. No. 694,586
Int. Cl. E01b *7/28*
U.S. Cl. 238—8 **9 Claims**



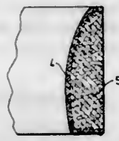
An improved railway-roadway crossing structure having a smooth uninterrupted crossing deck between the rails as well as immediate area adjacent the outside of the rails. The deck comprises center and side crossing pads of elastomeric material and an improved elastomeric filler strip adjacent the inside of each rail. The filler strip includes a plurality of recesses to facilitate compression under the passage of flanged railroad wheels and is securely anchored to provide uniform deflection under identical loads. The filler strips are designed for use with the elastomeric pads but may also be used in conventional crossing structures. This crossing structure allows small-wheeled vehicles to pass transversely over the rails without shock or damage thereto.

3,465,964
METHOD OF CONTROLLING SMOG
Barney B. Girden, New London County, Conn. (R.D. 1, Norwich, Conn. 06360)
No Drawing. Filed Nov. 9, 1964, Ser. No. 409,988
Int. Cl. A01g *15/00;* **E01h** *13/00*
U.S. Cl. 239—2 **3 Claims**

Control and substantial elimination of smog by producing an upwelling of cold subsurface ocean water adjacent the ocean shore to initiate and sustain onshore winds and enable the heavier oceanic atmosphere to be substitute for the lighter and polluted atmosphere which would otherwise be trapped over the adjacent shore land masses, as by the presence of thermo inversions thereover.

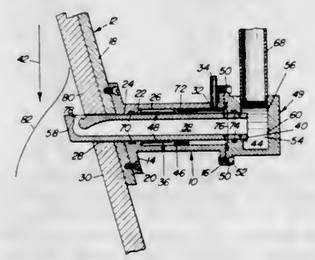
3,465,965
TAIL-PIPE NOZZLE FOR ROCKET MOTORS
Nils Gustav Schrewelius, Hallstahammar, Sweden, assignor to Aktiebolaget Kanthal, Hallstahammar, Sweden
Filed Apr. 18, 1967, Ser. No. 631,653
Claims priority, application Sweden, Apr. 20, 1966, 5,362/66
Int. Cl. B64d *33/04;* **F02k** *1/22*
U.S. Cl. 239—265.15 **6 Claims**

A nozzle for a tail-pipe section of rocket motors having at least on the inside a fine-mesh, three-dimensional skeleton of recrystallized silicon carbide, and in the cavities of this skeleton an evenly distributed continuous phase of a metallic component, namely, molybdenum disilicide. The metallic component forms 30–80% by weight of the mass in the part exposed to the hot gases of the rocket motor. The material inside the surface layer subjected to such hot gases has a porosity exceeding that of the surface layer and has continuous paths from the interior to the surface to permit the escape of vaporized metallic component.



The porosity of the surface layer is substantially less than 1% by volume. During use of the metallic component partly volatilizes at the high temperatures to which it is subjected thereby to provide capacity to withstand high temperatures during use.

3,465,966
ROCKET CONTROL
Manuel N. Fuentes, Brigham City, and Duane Morley Cox, Logan, Utah, assignors to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware
Filed Feb. 16, 1966, Ser. No. 527,963
Int. Cl. B64c *15/02*
U.S. Cl. 239—265.17 **1 Claim**



1. In a rocket motor having a thrust nozzle, a device for varying the thrust vector of said rocket motor comprising:

a cylindrical housing fixedly mounted on the wall of said thrust nozzle and projecting from the outer surface thereof, said housing being coaxial with an aperture in the wall of said thrust nozzle and having a port extending through the wall thereof at a point adjacent its free end;

a shaft disposed within said housing and said aperture in the wall of said thrust nozzle, a passage extending from the outer end surface of said shaft to a point located adjacent the other end of said shaft and on the upstream side thereof, at least one inlet port extending through the wall of said shaft adjacent the outer end thereof;

an annular piston fixedly positioned around said shaft intermediate the ends thereof, the peripheral surface of said piston being slidably engaged with the inner surface of said housing;

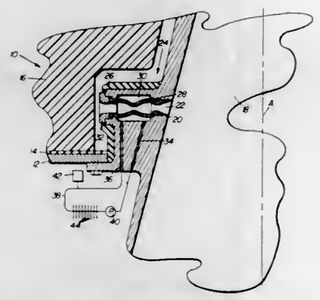
a cap fixedly mounted on the free end of said housing and including a hole in which the outer end of said shaft is slidably engaged, an internal chamber which communicated with said orifice, and an inlet port which extends through the wall of said cap and communicates with said chamber;

spring means positioned within said housing and resiliently biasing the outer end surface of said shaft toward the rear wall of said chamber in said cap;

means for injecting coolant into said chamber through said inlet port therein, said coolant passing through said inlet port in said shaft when the outer end surface of said shaft is engaged with said rear wall of said chamber in said cap; and

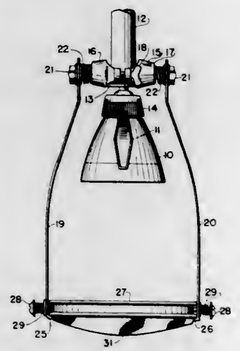
means for injecting pressurized fluid into said housing through said port therein to thereby move said piston and shaft connected therewith toward the longitudinal axis of said thrust nozzle, said means being adapted to selectively allow said fluid to pass out of said housing through said port therein so that said spring means can move the outer end surface of said shaft against said rear wall of said chamber in said cap.

3,465,967
FLEXIBLE HOT GAS VALVE
Theodore B. Card, Brigham City, Utah, assignor to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware
Filed Jan. 18, 1967, Ser. No. 610,125
Int. Cl. B64c *15/02*
U.S. Cl. 239—265.23 **16 Claims**



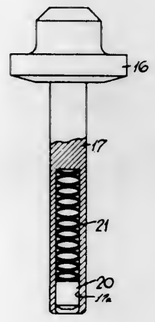
A valve for controlling the flow of hot gas from a rocket motor combustion chamber through a laterally directed opening in the exit cone of a rocket nozzle for thrust vector control of the propulsive gases passing through the nozzle, the valve including a flexible conduit of heat resistant material and having an inner lining of tungsten wire and an inlet member of a material which provides for cooling the hot gas by transpiration or ablation, deformation of the conduit by a pressurizable fluid serving to control gas flow through the conduit, and circulation of the fluid providing additional cooling.

3,465,968
SHOWER ATTACHMENT
Louis Halpern, 2275 Shore Parkway, Brooklyn, N.Y. 11214
Filed Dec. 15, 1967, Ser. No. 691,029
Int. Cl. B05b *1/26*
U.S. Cl. 239—504 **5 Claims**



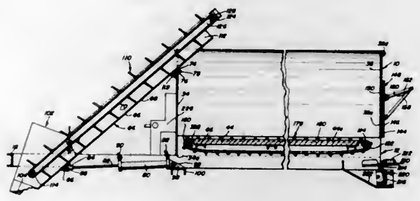
A pivoted support structure secures a screen in front of a conventional shower head to improve the spray issuing therefrom. The support structure and the screen fold flat for packaging.

3,465,969
LIQUID FUEL INJECTION NOZZLES
Teodore Priede, Southampton, and Jan Wilkins, London, England, assignors to C.A.V. Limited, London, England
Filed Jan. 9, 1967, Ser. No. 607,931
Claims priority, application Great Britain, Jan. 7, 1966, 791/66
Int. Cl. B05b *1/30, 1/32*
U.S. Cl. 239—533 **1 Claim**



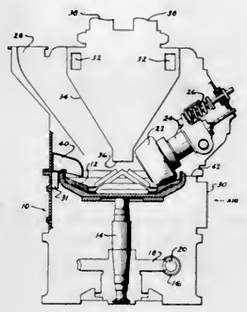
Liquid fuel injection nozzles for mounting in the body of an internal combustion engine and through which fuel is supplied by a fuel pump to the combustion space via a discharge orifice with the fuel flow being controlled by a valve member which is biased by a spring towards a posi ion in which fuel flow is prevented. A push rod having a bore therein is located between the spring and valve member and a resilient means within the bore serves to transmit the force exerted by the spring to the valve member.

3,465,970
SELF-LOADING AND UNLOADING LITTER SPREADER
Elvie E. Crimm, 103 Highway 35 S., Forest, Miss. 39074
Filed Feb. 15, 1967, Ser. No. 616,362
Int. Cl. A01c *17/00;* **B60p** *1/38*
U.S. Cl. 239—651 **6 Claims**



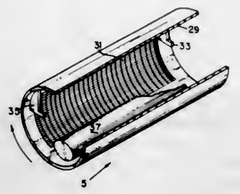
A powered machine for gathering, elevating, storing and selectively distributing material, such as fertilizing poultry litter. The gathering and elevating is effected by an elongated conveyor mounted within a trough, the upper end of which is communicated with a mobile storage bin and the lower end of which is vertically movable to receive the litter. The bin contains means for selectively moving the litter rearward and discharging the litter onto distributing fans for a spreading thereof.

3,465,971
DEFLECTOR ARRANGEMENT FOR USE IN A GRINDING MILL
John F. Dalenberg, Chicago, Ill., Elmer H. Todd, Nashville, Tenn., and John W. Carpenter, London, Ky., assignors to Combustion Engineering, Inc., Windsor, Conn., a corporation of Delaware
Filed Dec. 28, 1966, Ser. No. 605,410
Int. Cl. B02c *15/04, 19/08*
U.S. Cl. 241—53 **3 Claims**



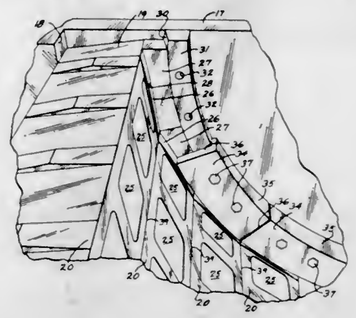
A pulverizing mill having a rotatable grinding ring and associated grinding rollers, including deflector means positioned above the grinding ring for directing the airborne pulverized material leaving the grinding ring downwardly and inwardly back towards the grinding ring, thus causing the more coarse pulverized particles to separate out and be redeposited on the grinding ring for further pulverization.

3,465,972
DEVICE FOR CONDUCTING CRUSHING AND SCREENING OPERATIONS SIMULTANEOUSLY
Zane L. Ardary, Oak Ridge, Tenn., assignor to the United States of America as represented by the United States Atomic Energy Commission
Filed May 10, 1967, Ser. No. 638,701
Int. Cl. B02c *17/00, 17/10*
U.S. Cl. 241—69 **1 Claim**



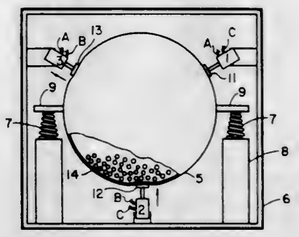
A hollow cylinder into which is placed a material to be crushed is mounted for rotation about its longitudinal axis. Crushing action is provided by a solid metal rod disposed inside the cylinder. As the cylinder rotates, the bar is picked up by a pair of dogs at the bottom of the cylinder and dropped from the top, thereby crushing any material caught between the bar and the wall. A portion of the wall of the cylinder is made of a selected size screen so that on each revolution of the cylinder the crushed material falls through the screen into a receptacle and is not left in the cylinder to produce fines from subsequent crushings. This device is quite useful in situations where it is desirous to obtain a narrow screen fraction of crushed particles in a very economical manner.

3,465,973
REVERSIBLE CAGE BAR AND MOUNTING FOR HAMMER MILLS
Robert M. Williams, Ladue, Mo., assignor to Williams Patent Crusher & Pulverizer Co., Inc., St. Louis, Mo., a corporation of Missouri
Filed June 30, 1967, Ser. No. 650,489
Int. Cl. B02c *17/02*
U.S. Cl. 241—86 **5 Claims**



A hammer mill apparatus in which the cage bars, mounted by wedge means including a protective keeper means therefor, are formed in a manner that allows reversal thereof on the mounting seats in the mill housing so that extended life is possible and efficient operation of the mill can be prolonged before cage bars have to be replaced.

3,465,974
VIBRATORY MILL
John S. Eckert, Silver Lake, Ohio, assignor, by mesne assignments, to Norton Company, a corporation of Massachusetts
Filed May 13, 1966, Ser. No. 550,015
Int. Cl. B02c *9/04, 15/00, 17/00*
U.S. Cl. 241—153 **3 Claims**



A vibratory mill including a drum and a plurality of electro-mechanical vibrators driven into and out of contact with the outer periphery of the drum, to vibrate sequentially, discrete portions of the periphery of the drum.

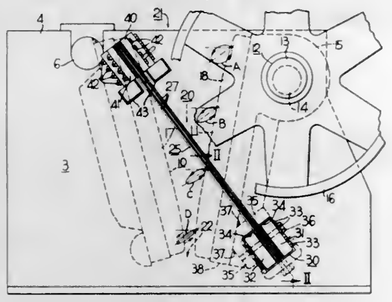
ERRATUM

For Class 241—163 see:
Patent No. 3,466,100

3,465,975
JAW CRUSHER
Bela Vitez, Franklin, Wis., assignor to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.
Filed Oct. 3, 1967, Ser. No. 672,605
Int. Cl. B02c *19/00, 13/06*
U.S. Cl. 241—201 **8 Claims**

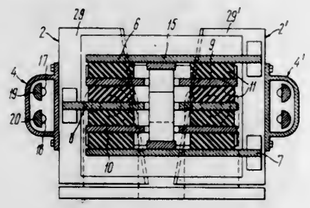
A toggleless jaw crusher is disclosed having a pair of jaws with one jaw fixed to crusher framework and the

other jaw movable relative thereto. The movable jaw hangs from an eccentric portion of a rotating drive shaft journaled in a top portion of the movable jaw. A flexible link bar is fixed on one end to the movable jaw near the lower end thereof and the other end of the flexible link



bar is fixed to the framework adjacent the top and fixed jaw side of the crushing chamber. The crushing motion of the movable jaw is established by the rotating eccentric connected to the top of the movable jaw and the swing of the flexible link bar connected to the bottom of the movable jaw.

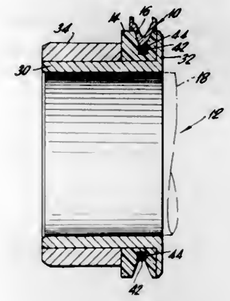
3,465,976
VIBRATING JAW CRUSHERS
Konstantin Efimovich Vinitsky, Krivoarbatsky pereulok 19, kv. 6, and Igor Fomich Goncharevich, Zubovsky bulvar 19, kv. 1, both of Moscow, U.S.S.R.
Filed June 14, 1967, Ser. No. 646,100
Int. Cl. B02c *1/04, 1/10*
U.S. Cl. 241—206 **4 Claims**



Crusher with two vibratory jaws interconnected from the sides by shock absorbers having horizontally flat brackets with resilient elements squeezed therebetween; the upper and lower brackets are secured to the side of one jaw with a third bracket (the central one) disposed therebetween. Two other brackets are each disposed respectively between the upper and central and the central and lower brackets and are interconnected by a resilient element against the frame. Each jaw may be of two separate parts interconnected by resilient links, one part carrying a crusher plate, the other a vibrator.

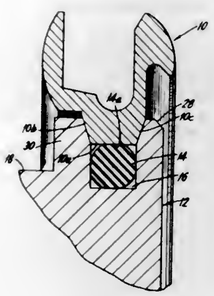
3,465,977
ROLLERS HAVING SYNTHETIC COMPONENTS FOR TOROIDAL COIL WINDING MACHINES
William A. Bernau, Short Hills, N.J., assignor to Universal Manufacturing Company, Inc., Irvington, N.J., a corporation of New Jersey
Filed May 5, 1967, Ser. No. 636,506
Int. Cl. B65h *81/02*
U.S. Cl. 242—4 **3 Claims**

A roller for engagement with a shuttle of a winding machine. The flanged-cylindrical roller is arranged into segmented replaceable portions for rapid interchange of the grooved flange portion thereof made of hard but, resilient synthetic material in rolling contact with the



shuttle. The roller is assembled by forcing the resilient portion onto the metallic portion and a jig serves to separate the several portions from each other.

3,465,978
ROLLERS FOR TOROIDAL COIL WINDING MACHINES
William A. Bernau, Short Hills, and Emil A. Yerman, South Plainfield, N.J., assignors to Universal Manufacturing Company, Inc., Irvington, N.J., a corporation of New Jersey
Filed Apr. 26, 1967, Ser. No. 633,824
Int. Cl. B65h *81/02;* **F16h** *55/36*
U.S. Cl. 242—4 **7 Claims**

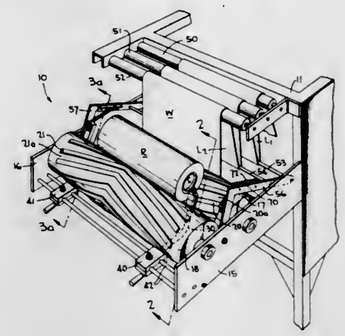


A roller for engagement with a shuttle of a winding machine. The roller is provided with a resilient O-ring seated in a groove or recess for receiving the shuttle. The roller is arranged in several forms to receive elastic and non-elastic O-rings by disassembling the roller.

3,465,979
WEB ROLL CRADLE
Nelson R. Henry, Decatur, and Jack Hobart, Atlanta, Ga., assignors to The Woodman Company, Inc., Decatur, Ga., a corporation of Georgia
Filed Aug. 21, 1967, Ser. No. 661,971
Int. Cl. B65h *17/12;* **B21b** *31/08, 27/02*
U.S. Cl. 242—68.7 **17 Claims**

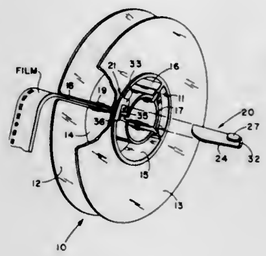
A roll cradle wherein the rollers are provided with a plurality of longitudinally extending ridges on the surface thereof forming spaced pockets to accommodate a slack loop so as to allow the same to pass from the roll. The forward one of said rollers in the direction of travel of the web is positioned below the rear roller and the web

is looped around said forward roller to prevent accidental dislodgement of said roll. The ridges are of a herringbone pattern to insure smooth transitional movement across said



pockets and upstanding rods are provided to maintain the roll centered in the cradle. Brake means with dancer lever provides tension control of the web.

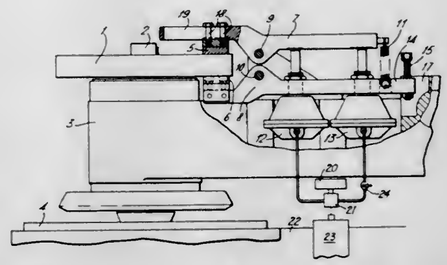
3,465,980
REEL AND FILM RETAINING MEANS
Evan A. Edwards, Lawrence A. Ulmschneider, and Robert J. Roman, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed Nov. 24, 1967, Ser. No. 685,631
Int. Cl. B65h *75/28*
U.S. Cl. 242—74.1 **10 Claims**



An improved pin and socket assembly for releasably securing an elongated web or film to a supply reel or other structure. The pin is specially shaped for optimum retaining characteristics, and may have an extended head portion to prevent improper positioning of the reel in a reel cartridge or other container.

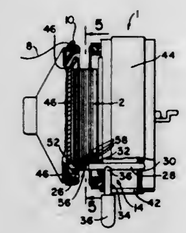
3,465,981
DISC BRAKES AND TORQUE VARYING MEANS THEREFOR
Graham Archie Bruce Byrt, Bristol, England, assignor to Masson Scott Thrissell Engineering Limited, Summerstown, London, England, a corporation of Great Britain
Filed July 20, 1967, Ser. No. 654,755
Claims priority, application Great Britain, Aug. 1, 1966, 34,499/66
Int. Cl. B65h *25/22;* **B60t** *11/10*
U.S. Cl. 242—75.43 **7 Claims**

A disc brake for a printing paper reel having a pair of brake pads mounted on arms to embrace the disc, one pad being movable along its arms to vary the resultant braking torque. The brake is actuated by a pneumatic motor the pressure of which is varied as required and a second pneu-



matic motor is connected in the same air line as the first to provide reserve braking power the strength of which is thereby automatically varied.

3,465,982
SPINNING REEL DEPTH-GAUGING MEANS
Chester L. Cosbow, 1113 Center St., Collinsville, Okla. 74021
Filed July 28, 1967, Ser. No. 656,940
Int. Cl. A01k *89/00*
U.S. Cl. 242—84.2 **12 Claims**

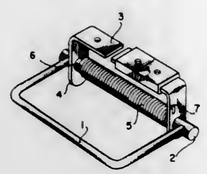


A spinning reel including metering means for paying-out predetermined lengths of line, comprising a stationary spool having a peripheral surface upon which line can be wound, a revolvable member adjacent to said spool, and a gauge member, the latter being movable between a first position removed from the region of said peripheral surface of said stationary spool and a second position spacedly superposed with respect to said peripheral surface, said gauge member being removably retainable in either said first or second positions, whereby when in said second position line wound about said stationary spool will be spaced above the peripheral surface of said spool in the region of said gauge member and supported by the latter in said region, the length of line subsequently payable from said spool when said gauge member is in the second position being limited to those line windings supported by said gauge member.

3,465,983
SEAT BELT RETRACTOR
Lawrence T. Taggart, Bakersfield, Calif., assignor, by mesne assignments, to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois
Filed May 14, 1962, Ser. No. 194,615
Int. Cl. B65h *75/48;* **B60r** *21/10;* **A47d** *15/00*
U.S. Cl. 242—107.11 **6 Claims**

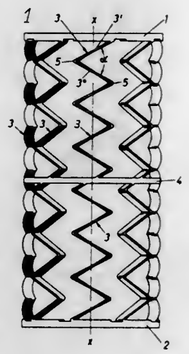
1. In combination with a vehicle safety belt, a take-up device comprising a first rectangular loop of circular cross section, a second rectangular loop having three sides of

rectangular cross section and having the fourth side closed by one side of said first loop, said second loop rotating within and with respect to said first loop, spring means at-



tached between said loops and adapted to cause relative rotation between said loops when energy is stored therein, said belt passing over said first loop and under said second loop in the direction said second loop is biased to rotate.

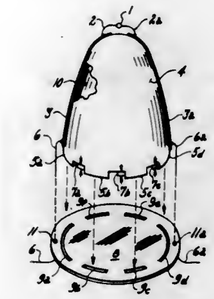
3,465,984
LAP CARRIER RESILIENTLY COMPRESSIBLE IN AXIAL DIRECTION
Gerhard Tigges, Kohlfurther Brucke 29, Wuppertal-Cronenberg, Germany, and Walter Henning, 5113 Haomann-Lonssh 1, Hoengen, Germany
Filed Nov. 8, 1967, Ser. No. 681,500
Claims priority, application Germany, Nov. 10, 1966, T 32,492; Sept. 6, 1967, T 34,726
Int. Cl. B65h *75/20*
U.S. Cl. 242—118.11 **11 Claims**



A lap carrier resiliently compressible in axial direction and defining a surface area, which comprises end rings and at least one intermediate ring. A plurality of carrier elements is disposed between the end rings and has outer edges. The outer edges are oriented toward the surface area of the lap carrier. The carrier elements comprise elastically bendable stays equally distributed along the periphery of the lap carrier and are inclined for at least a part of their length to the longitudinal axis of the lap carrier, and the stays are rigidly secured to the rings.

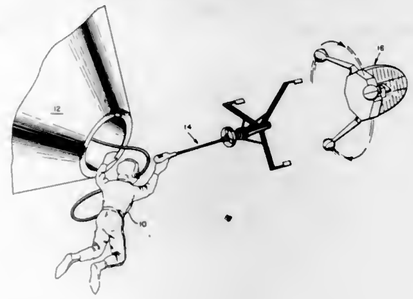
3,465,985
APPARATUS FOR MOUNTING A ROCKETSONDE THERMISTOR
Edward V. von Gohren, Bowie, Md.
(Hg. AWS, Scott Air Force Base, Ill. 62225)
Filed Oct. 5, 1967, Ser. No. 673,231
Int. Cl. B64g *1/00;* **H04b** *1/02*
U.S. Cl. 244—1 **4 Claims**

Thermistor mounting apparatus to be integrated with a rocketsonde in the form of a helmet or bonnet carrying a conventional thermistor type of sensor at the apex of the bonnet. Electrical connection to the telemetry



transmitter of the rocketsonde is in the form of a pair of aluminum strips extending from the apex, or "pole," of the bonnet to points on the bonnet's base.

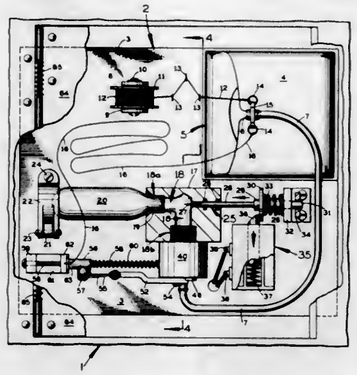
3,465,986
SATELLITE DESPIN DEVICE
John J. Milly, Huntsville, Ala., assignor to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration
Filed June 7, 1967, Ser. No. 645,563
Int. Cl. B64g *9/00*
U.S. Cl. 244—1 **4 Claims**



A grasping device comprising an extensible boom device connected to a powerhead having a plurality of pivotally mounted arms positioned thereon which are actuated by a spring driven linkage. The arms and linkage can be cocked and then released by a trigger included in the powerhead to cause the arms to move to a grasping position. The powerhead includes a rotary rocket motor for generating thrust which tends to contra-rotate the powerhead and stop the rotation of a grasped object. The powerhead is releasably connected to the extensible boom that is formed from a roll of thin metallic tape stored on a spool in a hand held deployment device. The metal tape assumes the form of a tube when unfurled.

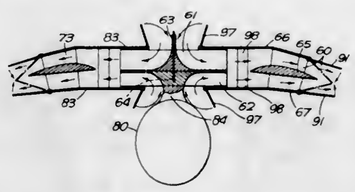
3,465,987
AUTOMATIC AERIAL DISTRESS SIGNAL
James R. Harmon, 6801 SW. 17th St., and Hodgie L. Yarbrough, 6744 SW. 21st St., both of Miami, Fla. 33155
Filed Oct. 19, 1967, Ser. No. 676,453
Int. Cl. B64d *25/00*
U.S. Cl. 244—1 **8 Claims**

An apparatus for automatically inflating and releasing a captive balloon with lighter than air gas and sealing said balloon to permit same to rise a predetermined dis-



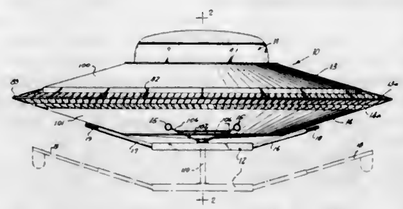
tance above the earth and retained by a line when momentarily triggered manually or by predetermined shock.

3,465,988
AERODYNAMIC LIFT PRODUCING DEVICES
Anthony Hugh Orr, 395 Wandsworth Road, London SW. 8, England
Filed July 31, 1967, Ser. No. 657,173
Claims priority, application Great Britain, Aug. 2, 1966, 34,545/66; Mar. 14, 1967, 11,977/67
Int. Cl. B64c *3/14, 21/02*
U.S. Cl. 244—12 **13 Claims**



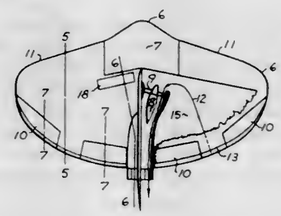
A device to utilize the lift developed by a static aerofoil when a fast moving flow of air is passed over the surface of the aerofoil whilst the aerofoil is partially enclosed in a casing, and having a reverse thrust device arranged to counteract the thrust of air emitted from the casing after passing over the surface of the aerofoil.

3,465,989
CIRCULAR VTOL AIRCRAFT
Ernest E. Bowshier, Mesquite, Tex., assignor to Saucercraft, Inc., Dallas, Tex., a corporation of Texas
Filed July 14, 1966, Ser. No. 565,238
Int. Cl. B64c *29/00, 11/48*
U.S. Cl. 244—23 **16 Claims**



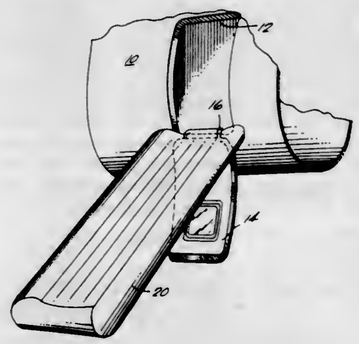
A circular VTOL aircraft having a body, a central pilot and power compartment with a pair of counter-rotating impeller sections having peripheral impeller blades, the blades of one section being radially offset from the blades of the other section, and control means disposed in the downblast from the impellers to control the orientation of the aircraft about its vertical central axis, and having power means for propelling the aircraft in a direction normal to the axis of lift of the impeller sections.

3,465,990
AIRCRAFT HAVING ENERGY-CONSERVING MEANS
Raymond Prunty Holland, Jr., 1702 W. 3rd St., Roswell, N. Mex. 88201
Filed Oct. 5, 1966, Ser. No. 584,395
Int. Cl. B64d *27/20*
U.S. Cl. 244—53 **9 Claims**



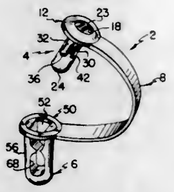
An airplane accomplishes very high speed-power-weight efficiency by capturing the viscous wake and using it for propulsion. Air admitted through distributed rear stagnation inlets is ducted internally, through a buried powerplant, reducing propulsive kinetic energy lost to the atmosphere, reducing engine power demands, and fuel consumption. Practical advantages include: light, deep, rigid structural forms with large internal volume; elimination of torque, of bird ingestion, of external parasite parts (even the propeller on low powered aircraft), and of the interference between the wing beam and the buried engine; and the reduction of noise. The invention is suited especially to airplanes of the air train types, U.S. Patent 3,249,322.

3,465,991
JETESCAPE EVACUATION SYSTEM
Henry C. Banas, Costa Mesa, William W. McReynolds, Lakewood, and David A. Smith, Long Beach, Calif., assignors to McDonnell Douglas Corporation, a corporation of Maryland
Filed Nov. 30, 1967, Ser. No. 686,922
Int. Cl. B64c *25/08*
U.S. Cl. 244—137 **1 Claim**



A method and apparatus for emergency evacuation of vehicle passengers wherein the door to the vehicle opens downwardly and initiates the opening of a passenger egress slide.

3,465,992
FASTENING DEVICE
Jerome T. Schuplin, Parma Heights, Ohio, assignor to Tinnerman Products, Inc., a corporation of Ohio
Filed June 27, 1967, Ser. No. 649,258
Int. Cl. F16b *2/02*
U.S. Cl. 248—71 **10 Claims**



A fastening device made from polymeric material including a flexible, variable length strap member, a deformable loop-like body member attached to and extending from one side of the strap member and a drive pin member attached to and extending from the opposite side of the strap member and adapted to be inserted into the loop-like body member for deforming the same into locking engagement with a support member.

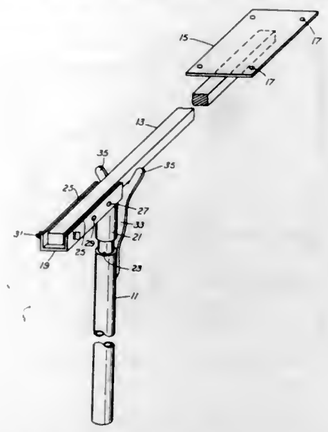
3,465,993
SELF-SUPPORTING GOLF BAG
George L. Muehlhausen, R.R. 2, Box 315, Logansport, Ind. 46947
Filed Feb. 29, 1968, Ser. No. 709,389
Int. Cl. A63b *55/04;* **A45b** *9/04*
U.S. Cl. 248—96 **10 Claims**



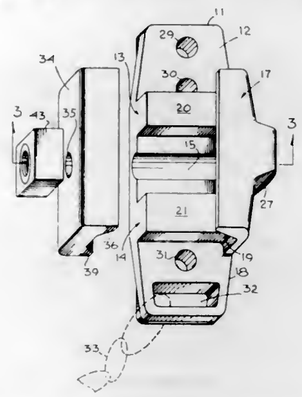
A self-supporting golf bag comprising a walking cane provided with a crook at its upper end and having secured to its shank opposite the crook a preferably cylindrical, self-sustaining receptacle open at its top and closed at its bottom, an earth-penetrating rod being reciprocably carried on the cane shank for movement between a position in which the lower end of the rod extends significantly beyond the lower end of the cane and a position in which it does not so extend, together with retaining means for securing said rod in either such position.

3,465,994
MAILBOX MOUNTING DEVICE
Charles F. Block, 7881 Lewiston Road, Batavia, N.Y. 14020
Filed Jan. 31, 1967, Ser. No. 619,492
Int. Cl. A47f *5/02*
U.S. Cl. 248—130 **1 Claim**

An improved mailbox mounting device for roadside use which comprises a mounting post, a pivot block rotatably carried by said post for movement in a horizontal plane, a supporting bar pivotally carried by said pivot block and having on its outer end means for mounting a mailbox thereon, and detent means secured to the post for releasably holding said arm projecting toward the road.



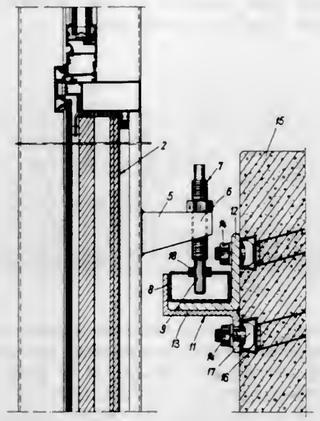
3,465,995
I-BEAM CLAMP
Ona Louis Whitman, Glendale, Calif., assignor to Viber Company, Burbank, Calif., a corporation of California
Filed Feb. 23, 1968, Ser. No. 707,507
Int. Cl. F16l *3/24*
U.S. Cl. 248—228 **3 Claims**



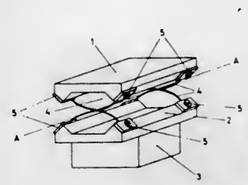
A clamping means is provided for the removable attachment of a mechanical device such as a vibratory machine to a flanged structural member such as a steel I-beam, whereby the mechanical device is rigidly secured to the beam during operation of the mechanical device, and wherein the clamping means is readily removable from the I-beam when desired.

3,465,996
UNIVERSAL CONNECTING ARRANGEMENT
Ernst von Wedel, Senne I, near Bielefeld, Germany, assignor to Firma Heinz Schurmann & Co., Bielefeld, Germany
Filed Apr. 25, 1967, Ser. No. 635,312
Claims priority, application Germany, Apr. 30, 1966, Sch 38,920
Int. Cl. A47f *5/00*
U.S. Cl. 248—287 **6 Claims**

A universal connecting arrangement for connecting two relatively movable elements to one another. The arrangement comprises a first member which is connectable to one of the elements and a second member which is connectable to the other of the elements. The arrangement further comprises a plurality of relatively movable intermediate members at least one of which cooperates with the first member and at least one other of which cooperates with the second member so as to enable movement of one of the elements in any desired direction relative to the other element and to further enable maintenance of such elements in any selected relative position thereof.

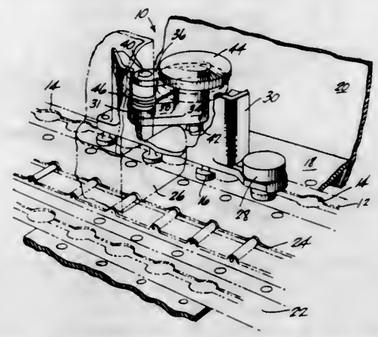


3,465,997
PIVOTAL SUPPORT OR MOUNTING
Wilfried Piske, Rebstein, Switzerland, assignor to Wild Heerbrugg AG., Heerbrugg, Switzerland, a corporation of Switzerland
Filed Aug. 25, 1966, Ser. No. 575,119
Claims priority, application Switzerland, Aug. 30, 1965, 12,116/65
Int. Cl. F16m *13/00*
U.S. Cl. 248—350 **19 Claims**



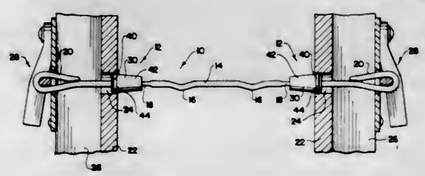
A novel pivotal support for limited deflections and particularly for use with measuring instruments is disclosed. The novel support comprises spaced clamping body means, at least two flexurally stiff and elastic elements suspended between the clamping body means, the elastic elements crossing when viewed across the axis of rotation of the pivotal support. Means for rigidly mounting the elastic elements at the clamping body means are provided such that each of the elastic elements is forced to flex along a line which deviates from a straight line, the forced lines of flexure being defined by at least approximately cubical parabolas. With the novel pivotal support, the ratio of the restoring moment to the angle of deflection in the moment-free position of the support is that much smaller the greater the deviation the forced lines of flexure of the elastic elements are from a straight line.

3,465,998
RESTRAINT LATCH
David L. Ginn, Garden Grove, Calif., assignor, by mesne assignments, to McDonnell Douglas Corporation, Santa Monica, Calif., a corporation of Maryland
Filed Apr. 28, 1967, Ser. No. 634,613
Int. Cl. A62b *35/00*
U.S. Cl. 248—361 **3 Claims**



A latch applicable for use with cargo handling apparatus and specifically to restrain vertical movement of a cargo handling pallet. The latch includes spring biased restraining arms which automatically retract to permit passage of the pallet during pallet movement.

3,465,999
CONE SUBASSEMBLY FOR CONCRETE FORM TIES
Harris Gordon Gates, Denver, Colo., assignor to Gates and Sons, Inc., Denver, Colo., a corporation of Colorado
Continuation-in-part of application Ser. No. 560,302, June 24, 1966. This application Apr. 17, 1967, Ser. No. 631,433
Int. Cl. E04g *17/00, 17/06;* **B28b** *7/00*
U.S. Cl. 249—210 **7 Claims**

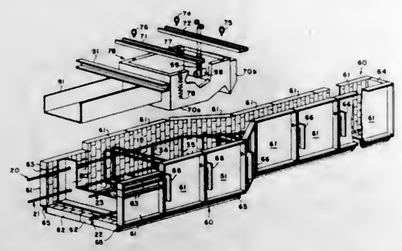


The instant application is specifically directed to a plastic cone subassembly for use on the shank of a rod-type gang form tie that has a metal washer sealed in a socket provided for the purpose on the rear end of the cone and a jam-nut recessed in a second socket on the front end thereof together with the method of assembling the cone elements and mounting them upon the tie.

3,466,000
APPARATUS FOR FORMING A PREFABRICATED FIREPLACE
William C. Southern, Los Gatos, Herbert M. Wagner, Campbell, and Raymond J. Scholz, Los Altos, Calif., assignors to John Billmeyer, San Jose, Calif., trustee of the estate of Western Monolithics Inc., San Jose, Calif., a corporation of California, bankrupt
Filed Oct. 21, 1965, Ser. No. 499,364
Int. Cl. B22d *19/00;* **B41b** *11/54;* **F24b** *1/18*
U.S. Cl. 249—93 **8 Claims**

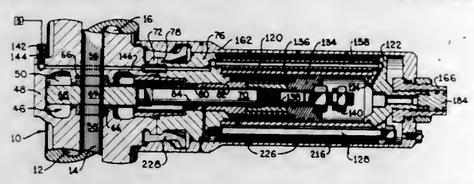
In the forming of a prefabricated fireplace, a fireplace form is formed with an interior wall grooved to simulate fireplace material so that the fireplace material cured therein has an exterior surface simulating the fireplace ma-

terial. The fireplace form is constructed with pivotal panels for movement between a position for pouring fireplace material within the form and a position for removing cured fireplace material from the form. A reinforcing frame is disposed within the fireplace form and has a configuration conforming to a base section, a firebox section and a chimney section.



A preformed firebox is received by the form at the firebox section of the frame. At the chimney section of the frame, a flue is located within the form. A bottom plate is disposed in the form at the base section of the frame. Disposed in the form at the base section of the frame and extending between the bottom plate and the firebox is an ash receptacle. The reinforcing frame, the firebox, the flue, the bottom plate and the ash receptacle are imbedded within the fireplace material cured within the form.

3,466,001
SUBSEA VALVE AND VALVE OPERATOR ASSEMBLY
Norman A. Nelson, Houston, Tex., assignor to ACF Industries, Incorporated, New York, N.Y., a corporation of New Jersey
Filed Jan. 15, 1968, Ser. No. 697,706
Int. Cl. F16k *31/12, 43/00*
U.S. Cl. 251—25 **10 Claims**



The invention relates to mechanical devices such as submergible valve and valve operator assemblies in which the valve and operator are maintained in sealed assembly by a plurality of segment clamps. A protective shroud which encloses the valve operator is movable relative to the operator to cause actuation of the segment clamps between their locked and unlocked positions, thereby effecting quick releasing of the connection between the valve and valve operator through simple movement of the shroud relative to the valve operator.

3,466,002
FLUIDIC DEVICE USING PILLS OF DIFFERENT SIZES
Peter A. Freeman, Baltimore, Md., assignor to Martin-Marietta Corporation, New York, N.Y., a corporation of Maryland
Original application Oct. 22, 1965, Ser. No. 501,157, now Patent No. 3,362,633, dated Jan. 9, 1968. Divided and this application Aug. 24, 1967, Ser. No. 670,491
Int. Cl. F16k *31/12, 3/02, 31/08*
U.S. Cl. 251—28 **3 Claims**

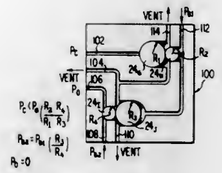
2. An improved fluidic, high gain inverter-buffer comprising:

a first fluid sealed, elongated slot of substantially rectangular cross-section;

a second fluid sealed, elongated slot of substantially rectangular cross-section, being substantially smaller in width than said first slot and being axially aligned and in fluid communication with said first slot;

first and second disc-like pills positioned in said first and second slots respectively, said pills having diameters on the order of their respective slot width;

a control port connected to said first slot at the end remote from said second slot;

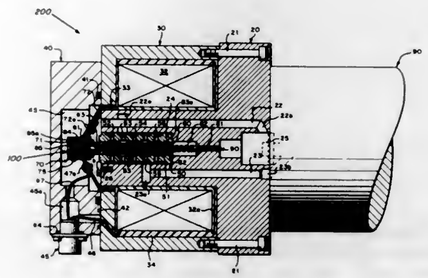


the end of said second slot remote from said first slot being rounded to accommodate its respective pill when said pill is at the end of its travel in a direction away from said first slot; and

a biasing port and an outlet port intersecting said second slot in said rounded portion;

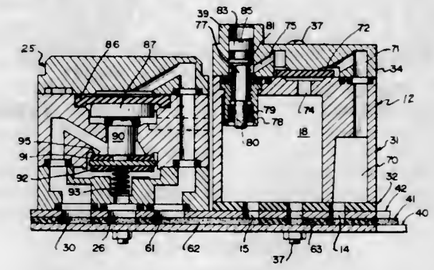
whereupon the presence of fluid at said control port at a pressure greater than the pressure at said biasing port times the ratio of the radius of said second slot pill over the radius of said first slot pill crosses said pills to move so that second slot pill blocks fluid connection between said biasing port and said outlet port.

3,466,003
HIGH FREQUENCY VALVE
Julius C. Boonshaft, Huntingdon Valley, and Kenneth W. Zeuner, Newton, Pa., assignors to Weston Instruments, Inc., Newark, N.J., a corporation of Delaware
Filed Dec. 30, 1966, Ser. No. 606,193
Int. Cl. F16k *31/16;* **F15b** *11/08*
U.S. Cl. 251—30 **8 Claims**



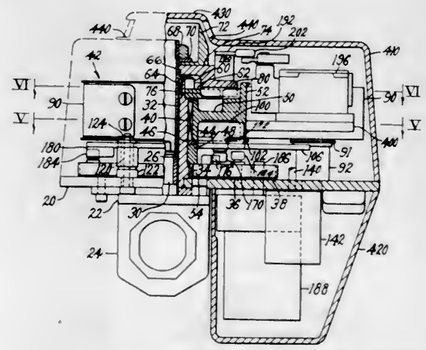
A high frequency spool valve comprising a fixed flux electromagnet in the form of an annulus. A stem having a screw, spring and body portion joined together is disposed within the annulus with a yoke adjustably fixed to one end of the stem and to the other end of the stem affixed to the electromagnet. A valve spool and a plurality of channels and lines are disposed within the annulus. The spring is unstressed when the spool is in a neutral position; exerts tension force when the spool is in a position on one side of neutral and an equal compressive force when the spool is on the other side of neutral.

3,466,004
INTERVAL TIMER FOR PNEUMATIC LOGIC SYSTEMS
Karl A. Brandenberg, Hayward, Calif., assignor to Aro Corporation, a corporation of Ohio
Filed July 8, 1966, Ser. No. 563,744
Int. Cl. F16k *31/165*
U.S. Cl. 251—61.3 **7 Claims**



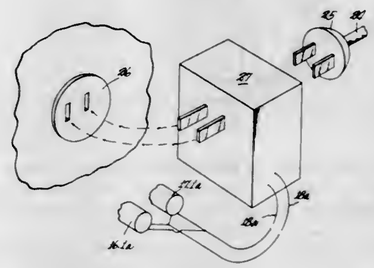
A timer for a pneumatic logic system which includes a fluid inlet port, an accumulator chamber with an adjustable restricted inlet orifice in a fluid passageway from the inlet port to the chamber, an outlet port from the chamber and a valved exhaust port for the chamber. Fluid flow is provided through a unidirectional check valve in the passageway to the restricted orifice. A sufficient pressure signal is delayed to the output by operation of the orifice and chamber volume. The check valve is also in responsive communication with the exhaust port of the accumulator chamber and is adapted to exhaust the chamber when pressure in the chamber is greater than pressure at the inlet port.

3,466,005
REMOTE CONTROL VALVE OPERATING MECHANISM
Gunther K. E. Kleeberg, Lexington, Mass., assignor, by mesne assignments, to E.B.V. Systems, Inc., Warwick, R.I., a corporation of Maryland
Filed Aug. 8, 1966, Ser. No. 570,874
Int. Cl. F16k *31/06, 31/44*
U.S. Cl. 251—69 **15 Claims**



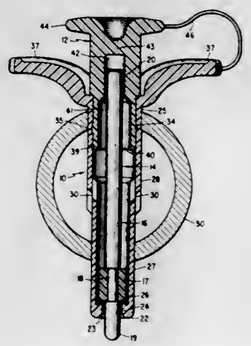
Valve operating mechanism in which a rotatably mounted drum is connected to the valve stem and urged by a spring in a direction to close the valve, characterized by a gear motor for rotating the drum in the opposite direction to open the valve and means acting directly on the drum and including a solenoid for holding the valve in open position when the solenoid is energized and for releasing the drum to the action of the spring to close the valve independently of the gear motor, when the solenoid is deenergized, either intentionally or as the result of power failure.

3,466,006
SAFETY DEVICE FOR AUTOMATIC WASHERS AND THE LIKE
Richard J. Livingston, R.D. 2, West Middlesex, Pa. 16159
Filed Apr. 7, 1967, Ser. No. 629,290
Int. Cl. F16k *31/02;* **B08b** *3/00*
U.S. Cl. 251—129 **5 Claims**



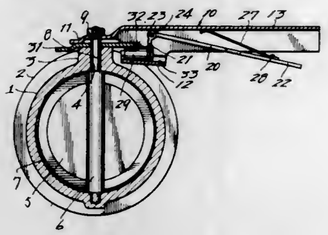
The present invention disposes a valve intermediate the flexible water supply hose of an automatic washer and the faucet to which it is usually connected and provides for automatic operation of such valve in coordination with the operating cycle of the washer. The invention further provides for coordinating valve operation with that of the washer by means including an adaptor interposed between the power lead of the washer and the electrical outlet which supplies power thereto.

3,466,007
DRINKING VALVE
James M. Launder, Wabash, Ind., assignor to HUPSI Corporation, Wabash, Ind., a corporation of Indiana
Filed Oct. 6, 1967, Ser. No. 673,350
Int. Cl. A01k *39/02;* **F16k** *31/56*
U.S. Cl. 251—145 **10 Claims**



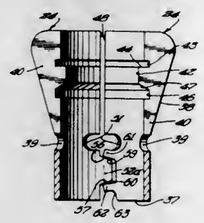
A poultry drinking valve is formed by a housing, a plug inserted in the housing, and a sliding valve stem and seal inside the assembled plug and housing. The housing and plug can be molded in one operation, assembled with the stem, and the completed assembly inserted in and removed from a water pipe without threaded connections.

3,466,008
BUTTERFLY VALVE
Kazuo Kitazawa, 21–13 2-chome, Ohara, Setagaya-ku, Tokyo, Japan
Filed Oct. 26, 1967, Ser. No. 678,305
Claims priority, application Japan, July 17, 1967, 42/45,632
Int. Cl. F16k *31/528, 5/00*
U.S. Cl. 251—297 **5 Claims**



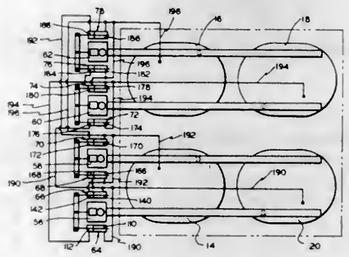
A butterfly valve or the like comprising a hollow flanged cylindrical body, a disc member disposed within said body extending across the interior of the body for rotational movement between valve opening and closing positions, an annular packing disposed around said disc member, a vertical shaft extending diametrically of said body, packing and disc member in a vertical plane which passes through the diameters of the body, packing and disc member and adapted to rotate about its longitudinal axis so as to rotate said disc member together with itself, a manual hollow operation handle rotationally mounted on said body and laterally extending from one side of the latter for rotating said shaft and a handle braking device operatively mounted within said handle and comprising a wedge actuating spring-loaded lever pivotally supported by said handle, a frusto-conical wedge member supported by said lever for longitudinal sliding movement together with said lever and for lateral sliding movement relative to said lever, and a brake disk fixedly mounted on said body and adapted to releasably hold said frusto-conical wedge member in position.

3,466,009
VALVE STEM RETAINER AND LOCK ASSEMBLY
William S. Giles, Highland Heights, Ohio, assignor to TRW Inc., Cleveland, Ohio, a corporation of Ohio
Continuation-in-part of application Ser. No. 387,680, Aug. 5, 1964, now Patent No. 3,338,228, dated Aug. 29, 1967. This application Oct. 5, 1966, Ser. No. 584,595
Int. Cl. F16k *51/00;* **F01l** *3/24*
U.S. Cl. 251—337 **4 Claims**



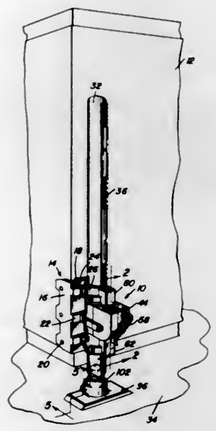
A valve stem lock and a unitized valve stem lock assembly in which the lock is split axially to provide two or more segments which are retained in the bore of a valve spring retainer by means of out turned flanges formed on the segments and which are wedged toward each other in the retainer bore by a wedging action between the retainer and the outer walls of the segments. Cooperating bosses and recesses are formed on the longitudinal edges of the segments to maintain a substantial axial alignment of the segments in the retainer bore.

3,466,010
APPARATUS TO COMPENSATE FOR OFF-CENTER LOADING ON A MATERIAL HANDLING DEVICE HAVING INFLATABLE FLUID PADS
Richard R. Jung, Battle Creek, Mich., assignor to Clark Equipment Company, a corporation of Delaware
Filed Dec. 16, 1966, Ser. No. 602,269
Int. Cl. B66f *3/24;* **B60v** *1/00;* **B25j** *3/00*
U.S. Cl. 254—93 **8 Claims**



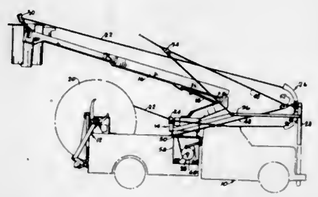
Apparatus to compensate for off-center loading of a device having a load supporting platform supported by three or more inflatable fluid pads. The apparatus is responsive to fluid pressure in the individual pads and operates to maintain the fluid flow to each pad directly proportional to the loading on the respective pad.

3,466,011
JACK CONSTRUCTION
George B. Hewes, Jr., Baltimore, and James Leon Conner, Bel Air, Md., assignors to Gichner Mobile Systems, Inc., a corporation of Maryland
Filed May 26, 1967, Ser. No. 641,530
Int. Cl. B66f *3/16*
U.S. Cl. 254—97 **5 Claims**



A jack construction for use on a shelter unit for supporting the shelter unit in a level condition and at a desired elevational position. The shelter unit is provided with a jack construction at each corner thereof with a bracket or adapter attached to the shelter unit and provided with a tubular sleeve slidably receiving an elongated cylindrical member having a rack gear extending substantially throughout the length thereof. A manually operated pinion gear is mounted on the bracket or adapter in meshing engagement with the rack gear for lowering and raising the elongated cylindrical lift member in relation to the shelter unit. The bracket or adapter and the elongated cylindrical lift member are provided with bearing members therebetween in such a manner to facilitate movement of the elongated cylindrical lift member without scuffing, galling or the like of the elongated cylindrical lift member and the sleeve forming part of the bracket or adapter. A self-levelling foot is attached to the lower end of the elongated lift member for universal pivotal movement thereof for enabling the supporting surface to be fully engaged by the foot even though the supporting surface may be inclined or irregular.

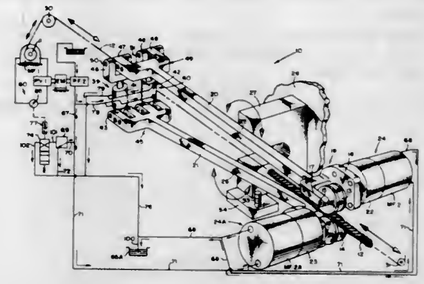
3,466,012
WINCH ASSEMBLY
Vincent P. Rheinberger, West Hartford, Conn., assignor to Hunt-Pierce Corporation, Milford, Conn., a corporation of Connecticut
Filed June 1, 1967, Ser. No. 642,837
Int. Cl. E21c *29/16*
U.S. Cl. 254—134.3 **5 Claims**



A winch assembly having a support and power means mounted on the support. A shaft is provided which is operably connected to the power means and a drum is rotatably mounted on the shaft for winding and unwinding a line on the drum. Advantageously, a disengageable connecting member is provided which joins the shaft and the drum to allow the drum to be power driven when the connecting member is engaged. The connecting member is disengageable from the shaft and drum to allow the drum to be freely rotatable on the shaft. The shaft has an outer portion extending beyond the drum for mounting an additional or drum reel on the shaft. The outer portion has engaging means for connecting the reel thereto. Another highly desirable aspect of this invention provides for a brake pivotally mounted on the support means and positioned adjacent the drum to provide for proper winding and unwinding of a line wound on the drum.

3,466,013
WINCH CABLE ANTI-SLACK UNIT
Gary C. Smith, Jr., Columbus, Ohio, assignor to Abex Corporation, New York, N.Y., a corporation of Delaware
Filed Nov. 8, 1967, Ser. No. 681,386
Int. Cl. B66d *1/50, 1/28*
U.S. Cl. 254—175.7 **15 Claims**

A tensioning device for preventing cable from becoming entangled or fouled as it is payed out or taken in from a motor driven drum or winch. The cable passes between a pair of opposed motor driven pulleys operative to pull the cable under tension off of the drum as cable is payed out and operative to maintain a predetermined tension on the cable when it is taken in. The cable extends



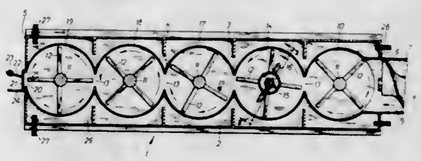
tangentially to the opposed pulleys so that the pulley support shafts do not carry and are not loaded by the tension on the cable.

3,466,014
SWITCHING ACTUATOR FOR A CONCRETE VIBRATING TOOL
Anton Pöttgens, 28 Robensstrasse 51, Aachen, Germany
Filed Nov. 29, 1966, Ser. No. 597,728
Claims priority, application Germany, Dec. 6, 1965, P 26,352
Int. Cl. H01h *1/08, 29/06*
U.S. Cl. 259—1 **2 Claims**



A switching actuator having particular use in vibrating tools is disclosed. A quantity of mercury is disposed within a hollow chamber within the hose-like casing. When the casing is lifted away from the horizontal, the mercury moves within the chamber to automatically actuate the switch to connect the tool drive motor to an external source of power.

3,466,015
PROCESS OF AND APPARATUS FOR WETTING BULK MATERIALS
Wilhelm Lodige, Fritz Lodige, and Josef Lucke, Paderborn, Germany
Filed Jan. 4, 1968, Ser. No. 695,676
Claims priority, application Germany, Jan. 11, 1967, L 55,478
Int. Cl. B01f *15/00, 7/04*
U.S. Cl. 259—9 **13 Claims**



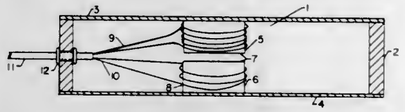
A process of and apparatus for wetting bulk materials capable of trickling movement by treating them in a multichamber apparatus having a rotatable knife head in each chamber at least one of them being in a hollow shaft through which the wetting liquid is introduced.

3,466,016
AGITATING APPARATUS FOR FLOCCULATING TREATMENT OF SUSPENSIONS
Theodore M. Jablon, Stamford, Conn., assignor to Dorr-Oliver Incorporated, Stamford, Conn., a corporation of Delaware
Continuation-in-part of application Ser. No. 644,275, June 7, 1967. This application May 10, 1968, Ser. No. 734,838
Int. Cl. B01f *11/00*
U.S. Cl. 259—100 **33 Claims**



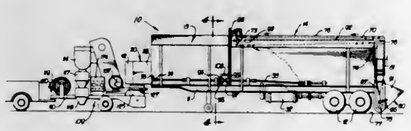
This invention relates to the flocculating treatment of a suspension of solids or turbudity in liquids in a horizontal throughflow tank by way of gentle mechanical agitation, and more particularly to improvements in the agitating mechanism wherein a horizontally extending flexible assembly of agitating means is endwise suspended, and the assembly is moved up and down along predetermined paths.

3,466,017
ULTRASONIC WAVE GENERATOR
Mark A. Malvin, R.R. 2, Box 101, Medford, N.J. 08055
Filed Dec. 19, 1967, Ser. No. 691,885
Int. Cl. B01f *11/02;* **H04b** *13/00*
U.S. Cl. 259—114 **8 Claims**



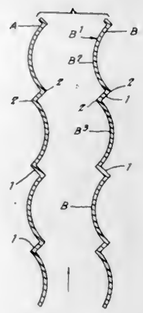
The specification describes an ultrasonic wave generator comprising a housing with oppositely disposed flexible plates, a first continuously energized coil pole attached to one of the plates and a second coil pole attached to another of the plates oppositely disposed to the first pole and periodically energized by a multivibrator circuit so that when energized the coil poles are directed from one another due to magnetic repulsion and when deenergized the poles are directed toward one another due to magnetic attraction.

3,466,018
MOBILE CEMENT UNIT
Donald G. Nourse, 9601 S. Clancey Ave., Downey, Calif. 90240
Filed Feb. 18, 1964, Ser. No. 345,647
Int. Cl. B28c *7/00, 7/04;* **B60p** *1/00*
U.S. Cl. 259—163 **13 Claims**



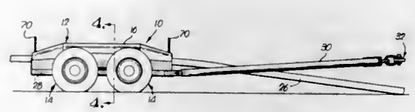
6. In a batch cement plant: a weighing box; means for conveying cement to said weighing box; means for conveying sand to said weighing box; a mixer; means for discharging the contents of the weighing box to the mixer; means for discharging the contents of the mixer; an actuator for causing operation of the cement conveying means; an actuator for causing operation of the sand conveying means; an actuator for causing operation of the weighing box discharging means; an actuator for causing operation of the mixer discharging means; means sensing the weight of the contents of the box; means for operating the cement actuator and the sand actuator in sequence and under automatic control of said weight sensing means; means responsive to the weight sensing means detecting a zero weight for initiating operation of said sand and cement actuator operating means; means for operating said box actuator after discharge of controlled quantities of sand and cement; means operating said mixer discharge actuator at a predetermined time interval after operation of said box actuator; and means preventing operation of said box actuator during said predetermined time interval.

3,466,019
GAS-LIQUID CONTACT PACKING SHEETS
Ronald Priestley, 84 Chesterwood Road, Kings Heath, Birmingham 14, England
Continuation-in-part of application Ser. No. 376,766, June 22, 1964. This application Aug. 4, 1967, Ser. No. 658,388
Int. Cl. B01d *47/12*
U.S. Cl. 261—112 **16 Claims**



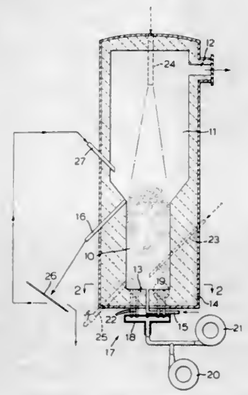
Packing sheets are described for use in apparatus for effecting contact between a gas or vapour flowing past such sheets and a liquid flowing over the surface of such sheets. By connecting curved portions of the sheet together so that they provide a ridge, greatly increased contact efficiency can be obtained. By suitable sheet contours, sufficiently rigid packing sheets may be made from intrinsically non rigid materials, e.g. sheet plastics materials.

3,466,020
HEATER FOR PLASTIC PIPE
Charles F. Blinne, P.O. Box 445, Poplar Bluff, Mo. 63901
Filed Dec. 28, 1967, Ser. No. 694,336
Int. Cl. F27d *7/02*
U.S. Cl. 263—4 **4 Claims**



A machine for facilitating the laying of a continuous stretch of pipe, comprising an elongated tube having a pair of truncated cones at the ends, each cone having an opening slidably receiving the pipe. The tube is mounted on a mobile frame for advancement along the pipe. Burner and blower means carried on the frame direct heat and artificial currents of air into the tube to uniformly distribute heat over the pipe.

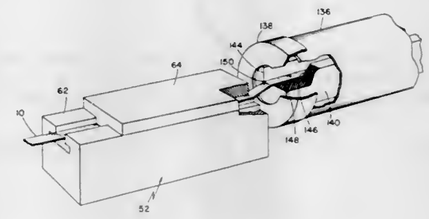
3,466,021
THERMAL TREATMENTS IN FLUIDIZED BEDS
Gezinus Van Weert, Richmond Hill, Ontario, Canada, and Jon-Olaf Valen, Kristiansand, Norway, assignors to Falconbridge Nickel Mines Limited, Toronto, Ontario, Canada, a company
Filed Sept. 14, 1967, Ser. No. 667,697
Int. Cl. F26b *3/04;* **C01g** *23/04*
U.S. Cl. 263—21 **15 Claims**



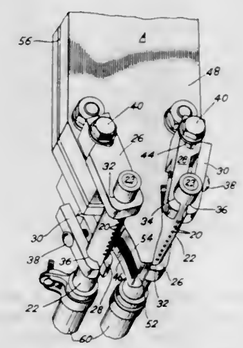
A method and apparatus for thermal treatment of solid particles in fluidized beds and carrying out of heat treatments and other reactions therein at elevated temperatures such as formation of metal oxides by the endothermic reaction of metal chlorides with water. An explosive mixture of gases is supplied to a fluidized bed of solid particles in a reactor as a multiplicity of separated streams, each stream is maintained at a temperature below the ignition temperature of the mixture by cooling a portion thereof outside the reactor, and at a velocity greater than the ignition velocity of the mixture by supplying the mixture under sufficient pressure, and the mixture is then combusted in the bed to produce hot fluidizing gases, thereby maintaining the bed in a fluidized condition at an elevated temperature and providing a suitable environment for the conduct of heat treatments and other reactions.

3,466,022
APPARATUS FOR PROCESSING OF STRIP METAL IN A CONTINUOUS MANNER TO REMOVE UNDESIRED CURVATURE
Thomas J. Rum, South Boston, Mass., assignor to The Gillette Company, Boston, Mass., a corporation of Delaware
Filed Oct. 14, 1966, Ser. No. 586,880
Int. Cl. C21d *7/14, 9/56;* **B65h** *23/34*
U.S. Cl. 266—3 **10 Claims**

Razor blade strip steel 0.2 inch wide and 0.0015 inch thick is transferred at a thirty foot per minute rate sequentially through a hardening furnace, an air cooled tubular transition zone, a quench unit, a freeze unit, a tempering furnace, and a continuous inspection station to a take up reel. The vertical position of the quench unit relative to the transition zone is adjustable so that a differential stress may be applied to the steel strip to prevent or minimize a dish condition in the processed strip.



3,466,023
SIDE QUENCH MECHANISM FOR INDUCTION INTENSIFIERS
James J. Cunningham and Webster F. Hall, Richmond, and Allen J. Myers, Fountain City, Ind., assignors to National Automatic Tool Co., Inc., a corporation of Indiana
Filed Jan. 16, 1967, Ser. No. 609,388
Int. Cl. C21d *1/66, 9/32*
U.S. Cl. 266—4 **11 Claims**

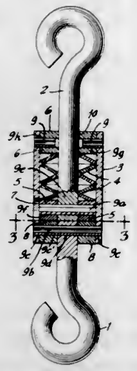


Quenching means for an induction intensifier which hardens gear teeth or the like in tooth-by-tooth fashion, such means being operable to concentrate quench liquid on specific areas of the gear teeth in order to improve the hardness pattern thereof.

3,466,024
APPARATUS FOR TENSIONING OF TENSION ROPES IN GYMNASTIC APPARATUS
Rudolf Spieth, Oberhof, 14 Haus, 7300 Esslingen, Germany
Filed May 2, 1967, Ser. No. 635,521
Claims priority, application Germany, May 3, 1966, S 56,932
Int. Cl. F16g *11/12;* **F16f** *1/32*
U.S. Cl. 267—69 **6 Claims**

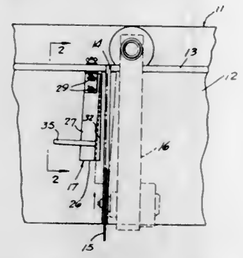
An apparatus for tensioning of tension-cords of double bars, horizontal bars and the like, which comprises a housing, two anchors disposed in and projecting oppositely from the housing. Furthermore, spring means are provided which are disposed in the housing and tend to urge one of the anchors into the housing. A movable

member includes a spring plate in the housing which guides directly one of the anchors and an immovable



member includes likewise a spring plate and guides indirectly the one of the anchors.

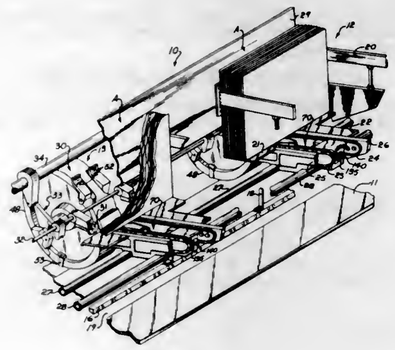
3,466,025
WEDGE-CUTTING FIXTURE FOR A RADIAL ARM SAW
Melvin R. Kimber, 1701 Aspen St., Fort Collins, Colo. 80521
Filed July 7, 1967, Ser. No. 651,726
Int. Cl. B23q *1/00, 3/02;* **B27b** *27/06*
U.S. Cl. 269—53 **8 Claims**



A wedge-cutting fixture for a radial arm saw of the type having a table provided with an upstanding fence rib and a transverse saw slot intersecting the rib. The fixture consists of a hinged assembly having two leaves. One of the leaves is fastened by a bolt to the fence rib adjacent the saw slot. The other leaf is adjustably-fastened to the horizontal bottom flange of an angle bar with the vertical web thereof extending alongside the saw slot and at an adjusted angle thereto. The vertical web is provided with a top clamping flange adapted to overlie and engage on the top edge of a wood block from which a desired wedge is to be cut. The clamping flange has depending prongs adapted to penetrate into the top edge of the block to hold it against shifting. The vertical web is provided with an outwardly-projecting substantially horizontal handlebar.

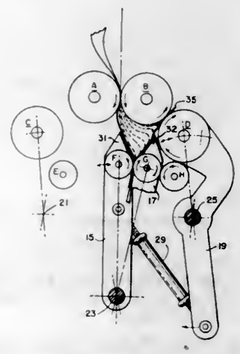
3,466,026
COLLATOR
Carl H. Heigl, Westlake, Ohio, assignor to Harris-Intertype Corporation, Cleveland, Ohio, a corporation of Delaware
Filed July 26, 1967, Ser. No. 656,173
Int. Cl. B65h *7/04, 43/02*
U.S. Cl. 270—58 **15 Claims**

The collating machine for feeding and grouping signatures to form a pack has a plurality of spaced feeding units which are adapted to feed signatures one at a time to associated signature receiving stations. The signatures are then gathered and grouped by a conveyor means to form packs for delivery to a suitable binding or stapling station where the packs are bound or stapled together to form a book. A detector mechanism is provided at each of the feeding units for detecting when no or more than one signature is being fed and which is operable to stop



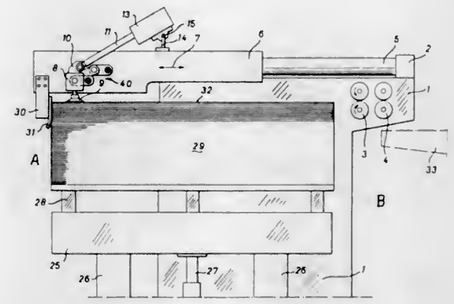
the machine when either of these conditions is detected. The machine also includes control means for automatically sequentially actuating the feeding units for initial pack formation, the control means being also operatively connected with the detector mechanisms to render the detector mechanisms at the feeding units not yet or not to be placed in operation ineffective to stop the machine.

3,466,027
PAPER FOLDING MACHINE
John H. Kwik, Jr., Red Bank, N.J., assignor to the United States of America as represented by the Secretary of the Army
Filed Sept. 7, 1967, Ser. No. 666,567
Int. Cl. B65h *45/20*
U.S. Cl. 270—79 **4 Claims**



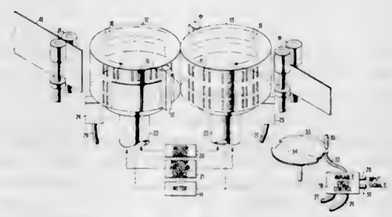
The paper folding and creasing machine of the present disclosure includes essentially a combination of four fixed and four shiftable rollers that operate in timed, sequential arrangement whereby in any one operational direction six of the rollers are active to fold and crease the paper as desired. The machine further includes pivotable links between several of said rollers to effect movement and displacement of the shiftable rollers.

3,466,028
APPARATUS FOR FEEDING SHEETS FROM A STACK TO A PROCESSING MACHINE
Fernand Bays, Pully, Switzerland, assignor to Vidosa S.A., Lausanne, Switzerland, a corporation of Switzerland
Filed June 20, 1967, Ser. No. 647,501
Claims priority, application Switzerland, June 24, 1966, 9,152/66
Int. Cl. B65h *3/08, 5/08*
U.S. Cl. 271—11 **9 Claims**



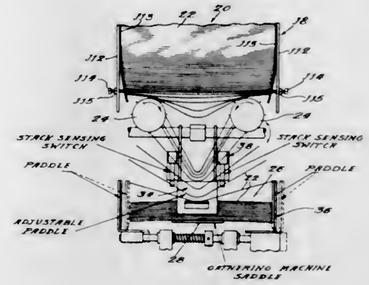
An apparatus for feeding individual sheets or the like from a stack of such sheets to a processing machine which comprises a plurality of lifting means for the sheets disposed above the stack, and at least two transport rolls arranged downstream of the aforesaid stack in the direction of withdrawal of the individual sheets therefrom, said sheet being movable between such transport rolls. Further, a cross-beam is provided which is mounted to be longitudinally displaceable and at which are arranged the sheet lifting means. Power driven guide means, typically in the form of quadrangular or quadrilaterial guide linkage arrangements, cooperate with the aforementioned cross-beam for displacing the sheet lifting means. The latter, during displacement, conjointly carry out a substantially curve-shaped work stroke consisting of a vertical component and a horizontal component, wherein the uppermost sheet of the stack arrives between the aforesaid transport rolls at the end of such work stroke.

3,466,029
FLUID-CONTROLLED DOCUMENT TRANSPORT DRUM
Donald F. Jensen, Endicott, N.Y., and Hans R. Müller, Adliswil, Switzerland, assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed Dec. 26, 1967, Ser. No. 693,367
Int. Cl. B65h *5/06, 29/32*
U.S. Cl. 271—51 **11 Claims**



A rotatable drum for attracting and releasing sheet material on the perforated cylindrical surface thereof by controlling internal diaphragm valve means to apply vacuum or pressure at the perforations in response to streams of pressurized fluid directed from stationary nozzles toward valve control ports on the drum periphery.

3,466,030
ROTARY FEEDER FOR GATHERING MACHINES
Kermit E. Swanson, Naperville, Ill., assignor to R. R. Donnelley & Sons Company, a corporation of Delaware
Filed Aug. 10, 1966, Ser. No. 571,576
Int. Cl. B65h *3/06, 7/02*
U.S. Cl. 271—71 **14 Claims**

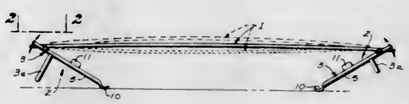


Apparatus for intermittently feeding signatures into the signature supply box of a gathering machine, in which a large upper stack of signatures is supported upon a pair of spaced, driven rollers which may be rotated toward each other to collapse the bottom signatures in the upper stack in the supply box without creasing them. Means associated with the supply box senses whether the top of the lower stack is above a predetermined level, and interrupts rotation of the rollers when the top of the lower stack is above said level.

ERRATUM

For Class 272—65 see:
Patent No. 3,466,053

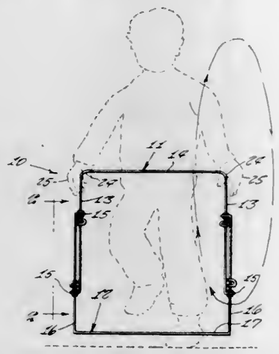
3,466,031
JOUNCING BOARD
Robert O. Boykin, Jr., 3678 N. Fair Oaks, Altadena, Calif. 91001
Continuation of application Ser. No. 489,185, Sept. 22, 1965. This application May 31, 1968, Ser. No. 739,922
Int. Cl. A63b *5/08*
U.S. Cl. 272—65 **6 Claims**



A jouncing board having special supporting structures at its ends, which are secured against displacement relative to the board when the ends of the board flex upwardly and downwardly, and consequently, move to and from each other. One embodiment accomplishes this result by pairs of struts which converge toward each other, each pair of struts being connected by an upper bar extending over the end of the board and the other extending under the board in offset relation, both cross bars being firmly secured to the board, with the result that the struts permit the flexing and displacement movements of the board. The other embodiment accomplishes this result by use of

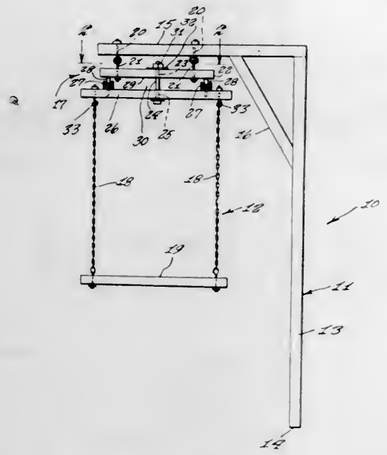
a pair of crossed frames at each end of the board connected by a plate secured to the board, the frames being unattached at their cross points to permit the flexing and displacement movements of the ends of the board.

3,466,032
ADJUSTABLE SIZE JUMPING HOOP
Ernest R. Thornton, Rte. 2, Box 228–C, Point Pleasant, W. Va. 25550
Filed May 26, 1967, Ser. No. 641,542
Int. Cl. A63b *5/22*
U.S. Cl. 272—74 **2 Claims**



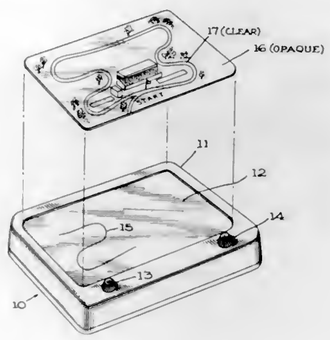
A jumping hoop formed from a pair of metal rods which are adjustable relative to each other so to accommodate children or persons of different sizes, one of the metal rods being selectively adjustable relative to the other.

3,466,033
SWIVEL SWING
Hugo A. Pori, 412 Chilverton St., Santa Cruz, Calif. 95060
Filed Jan. 3, 1967, Ser. No. 607,061
Int. Cl. A63g *9/00*
U.S. Cl. 272—85 **2 Claims**



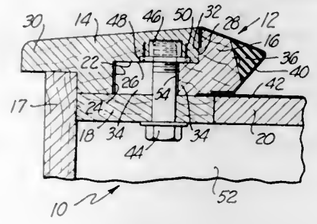
A children's swing supported from a pair of spaced-apart, stationary eye bolts, the swing including a swivel mechanism whereby the lower end of the swing supporting the child may travel in a rotational motion while swinging back and forth, this being accomplished by a swivel in the mechanism.

3,466,034
GAME DEVICE
Raymond E. Sargent, R.D. 1, Burlington, Vt. 05401
Filed June 9, 1967, Ser. No. 644,911
Int. Cl. A63f *9/00*; **B43l** *13/14*
U.S. Cl. 273—1 **3 Claims**



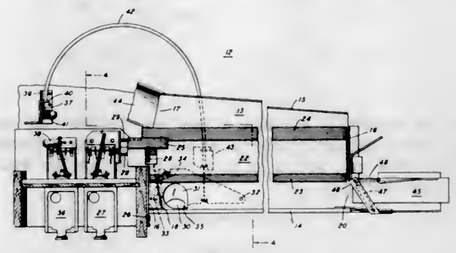
The invention relates to an overlay element arranged to be positioned over the translucent surface of a game device provided with a tracing stylus and covered by U.S. Patent No. 3,055,113. The overlay includes transparent or framed curvilinear lines of demarcation depicting a closed race course. Upon playing the patented game device one attempts to control the tracing stylus thereof in such a manner that it will be traversed through the entire curvilinear path of the race course without departing therefrom.

3,466,035
DISASSEMBLABLE TOP RAIL FOR A BILLIARD TABLE
Joseph S. Duarte, Whittier, Calif., assignor to Duarte International Sales Co., Inc., Los Angeles, Calif., a corporation of California
Filed Sept. 15, 1967, Ser. No. 667,985
Int. Cl. A63d *15/06*
U.S. Cl. 273—9 **6 Claims**



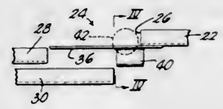
A top rail construction for a billiard table or the like consisting of outer elongated members secured to the periphery of the table, each outer member having a longitudinal inboard bottom recess, and elongated inner members, each inner member having a longitudinal outboard bottom projection. The recesses are adapted to receive respective projections to enable the inner members to laterally slidably engage the outer members to form a substantially contiguous top rail where the inner members are releasably and removably secured to the table for ease in repairing the cloth covering.

3,466,036
COIN-OPERATED BALL SEPARATING AND DISPENSING DEVICE
William F. Connelly, 24 Walnut St., Belleville, N.J. 07109, and Paul Kotler, 35 Webster St., Irvington, N.J. 07111
Filed Nov. 9, 1966, Ser. No. 593,074
Int. Cl. A63d *15/00*
U.S. Cl. 273—11 **6 Claims**



This invention relates to game tables, and more particularly, to coin-operated billiard tables wherein a player can obtain all game balls or selected game balls at will and is embodied within a coin-operated game table having a ball control mechanism. The mechanism includes means for aligning the playing balls in an adjacent pattern and two separate ball releasing systems that are actuated and operated independent of each other. The first releasing system, upon actuation, releases all of the balls in the pattern for play purposes. The second releasing system is located under a particular ball in the pattern and includes an aperture, aperture closure plate and isolating device. Upon actuation, the aperture closure plate is displaced opening the aperture and allowing a single ball to be released. The isolating device isolates the rest of the balls in the pattern from the aperture.

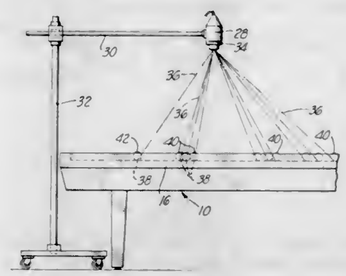
3,466,037
BALL SEPARATING AND ALIGNING DEVICE
Raphael W. Miller, 1406 W. Franklin St., Jackson, Mich. 49203
Filed Jan. 3, 1967, Ser. No. 606,925
Int. Cl. A63d *15/00*
U.S. Cl. 273—11 **2 Claims**



Separation apparatus separating a smaller diameter cue ball from larger diameter playing balls for use with coin-operated pocket billiard tables, the separation apparatus including preliminary ball-receiving means for vertically aligning the balls with the gauging apparatus prior to gauging.

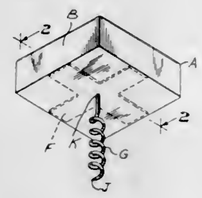
3,466,038
APPARATUS AND METHOD TO SELECTIVELY INDICATE BALL POSITIONS
Gerard T. Hill, 14229 Chandler Blvd., Van Nuys, Calif. 91401
Filed July 20, 1967, Ser. No. 654,831
Int. Cl. A63d *15/00*; **A63b** *71/06*
U.S. Cl. 273—14 **18 Claims**

Means is provided for temporarily and repetitively indicating a multiplicity of ball location spots on the playing surface of a standard pocket billiard table so that balls may be placed on said spots during said temporary indication and a series of games played from the exact same starting ball locations. The means may then be altered for tempor[illegible] indicating a different pattern of ball location



spots serving the same function for another series of games. Such indicating means may be light projection means above or beneath the table surface, a template over said surface, or electromagnets beneath said surface attracting means embedded in the balls.

3,466,039
BASEBALL BASE WITH GROUND-FASTENING ROD
David L. Golomb, Port Washington, N.Y., assignor to Everlast World's Boxing Headquarters Corporation, Bronx, N.Y., a corporation of New York
Filed May 18, 1967, Ser. No. 639,558
Int. Cl. A63b *71/00*
U.S. Cl. 273—25 **6 Claims**

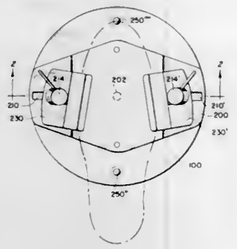


A baseball base, adapted to be screwed into the ground by means of a screw-type rod projecting vertically down from the lower central axis of the base. The rod is attached to a stiff metallic crucible shaped member which extends the entire width of the bottom of the base. The crucible shaped member is attached to a generally rectangular board member which also extends the width of the base. The base is stuffed and has a covering encompassing the top, bottom, and all four sides.

3,466,040
PIVOT POSITIONER FOR A BASEBALL PLAYER'S REAR FOOT
Michael P. Sertich, 405 Forest Hills Drive NE., Atlanta, Ga. 30300
Filed Sept. 6, 1966, Ser. No. 577,504
Int. Cl. A63b *69/00*
U.S. Cl. 273—26 **5 Claims**

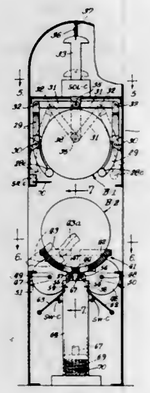
A pivot positioner for a player's foot which is designed to ensure proper rear foot pivot action as in batting in baseball. The device comprises foot securing clamps which

are mounted upon a rotatable plate causing the player to pivot in position on his rear foot, securing his balance and



avoiding thereby lunging, overstriding and related errors in performing baseball and related sports.

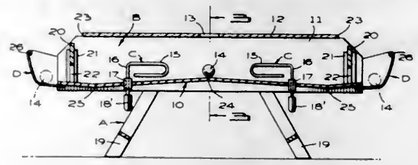
3,466,041
CONTROL SYSTEM
Joseph L. Byrd and William M. Allen, Columbus, Ohio, assignors, by direct and mesne assignments, to Brunswick Corporation, a corporation of Delaware
Filed Apr. 25, 1963, Ser. No. 275,560
Int. Cl. A63d *5/02*
U.S. Cl. 273—49 **30 Claims**



28. In combination with a bowling alley, ball return track means including a plurality of releasable means at the forward end thereof, a row of ball supporting means one each for each of said releasable means, disposed beneath said track means, and means controlling said releasable means whereby a ball may move along a substantially vertical path from the track means selectively to any of the ball supporting means.

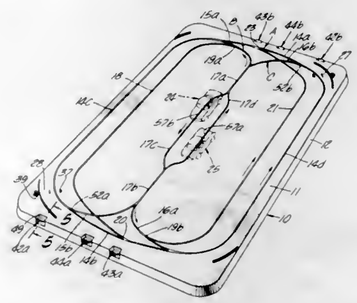
3,466,042
TABLE BALL GAME
Joseph A. Lucci, 3833 Beresford St., San Mateo, Calif. 94403
Filed Aug. 22, 1967, Ser. No. 662,459
Int. Cl. A63p *7/06*
U.S. Cl. 273—85 **2 Claims**

A table ball game having a channel-shaped body with a transparent plate mounted over the channel, the plate having a central opening through which a ball may be dropped into the channel. At least a pair of spaced paddles are swingably mounted, with at least one of the paddles being disposed near opposite end portions of the channel in positions to propel the ball into net baskets supported at the opposite ends of the channel. Gates



may be removably mounted across the channel, with one gate being disposed between a paddle and the adjacent basket, each gate having at least one notch through which the ball may pass.

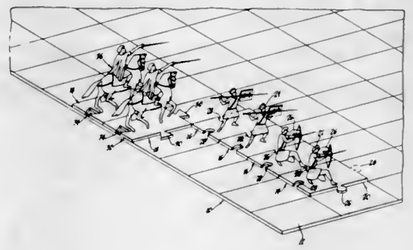
3,466,043
COMBINED PASSING RACE TRACK AND SELF-PROPELLED VEHICLES
Leonard H. McRoskey and John W. McRoskey, Los Angeles, Calif., assignors to Republic Tool & Manufacturing Corp., a corporation of California
Filed Dec. 7, 1966, Ser. No. 599,779
Int. Cl. A63f *9/14*
U.S. Cl. 273—86 **3 Claims**



An amusement game in which contestants compete with each other by racing miniature toy vehicles on an endless lap race track course, the vehicles being self-propelled at a substantially uniform speed, and wherein the race course for each vehicle has a starting point and lap finish point, starting gates under the control of each contestant being provided for releasing the start of his vehicle, and manually operable switching devices being provided under the control of each contestant whereby his opponent's vehicle may be directed over an auxiliary track course to increase the lap distance, and wherein each contestant may direct his own vehicle over an auxiliary track course to decrease the lap distance. Automatic counters indicate the laps completed by each vehicle.

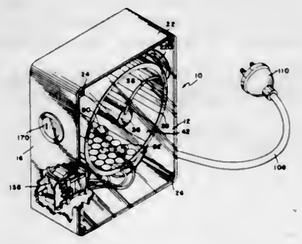
3,466,044
BOARD GAME APPARATUS WITH GAME PIECES INTERLOCKED FOR MOVEMENT AS A UNIT
Craig A. Somerville, 1052 Fairfax St., Birmingham, Mich. 48009
Filed May 23, 1966, Ser. No. 552,247
Int. Cl. A63f *3/02, 3/00;* **A63h** *13/00*
U.S. Cl. 273—131 **11 Claims**

Game equipment including a game board and a plurality of game pieces. Each game piece includes a rectangular base portion and a figure representing a cavalryman, or a lancer, or an archer, on the base portion. Each base portion includes tabs extending outwardly from adjacent side edges and correspondingly shaped apertures in adjacent side edges oppositely disposed from the side edges having the tabs. The tabs and apertures in the base portions of game pieces of all of one form are differently



shaped than the tabs and apertures in the game pieces having different forms so that they cannot be connected together, i.e., a cavalryman cannot be connected to an archer. The game board surface is divided into a plurality of rectangles of the same dimensions, and the base portion of each game piece is dimensioned to exactly fit within one of said rectangles.

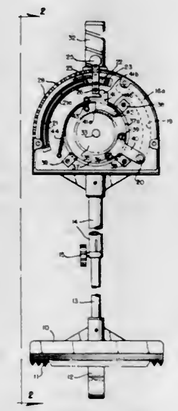
3,466,045
RANDOM SELECTOR SYSTEM FOR ADVERTISING, SALES PROMOTION, AND SELECTION OF AWARD RECIPIENTS
Fredric B. Walton, 213 S. 5th St., Sterling, Kans. 67579
Filed Mar. 21, 1966, Ser. No. 535,959
Int. Cl. A63b *71/06*
U.S. Cl. 273—138 **7 Claims**



A random electric circuit closing apparatus that includes a hollow cylindrical housing wherein the lower internal surface is provided with a plurality of recesses into which a ball rolling upon such surface may randomly seat. Some of the recesses have electrical contacts therein and the ball, which is electrically conductive, will bridge such contacts if the ball comes to rest in a recess so equipped. An electrically driven rotary vane periodically moves the ball from the lower portion of the housing (and such recess in which it is seated) and allows the ball to fall gravitationally so as to roll upon the surface and again become randomly seated in one of the recesses. Normally open electrical signal circuit means are coupled to the contacts which may be bridged by the ball.

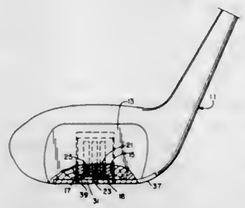
The present invention relates to apparatus that will signal the occurrence of a randomly occurring event for use in conjunction with a pre-established set of rules such that the signal will serve to designate the person or persons thereby entitled to an award, premium discount or the like in sales or good-will promotion efforts.

3,466,046
MECHANICAL PUTTER
Hugh P. McTeigue, Hollywood, Fla., assignor to Parker Electronics, Inc., Fort Lauderdale, Fla., a corporation of Florida
Filed June 16, 1967, Ser. No. 646,632
Int. Cl. A63b *69/36*
U.S. Cl. 273—162 **8 Claims**



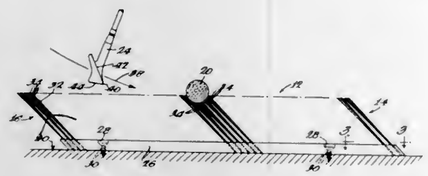
A regulation golf club (putter) is removably mounted on a bracket connected to a control mechanism comprising a ratchet and pawl arrangement associated with an angularly movable setting mechanism adapted to move the pawl out of engagement with the ratchet when the putter has been moved rearwardly through a preselected arc, thereby to permit the putter to swing freely in a forward direction with a force determined by the extent of its rearward motion.

3,466,047
GOLF CLUB HAVING ADJUSTABLE WEIGHTS
Frank J. Rodia, 7331 Rue Michael, La Jolla, Calif. 92037, and William J. Connelly, 4477 48th St., San Diego, Calif. 92115
Filed Oct. 3, 1966, Ser. No. 583,707
Int. Cl. A63b *53/04*
U.S. Cl. 273—171 **5 Claims**



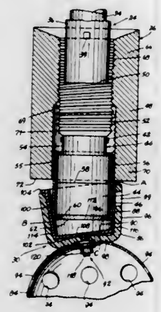
A golf club head having a weight plug with a threaded, recessed bottom surface, which bottom surface has threaded openings for receiving threaded adjusting weights that are selectively inserted into the openings to adjust the swing weight of the club, and a cap member that is threaded into the recess.

3,466,048
GOLF BALL DRIVING AREA INCLUDING SAND TRAP SIMULATING MEANS
Robert I. Anderson, Springlake, and Donald E. Bayne, Muskegon, Mich., assignors to Brunswick Corporation, a corporation of Delaware
Filed Oct. 19, 1966, Ser. No. 587,839
Int. Cl. A63b *67/02, 57/00, 69/36*
U.S. Cl. 273—176 **5 Claims**



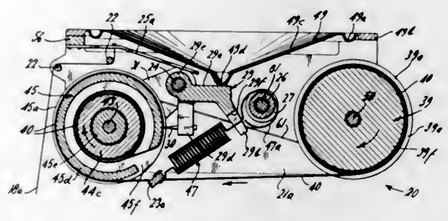
A golf ball driving area having anchored thereto a sand trap simulating mat including a backing from which a plurality of elongated bristles extend upwardly and rearwardly whereby a golf ball may be supported by the bristles and when a golf club is swung thereat in a manner to encounter the bristles prior to contact with the ball, the bristles exert a downward force on the golf club and are interposed between the club and the ball to act as an energy transfer medium to add impetus to the ball without actual ball-club contact.

3,466,049
GOLF PRACTICE DEVICE
Robert B. Fox, 28 Medial Place, Decatur, Ill. 62521, and Ernst F. Sturm, 8768 Del Vista Drive, St. Louis, Mo. 63126
Filed Jan. 8, 1968, Ser. No. 696,348
Int. Cl. A63b *69/36;* **F41b** *3/04;* **A63h** *33/26*
U.S. Cl. 273—186 **9 Claims**



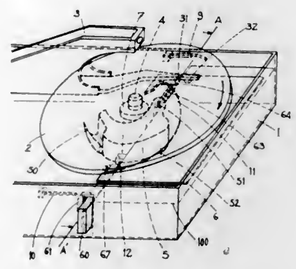
A simulated golf club has magnetically held to its lower end a releasable ball member which, if a proper golf swing has been executed with said club, will be detached from the club and enter an opening in a target member which is positioned forwardly of the golfer. The ball member is detachably secured to the club by a holding element thereon which fits into a cup attached to the ball member. The holding element magnetically coacts with the bottom of the cup in a manner which permits the top of the cup to be tilted at an angle to the longitudinal axis of the club. A movable member on the club is engageable with the top of the cup to tilt same relative to the holding element and create an air gap therebetween, to thus vary the magnetic holding force. The target includes a suspended impact curtain behind the above mentioned opening. A second target opening is provided for putting purposes. The target is formed from a card board blank including score lines and assembling tabs and slots.

3,466,050
MULTIMESSAGE PHONOGRAPH MECHANISM
Norman E. Sindlinger, Medford Lakes, N.J., assignor to Ideal Toy Corporation, Hollis, N.Y., a corporation of New York
Filed Mar. 3, 1967, Ser. No. 620,501
Int. Cl. G11b *3/00, 3/08*
U.S. Cl. 274—1 **42 Claims**



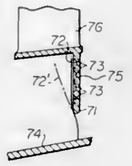
A multimessage tape audio device for use in toy dolls and the like. Flutter is minimized by providing a high tape tension relative to the dynamic load induced by the stylus. The provision of a friction surface enables a low-speed and small-size governor to be sufficient to regulate tape speed. The friction surface is rotatable and around the take-up drum and the tape passes through a slot in it such that the tape friction force is not present during wind-up or the acceleration period of playback. Although any tape message normally may be selected at random, switches are provided for limiting the random selection from among those in a particular group if desired.

3,466,051
MINIATURE RECORD-PLAYERS
Robert Renoux, Paris, France, assignor to CSF—Compagnie Generale de Telegraphie Sans Fil, a corporation of France
Filed Mar. 8, 1968, Ser. No. 711,602
Claims priority, application France, Nov. 17, 1967, 128,687
Int. Cl. G11b *17/06*
U.S. Cl. 274—15 **5 Claims**



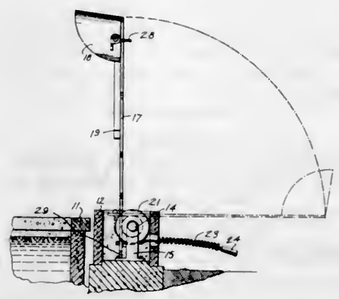
A record-player comprises a fork-shaped pick-up arm and a first arc-shaped, cam carrying part pivotably mounted at one end under the turntable and whose other end carries a cam, which can cooperate with the lower prong of the pick-up arm, for this arm to be returned to its rest position at the end of a playback of a record, and a pin extending towards a second cam carrying part. This second cam carrying part is controlled by a push-button for rejecting the pick-up arm and comprises a plate for lifting the lower prong of the arm and for cooperating with the pin of the first cam carrying part when rejection of the arm is desired.

3,466,052
FOIL SEAL
Lawrence P. Ludwig, Fairview Park, Ohio, assignor to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration
Original application Apr. 20, 1966, Ser. No. 545,224. Divided and this application Jan. 25, 1968, Ser. No. 700,586
Int. Cl. F16j *15/32, 15/34*
U.S. Cl. 277—25 **9 Claims**



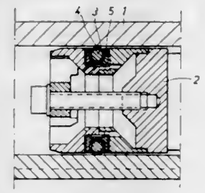
A flexible disc mounted on a rotating shaft in close proximity with a plate having a recessed surface forms a seal. The fluid to be sealed flows into the recess, and leakage is prevented by a pumping action resulting from movement of the disc relative to the plate. A centrifugal force caused by rotation of said flexible disc forces the disc toward the plate.

3,466,053
COMBINED DIVING CATAPULT AND SWIMMING POOL
William F. Whaley, P.O. Box 766, Moorhead, Minn. 56560
Filed Nov. 14, 1966, Ser. No. 593,936
Int. Cl. A63b *71/00;* **F41b** *3/02*
U.S. Cl. 272—65 **2 Claims**



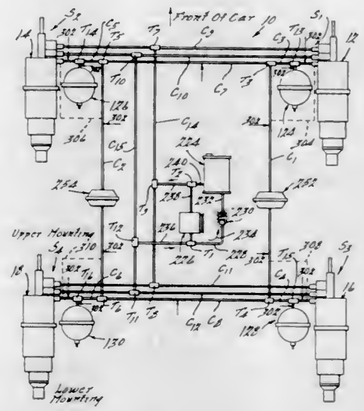
A catapulting device including a seat at one end of a pair of rods which at their opposite ends are pivotable about a transverse shaft supported between stationary bearings, the shaft carrying a pulley, one end of a tension cord being stationarily mounted to a post, the opposite end of the tension cord being affixed to a projecting end of one of the rods, the tension cord being passed around the pulley so to cause the rods to be pivoted about the shaft and catapulting a person positioned in the seat.

3,466,054
SEALING DEVICE BETWEEN A MOVABLE SURFACE AND A STATIONARY SURFACE
Lennart G. Berg, Fylgiavagen 1, Djursholm, Sweden
Filed Sept. 27, 1966, Ser. No. 582,463
Claims priority, application Switzerland, Oct. 21, 1965, 13,647/65
Int. Cl. F16j *15/00, 9/00, 1/02*
U.S. Cl. 277—169 **2 Claims**



A sealing device positioned between a piston and cylinder comprising a rigid annular support member, such as a steel ring, inserted in an endless annular rubber hose so as to be enclosed in the tubular space within said hose. A guide member made of a material having a low coefficient of friction is positioned in a circumferential groove in either the piston or the cylinder for supporting the hose. When the piston and cylinder are moved axially relative to each other the hose rolls along in sealing relationship with the other surface while rotating around the steel ring.

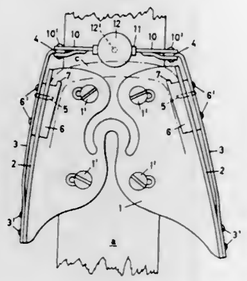
3,466,055
VEHICLE LEVELING SYSTEM
Johan H. Keijzer, Brustem, Belgium, assignor to Monroe Belgium N.V., St. Truiden, Belgium, a corporation of Belgium
Filed Mar. 22, 1967, Ser. No. 625,146
Int. Cl. B62d *37/00, 37/02*
U.S. Cl. 280—6 **23 Claims**



A leveling system comprising a plurality of vehicle suspension units interposed between the sprung and unsprung portions of an automotive vehicle and adapted to control the relative attitude between said vehicle portions; a combination fluid-air spring unit and a fluid leveling valve device operatively associated with each of the suspension units for controlling selective actuation thereof; fluid circuit means communicating the suspension units at the front and/or rear end of the vehicle and the units

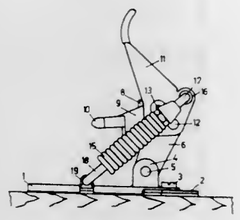
along the same side of the vehicle; a fluid reservoir and pumping means for transmitting actuating fluid to the suspension units, and load compensating means interposed between the suspension units on the same side of the vehicle for controlling the actuation of the suspension units at the front and rear of the vehicle in response to unequal load distribution.

3,466,056
SKI BINDING
Arthur Eugen Heyerdahl, 39 Martin Borrebekkens, Oslo, Norway
Filed Nov. 24, 1967, Ser. No. 685,608
Claims priority, application Norway, Nov. 28, 1966, 165,760
Int. Cl. A63c *9/00*
U.S. Cl. 280—11.35 **2 Claims**



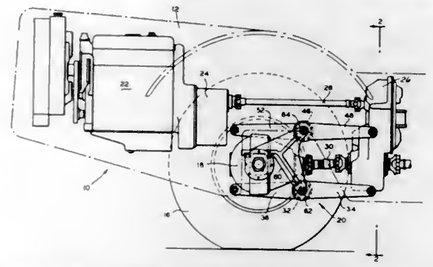
A pair of toe brackets (**1, 2**) have side springs (**3**) riveted thereto; the side springs (**3**) have inwardly extending brackets (**6**) to extend over the welt of the sole of the ski boot and further catches (**5**) to engage into recesses or notches (**5'**) in the sole of the boot (FIG. 2); links (**10**, FIG. 5) interconnect the springs which, when depressed for example by a ski pole, spread the springs to release the boot from the catches on the springs.

3,466,057
HEEL HOLDER FOR CABLELESS SKI BINDING
Hans Dobler, Zurich, Switzerland, assignor to A. Attenhofer AG, Zurich, Switzerland
Filed Jan. 10, 1968, Ser. No. 696,917
Claims priority, application Switzerland, Jan. 12, 1967, 458/67
Int. Cl. A63c *9/12, 9/24*
U.S. Cl. 280—11.35 **1 Claim**



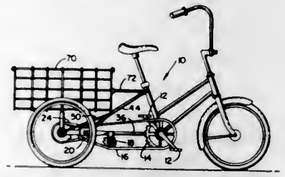
The heel holder proper slides along a pivotal rod in response to rotation of the operating lever to which it is coupled by a pin-and-slot, which guide the heel holder proper in its movement. Two springs maintain the heel holder proper in "closed" position.

3,466,058
TORSION SPRING SUSPENSION SYSTEM FOR VEHICLES
James F. King, St. Joseph, Mich., assignor to Clark Equipment Company, a corporation of Delaware
Filed Nov. 24, 1967, Ser. No. 685,396
Int. Cl. B60g *11/20;* **F16f** *1/16*
U.S. Cl. 280—124 **2 Claims**



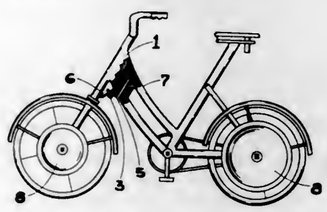
A suspension system connecting an axle to a vehicle frame for vertical movement and pivotal movement about a horizontal longitudinal extending axis.

3,466,059
COMMERCIAL TRICYCLE CONSTRUCTION
Robert M. Kiernan, 3 Radding St., Manchester, Conn. 06040
Filed July 11, 1967, Ser. No. 652,572
Int. Cl. B62m *1/02, 1/06*
U.S. Cl. 280—261 **1 Claim**



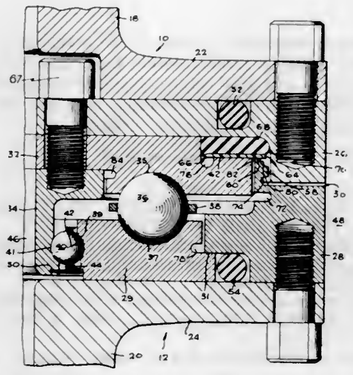
A commercial tricycle construction having two sprockets juxtapositioned at one end of the brake assembly, one sprocket engaging a drive chain from and aligned with the pedal sprocket, an idler sprocket mounted in between these two sprockets which also engages the drive chain. The second sprocket engaging a chain which drives the rear axle sprocket, and the members of the frame forming a welded unitary junction at either side of the brake assembly at which junction the brake assembly is mounted to the frame.

3,466,060
KNOCKDOWN STORAGE BICYCLE
Stanley T. Atterbury, 9745 S. Ingleside Ave., Cook County, Ill.
Filed Sept. 28, 1966, Ser. No. 588,234
Int. Cl. B62k *15/00*
U.S. Cl. 280—287 **1 Claim**



A knockdown bicycle in two rigid parts, front part with square sleeve extending diagonally from steering post, and rear rigid part with square bar extending diagonally, rear portion with square bar, inserted into square sleeve, and ready to ride.

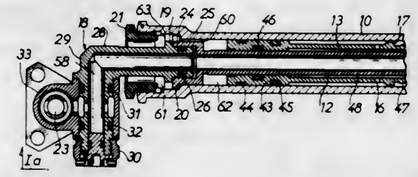
3,466,061
ROTARY JOINT
Giusto Fonda-Bonardi, Los Angeles, Calif., assignor to Litton Systems, Inc., Beverly Hills, Calif., a corporation of Maryland
Continuation-in-part of application Ser. No. 486,286, Sept. 10, 1965. This application July 17, 1967, Ser. No. 654,041
Int. Cl. F16l *19/02, 17/06*
U.S. Cl. 285—95 **17 Claims**



A rotary joint, and a seal for a rotary joint which is useful in diving suits, space suits, and the like.

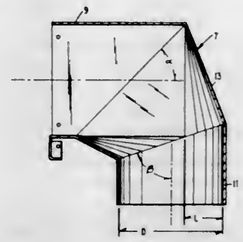
A pair of hollow shafts are held assembled by retaining bearings, and thrust bearing means are provided for carrying axial loads. Resilient seal means are positioned on one of the hollow shafts for contacting a hard sealing surface on the other shaft. Means are provided to control the sealing pressures on the sealing surfaces so that the sealing force is substantially constant or increases only slightly with large changes in differential pressure across the seal.

3,466,062
TELESCOPIC TUBES
Henri Deplante, Paris, France, assignor to Avions Marcel Dassault, Saint-Cloud, Hauts-de-Seine, France, a French company
Filed July 31, 1967, Ser. No. 657,116
Claims priority, application France, Feb. 24, 1967, 96,520
Int. Cl. F16l *27/04, 27/00, 5/00*
U.S. Cl. 285—165 **4 Claims**



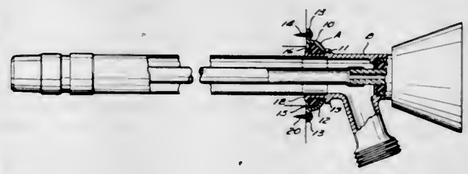
A telescopic tube comprising a first cylinder having with a base in which an aperture is formed, a second cylinder disposed coaxially within the first cylinder in fixed relationship thereto, and a third coaxial cylinder disposed radially between the first two cylinders to slide in a sealed manner through the aperture formed in the base of the first cylinder, and a piston carried by the third cylinder to slide in a sealed manner between said first two cylinders, the third cylinder having an orifice in its cylindrical wall. The volume occupied by a fluid in such a telescopic tube varies relatively little or not at all during deformation.

3,466,063
TRANSITION ELBOW
Darwin G. Traver, DeWitt, N.Y., assignor to Carrier Corporation, Syracuse, N.Y., a corporation of Delaware
Filed Aug. 1, 1967, Ser. No. 657,681
Int. Cl. F16l *43/00, 55/00, 35/00*
U.S. Cl. 285—183 **1 Claim**



A round to rectangular air duct elbow having minimal sound generation by air flow therethrough.

3,466,064
ADJUSTABLE FLANGE FOR A SILLCOCK
Howard A. Fulton and Vaughn D. Flinner, Big Prairie, Ohio, assignors to Mansfield Sanitary, Inc.
Filed Sept. 27, 1967, Ser. No. 671,020
Int. Cl. F16l *41/00, 5/00*
U.S. Cl. 285—192 **5 Claims**

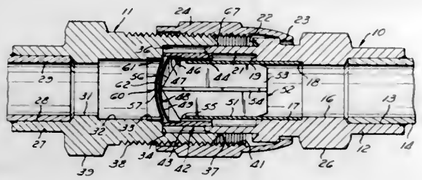


The said device includes a movable, cupped, ring flange mounted on a sillcock adjacent a water pipe connection thereto, a cushion type ring gasket seated in said cupped portion thereof, and a snap ring seated in a sillcock channel adjacent said water pipe connection to hold said gasket in place, the said device providing a closure or seal for an opening in a building wall carrying said water pipe through said wall.

3,466,065
RUPTURABLE DIAPHRAGM COUPLING
Richard C. Acker, Chagrin Falls, Eugene Bahniuk, Gates Mills, and Robert E. Kozulla, Willowick, Ohio, assignors to The Weatherhead Company, Cleveland, Ohio, a corporation of Ohio
Filed Apr. 4, 1968, Ser. No. 718,717
Int. Cl. F16l *35/00, 37/00*
U.S. Cl. 285—3 **8 Claims**

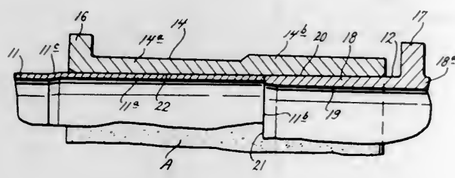
A coupling is disclosed which includes two coupling halves each provided with a diaphragm normally sealing the coupling. A cutter is provided in one coupling half and is arranged to cut both diaphragms as the coupling halves are assembled. The diaphragm assembly of one

coupling half includes a rigid tube frangibly connected to its coupling half and provided with a thin dome-shaped diaphragm extending thereacross. During assembly the frangible connection between the tube and the coupling



half is broken and subsequently the cutter cuts both diaphragms. The cutter is arranged with a central point and symmetrical cutting edges which cut the diaphragms into leaves which are pressed back clear of the bore by a tubular portion of the cutter.

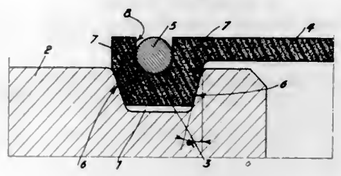
3,466,066
PRESS-FIT CONNECTION FOR FLUID COUPLINGS AND STRUCTURES
James A. Dawson, Hazelwood, Mo., assignor to McDonnell Douglas Corporation, St. Louis County, Mo., a corporation of Maryland
Filed June 19, 1967, Ser. No. 646,816
Int. Cl. F16l *35/00, 21/00*
U.S. Cl. 285—39 **9 Claims**



A press-fitted connection for fluid couplings and structures such as connecting tension rods or tubes in a fluid system, in which rod to rod or tube to tube connection is made by mating the taper of a body part to that of the rod or tube and applying a sleeve for connecting the rod or tube to the body without reliance upon threads or similar mechanical means to retain the connected rods or tubes united in a structural assembly.

3,466,067
DETACHABLE CONNECTION BETWEEN A FLEXIBLE TUBE AND A RIGID TUBULAR MEMBER
Michel Orain, Courbevoie, France, assignor to Glaenzer Spicer Societe Anonyme, Poissy, Yvelines, France, a corporation of France
Continuation of application Ser. No. 445,349, Apr. 5, 1965. This application Aug. 14, 1968, Ser. No. 754,109
Claims priority, application France, Apr. 8, 1964, 970,131
Int. Cl. F16l *33/00, 31/00, 47/00*
U.S. Cl. 285—244 **7 Claims**

This disclosure relates to a coupling between a flexible tubular member and a rigid tubular member. The rigid tubular member is provided with an annular groove and the flexible member is provided with an annular bead, generally complementally shaped with respect to the groove and receivable therein. Adjacent sidewalls of the groove and bead are inclined at a small angle to facilitate a wedging of the bead within the groove, and in the connected condition of the flexible and tubular members, an annular void is provided at the bottom of the annular groove, which is unfilled by the annular bead, in order



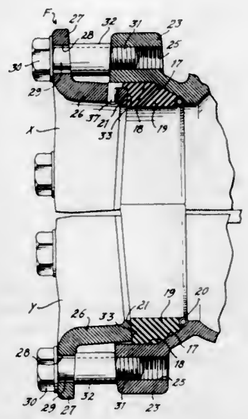
that resilient tangential tension forces maintain the bead urged into wedging contact within the groove. The flexible member is provided with a resilient ring completely housed within the bead, also for urging the bead into wedging engagement within the groove.

3,466,068
SEALING RING WITH CIRCULAR CUTTING EDGES FOR PIPE CONNECTION
Hans Kreidel, Sr., and Hans Kreidel, Wiesbaden, Germany, assignors to Inventex G.m.b.H., Baden, Aargau, Switzerland, a corporation of Switzerland
Continuation-in-part of application Ser. No. 552,932, May 25, 1966. This application Mar. 4, 1968, Ser. No. 710,334
Claims priority, application Germany, Apr. 14, 1967, K 62,012
The portion of the term of the patent subsequent to Sept. 24, 1985, has been disclaimed and dedicated to the Public
Int. Cl. F16l *19/06, 19/08, 21/02*
U.S. Cl. 285—341 **2 Claims**

A sealing sleeve used in a tube connection by insertion between a connecting nipple and a pressure applying nut. The sleeve has a plurality of circular cutting edges spaced along an inner surface from one end of the sleeve. The inner diameters of the circular cutting edges are progressively increasing as the distance from the one end increases. During the connecting operation, the edges cut into the tube successively and with decreasing penetration depths beginning with the edge adjacent to the one end of the sleeve to provide a firm connection between the tube and the connecting nipple.

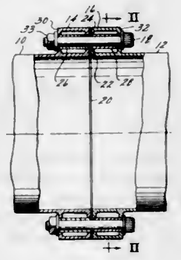
3,466,069
REPAIR SLEEVE
Howard L. Hoke, deceased, late of Bradford, Pa., by Jean K. Hoke, executrix, Bradford, Pa., and James W. Halterman, Salamanca, N.Y., assignors to Dresser Industries, Inc., Dallas County, Tex., a corporation of Delaware
Continuation of application Ser. No. 552,346, May 23, 1966. This application July 18, 1968, Ser. No. 749,249
Int. Cl. F16l *19/00, 33/18*
U.S. Cl. 285—348 **10 Claims**

A preassembled pipe repair sleeve formed in complementary halves each having end gaskets which are axially compressible. Axially adjustable followers have an inward



cammed surface for compressibly engaging the gasket non-uniformly about its extent.

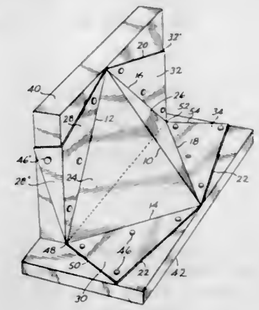
3,466,070
CONDUIT FLANGES
William R. Spencer, Cincinnati, Ohio, assignor to General Electric Company, a corporation of New York
Filed May 2, 1966, Ser. No. 546,754
Int. Cl. F16l *23/00, 19/02*
U.S. Cl. 285—405 **3 Claims**



A conduit connection comprises hollow flanges having interconnecting tubes. Radial walls of the flanges are held in tight sealing engagement by bolts extending through the tubes.

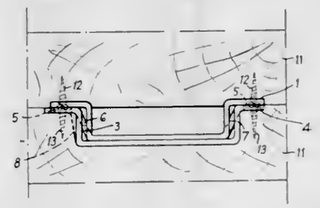
3,466,071
STRUCTURAL BRACE
Gaylard O. Reed, 8636 SW. 14th Ave., Portland, Oreg. 97219
Filed Jan. 8, 1968, Ser. No. 696,463
Int. Cl. F16l *5/00, 9/00;* **E04c** *3/00*
U.S. Cl. 287—20.92 **2 Claims**

A single structural plate is bent angularly inward along an intermediate line to form angularly offset lateral portions defining between their inner surfaces an included angle of less than 180°. Each lateral portion has a pair of anchor tabs extending angularly outward therefrom, the planes of intersection of the inner surfaces of the pair of anchor tabs defining an included angle of less than 180°



corresponding to the angle between a pair of structural members to be braced by the plate.

3,466,072
BUILDING CONSTRUCTIONS AND FASTENERS THEREFOR
Harold John Andrews, Brandfold, Durrington Hill, Worthing, Sussex, England
Filed Dec. 9, 1966, Ser. No. 600,463
Claims priority, application Great Britain, Dec. 13, 1965, 52,917/65
Int. Cl. F16b *5/00, 7/00, 9/00*
U.S. Cl. 287—20.92 **4 Claims**

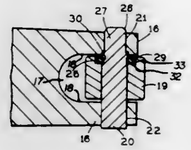


This invention discloses fasteners and building constructions incorporating same. The fastener disclosed comprises a first fastener member for fixing to one building component and having a groove, a second fastener member for fixing to another building component to be joined in abutting relationship to said one building component and having a tongue receivable in said groove, and cooperating projections on both fastener members whereby when the tongue of said second fastener member is pressed into the groove of said first fastener member the projections on each said fastener members inter-engage so positively interlocking the two fastener members and preventing separation thereof in the direction opposite to that for their engagement.

3,466,073
LOCKED ASSEMBLY
William A. Pohle, Hallandale, Fla., assignor to Crane Engineering Company, Incorporated, Hallandale, Fla., a corporation of Florida
Filed Oct. 12, 1967, Ser. No. 674,825
Int. Cl. F16c *11/00;* **B25g** *3/38*
U.S. Cl. 287—100 **5 Claims**

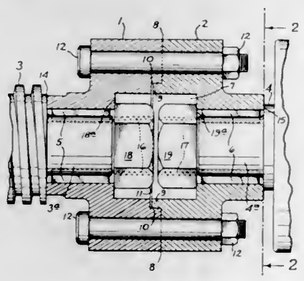
A preferred embodiment of the locked assembly includes a shaft which is locked to an annular member

and a support by a locking ring which fits in a circumferential groove in the shaft and is also received in a recess having a retaining surface which radially confines the locking ring to inhibit loss of the locking ring from the groove, even if the locking ring should break during use.



The shaft can be simply inserted into the support, annular member and locking ring, and the locking ring is guided into the groove in the shaft without the use of a separate tool. The locked assembly may be part of a rocker arm, but this is not essential.

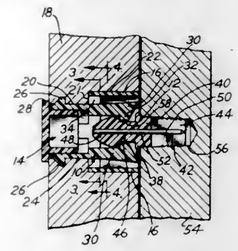
3,466,074
COUPLING FOR VENEER LATHE FEED SCREW
Edwin M. Heth, Portland, Oreg., assignor to Production Machines, Inc., Portland, Oreg., a corporation of Oregon
Filed June 16, 1967, Ser. No. 646,530
Int. Cl. F16b *7/00;* **F16d** *1/00;* **E21b** *17/02*
U.S. Cl. 287—129 **3 Claims**



This invention relates to a coupling for a veneer lathe feed screw required to resist stresses affecting the rigidity and axial alignment of the shaft without producing weakening at the point of joinder. In an organization of this character, forces involving elongation or tension, shortening or compression, twisting due to strains induced by torsion, and misalignment produced by any or all of said forces, are produced. A step joint at a parting line extending transversely of the coupling maintains axial alignment under torsion. Peripheral tensile bolts hold the parts together against separation and are arranged near the periphery of the coupling and a chamber formed within the coupling provides abutments for engaging the opposed faces of nuts, screw-threaded to the feed shaft elements, for inducing face-to-face abutment and to transmit axial compression through said nuts to the shaft sections onto which said nuts are screw-fitted.

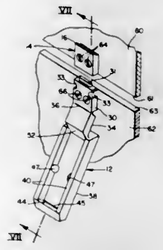
3,466,075
CATCH ASSEMBLY FOR DOORS AND THE LIKE
Arthur Fernandez, AP–27, Calle 47, Santa Juanita, Bayamon, Puerto Rico, and David H. Wurster, 27 Calle Caoba Pta. Las Marias, Santurce, Puerto Rico
Filed Feb. 19, 1968, Ser. No. 706,413
Int. Cl. E05c *19/02, 19/06*
U.S. Cl. 292—19 **10 Claims**

A catch assembly comprising a catch for mounting on a door frame and a knob member for mounting on a door and for latching coaction with the catch. The catch and the knob member may be mounted by insertion in holes



of the door frame and the door, and means is provided for spreading certain parts of the catch and knob member after insertion to effectively anchor them in position.

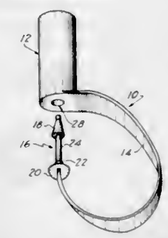
3,466,076
DRAW PULL CATCH
Robert H. Bisbing, Springfield, Pa., assignor to Southco, Inc., Lester, Pa., a corporation of Delaware
Filed Sept. 15, 1967, Ser. No. 667,906
Int. Cl. E05c *19/14;* **B65d** *45/32*
U.S. Cl. 292—109 **2 Claims**



A catch for securing two members together, has a part which is affixed to one of said members and a second one-piece part which is composed of three segments, i.e. a base segment, a locking segment, and an intermediate segment. The base segment is adapted for being affixed to the second one of the members and the intermediate segment is flexibly connected to the base segment and the locking segment for pivotal movement of the segments about transverse axes. When in the locked condition the intermediate segment is disposed substantially in coplanar relation to the base segment, and the locking segment is disposed in overlying relation to the base segment and the intermediate segment and to the first mentioned part. The locking segment is detachably connected to the first mentioned part, and the flexible connection between the intermediate and the locking segment is closer to the second member than the flexible connection between the intermediate and the base segment. The base segment has recesses in the longitudinal sides thereof which mate with detents in the cavity of the locking segment.

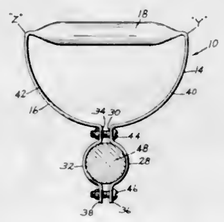
3,466,077
ALL-PLASTIC SEAL
Sigurd M. Moberg, East Orange, N.J., assignor to E. J. Brooks Company, Newark, N.J., a corporation of New Jersey
Filed May 1, 1968, Ser. No. 725,628
Int. Cl. B65d *55/06, 63/00*
U.S. Cl. 292—322 **8 Claims**

A one-piece seal formed entirely of moldable, resilient plastic material includes a group of resilient fingers enclosed within a generally cylindrical housing, and a shackle fixed, at one end thereof, to said housing and its other end being insertable to a limited extent into an opening in one end of the housing to lockably



engage said fingers. To deny tampering access to said fingers within which a shackle end is locked, the other end of the housing is completely closed and the shackle includes a space-filling portion to close said opening.

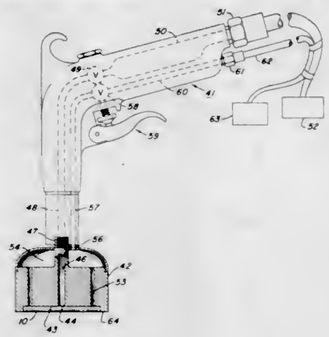
3,466,078
AUXILIARY HANDLE FOR A SHOVEL
Richard J. Sholund, 12 1st Ave., Duluth, Minn. 55810
Filed May 10, 1967, Ser. No. 637,508
Int. Cl. B25g *3/24;* **A01b** *1/22*
U.S. Cl. 294—57 **1 Claim**



The invention is an auxiliary handle for a shovel used in conjunction with the conventional handle grip on the outer free end of a conventional shovel and includes a tubular grip portion from each end of which extends an integral flat side member. Each of said side members is formed with an integral flat half clamp formation, the half clamp formations having draw-up nut-equipped bolt members for connection with the handle of a shovel to place the grip portion in a position normal to the longitudinal axis of the grip portion, the side members and the half clamp formations all formed from one piece of elongated tubular material.

3,466,079
PRESSURIZED FLUID PICKUP DEVICE
Walter K. Mammel, Yardley, Pa., assignor to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York
Filed Sept. 8, 1965, Ser. No. 485,751
Int. Cl. B66c *1/02*
U.S. Cl. 294—64 **2 Claims**

A pressurized fluid pickup device which consists of a head with a central orifice through which fluid under pressure is applied to a workpiece. Means are provided at the periphery of the head to direct fluid away from the workpiece. The workpiece is maintained in a suspended condition spaced from the head as a result of the balance maintained between the weight of the workpiece, the atmospheric pressure and the sub-atmospheric pressure-produces by fluid passing across the face of the workpiece which is adjacent the head.

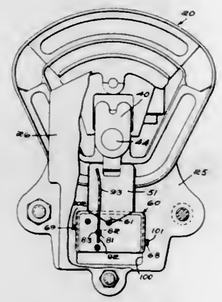


3,466,080
FABRIC LOAD LIFTING SLING AND SIMILAR FLEXIBLE TENSION MEMBER HAVING INCREASED ABILITY TO WITHSTAND SHOCK LOADS
Roy Norton, Milwaukee, Wis., assignor to The Wear-Flex Corporation, Milwaukee, Wis., a corporation of Wisconsin
Filed Oct. 5, 1967, Ser. No. 674,057
Int. Cl. B66c *1/12*
U.S. Cl. 294—74 **16 Claims**



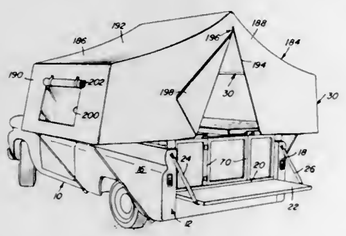
A load lifting sling made of fabric webbing, parts of which are joined together in lengthwise overlapping relation by stitching which is confined to portions of the lap that are separated from one another along the length of the lap and are of substantially the same area. The medial unsecured portions of the overlapping parts connecting the separated stitched areas are of unequal length so that tension loads on the sling tending to tear the stitched joints apart are successively transmitted to the stitched portions, with the result that the stresses concentrated at the ends of the stitched portions are reduced and the ability of the sling to withstand shock loads is increased.

3,466,081
DELAY ACTION DEVICE
Joseph E. Femia, Framingham, Mass., assignor to the United States of America as represented by the Secretary of the Army
Filed Oct. 17, 1967, Ser. No. 676,392
Int. Cl. B64d *17/38*; G05g *1/04*
U.S. Cl. 294—83 9 Claims



A delay action device for arming a parachute release mechanism after a preselected time period following extraction of an airdrop load from an aircraft which comprises a pair of keys operated simultaneously in opposite directions by a toggle for unlocking the device, the unlocking action being controlled by a timing mechanism which actuates the keys at a preselected time after deployment of the parachutes.

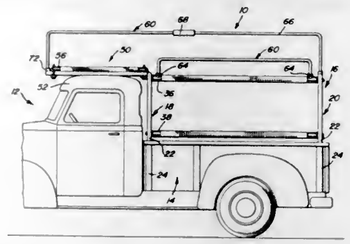
3,466,082
PICKUP TRUCK BED MOUNTED CAMPER TENT
Chester W. Branch, 5507 W. Malcomb, Pine Bluff, Ark. 71601
Filed Jan. 19, 1967, Ser. No. 610,269
Int. Cl. B60p *3/34*
U.S. Cl. 296—23 10 Claims



A collapsible tent-like camper unit specifically adapted for mounting on a pickup truck load bed and including opposite side generally horizontally disposed portions shiftable between closely adjacent positions inwardly of the side walls of the associated pickup truck load bed and extended positions projecting outwardly beyond the opposite side walls of the load bed and defining upwardly facing support surfaces upon which bed mattresses may be disposed.

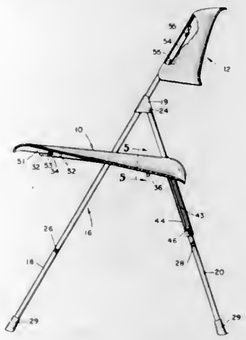
3,466,083
PICKUP CAMPER
Bill E. Owen, Columbus, Miss. (Rte. 1, Box 160, Steens, Miss. 39766)
Filed June 30, 1967, Ser. No. 650,360
Int. Cl. B60p *3/34*
U.S. Cl. 296—23 11 Claims

A partially collapsible camper frame having end stanchions removably supported in the corner stanchion sockets of a pickup truck body which end stanchions support a plurality of longitudinally and laterally disposed knockdown or collapsible bunks. The camper frame is further



provided with knockdown standoff means for supporting a tent covering thereabout in spaced relation from the bunks.

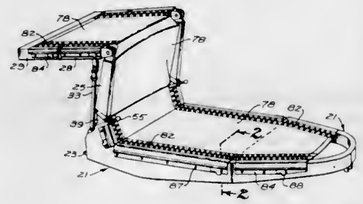
3,466,084
FOLDING CHAIR
Donald L. Moore and Paul M. Fricke, Jr., Gallatin, Tenn., and Raymond R. Spilman, Stamford, Conn., assignors to Hamilton Cosco, Inc., Columbus, Ind., a corporation of Indiana
Filed Dec. 13, 1967, Ser. No. 690,148
Int. Cl. A47c *4/00*; A47d *1/02*
U.S. Cl. 297—58 1 Claim



A chair having a back rest and a seat attached to a folding frame. The frame comprises a pair of leg assemblies each having a rear leg swingably connected to a front leg. A rigid seat frame interconnects the two leg assemblies and is formed by a pair of side members interconnected by a pair of transverse braces. The side members are swingably connected to the front legs on a fixed axis and swingably connected to the rear legs on a slidable axis whereby the frame may fold into a collapsed position. The seat is mounted on the seat frame, while the back rest is connected to the upper ends of the front legs.

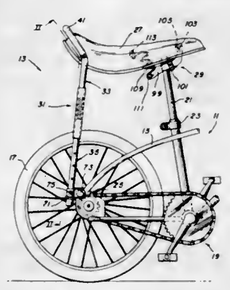
3,466,085
ARTICULATED MULTIPLE COUCH ASSEMBLY
James E. Webb, Administrator of the National Aeronautics and Space Administration, with respect to an invention of Leon P. Stone, Sun Valley, and David L. Johansen, Los Angeles, Calif.
Filed Jan. 5, 1968, Ser. No. 695,973
Int. Cl. A47c *1/022, 1/031, 15/00*
U.S. Cl. 297—68 10 Claims

A multiple couch assembly particularly adapted for use by astronauts and comprising a plurality of articulated couch frames in side-by-side relationship, each individually detachably mounted on a main supporting frame structure. Each couch frame comprises a torso support section pivotally connected to a thigh support section, in turn pivotally connected to a lower leg support section. Each couch frame is provided with a releasable latch mechanism which is operable by a person on the couch to releasably secure the thigh support section at selected angles relative to the torso support section. The thigh support section is also pivotal to positions parallel to the torso section whereby the particular couch frame is either in a compact bundle suitable for stowage, or is adapted



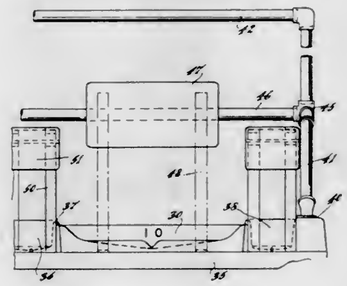
to provide a seat. Guide track means are provided on the main frame structure for cooperation with roller means on one of the couch frames whereby the one couch is permitted a degree of movement relative to the other couches in its longitudinal direction. A fabric webbing support is provided each couch frame with indivdual sections thereof possessing a yield strength in predetermined relation to the mass of the body member of a person it is adapted to support, whereby the attitude and contour of a person's body is maintained during the application and attenuation of excessive G forces.

3,466,086
BICYCLE SADDLE SUPPORT MEANS
Carl A. James and John R. Miller, Bolivar, Tenn., assignors to Troxel Manufacturing Company, Moscow, Tenn.
Continuation-in-part of application Ser. No. 640,860, May 24, 1967. This application July 18, 1967, Ser. No. 654,238
Int. Cl. B62j *1/02*; B62k *19/00*; B60g *11/14*
U.S. Cl. 297—209 12 Claims



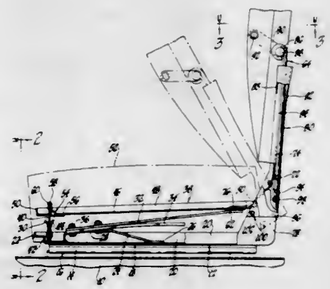
Support means for supporting an elongated bicycle saddle or seat adjacent the forward and rearward ends thereof. The portion of the support means which is adjacent the forward end of the saddle having pivot means for attaching the forward end of said saddle to the post of the bicycle. The portion of the support means which is adjacent the rearward end of the saddle having an inverted U-shaped brace means including a pair of legs which are respectively of telescopic construction and have spring means therein.

3,466,087
MODULAR SEATING COMBINATION
George F. Motter III, R.F.D. 1, Center Valley, Pa. 18034
Continuation-in-part of application Ser. No. 563,576, July 7, 1966. This application Mar. 3, 1967, Ser. No. 620,311
Int. Cl. A47c *1/124, 7/02*
U.S. Cl. 297—232 6 Claims



The invention relates to a modular seating combination, which employs a series of seat modules which in the simplest form are combined and connected into rows by connector modules, and which in many of the preferred forms will include wells interposed between the seats, and ends completing the rows, and often including wells, and arm rests, as well as hand rails and back supports which are supported by utilization of modules contributing to the support. Special provisions are made for comfort by reason of flexibility, insulation to protect the body against excessive heat and cold, drainage, and cleaning.

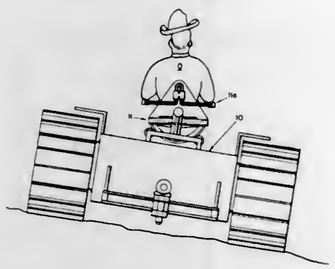
3,466,088
ENERGY ABSORPTION SEAT
Hyland C. Flint, 3551 Walnut Lake Road, Rte. 2, Orchard Lake, Mich. 48033
Filed Jan. 4, 1967, Ser. No. 607,205
Int. Cl. A47c *3/00, 1/02*; B60n *1/02*
U.S. Cl. 297—296 11 Claims



A seat structure for either vehicles or as furniture having a seat pan pivotally and flexibly mounted at its forward end on a support structure, such mounting permitting the seat pan limited horizontal movement relative to the support; and a back support pan flexibly mounted

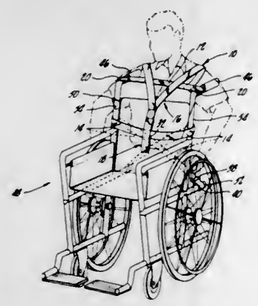
for limited horizontal movement relative to the support structure; the back pan and seat pan being pivotally connected for unison action.

3,466,089
SELF-LEVELING TRACTOR SEAT
Harvey H. Stueckle, Rte. 2, Oakesdale, Wash. 99158
Filed Jan. 22, 1968, Ser. No. 699,529
Int. Cl. B60n *1/02*
U.S. Cl. 297—314 **4 Claims**



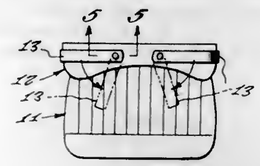
For a tractor and like implements, a seat having mounting means supporting the seat for lateral tilting movements about an axis generally longitudinal of the implement and spaced upwardly above the seat level so as to minimize the relative movement of an operator's hands and feet with respect to the implement controls during tilting movements.

3,466,090
SAFETY HARNESS
John T. Posey, 1739 Meadowbrook Road, Altadena, Calif. 91001
Filed Dec. 6, 1967, Ser. No. 688,572
Int. Cl. B60r *21/10;* **A62b** *35/00;* **A47d** *15/00*
U.S. Cl. 297—389 **1 Claim**



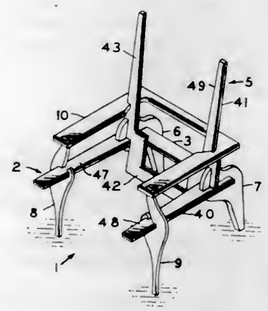
A safety harness having a V-shaped shoulder piece adapted to be placed over a patient's head and secured to a first traverse strap provided with loops for connecting it to handles of a support such as a wheel chair. Ends of the shoulder piece adjacent the patient's chest are secured to an elongated center piece which mounts a second traverse strap extending transversely away from the center piece in opposing directions. Ends of the second traverse strap are adjustable and adapted to be secured to a member of the chair to restrain a patient sitting in the chair.

3,466,091
SEAT HOLDING DEVICE
Don de Grusso, 2353 E. 74th St., Brooklyn, N.Y. 11234
Filed July 24, 1967, Ser. No. 655,427
Int. Cl. B60r *21/10*
U.S. Cl. 297—390 **1 Claim**



A seat for an automobile or the like having adjustable clamps that will grasp a person and prevent him from falling forward into a windshield or dashboard in case of a head-on collision.

3,466,092
CHAIRS
Thomas Alexander Robert Virany, Ottawa, Ontario, Canada
Filed Oct. 20, 1967, Ser. No. 676,906
Int. Cl. A47c *7/00*
U.S. Cl. 297—445 **13 Claims**



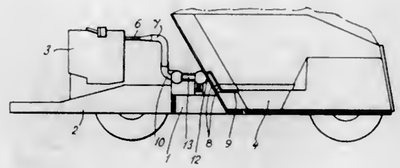
A chair, comprising U-shaped seat and back frames which support soft surfaces, the frames projecting through each other to avoid the bottom of the spinal column.

The embodiments are a knock-down arm-chair assembled by means of slots; a foldable tubular chair; a chair assembled with screws; a U-shaped seat in which the legs of the U are folded back or split with the inner part supporting the surface and making it more resilient in the rear; an arm-chair constructed without any beam between the front legs.

3,466,093
METHOD AND A DEVICE FOR PURIFYING THE EXHAUST GASES FROM MOTOR-DRIVEN MINING TRUCKS
Lars Erik Landeborg, Exercisgatan 2, Malmo, Sweden; and Sune Torsten Henriksson, Kvartsvagen 6; and Ragnar Ludvig Muotka, Kyrkogatan 46, both of Kiruna, Sweden
Filed May 18, 1967, Ser. No. 639,430
Claims priority, application Sweden, May 25, 1966, 7,142/66
Int. Cl. F02b *75/10;* **B60p** *1/28*
U.S. Cl. 298—1 **10 Claims**

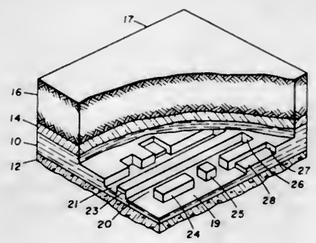
A method of and structure for purifying exhaust gases from motor-driven trucks having a load container

for carrying ore or similar material, particularly in spaces difficult to ventilate, such as mines or the like is disclosed. The method comprises feeding the exhaust gases into the load container from the engine so that the exhaust gases are forced to rise through the material carried in the container which material acts as a filter medium and cooling magazine, whereby steam is condensed and soot and oil particles are deposited on the material. The structure for accomplishing the method includes a load container having a duct adjacent the bot-



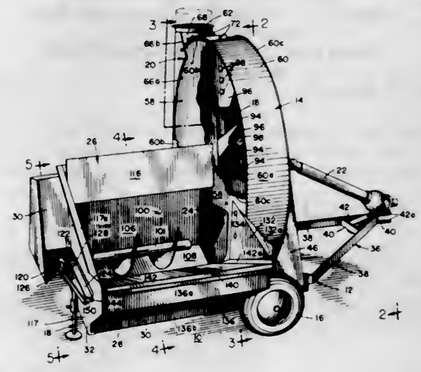
tom thereof with a plurality of openings therein into which exhaust gases are passed and which pass therefrom into material in the load container and structure for connecting the exhaust gases between the engine and load container including a vertical rotatable coupling, an articulated telescoping pipe section having a spherical joint at both ends, one of which is restrained for upward swinging of the pipe section only, and the other of which is constructed to be automatically disengaged on pivoting of the load container.

3,466,094
BLASTING ARRANGEMENT FOR OIL SHALE MINING
Gordon R. Haworth, Ponca City, Okla., and Peter G. Zambas, Woodside, N.Y., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Interior
Filed Feb. 5, 1968, Ser. No. 702,965
Int. Cl. E21c *41/10;* **F42d** *3/04*
U.S. Cl. 299—13 **14 Claims**



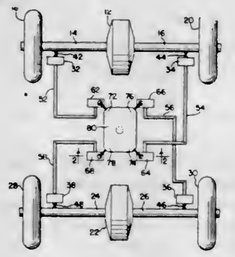
This specification discloses a blasting technique for use in excavation of an oil shale deposit during the subterranean mining thereof. Primary blasting holes are provided in a working zone such as a heading or bench within the mine. In addition, a row of explosive-loaded secondary blasting holes is provided along a line between the working zone and a support zone adjacent the working zone. Thus, in a benching round, secondary holes extend downwardly through the bench from the top thereof and in a heating round the secondary holes extend into the heading from the heading face. The secondary and primary blasting holes are detonated in a desired sequence. Preferably, the secondary blasting holes are detonated first although this sequence of operation may be reversed. The secondary blasting holes carry a lower explosive charge than the primary holes and also are spaced closer together than the primary holes.

3,466,095
BLOWER TYPE MATERIAL FEEDER
Walter N. Weihmuller, Kaukauna, Wis., assignor to De Muth Steel Products Company, Schiller Park, Ill., a corporation of Illinois
Filed Feb. 1, 1968, Ser. No. 702,464
Int. Cl. B65g *53/46, 53/48*
U.S. Cl. 302—37 **4 Claims**



A centrifugal blower for pneumatically conveying material, such as silage, grain, and the like, into silos, storage bins, etc., comprising a blower housing having parallel sidewalls with an inlet formed on one of said sidewalls and tangentially directed outlet means between said sidewalls. A rotor assembly is mounted for rotation in the housing for moving the material entering through the inlet and discharging it through the outlet means at high velocity generally tangential to the path of the rotor. The rotor assembly includes a hub journaled for rotation and extending transversely between the sidewalls with a plurality of radial spokes projecting outwardly of the hub. A rotor blade is removably mounted adjacent the outer end of each spoke, and each rotor blade has a concavely curved, advancing face with longitudinal side edges thereof spaced in advance of the central portion of the blade in the direction of rotation.

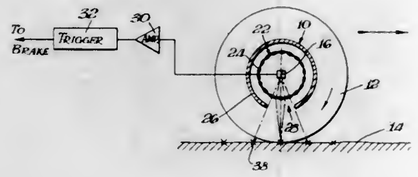
3,466,096
SELECTIVE BRAKING SYSTEM FOR FOUR WHEEL DRIVE VEHICLES
Ernest R. Cunningham, Libertyville, Ill., assignor to Illinois Tool Works Inc., Chicago, Ill., a corporation of Delaware
Filed Oct. 3, 1968, Ser. No. 764,801
Int. Cl. B60t *13/10*
U.S. Cl. 303—6 **5 Claims**



System for preventing wheel slip by selectively braking any single wheel, any pair of wheels which are not on the same axle, or all four wheels on a four wheel drive vehi-

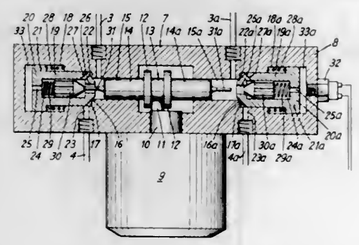
cle. The brakes on the individual wheels are manually controlled by the vehicle operator by means of one or more foot or hand actuated control members. By proper actuation of the control members, further slipping of any drive wheel(s) caused by differences in the traction between the slipping wheel(s) and the surface contacted thereby and another wheel connected to the slipping wheel(s) through a differential is prevented.

3,466,097
SKID DETECTING DEVICE
William M. Flook, Jr., Greenspring Road, Greenville, Del. 19807
Filed Sept. 27, 1967, Ser. No. 670,848
Int. Cl. B60t *8/10*
U.S. Cl. 303—21 **5 Claims**



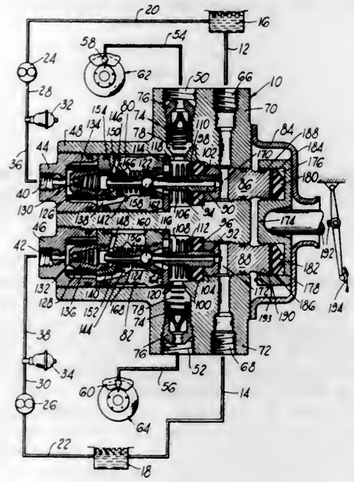
A device for detecting slippage or skidding between a rolling wheel such as a vehicle wheel and a fixed surface such as a road over which the wheel rolls includes an optical element which is rotated in synchronization with the wheel, an image dwells on a point on the surface when there is rolling motion, and moves relative to the point on the surface when slippage occurs.

3,466,098
ANTI-LOCK DEVICE FOR THE BRAKED WHEELS OF MOTOR VEHICLES
Heinz Pieren, Frutigen, Switzerland, and Ilias Toptani, Johannesburg, Transvaal, Republic of South Africa, assignors to Topia SA, Fribourg, Fribourg, Switzerland
Filed Aug. 2, 1968, Ser. No. 749,821
Claims priority, application Switzerland, May 21, 1968, 7,528/68
Int. Cl. B60t *8/02, 13/18, 15/58*
U.S. Cl. 303—21 **7 Claims**



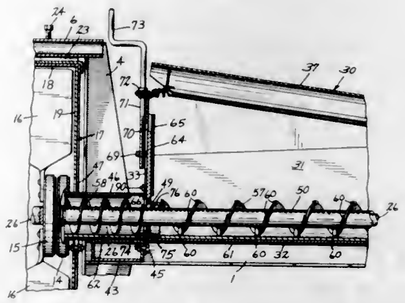
At a predetermined brake-fluid pressure two slide valves shut off the secondary brake lines to the front and rear wheels from the primary brake lines to the brake master cylinder, and a piston is reciprocated in a chamber connected to the secondary lines so as cyclically to raise and lower the hydraulic pressure in these latter lines and momentarily to move alternately each slide valve to reconnect a primary and corresponding secondary line when the secondary-line hydraulic pressure is maximum.

3,466,099
FLUID PRESSURE CONTROL VALVE
Harold B. Schultz, South Bend, Ind., assignor to The Bendix Corporation, a corporation of Delaware
Filed Mar. 6, 1968, Ser. No. 710,943
Int. Cl. B60t *15/06, 15/12*
U.S. Cl. 303—52 **17 Claims**



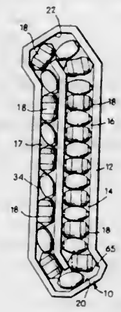
A fluid pressure control valve having at least two valve means operated by a common actuating means including a resilient connector for equalizing input forces to the valve means.

3,466,100
PORTABLE FEED MILLS AND THE LIKE
Warren B. Saufferer, Hopkins, Minn., assignor to Farmhand, Inc., Hopkins, Minn., a corporation of Delaware
Filed Dec. 27, 1966, Ser. No. 604,727
Int. Cl. B02c *13/10, 23/02;* **B02b** *5/02*
U.S. Cl. 241—163 **5 Claims**



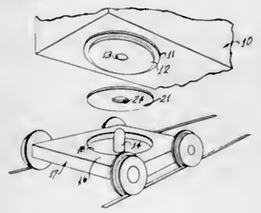
A portable mill for animal feed having a feed auger equipped trough and a rotary feed grinding mill disposed to receive material from the trough. An adjustable flow gate and a cooperating baffle element control the rate of feed from the trough to the grinding mill, and a removable funnel element aids in directing feed to the grinding mill.

3,466,101
BEARING
Arthur F. Hudson, P.O. Box 630, Huntington, Ind. 46750
Filed Oct. 23, 1965, Ser. No. 502,824
Int. Cl. F16c *19/56, 21/00, 17/26*
U.S. Cl. 308—6 **4 Claims**



This invention concerns an improved bearing in which the bearing elements are of dumbbell configuration and are separated by rotatable spacer bearing elements engageable with and spacing the dumbbell bearing elements apart by the proper clearance, all of the bearing elements being circulated in a raceway, a portion of the raceway being located with the bearings in supported position and the remainder of the raceway forming the closed loop path by which the individual bearing elements are continuously circulated.

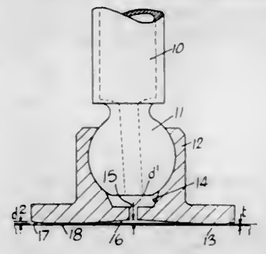
3,466,102
BEARING ASSEMBLY FOR RAILROAD CAR CENTER PLATE
John W. Goodwyn, Birmingham, Ala., assignor of fifty percent to Fred Hetzler, Chattanooga, Tenn.
Filed Dec. 22, 1967, Ser. No. 692,800
Int. Cl. F16c *17/00*
U.S. Cl. 308—137 **7 Claims**



A bearing assembly embodying a resilient plate-like member disposed to fit between load carrying surfaces of a railroad car center plate and a subjacent truck center plate. A plurality of openings are provided in the plate-like member for receiving bearing pads of a high compressive strength, such as carbon-graphite, with the plate-like member retaining the bearing pads at predetermined locations for load distribution.

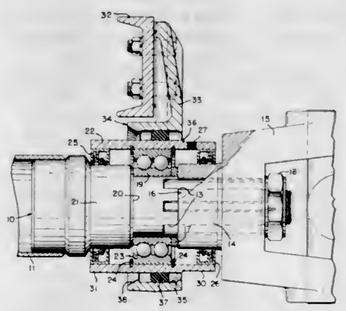
3,466,103
HYDROSTATIC THRUST BEARINGS
Anthony Roger Davies, Birmingham, and John Peter O'Donoghue, Coventry, England, assignors to Joseph Lucas (Industries) Limited, Birmingham, England
Filed Dec. 11, 1967, Ser. No. 689,561
Claims priority, application Great Britain, Dec. 15, 1966, 56,172/66
Int. Cl. F16c *17/06, 17/08, 17/14*
U.S. Cl. 308—160 **3 Claims**

A thrust bearing comprising a part having a recess and an entry passage for fluid to the space defined, in use, between the part and a member, the recess extending from the entry passage to the inner edge of a flat land portion, the maximum depth of the recess being



between 0.5 and 10 times the film thickness, when the load is at a mean value, and an external taper on the part having a depth between 0.5 and 10 times the film thickness.

3,466,104
RESILIENT MIDSHIP DRIVE-LINE BEARING
Robert C. Norrie, Seattle, and Paul A. Turvill, Des Moines, Wash., assignors to Pacific Car and Foundry Company, Renton, Wash., a corporation of Washington
Filed Nov. 16, 1967, Ser. No. 683,645
Int. Cl. F16c *27/00*
U.S. Cl. 308—184 **7 Claims**

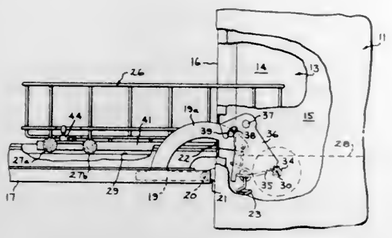


A resilient midship drive-line bearing providing a bearing assembly in which the drive-line is journaled, with the bearing assembly housed within a lubricant-containing sleeve and the sleeve resiliently gripped within a frame-carried bracket by means of a deformed hard-rubber O-ring.

3,466,105
DOOR-OPERATED RACK EXTENDING AND RETRACTING MEANS FOR A FRONT-OPENING APPLIANCE CABINET
Lauren W. Guth, Louisville, Ky., assignor to General Electric Company, a corporation of New York
Filed Dec. 21, 1967, Ser. No. 692,447
Int. Cl. A47b *96/16;* **F24c** *15/16*
U.S. Cl. 312—274 **12 Claims**

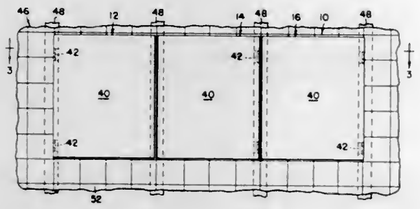
Door-operated means for extending or retracting an article-receiving rack of an appliance, such as a dishwasher or the like, of the front-opening horizontally-hinged drop-door type. The appliance includes a cabinet structure forming an enclosure having a front wall provided with an access opening and a door for the opening hinged for pivotal movement about its bottom edge between a generally vertical fully closed position and a substantially horizontal fully open position. An article-receiving rack is supported within the enclosure for movement through the access opening on first track means within the enclosure

and second track means on the door inner surface, which are horizontally aligned when the door is in its fully open position. Drive means are mounted on one of the enclosure walls for engagement with the movable rack. The drive means are operable, when actuated, to propel a major portion of the rack through the access opening in a fore-and-



aft direction. Means carried by the door for pivotal movement therewith are provided for actuating the drive means during only the final few degrees of pivotal opening movement and the initial few degrees of closing movement of the door, whereby the drive means are operated only when the enclosure and door track means are generally horizontally aligned.

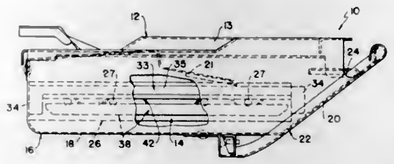
3,466,106
PREFABRICATED CABINET STRUCTURE
Joseph E. Johnson, 990 NE. 3rd Ave., Boca Raton, Fla. 33432
Filed Dec. 1, 1967, Ser. No. 687,273
Int. Cl. A47b *67/02, 81/00;* **A47f** *5/08*
U.S. Cl. 312—242 **10 Claims**



A prefabricated cabinet structure comprising two or more interconnected individual cabinets, each individual cabinet having a depth not exceeding the width of a standard existing wall stud, and a width not exceeding the existing or standard spacing between adjacent studs, the individual cabinets being interconnected by strips having a width substantially the thickness of an existing or standard wall stud, whereby two or more so-interconnected individual cabinets can be installed within adjacent recesses formed by wall studs in a building wall or partition.

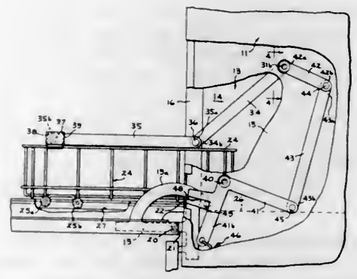
3,466,107
ASH RECEPTACLE FOR AUTOMOBILES
Jack W. Blake, Grand Rapids, Mich., assignor to F. L. Jacobs Co., Detroit, Mich., a corporation of Michigan
Filed Nov. 13, 1967, Ser. No. 682,453
Int. Cl. B60n *3/08;* **A47b** *88/04*
U.S. Cl. 312—246 **18 Claims**

An improved ash receptacle is disclosed for installation on the dashboard of an automobile. The receptacle comprises a stamped sheet metal mounting structure which slidably receives and houses a stamped sheet metal ash box or tray. The mount is in the general form of an inverted U-shaped housing, which is suitably affixed rigidly within the dashboard, behind the latter's instrument panel; and this mount carries a two-part guide unit on each of its parallel, laterally spaced and depending side walls. Each unit includes a pair of elongated die cast members having a sinuous or undulatory wire spring acting therebetween to bias the lowermost thereof downwardly away from the uppermost, the latter being fixedly secured to the inner side of a side wall of the mounting structure. A suitable formation on the side wall acts to maintain the lower guide member in place when the ash box is removed from the mounting structure, as for emptying, and when the lower guide member is otherwise unsustained.



For coaction with the spring-biased guide means on the mount, the ash box has an elongated, non-metallic and one-piece guide mounted to the outer surface of each of its upright side walls, in a longitudinal zone laterally paralleling that of the guide means of the stamped mounting member. These box-carried guides are of molded nylon or other moldable plastic material known for its low coefficient of friction in sliding engagement with a metal member. The die cast members on either side of the mount are formed on their upper and lower surfaces in a V-outline for a slidingly guided engagement with mating formations integral with the nylon guides of the ash box.

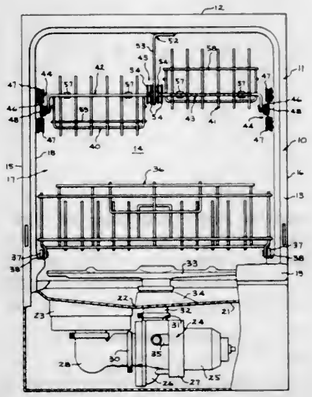
3,466,108
DOOR-OPERATED RACK EXTENDING AND RETRACTING MEANS FOR A FRONT-OPENING APPLIANCE CABINET
Lauren W. Guth, Louisville, Ky., assignor to General Electric Company, a corporation of New York
Filed Dec. 21, 1967, Ser. No. 692,446
Int. Cl. A47l *15/50;* **A47b** *77/08*
U.S. Cl. 312—274 **8 Claims**



Door-operated means for extending or retracting an article-receiving rack of an appliance, such as a dishwasher or the like, of the front-opening horizontally-hinged drop-door type. The appliance includes a cabinet structure forming an enclosure having a front wall provided with an access opening and a door for the opening

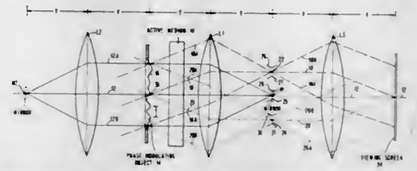
hinged for pivotal movement between a non-horizontal or generally vertical fully-closed position and a substantially horizontal fully-open position. An article-receiving rack is supported within the enclosure for movement through the access opening on first track means within the enclosure and on second track means on the door inner surface, which are horizontally aligned when the door is in its fully open position. Linkage means are pivotally mounted on one of the cabinet structure walls for connection with the movable rack. The linkage means are operable, when actuated, to propel a major portion of the rack along the track means and through the enclosure access opening in a fore-and-aft direction. Means carried by the door for hinged pivotal movement therewith are provided for engaging and actuating the linkage means during only the final few degrees of door opening and the initial few degrees of door closing movements, whereby the linkage means are engaged with and operated by the door only when the enclosure and door track means are generally horizontally aligned.

3,466,109
FRONT OPENING DISHWASHER WITH IMPROVED RACK ASSEMBLY
Melvin R. Kauffman and Wesley S. Pattison, Louisville, Ky., assignors to General Electric Company, a corporation of New York
Filed Sept. 5, 1967, Ser. No. 665,559
Int. Cl. A47l *15/50;* **A47b** *77/08*
U.S. Cl. 312—338 **9 Claims**



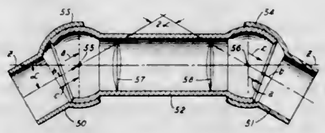
An improved rack assembly for a dishwasher of the type including a washing enclosure having top, bottom and side walls and an access opening through the front side wall. The rack assembly includes upper and lower open framework dish racks positionable within the enclosure in a vertically spaced relationship. The lower rack extends over substantially the entire horizontal cross-sectional area of the enclosure when positioned therein and the upper rack is split from front to rear into left and right sections which have a combined cross-sectional area approximating that of the lower rack. Support means are provided in the upper portion of the enclosure for removably mounting the upper rack sections selectively at several different elevations above the lower rack for substantially horizontal sliding movement through the access opening independently of the lower rack and of one another. The division of the upper rack into plural removable sections permits easier access to the lower rack and also allows use of practically the entire height of all or part of the washing enclosure.

3,466,110
LASER PROJECTOR FOR PHASE MODULATING OBJECTS
Robert V. Pole, Yorktown Heights, Harold Wieder, Mahopac, and Robert A. Myers, New York, N.Y., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed Mar. 24, 1966, Ser. No. 537,147
Int. Cl. G02b *27/00*
U.S. Cl. 350—3.5 **10 Claims**



A laser cavity is provided which includes a phase modulating object and a laser medium for producing laser light. Two reflecting surfaces are arranged to form the ends of the cavity so that light which is unmodulated by the object, i.e., the zero order light, is reflected and contained within the cavity. At least a portion of a modulated light, typically first order light, is permitted to pass by one reflecting surface and is projected out of the cavity. The higher order light is collected by a lens and imaged on a viewing screen where the intensity of the light is a function of the phase modulating properties of the object. The zero order light, whose presence on the screen would obscure the information in the image, is stored within the cavity to provide energy and only the higher order light which produces the image is projected out of the cavity.

3,466,111
OPTICAL BEAM REDIRECTOR
Douglas H. Ring, River Plaza, N.J., assignor to Bell Telephone Laboratories, Incorporated, Murray Hill, Berkeley Heights, N.J., a corporation of New York
Filed Dec. 29, 1966, Ser. No. 605,741
Int. Cl. G02b *27/00*
U.S. Cl. 350—54 **7 Claims**

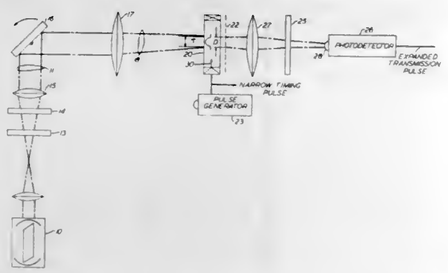


Apparatus for redirecting an optical beam. When an off axis ray traverses a sequence of equally spaced, identical lenses whose centers lie along a common axis, it traces a path which oscillates about the axis with a periodicity that can be measured in terms of the number of lenses traversed. Of particular interest to the problems of redirecting an optical beam are the properties of a lens system equivalent to one-half a ray displacement cycle, or a half-wave section. In particular, it is shown that complete beam control can be realized by rotating and translating a half-wave section of lenses.

3,466,112
LOW NOISE PULSE EXPANSION USING A SCANNED OPTICAL CORRELATOR
MacLellan Emshwiller, Orange, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Apr. 12, 1966, Se. No. 542,032
Int. Cl. G02f *1/28*
U.S. Cl. 350—161 **5 Claims**

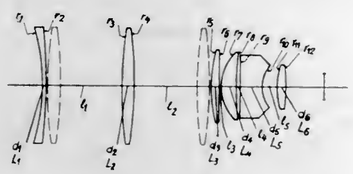
An optical correlator arrangement is utilized to obtain pulse expansion by illuminating a short acoustical pulse

traversing an acoustical medium. The light transmitted through the medium is modulated by a correlator mask to obtain the expanded pulse frequency spectrum. The



system noise is reduced by limiting illumination to the immediate region of the acoustical pulse traversing the medium.

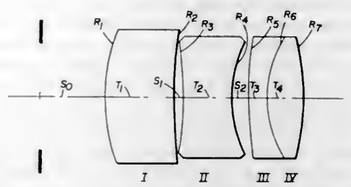
3,466,113
VARIFOCAL OBJECTIVE WITH MOVABLE LENS COMPONENT OF POSITIVE REFRACTIVITY
Ludwig Bertele, Heerbrugg, Switzerland
Filed Aug. 24, 1964, Ser. No. 391,528
Claims priority, application Switzerland, Aug. 28, 1963, 10,704/63
Int. Cl. G02b *3/00, 9/62*
U.S. Cl. 350—184 **2 Claims**



A variable focal length objective of simple physical construction affording an aperture ratio of 1:1.4 or greater and an image forming power that meets high requirements. The objective comprises at least 6 lens members, the second lens member being displaceably mounted so as to change the focal distance. With respect to the side of the longer conjugate, the first lens member of the objective has a dispersing or negative power, the second and third lens members having a positive or collective power, the lens surface of the fourth lens member being convexly formed to such a degree that the radius of curvature of said lens surface is shorter than the radius of curvature of the preceding glass-air surfaces. The first lens member is further shaped in such a fashion that the stronger curved surface thereof exhibits a dispersing or negative power and is curved towards the second lens member. Regardless of the position of the displaceable second lens member, the focal distance of the first two lens members taken together is always positive.

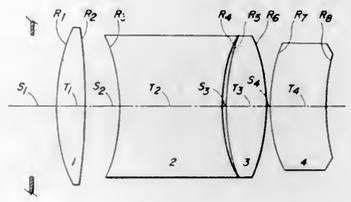
3,466,114
FOUR ELEMENT TRIPLET PHOTOGRAPHIC OBJECTIVE
Paul L. Ruben, Penfield, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed May 1, 1967, Ser. No. 635,224
Int. Cl. G02b *9/34, 9/18*
U.S. Cl. 350—206 **2 Claims**

A photographic objective comprising three air-spaced components, the front component being a simple positive element, the middle component being a simple negative biconcave element, and the rear component being



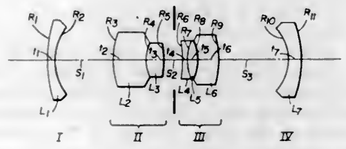
a compound positive component which consists of two cemented elements of opposite refractive power with the cemented surface convex towards the middle element.

3,466,115
FOUR COMPONENT WIDE APERTURE LENS
Paul L. Ruben, Penfield, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed July 1, 1966, Ser. No. 562,207
Int. Cl. G02b *9/34*
U.S. Cl. 350—220 **4 Claims**



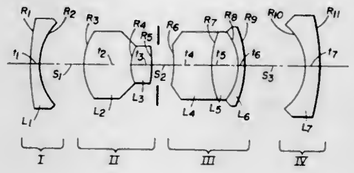
Wide aperture lenses consisting of four simple air-spaced components comprising from front to rear a biconvex positive component, a thick biconcave negative component, a biconvex positive component and a meniscus positive component concave to the rear.

3,466,116
FOUR COMPONENT OBJECTIVE LENS
Max Reiss, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed May 22, 1967, Ser. No. 639,979
Int. Cl. G02b *9/34*
U.S. Cl. 350—220 **1 Claim**



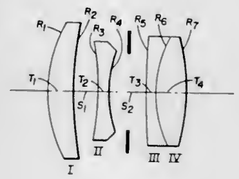
Objective lenses comprising four components, the two outer components being simple negative meniscus elements concave toward the centrally located diaphragm, the front inner component being a positive cemented doublet and the rear inner component being a positive cemented triplet.

3,466,117
FOUR COMPONENT OBJECTIVE LENS
Donald P. Feder, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed May 29, 1967, Ser. No. 641,834
Int. Cl. G02b *9/34*
U.S. Cl. 350—220 **1 Claim**



Objective lenses comprising four components, the two outer components being simple negative meniscus elements concave toward the centrally located diaphragm, the front inner component being a positive cemented doublet and the rear inner component being a positive cemented triplet.

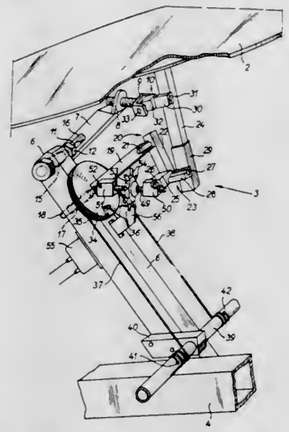
3,466,118
FOUR ELEMENT TRIPLET PROJECTION LENS
Paul L. Ruben, Penfield, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed Apr. 25, 1967, Ser. No. 633,569
Int. Cl. G02b *9/18, 9/34*
U.S. Cl. 350—227 **3 Claims**



A projection lens comprising three airspaced components, namely a simple positive meniscus front element, a simple negative biconcave middle element, and a compound positive rear component which consists of two cemented elements of opposite refractive power with the cemented surface convex towards the middle element.

3,466,119
MULTIPLE MIRRORED APPARATUS UTILIZING SOLAR HEAT
Giovanni Francia, 11–13 Via Vassallo, Genoa, Italy
Filed Apr. 7, 1966, Ser. No. 540,864
Claims priority, application Italy, Apr. 10, 1965, 8,955/65
Int. Cl. G02b *5/08*
U.S. Cl. 350—299 **4 Claims**

A reflecting surface formed from a plurality of mirrors designed to utilize solar heat wherein each of the mirrors includes a supporting device comprising a frame which includes a plurality of articulated rods joined to one another. The rods are joined such that the points of articulation of the four rods are arranged at the apexes of an isoceles triangle whereby cooperating movement between the four rods maintains the incident rays of the sun on the reflecting surface which is being supported. Control means cooperate with the rods so as to keep the mirror in constant movement so as to compensate for the earth's rotation and maintain the incident rays of the sun directly on the reflecting surface.

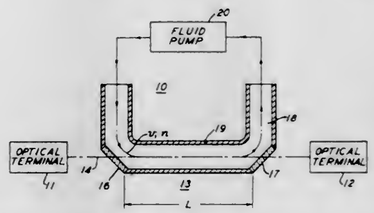


3,466,120
METHOD OF MAKING OPTICAL COMPONENTS
Donald R. Herriott, Morris Township, Morris County, and Darwin L. Perry and Jeffery R. Wimperis, Murray Hill, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Mar. 14, 1966, Ser. No. 534,026
Int. Cl. G02b *1/00, 5/08*
U.S. Cl. 350—320 **6 Claims**



Optical components such as wave plates, filters, and the like are often of extreme thinness and fragility. Such components can be fabricated by gluing a blank to an optically neutral backing member which supports the blank during grinding and polishing and forms an integral part of the finished component.

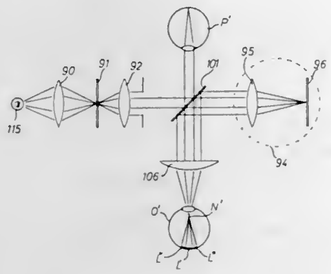
3,466,121
NONRECIPROCAL OPTICAL DEVICES
Edward H. Turner, Rumson, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Sept. 28, 1965, Ser. No. 490,958
Int. Cl. G02b *17/08*
U.S. Cl. 350—321 **6 Claims**



This application describes optical gyrators and circulators. In accordance with the disclosure, light is transmitted through a moving medium, the velocity of which

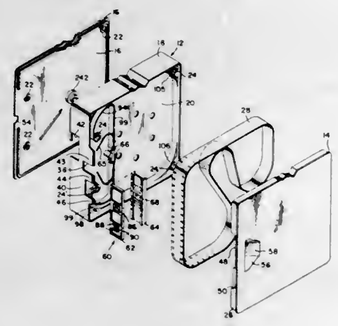
affects the velocity of propagation of the light in accordance with the Fresnel drag effect. Depending upon the relative directions of the light and the moving medium, the phase shift of the light is either advanced or retarded. In one class of devices a moving fluid is used. In a second class of devices rotating discs are employed.

3,466,122
OCULAR REFRACTOMETRY APPARATUS
Nathan Ben-Tovim, 18 Weisel St., Tel Aviv, Israel
Continuation-in-part of application Ser. No. 179,662, Mar. 14, 1962. This application Sept. 12, 1963, Ser. No. 308,558
Int. Cl. A61b *3/10*
U.S. Cl. 351—6 **8 Claims**



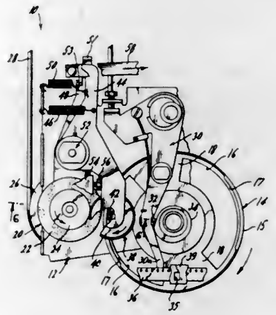
Apparatus for objective ocular refractometry comprises a point-source of light, a transparent mirror reflecting the light into the examined eye and transmitting the light emerging therefrom, a cylindrical lens located behind the mirror so as to collect the rays emerging from the examined eye and mirror, to form them into an astigmatic beam, and to focalize parallel rays into a sharp linear streak of light upon the retina of the examiner's eye, and means for sweeping the rays emerging from the cylindrical lens across the retina of the examiner's eye.

3,466,123
FILM PROJECTION CARTRIDGE
Ivars M. Skuja, Seattle, Wash., assignor to Audiscan Corporation, Bellevue, Wash., a corporation of Washington
Filed July 13, 1967, Ser. No. 653,240
Int. Cl. G03b *31/02, 23/04*
U.S. Cl. 352—34 **23 Claims**



A film projection cartridge is provided with a self-contained film advance assembly adapted to be operably coupled to a projector-mounted actuating mechanism when the cartridge is inserted into a suitable projection system. The cartridge may also contain a sound tape for presentation of an integrated sound-picture program.

3,466,124
SINGLE FRAMING DEVICE FOR MOTION PICTURE PROJECTORS
Jerome B. Geisman, Roslyn Heights, and Rein S. Randmae, Babylon, N.Y., assignors, by mesne assignments, to Bohn Benton Inc., New York, N.Y., a corporation of New York
Filed Feb. 6, 1967, Ser. No. 614,150
Int. Cl. G03b *21/38, 1/00, 21/46*
U.S. Cl. 352—169 **16 Claims**

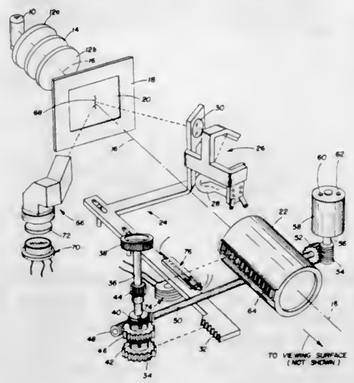


A motion picture projector for providing unobstructed projection of single frames of motion picture film, has raised engaging segments disposed along the inner surface of the rim of a shutter wheel. The position and number of the segments are in spaced relation with the position and number of shutter blades which can block the projection optical path during single frame projection. When single frame projection is desired, the normal shutter drive is disengaged and the shutter is permitted to coast to a halt. If any portion of a shutter blade obscures the projection optical path, an auxiliary single frame mechanism, powered by the basic shutter drive, makes selective driving contact with the corresponding engaging segment until the obscuring blade is removed from the optical path.

3,466,125
FOCUS ADJUSTING CIRCUITRY FOR A SLIDE PROJECTOR
William E. Jordan and Franklin D. Kottler, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed June 23, 1967, Ser. No. 648,265
Int. Cl. G03b *3/12*
U.S. Cl. 353—101 **5 Claims**

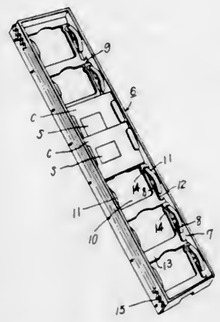
Focus adjusting circuitry for a slide projector having an objective lens, and first and second focal distances measured on opposite sides of the objective lens, the first focal distance being defined as being measured from a photographic transparency slide to a pilot image lens apparatus arranged to project a pilot image on the photographic transparency. The second focal distance by definition is measured from the objective lens to the viewing screen. Photoconductive transducer apparatus is arranged to form two resistive arms of a bridge, each arm having an ohmic magnitude which is a function of the incident radiant energy reflected from the pilot image on the photographic transparency, the photoconductive transducer apparatus defining a null when the reflected light produces equal resistive arms. Amplifying channels are provided on each

output arm of the bridge, the unbalanced condition of the bridge providing error signals which are applied to a reversible electric motor to maintain the first focal distance constant. Additionally, remote switching apparatus



is provided for disabling the amplifying channels and holding the first focal distance constant, while applying selectable polarized signals to the reversible electric motor to change the second focal distance as desired.

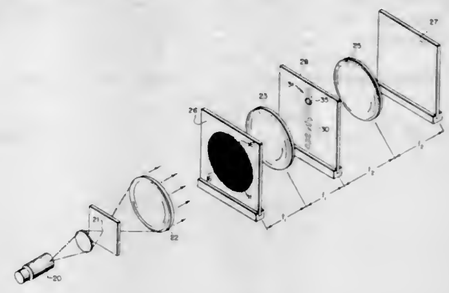
3,466,126
SLIDE-HOLDING FRAME AND A FILE PLATE FOR FILING SUCH FRAMES
Yoshichika Sakamoto, 214 2-chome, Sengen-cho, Ohmiya, Japan
Filed Apr. 22, 1966, Ser. No. 544,451
Claims priority, application Japan, Apr. 28, 1965 40/24,686; July 16, 1965, 40/57,878
Int. Cl. G03b *23/10;* **G09f** *11/30*
U.S. Cl. 353—108 **2 Claims**



A slide-holding frame holds a straight row of slides with their blank edges overlapped to save space. A plurality of frames are held by their corners on a file plate. The slides are projected by moving the frame through the projector at an acute angle to the optical axis so that the slides themselves are perpendicular to that axis.

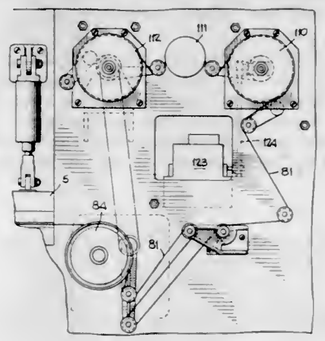
3,466,127
PRESERVING PHOTOSTORED IMAGES
Charles R. Hauer, Newton Lower Falls, Mass., assignor to Technical Operations, Incorporated, Burlington, Mass., a corporation of Delaware
Filed Aug. 31, 1966, Ser. No. 576,412
Int. Cl. G03b *27/52, 27/68*
U.S. Cl. 355—40 **2 Claims**

A method and structure for photostoring images on a recording medium in multiplication with a spatial carrier in such a way as to permit retrieval of the image from



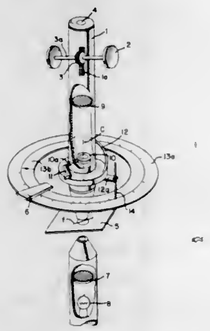
the record despite fogging, fading, or other degrading forces which might operate on the photostorage medium either before or after the image recording step.

3,466,128
METHOD AND MEANS FOR PERFORATING AND EXPOSING WEBS OF FILM AND PAPER
Carl A. Napor, Glen Ridge, and William T. Engel, Union, N.J., assignors to Kahle Engineering Company, Union City, N.J., a corporation of New Jersey
Filed Dec. 16, 1965, Ser. No. 514,180
Int. Cl. G03b *27/02;* **G03c** *5/00*
U.S. Cl. 355—89 **10 Claims**



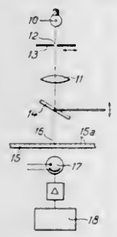
A machine for processing rolls of sensitized film or rolls of related protective film indicator paper prior to the cutting of the rolls into short lengths for insertion into film cartridges. The cut lengths of film and paper require particular patterns of punch marks. In addition, certain other indicia is applied to the film by exposing the film to a printing means. The apparatus includes a mounting for supply rolls of paper or film and a spaced takeup roller. A punching means and the light exposing means are mounted on a support frame for processing an unwound portion of the film or paper intermediate the supply roll and the takeup roll. In order to permit punching of the necessary perforations, the portion of the film or paper between the supply and takeup rollers is only intermittently advanced. This intermittent advance is attained by including slack receiving means on both sides of the punch so that the film supply spool of the film takeup spool may be continuously rotated while central portions of the strips at the punch are intermittently advanced out of and into the slack takeup means. The film drive for the printing is synchronized with the punching drive so that the printed indicia is positioned with respect to the punches.

3,466,129
POLARIZING MICROSCOPE FOR IDENTIFYING PROPERTIES OF FIBER
Tadao Agatsuma, Yokohama, Kanagawa-ken, and Kiyoshi Yamano, Omiya, Saitama-ken, Japan, assignors to Toyo Rika Kogyo Company Limited, Tokyo, Japan
Filed Mar. 31, 1966, Ser. No. 539,043
Claims priority, application Japan, May 31, 1965, 40/43,043
Int. Cl. G01n *21/40*
U.S. Cl. 356—115 **4 Claims**



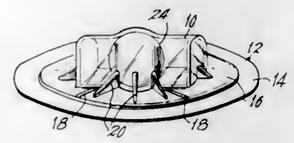
A polarizing microscope for identifying a fiber. A source of light, a polarizer, and an analyzer for passing polarized light only at right angles to the polarized light passed by the polarizer are provided along an optical axis. A support for a fiber is positioned between said polarizer and said analyzer, and a Berek compensator is positioned between said fiber support and said analyzer. The compensator is mounted for rotation about an axis perpendicular to said optical axis, and birefringence indicating means are provided adjacent said compensator coupled to said compensator for indicating a birefringence according to the amount said compensator has rotated around said perpendicular axis, whereby the fiber can be identified by the indication of the birefringence thereof.

3,466,130
ARRANGEMENT FOR DIGITAL INDICATION
Helmut Frenk, Wetzlar, Germany, assignor to Ernst Leitz G.m.b.H., Wetzlar, Germany
Filed Aug. 25, 1966, Ser. No. 575,054
Claims priority, application Germany, Sept. 9, 1965, L 51,596
Int. Cl. G01b *11/04*
U.S. Cl. 356—167 **7 Claims**



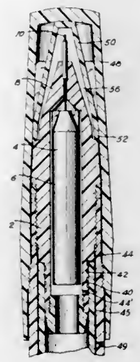
This invention provides a device for a digital display of small deviations of the measured object from its initial position in at least one coordinate system. A periodically deflected beam of light is pulse-modulated by a plurality of graduation marks of two different breadths on at least one scale attached to the measure object. Equidistantly spaced thinner marks drive a counter while wider scale field-dividing marks determine the counting sequence and direction.

3,466,131
DISPENSING APPLICATOR PACKAGE
Joseph L. Arcudi, Elizabeth, N.J., assignor, by mesne assignments, to Becton, Dickinson and Company, Rutherford, N.J., a corporation of New Jersey
Filed Sept. 7, 1967, Ser. No. 666,051
Int. Cl. A45d *34/00;* **A61m** *35/00*
U.S. Cl. 401—132 **1 Claim**



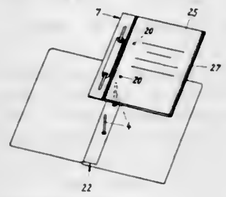
A dispensing package having a frangible capsule containing a product to be dispensed disposed between a porous applicator pad and a plastic housing, compression of said plastic housing resulting in fracturing of said capsule to release the contents thereof onto the porous pad. The plastic housing is characterized by channels which direct the contents of the fractured capsule toward the periphery of the porous pad to insure even distribution of the product over the pad.

3,466,132
WRITING HEAD FOR A TUBE WRITING PEN
Helmuth Riepe, Hamburg, Germany, assignor, by mesne assignments, to Rapidograph, Inc., Bloomsbury, N.J., a corporation of New Jersey
Filed Mar. 13, 1967, Ser. No. 622,678
Claims priority, application Germany, Mar. 12, 1966, R 42,817
Int. Cl. B43k *1/10*
U.S. Cl. 401—259 **4 Claims**



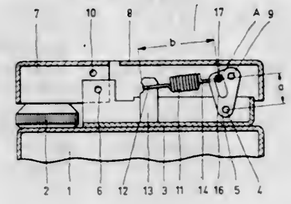
Disclosed herein is a writing head for a tube writing pen, wherein a cylindrical body of the writing head is formed with a bore for the reception of a drop weight adjoining a mount for a writing tube in which a hair wire affixed to the bottom end of the drop weight is movable, and wherein the inwardly extended end of the cylindrical body is formed with a low pitched screw thread which serves as a pressure balancing chamber and which communicates with a bore leading to the outside, the inwardly extended end being so contrived that a shank of smaller diameter than that of the cylindrical body rearwardly adjoins the end of the cylindrical body and forms an annular shoulder, and that the threads which function as the pressure balancing chamber are cut into this rearwardly extending shank.

3,466,133
INSERT SHEET FOR FILE FOLDERS HAVING A PAPER FASTENING DEVICE THEREON
Walter Lennartz, Waldstrasse 9, Rothschwaige, near Dachau, Germany
Filed Mar. 30, 1967, Ser. No. 627,233
Claims priority, application Germany, Apr. 1, 1966, L 53,257
Int. Cl. B42f *13/06, 13/08, 13/10*
U.S. Cl. 402—14 **2 Claims**



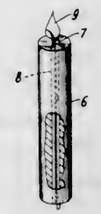
An insert sheet for file folders, said sheet having a paper retaining device. The insert sheet is folded, forming a base portion and a relatively narrow strip which may be superimposed above said base portion. The base portion may be approximately the size of the cover of the file folder and may be provided with a pair of holes by which said insert sheet may be mounted in a file folder. A pair of holes are provided in said narrow strip through which a second paper retaining device may extend thereby providing a means to secure papers to the insert sheet. During long periods of storage, the insert sheet with said papers still attached, may be removed from said file folder, thus releasing said file folder for a second use. The insert sheet and papers may be stored in an appropriate location. An alternate structure provides a cover portion for further protection of the papers during storage.

3,466,134
LIGHTER
Peter Rabe, Grimmstrasse 7, Muhlheim am Main, Germany
Filed Sept. 26, 1967, Ser. No. 670,624
Claims priority, application Germany, Sept. 28, 1966, M 71,083
Int. Cl. F23q *2/46*
U.S. Cl. 431—152 **10 Claims**



In a lighter of the type having an actuating member which is movable between an inoperative position and operative position, a coupling member which couples the actuating element to the supporting structure of the lighter. The coupling member is connected for turning movement about a first pivot axis to the supporting structure, and for turning movement about a second pivot axis parallel to the first pivot axis to the actuating element. A contraction spring has a first end portion connected to the supporting structure and a second end portion connected to the coupling member, in such a manner that the second end portion has freedom of movement with reference to the coupling member, from one point at which it is farthest spaced from the first pivot axis to another point at which it is closer to the first pivot axis, when the actuating element moves from the inoperative position to the operative position thereof.

3,466,135
CANDLE MAINTAINING DEVICES
James R. Summers, 353 E. 50th St., New York, N.Y. 10022
Continuation-in-part of applications Ser. No. 406,037, Oct. 23, 1964, Ser. No. 577,268, Sept. 6, 1966, Ser. No. 581,105, Sept. 21, 1966, and Ser. No. 705,252, Dec. 5, 1967. This application Apr. 26, 1968, Ser. No. 724,440
Int. Cl. F23d *3/16, 3/18, 3/40*
U.S. Cl. 431—289 **40 Claims**



The present invention relates to candle maintaining devices providing an integral member to a candle which imparts the strength of the member to the body of the candle and serves as a mounting member to maintain a candle in upright position. The member generally extends longitudinally along the length of the candle to at least the base of the candle and is consumable with the descending flame of the candle.

CHEMICAL

3,466,136
SHRINKPROOFING OF WOOL
William L. Wasley, Berkeley, Robert E. Whitfield, Pleasant Hill, and Lowell A. Miller, Walnut Creek, Calif., assignors to the United States of America as represented by the Secretary of Agriculture
No Drawing. Filed Mar. 17, 1964, Ser. No. 352,700
Int. Cl. D06m *3/06*
U.S. Cl. 8—127.5 **12 Claims**

1. In the process wherein fibrous textile material having disulphide bonds is subjected to serial impregnation with (I) a solution of a diamine in water and with (II) a solution of a bifunctional organic compound capable of forming a polymer with said diamine, the said compound being dissolved in an inert, volatile, water-immiscible solvent, the improvement which comprises incorporating in said solution (I) a sulphur-containing, reductive, disulphide-splitting agent.

3,466,137
METHOD OF REMOVING RADIOIODINE VALUES FROM A GASEOUS MEDIUM
Wilfred T. Ward and Robert E. Adams, Oak Ridge, Tenn., assignors to the United States of America as represented by the United States Atomic Energy Commission
No Drawing. Filed May 23, 1967, Ser. No. 642,290
Int. Cl. B01d *47/06;* **C01b** *2/30*
U.S. Cl. 23—2 **4 Claims**

The removal of gaseous radioiodine values particularly

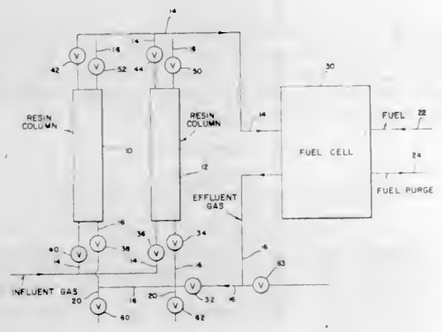
methyl iodide from a gaseous atmosphere containing such values is accomplished by contacting the gas atmosphere with an aqueous solution containing ammonium sulfide.

3,466,138

PROCESS AND SYSTEM FOR REMOVAL OF ACIDIC GASES FROM INFLUENT GAS TO FUEL CELL

Kurt S. Spiegler, Richmond, Calif., and Kostas Routsis, East Hartford, Conn., assignors to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware

Filed June 7, 1966, Ser. No. 555,724
Int. Cl. B01d *37/00*
U.S. Cl. 23—2 **7 Claims**



A process and system are provided for supplying a purified influent, reactant gas to a fuel cell by passing the influent gas through a basic anion exchange resin which absorbs acid gases such as carbon dioxide from the influent gas stream, allowing the purified gas to pass to the fuel cell where it reacts with another reactant to generate the electric current of the cell and give off a hot, humid gaseous reaction effluent. This effluent gas from the fuel cell is used to regenerate the anion exchange resin after its absorptive capacity has been exhausted. Two resin columns are preferably connected with both the influent gas inlet to the fuel cell and the effluent gas outlet from the fuel cell through suitable control means which allow the influent gas to be passed through one source of anion exchange resin for purification while the effluent gas from the cell is passed through the other source of anion exchange material to regenerate it. The connections are periodically reversed so that one source of resin is constantly being regenerated while the other is purifying influent gas.

3,466,139

UTILIZATION OF SEA WATER

Kazuhiko Mihara and Takashi Yamashiki, both of 504 Idokubo Okubocho, Minami-ku, Yokohama, Japan

Continuation-in-part of application Ser. No. 245,360, Dec. 13, 1962. This application Apr. 19, 1967, Ser. No. 631,987
Claims priority, application Japan, Mar. 6, 1962, 37/8,154; May 17, 1962, 37/19,609, 37/19,610, 37/19,611
Int. Cl. C01d *1/04, 5/00;* **C01f** *5/14, 11/18*
U.S. Cl. 23—42 **1 Claim**

A process for producing sodium hydroxide from sea water by passing the sea water through an OH-type resin whereafter the resin is continuously regenerated with a lime milch slurry; and a process for recovering Na, Mg, Ca and SO_4 from sea water using the aforesaid sodium hydroxide in the production of $Mg(OH)_2$, $CaCO_3$ and Na_2SO_4.

3,466,140

PROCESS FOR PRODUCING REDUCED TRANSITION METAL HALIDES

Geoffrey H. Smith, Stow, and William M. Saltman, Akron, Ohio, assignors to The Goodyear Tire & Rubber Company, Akron, Ohio, a corporation of Ohio

No Drawing. Filed Mar. 31, 1967, Ser. No. 627,328
Int. Cl. C01g *1/06;* **B01j** *11/06*
U.S. Cl. 23—87 **10 Claims**

A method of preparing a catalytically active form of β titanium trichloride by reacting a compound prepared from aluminum, aluminum chloride, titanium tetrachloride and an aromatic hydrocarbon (arene) and having the empirical formula, arene·$TiAl_2Cl_8$, with additional titanium tetrachloride in excess arene solvent, in the presence of a ligand which will complex aluminum chloride, whereby the β titanium trichloride is precipitated essentially free of aluminum chloride. The so produced β titanium trichloride has been found useful in the polymerization of diolefins to form polymers containing a high percentage of 1,4 configuration, and has been found particularly useful in the polymerization of isoprene to substantially all cis 1,4-polyisoprene.

3,466,141

PROCESS FOR THE PRODUCTION OF SODIUM PHOSPHATES

Iuliu Moldovan and Marinela Man, Bucharest, Rumania, assignors to Ministerul Industriei Chimice, Bucharest, Rumania, a corporation of Rumania

No Drawing. Filed Feb. 14, 1967, Ser. No. 615,927
Claims priority, application Rumania, Feb. 22, 1966, 51,021
Int. Cl. C01b *25/30*
U.S. Cl. 23—107 **1 Claim**

Sodium orthophosphates are produced from wet-process orthophosphoric acid by extracting the latter from aqueous solution with n-butanol and neutralizing the extract with sodium carbonate or hydroxide to a pH of 4.5 to 4.6 for monosodium phosphate, 8.5 to 8.6 for disodium phosphate and 11.2 to 11.3 for trisodium phosphate, the neutralization being carried out at a temperature of 50 to 60° C. due to the generated heat of reaction and being followed by a drying of the resulting phosphate crystals in a hot gas current.

3,466,142

METHOD OF PREPARING SPHERICAL ALUMINA HYDRATE FROM SEEDED ALUMINATE LIQUOR

John Arthur Hambly, Arvida, Quebec, Canada, assignor to Aluminium Laboratories Limited, Montreal, Quebec, Canada, a corporation of Canada

Filed Apr. 11, 1967, Ser. No. 630,122
Int. Cl. C01f *7/34, 7/02;* **B01d** *9/02*
U.S. Cl. 23—143 **4 Claims**

Alumina hydrate spheres or spheroids characterized by a naturally smooth external surface and a radially oriented crystal structure.

The spheres are made by forming a loose bed of individual alumina hydrate particles in a pool of supersaturated aluminate liquor and maintaining the particles in random rubbing contact by controlled motion of the bed until spheres in excess of 150 microns are formed.

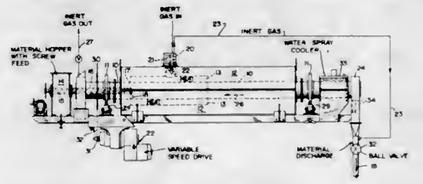
Calcined spheres are useful as activated aluminas or catalyst supports.

3,466,143

METHOD OF MAKING CUPROUS OXIDE

Howard E. Day, Calumet, Mich., assignor, by mesne assignments, to Calumet & Hecla Corporation, Evanston, Ill., a corporation of Delaware

Filed Apr. 13, 1967, Ser. No. 630,750
Int. Cl. C01g *3/02*
U.S. Cl. 23—147 **6 Claims**



A method of producing cuprous oxide in which a mixture of copper oxides containing more than about 50% but less than all of the mixed oxides as cuprous oxide and about 0.3–1.2% ammonia is heated at about 800–1300° F. in the presence of a preheated nonoxidizing inert gas flowing at a velocity of at least about seven feet per minute until at least a significant portion of the cupric oxide in the mixture has been reduced to cuprous oxide.

3,466,144

TREATMENT OF NICKELIFEROUS OXIDIC MATERIALS FOR THE RECOVERY OF NICKEL VALUES

Herbert Kay, New York, N.Y., assignor to American Metal Climax, Inc., New York, N.Y., a corporation of New York

Continuation-in-part of application Ser. No. 633,158, Apr. 24, 1967. This application July 3, 1967, Ser. No. 655,264
Int. Cl. C01g *53/04*
U.S. Cl. 23—183 **15 Claims**

A hydrometallurgical process using a sulfuric acid leach or a sulfation roast with a water leach for the recovery of nickel values from oxidic materials containing up to 12% magnesia wherein the leach solution is contacted with magnesia to precipitate nickel which is separated from the solution containing $MgSO_4$ before converting to nickel product. The $MgSO_4$ in the remaining solution is nonevaporatively crystallized at 370° to 480° F. under a pressure of 160 p.s.i.g. or more. The crystallized material

$(MgSO_4.H_2O)$

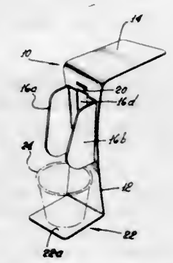
is thermally decomposed in the presence of sulfur-bearing material and the decomposition products are returned to the process.

3,466,145

URINE SCREENING DEVICE

Charles M. Van Duyne, 4655 Via Huerto, Santa Barbara, Calif. 93105

Filed Aug. 30, 1965, Ser. No. 483,683
Int. Cl. G01n *33/16*
U.S. Cl. 23—253 **7 Claims**



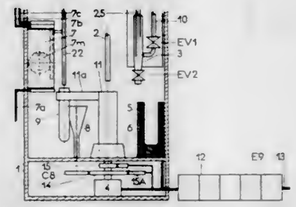
A unitary device for receiving a urine specimen for analysis having a single point of contact on the rim of a toilet bowl, and including means for channeling a urine specimen for collection or visual screening. Said device may be formed from a blank of relatively rigid material and may be disposed of after a single use.

3,466,146

INSTALLATION FOR AUTOMATIC ATTACK OF MATERIALS WITH A VIEW TO THEIR CHEMICAL ANALYSIS

Jean F. Tabourin, Crouy, Aisne, France, assignor to Bureau de Recherches Geologiques et Minieres, Paris, France, and Minerais et Melaux, Paris, France, a société anonyme of France

Filed Apr. 1, 1966, Ser. No. 539,498
Claims priority, application France, Apr. 1, 1965, 11,487; Mar. 1, 1966, 51,541
Int. Cl. G01n *31/00*
U.S. Cl. 23—253 **10 Claims**



An automatic chemical analysis apparatus is provided with a container for holding the materials to be tested, automatic filling, heating and mixing means all located externally of the container and a container cleaning arrangement which is provided with a device for completely inverting the container to discharge the material therein and to permit washing and drying of the container. The container may be located at a fixed station or indexed from one station to another for the performance of the various operations.

3,466,147

PRODUCTION OF A HIGH BORIC OXIDE-CONTAINING PRODUCT

Nelson P. Nies, Laguna Beach, and Robert W. Sprague, Santa Ana, Calif., assignors to United States Borax & Chemical Corporation, Los Angeles, Calif., a corporation of Nevada

No Drawing. Filed Aug. 15, 1966, Ser. No. 572,184
Int. Cl. C01b *35/00;* **C01d** *3/02*
U.S. Cl. 23—149 **12 Claims**

Vitreous boric oxide-containing product of at least 75% B_2O_3 is produced by heating an admixture of alkali metal or alkaline earth metal borate and hydrochloric or hydrobromic acid at a temperature of at least about 850° C. to form two molten layers. The molten layers are separated and the boric oxide product is obtained as a solid product after cooling. The other layer is also cooled to give the corresponding alkali or alkaline earth metal halide.

3,466,148

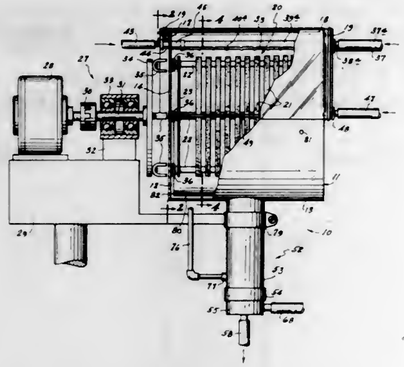
BLOOD OXYGENATOR

Hazen F. Everett, 120 Bedford Road, Hillsdale, N.J. 07642

Continuation-in-part of application Ser. No. 415,375, Dec. 2, 1964. This application Feb. 15, 1966, Ser. No. 527,607
Int. Cl. B01f *1/00*
U.S. Cl. 23—258.5 **17 Claims**

In a blood oxygenator, at least one dispersing element mounted on an open support is rotated in a chamber and has a three-dimensional, reticulate open cell struc-

ture, for example, as constituted by one or more perforate plastic sheets having the material between perforations displaced out of the normal flat plane, or as constituted by an open cellular plastic foam, venous blood is directed onto the top of the dispersing element for dispersion through the latter during its rotation, oxygen is

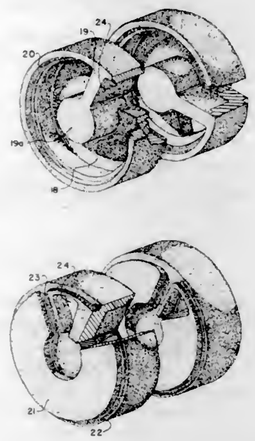


admitted to the chamber for oxygenating the thus dispersed blood, carbon dioxide and excess oxygen are vented from the chamber, and oxygenated blood dripping from the bottom of the dispersing element is discharged through an outlet extending from the chamber bottom.

3,466,149
TOWER REACTOR
Alden E. Blood, Herschel T. Vinyard, and Glenn L. Phillips, Longview, Tex., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed Feb. 25, 1966, Ser. No. 530,127
Int. Cl. C01b *17/86, 31/30*
U.S. Cl. 23—283 **9 Claims**

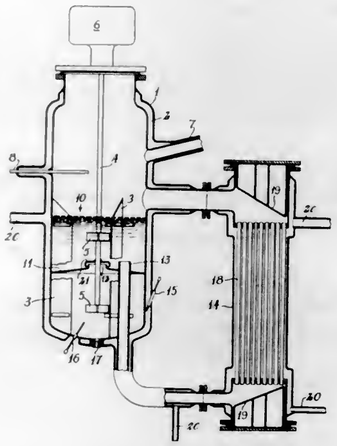


Tower reactors particularly for reactions at elevated temperatures to obtain high linear velocity and heat transfer. The reactors include a shell containing a plurality of stacked members or plates having a design to conform to the reactor shell, each member having a sector of an annular depression formed therein, an aperture adjacent to one end of the sector, and angularly displaced male and female parts for cooperating with corresponding parts on an adjacent member when in the stacked relation to angularly displace the aperture in an adjacent member. The reactors are particularly useful in oxidative



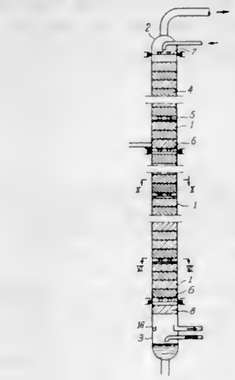
dehydrogenation processes for the production of unsaturated organic compounds.

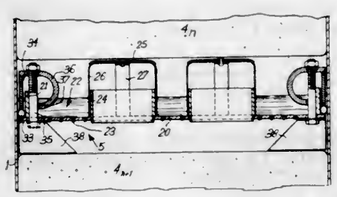
3,466,150
POLYCONDENSATION REACTOR
Manfred Dietze, Offenbach am Main, Wolfgang Kraft, Bad Vilbel, Hans Scheller, Schonberg, Taunus, and Hansjürgen Ullrich, Frankfurt am Main, Germany, assignors to Vickers-Zimmer Aktiengesellschaft, Planung und Bau von Industrieanlagen, Frankfurt am Main, Germany, a corporation of Germany
Filed June 1, 1965, Ser. No. 460,258
Int. Cl. B01j *1/00;* **C08g** *41/00*
U.S. Cl. 23—285 **8 Claims**



Polycondensation apparatus for the making of polyesters or polyamides such as polyethylene terephthalate or nylon, particularly nylon 66. The first stage polycondensation apparatus comprises a vertical reaction vessel of cylindrical configuration in combination with an external heat exchanger, the reaction vessel and exchanger being jacketed for temperature control. Precondensate pumped from a transesterification reaction is recycled between the reaction vessel and heat exchanger and is agitated in the vessel while ethylene glycol vapor is removed therefrom through an outlet communicating with a source of reduced pressure. Polycondensate product is drawn off at the bottom of the vessel at a rate substantially less than the vessel-heat exchanger re-cycle rate.

3,466,151
FLUID EXCHANGE COLUMN
Louis Sicard, Sainte-Foy-les-Lyon, and Claude Daumard, Lyon, France, assignors to Societe anonyme dite: Tissmetal, Lionel-Dupont, Teste & Cie, Lyon, France,
Filed Sept. 22, 1964, Ser. No. 398,327
Claims priority, application France, Sept. 26, 1963, 948,715
Int. Cl. B01j *9/02*
U.S. Cl. 23—288 **11 Claims**

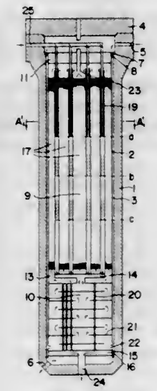




A column for the exchange of fluid flowing through packing elements contained in the column and for the uniform repartition of the fluids over each packing element. Each of the packing elements includes a body of packing material having a porous intricate structure and at least one partition wall dividing the material into a plurality of thin longitudinal strips to suppress the radial components of the flowing fluids. The packing elements are supported by at least one redistribution platform sealing held in the column, which platform has means for spacing the packing elements from the platform so as to define a reservoir for fluid therebetween.

3,466,152
SYNTHETIZING REACTOR EQUIPPED WITH TEMPERATURE CONTROL DEVICE FOR CATALYST LAYER
Hisao Yamamoto and Noboru Iwaasa, Yamaguchi-ken, assignors to Ube Industries, Ltd., Yamaguchi-ken, Japan, a corporation of Japan
Filed Mar. 22, 1966, Ser. No. 536,417
Claims priority, application Japan, July 28, 1965, 40/45,365
Int. Cl. B01j *9/00*
U.S. Cl. 23—289 **6 Claims**

A reactor for effecting a catalyzed gaseous reaction which comprises a reaction chamber and a heat exchanger. The reaction chamber has a plurality of spaced catalyst chambers each having an inlet for introduction of unreacted gas and an outlet for discharge of reacted gas. The heat exchanger has means defining a first gas flow path in communication with the outlets and a means defining a second gas flow path. The first gas flow path being separate from, but in thermal contact with the second gas flow path. The space between the catalyst



chambers being such as to afford a passage for unreacted gas from the second gas flow paths to the inlets of the catalyst chambers. Such space having a plurality of pipes disposed therein and each pipe having an outlet in communication with said space so that in operation further unreacted gas can be passed into the space by means of said pipes and admixed with the unreacted gas in such space.

3,466,153
APPLIANCE FOR USE IN CHEMICAL ANALYSIS
Gyula Takatsy, Budapest, Hungary, assignor to Metrimpex Magyar Muszeripari Kulkereskedelmi Vallalat, Budapest, Hungary
Filed Aug. 12, 1966, Ser. No. 576,498
Int. Cl. B01l *3/00*
U.S. Cl. 23—292 **6 Claims**



A cage for a volumetric liquid-transfer device, mounted on a shaft, comprises a grid of flat bars surrounding an

axially positioned stem so as to form an annular capillary space between the stem and the inner surfaces of the bars, the mutual separation of the bars being greater than the maximum spacing which would enable capillary retention of entrained liquid between the bars.

3,466,154

METHOD OF SEPARATING A DISPERSED PHASE FROM A MIXED-PHASE FLUID SYSTEM BY ELECTROMAGNETIC FORCE

Masao Hori, Tadato Fujimura, and Yoshihiro Ohuchi, Tokai-mura, and Kinichi Torigai, Mito-shi, Japan, assignors to Nihon Genshiryoku Kenkyo-sho, Tokyo, Japan

Filed July 29, 1964, Ser. No. 385,979
Claims priority, application Japan, Aug. 27, 1963, 38/45,082, 38/45,083, 38/45,084, 38/45,085
Int. Cl. B03c *1/00;* **C01g** *56/00;* **G21c** *19/42*
U.S. Cl. 23—317 **1 Claim**

A method of classifying different specific gravity particles of oxides of a nuclear fission product comprising forming a continuous phase of electrically conducting liquid from a mixture of molten sodium and potassium and disbursing in such continuous phase the oxides resulting from nuclear fission and including uranium oxides and plutonium oxide and lighter oxides. Electrical forces are applied to the continuous phase to produce an electromagnetic effect in a vertical direction that acts upon the fluid in such a manner that the dispersed phase can be moved relative to the continuous phase and wherein the action upon the oxides can be varied to cause the lighter oxides to rise and be removed after which the electromagnetic effect can be increased to float the heavier oxides for recovery, or such oxides can be obtained from the continuous phase.

3,466,155

CHROME ALLOYS

Robert V. Watkins and Wayne A. Farrington, South Bend, Ind., assignors to The Bendix Corporation, a corporation of Delaware

No Drawing. Filed May 15, 1968, Ser. No. 729,442
Int. Cl. B22f *3/16;* **C22c** *1/04*
U.S. Cl. 29—182.5 **6 Claims**

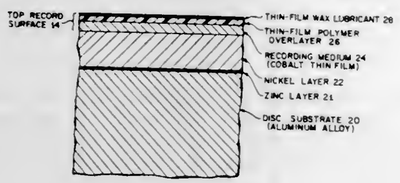
A chromium alloy composite utilizing additives of magnesium oxide, silicon, titanium, vanadium, tantalum and carbon with chromium powder that is screened through a 200–325 mesh screen which is blended with all or some of the additives, compacted, broken up, recompacted and sintered.

3,466,156

MAGNETIC RECORD MEMBERS

Richard T. Peters, Torrance, Eliot Stone, Los Angeles, and Joseph J. Bourdon, Inglewood, Calif., assignors to The National Cash Register Company, Dayton, Ohio, a corporation of Maryland

Filed Dec. 1, 1966, Ser. No. 598,292
Int. Cl. B23p *3/20*
U.S. Cl. 29—195 **12 Claims**



A magnetically coated disc or other magnetic recording member is made with an overlayer of thin-film synthetic polymer onto which is adsorbed a uniformly smooth mineral wax lubricant. This provides a protected recording surface while allowing high recording density. The wax lubricant constitutes a surface having a low coefficient of friction for a flying record head having unintended continuous or momentary contact therewith.

3,466,157

COMPOSITE METAL CONTAINING COPPER FOR COINAGE PURPOSES

Philip B. Neisser, Alexandria, Va., and Morris V. Boley, Bethesda, Md., assignors to the United States of America as represented by the Department of the Treasury

Filed Oct. 22, 1965, Ser. No. 502,738
Int. Cl. B23p *3/20*
U.S. Cl. 29—199 **13 Claims**



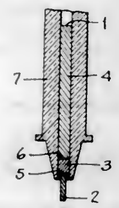
The present invention relates to a new composite metal strip having outer layers of either copper-nickel or silver-copper alloys bonded directly to either a pure copper or silver-copper base, the layers having appropriate alloy compositions and thicknesses to provide the composite strip with the necessary qualities of color, weight, brittleness, bounce, ring, electrical conductivity, magnetic attraction, and density to permit coinage which is compatible with present U.S. currency.

3,466,158

COMPOUND PRECIOUS METAL ARTICLE HAVING LAYER CONTAINING IRIDIUM OR RUTHENIUM

David Wade Rhys, Gerrards Cross, England, assignor to The International Nickel Company, Inc., New York, N.Y., a corporation of Delaware

Filed Jan. 4, 1967, Ser. No. 607,197
Claims priority, application Great Britain, Jan. 10, 1966, 1,108/66; Sept. 20, 1966, 41,874/66
Int. Cl. C01g *55/00*
U.S. Cl. 29—199 **6 Claims**



Bonded compound article, e.g., spark plug, comprising a silver component and a high melting point component of iridium, ruthenium or an iridium-rich or ruthenium-rich alloy connected by a junction made of a silver-palladium alloy; metallurgical process comprising brazing and welding precious metals.

3,466,159

PROCESS AND CATALYST FOR PRODUCTION OF METHANE-RICH GAS

Abe Warshaw, Clark, John S. Negra, South Plainfield, and Arnold R. Bernas, Nixon, N.J., assignors to Chemical Construction Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Mar. 26, 1965, Ser. No. 443,072
Int. Cl. C10l *3/00*
U.S. Cl. 48—213 **13 Claims**

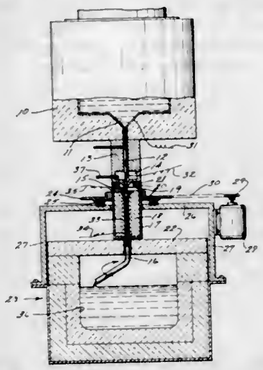
An improved process and catalyst are provided for the conversion of a normally liquid hydrocarbon typically containing from three to ten carbon atoms per molecule and having a boiling point in the range of 100° F. to 500° F., to a gas stream principally containing methane, by catalytic reaction of the liquid hydrocarbon in the vapor state with steam at elevated temperature and in the presence of hydrogen. The improvement of this process entails the provision of a novel catalyst for the reaction, which contains manganese dioxide in addition to a catalytic agent selected from the group consisting of nickel oxide and cobalt oxide.

3,466,160

MOLTEN ADDITIVE DISTRIBUTOR FOR GLASS

George E. Keefer, Toledo, Ohio, assignor to Owens-Illinois, Inc., a corporation of Ohio

Filed July 1, 1966, Ser. No. 562,341
Int. Cl. C03b *5/18*
U.S. Cl. 65—157 **6 Claims**



The addition of a molten additive or frit to a forehearth containing a flowing stream of molten glass, is carried out by providing a frit melter mounted above the forehearth with a heated discharge tube extending downwardly therefrom to discharge into the upper end of a distributing tube in the form of a pipe having its lower end extending through the forehearth cover and being bent at an angle so that upon rotation of the second heated tube the molten additive will be spread over a large area of the surface of the glass in the forehearth. A second embodiment involves the use of a longer second tube having its lower end submerged in the molten glass stream, so that it serves, not only as a distributor of molten additive but also as a stirrer.

3,466,161

GRANULATED POTASSIUM CHLORIDE FERTILIZER

Shmuel Perlmutter, 18 Hapalmach St., Jerusalem, Israel, and Moshe Rudolf Bloch, Asaf Simchoni St., Beersheba, Israel

No Drawing. Filed June 2, 1966, Ser. No. 554,680
Claims priority, application Israel, June 9, 1965, 23,702
Int. Cl. C07c *7/02;* **C01d** *3/04, 3/06*
U.S. Cl. 71—33 **6 Claims**

Granulated potassium chloride for use as a fertilizer is produced by adding to a potassium chloride slurry in any desired sequence the combination of a phosphate reactant which may be phosphoric acid or a water-soluble acidic salt thereof and a magnesium reactant which may be magnesium oxide, magnesium hydroxide or a reaction mixture capable of yielding magnesium hydroxide in situ, thereby to produce a magnesium-phosphorus binder followed by granulating the resultant mixture and drying.

3,466,162

PROCESS FOR CONTROL OF ALGAE GROWTH USING COMPOSITIONS CONTAINING DIAMINES AND/OR DERIVATIVES THEREOF

Urs Gloor, Riehen, and Klaus Bohnen, Dielsdorf, Switzerland, assignors to Hoffmann-La Roche Inc., Nutley, N.J., a corporation of New Jersey

No Drawing. Filed Feb. 7, 1967, Ser. No. 614,403
Claims priority, application Switzerland, Feb. 25, 1966, 2,789/66
Int. Cl. A01n *9/20*
U.S. Cl. 71—67 **10 Claims**

Diamines, and acid addition salts thereof, or quaternary products produced therefrom; compositions containing same; and the use of such compounds and compositions for the control of algae.

3,466,163

EFFICIENT ARSONATE HERBICIDE COMPOSITION AND METHOD OF USE

John H. Kirch, Roslyn, Pa., assignor to Amchem Products, Inc., Ambler, Pa., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 597,204, Nov. 28, 1966. This application Apr. 2, 1968, Ser. No. 718,251
Int. Cl. A01n *9/20*
U.S. Cl. 71—97 **11 Claims**

A herbicidal composition and method of use for eradicating perennial woody and bush species involving a composition including an arsonate compound and a phenoxyalkanoic compound.

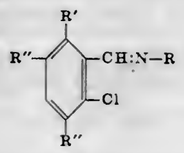
3,466,164

PROCESS FOR THE CONTROL OF PLANT GROWTH WITH N-(SUBSTITUTED BENZYLIDENE) ALKYL AMINES

Joseph F. De Gaetano, Montvale, and Adolph J. Deinet, Woodcliff Lake, N.J., assignors to Tenneco Chemicals, Inc., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 410,730, Nov. 12, 1964. This application Mar. 29, 1968, Ser. No. 717,443
Int. Cl. A01n *9/20;* **C07c** *119/10*
U.S. Cl. 71—121 **4 Claims**

N-(substituted benzylidene) alkyl amines that have the structural formula

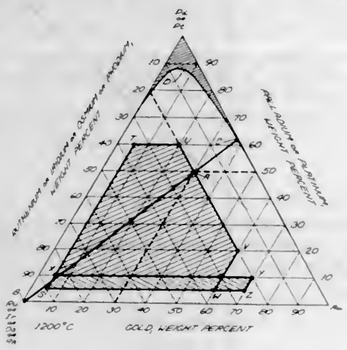


wherein R represents an alkyl group having from 1 to 16 carbon atoms; R′ represents chlorine, a lower alkyl group, or a lower alkoxy group; and each R″ represents hydrogen, chlorine, a nitro group, or an amino group are effective preemergence and post-emergence selective herbicides. Among the most active of these compounds is N-(2,3,6-trichlorobenzylidene)n-butyl amine.

3,466,165
PRODUCTION OF REFRACTORY PLATINUM-GROUP METAL SPHEROIDAL ARTICLES

David Wade Rhys, Gerrards Cross, Peter Edward Gainsbury, Ruislip, and Ronald Savage, Southall, England, assignors to The International Nickel Company, Inc., New York, N.Y., a corporation of Delaware

Filed Feb. 2, 1967, Ser. No. 613,630
Claims priority, application Great Britain, Feb. 7, 1966, 5,301/66; Feb. 16, 1966, 23,418/66; Jan. 30, 1967, 5,301/67
Int. Cl. B22f *9/00;* B29f *5/00*
U.S. Cl. 75—.5 10 Claims



Small spheres and spheroid-like articles which are predominantly of ruthenium, iridium, osmium or rhodium are formed in a molten matrix of other metal and thereafter the matrix is solidified and leached away so as to recover the spheres or spheroidal articles.

3,466,166
METHOD FOR MAKING A HOLLOW METAL ARTICLE

Moses A. Levinstein, Cincinnati, and William R. Butts, Milford, Ohio, assignors to General Electric Company, a corporation of New York

Filed Jan. 3, 1967, Ser. No. 606,963
Int. Cl. C22f *1/00;* C22c *1/00, 19/00*
U.S. Cl. 75—.5 6 Claims

A hollow metal article is produced by first providing a composite structure corresponding in shape to the hollow article and including a core metallic material coated with a shell metallic material in particular amounts. The core metallic material, upon heating, will preferentially diffuse into the shell metallic material which has a higher melting point, thereby resulting in a hollow central portion within the article.

3,466,167
REMOVAL OF IMPURITIES FROM NICKEL SULFIDE

Alexander Illis, Copper Cliff, Ontario, and Alan Manson, Oakville, Ontario, Canada, assignors to The International Nickel Company, Inc., New York, N.Y., a corporation of Delaware

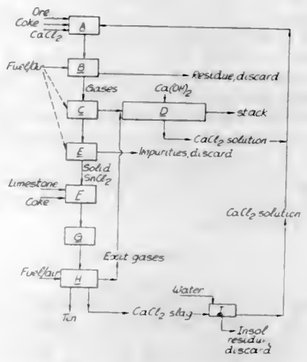
No Drawing. Filed Aug. 19, 1966, Ser. No. 573,496
Claims priority, application Canada, Sept. 14, 1965, 940,557
Int. Cl. C22b *1/10;* C22c *19/00*
U.S. Cl. 75—1 22 Claims

Impure nickel sulfide is selectively chlorinated with gaseous chlorine at a temperature between about 400° F. and 700° F. to chlorinate at least one impurity selected from the group consisting of copper, cobalt, lead, arsenic and iron. The selectively chlorinated impurities are then leached from the nickel sulfide. Leaching can be effected by bubbling chlorine through water or by aerating an ammoniacal ammonium carbonate solution.

3,466,168
METHOD OF SMELTING TIN ORES

Archibald William Fletcher, Stevenage, and John Charles Wilson, Hitchin, England, assignors to National Research Development Corporation, London, England, a British corporation

Filed Jan. 3, 1966, Ser. No. 518,265
Claims priority, application Great Britain, Jan. 11, 1965, 1,262/65
Int. Cl. C22b *25/02, 1/24*
U.S. Cl. 75—85 5 Claims



A method of extracting tin from ores and concentrates is described characterized in that the tin content of the ores is extracted as stannous chloride by mixing the ores with carbon and an inorganic chloride, roasting the mixture at a temperature above the boiling point of stannous chloride and condensing the stannous chloride vapor given off and reducing the stannous chloride by heating at elevated temperatures with carbon and calcium carbonate or calcium oxide. In a preferred embodiment the stannous chloride is ground with coke and lime or limestone, the ground mixture pelletized or briquetted and the resultant pellets or briquettes heated at a temperature sufficient to reduce the stannous chloride to metallic tin and to maintain the metallic tin and calcium chloride formed in the liquid state, permitting the tin which has a higher density to separate from the calcium chloride slag.

3,466,169
PROCESS FOR THE PRODUCTION OF METALLIC CHLORIDES FROM SUBSTANCES CONTAINING METALLIC OXIDES

Rudolf Nowak, Frankfurt am Main-Oberrad, and Wilhelm Schuster, Frankfurt am Main, Germany, assignors to Halomet AG, Basel, Switzerland

No Drawing. Continuation-in-part of application Ser. No. 133,086, Aug. 22, 1961. This application Dec. 22, 1965, Ser. No. 515,733
Claims priority, application Germany, Dec. 31, 1964, H 54,733
Int. Cl. C22b *5/16;* C01b *7/00*
U.S. Cl. 75—112 11 Claims

Ore is chlorinated in the presence of coke. The amount of chlorine is limited to the stoichiometric amount needed to form the chloride of the metal of greatest chloride forming affinity. The temperature is held above the vaporization point of the resulting chloride. This removes all the metal of greatest chloride-forming affinity from the ore. The resulting chloride gas, along with any chloride impurities formed, is passed over new ore which is free of carbon, at which time chloride impurities are removed in favor of additional chloride of the metal of greatest chloride forming affinity in order to yield pure chloride of the metal of greatest chloride forming affinity. This pure metal chloride may be reduced to yield metal in the zero valence state and the ore that is then free of all of the metal of greatest chloride forming affinity can be treated similarly for collection of the chloride of the metal of next greatest chloride forming affinity.

3,466,170
PROCESS FOR IMPROVING GRAIN STRUCTURE OF ALUMINUM SILICON ALLOYS

Eckhard Dunkel, Frankfurt am Main, and Wolfgang Thiele, Bad Homburg vor der Hohe, Germany, assignors to Metallgesellschaft Aktiengesellschaft, Frankfurt am Main, Germany

No Drawing. Filed Jan. 12, 1967, Ser. No. 608,754
Claims priority, application Germany, Jan. 13, 1966, M 67,990
Int. Cl. C22c *21/04*
U.S. Cl. 75—148 3 Claims

Process for improving modification structure of Al-Si alloys with a content of 5 to 14% of Si and optionally Mg and/or Zn or Cu by introduction of Sr and/or Ba in a quantity of 0.001 to 2.0% into the molten alloy prior to casting whereby a long lasting modification effect is obtained. The Sr and/or Ba can be added in metallic form as such or in the form of alloys or in the form of their compounds. Optionally Be may also be added to the molten Sr and/or Ba containing alloy in a quantity of 0.001 to 2.0%.

3,466,171
NICKEL-CHROMIUM-NIOBIUM ALLOY

Alfred John Fletcher, Birmingham, and Edward Gordon Richards, Worcestershire, England, assignors to The International Nickel Company, New York, N.Y., a corporation of Delaware

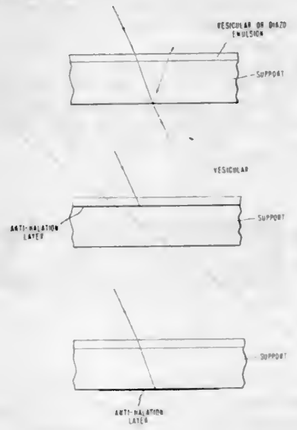
No Drawing. Filed July 18, 1966, Ser. No. 565,711
Claims priority, application Great Britain, July 20, 1965, 30,785/65
Int. Cl. C22c *19/00;* C22f *1/11*
U.S. Cl. 75—171 10 Claims

Nickel-chromium alloys containing niobium, substantial amounts of carbon and, advantageously, molybdenum, wherein the niobium, carbon, chromium and molybdenum constitutents of the alloys are carefully correlated to obtain good stress-rupture properties at 900° C. and higher.

3,466,172
METHOD OF USING PHOTOGRAPHIC VESICULAR AND DIAZO FILMS HAVING DIAZO ANTIHALATION LAYERS

Eugene R. Skarvinko, Binghamton, N.Y., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York

Filed Jan. 13, 1967, Ser. No. 609,111
Int. Cl. G03c *1/84, 5/34*
U.S. Cl. 96—49 3 Claims



A process of forming either an azo dye or a vesicular image in photographic elements which have an antihalation layer which can be rendered inert by overall exposure to actinic light after imaging said element.

3,466,173
SILVER HALIDE ELEMENT CONTAINING A DEVELOPER AND AROMATIC SULFINIC ACID STABILIZERS

Hidehiko Ishikawa, Odawara-shi, Mikio Sato, Kanagawaken, and Kazuo Matsui, Tokyo, Japan, assignors to Keuffel & Esser Company, Hoboken, N.J., a corporation of New Jersey

No Drawing. Filed Nov. 29, 1966, Ser. No. 597,567
Claims priority, application Japan, Nov. 30, 1965, 40/73,178
Int. Cl. G03c *1/48;* G03c *1/34*
U.S. Cl. 96—95 6 Claims

Incorporation of an aromatic sulfinic acid derivative into direct positive photographic material including a photographic developer provides extended storage capabilities.

3,466,174
BREAD FLAVOR

Robert H. Bundus, Evanston, and Anthony J. Luksas, Chicago, Ill., assignors to Beatrice Foods Co., Chicago, Ill., a corporation of Delaware

No Drawing. Filed July 25, 1966, Ser. No. 567,371
Int. Cl. A21d *2/00*
U.S. Cl. 99—90 9 Claims

A synthetic bread flavor is prepared by growing yeast on a medium consisting essentially of whey and containing 6% to 40% total solids with intimate mixing of air with the medium throughout the growth period of 14 to 24 hours.

3,466,175
SEASONING COMPOSITIONS CONTAINING TRICHOLOMIC ACID AND IBOTENIC ACID AS FLAVOR ENHANCERS

Tsunematsu Takemoto, Sendai, Japan, assignor to Takeda Chemical Industries, Ltd., Osaka, Japan

No Drawing. Filed Dec. 14, 1965, Ser. No. 513,851
Claims priority, application Japan, Dec. 17, 1964, 39/71,389
Int. Cl. A23l *1/22*
U.S. Cl. 99—140 7 Claims

Tricholomic acid and ibotenic acid enhance the flavor and quality of food and produce a synergistic effect with respect to flavor when combined with a 5'-nucleotide.

3,466,176
MANUFACTURE OF SYNTHETIC BREAD FLAVOR

Robert H. Bundus, Evanston, and Anthony J. Luksas, Chicago, Ill., assignors to Beatrice Foods Co., Chicago, Ill., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 567,371, July 25, 1966. This application Dec. 20, 1967, Ser. No. 691,985
Int. Cl. A21d *2/00;* A23l *1/22*
U.S. Cl. 99—140 7 Claims

Synthetic bread flavor is produced by a high temperature, short time treatment of whey followed by growing yeast on the whey in the presence of lactic acid. A strong yeasty odor is imparted to the product by either (1) hydrolyzing whey with a lactase, fermenting the product with yeast and then adding the product to synthetic bread flavor, (2) growing lactose fermenting yeast on whey and combining the product with synthetic bread flavor, (3) forming the synthetic bread flavor in the

presence of yeast which ferments lactose, or (4) forming the synthetic bread flavor in the presence of lactose fermenting bacteria.

3,466,177
BREAD FLAVOR CONCENTRATE
Robert H. Bundus, Riverside, and Anthony J. Luksas, Chicago, Ill., assignors to Beatrice Foods Co., Chicago, Ill., a corporation of Delaware
No Drawing. Continuation-in-part of application Ser. No. 567,371, July 25, 1966. This application Jan. 12, 1968, Ser. No. 697,320
Int. Cl. A23l *1/22*
U.S. Cl. 99—140 **5 Claims**

Synthetic bread flavor is produced by reducing the lactose content of whey which has from 6% to 40% total solids, adding yeast and growing the yeast for a period of up to 48 hours with intimate mixture of air during the growth period.

3,466,178
PROCESS OF MANUFACTURING CONCENTRATED AQUEOUS EMULSIONS AND EMULSIONS PRODUCED BY SUCH PROCESS
Heinz Enders, Stadtbergen, near Augsburg, and Hans Diener, Neusaess-Lowald, near Augsburg, Germany, assignors to Chemische Fabrik Pfersee G.m.b.H., Augsburg, Germany
No Drawing. Filed Dec. 28, 1965, Ser. No. 517,081
Claims priority, application Germany, Jan. 16, 1965, C 34,872; May 7, 1965, C 35,781
Int. Cl. C09k *3/18;* **C09d** *5/20;* **D06m** *15/66*
U.S. Cl. 106—2 **9 Claims**

An emulsion suitable, when diluted, for the hydrophobing of fibrous materials is produced by emulsifying a liquefied water-insoluble wax, fat or silicones with a salt mixture expressed as oxides in aqueous solution and consisting of salts of titanium and zirconium with a monocarboxylic acid with 1 to 4 carbon atoms in a weight ratio when expressed as titanium oxide and zirconium oxide as ranging between 1:0.6 to 1:3, the weight ratio between emulsified substances and metal salts calculated as oxides being between about 1:0.1 and about 1:0.3.

3,466,179
PLASTICIZED SULFUR COMPOSITIONS
Carl C. Greco, Bronx, N.Y., assignor to Stauffer Chemical Company, New York, N.Y., a corporation of Delaware
No Drawing. Filed Aug. 17, 1967, Ser. No. 661,239
Int. Cl. C09d *5/00*
U.S. Cl. 106—19 **12 Claims**

Impact resistant sulfur compositions comprising the reaction product of a major proportion of elemental sulfur and a minor amount of a bis(mercaptoalicyclic hydrocarbon)disulfide of the formula:

$$(HS)_nR—S_2—R'(SH)_{n'}$$

wherein R and R' are alicyclic hydrocarbons of from 3 to 12 carbon atoms and n and n' are integers of from 1 to 2, inclusive.

3,466,180
DICHROIC GLASSES
Erwin C. Hagedorn, Oregon, and Dallas P. Hall, Toledo, Ohio, assignors to Owens-Illinois, Inc., a corporation of Ohio
No Drawing. Filed Sept. 14, 1965, Ser. No. 487,323
Int. Cl. C93c *3/04*
U.S. Cl. 106—52 **5 Claims**

Dichroic soda lime glass compositions containing 0.05 to 0.2% CoO, and 0.05 to 0.6% total chromium oxides present as both Cr_2O_3 and CrO_3 with the latter being 0.03 to 0.09%.

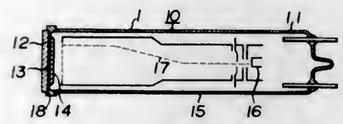
3,466,181
HEAT AND LIGHT GLARE REDUCING COMPOSITION FOR GLASS
William H. Cooley, 1228 Westmoor Road, Winnetka, Ill. 60093, Kenneth C. Allison, 1546 S. Shore Drive, Crystal Lake, Ill. 60614, and William Colburn, Chicago, Ill.; said Colburn assignor to said Cooley and said Allison
No Drawing. Filed Jan. 11, 1967, Ser. No. 608,492
Int. Cl. C08b *21/00, 27/04*
U.S. Cl. 106—189 **4 Claims**

A heat and light glare reducing composition for application to a panel of glass, said composition including as a vehicle a resin material combined with a volatile solvent and finely divided particles of light scattering material dispersed therein, said vehicle on evaporation of said solvent remaining as a relatively dry-non-tacky film holding said particles in fixed position and permitting transmission of light through areas of said film not occupied by said light scattering particles, and said film being removable with a wiping cloth dampened with water or other suitable solvent.

3,466,182
POLYMERISATION PROCESS
Clement Henry Bamford, Liverpool, and Frederic James Duncan and Reginald John William Reynolds, Runcorn, England, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain
No Drawing. Filed Jan. 17, 1966, Ser. No. 520,911
Claims priority, application Great Britain, Feb. 10, 1965, 5,764/65
Int. Cl. C09d *3/47, 11/10;* **D06p** *5/04*
U.S. Cl. 117—12 **35 Claims**

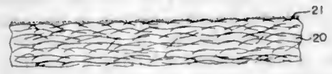
A process which comprises contacting a receptive substrate with (i) ethylenically unsaturated material which is normally polymerisable by free-radical mechanism, (ii) an organic halogen-containing compound as hereinafter defined and (iii) a transition metal organic compound which with the organic halogen-containing compound provides a combination which is active as a polymerisation initiator for said ethylenically unsaturated material, thereby causing the ethylenically unsaturated material to polymerise in contact with the receptive substrate. Any substrate may be modified by the process if it is of a receptive nature; that is, if it is adsorbent or absorbent or otherwise allows intimate contact by penetration of the components within its structure.

3,466,183
METHOD OF MANUFACTURING PHOTOCONDUCTIVE LAYERS
Yuji Kiuchi and Kazuo Shimizu, Kanagawa-ku, Yokohama-shi, Japan, assignors to Tokyo Shibaura Electric Co., Ltd., Kawasaki-shi, Japan, a corporation of Japan
Filed Feb. 1, 1966, Ser. No. 524,319
Claims priority, application Japan, Jan. 30, 1965, 40/4,597, 40/4,601; Aug. 10, 1965, 40/48,218
Int. Cl. G03c *1/08*
U.S. Cl. 117—34 **3 Claims**



A method of manufacturing a photoconductive target for use in an image pickup tube by vaporizing a powdery mixture formed by adding minute amounts of thallium to cadmium selenide and cadmium chloride to form a photoconductive layer on a transparent conductive layer which is on a substrate, and heat treating the formed layer at a temperature of from 425° C. to 700° C. in an inert atmosphere containing selenium vapor.

3,466,184
RECORD SHEET SENSITIZED WITH PHENOLIC POLYMERIC MATERIAL
Richard G. Bowler and Robert E. Miller, Dayton, Ohio, assignors to The National Cash Register Company, Dayton, Ohio, a corporation of Maryland
Filed Feb. 14, 1967, Ser. No. 616,065
Int. Cl. D21h *1/28*
U.S. Cl. 117—36.2 **1 Claim**

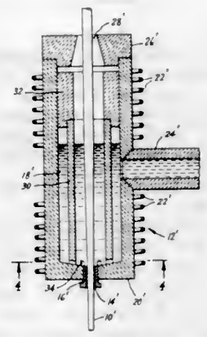


This invention relates especially to a paper copy-receiving sheet having the nap fibers protruding from a surface thereof clothed in a phenolic polymeric film material investment which is individual to each fiber and may extend in broken festoon-fashion from fiber to fiber, leaving a more or less capillarily porous sheet structure receptive of marking (printing) liquids.

3,466,185
PROCESS OF A SENSITIZING PAPER WITH PHENOLIC POLYMERIC MATERIAL
John Edwin Gordon Taylor, Dayton, Ohio, assignor to The National Cash Register Company, Dayton, Ohio, a corporation of Maryland
No Drawing. Filed Mar. 21, 1967, Ser. No. 624,691
Int. Cl. D21h *1/28*
U.S. Cl. 117—36.2 **1 Claim**

This invention provides an integral paper sheet sensitized to react with applied solutions of normally colorless chromogenic compounds by exhibiting a subsident stratum of color-reactant phenolic polymeric film material clinging to fibers within said integral paper sheet near its surface but beneath it. This sheet finds an important use as an undersheet in a two-sheet system, the top sheet having a rear surface coated with droplets of printing liquid transferable by pressure to the sensitive undersheet to produce colored marks.

3,466,186
DIP FORMING METHOD
Roland P. Carreker, Jr., Schenectady, N.Y., assignor to General Electric Company, a corporation of New York
Filed May 16, 1966, Ser. No. 550,237
Int. Cl. C23c *1/00*
U.S. Cl. 117—114 **3 Claims**



In a dip crucible apparatus for accreting molten metal onto a moving core rod passing through a crucible containing molten metal, an annular baffle is disposed concentrically to the crucible wall defining a reservoir of molten metal and surrounds the core rod. The baffle has a plurality of openings at its lower end, and a feed inlet to the crucible is positioned below the upper edge of the baffle but above the openings in the baffle. Molten metal introduced to the crucible flows downwardly between the crucible walls and the baffle and countercurrently within the baffle.

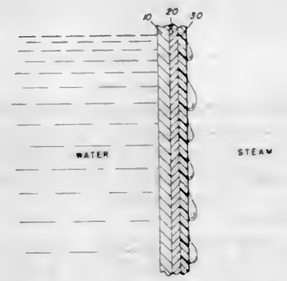
3,466,187
PRESSURE-SENSITIVE TAPE
Frederick E. Heinemann, Canton, and Charles B. Moore, Scituate, Mass., assignors to W. R. Grace & Co., Cambridge, Mass., a corporation of Connecticut
No Drawing. Continuation-in-part of application Ser. No. 465,738, June 21, 1965. This application May 6, 1968, Ser. No. 727,048
Int. Cl. C09j *7/00*
U.S. Cl. 117—122 **4 Claims**

A cellulosic sheet containing between 5 and 20% asbestos fibers, based on the total weight of cellulose and asbestos, is impregnated with elastomeric composition (e.g. a carboxylic/butadiene/acrylonitrile copolymer latex) and coated at least on one side with a pressure sensitive adhesive. The product exhibits enhanced resistance to delamination and is ideally suited for use as a pressure sensitive adhesive tape.

3,466,188
METHODS AND MATERIALS FOR INHIBITING CORROSION
Robert R. Annand, St. Louis, Mo., and Norman Hackerman, Austin, Tex., assignors to Tracor, Inc., Austin, Tex., a corporation of Texas
No Drawing. Continuation-in-part of application Ser. No. 323,504, Nov. 13, 1963. This application July 26, 1965, Ser. No. 474,942
Int. Cl. B44d *1/34*
U.S. Cl. 117—132 **31 Claims**

The corrosion inhibiting activity of a polymerizable material, such as vinylpyridine, can be enhanced by polymerizing the material to form a longer chain material, such as poly(vinylpyridine), before using the material as a corrosion inhibitor.

3,466,189
METHOD FOR IMPROVING HEAT TRANSFER IN CONDENSERS
Robert A. Erb, Valley Forge, Pa., assignor to the United States of America as represented by the Secretary of the Interior
Filed Sept. 2, 1966, Ser. No. 577,092
Int. Cl. B32b *27/04;* **C23c** *13/00*
U.S. Cl. 117—132 **4 Claims**



Improved efficiency in the condensation of water vapor is achieved through the use of para-xylylene polymer coatings as cooling surfaces.

3,466,190
METHOD OF MAKING FILMS OF INORGANIC COMPOUNDS

Toshio Yamashita, Hirakata-shi, Manabu Yoshida, Moriguchi-shi, and Hirokazu Tsukamoto, Sendai-shi, Japan, assignors to Matsushita Electric Industrial Co., Ltd., Kadoma-shi, Osaka, Japan, a corporation of Japan

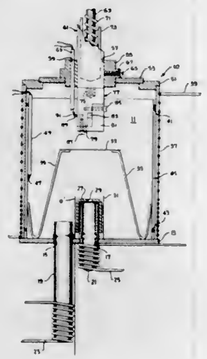
Filed Feb. 25, 1966, Ser. No. 530,124
Claims priority, application Japan, June 16, 1965, 40/36,465
Int. Cl. H01b *1/02*; H01l *3/04*
U.S. Cl. 117—201 8 Claims

Inorganic semiconductive films, particularly photoconductive films such as cadmium sulfide and the like, are prepared by adding ammonia water to an aqueous solution of at least one water soluble salt of an element of Groups I–B, II–B and III–A to form a soluble complex compound, adding thereto at least one of thiourea, selenurea or dimethyl selenurea, and heating the system to cause the sulfide, selenide or sulfoselenide of one of said elements to deposit as a film on a substrate immersed in the system.

3,466,191
METHOD OF VACUUM DEPOSITION OF PIEZOELECTRIC FILMS OF CADMIUM SULFIDE

James Maxwell Stinchfield, Bethesda, Md., and Hayden Morris, Washington, D.C., assignors to the United States of America as represented by the Secretary of the Army

Filed Nov. 7, 1966, Ser. No. 592,640
Int. Cl. B44d *1/18*; C23c *13/02*
U.S. Cl. 117—213 8 Claims



Piezoelectric films of cadmium sulfide are prepared by vacuum deposition under controlled conditions. During the critical deposition period a mixture of argon and oxygen is admitted to the deposition apparatus while pumping is continued holding the pressure at 10^{-4} to 10^{-3} mm. of mercury.

3,466,192
CORROSION PREVENTION PROCESS

George S. Gardner, Elkins Park, Pa., assignor to Amchem Products, Inc., Ambler, Pa., a corporation of Delaware

No Drawing. Filed Jan. 23, 1967, Ser. No. 610,788
Int. Cl. B08b *17/00*
U.S. Cl. 134—3 4 Claims

Oxidizing acid attack on basis metal surfaces is reduced by use of an oxidizing acid solution containing nitrate, ferric ion or hydrogen peroxide along with soluble methylol thiourea compounds in the acid solution. Copper ion is added to enhance corrosion prevention by the acid solutions.

3,466,193
STORAGE BATTERY POSITIVE PLATE WITH LEAD FIBERS

Thomas J. Hughel, Royal Oak, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed May 1, 1967, Ser. No. 634,990
Int. Cl. H01m *39/00*
U.S. Cl. 136—26 4 Claims

This invention relates to an improved antimony-free positive plate and a method for making the plate. The positive plate consists of a layer of lead dioxide active material containing 5 to 25 weight percent short lead fibers substantially uniformly dispersed therethrough in such a manner that there is essentially no contact among the lead fibers. The lead fibers in the lead dioxide provide electrical conductivity and strength in the positive plate. In a preferred embodiment of this invention, a plastic frame and a lead connector having a plurality of fingers are incorporated into the positive plate and the layer of lead dioxide contains non-electrical conductive fibers as well as lead fibers.

3,466,194
BATTERY HAVING LEAD DIOXIDE CATHODE, MAGNESIUM OR ZINC ANODE, AND POTASSIUM ACID SULFATE ELECTROLYTE

Joseph C. Duddy, Trevose, Pa., assignor to ESB Incorporated, a corporation of Delaware

Filed Aug. 29, 1967, Ser. No. 664,070
Int. Cl. H01m *17/00*, *11/00*
U.S. Cl. 136—26 6 Claims

A battery having a lead dioxide cathode, a magnesium or zinc anode, and a potassium acid sulfate ($KHSO_4$) electrolyte. In the preferred embodiment the $KHSO_4$ is impregnated in the separator between the electrodes and the battery may be used as a reserve cell which may be instantly activated with the addition of water.

3,466,195
ALKALINE CELL CONTAINING SILICATE IONS IN THE ELECTROLYTE

Patrick J. Spellman, Madison, Wis., and John A. Youngquist, Haddonfield, N.J., assignors, by mesne assignments, to ESB Incorporated, Philadelphia, Pa., a corporation of Delaware

No Drawing. Filed July 20, 1966, Ser. No. 566,475
Int. Cl. H01m *43/02*, *19/00*
U.S. Cl. 136—30 14 Claims

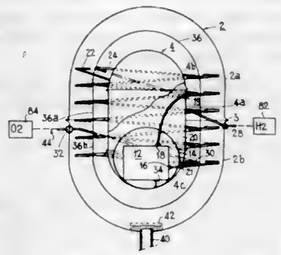
An alkaline cell containing silicate ions in the electrolyte which is characterized by an improved initial capacity and improved stability during storage and a limited amount of alkaline electrolyte sufficient only to provide wetting of the cell components without establishing a liquid level of electrolyte in the cell.

3,466,196
ISOTHERMAL ASSEMBLY

Roland P. Gosmand, Blanc-Mesnil, France, assignor to Compagnie Francaise Thomson Houston-Hotchkiss Brandt, Paris, France, a corporation of France

Filed Nov. 12, 1965, Ser. No. 507,377
Claims priority, application France, Nov. 13, 1964, 994,960
Int. Cl. H01m *27/00*
U.S. Cl. 136—86 17 Claims

A pair of entirely sealed shells are maintained in spaced relation from each other by spirally wound electrical conductors, or tubing, the space between the shells being evacuated; an electronic equipment, such as fuel cells and the like, are located within the inner shell, electrically and hydraulically connected to the wires in the tubing, the equipment being sealed in the inner shell and the space surrounding the equipment being entirely filled with a fluid, such as water, which will undergo phase transformation when the temperature drops, within the inner shell, below freezing to provide long-term protection of the equipment against extreme cold.



3,466,197
METHOD OF MAKING CARBONATE ELECTROLYTE MATRIX AND FUEL CELL THEREWITH

Mohendra S. Bawa, Dallas, Tex., assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware

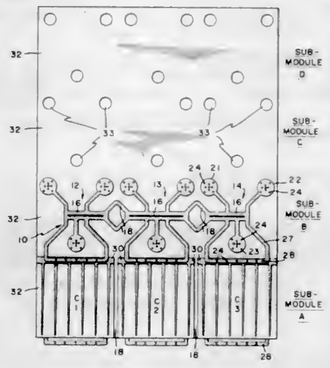
Filed Dec. 14, 1966, Ser. No. 601,782
Int. Cl. H01m *27/16*, *27/20*
U.S. Cl. 136—86 6 Claims

Disclosed is an electrolyte-matrix for use in thin molten carbonate fuel cells and a method for making same, the electrolyte-matrix being disposed between the anode and the cathode of the fuel cell and containing a membrane with which the molten carbonate of the electrolyte reacts to form a porous support medium to hold and contain the electrolyte during operation of the fuel cell; the method comprises the steps of mixing particular oxide and carbonate compounds, heating the mixture, grinding the mixture to form a powder, and mixing particular metals with the powder to form the electrolyte-matrix material.

3,466,198
SOLAR CELL MATRIX

James E. Webb, Administrator of the National Aeronautics and Space Administration, with respect to an invention of Robert K. Yasui, Los Angeles, Calif.

Filed Sept. 26, 1967, Ser. No. 670,814
Int. Cl. H01m *5/00*
U.S. Cl. 136—89 8 Claims

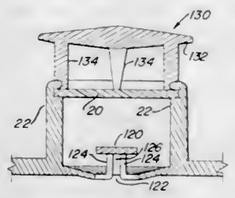


A novel configuration of a conductor for connecting cells in parallel to form a submodule, which are in turn connected in series to form a cell matrix. The conductor has segments interconnected in series with the entire combinations flexible to provide the desired matrix flexibility. Each conductor segment has a plurality of perforated pads used to form an electrical contact with one electrode or terminal of a cell in one submodule. The segment also includes at least one contact strip used to form contact with an electrode of a cell in an adjacent submodule and thereby produce the series interconnection between submodules.

3,466,199
BATTERY WITH IMPROVED VENT

Roy Erving Hennen, Mequon, Wis., assignor to Globe-Union Inc., Milwaukee, Wis., a corporation of Delaware

Filed Jan. 3, 1967, Ser. No. 606,809
Int. Cl. H01m *1/06*
U.S. Cl. 136—177 2 Claims

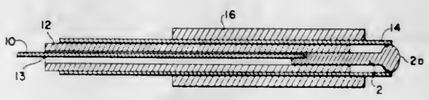


A battery having a vent including a generally horizontal baffle in the battery cover and nonvertical passageways for venting gas and returning liquid, advantageously used with a microporous disc vent to prevent impairment of the disc's permeability.

3,466,200
COAXIAL THERMOCOUPLE WITH TUBE SEALED BY ENLARGED MASS OF ROD

Clarence Howard Mellor, Framingham, and James J. Foley, Hopkinton, Mass., assignors, by mesne assignments, to Space Sciences, Incorporated, Wilmington, Del., a corporation of Delaware

Original application May 8, 1964, Ser. No. 366,092, now Patent No. 3,362,064, Jan. 9, 1968. Divided and this application Aug. 9, 1967, Ser. No. 679,949
Int. Cl. H01v *1/02*
U.S. Cl. 136—228 2 Claims



1. A thermocouple comprising a rod of a first thermocouple material having an integral enlarged mass of said first thermocouple material at one end thereof,
said rod being coaxially located in a tube comprising a constant diameter second thermocouple material,
the outside diameter of said mass being substantially equal to the inside diameter of said tube,
said rod being positioned in said tube so that said mass is close to one end of said tube and integrally closes said one end,
and said mass and said tube being joined together by a joint consisting essentially of said first thermocouple material and said second thermocouple material.

3,466,201

SILICON-IRON MAGNETIC SHEETS HAVING CUBE-ON-FACE GRAINS

Fritz Assmus, Hanau, Richard Boil, Muhlheim am Main, Klaus Detert, Berlin-Zehlendorf, Dietrich Ganz, Hanau, Gerhard Ibe, Aachen, and Friedrich Pfeifer, Hanau, assignors to Vacuumschmelze Aktiengesellschaft, Hanau, Germany, a corporation of Germany

Continuation-in-part of applications Ser. No. 623,596, Nov. 21, 1956, and Ser. No. 706,103, Dec. 30, 1957. This application July 13, 1961, Ser. No. 123,889

Claims priority, application Germany Dec. 1, 1955, V 9,825; May 17, 1956, V 10,655; Aug. 15, 1956, V 11,083

Int. Cl. C22c *39/46;* C21d *7/14, 7/02*
U.S. Cl. 148—31.55 11 Claims

9. A cold rolled sheet of polycrystalline silicon iron alloy composed of from 2% to 5% silicon, up to 3% of manganese, and the balance being iron except for incidental additions and impurities, the sheet having at least 70% of its crystal volume of cube-on-face grains having faces within an angle of about 10° to the surface of the sheet.

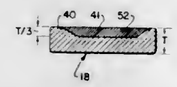
3,466,202

METHOD OF MAKING WEAR RESISTANT SPRING LEAF

Louis Hrusovsky, Bloomfield Hills, Mich., assignor to North American Rockwell Corporation, a corporation of Delaware

Filed July 21, 1966, Ser. No. 566,968

Int. Cl. C21d *7/14*
U.S. Cl. 148—149 4 Claims



A method of making a wear resistant spring leaf comprises the steps of providing an elongated steel spring leaf having desirable spring characteristics including moderate hardness, use of said spring leaf in a suspension subjecting localized surface regions extending across the width of one side of said spring leaf adjacent its ends to sliding engagement with frame mounted wear surfaces, and hardening central limited width portions only of said localized surface regions to a limited predetermined depth to provide surface wear resistance without adversely affecting the desirable spring characteristics in the remainder of said spring leaf including the edge portions of said surface regions.

3,466,203

METHOD OF PRODUCING PURIFIED REFRACTORY METAL AND ALLOY POWDERS

Charles O. Tarr and Louis V. Owen, Cincinnati, Ohio, assignors to the United States of America as represented by the United States Atomic Energy Commission

No Drawing. Filed Apr. 25, 1967, Ser. No. 634,795

Int. Cl. C21d *1/74*
U.S. Cl. 148—20.3 1 Claim

Porosity-free welds are produced from refractory metal powders which have been purified by leaching in dilute solutions of a mineral acid followed by heat treatment at elevated temperatures in a hydrogen atmosphere containing water vapor.

3,466,204

PROCESS FOR THE PREPARATION OF AN EXPLOSIVE COMPOSITION COATED WITH POLYTETRAFLUOROETHYLENE

Robert Stewart Gow, Fairlie, Scotland, assignor to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

No Drawing. Original application July 14, 1966, Ser. No. 565,075. Divided and this application Feb. 15, 1968, Ser. No. 726,624

Int. Cl. C06b *21/02, 15/02, 5/00*
U.S. Cl. 149—3 8 Claims

A process in which discrete particles of an explosive composition are coated with polytetrafluoroethylene (PTFE) by mixing the explosive composition particles with an aqueous dispersion of discrete PTFE particles having an average size of 0.1 to 5 microns to distribute over the surfaces of the explosive composition particles 1 to 5% by weight of PTFE particles and in which the coated particles are compressed to convert them to a coherent mass.

3,466,205

EXPLOSIVE CONTAINING HEXOGENE OR OCTOGENE AND A NITRATED N-METHYLANILINE

Jacques Boileau and Gérard Desseigne, Paris, and Jean Paul Konrat, Sorgues, France, assignors to Etat Francais, represente par le Ministre des Armees, Delegation Ministerielle pour l'Armement (Direction des Poudres)

No Drawing. Filed Feb. 28, 1966, Ser. No. 532,528

Claims priority, application France, Mar. 1, 1965, 7,444

Int. Cl. C06b *9/00, 15/02, 19/02*
U.S. Cl. 149—18 2 Claims

An explosive composition which does not exude at temperatures below 100° C. comprises at least one of hexogene (cyclotrimethylenetrinitramine) or octogene (cyclotetramethylenetetranitramine) in intimate mixture with at least one of 2,4,6-trinitro-N-methylaniline or 2,4,6-trinitro-N,N'-dimethylaniline. The composition may also contain at least one additive of the group consisting of waxes, graphite and metallic powders.

3,466,206

METHOD OF MAKING EMBEDDED PRINTED CIRCUITS

John T. Beck, White Bear Lake, Minn., assignor, by mesne assignments, to Control Data Corporation, Minneapolis, Minn., a corporation of Minnesota

Original application June 1, 1962, Ser. No. 199,335, now Patent No. 3,217,089, dated Nov. 9, 1965. Divided and this application Jan. 4, 1965, Ser. No. 434,730

Int. Cl. C23f *1/02;* C23q *1/00*
U.S. Cl. 156—3 5 Claims



A method for forming embedded printed circuits having integral aligned through-terminals exposed on both sides by a multi-step etching process where etching is performed on both sides of a conducting sheet and an insulating material is applied to the etched surfaces.

3,466,207

TREATMENT OF METALS FOR PROMOTING ADHESION OF POLYOLEFINS

Gerald G. Vincent, Addison, Ill., and Frank L. Saunders, Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Continuation-in-part of applications Ser. No. 378,972 and Ser. No. 378,996, June 29, 1964. This application July 19, 1967, Ser. No. 654,373

Int. Cl. C23f *7/00;* B44d
U.S. Cl. 156—3 14 Claims

Bonding of organic plastic coatings and laminar layers to surfaces of base metals is improved by treating the metal surface with aqueous solution of aliphatic carboxylic acid, drying the surface, and applying the organic plastic to the so-treated metal surface with heat and pressure. Optionally, the starting metal surface is first treated with aqueous inorganic acid solution containing hexavalent chromium and rinsed with water before the essential treatment with aqueous carboxylic acid solution. Strongly adherent bonds between organic plastic and base metal are obtained.

3,466,208

SOLUTION AND METHOD FOR DISSOLVING COPPER

Leo J. Slominski, Bristol, Conn., assignor to MacDermid Incorporated, Waterbury, Conn., a corporation of Connecticut

No Drawing. Continuation-in-part of application Ser. No. 620,682, Mar. 6, 1967. This application Dec. 18, 1967, Ser. No. 691,207

Int. Cl. C23f *1/02*
U.S. Cl. 156—18 5 Claims

Etchant solution for dissolving copper of the "non-metallic" aqueous alkaline ammoniacal chlorite type reinforced by inclusion of ammonium chloride or nitrate in full or partial substitution of ammonium bicarbonate used in a prior system, resulting in substantially improved operating results.

3,466,209

METHOD OF PREPARING MICROSCOPE SLIDES USING TERPOLYMERS OF VINYL BENZENE; METHYL METHACRYLATE, AND ACRYLATE ESTER

Newton G. Leveskis, 49 Vallecito Lane, Walnut Creek, Calif. 94596

No Drawing. Filed July 15, 1964, Ser. No. 382,954

Int. Cl. C09j *3/00*
U.S. Cl. 156—57 4 Claims

Mounting medium for use in the mounting of specimens on microscope slides formed from a copolymer of a vinyl substituted benzene, methyl methacrylate, and an acrylate ester in a solvent.

3,466,210

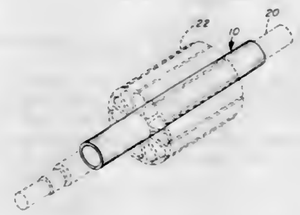
METHOD OF FORMING A HEAT SHRINKABLE TUBULAR SLEEVE AND BONDING SAME TO A TUBULAR MEMBER

Richard C. Wareham, 2371 N. 90th St., Wauwatosa, Wis. 53226

Filed Jan. 10, 1966, Ser. No. 519,664

Int. Cl. B32b *1/08;* B05b *13/06*
U.S. Cl. 156—86 5 Claims

The method of forming a protective sleeve from fibrous material having dielectric, chemical or mechanical characteristics including the steps of interweaving a fibrous material and a heat shrinkable fibrous material with the heat shrinkable material aligned in the direction of required shrinkage, coating the sleeve with a resin and heating the resin coated sleeve while on the member to be protected to shrink into tight engagement with the member and to cure the resin.



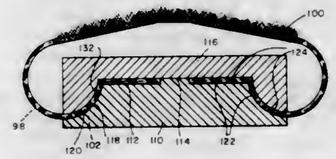
3,466,211

INTEGRAL PNEUMATIC TIRE AND WHEEL CONSTRUCTION AND METHOD OF MAKING THE SAME

James H. McHugh, 408 S. Belmont, Wichita, Kans. 67218

Original application Nov. 26, 1965, Ser. No. 509,730, now Patent No. 3,362,451, dated Jan. 9. 1968. Divided and this application Aug. 30, 1967, Ser. No. 683,745

Int. Cl. B29h *17/10*
U.S. Cl. 156—123 4 Claims



This invention pertains to a method for making a unitary pneumatic tire, rim and wheel of molded construction wherein the rim has embedded therein extensions of fabric disposed in the tire body and fabric disposed in the wheel. The method involves molding the tire body with fabric embedded therein projecting from both of the opposite rim edges of the tire body, then molding one half of the rim and wheel and fabric embedded therein to one rim edge of the tire body and to the fabric projecting from such rim edge of the tire body, and finally, with an inflated bladder in the tire body, molding the other half of the rim and wheel to the other rim edge of the tire body and the fabric projecting therefrom.

3,466,212

QUILTED FILM PROCESS

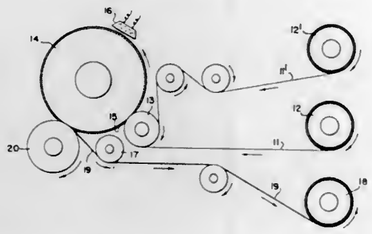
William J. Clayton, Fairport, and Robert J. Miller and Clair C. Smith, Holcomb, N.Y., assignors, by mesne assignments, to Mobil Oil Corporation, New York, N.Y., a corporation of New York

Filed Mar. 24, 1965, Ser. No. 442,323

Int. Cl. B32b *3/28*
U.S. Cl. 156—199 6 Claims

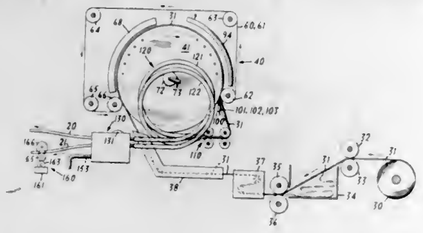
A method of embossing either single or multiple laminar layers of thermoplastic film structures which comprises continuously feeding at least one thermoplastic film into engagement with a raised patterned surface of a moving support having a film-adherent, infra-red absorbent, coating on said raised patterned surface to which said film is adherent; subsequently elevating the temperature of the

raised, adhesive coated, patterned surface sufficient to emboss the area of the thermoplastic film not in contact



with the raised pattern; and thereafter withdrawing the embossed film structure from the surface of the moving support.

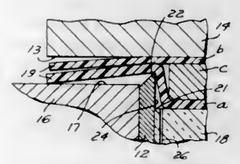
3,466,213
MANUFACTURE OF CONTINUOUS TUBULAR ARTICLE
Wesley S. Larson, Hazardville, Conn., Richard L. Panicci, Westfield, Mass., and Richard N. Thomson and Jerome S. Osmalov, Richmond, Va., assignors to Philip Morris Incorporated, New York, N.Y., a corporation of Virginia
Filed Apr. 14, 1966, Ser. No. 542,518
Int. Cl. B29c *17/06;* **B32b** *31/10;* **A32c** *5/48*
U.S. Cl. 156—245 **31 Claims**



1. A method for forming a continuous tubular cigarette filter rod comprised of at least two interfitting longitudinal parti-tubular sections each having a repeating pattern of integral transverse smoke barriers and supporting ribs therein which comprises advancing a continuous strip of moldable material longitudinally onto a rotating forming wheel having separate endless molding grooves extending around the periphery thereof with the strip covering said molding grooves, said molding grooves having each a shape adapted to shape one of said sections, drawing the strip into said molding grooves to shape the respective parti-tubular sections therein, removing the shaped strip from the forming wheel and severing it longitudinally into the respective sections, and thereafter bringing the shaped sections into registering assembly with the smoke barriers in one section axially spaced relative to the smoke barriers in the other section and aligned with a supporting rib in said other section.

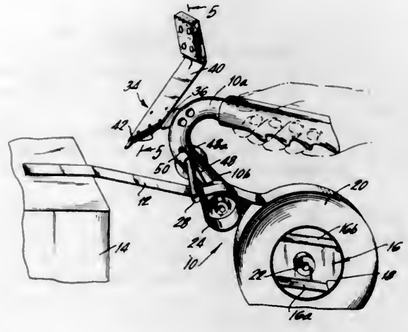
3,466,214
METHOD AND APPARATUS FOR TREATING AND COVERING AN INSERT WITH THERMOPLASTIC MATERIAL
Edgwin R. Polk and Antonio La Grassa, Fords, N.J., assignors to Keene Packaging Associates, Elizabeth, N.J., a corporation of New Jersey
Filed Aug. 4, 1965, Ser. No. 477,148
Int. Cl. B32b *31/18;* **B29d** *3/02*
U.S. Cl. 156—213 **11 Claims**

An apparatus and method for treating thermoplastic sheet material. A tool and die apparatus provided with heating means is arranged to accommodate thermoplastic sheet material with or without an insert there-



between and, by heating and cutting, form thermoplastic members conforming to the contour of the die.

3,466,215
HAND TAPE DISPENSER TOOL
Theodore H. Krueger, Stratford, Conn., assignor to Better Packages, Inc., Shelton, Conn.
Filed Oct. 21, 1966, Ser. No. 588,622
Int. Cl. B32b *31/18;* **B44c** *7/00*
U.S. Cl. 156—378 **4 Claims**



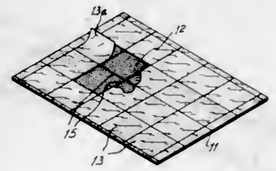
A hand tool for dispensing a length of tape, particularly a tape of a type having a pressure sensitive adhesive on one side, includes a tubular member having a bend at one end which forms a handle and a straight end having a rotatable mounting for a roll of the tape. At the location of the bend of the tubular pipe at the juncture of the handle to the straight portion, there is mounted a serrated cutting knife. The knife is located so that the two members move through the plane of passage of the tape from the roll to a device onto which it is to be applied in order that the tape may be easily cut. A feature of the construction is the provision of a measuring roller over which the tape is fed from the roll as it is applied to an object. Associated with the roller is a detent which is effective to provide a resistance to the rotation of the roller after it is advanced by a predetermined amount during the feed-out of the tape over its surface. The resistance may be overcome by a slight feed-out pressure, if desired, but it does provide an indication of how much tape has been fed out.

3,466,216
LIGHT SENSITIVE COATING FOR LIGHT TRANSMITTING BODY
William H. Cooley, 1228 Westmoor Road, Winnetka, Ill. 60093, and Kenneth C. Allison, 1546 S. Shore Drive, Crystal Lake, Ill. 60014
No Drawing. Filed July 23, 1964, Ser. No. 384,777
Int. Cl. B44f *1/06;* **B32b** *17/06*
U.S. Cl. 161—5 **7 Claims**

A light transmitting article including a light transmitting body coated with a light sensitive film comprising a dispersion of finely divided particles of silver halide con-

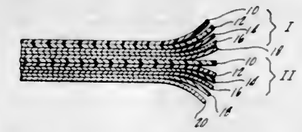
taining silicates in a binder to lighten and darken said body under varying conditions of light intensity.

3,466,217
DISPLAY PANEL
Vivian H. Mott, 323 Central Ave., Albany, N.Y. 12206
Filed Feb. 9, 1966, Ser. No. 526,218
Int. Cl. B44f *1/00;* **B32b** *3/16*
U.S. Cl. 161—5 **2 Claims**



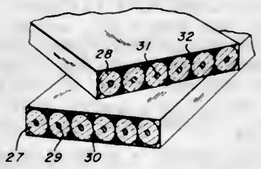
A display panel to be used as a layout sheet. The panel comprises a paper product base sheet having equidistantly spaced horizontal and vertical lines printed thereon. A tacky non-drying translucent pressure sensitive adhesive is applied over the matrix defining lines of the base sheet and a matrix of translucent cover sheets is applied over the adhesive, the edges of the cover sheets being in abutting relation and parallel to the matrix defining printed lines of the base sheet.

3,466,218
ARTICLE FOR MULTIPLICATE MARKING
Ray S. Avery, Bradbury, Calif., assignor to Avery Products Corporation, San Marino, Calif., a corporation of California
Continuation-in-part of application Ser. No. 345,676, Feb. 18, 1964. This application June 19, 1967, Ser. No. 647,890
The portion of the term of the patent subsequent to July 25, 1984, has been disclaimed
Int. Cl. B32b *7/02;* **B44f** *1/08;* **G03c** *11/02*
U.S. Cl. 161—33 **2 Claims**



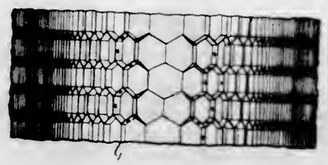
A multiple layer article in which at least two of the layers retain an image responsive to embossment and at least one of the layers is responsive to embossment so that a change in color takes place in the embossed image.

3,466,219
FIBER REINFORCED PLASTIC COMPOSITE MATERIAL
Herbert S. Schwartz, Trotwood, Ohio, assignor to the United States of America as represented by the Secretary of the Air Force
Filed Aug. 9, 1965, Ser. No. 478,492
Int. Cl. B32b *5/12, 9/04*
U.S. Cl. 161—57 **1 Claim**



Fiber reinforced composite plastic laminates. Small filaments are employed to improve interlaminary shear strength in composites utilizing large diameter filaments forming troughs as the main strengthening component with said small filaments filling said troughs.

3,466,220
EXPANDABLE SELF-RIGIDIZING HONEYCOMB STRUCTURE
Sidney Allinikov, 1109 Xenia Ave., Yellow Springs, Ohio 45387, and Fred W. Forbes, 533 Murray Hill Drive, Xenia, Ohio 45385
Continuation-in-part of application Ser. No. 277,985, May 2, 1963. This application Mar. 23, 1965, Ser. No. 444,927
Int. Cl. B32b *3/12, 17/10*
U.S. Cl. 161—68 **5 Claims**



An initially small, compact, lightweight body which is inflatable and expandable by internal pressure to a much larger rigidized structure of predetermined shape and size having inner and outer expandable or elastomer skins, with an expandable honeycomb core sandwiched therebetween, and a rupturable encapsulated adhesive means sandwiched between the facing sheet-like elastomer skins and the adjacent edges or sides of the expandable honeycomb structure to automatically release the cement under inflation and expansion pressure and secure the adjacent surfaces of the expanded skins to the contacting edges of the intermediate expanded honeycomb structure, to form an expanded rigidized honeycomb and wall sandwich structure of predetermined size and shape when inflated by internal pressure which will not collapse when subsequently punctured or upon leakage of the inflation medium.

Another form provides a hollow expandable self-rigidizing structure which is greatly expanded by internal pressure and automatically rigidized in its expanded condition to prevent collapse upon puncture and escape of the internal pressure or inflation medium.

The expandable structure is made of an expandable honeycomb core made of aluminum foil sheets, which are initially collapsed with inner and outer extensible or elastomer impervious skins or walls that are aluminized, thin and tough, and expandable by internal pressure and include an encapsulated adhesive compound coating, such as epoxy cement or glue which is disposed between the elastomer impervious skins and the edges of the intermediate core which release the adhesives by expansive contact pressure between the skins and the honeycomb core, and automatically cement the core and skins together into an expanded integral, non-collapsible, hollow unit.

In another form, the expansible hollow body is impregnated with a plasticizer "boil-off" material which, after expansion and exposure, migrates away to cause the expanded hollow body to become rigidized.

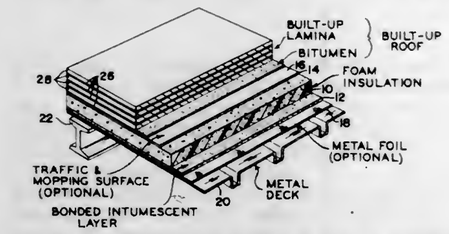
In another form, the hollow inflatable core is made of woven glass fibers which are impregnated by a compound such as epoxy resin, urethane and polyester in a flexible state and expanded and rigidized by internal

pressure by a vaporized catalyst selected from a group that consists of an amine, water, and dibutyl tin ethyl hexoate, disbursed in the inflation medium.

3,466,221
EXPANDED SILICATE INSULATION
Robert H. Sams, Aldan, and Newton W. McCready, Newtown Square, Pa., assignors to Philadelphia Quartz Company, Philadelphia, Pa., a corporation of Pennsylvania
No Drawing. Filed Apr. 5, 1966, Ser. No. 540,204
Int. Cl. B32b *3/30, 5/18;* **C09j** *1/00*
U.S. Cl. 161—133 **7 Claims**

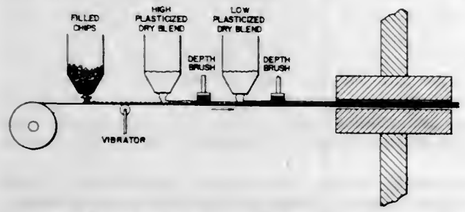
This improvement comprises a continuous mass of intumesced alkali silicate reinforced with inorganic fibers and uniformly expanded by reaction of finely divided Si and its alloys and set at its optimum expansion by reaction with finely divided sodium fluosilicate.

3,466,222
FIRE RETARDANT INSULATIVE STRUCTURE AND ROOF DECK CONSTRUCTION COMPRISING THE SAME
Frank W. Curtis, Chagrin Falls, Ohio, assignor to Lexsuco, Inc., Solon, Ohio, a corporation of Ohio
Filed July 26, 1967, Ser. No. 656,125
Int. Cl. B32b *3/26, 5/18*
U.S. Cl. 161—160 **6 Claims**



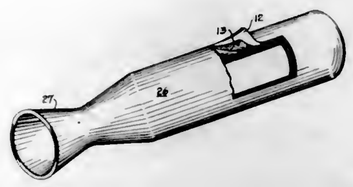
As a fire retardant insulative structure, a substantially rigid body of synthetic, organic polymeric foam, and a lamina on one surface of the body formed of a particulate, inorganic material and a binder, wherein at least about 50 wt. percent of the inorganic material is unexpanded vermiculite.

3,466,223
PLASTICIZED VINYL RESIN COMPOSITIONS CONTAINING 2,2,4 - TRIMETHYLPENTANE-1,3-DIOL DIISOBUTYRATE
Albert D. Beeler and Marvin R. Whitley, Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed June 1, 1964, Ser. No. 371,794
Int. Cl. B32b *5/16, 27/30;* **C07c** *69/28*
U.S. Cl. 161—162 **3 Claims**



Highly stain-resistant and flexible surface coverings such as floor tile are prepared from resinous compositions having a thin surface coating of vinyl chloride resin containing 8–13 phr. of 2,2,4-trimethylpentane-1,3-diol diisobutyrate.

3,466,224
PRESSURE VESSEL OF METAL AND SILICON MONOXIDE LAYERS
John H. Vaughn, deceased, late of Bloomfield, N.J., by Ogretta H. Vaughn, legal representative, Worcester, Mass., and Henry Hahn, Fairfax, Va., assignors to Curtiss-Wright Corporation, a corporation of Delaware
Filed Mar. 2, 1966, Ser. No. 534,283
Int. Cl. B32b *15/04;* **C23c** *13/02;* **B44d** *1/12*
U.S. Cl. 161—165 **2 Claims**



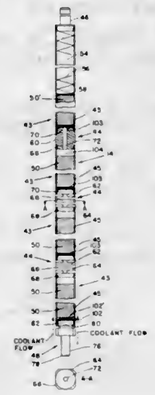
A pressure vessel of high strength structural material approaching theoretical atomic strength, formed of a plurality of thin films of metal alternating with and metallurgical separated by thin films of silicon monoxide.

3,466,225
PULSING NUCLEAR REACTOR
John MacPhee, Rowayton, Conn., assignor, by mesne assignments, to Hittman Associates, Inc., a corporation of Maryland
Original application Sept. 25, 1963, Ser. No. 311,573. Divided and this application Oct. 12, 1965, Ser. No. 594,284
Int. Cl. G21c *7/08, 3/30, 3/16*
U.S. Cl. 176—62 **3 Claims**

This invention relates to nuclear reactors categorized as research reactors and more specifically to research reactors of the swimming pool type. In particular, the invention relates to a "pulsing" nuclear reactor which is capable of providing steady state radiation suitable for conducting experimentation by operating at one power level for relatively long periods and which is further capable of being pulsed to very high power levels to provide relatively intense bursts of radiation for shorter intervals of time. This is achieved by providing a ratio of moderating liquid to uranium dioxide present in the core so as to be sufficiently large to achieve adequate excess reactivity and sufficiently small to achieve an adequate Doppler coefficient of reactivity.

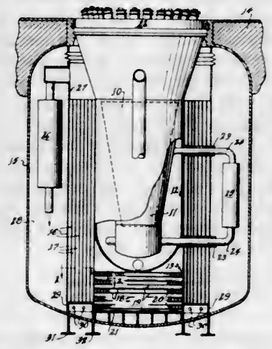
3,466,226
NUCLEAR FUEL ELEMENT
James L. Lass, San Jose, Calif., assignor to General Electric Company, a corporation of New York
Continuation of application Ser. No. 523,060, Jan. 26, 1966. This application Aug. 25, 1967, Ser. No. 667,878
Int. Cl. G21c *3/10*
U.S. Cl. 176—68 **9 Claims**

A nuclear fuel element is disclosed in which a thin unbonded metal wafer is included between the fuel material and a cladding tube closure such as an end plug or an inter-segment connector. The wafer introduces a second thermal interface between the wafer and end plug or connector, in addition to the thermal interface between



the fuel and the wafer. This serves to prevent overheating and the resulting excessive volumetric expansion of the end plug or connector during reactor operation.

3,466,227
BLAST SHIELD FOR NUCLEAR REACTOR
Lester M. Finch, Pasco, Wash., assignor to the United States of America as represented by the United States Atomic Energy Commission
Filed Sept. 22, 1967, Ser. No. 669,957
Int. Cl. G21c *9/00, 11/00*
U.S. Cl. 176—87 **3 Claims**



Energy-absorbing blast shield for fast-reactor core. The core is surrounded by a plurality of nested, radially spaced cylinders and by a plurality of tubes between the cylinders. Beneath the core lie sets of tubes and flat sheets separating the sets of tubes.

3,466,228
METHOD FOR DETERMINING MINOR QUANTITY OF STRONG ACID IN MAJOR QUANTITY OF WEAK ACID
Edward J. Trebes, Tampa, Fla., assignor to Tennessee Corporation, New York, N.Y., a corporation of Delaware
Filed Feb. 28, 1967, Ser. No. 619,237
Int. Cl. B01k *3/00*
U.S. Cl. 204—1 **9 Claims**

A method and apparatus for the electrochemical determination of sulfuric acid excess or demand in the acidulation of phosphate rock to obtain phosphoric acid product. A small sample of the reaction product is mixed with an organic solvent such as a mixture of ethylene glycol and isopropyl alcohol in order to substantially reduce the phosphoric acid hydrogen ion dissociation as indicated by conventional pH meter measurements. Additionally, a small and fixed quantity of a strong acid such as hydrochloric acid (HCl) is also mixed in the organic solution of the product sample, to provide hydrogen ion for any unreacted phosphate rock. The test mixture is then passed through a quinhydrone electrode apparatus and the electrochemical properties of the mixture is measured by conventional pH indicating equipment. The measured pH values are compared to the values obtained during calibration of the equipment utilizing known solutions. The pH measuring equipment thereby provides a direct value for the quantity of strong acid present or required by the reaction product.

3,466,229
METALLIZING PLASTICS BY GAS PLATING
John R. Whitacre and William C. Jenkin, Dayton, Ohio, assignors to Union Carbide Corporation, New York, N.Y.
Filed Nov. 4, 1964, Ser. No. 408,843
Int. Cl. C23c *13/04;* **C23b** *5/62;* **C23f** *17/00*
U.S. Cl. 204—30 **13 Claims**

The present invention relates to an improvement in the method of applying highly adherent, durable coatings of metals by gas plating to the surfaces of synthetic resins which have been subjected to molding or extrusion, by subjecting said resins, prior to metal plating, to a treatment cycle including sand blasting with a very fine abrasive, followed by complete removal of any adhering abrasive, preferably by immersion in a hot agitated solution of detergent, washing with water, subjecting the treated surface to the action of vapors of a high boiling organic acid having a vapor pressure of less than 0.1 mm. Hg at ambient temperatures, followed by conventional gas plating of the surface thus treated.

3,466,230
TANTALUM THIN FILM CAPACITOR PRODUCTION LEAKAGE CURRENT MINIMIZING PROCESS
Mercer D. Carithers, Atlanta, Ga., assignor to Collins Radio Company, Cedar Rapids, Iowa, a corporation of Iowa
No Drawing. Filed Mar. 2, 1965, Ser. No. 436,681
Int. Cl. C23b *9/00, 5/52;* **C23f** *17/00*
U.S. Cl. 204—38 **16 Claims**

A process in the formation of valve metal oxide dielectric during the buildup of thin film capacitors wherein after a period of anodization the valve metal oxide dielectric is heated to an elevated temperature of approximately 300° C. or higher, held at the elevated temperature for a period of time, then rapidly cooled, and then the anodized process is resumed for more complete formation of the desired oxide film of valve metal. With another alternate using an initial oxidizing process step at an elevated temperature it is important that the rapid cooling step still be included before resumption thereafter of continued oxidization of the valve metal in providing a desired quality thin film capacitor dielectric zone between capacitor plates.

3,466,231
MANUFACTURE OF NICKEL ELECTRODES FOR ALKALINE CELLS

Donald M. MacArthur, New Providence, N.J., assignor to Bell Telephone Laboratories, Incorporated, Murray Hill, Berkeley Heights, N.J., a corporation of New York

No Drawing. Filed Nov. 16, 1967, Ser. No. 683,451
Int. Cl. B01k 1/00; C23b 11/00
U.S. Cl. 204—56 4 Claims

The specification describes a technique for activating nickel electrodes for nickel-cadmium cells. If a prescribed amount of chloride ion is added to the standard nickel nitrate electrolyte during cathodic precipitation an improvement in the cycle life of the nickel electrode results.

3,466,232
ELECTROPLATING PROCESS

Peter S. Francis, Minneapolis, Minn., and Leslie D. McGraw, Weirton, W. Va., assignors, by mesne assignments, to Carlen Industries, Inc., Minneapolis, Minn., a corporation of Minnesota

No Drawing. Filed Oct. 23, 1965, Ser. No. 504,188
Int. Cl. C23b 5/60, 3/02
U.S. Cl. 204—20 15 Claims

The process of plating a plastic with a metal which involves using a plastic in which is dispersed at least one etchable material, etching a surface of the plastic after the plastic has first been molded into the desired shape, and thereafter plating the etched surface with a metal. The etching produces a large number of small pockets in the surface of the plastic article. These pockets are substantially filled with metal during plating to thereby provide a strong mechanical bond between the metal film and the plastic article.

3,466,233
GOLD PLATING

Lawrence Greenspan, New York, N.Y., assignor to Engelhard Industries, Inc., Newark, N.J., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 356,657, Apr. 1, 1964. This application May 23, 1967, Ser. No. 640,464
Int. Cl. C23b 5/32, 5/28
U.S. Cl. 204—43 6 Claims

A process and electrolyte for electrodepositing bright gold. The bath used is an aqueous solution consisting essentially of about 1 to 100 g./l. of alkali metal gold cyanide, 5 to 200 g./l. of alkali metal or ammonium pyrophosphate, and 0.01–0.5 g./l. of potassium silver cyanide. The bath has a pH of 6.5–8.5 controlled by additions of phosphoric acid.

3,466,234
ELECTROLYTIC FORMATION OF FILMS OF Fe_2O_3

Morris Cohen and Peter B. Sewell, Ottawa, Ontario, Canada, assignors to Canadian Patents and Development Limited, Ottawa, Ontario, Canada, a corporation of Canada

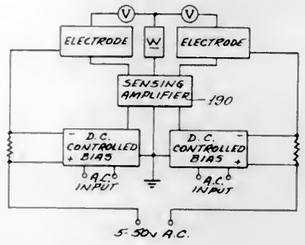
No Drawing. Filed June 20, 1966, Ser. No. 558,580
Int. Cl. C23b 9/00, 11/00
U.S. Cl. 204—56 6 Claims

There is provided a process for depositing ferric oxide films from an electrolytic bath containing ferrous iron in solution onto an anodic conductor. The conductors in the electrolytic bath are controlled as to the potentiostat voltage and current density whereby the ferrous iron is electrolytically oxidized to ferric oxide and the ferric oxide is deposited as a thin film on the anode. The films range in thickness from 10 A. to about 10,000 A.

3,466,235
ELECTROCHEMICALLY MACHINING A WORKPIECE BETWEEN ADVANCING ELECTRODES HAVING JUXTAPOSED WORKING FACES USING ALTERNATING CURRENT

Lynn A. Williams, Winnetka, Ill., assignor to Anocut Engineering Company, Elk Grove Village, Ill., a corporation of Illinois

Continuation-in-part of abandoned application Ser. No. 187,902, Apr. 16, 1962. This application July 17, 1968, Ser. No. 753,824
Int. Cl. B23p 1/04
U.S. Cl. 204—143 4 Claims



The apparatus and method relate to the removal of metal by electrochemical techniques by the use of alternating current or periodically reversing current with an electrolyte consisting of inexpensive salt water solutions for the purpose of metal shaping or for purpose of inducing a high polish or for both purposes. The electrically conductive and electrochemically erodable workpiece has at least two electrically connected surfaces thereon to be treated and adjacent which the working faces of at least two electrodes are brought to define work gaps through which the electrolyte is pumped under pressure. The electrode working faces are substantially electrolytically inert and chemically insoluble in the electrolyte used. A periodically reversing current or an alternating current supply circuit is connected either to the electrodes or to the electrodes and the workpiece so that material is removed from one or the other of the workpiece surfaces to be eroded. Means are provided for sensing the voltage drops across the respective work gaps. Manual and automatic means are provided for proportioning the current flow across the work gaps so that the rate of material removal is higher from that workpiece surface which is subjected to the lower voltage drop.

3,466,236
IRRADIATION OF AMINOCYCLOBUTANONES

Hans U. Hostettler, Zurich, Switzerland, assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Sept. 1, 1966, Ser. No. 576,532
Claims priority, application Great Britain, Nov. 9, 1965, 47,580/65
Int. Cl. B01j 1/10; C07c 3/24
U.S. Cl. 204—158 10 Claims

Cyclopropylamine and tetrahydrofuranamine compounds are formed by ultraviolet irradiation of certain 3-aminocyclobutanones in the presence of compounds having a labile hydrogen atom. The cyclopropylamine compounds are formed by the decarbonylation of the starting material. The tetrahydrofuranamine compounds are formed by the addition of the labile hydrogen-containing compound to the starting material. The cyclopropylamine and tetrahydrofuranamine compounds are useful for pharmaceutical purposes.

3,466,237
METHOD OF OBTAINING AN INTERMETALLIC COMPOUND OF NIOBIUM AND TIN IN FABRICATED FORM

Anthony Clifford Barber, Lichfield, England, assignor to Imperial Metal Industries (Kynoch) Limited, Birmingham, England, a corporation of Great Britain

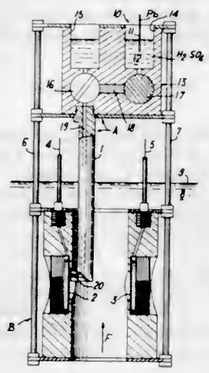
No Drawing. Continuation-in-part of application Ser. No. 330,656, Dec. 16, 1963. This application Sept. 6, 1966, Ser. No. 577,150
Claims priority, application Great Britain, Sept. 17, 1965, 39,724/65
Int. Cl. B01k 5/00; C23b 13/00
U.S. Cl. 204—181 8 Claims

A method of manufacturing an article having superconducting properties resulting from the presence of Nb_3Sn comprises depositing tin powder on niobium by electrophoresis and heating to cause the tin to react with the niobium to form Nb_3Sn.

3,466,238
ELECTROLYTIC REFERENCE CELL

Claude Mahieu and Marcel Le Peintre, Paris, and Jacques Monjou, La Courneuve, France, assignors to Commissariat a l'Energie Atomique, Paris, France

Filed Oct. 27, 1966, Ser. No. 589,910
Claims priority, application France, Apr. 7, 1966, 56,920
Int. Cl. B01k 3/00
U.S. Cl. 204—195 10 Claims



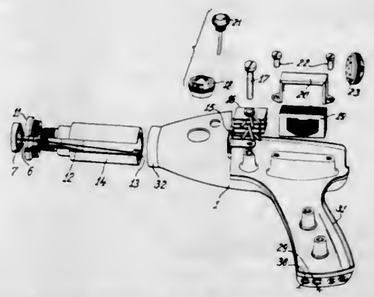
An electrolytic reference cell for the study of electrochemical properties of metals at temperatures above 300° C. has a reference electrode of lead in sulfuric acid solution. The electrode is in a block of thermally and chemically resisting material. A tubular element is mounted at one end in the block and passes through a first porous element to bear on the metal sample which acts as the second electrode. The tubular element contains an electrolytic solution. A second porous element is interposed between the electrolytic solution and the sulfuric acid solution.

3,466,239
ELECTRO PLATING DEVICE

Paul Hirsch, Vienna, and Johann Kerschgens, Oberosterreich, Austria, assignors to Johann Kerschgens, Scharnstein, Austria

Filed Apr. 14, 1965, Ser. No. 448,099
Claims priority, application Belgium, Nov. 25, 1964, 5,795/64; Dec. 9, 1964, 6,401/64
Int. Cl. C23b 5/76, 5/06
U.S. Cl. 204—224 6 Claims

A portable manually operable electro-plating device having a body portion provided with a hand grip and a barrel portion extending therefrom. The barrel portion includes means for releasably holding a container for the electrolyte and means for supplying from conventional domestic electric power sources direct current at selected

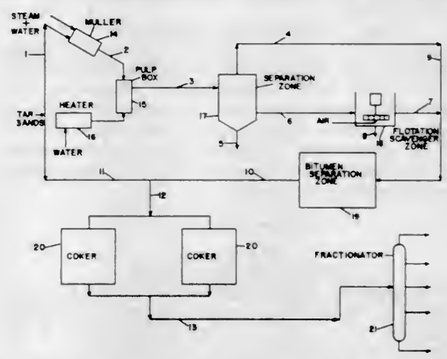


voltages and amperages to the work piece. The electrolyte and the anode element are contained in a container designed for interchangeable engagement with the barrel portion of the device.

3,466,240
COKING A MIXTURE OF TAR SAND AND FROTH PRODUCT

Ib Steinmetz, Timbers, Del., assignor to Great Canadian Oil Sands Limited, Toronto, Ontario, Canada, a corporation of Canada

Filed Jan. 11, 1967, Ser. No. 608,696
Int. Cl. C10b 53/06, 57/04; C10g 1/04
U.S. Cl. 208—11 6 Claims



Bitumen extracted from tar sands by the hot water process or the like, can be mixed with fresh tar sands and used as a feed for direct coking. The proportion of added bitumen in the feed can be adjusted so that regardless of the proportion of bitumen in the fresh sands, the mixed feed will always contain the same amount of cokable material.

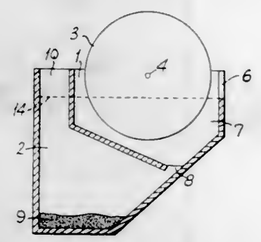
3,466,241
BIOLOGICAL TREATMENT OF WASTE WATER CONTAINING ORGANIC MATTER

James Roxby Simpson, Stocksfield, England, assignor to National Research Development Corporation, London, England, a British corporation

Filed Dec. 27, 1967, Ser. No. 693,808
Claims priority, application Great Britain, Jan. 5, 1967, 768/67
Int. Cl. C03c 5/10, 1/02
U.S. Cl. 210—17 12 Claims

Apparatus for the biological treatment of waste water containing organic matter comprising a combined settling

and decomposition tank consisting of two interconnecting compartmets, a first compartment which is designed for the removal of dissolved or suspended matter by the action of micro-organisms and a second compartment for receiving solid organic matter deposited from the first compartment



and so designed that gases produced therein are prevented from returning to the first compartment and in which a plurality of rotatable members are mounted in the first compartment and project above the working level of waste water therein so as to facilitate aerobic removal of dissolved or suspended matter.

3,466,242

METHOD FOR FRACTURING OIL WELLS WITH LOW FLUID LOSS FRACTURING FLUIDS

Gifford G. McClaflin and Claud L. Jacocks, Ponca City, Okla., assignors to Nalco Chemical Company, Chicago, Ill., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 384,778, July 23, 1964. This application May 27, 1968, Ser. No. 732,082

Int. Cl. E21b *43/25;* **C09k** *3/00*

U.S. Cl. 252—8.55 **16 Claims**

Composition and method for controlling the fluid loss of oil-base fluids used in hydraulically fracturing subterranean formations. The fluid loss additive which is added to the oil-base fluid comprises from 80 to 98 percent of an oil-insoluble solid particulate material encapsulated with from 20 to 2 percent of an in situ-formed polymer derived from a 1-olefin.

3,466,243

ALLOYS FOR BEARINGS

Donald H. Buckley, North Olmsted, and Robert L. Johnson, Fairview Park, Ohio, assignors to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration

No Drawing. Filed Nov. 29, 1965, Ser. No. 510,474

Int. Cl. C10m *5/28;* **C22b** *23/00*

U.S. Cl. 252—12 **6 Claims**

Metal alloys with hexagonal crystalline form for minimizing surface failures in mechanical components having static, sliding, or rolling contact. The lattice structure of the hexagonal metals is expanded to increase the crystal height.

3,466,244

OIL-IMPREGNATED WICKING MATERIAL

Martin L. Abel, Oak Park, Mich., assignor to Permawick Company, Inc., Detroit, Mich., a corporation of Michigan

Filed Feb. 28, 1967, Ser. No. 619,312

Int. Cl. C10m *1/08*

U.S. Cl. 252—14 **9 Claims**

An oil-impregnated wicking material comprising a mixture of a bearing lubricating oil and cotton linters fibers. The mixture is several parts oil by weight to one part fibers and can be injected under pressure into bearing wells without the oil separating from the fibers.

3,466,245

METHOD OF PREPARING CALCIUM SOAP-CALCIUM SALT GREASES

Carl M. Peck, Saxonburg, Pa., assignor to Gulf Research & Development Company, Pittsburgh, Pa., a corporation of Delaware

No Drawing. Filed July 31, 1967, Ser. No. 657,037

Int. Cl. C10m *5/16*

U.S. Cl. 252—36 **16 Claims**

A calcium soap-calcium salt grease composition is prepared by the following sequence of steps:

(1) Form a first lime-oil slurry of calcium oxide and/or calcium hydroxide and a major amount of the mineral lubricating oil used in preparing the grease.

(2) Add acetic acid to the first lime-oil slurry without the application of external heat.

(3) Add a high molecular weight carboxylic acid, e.g., stearic acid, to the first lime-oil slurry without the application of external heat.

(4) Add a medium molecular weight carboxylic acid, e.g., caprylic acid, to the first lime-oil slurry without the application of external heat.

(5) Form a second lime-oil slurry of calcium oxide and the remainder of the mineral lubricating oil used in preparing the grease.

(6) Add the second lime-oil slurry to the first lime-oil slurry.

(7) Heat the slurry mixture to 300° to 325° F.

(8) Add a metal acetate, e.g., lead acetate, to the heated slurry mixture.

(9) Heat the slurry mixture to 450° to 460° F. to effect dehydration of the grease.

(10) Cool the grease composition to below 200° F.

(11) Mill the cooled grease composition to obtain a smooth-textured grease product.

3,466,246

INSECTICIDAL WASHING COMPOSITION

Ulrich J. Fregeau, 5464 Carr, Denver, Colo. 80612

No Drawing. Continuation of application Ser. No. 441,833, Mar. 22, 1965. This application June 26, 1968, Ser. No. 744,612

Int. Cl. C11d *3/48, 3/065*

U.S. Cl. 252—106 **6 Claims**

An insect repelling cleansing composition comprising a mixture of from about 50%–55% borax, about 35%–40% trisodium phosphate, 2%–10% soda ash, 2%–10% sodium sulfate and 2%–10% sodium dodecylbenzene sulfonate.

3,466,247

METHOD OF PREPARING CATIONIC BITUMEN EMULSIONS

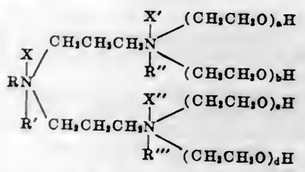
Shunzo Ohtsuka and Tadashi Doi, Wakayama-shi, Japan, assignors to Kao Soap Co., Ltd., Tokyo, Japan, a corporation of Japan

No Drawing. Filed Mar. 20, 1967, Ser. No. 624,137

Int. Cl. C10b *3/02;* **B32b** *11/04;* **B01j** *13/00*

U.S. Cl. 252—311.5 **4 Claims**

A method of preparing an oil-in-water type cationic bitumen emulsion in which the bitumen is emulsified in water with a quaternary ammonium salt derivative of an ethylene oxide condensate of a long chain alkyl triamine of the formula:



wherein R is a saturated or unsaturated alkyl radical of 8 to 22 carbon atoms, each of R′, R″ and R‴ is a methyl

or ethyl radical, each of X, X′ and X″ is a halogen, CH_3SO_4 or $C_2H_5SO_4$, each of *a*, *b*, *c* and *d* is the integer 1 or an integer larger than 1 and $a+b+c+d$ is from 4 to 40.

3,466,248

ANTIOZONANT MIXTURE CONTAINING A PHENYLENEDIAMINE AND A N-ALKYL-AMINOPHENOL OR A N-ALKYL-ALKOXYANILINE

Robert H. Rosenwald, Western Springs, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

No Drawing. Filed Jan. 31, 1967, Ser. No. 612,830

Int. Cl. B01j *1/16;* **C09k** *3/00*

U.S. Cl. 252—403 **8 Claims**

Synergistic mixture of phenylenediamine antiozonant and N-substituted-aminophenol or N-substituted-alkoxyaniline.

3,466,249

BLOOD SERUM REFERENCE STANDARD FOR MULTI-AUTOMATED ANALYTICAL PROCEDURES

Roy A. Anderson, North Hollywood, Calif., assignor to Baxter Laboratories, Inc., Morton Grove, Ill., a corporation of Delaware

No Drawing. Filed Feb. 13, 1967, Ser. No. 615,339

Int. Cl. C09k *3/00*

U.S. Cl. 252—408 **4 Claims**

A stable blood serum reference standard having a standard carbon dioxide content for use in multi-automated analytical procedures in which a freeze-dried blood serum component of the reference standard is reconstituted with an aqueous ammonium bicarbonate component of the reference standard.

3,466,250

METHOD FOR ACTIVATING ALUMINA CATALYSTS

Joseph P. Giannetti, Oakmont, Alfred M. Henke, Springdale, Raynor T. Sebulsky, Verona, and William C. Starnes, Cabot, Pa., assignors to Gulf Research & Development Company, Pittsburgh, Pa., a corporation of Delaware

No Drawing. Filed Oct. 20, 1965, Ser. No. 499,060

Int. Cl. B01j *11/64, 11/58, 11/16*

U.S. Cl. 252—442 **6 Claims**

An activated alumina catalyst and its method of activation, which method comprises treating the catalyst with a particular type of phosphorous halide containing at least two chlorine atoms.

3,466,251

PROCESS FOR POLYMERIZING AN EPOXY COMPOUND IN THE PRESENCE OF CARBON DIOXIDE

Kenichi Fukui and Tsutomu Kagiya, Kyoto, Hisao Yokota, Kobe, and Misato Horie, Kyoto, Japan, assignors to Sumitomo Chemical Company, Ltd., and Seitetsu Kagaku Co., Ltd., both of Osaka, Japan, both corporations of Japan

No Drawing. Filed Sept. 2, 1966, Ser. No. 576,836

Claims priority, application Japan, Sept. 4, 1965, 40/54,134

Int. Cl. C08g *23/14, 23/06*

U.S. Cl. 260—2 **3 Claims**

A process for polymerizing at least one epoxy compound selected from the group consisting of alkylene epoxides, substituted alkylene epoxides, epoxy ethers, styrene epoxide, substituted styrene oxides, butadiene monoepoxide and epoxy stearate with an ionic catalyst free of alkaline earth metals, characterized in that liquid carbon dioxide is used as a part of the entire solvent or dispersion medium, whereby the separation of the produced polymer is facilitated and the process is rendered advantageous from the viewpoint of fire prevention.

3,466,252

POLYURETHANE RESINS DERIVED FROM POLYOXYALKYLATED ARYLATED CARBOHYDRATES AND METHOD OF MAKING THE SAME

Helmut F. Prahl, Middleton, and Frederick M. Hart, Madison, Wis., assignors to Department of Agriculture and Inspection of the State of Nebraska, Lincoln, Nebr., a corporation of Nebraska

No Drawing. Filed Feb. 21, 1964, Ser. No. 346,408

Int. Cl. C08g *22/14, 22/16, 22/44*

U.S. Cl. 260—2.5 **2 Claims**

Polyurethane foams using as the polyether component alkoxylated dixylo glucitol have less shrinkage.

3,466,253

ADDUCTS OF HEXAHALOCYCLOPENTADIENES AND RICINOLEATES AND PRODUCTION OF POLYURETHANE PLASTICS THEREFROM

Cameron K. Lyon, Orinda, and Thomas H. Applewhite, Concord, Calif., assignors to the United States of America as represented by the Secretary of Agriculture

No Drawing. Filed Mar. 20, 1967, Ser. No. 624,238

Int. Cl. C08g *22/44;* **C08j** *1/18*

U.S. Cl. 260—2.5 **10 Claims**

A hexahalocyclopentadiene is reacted with a ricinoleic ester of a polyhydric alcohol, e.g., glyceryl triricinoleate, to produce a Diels-Alder adduct. The adducts are useful to form plastics—for example, flame-resistant polyurethane foams—by reacting them with a polyisocyanate in the presence of a blowing agent.

3,466,254

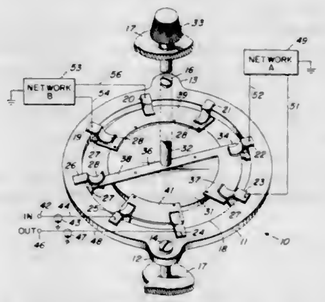
THREE POSITION RF CIRCUIT ROTARY SWITCH

Richard E. Deasy, Cedar Rapids, Iowa, assignor to Collins Radio Company, Cedar Rapids, Iowa, a corporation of Iowa

Filed Nov. 20, 1967, Ser. No. 684,384

Int. Cl. H01h *19/58, 21/78*

U.S. Cl. 200—11 **5 Claims**



A switch is disclosed which is capable of connecting input and output lines directly to each other or to one of two networks. The elements not connected in circuit are shorted out.

3,466,255

POLYMERIZATION CATALYSTS CONTAINING AN ACYLCYCLOALKANE SULFONYL PEROXIDE, FATTY ACID AND WATER

Gerhard Faerber and Wilhelm Kersken, Rhineberg, Germany, assignors to Deutsche Solvay-Werke G.m.b.H., Solingen-Ohligs, Germany, a company of Germany

Filed Feb. 28, 1966, Ser. No. 530,466

Claims priority, application Germany, Mar. 2, 1965, D 46,644

Int. Cl. C08f *1/60*

U.S. Cl. 260—23 **10 Claims**

The preparation of polymers and co-polymers from

addition polymerizable unsaturated monomeric compounds using acylcycloalkane sulphonyl peroxides as catalysts, characterized in that a catalyst is used which comprises 30 to 70% by weight of at least one higher fatty acid having 7 to 13 carbon atoms, at least one acylcycloalkane sulphonyl peroxide and water. These catalysts exhibit reduced explosiveness.

3,466,256

SPRAYABLE RUBBER ADHESIVES

John F. Romanick, Irvington, and Arthur B. Pruiksma, Paterson, N.J., assignors to PPG Industries, Inc., Pittsburgh, Pa., a corporation of Pennsylvania

No Drawing. Continuation-in-part of applications Ser. No. 578,997 and Ser. No. 578,972, Sept. 13, 1966. This application May 7, 1968, Ser. No. 727,364

Int. Cl. C08d *9/10;* **C09j** *3/12*

U.S. Cl. 260—27 **18 Claims**

Rubber based adhesive compositions of improved properties comprise a carboxyl-containing rubbery addition polymer, a metal contained in an organometallic resin and a solubilizing resin, where the carboxyl-containing polymer and the metal in the organometallic resin are reacted together by mastication at elevated temperature. Compositions containing the adhesive thus obtained in an organic solvent can be easily and efficiently sprayed at low atomization pressures and with minimum cobwebbing, even when the composition has relatively high solids content. They can also be employed as mastic adhesives.

3,466,257

POLYPROPYLENE OF ENHANCED IMPACT STRENGTH

Samuel Howard Coulson, Stockport, England, assignor to Geigy Chemical Corporation, Ardsley, N.Y., a corporation of New York

No Drawing. Filed Jan. 18, 1967, Ser. No. 610,031

Claims priority, application Great Britain, Jan. 28, 1966, 3,849/66

Int. Cl. C08f *45/50*

U.S. Cl. 260—30.6 **21 Claims**

Rigid thermoplastic compositions the major portion of which consists of solid crystalline polypropylene and which comprise as low temperature impact strength-enhancing component, 5 to 15% by weight of at least one ester having a solubility parameter within the range of from 9.6 to 10.7, and preferably being an ester containing an aryl, especially a phenyl nucleus in at least one of its alcohol and acid moieties and having a boiling point of not less than 300° C. and being solid at room temperature (20° C.).

3,466,258

NON-TACKY PUTTY COMPOSITIONS COMPRISING A LOW MOLECULAR WEIGHT POLYSULFIDE AND A HIGH MOLECULAR WEIGHT POLYSULFIDE ELASTOMER

Julian R. Panek, Newtown, Pa., and Donald K. Goodwin, Trenton, N.J., assignors to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware

No Drawing. Filed May 10, 1965, Ser. No. 454,726

Int. Cl. C08g *43/00;* **C09d** *5/34*

U.S. Cl. 260—30.8 **5 Claims**

A non-tacky putty composition is prepared by blending 100 to 1,500 parts by weight of one or more plasticizers, 100 to 1,500 parts by weight of one or more fillers, and about 1 to 20 parts by weight of a low molecular weight polysulfide polymer having a molecular weight of about 500 to 12,000 and having certain reactive terminal groups such as mercaptan, isocyanate and amine groups per 100 parts by weight of a high molecular weight elastomeric polymer having a molecular weight of about 50,000 to 200,000 such as polysulfide polymers, 1-butene homopolymer, isobutylene-isoprene and the like.

3,466,259

THICKENED THERMOSETTING VINYL ESTER RESINS

Jack W. Jernigan, Lake Jackson, Tex., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Dec. 15, 1966, Ser. No. 601,860

Int. Cl. C08g *45/04, 30/12*

U.S. Cl. 260—37 **14 Claims**

Thermosetting vinyl ester resin compositions which contain reactive carboxylic acid groups can be rapidly thickened by adding a Group II metal oxide or hydroxide and a catalytic amount of water. The resin compositions can be cured by the addition of a free radical catalyst and applying heat and/or pressure. A variety of reinforced plastic articles can be produced from the resin compositions.

3,466,260

POLYCARBONATES OF 1,4-BIS(p-HYDROXYCUMYL) BENZENE

Logan C. Bostian, Richmond, Va., and Thomas M. Cawthon, Dover, and Bryce C. Oxenrider, Florham Park, N.J., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York

No Drawing. Continuation-in-part of application Ser. No. 200,037, June 5, 1962. This application July 8, 1965, Ser. No. 470,578

Int. Cl. C08g *17/13*

U.S. Cl. 260—47 **4 Claims**

This invention relates to the preparation of novel polycarbonates by the phosgenation of 1,4-bis(p-hydroxycumyl) benzene.

3,466,261

POLYOLEFINS STABILIZED BY THIOESTERS OF ANTIMONIOUS ACID

Otto Mauz, Niederhofheim, Taunus, Germany, assignor to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany, a corporation of Germany

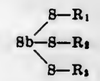
No Drawing. Filed Jan. 5, 1967, Ser. No. 607,399

Claims priority, application Germany, Jan. 15, 1966, F 48,174

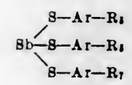
Int. Cl. C08f *45/62*

U.S. Cl. 260—45.75 **4 Claims**

Homo- and copolymers of olefins stabilized against the degradation caused by light and heat, containing as stabilizers 0.1 to 5% by weight, referred to the polymer, of an antimony compound of the formulae:

I 

or

II 

wherein R_1, R_2 and R_3 represent alkyl radicals containing 6 to 20, preferably 12 to 18 carbon atoms, or the group $-(CH_2)_n-COO\cdot R_4$, n representing a whole number in the range of from 1 to 12, preferably 1 to 4, and R_4 representing an alkyl radical containing 1 to 20, preferably 12 to 18 carbon atoms, R_5, R_6 and R_7 represent hydrogen atoms or alkyl radicals containing 1 to 18, preferably 12 to 18, carbon atoms and Ar represents a phenyl or naphthalene ring.

3,466,262

ALKALINE DEGRADATION OF OXYMETHYLENE POLYMER IN THE PRESENCE OF A SOLUTION OF FORMALDEHYDE

Kenneth Barrell, Wordsley, and William Phillips, West Bromwich, England, assignors to British Industrial Plastics Limited, Manchester, England, a corporation of the United Kingdom

Filed June 22, 1967, Ser. No. 657,717

Claims priority, application Great Britain, June 24, 1966, 28,440/66

Int. Cl. C08g *1/28*

U.S. Cl. 260—67 **23 Claims**

Oxymethylene polymers are stabilized by subjecting the polymer to alkaline degradation in the presence of a solution of formaldehyde containing at least 10% of the formaldehyde based on the liquid medium or at least 10% of the water present when the medium comprises at least 10% water.

3,466,263

COPOLYMERIZING FORMALDEHYDE OLIGOMERS AND HEPTADIENES WITH ARSENIC AND ANTIMONY FLUORIDE CATALYSTS

Herbert May, Windsor Tower, N.Y., and Derek Bernard Partridge, Stourbridge, England, assignors to British Industrial Plastic Limited, Manchester, England, a corporation of the United Kingdom

No Drawing. Filed Oct. 28, 1966, Ser. No. 590,193

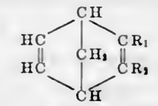
Claims priority, application Great Britain Nov. 1, 1965, 46,158/65

The portion of the term of the patent subsequent to July 30, 1985, has been disclaimed

Int. Cl. C08g *1/18, 1/20*

U.S. Cl. 260—73 **8 Claims**

A high molecular weight oxymethylene copolymer is prepared by copolymerising a formaldehyde oligomer, e.g., trioxan or tetroxan with a comonomer having the formula



where R_1 and R_2 are hydrogen, alkyl, substituted alkyl, aryl, substituted aryl, aralkyl or aldehyde group using antimony pentafluoride, arsenic pentafluoride or a complex thereof. There can also be included additional copolymerisable compounds.

3,466,264

PROCESS FOR PREPARING GLYCOL MALEATE POLYESTERS

Hugh J. Hagemeyer, Jr., Willard P. Gleason, and Alfred G. Robinson III, Longview, Tex., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Continuation-in-part of application Ser. No. 602,601, Dec. 19, 1966. This application July 23, 1968, Ser. No. 746,748

Int. Cl. C08g *17/03, 17/12*

U.S. Cl. 260—75 **6 Claims**

A process for preparing maleate polyesters of sterically hindered diols, said process comprising (1) heating a mixture of either maleic acid or maleic anhydride and a sterically hindered diol in the presence of a tin catalyst for at least four hours at less than about 145° C. and (2) heating the resultant mixture between about 160° C. and about 200° C. for an additional period of at least about two hours.

3,466,265

PROCESSES FOR PREPARING ETHYLENE COPOLYMERS

Richard L. Alexander, Greensburg, Ind., Harry D. Anspon, Kansas City, Mo., and Francis E. Brown, Orange, Tex., assignors to Gulf Research & Development Company, Pittsburgh, Pa., a corporation of Delaware

No Drawing. Filed Sept. 21, 1966, Ser. No. 580,853

Int. Cl. C08f *1/80, 1/06, 15/16*

U.S. Cl. 260—78.5 **8 Claims**

Copolymers of ethylene and lower alkyl fumarates and maleates are prepared in a continuous high pressure free radical catalyst initiated process. Explosive decompositions are prevented by introducing a hindered phenol into the polymerization reactor.

3,466,266

RESINOUS COMPOSITIONS AND METHOD FOR PRODUCTION THEREOF

Nobuyoshi Nagata, Hirakata-shi, and Shu Taniguchi, Minoo-shi, Japan, assignors to Nippon Paint Co., Ltd., Oyodo-ku, Osaka, Japan, a corporation of Japan

No Drawing. Continuation of application Ser. No. 478,411, Aug. 9, 1965. This application Dec. 16, 1968, Ser. No. 786,820

Claims priority, application Japan, Aug. 11, 1964, 39/44,708, 39/44,709

Int. Cl. C08f *15/40*

U.S. Cl. 260—78.5 **12 Claims**

This invention relates to a method for producing a novel copolymer solution which is stable at room temperature and is readily cured by baking. More particularly, the invention pertains to a novel copolymer solution prepared, in the methylolation reaction of an amide or amino group-containing copolymer, by adding to the reatcion system no or a little alcohol, i.e., less than 6 moles, preferably less than 1.5 moles, per amide group in the reaction system, reacting monoaldehyde with the copolymer in the presence of a basic catalyst under such conditions that said copolymer is characterized by having at least about 50% of the amide or amino groups thereof having a hydrogen atom replaced by the structure

$$-CH_2OH$$

and, if necessary, using together with an acid catalyst during or after the reaction.

The copolymer solutions obtained in accordance with the present invention are applied to coating materials, adhesives, fiber-treating agents and impregnants to give products high in weather and light resistance and excellent in physicochemical properties.

3,466,267

TERPENE RESIN COMPOSITIONS

John M. Derfer, Jacksonville, Fla., assignor, by mesne assignments, to SCM Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed Feb. 14, 1966, Ser. No. 527,045

Int. Cl. C08f *17/00*

U.S. Cl. 260—80.7 **10 Claims**

The invention provides a resin composition consisting essentially of polymerized unsaturated hydrocarbon diene units of:

(a) A mixture of dipentene and carvestrene in a di-

pentene-carvestrene weight ratio of between about 1:0.66 and about 1:10, and

(b) From about 0 to about 90% of a hydrocarbon selected from the group consisting of β-pinene, piperylene, and mixtures thereof.

The preparation of the novel resins is described.

The invention is advantageous in that it provides economical thermoplastic polymers having high softening points (e.g., above 120° C.).

3,466,268

BUTADIENE-ISOBUTYLENE COPOLYMERS

Bernard Charles Barton, Butler, Walter Nudenberg, West Caldwell, and Edward Axel Delaney, Dover, N.J., assignors to Texas-U.S. Chemical Company, Parsippany, N.J., a corporation of Delaware

No Drawing. Application July 20, 1965, Ser. No. 473,497, which is a continuation-in-part of application Ser. No. 163,855, Jan. 2, 1962. Divided and this application June 20, 1967, Ser. No. 647,332

The portion of the term of the patent subsequent to Dec. 12, 1984, has been disclaimed

Int. Cl. C08d *3/06;* **C08f** *15/04*

U.S. Cl. 260—85.3 **2 Claims**

An elastomeric essentially linear copolymer of butadiene and isobutylene containing between 2 percent and 40 percent isobutylene and between 60 percent and 98 percent butadiene.

3,466,269

PROCESS FOR CONTINUOUS MASS POLYMERIZATION OF STYRENE AND METHYL METHACRYLATE

Ernest P. Fivel, Lyon, Rhone, France, assignor to Plastugil (Plastique et Elastomeres Ugine-Progil), Lyon, France, a French body corporate

Continuation-in-part of application Ser. No. 495,436, Oct. 13, 1965. This application Aug. 2, 1968, Ser. No. 749,657

Claims priority, application France, Oct. 20, 1964, 991,999

Int. Cl. C08f *19/10, 1/04, 1/02*

U.S. Cl. 260—86.7 **4 Claims**

Styrene and methyl methacrylate are continuously copolymerized at 170–190° C. in the absence of a catalyst to give a high conversion of a homogeneous product having a narrow molecular weight distribution and a narrow chemical composition. The heat of reaction is controlled by lamellar flow of the monomer mixture thru the annular space between two concentric cylindrical diathermic walls, the space between the walls being defined by a critical ratio of total heat exchanging surface to thickness of the monomer mixture.

3,466,270

HYDROPYRIDINES, TRIORGANOSILYL HYDROPYRIDINES, AND PROCESS FOR THEIR PREPARATION

Newell C. Cook, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York

No Drawing. Filed May 27, 1965, Ser. No. 459,463

Int. Cl. C08f *5/00;* **C07f** *7/10*

U.S. Cl. 260—88.3 **18 Claims**

Triorganosilyl pyridine compounds are produced by reacting an organosilicon compound containing silanic hydrogen with a pyridine compound in the presence of a Group VIII metal. These triorganosilyl pyridine compounds are useful in the preparation of dihydropyridines which can be polymerized to yield polymers useful as molding compounds and as insulating materials. The triorganosilylated pyridines themselves are useful as oxidation inhibitors and as ultraviolet light absorbers for various polymers.

3,466,271

ALPHA PINENE POLYMERS AND THEIR PREPARATION

Anargiros P. Patellis, Belle Vernon, and Hans L. Nufer, Whitehall, Pa., assignors to Pennsylvania Industrial Chemical Corporation, Clairton, Pa., a corporation of Pennsylvania

No Drawing. Filed Nov. 8, 1966, Ser. No. 592,723

Int. Cl. C08f *5/00, 1/76, 1/72*

U.S. Cl. 260—93.3 **7 Claims**

Polymerization of alpha pinene using as catalyst aluminum chloride and a lower alkyl tertiary amine and optionally an amine hydrochloride.

3,466,272

PROCESS FOR THE PREPARATION OF POLYISOPRENE UTILIZING A TITANIUM TETRAHALIDE AND THE REACTION PRODUCT OF AN ALUMINUM ALKYL AND A CYANOGEN HALIDE

Kan Mori, Masato Kawakami, Yasumi Sugihara, Shoji Kimura, Tooru Shibata, and Akira Koguré, Yokkaichi-shi, Japan, assignors to Japan Synthetic Rubber Co., Ltd., Tokyo, Japan, a corporation of Japan

No Drawing. Filed Sept. 18, 1967, Ser. No. 668,676

Claims priority, application Japan, Sept. 26, 1966, 41/63,161

Int. Cl. C08d *1/14, 3/12*

U.S. Cl. 260—94.3 **3 Claims**

Isoprene is polymerized with the aid of a catalyst prepared by a reaction of (A) a titanium tetrahalide with (B) a reaction product of a trialkyl aluminum with a cyanogen halide. 0.1 to 1 mol of the cyanogen halide is used per 1 mol the trialkyl aluminum. Handling of the catalyst and controlling of the polymerization using said catalyst are very easy. Products have high cis-1,4 content and physical properties closer to those of a natural rubber.

3,466,273

PROCESS FOR PRODUCING NUCLEOTIDE BY A SELECTIVE PHOSPHORYLATION

Tuneo Sowa, Kenji Sato, Shunji Ouchi, Takeyoshi Ohsawa, and Saburo Senoo, Nobeoka-shi, Miyazaki-ken, Japan, assignors to Asahi Kasei Kogyo Kabushiki Kaisha, Osaka, Japan

No Drawing. Filed Dec. 14, 1967, Ser. No. 690,425

Claims priority, application Japan, Dec. 16, 1966, 41/82,058; Jan. 7, 1967, 42/1,302

Int. Cl. C07d *51/50*

U.S. Cl. 260—211.5 **5 Claims**

Process for producing nucleotides by a selective phosphorylation which comprises reacting unprotected nucleosides with phosphorus oxyhalides and/or pyrophosphoryl chloride in a polar organic solvent containing organic amine-inorganic acid salts and contacting the resulting reaction mixture with water.

3,466,274

FLUORENO-[1,9-ef]-1,4-DIAZEPINE-1-OXIDES AND 1,3-DIAZAFLUORANTHENE-1-OXIDES

René R. De Ridder, Brussels, Belgium, assignor to Manufacture de Produits Pharmaceutiques a Christiaens Societe Anonyme, Brussels, Belgium

No Drawing. Filed July 1, 1965, Ser. No. 468,952

Claims priority, application Great Britain, July 6, 1964, 27,794/64

Int. Cl. C07d *53/02, 51/48;* **A61k** *27/00*

U.S. Cl. 260—239 **15 Claims**

This invention is directed to certain novel fluoreno-[1,9-ef]-1,4-diazepine-1-oxides and certain novel precursor 1,3-diazafluoranthrene-1-oxides. These compounds are useful as sedatives, tranquilizers, hypnotics, anticonvulsants, antispasmodics and other pharmaceutical purposes.

3,466,275

MODIFIED PENICILLINS AND THEIR PREPARATION VIA PENICILLIN SULFOXIDES

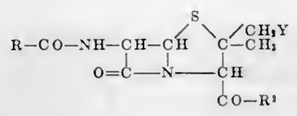
Robert B. Morin and Billy G. Jackson, Indianapolis, Ind., assignors to Eli Lilly and Company, Indianapolis, Ind., a corporation of Indiana

No Drawing. Original application July 31, 1962, Ser. No. 213,588, now Patent No. 3,275,626, dated Sept. 27, 1966. Divided and this application Sept. 30, 1965, Ser. No. 491,832

Int. Cl. C07d *99/22, 99/16*

U.S. Cl. 260—239.1 **2 Claims**

Compounds having the following general formula are disclosed. These compounds are useful antibiotics.



R may be an organic radical and R^2 may be H and pharmaceutically acceptable cations. Y may be acyloxy or alkoxy.

3,466,276

2-PIPERIDYLGLYCOL KETALS OF STEROIDAL COMPOUNDS

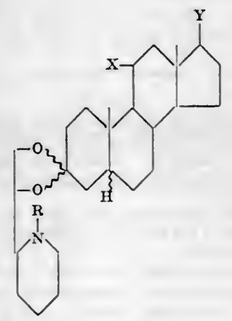
J Allan Campbell and John C. Babcock, Kalamazoo, Mich., assignors to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware

No Drawing. Filed Sept. 5, 1967, Ser. No. 665,218

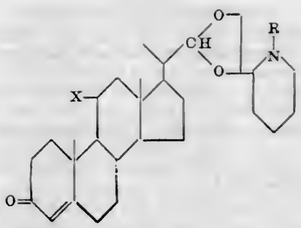
Int. Cl. C07c *173/10;* **A61k** *27/00*

U.S. Cl. 260—239.55 **5 Claims**

Novel 2-piperidylglycol ketals of steroids having the following formulae:



(A)



(B)

possess valuable antifungal activity. They are made by reacting the corresponding 3-ketone in the case of A, or 21-aldehyde in the case of B with 2-piperidylglycol in the presence of an acid catalyst.

3,466,277

N-ALLYLIC CYCLOHEXYL LOWER ALKYL NORMORPHINES

Herbert Merz, Hans-Detlef Schroeder, Adolf Langbein, and Karl Zeile, Ingelheim am Rhein, Germany, assignors to Boehringer Ingelheim G.m.b.H., Ingelheim am Rhein, Germany, a corporation of Germany

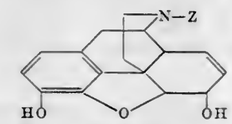
No Drawing. Filed Dec. 11, 1967, Ser. No. 689,314

Claims priority, application Germany, Dec. 13, 1966, B 90,286

Int. Cl. C07d *43/28;* **A61k** *27/00*

U.S. Cl. 260—240 **4 Claims**

Novel N-substituted-normorphines of the formula



I

wherein Z is an allyl group, the double bond of which belongs endocyclically or exocyclically to an alicyclic six-membered ring and their non-toxic, pharmaceutically acceptable acid addition salts, having analgesic and morphine antagonistic properties.

3,466,278

MELAMINE DERIVATIVES AND PROCESS FOR THEIR PRODUCTION

Richard Hochreuter and Robert Christian Keller, Basel, Switzerland, assignors to Sandoz Ltd., Basel, Switzerland, a corporation of Switzerland

Filed Sept. 6, 1967, Ser. No. 665,778

Claims priority, application Switzerland, Oct. 31, 1966, 15,728/66

Int. Cl. C07d *55/24*

U.S. Cl. 260—249.6 **17 Claims**

Novel quaternized melamine derivatives suitable for use as emulsifiers, softeners or antistatic agents in textile, leather and paper articles and emulsifiers, especially for paraffin in water emulsions, or for the production of agents for engendering hydrophobicity, said quaternized melamine derivatives being reaction products of

(i) hexamethylolmelamine-hexamethyl, -ethyl, -propyl or -butyl ether,

(ii) triethanolamine stearate, behenate, acetate, formate or mixtures of any two or more of these, or methyldiethanolamine acetate, with or without free amine, and

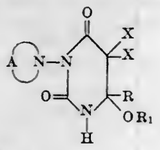
(iii) stearyl alcohol, are produced.

3,466,279
CONESSINE DERIVATIVES
Arthur Friedrich Marx, Rijswijk, and Willem Frederik van der Waard, Delft, Netherlands, assignors to Koninklijke Nederlandsche Gist-en Spiritusfabriek N.V., Delft, Netherlands, a corporation of the Netherlands
Filed July 29, 1966, Ser. No. 568,896
Claims priority, application Netherlands, July 30, 1965, 6509936
Int. Cl. C07c *173/10;* A61k *27/00*
U.S. Cl. 260—239.5 1 Claim

Conessine derivatives of the class of 9α-hydroxyconessine, acid addition salts thereof and quaternary ammonium derivatives thereof. The salts and quaternary ammonium derivatives are useful as muscular relaxing agents.

3,466,280
3-AMINO-5,5-DIHALO-6-ALKYL-6-ALKOXY HYDROURACILS
Harvey M. Loux, Hockessin, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Original application Dec. 13, 1967, Ser. No. 690,078, now Patent No. 3,406,023, dated Oct. 15, 1968. Divided and this application May 20, 1968, Ser. No. 730,655
Int. Cl. C07d *51/30, 51/16, 57/00*
U.S. Cl. 260—247.2 10 Claims

Novel hydrouracils of the following formula:



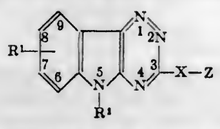
wherein X, R, R_1 and

are as defined hereinafter are useful as herbicides.

Exemplary of such compounds is 5,5-dichloro-3-(hexahydro-1-azepinyl)-6-methoxy-6-methylhydrouracil.

3,466,281
AS-TRIAZINO[5,6-b]INDOLES
Jan Mieczyslaw Zygmunt Gladych, Hertford, and John Harold Hunt, Theydon Bois, England, assignors to Allen and Hanburys Limited, London, England
No Drawing. Continuation-in-part of application Ser. No. 658,644, Aug. 7, 1967. This application July 16, 1968, Ser. No. 745,124
Claims priority, application Great Britain, Sept. 17, 1963, 36,551/63; Feb. 20, 1964, 7,168/64; Aug. 27, 1964, 35,190/64; July 18, 1967, 33,050/67
Int. Cl. C07d *57/34;* A61k *9/04*
U.S. Cl. 260—249.9 10 Claims

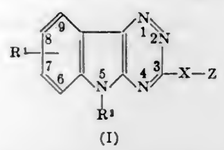
As-triazino[5,6-b]indoles of the formula:



where R^1 is halogen, such as chloro, bromo or fluoro; lower alkyl of 1–4 carbon atoms, hydroxy, mercapto, lower alkoxy of 1–4 carbon atoms, lower alkylmercapto of 1–4 carbon atoms, nitro, amino, lower alkylamino of 1–4 carbon atoms, diloweralkylamino of 2–8 carbon atoms, or trifluoromethyl; R^2 is hydrogen, lower alkyl of 1–4 carbon atoms, benzyl, or phenethyl; X is NR^3, where R^3 is hydrogen, methyl, or lower alkanoyl of 1–4 carbon atoms; and Z is AlkOH, where Alk is branched or straight chain alkylene of 2–10 carbon atoms; the alkylene chain may also be substituted with an aryl group such as phenyl or an additional hydroxy group, exhibit antiviral activity. Particularly valuable compounds are those substituted in the 3-position with hydroxyalkylamino moiety.

3,466,282
AS-TRIAZINO[5,6-b]INDOLES
Jan Mieczyslaw Zygmunt Gladych, Hertford, and John Harold Hunt, Theydon Bois, England, assignors to Allen and Hanburys Limited, London, England
No Drawing. Original application Aug. 7, 1967, Ser. No. 658,644. Divided and this application July 16, 1968, Ser. No. 745,129
Claims priority, application Great Britain, Sept. 17, 1963, 36,551/63; Feb. 20, 1964, 7,168/64; Aug. 27, 1964, 35,190/64; July 18, 1967, 33,050/67
Int. Cl. C07d *87/38, 55/10;* A61k *9/04*
U.S. Cl. 260—249.9 8 Claims

as-Triazino[5,6-b]indoles of the formula:



(I)

where R^1 is hydrogen, halogen, alkyl of 1–4 carbon atoms, hydroxy, alkoxy of 1–4 carbon atoms, nitro, amino or trifluoromethyl; R^2 is hydrogen, lower alkyl of 1–4 carbon atoms, benzyl, or phenylethyl; X is NR^3, wherein R^3 is hydrogen or methyl; and Z is $AlkNR^4R^5$, where Alk is a branched or straight chain alkylene radical containing 2 to 10 carbon atoms and R^4 and R^5 are each hydrogen or alkyl of 1–4 carbon atoms, or together with the adjacent nitrogen atom form a heterocyclic ring which may contain additional hetero atoms. The group Alk may also contain one hydroxy group or aryl group in the chain. The preferred heterocyclic rings include morpholino, piperidino, 4-methyl-1-piperazinyl, and pyrrolidino. N-oxide derivatives are a part of the present invention as well as pharmaceutically acceptable non-toxic salts of the as-triazino[5,6-b]indoles of the general formula shown above. They exhibit antiviral activity. Particularly valuable compounds are those substituted in the 3-position with aminoalkylamino moieties.

3,466,283
METHOD FOR PREPARING 3,4,6-TRICHLORO-PYRIDAZINE
Donald E. Bublitz, Concord, Calif., assignor to The Dow Chemical Company, Mldland, Mich., a corporation of Delaware
No Drawing. Filed May 17, 1968, Ser. No. 729,930
Int. Cl. C07d *51/04*
U.S. Cl. 260—250 3 Claims

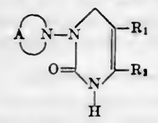
3,4,6-trichloropyridazine is prepared by the direct chlorination of 3,6-dichloropyridazine. The reaction is a highly efficient one and can be conducted without formation of tetrachloropyridazine in other than trace amounts.

3,466,284
3,4-DIHYDRO QUINAZOLINES AND METHOD FOR PREPARATION THEREOF
Margaret H. Sherlock, Bloomfield, N.J., assignor to Schering Corporation, Bloomfield, N.J., a corporation of New Jersey
No Drawing. Filed Dec. 30, 1965, Ser. No. 517,832
Int. Cl. C07d *51/48;* A61k *27/00*
U.S. Cl. 260—251 8 Claims

This invention relates to certain substituted 4-phenyl-3,4-dihydroquinazolines, to processes and intermediates useful in the preparation thereof, and to the use of such dihydroquinazolines as valuable anti-inflammatory agents.

3,466,285
3-HETEROCYCLICAMINO URACILS
Harvey M. Loux, Valley View, Hockessin, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Application Dec. 13, 1967, Ser. No. 690,077, which is a continuation-in-part of application Ser. No. 590,544, Oct. 31, 1966. Divided and this application Apr. 12, 1968, Ser. No. 721,055
Int. Cl. C07d *51/42*
U.S. Cl. 260—256.4 6 Claims

Novel uracils of the following formula:



wherein R_1 and R_2 and



are as defined hereinafter are useful as herbicides.

Exemplary of such compounds is:
5-bromo-6-methyl-3-(1-piperidino) uracil.

3,466,286
PYRIMIDINE DYESTUFFS
Jakob Benz, Muenchenstein, and August Schweizer, Muttenz, Switzerland, assignors to Sandoz Ltd., Basel, Switzerland, a Swiss firm
No Drawing. Continuation of application Ser. No. 462,036, June 7, 1965. This application Apr. 29, 1968, Ser. No. 725,224
Claims priority, application Switzerland, May 28, 1958, 59,953/58
Int. Cl. C07d *51/42;* D06p *1/20*
U.S. Cl. 260—256.5 8 Claims

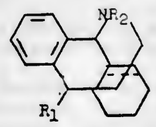
Tri-halopyrimidine-containing water-soluble anthraquinone dyestuffs are disclosed. The dyestuffs may be used on natural and synthetic fibers, and they possess good fastness characteristics.

3,466,287
1-[(3-INDOLYL)-LOWER-ALKYL]-4-SUBSTITUTED PIPERAZINES
Sydney Archer, Bethlehem, N.Y., assignor to Sterling Drug Inc., New York, N.Y., a corporation of Delaware
No Drawing. Continuation-in-part of application Ser. No. 584,983, Oct. 7, 1966. This application Oct. 23, 1967, Ser. No. 677,036
Int. Cl. C07d *57/00;* A61k *25/00*
U.S. Cl. 260—268 3 Claims

New 1-[(3-indolyl)-lower-alkyl]-4-substituted piperazines having useful antiinflammatory and antibacterial activities.

3,466,288
9,4α-IMINOETHANOANTHRACENES AND INDENO [2,1-j]ISOQUINOLINES
Holger V. Hansen, Morris Plains, Sylvester Klutchko, Hackettstown, and Robert Israel Meltzer, Rockaway, N.J., assignors to Warner-Lambert Pharmaceutical Company, Morris Plains, N.J., a corporation of Delaware
No Drawing. Filed Sept. 9, 1966, Ser. No. 578,149
Int. Cl. C07d *29/20*
U.S. Cl. 260—286 8 Claims

Tetracyclic 9,4a-iminoethanoanthracene of the formula:



I

wherein R_1 is carbonyl oxygen or hydroxyl; and R_2 is lower alkyl.

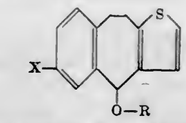
These compounds are useful as antiinflammatory agents.

3,466,289
1-HETEROCYCLIC-1,2,3,4-TETRAHYDROISOQUINOLINES AND PROCESSES
John Mervyn Osbond, Hatfield, and James Charles Wickens, St. Albans, England, assignors to Hoffmann-La Roche Inc., Nutley, N.J., a corporation of New Jersey
No Drawing. Filed Sept. 3, 1965, Ser. No. 485,127
Claims priority, application Great Britain, Sept. 22, 1964, 38,571/64, 38,572/64
Int. Cl. C07d *35/18, 57/00, 99/06*
U.S. Cl. 260—288 7 Claims

Pharmacologically active 1,2,3,4-tetrahydroisoquinolines having at position-1 a heterocyclic group such as, for example, 2-hydroxy-2-[pyridyl-(2)]ethyl, 2-hydroxy-2-[thienyl-(2)]ethyl and the like, are prepared, for instance, from the corresponding 3,4-dihydroisoquinoline N-oxide and heterocyclic compound possessing an unsaturated side chain, such as, for example, 4-vinyl pyridine or 2-vinyl thiophene. The products are useful analgesic agents.

3,466,290
9,10-DIHYDRO-4H-BENZO[4,5]CYCLOHEPTA[1,2-b] THIOPHENE ETHERS
Ernst Jucker, Ettingen, Anton Ebnother, Reinach, Basel-Land, and Jean-Michel Bastian, Birsfelden, Switzerland, assignors to Sandoz Ltd (also known as Sandoz A.G.), Basel, Switzerland
No Drawing. Filed Jan. 31, 1967, Ser. No. 612,799
Claims priority, application Switzerland, Feb. 2, 1966, 1,440/66; Feb. 16, 1966, 2,259/66
Int. Cl. C07d *43/10*
U.S. Cl. 260—292 5 Claims

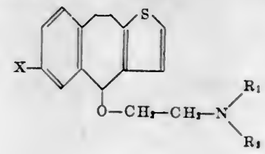
The present invention provides benzocyclohepta-thiophene ethers of formula:



in which X is hydrogen or chlorine and R is nortropanyl-(3) substituted on the nitrogen atom by a lower alkyl of 1–4 carbon atoms, or alkylaminoethyl, in which alkyl is of 1–4 carbon atoms, and their acid addition salts. These compounds exhibit histamine, acetylcholine and serotonin inhibiting effects, as well as blood pressure lowering effects. The production of these compounds is further described.

3,466,291
4(2-DIALKYLAMINOETHOXY OR 2-PIPERIDINOETHOXY) - 9,10 - DIHYDRO BENZO[4,5]CYCLOHEPTA[1,2-b]THIOPHENE DERIVATIVES
Ernst Jucker, Ettingen, Anton Ebnother, Reinach, Basel-Land, and Jean-Michel Bastian, Birsfelden, Switzerland, assignors to Sandoz Ltd. (also known as Sandoz A.G.), Basel, Switzerland
No Drawing. Filed Feb. 13, 1967, Ser. No. 615,380
Claims priority, application Switzerland, Feb. 16, 1966, 2,258/66
Int. Cl. C07d *63/18;* A61k *27/00*
U.S. Cl. 260—293.4 4 Claims

The present invention provides basic ethers of benzocycloheptathiophenes of formula:



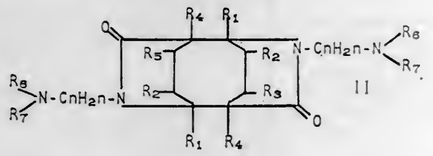
in which X is hydrogen or chlorine, and each of R_1 and R_2 is alkyl of 1 to 4 carbon atoms, or R_1 and R_2 together with the nitrogen are piperidine, and the pharmaceutically acceptable acid addition salts thereof. The compounds I exhibit the typical properties of antidepressants. The compounds also have peripheral and central anticholinergic effects. They have a pressoric effect on the blood pressure of dogs. They exhibit a histamine, acetylcholine and serotonin inhibiting effect in vitro. Furthermore, they are characterized by a broncholytic effect. The production of these compounds is furthermore described.

3,466,292
DIAZATRICYCLODODECANEDIONES AND DIAZATRICYCLODODECADIENDIONES

Leo A. Paquette, Kalamazoo County, Mich., assignor to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware

No Drawing. Original application July 16, 1962, Ser. No. 210,195. Divided and this application May 13, 1966, Ser. No. 590,443
Int. Cl. C07d *29/28*
U.S. Cl. 260—294 **8 Claims**

This invention relates to novel compositions of matter and to methods for their preparation and is particularly directed to certain diazatricyclododecane diones having the following formula:



and to the corresponding diazatricyclododecadiendiones.

3,466,293
AROYLALKYL DERIVATIVES OF 1,2,3,4-TETRAHYDRO-5H-PYRIDO[4,3b]INDOLES

Robert Phillip Johnson, Waukegan, Ill., and John Paul Oswald, Berkeley, Calif., assignors to Abbott Laboratories, North Chicago, Ill., a corporation of Illinois

No Drawing. Continuation-in-part of applications Ser. No. 599,747 and Ser. No. 599,748, Dec. 7, 1966. This application Apr. 3, 1968, Ser. No. 718,323
The portion of the term of the patent subsequent to May 7, 1985, has been disclaimed
Int. Cl. C07d *57/02;* **A61k** *27/00*
U.S. Cl. 260—294.9 **7 Claims**

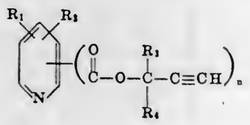
2[γ-(p-fluorobenzoyl)propyl]-6,7,8, or 9-(cyano or methyl)-1,2,3,4-tetrahydro-5H-pyrido[4,3b]indoles, which are useful chemotherapeutic agents primarily through effects on the central nervous system of mammals.

3,466,294
TERTIARY ACETYLENIC ESTERS OF PYRIDINE CARBOXYLIC ACIDS

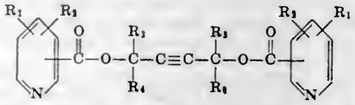
Seymour Hyden, Spring Valley, Henry Wetstein, Monroe, and Godfrey Wilbert, Carmel, N.Y., assignors to Nepera Chemical Co. Inc.

No Drawing. Continuation-in-part of application Ser. No. 516,772, Dec. 27, 1965. This application Nov. 30, 1967, Ser. No. 686,793
Int. Cl. C07d *31/34;* **A01n** *9/22*
U.S. Cl. 260—295.5 **5 Claims**

Compounds of the formula:



and



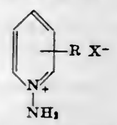
wherein R_1 and R_2 each represent hydrogen, lower alkyl, halogen, nitro, lower alkoxy or acyl, and R_3, R_4, R_5 and R_6 each represent lower alkyl, monohomocyclic aryl such as phenyl, or R_3, R_4, R_5 and R_6 taken together with the carbon atom to which they are attached form a cycloalkyl system such as cyclohexyl, and n is from 1 to 2. These compounds are useful as antifungal agents.

3,466,295
1-AMINO-2-, 3- OR 4-PHENYL PYRIDINIUM SALTS AND DERIVATIVES

Alexander Crawford Ritchie, Dennis George Cheesman, and Peter Garside, London, and Juliet Mary Waring, Purleigh, Chelmsford, England, assignors to Allen & Hanburys Limited, London, England, a British company

No Drawing. Filed Oct. 18, 1966, Ser. No. 587,430
Claims priority, application Great Britain, Oct. 21, 1965, 44,641/65
Int. Cl. C07d *31/42, 31/44;* **A61k** *27/00*
U.S. Cl. 260—296 **7 Claims**

Pyridinium salts of the formula



in which R is phenyl unsubstituted or substituted by at least one halogen or alkyl or hydroxy or alkoxy, and X^- is a pharmaceutically acceptable anion, are valuable for their antihypertensive activity.

3,466,296
PROCESS FOR THE PREPARATION OF ALKYL 3,5-DISUBSTITUTED-ISOXAZOLE-4-CARBOXYLATES

Dean C. Plemmons, West Chester, Pa., assignor to American Home Products Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed May 16, 1967, Ser. No. 638,759
Int. Cl. C07d *85/22;* **A61k** *25/00*
U.S. Cl. 260—307 **15 Claims**

Alkyl 3,5-disubstituted-isoxazole-4-carboxylates (I) are prepared by an improved process comprising condensing a hydroxyamoyl chloride (II) with an alkyl acylacetate (III) in the presence of a trialkylamine. Higher yields are obtained if an inert dehydrating agent is added to the reaction mixture. An optional hydrolysis after-step is a preferred embodiment, which leads to the 4-carboxylic acids corresponding to (I). The products of the processes are valuable intermediates, especially useful to prepare synthetic penicillins, such as, for example, oxacillin, cloxacillin and dicloxacillin.

3,466,297
2-(2-AMINOPHENYL)ISOINDOLINES

Theodore S. Sulkowski, Narberth, and Albert A. Mascitti, Norristown, Pa., assignors to American Home Products Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Mar. 14, 1967, Ser. No. 622,920
Int. Cl. C07d *27/56;* **A61k** *27/00*
U.S. Cl. 260—326.1 **8 Claims**

The present invention is concerned with 2-(2-aminophenyl)phthalimidines and 2-(2-aminophenyl)isoindolines. These 2-(2-aminophenyl)phthalimidines are useful

intermediates in the preparation of their corresponding 2-(2-aminophenyl)isoindolines which are pharmacologically efficacious as anti-convulsants.

3,466,298
PROCESS FOR THE PREPARATION OF 2-(2-AMINOETHYL)ISOINDOLINES

Theodore S. Sulkowski, Narberth, and Albert A. Mascitti, Norristown, Pa., assignors to American Home Products Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Mar. 14, 1967, Ser. No. 622,928
Int. Cl. C07d *27/48*
U.S. Cl. 260—326.1 **7 Claims**

This invention is concerned with a process for the preparation of 2-(2-aminoethyl)isoindolines which are pharmacologically efficacious as antidepressants and anorexiants. This process involves the substitution of a 2-(2-aminoethyl)-3-hydroxyphthalimidine with a halogen to afford a 2-(2-aminoethyl)-3-halophthalimidine which by a displacement reaction is converted to a 3-alkoxy-2-(2-aminoethyl)phthalimidine which is then subjected to hydrogenolysis to yield a 2-(2-aminoethyl)isoindoline.

3,466,299
DIOXANE COMPLEXES OF LOWER ALKANOLS AND MAGNESIUM HALIDES

Ulrich W. Weissenberg, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Original application Oct. 31, 1966, Ser. No. 590,521. Divided and this application Aug. 14, 1968, Ser. No. 770,880
Int. Cl. C07d *17/00;* **C07f** *3/02*
U.S. Cl. 260—340.6 **4 Claims**

This invention relates to a new complex of magnesium halides, particularly halides of halogens having an atomic weight above 35, containing alcohol and cyclic ether molecules, and to a method for preparing such magnesium halides of high purity from the complexes, and more particularly pertains to complexes of such magnesium halides containing both a low molecular weight monohydric alkanol and a cycloaliphatic ether as solvate molecules, and to a method of preparing a magnesium halide of high purity by removing the solvating organic molecules at an elevated temperature.

3,466,300
METHOD FOR PRODUCING ANHYDRIDES BY CATALYTIC OXIDATION OF AROMATIC HYDROCARBONS

Stefan Vedrilla, Cologne-Junkersdorf, Germany, assignor to Chemiebau Dr. A. Zieren G.m.b.H. & Co., K.G., Cologne-Braunsfeld, Germany, a corporation of Germany

No Drawing. Filed Apr. 10, 1967, Ser. No. 629,375
Claims priority, application Germany, Apr. 19, 1966, C 38,808
Int. Cl. C07d *5/32, 5/34*
U.S. Cl. 260—346.4 **10 Claims**

An improved process for producing anhydrides of dicarboxylic acids by passing a mixture of air and vaporized aromatic hydrocarbons through a multi-stage contact apparatus, in which the temperature rise in each of the first group of catalytic oxidation stages of the apparatus is about 50 to 60° C., until a 50% overall conversion is reached. The temperature rise in each of the succeeding stages is maintained below 50° C. per stage. The temperature of the partially oxidized gaseous reaction mixture is cooled between each succeeding stage to the initial temperature required for the oxidation. In a preferred embodiment of the invention, the heat given off in cooling between each of the first stages wherein the temperature rise is 50° or more, is used to pre-heat the feed reaction mixture.

3,466,301
PROCESS FOR OBTAINING A NITROGEN CONTAINING KETO POLYCARBOXYLIC ACID ANHYDRIDE

John H. McCracken, Pitcairn, and Johann G. D. Schulz and Arthur C. Whitaker, Pittsburgh, Pa., assignors to Gulf Research & Development Company, Pittsburgh, Pa., a corporation of Delaware

No Drawing. Original application Mar. 26 1964, Ser. No. 355,114. Divided and this application Nov. 20, 1968, Ser. No. 777,462
Int. Cl. C07d *5/32, 5/34*
U.S. Cl. 260—346.4 **4 Claims**

A process for preparing a ketopolycarboxylic acid anhydride which involves oxidizing a 1,1-bis(3,4-dialkylphenyl)alkane with nitric acid to obtain a liquid reaction product contaning precipitated benzophenone 3,4,3′,4′-tetracarboxylic acid, separating the precipitate from the reaction product and subsequently recovering the desired ketopolycarboxylic acid from the filtrate. The anhydride is used as a curing agent for epoxy resins.

3,466,302
POLYCARBOXYLIC ACIDS DERIVED FROM SUBSTITUTED ALKYLCYCLOHEXENES

Garson P. Shulman, Baltimore, Md., and Freeman M. Young, Brookhaven, Pa., assignors, by mesne assignments, to Ashland Oil and Refining Company, a corporation of Delaware

No Drawing. Filed Dec. 20, 1965, Ser. No. 515,210
Int. Cl. C08g *51/80;* **C07c** *51/32, 51/34*
U.S. Cl. 260—346.8 **7 Claims**

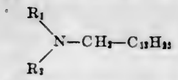
A novel class of polycarboxylic acids are provided by the ozonization of a Diels-Alder adduction product obtained by reacting a conjugated octadecadienyl compound and a low molecular weight mono-olefin. These polybasic acids exhibit usefulness as curing agents for synthetic polymers such as polyisocyanates, polyepoxides, and the like.

3,466,303
N,N-DIALKYLTRIDECYLAMINE SALTS OF 3,6-ENDOXOHEXAHYDROPHTHALIC ACID

Harold Miller, Newtown Square, Pa., and Russell Nelson, Tacoma, Wash., assignors to Pennsalt Chemicals Corporation, Philadelphia, Pa., a corporation of Pennsylvania

No Drawing. Original application Oct. 1, 1965, Ser. No. 492,331, now Patent No. 3,321,294. Divided and this application Dec. 13, 1966, Ser. No. 618,558
Int. Cl. C07d *5/32;* **A01n** *9/28*
U.S. Cl. 260—347.3 **4 Claims**

Di-lower-alkyltridecylamine salts of 3,6-endoxohexahydrophthalic acid where the amine has the formula



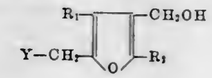
and where R_1 and R_2 are lower alkyl radicals and where the $C_{12}H_{25}$ moiety is branched useful as a pre-emergent herbicide.

3,466,304
PREPARATION OF FURAN-SUBSTITUTED METHANOLS

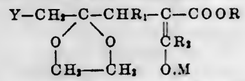
Michael Elliott, Harpenden, and Norman Frank Janes, Luton, England, assignors to National Research Development Corporation, London, England, a British corporation

No Drawing. Filed Dec. 5, 1966, Ser. No. 598,901
Claims priority, application Great Britain, Aug. 23, 1966, 37,788/66
Int. Cl. C07d *5/20*
U.S. Cl. 260—347.8 **4 Claims**

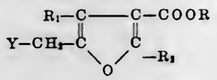
Alcohols of formula



in which Y is hydrogen or lower alkyl, lower alkenyl or phenyl or phenyl substituted by lower alkyl, lower alkoxy or chlorine or a heterocyclic radical, for instance, furyl or furfuryl and R_1 and R_2 are hydrogen or lower alkyl, are prepared by cyclizing a compound of formula



in which M is an alkali metal and R is hydrogen or lower alkyl in the presence of an acid. The product is a substituted furoic acid ester of formula



which is then reduced to the corresponding alcohol. The enol for the cyclization step is prepared by reaction of a gamma-ketoester for instance, from levulinic acid, with ethylene glycol to protect the keto group and then reacting the product with another ester, for instance, a formate or an acetate ester.

3,466,305

HALOGEN CONTAINING ETHER EPOXIDES

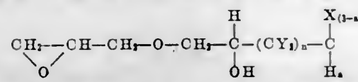
Pauls Davis, Gibraltar, and Herwart C. Vogt, Grosse Ile, Mich., assignors to Wyandotte Chemicals Corporation, Wyandotte, Mich., a corporation of Michigan

No Drawing. Continuation-in-part of application Ser. No. 560,842, June 27, 1966. This application Nov. 25, 1968, Ser. No. 778,851

Int. Cl. C07d *1/00, 1/18*

U.S. Cl. 260—348 **4 Claims**

A halogen-containing ether composition of matter having a structure depicted by the following formula:



wherein n is an integer of from 0 to 1, a is an integer of from 0 to 1, Y is H or halogen and X is halogen useful in the preparation of more complex epoxide-based compositions of relatively high order of nonflammability.

3,466,306

PROCESS FOR THE STABILIZATION OF ORGANIC ESTERS OF PHOSPHORIC ACID

Arthur L. Babson, Morristown, N.J., assignor to Warner-Lambert Pharmaceutical Company, Morris Plains, N.J.

No Drawing. Filed Aug. 6, 1965, Ser. No. 477,962

Int. Cl. C09b *11/08;* **C07f** *9/02*

U.S. Cl. 260—395 **6 Claims**

A composition of matter useful for the determination of alkaline phosphatase which comprises a phosphate ester or its salts in a solution containing a high concentration of an alkaline buffer, for example, 2-amino-2-methyl-1-propanol or 2-amino-2-methyl-1,3-propanediol.

3,466,307

PROCESS FOR PREPARING CARBOXYLIC ACID THIOANHYDRIDES

Walter Stamm, Tarrytown, Carl C. Greco, Bronx, and Thomas M. Beck, Hastings-on-Hudson, N.Y., assignors to Stauffer Chemical Company, New York, N.Y., a corporation of Delaware

Filed Oct. 13, 1967, Ser. No. 675,247

Int. Cl. C07c *153/00;* **C07b** *5/02*

U.S. Cl. 260—399 **12 Claims**

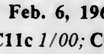
A process for preparing carboxylic acid thioanhydrides of the formula:

(1)



wherein the groups represented by R are aliphatic radicals of from 4 to 23 carbon atoms. The process comprises reacting at least one aliphatic acid halide of the formula:

(2)



wherein R is as previously defined and X is a halogen, with hydrogen sulfide and a hydrogen halide acceptor. The reaction is conducted in a two-phase aqueous-organic solvent system, which organic solvent phase is at least partly immiscible with the aqueous phase but substantially miscible with the aliphatic acid halide reactant.

3,466,308

PREPARATION OF ORGANIC ACIDS

Herbert L. Wehrmeister, Terre Haute, Ind., assignor to Commercial Solvents Corporation, New York, N.Y., a corporation of Maryland

No Drawing. Continuation-in-part of application Ser. No. 254,010, Jan. 25, 1963. This application Feb. 6, 1967, Ser. No. 614,026

Int. Cl. C07c *63/04, 57/02*

U.S. Cl. 260—413 **6 Claims**

A method for preparing compounds of the class of unsaturated aromatic acids and unsaturated aliphatic acids, useful is intermediates in the preparation of perfumes, cosmetics, polymers and plant growth modifiers, by the acid-catalyzed hydrolysis of 2-substituted-2-oxazolines.

3,466,309

PRODUCTION OF NEO-ACIDS

Herbert L. Wehrmeister, Terre Haute, Ind., assignor to Commercial Solvents Corporation, New York, N.Y., a corporation of Maryland

No Drawing. Filed Feb. 6, 1967, Ser. No. 614,012

Int. Cl. C11c *1/00;* **C07d** *85/44*

U.S. Cl. 260—413 **2 Claims**

A process for the production of neo-acids, i.e. organic acids having a completely substituted α-carbon atom, by the hydrolysis of 2 - substituted - 2 - oxazolines in the presence of an acid.

3,466,310

PREPARATION OF OMEGA-HYDROXY-ALKANOIC ACIDS

Martin J. Diamond, Oakland, Calif., assignor to the United States of America as represented by the Secretary of Agriculture

No Drawing. Continuation-in-part of application Ser. No. 453,228, May 4, 1965. This application July 26, 1967, Ser. No. 656,634

Int. Cl. C07c *59/20, 59/04;* **C11c** *3/00*

U.S. Cl. 260—413 **15 Claims**

Ricinoleic acid—or a salt, ester, or amide thereof—is heated at about 178°–210° C. with a strong alkali (NaOH), using as a reaction medium a high-boiling primary or secondary alcohol, such as 1-octanol or 2-octanol, whereby to yield a product containing an enhanced ratio of 10-hydroxydecanoic acid to sebacic acid. The process is also applicable to lesquerolic acid and other hydroxy unsaturated acids having allylic or homoallylic systems with a double bond between the hydroxyl and carboxyl group, and their salts, esters, and amides to yield a product containing an enhanced proportion of the corresponding omega-hydroxyalkanoic acid, e.g., 12-hydroxydodecanoic acid.

3,466,311

PREPARATION OF DIALKYLTIN OXIDES

Yutaka Mizuno, Osaka-shi, Tadashi Nishihara, Sakai-shi, Yutaka Shioyama, Suita-shi, Tsutomu Tsutsui, Osaka-shi, and Keiichi Murakami, Ibaragi-shi, Japan, assignors to Nitto Kasei Co., Ltd., Osaka, Japan, a corporation of Japan

No Drawing. Filed July 18, 1967, Ser. No. 654,051

Claims priority, application Japan, July 18, 1966, 41/46,537

Int. Cl. C07f *7/22*

U.S. Cl. 260—429.7 **3 Claims**

In accordance with certain of its aspects the process of this invention for producing dialkyltin oxides comprises washing a crude dialkyltin diiodide with a 5–37% aqueous solution in hydrochloric acid, and hydrolyzing the purified dialkyltin diiodide with an alkaline solution thereby to produce a high purity dialkyltin oxide. These dialkyltin oxides are useful for preparing stabilizers for polyvinyl resins.

3,466,312

DERIVATIVES OF DIALKYL-CYSTEINES AND ALLIED COMPOUNDS

Nicholas Ercoli, Caracas, Venezuela, assignor to A. H. Robins Company, Incorporated, Richmond, Va., a corporation of Virginia

Filed Jnne 7, 1965, Ser. No. 461,855

Claims priority, application Great Britain, June 8, 1964, 23,659/64; Sept. 4, 1964, 36,319/64

Int. Cl. C07f *9/76, 15/02, 9/94*

U.S. Cl. 260—440 **11 Claims**

Compounds and chelates formed by the reaction of β,β-dialkylcysteines with organometallic compounds and metallic salts, wherein the metals are arsenic, antimony, bismuth and iron are described. The compounds and chelates reduce the toxicity of the metallic compounds without substantially impairing the therapeutic effectiveness of the metallic radical, thus greatly increasing the therapeutic index.

3,466,313

BIS[4,4'-DIPHENYLMETHYL] BIBENZYL-BIS (HEXACHLOROANTIMONATE)

Irving Kuntz, Westfield, and Robert M. Thomas, Mountainside, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Original application Apr. 8, 1965, Ser. No. 446,714. Divided and this application Aug. 27, 1968, Ser. No. 777,528

Int. Cl. C07f *9/92*

U.S. Cl. 260—446 **1 Claim**

This invention relates to bis [4,4'-diphenylmethyl] bibenzyl-bis (hexachloroantimonate) which is useful as a catalyst in polymerization reactions between tetrahydrofuran and cyclopentadiene alone or in the presence of an oxirane or oxetane compound.

3,466,314

SILICON COMPOUNDS

Kurt Moedritzer, Webster Groves, and John R. Van Wazer, Ladue, Mo., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Filed Jan. 3, 1966, Ser. No. 517,966

Int. Cl. C07f *7/02;* **H01b** *3/46*

U.S. Cl. 260—448.2 **22 Claims**

1. Mixed organosilane compounds having the general formula

$$R_{4-n}SiX_{n-m}Y_m$$

in which R is selected from the group consisting of hydrocarbyl radicals having from 1 to 20 carbon atoms; X is different from Y and is selected from the group consisting of a halogen, alkoxyl, thioalkyl, dialkylamino, cyano, cyanate, thiocyanate, azide, and acetylide; Y is selected from the group consisting of cyano, cyanate and thiocyanate; n is a whole number from 2 to 3, and m is a whole number from 1 to 2, with the requirement that m be less than n.

3,466,315

PROCESS FOR CONVERSION OF D-AZLACTONES TO DL-α-ACYLAMINO-α-METHYL-β-(3,4 - DISUBSTITUTED PHENYL) PROPIONITRILES

Raymond A. Firestone, Fanwood, and Donald F. Reinhold and Meyer Sletzinger, North Plainfield, N.J., assignors to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey

No Drawing. Continuation-in-part of application Ser. No. 406,922, Oct. 27, 1964. This application Dec. 29, 1966, Ser. No. 605,613

Int. Cl. C07c *121/50;* **C07d** *85/44*

U.S. Cl. 260—465 **9 Claims**

A process for converting an azlactone derived from D-α-methyl-(3,4-disubstituted phenyl)alanine to a DL-α-acylamino - α - methyl - β - (3,4 - disubstituted phenyl) propionitrile by reacting the D-azlactone with ammonia to form the corresponding propionamide, dehydrating the propionamide to the nitrile and racemizing the nitrile to the desired products.

3,466,316

ALPHA-CYANO CARBAMOYLOXIME COMPOUNDS

Linwood K. Payne, Jr., Charleston, W. Va., and Mathias H. J. Weiden, Raleigh, N.C., assignors to Union Carbide Corporation, a corporation of New York

No Drawing. Original application Sept. 23, 1964, Ser. No. 398,744, now Patent No. 3,400,153, dated Sept. 3, 1968. Divided and this application May 31, 1968, Ser. No. 733,236

Int. Cl. C07c *131/00*

U.S. Cl. 260—465.4 **3 Claims**

Straight-chain and cyclic carbamoyloximes carrying a cyano substitutent on the carbon atom adjacent to the oxime function exhibit pronounced pesticidal activity, particularly as insecticides and miticides.

3,466,317

CYANO ACETALS

Donald G. Kuper, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

No Drawing. Filed Dec. 12, 1966, Ser. No. 600,793

Int. Cl. C07c *121/08, 121/02*

U.S. Cl. 260—465.6 **9 Claims**

3-cyano acetals are prepared at relatively low pressures from a nitrile, an alcohol, CO and H_2 in the presence of a Group VIII metal containing hydrogenation catalyst by adding an acid.

3,466,318

PROCESS FOR THE PRODUCTION OF 1-CYANO-1,3-BUTADIENE BY DEHYDROGENATION OF A 1-CYANOBUTENE

Arthur Lambert and George Kenneth Makinson, Manchester, England, and Arthur Hill, deceased, late of Wilmslow, Cheshire, England, by Dora Margaret Hill and Keith Alan Hill, joint administrators, assignors to Imperial Chemical Industries Limited, Millbank, London, England, a corporation of Great Britain

No Drawing. Filed Nov. 23, 1965, Ser. No. 527,401

Claims priority, application Great Britain, Nov. 24, 1964, 47,785/64

Int. Cl. C07c *121/30;* **B01j** *11/32*

U.S. Cl. 260—465.9 **9 Claims**

A process for preparing 1-cyano-1,3-butadiene by dehydrogenating a 1-cyanobutene in the vapor phase at a temperature of from 300° C. to 550° C. The dehydrogenation is carried out in the presence of a catalytic

amount of a catalyst selected from the group consisting of bismuth phosphomolybdate, mixed zinc and copper oxides and cobalt molybdate.

3,466,319

1-CYCLOPENTENECARBOXYLIC ACIDS

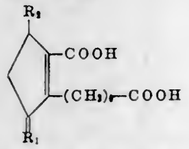
Neville Finch, Irvington, and William Irving Taylor, Summit, N.J., assignors to Ciba Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 526,379, Feb. 10, 1966. This application May 23, 1966, Ser. No. 551,961

Int. Cl. C07c *69/74, 61/20, 121/34*

U.S. Cl. 260—468 **10 Claims**

New 2-(6-carboxyhexyl)-1-cyclopentenone-carboxylic acids e.g. those of the formula



one of $R_{1,2}$ is 0, the other is H_2 and functional derivatives thereof are antiandrogens.

3,466,320

METHOD FOR THE PREPARATION OF ESTERS OF UNSATURATED ACIDS FROM THE CORRESPONDING NITRILES

Charles W. Hargis, Johnson City, Tenn., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed June 27, 1967, Ser. No. 649,155

Int. Cl. C07c *69/52;* **B01j** *11/06*

U.S. Cl. 260—486 **5 Claims**

Alpha,beta-unsaturated esters such as ethyl and methyl methacrylate are prepared in a single step by contacting the corresponding unsaturated nitrile, water, and a lower alkanol with a catalyst, comprising an esterification catalyst and niobium, in the calcined form. The esters are polymerizable to useful thermoplastic resins.

3,466,321

DERIVATIVES OF PHENYL-ACETIC ACID

Henri Morren, Forest, Belgium, assignor to UCB (Union Chimique-Chemische Bedrijven), S.A., Saint-Gilles-lez-Bruxelles, Belgium

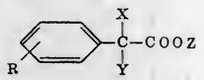
No Drawing. Filed May 12, 1966, Ser. No. 549,462

Claims priority, application Great Britain, May 17, 1965, 20,743/65

Int. Cl. C07c *101/00, 101/18;* **A61k** *25/00*

U.S. Cl. 260—471 **6 Claims**

Compounds of the formula



in which:

X is selected from the group consisting of a straight and a branched lower alkyl radical containg 1 to 5 carbon atoms;

Y is an aminated chain of the general formula



V being selected from the group consisting of a straight and a branched alkylene chain containing 1 to 4 carbon atoms, A and B, taken separately, being selected from the group consisting of H and lower alkyl, and, taken together with the nitrogen atom, forming a heterocyclic ring containing up to 5 carbon atoms, e.g. the morpholino, the piperidino or the pyrrolidino ring;

Z is selected from the group consisting of a straight and a branched lower alkyl radical and a lower aralkyl (e.g. benzyl, phenethyl, etc.) radical; and

R is selected from the group consisting of a hydrogen atom, a halogen atom (Cl, Br, etc.) a lower alkyl group, a lower alkoxy (e.g. methoxy, ethoxy, etc.) radical and an amino group

are suitable for use as anti-depressive agents.

3,466,322

ALKYL TRIALKYLVINYL SULFIDES

Edward U. Elam, Kingsport, Tenn., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Continuation-in-part of application Ser. No. 220,061, Aug. 28, 1962. This application Apr. 27, 1965, Ser. No. 451,330

Int. Cl. C07c *149/20;* **C07d** *63/10, 91/44*

U.S. Cl. 260—481 **5 Claims**

Process for the preparation of alkyl trialkylvinyl sulfides by the reaction of a mercaptan with a 3-hydroxy-2,2,4-trialkylalkenoic acid β-lactone in the presence of ultraviolet light and a free-radical producing catalyst, the products of the process being useful as stabilizers for polyolefins and is antioxidants for rubber.

3,466,323

LOW MOLECULAR WEIGHT LINEAR THIODIPROPIONIC POLYESTERS

Clarence E. Tholstrup, Alan Bell, and Charles J. Kibler, Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Continuation-in-part of application Ser. No. 309,339, Sept. 16, 1963. This application Dec. 13, 1965, Ser. No. 513,593

Int. Cl. C07c *149/26, 149/00*

U.S. Cl. 260—481 **2 Claims**

Low molecular weight polyesters useful as stabilizers for organic materials and prepared by condensing a thiodipropionic acid or ester thereof with a diprimary sterically hindered glycol with a chain terminating agent.

3,466,324

METHOD OF MANUFACTURING METHACRYLIC ESTERS FROM ALLENE

Sango Kunichika and Yasumasa Sakakibara, Takatsukishi, Osaka-fu, Japan, assignors to Chiyoda Kako Kensetsu Kabushiki Kaisha, Akasaka, Minato-ku, Tokyo, Japan

No Drawing. Filed July 7, 1966, Ser. No. 563,380

Int. Cl. C07c *67/00, 69/54*

U.S. Cl. 260—486 **8 Claims**

Methacrylic esters are prepared by reacting allene with carbon monoxide and a saturated monohydric alcohol in the presence of nickel carbonyl and water at a temperature in the range 100–250° C. and a pressure of 5–100 atmospheres.

3,466,325

1-(ORTHO-ALKENYL PHENOXY) - 2-HYDROXY-3-ISOPROPYLAMINOPROPANES AND THE SALTS THEREOF

Arne Elof Brandstrom, Goteborg, Hans Rudolf Corrodi, Molndal, and Bengt Arne Hjalmar Ablad, Goteborg, Sweden, assignors to Aktiebolaget Hässle, Goteborg, Sweden, a company of Sweden

No Drawing. Filed Jan. 18, 1966, Ser. No. 521,436

Claims priority, application Sweden, Apr. 30, 1965, 5,711/65

Int. Cl. C07c *93/06;* **A61k** *27/00*

U.S. Cl. 260—501.17 **4 Claims**

Ortho-alkenylphenoxy-hydroxyalkyl derivatives of isopropylamine, specifically, allyl, 2-chloroallyl, 3-chloroallyl, and propenyl substituted phenoxy-hydroxyalkyl isopropylamine derivatives, their preparation, pharmaceutical compositions containing these compounds, and the use thereof in the treatment of cardiac and vascular diseases.

3,466,326

METHOD FOR PRODUCING ALKANEDIOIC ACID AND NITROGEN CONTAINING INTERMEDIATES FROM CYCLOALKENE

Donald R. Lachowicz, Todd S. Simmons, and Kenneth L. Kreuz, Fishkill, N.Y., assignors to Texaco Inc., New York, N.Y., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 466,816, June 24, 1965. This application Mar. 10, 1966, Ser. No. 541,431

Int. Cl. C07c *51/00, 77/02*

U.S. Cl. 260—537 **2 Claims**

Method for preparing cycloalkylnitroperoxy nitrate, nitrocycloalkanone and alkanedioic acids from cycloalkane compounds comprising contacting a cycloalkane with a mixture of dinitrogen tetroxide and oxygen to form the nitrate intermediate, contacting the nitrate intermediate with a denitrating agent to form the nitrocycloalkanone intermediate and acidifying the nitrocycloalkanone intermediate under aqueous conditions to form the alkanedioic acid.

3,466,327

BENZOIC ACID HYDRAZIDE DERIVATIVES AND COMPOSITIONS

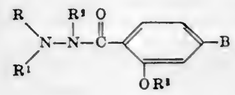
Rudolf Tschesche, Bonn-Rottgen, and Franz Riemhofer, Marl, Germany, and Jack Bernstein, New Brunswick, N.J., assignors to E. R. Squibb & Sons, Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Mar. 30, 1966, Ser. No. 538,591

Int. Cl. C07c *109/10;* **A61k** *27/00*

U.S. Cl. 260—559 **4 Claims**

1. A compound of the formula



wherein R, R^1 and R^2 each is hydrogen or methyl, R^3 is lower alkyl or lower alkenyl, B is nitro, amino, lower alkylamino, di-lower alkylamino, lower alkanoylamino, benzoylamino or p-halobenzoylmethylamino, the lower alkyl, lower alkenyl and lower alkanoyl groups having up to 4 carbon atoms.

3,466,328

2-HALOACETAMIDOPHENYL-CYCLOALKYL KETONES

Leo Berger, Montclair, and Leo/Henryk Sternbach, Upper Montclair, N.J., assignors to Hoffmann-La Roche Inc., Nutley, N.J., a corporation of New Jersey

No Drawing. Continuation-in-part of application Ser. No. 131,750, Aug. 16, 1961, and a division of application Ser. No. 137,047, Sept. 11, 1961, now Patent No. 3,338,886, dated Aug. 29, 1967. This application Nov. 19, 1963, Ser. No. 324,850

Int. Cl. C07d *53/06*

U.S. Cl. 260—562 **5 Claims**

2-haloacetamidophenylcycloalkyl ketones, useful in the preparation of 5-cycloalkyl - 3H - 1,4 - benzodiazepin-2(1H)-ones and 2-lower alkylamino-5-cycloalkyl-3H-1,4-benzodiazepine 4-oxides which are useful as tranquilizers and as anticonvulsant agents.

3,466,329

N^2,N^2-DIALKYL-3-NITRO-5-TRIFLUOROMETHYL-o-PHENYLENEDIAMINES

Quentin F. Soper, Indianapolis, Ind., assignor to Eli Lilly and Company, Indianapolis, Ind., a corporation of Indiana

No Drawing. Continuation-in-part of application Ser. No. 505,964, Nov. 1, 1965. This application Mar. 3, 1967, Ser. No. 620,258

Int. Cl. C07c *87/58, 87/60;* **A01n** *9/20*

U.S. Cl. 260—577 **3 Claims**

The synthesis of N^2,N^2-dialkyl-3-nitro-5-trifluoromethyl-o-phenylenediamines which amines are useful as herbicides.

3,466,330

2,3-DIAMINO-5,8-ALKANO-5,6,7,8-TETRAHYDRONAPHTHALENE COMPOUNDS

Hiroshi Tanida, Osaka-shi, and Ryonosuke Muneyuki, Itami-shi, Japan, assignors to Shionogi & Co., Ltd., Higashi-ku, Osaka-shi, Osaka, Japan

No Drawing. Original application Jan. 22, 1965, Ser. No. 427,470, now Patent No. 3,336,331, dated Aug. 15, 1967. Divided and this application Apr. 25, 1967, Ser. No. 647,270

Claims priority, application Japan, Jan. 24, 1964, 39/3,392, 39/3,393

Int. Cl. C07c *87/66*

U.S. Cl. 260—578 **3 Claims**

2,3 - diamino - 5,8 - alkano - 5,6,7,8 - tetrahydronaphthalene compounds are provided herein, wherein the alkano group may be a methano or an ethano group. These compounds are useful as intermediates in the production of the corresponding 5,8-alkano-5,6,7,8-tetrahydro-1H-naphtho[2,3-d]imidazole compounds; the latter compounds being useful as analgesics.

3,466,331

INTERMEDIATE FOR SYNTHESIZING RHODOXANTHIN

Joseph Donald Surmatis, West Caldwell, N.J., and Armin Walser, Arlesheim, Switzerland, assignors to Hoffmann-La Roche Inc., Nutley, N.J., a corporation of New Jersey

No Drawing. Filed Feb. 23, 1967, Ser. No. 617,827

Int. Cl. C07f *9/54;* **C07c** *49/54;* **A23l** *1/27*

U.S. Cl. 260—586 **4 Claims**

3-ethylenedioxy-β-ionone is reacted with isopropenylethynyl carbinol in the presence of a Grignard reagent to form the tertiary alcohol 2,6-dimethyl-8-(4-oxo-2,6,6-trimethyl-2-cyclohexylidene)-1,6-octadien-4-yn-3 - ol. Said tertiary alcohol is dehydrated and deketalized with dilute acid and converted by treatment with a phosphine and a mineral acid to 2,6-dimethyl-9-(4-oxo-2,6,6-trimethyl-2-cyclohexenylidene) - 2,6 - octadiene - 4-yne triphenylphosphonium halide. The latter compound has utility as an intermediate in the production of rhodoxanthin.

3,466,332

BETA-DISUBSTITUTED ALPHA-INDANONES AND THE PROCESS FOR PREPARING THEM FROM ARYL-SUBSTITUTED ALIPHATIC HALIDES

Herman A. Bruson, Woodbridge, and Howard L. Plant, Milford, Conn., assignors to Olin Mathieson Chemical Corporation, a corporation of Virginia

No Drawing. Filed Feb. 11, 1965, Ser. No. 432,013

Int. Cl. C07c *49/76*

U.S. Cl. 260—590 **8 Claims**

The process for preparing beta-disubstituted alpha-indanones by reacting carbon monoxide and an aryl-substituted aliphatic halide in the presence of an aluminum halide selected from the group consisting of aluminum chloride and aluminum bromide.

3,466,333

PROCESS FOR PREPARING BETA-DISUBSTITUTED ALPHA-INDANONES

Herman A. Bruson, Woodbridge, and Howard L. Plant, Milford, Conn., assignors to Olin Mathieson Chemical Corporation, a corporation of Virginia

No Drawing. Filed Dec. 10, 1964, Ser. No. 417,507
Int. Cl. C07c *49/76*
U.S. Cl. 260—590 10 Claims

Process for preparing beta-disubstituted alpha-indanones by reacting carbon monoxide, an aromatic compound such as benzene, and certain aliphatic halides in the presence of an aluminum halide catalyst. Products of the process include 2-methyl-2-phenylindanone-1; 2,2-dimethylindanone-1; 2,2,3,3-tetramethylindanone-1; 2,3-dimethyl-2-phenylindanone-1; and 2-methyl - 2 - (o-chlorophenyl)-4-chloro-indanone-1.

3,466,334

CATALYTIC SYNTHESIS OF KETONES FROM A MIXTURE OF AN ALDEHYDE AND AN ACID

Howard S. Young and Jefferson Wayne Reynolds, Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Aug. 5, 1966, Ser. No. 570,440
Int. Cl. C07c *45/18, 49/06*
U.S. Cl. 260—595 9 Claims

Process for preparing unsymmetrical ketones comprising passing at an elevated temperature an aldehyde reactant and a carboxylic acid reactant over a catlyst comprising oxidized lithium supported on activated alumina.

3,466,335

PROCESS FOR MAKING THE TRIARYL PHOSPHONIUM SALT OF VITAMIN A ALCOHOL

Rudolf Ruegg, Bottmingen, and Ulrich Schwieter, Reinach, Basel, Switzerland, assignors to Hoffmann-La Roche, Inc., Nutley, N.J., a corporation of New Jersey

No Drawing. Filed Nov. 12, 1963, Ser. No. 323,156
Claims priority, application Switzerland, Nov. 16, 1962, 13,430/62; May 17, 1963, 6,208/63
Int. Cl. C07f *9/54*; C07c *47/20*
U.S. Cl. 260—606.5 10 Claims

A process for preparing useful carotenoids from difficulty crystallizable residues obtained in the preparation of crystalline material which is either vitamin A alcohol or lower alkyl esters thereof wherein the crystallizable material has been separated from the residue by first reacting this residue with a triaryl phosphine to form a phosphonium salt, isolating the phosphonium salt in crystalline form and finally treating the crystalline material with an unsaturated aldehyde.

3,466,336

POLYTHIOETHERS DERIVED FROM ACETYLENIC COMPOUNDS AND H_2S

Wolfgang H. Mueller, Elizabeth, and Alexis A. Oswald, Mountainside, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Filed Apr. 6, 1966, Ser. No. 540,483
Int. Cl. C07c *149/12*
U.S. Cl. 260—609 9 Claims

A process for preparing terminally difunctional polythioether polyadducts having a minimum of six repeating units useful in mastic compositions which comprises reacting hydrogen sulfide with at least an equimolar amount of an acetylene in the liquid phase. Dependent on the excess of acetylene over hydrogen sulfide, the polymers contain thiol and/or vinyl end groups.

3,466,337

REGENERATION OF PHENOL FROM BISPHENOL A AND BYPRODUCTS

William E. Smith and Fred W. Neumann, Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Jan. 30, 1967, Ser. No. 612,365
Int. Cl. C07c *37/00*
U.S. Cl. 260—621 3 Claims

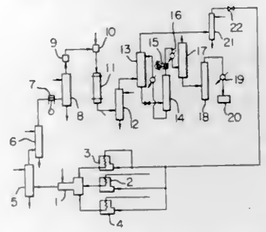
Bisphenol A and isomers and byproducts obtained in its preparation are decomposed by heating with an acid to form phenol and other products. By distilling phenol from the reaction mixture substantially as it is formed, up to about 1.5 moles of phenol per mole of bisphenol A or equivalent thereof can be obtained.

3,466,338

PROCESS FOR PRODUCING VINYL CHLORIDE

Kyozo Kaneko, Tadahiro Matsuzawa, and Hideo Okouchi, Niigata-shi, and Takao Nishimura, Yokohama, and Yukimasa Yamamoto, Nishinomiya-shi, Japan, assignors to Japan Gas-Chemical Company, Inc., Chiyoda-ku, Tokyo, Japan, a corporation of Japan

Filed July 30, 1965, Ser. No. 476,130
Claims priority, application Japan, July 17, 1965, 40/43,283
Int. Cl. C07c *21/04, 11/24*
U.S. Cl. 260—656 4 Claims



The invention provides an improvement in a process for producing vinyl chloride by directly reacting hydrogen chloride and a gas containing dilute acetylene produced by thermal cracking of hydrocarbons such as propane and naphtha without concentration. The improvement resides in effecting absorption and recovery of higher acetylenes from the starting material gas and recovering vinyl chloride from the reaction product gas by utilizing particular kerosenes.

3,466,339

CONVERSION OF ACROLEIN AND METHACROLEIN INTO THE CORRESPONDING UNSATURATED ALCOHOLS

Coenraad J. Duyverman, Sittard, Netherlands, assignor to Stamicarbon N.V., Heerlen, Netherlands

No Drawing. Filed Aug. 13, 1965, Ser. No. 479,610
Claims priority, application Netherlands, Aug. 18, 1964, 6409479
Int. Cl. C07c *29/14*
U.S. Cl. 260—638 2 Claims

A process for the reduction of acrolein or methacrolein to the corresponding unsaturated alcohols is described wherein the reduction takes place in the liquid phase using a copper of cadmium soap as the catalyst.

3,466,340

ALCOHOL PURIFICATION PROCESS

Harry S. Leach and Johnny L. Slate, Texas City, Tex., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Filed May 29, 1967, Ser. No. 642,200
Int. Cl. C07c *29/24, 27/26*
U.S. Cl. 260—643 6 Claims

Removal of iron carbonyls from streams by using weak base ion exchange resins containing primary and secondary amino groups and mixtures thereof.

3,466,341

PROCESS FOR THE PREPARATION OF TRIFLUOROMETHANE

Heinrich Pauksch, Langenhagen, and Joachim Massonne, Hannover, Germany, assignors to Kali-Chemie Aktiengesellschaft, Hannover, Germany, a corporation of Germany

No Drawing. Filed Mar. 4, 1968, Ser. No. 709,956
Claims priority, application Germany, Mar. 10, 1967, K 61,687
Int. Cl. C07c *17/20, 17/24*
U.S. Cl. 260—653.8 7 Claims

Trifluoromethane is prepared by contacting difluoromonochloromethane or monofluorodichloromethane with aluminum halide suspended in an inert liquid at a temperature of −10 to +150° C. and pressures of 0.2 to 50 atm.

3,466,342

PREPARATION OF 1,1,2,2,3-PENTABROMOPROPANE

Richard T. Dickerson, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Dec. 9, 1965, Ser. No. 512,770
Int. Cl. C07c *17/10, 17/04*
U.S. Cl. 260—658 3 Claims

1,1,2,2,3-pentabromopropane is the principal product obtained when 2-bromopropene, 2,2-dibromopropane, or 1,2,2-tribromopropane is brominated by adding it to an excess of liquid bromine in the presence of an iron halide. Bromination in the reverse order by adding bromine to the starting compound yields a mixture of the pentabromopropane and a tetrabromopropane.

3,466,343

ALKYLATION METHOD

James J. Tazuma, Stow, Ohio, assignor to The Goodyear Tire & Rubber Company, Akron, Ohio, a corporation of Ohio

No Drawing. Continuation of application Ser. No. 629,406, Apr. 10, 1967. This application Dec. 6, 1968, Ser. No. 785,016
Int. Cl. C07c *3/56*
U.S. Cl. 260—671 5 Claims

A method of alkylating a benzenoid or polybenzenoid aromatic compound with an olefin is disclosed. The catalyst employed is a combination comprising an alkyl aluminum dihalide and a polyhalide of a transition metal which is selected from the group of tungsten, tin and antimony. The catalyst is dissolved or suspended in the aromatic compound containing a benzenoid or polybenzenoid structure and the olefin is added to this mixture. The alkylation takes place immediately and in substantial yields at temperatures much lower than those of conventional alkylation processes.

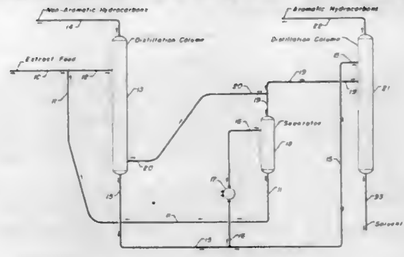
3,466,344

SOLVENT EXTRACTION OF AROMATIC HYDROCARBONS

Richard R. De Graff, Arlington Heights, and Martin W. Perga, Hoffman Estates, Ill., assignors to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

Filed May 29, 1967, Ser. No. 641,771
Int. Cl. C07c *15/00, 7/08*
U.S. Cl. 260—674 10 Claims

Method for fractionating the extract phase from an aromatic solvent extraction operation. The extract is subjected to extractive distillation followed by separate distillation of the solvent-aromatic stream for recovery of the aromatic hydrocarbons. A preflash of the solvent-



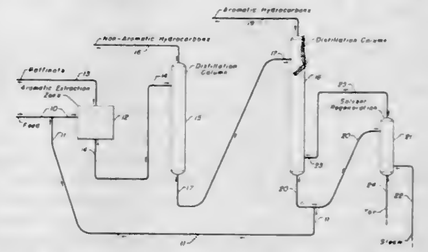
aromatic stream prior to the aromatic recovery column is effectively utilized.

3,466,345

AROMATIC HYDROCARBON RECOVERY PROCESS

Richard R. De Graff, Arlington Heights, and Martin W. Perga, Hoffman Estates, Ill., assignors to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

Filed May 29, 1967, Ser. No. 641,774
Int. Cl. C07c *15/08, 15/06, 7/08*
U.S. Cl. 260—674 5 Claims



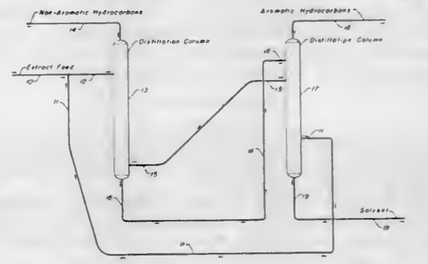
Method for solvent extracting aromatic hydrocarbons from suitable feedstocks such as catalytic reformate and for regenerating the solvent to a quality suitable for reuse in the solvent extraction zone. The preferred solvent comprises sulfolane and the typical aromatic hydrocarbons to be recovered include benzene, toluene, and xylene.

3,466,346

METHOD FOR AROMATIC HYDROCARBON RECOVERY

Richard R. De Graff, Arlington Heights, and Martin W. Perga, Hoffman Estates, Ill., assignors to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

Filed May 29, 1967, Ser. No. 641,773
Int. Cl. C07c *15/02, 7/08*
U.S. Cl. 260—674 5 Claims



Method for extracting aromatic hydrocarbons from a suitable feedstock such as catalytic reformate using a

solvent such as sulfolane. The extracted aromatics are recovered using a combination of extractive distillation followed by fractionation.

3,466,347

COATING COMPOSITIONS COMPRISING DISPERSION GRADE VINYL RESIN, SOLUTION GRADE VINYL RESIN, CARBOXYL CONTAINING ACRYLIC RESIN AND EPOXIDIZED NOVOLAC RESIN FOR ADHERENTLY COATING METAL

Kenneth G. Davis, Wilkinsburg, Pa., assignor to Mobil Oil Corporation, a corporation of New York

No Drawing. Filed Feb. 23, 1966, Ser. No. 529,246

Int. Cl. C08f *29/20, 29/24*

U.S. Cl. 260—837 **11 Claims**

Coatings, especially for sanitary cans and the like, are provided in which a dispersion grade vinyl chloride polymer is dispersed in an organic solvent medium having dissolved therein a solution grade vinyl chloride copolymer, an acrylic copolymer containing free carboxyl groups and an epoxidized novolak resin.

3,466,348

POLYESTER MELT BLENDS

Maria V. Wiener, Akron, Ohio, assignor to The Goodyear Tire & Rubber Company, Akron, Ohio, a corporation of Ohio

No Drawing. Continuation of application Ser. No. 392,315, Aug. 26, 1964. This application Mar. 27, 1967, Ser. No. 626,342

Int. Cl. C08g *39/10, 39/04*

U.S. Cl. 260—860 **3 Claims**

A melt blend of a crystallizable polyester and a flexible, essentially non-crystalline polyester makes good electrical insulation films, fibers, molded products, etc. Both polyesters are saturated, linear and thermoplastic and essentially free from ether linkages, and the acid units of both polyesters are derived from dibasic aromatic acids. The melt blend is formed from 10 to 85 weight percent of the crystallizable polyester, and 90 to 15 weight percent of the flexible polyester. At least 70 mol percent of the glycol units of the crystallizable polyester are derived from a glycol containing 2 to 4 carbon atoms. The remaining glycol units of the crystallizable polyester, if any, are derived from an aliphatic glycol containing up to 6 carbon atoms. The flexible polyester comprises glycol units containing 2 to 12 carbon atoms. The polyesters are melt-blended only so long as necessary, in order to minimize randomization. The melt blend has an intrinsic viscosity of at least 0.5.

3,466,349

PROCESS FOR POLYMERIZING MONOVINYLIDENE AROMATIC HYDROCARBON MONOMER FORMULATIONS

Alva F. Harris, Wilbraham, Mass., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Filed Dec. 6, 1966, Ser. No. 599,366

Int. Cl. C08f *1/74, 7/04, 19/08*

U.S. Cl. 260—886 **19 Claims**

A polymerization process for monovinylidene aromatic hydrocarbon monomer reaction mixtures utilizes a dimeric, trimeric or tetrameric polyketone catalyst.

3,466,350

PROCESS FOR POLYMERIZING MONOVINYLIDENE AROMATIC HYDROCARBON MONOMER FORMULATIONS

Alva F. Harris, Wilbraham, Mass., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Filed Dec. 8, 1966, Ser. No. 600,058

Int. Cl. C08f *1/74, 7/04, 19/08*

U.S. Cl. 260—886 **16 Claims**

A polymerization process involved admixing a dialkyl benzene polymer catalyst with a polymerizable monovinylidene aromatic hydrocarbon reaction mixture and heating the admixture under polymerization conditions. Products are obtained which contain a minimum amount of residual monomer without sacrificing desirable characteristics of the polymer.

3,466,351

CLOSED COMBUSTION CYCLE FOR CEMENT KILNS

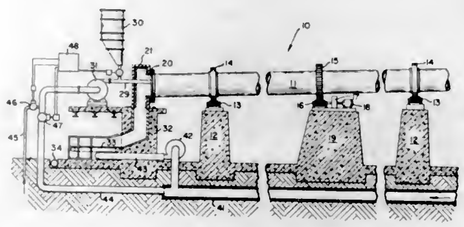
Martin J. La Velle, 2153 Abbey Lane, Campbell, Calif. 95008

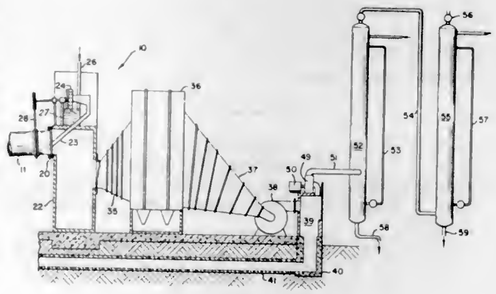
Continuation of application Ser. No. 551,995, May 23, 1966. This application Apr. 1, 1968, Ser. No. 718,018

Claims priority, application France May 8, 1967, 105,607

Int. Cl. C04b *1/02, 7/44*

U.S. Cl. 263—53 **4 Claims**





In heating devices, such as rotary cement kilns, performance can be improved and the spewing of combustion products and dust into the atmosphere can be eliminated by a completely closed combustion process wherein a synthetic gas mixture is continuously circulated within the device with fuel and oxygen added to the circulating synthetic gaseous mixture under combustion conditions to add thermal energy for heating while removing a quantity of the circulating synthetic gaseous mixture to provide for the additional gas volume generated by the combustion of the fuel and oxygen. The removed quantities of said mixtures can be processed to remove undesirable air contaminants or largely recovered as by-products.

3,466,352

PROCESS FOR PRODUCING FIBERS

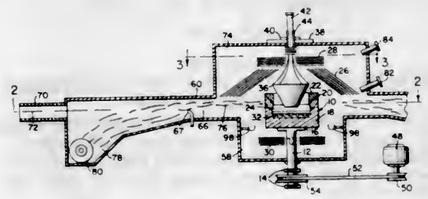
Robert B. Corbett, Mars, Pa., assignor to Corbett Associates, Inc., Mars, Pa., a corporation of Pennsylvania

Continuation of application Ser. No. 465,463, June 21, 1965. This application Dec. 18, 1967, Ser. No. 691,654

Int. Cl. B22d *23/00*

U.S. Cl. 264—7 **6 Claims**

This invention proposes a new and improved method for making attenuated fibers by melting the starting material to convert such material to an extrudible state and then spinning the melted material within a container having a porous, annular sintered section, including interstices through which the extrudible material can be ejected under centrifugal force. As the attenuated fibers emerge through the porous layer they are of a preferred



cross-sectional size and shape and are then projected through a chamber which can be either evacuated or ininclude a preferred composition for modifying the fiber. The process may be continuous and it is especially noted for its ability to produce a very small cross-section fiber exhibiting many of the unexpected properties of fibers.

3,466,353

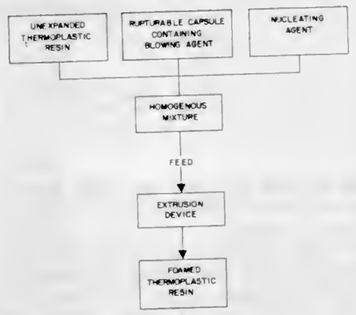
FOAMED RESIN EXTRUSION PROCESS EMPLOYING MICROENCAPSULATED BLOWING AGENTS

Howard M. Turner, Oak Forest, Ill., assignor to Continental Can Company, Inc., New York, N.Y., a corporation of New York

Filed Nov. 29, 1966, Ser. No. 597,528

Int. Cl. B29d *27/00;* **B29h** *7/20*

U.S. Cl. 264—53 **7 Claims**



Foamed thermoplastic polymers such as polystyrene are produced by extruding the thermoplastic resin mixed with rupturable capsules having a suitable blowing agent encapsulated within.

3,466,354

PROCESS FOR FAST CURING ALKALI METAL SILICATE BONDED PRODUCT

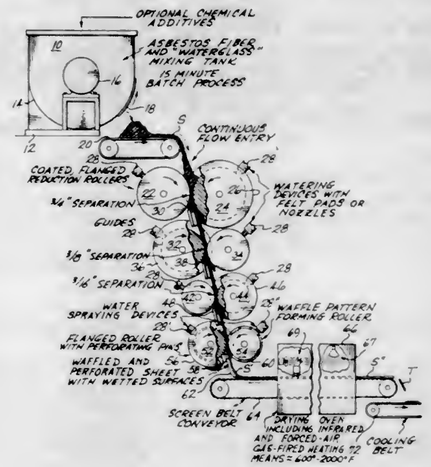
Fred Albert Donner, Seattle, Wash., assignor to Vermiculite Manufacturing Company, Seattle, Wash., a corporation of Washington

Filed Jan. 16, 1967, Ser. No. 609,619

Int. Cl. B28b *11/14*

U.S. Cl. 264—57 **17 Claims**

A method of fast curing a sheet-like mass of mineral fibrous material containing an aqueous solution of an alkali metal silicate as a binder and having a minimum moisture content of 30% by simultaneously puncturing one side of the sheet to form a multitude of perforations while wetting both sides of the sheet to prevent migration



of the binder to the surfaces and then exposing the sheet to a radiant heat source in an oven having an ambient temperature of 600–2000° F. so as to reduce the moisture content to less than 15% in 2–5 minutes time.

3,466,355

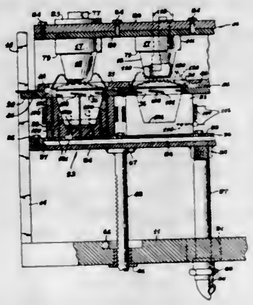
METHOD OF MAKING HEAT FORMED ARTICLE

J. Edward Kostur, Elmhurst, Ill., assignor to Comet Industries, Inc., Bensenville, Du Page County, Ill., a corporation of Illinois

Continuation of application Ser. No. 539,592, Jan. 6, 1966, and a division of application Ser. No. 318,888, Oct. 25, 1963, now Patent No. 3,268,521. This application Jan. 8, 1968, Ser. No. 697,243

Int. Cl. B29c *5/06, 17/04*

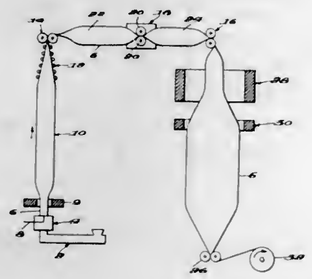
U.S. Cl. 264—89 **4 Claims**



The female die has a shearing edge, and beneath the shearing edge, grooves for forming partial screw-threads. A heated matrix is positioned on one side of the female die and a heated patrix on the other, the plastic to be formed being clamped against the die. The plastic is heated and caused to billow against the patrix by fluid pressure from the matrix prior to being drawn within the matrix by reversal of the pressure. The patrix is inserted into the die and moved against the shearing edge to blank

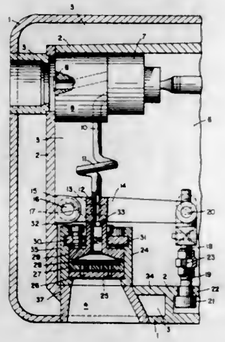
out the article. As the article is removed it bends so that the partial threads are pulled free from the grooves.

3,466,356
METHOD AND APPARATUS FOR MAKING PLASTIC FILM
Frank A. Carlson, Jr., Pittsford, N.Y., and Walter E. Zavitz, Greenville, S.C., assignors to Celanese Corporation, New York, N.Y., a corporation of Delaware
Filed Oct. 27, 1966, Ser. No. 590,089
Int. Cl. B29c *17/04;* B29d *7/24, 23/04*
U.S. Cl. 264—95 9 Claims



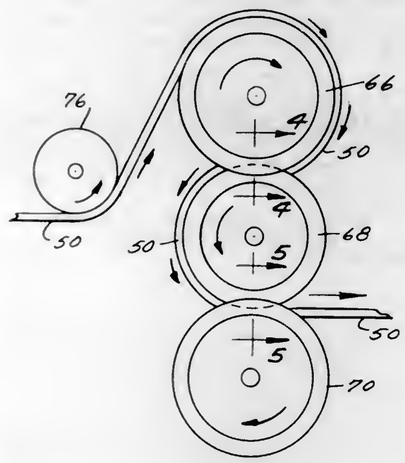
A method for stretching a tubular thermoplastic film is disclosed and claimed which consists of forming a bubble of gas in a tubular film and by means of a sliding pair of pinch rollers, increasing the gas pressure within the bubble by reducing the volume of the bubble and subsequently allowing the gas to leak into a second bubble, called the orientation section. The products produced by the claimed process have a well orientated crystalline structure and may be produced in sheet form and accordingly have utility in many sheeting applications.

3,466,357
METHOD AND APPARATUS FOR SPINNING ORGANIC HIGH POLYMERS
Heinz Schippers, Remscheid, and Karl Ostertag, Wuppertal-Barmen, Germany, assignors to Glanzstoff AG, Wuppertal, Germany
Filed Dec. 7, 1966, Ser. No. 599,782
Claims priority, application Germany, Dec. 18, 1965, V 29,972
Int. Cl. B29f *3/08;* D01d *5/10*
U.S. Cl. 264—176 7 Claims



A method and apparatus for spinning organic polymers in which the melt conveying means and the spinning unit are separately heated by heat conduction over a substantial contact surface. Below the filament outlet and parallel, or substantially parallel, to the emerging filaments, heat counteracting the reflection of the nozzle surface is also supplied over radiation surfaces. Uniformly heating the spinning plate and heating the wall surrounding the emerging filaments makes it possible to spin polymers which otherwise would tend to decompose or afterpolymerize during the process.

3,466,358
METHOD OF MAKING FILTERING MATERIAL FOR CIGARETTES
Paul Adolf Muller, Domaine des Planes Roquebrune S/Argens Var France, Triesenberg, Liechtenstein
Continuation-in-part of application Ser. No. 841,919, Sept. 2, 1959. This application May 22, 1967, Ser. No. 640,255
Claims priority, application Switzerland, May 31, 1966, 7,866/66
Int. Cl. B29c *17/02;* B31f *1/26*
U.S. Cl. 264—287 5 Claims

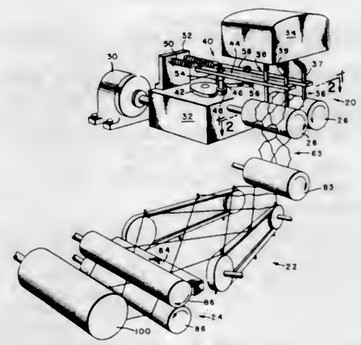


Method for treating paper to render it particularly adapted to be gathered and enclosed in a wrapper to make a filter cord subdividable into efficient cigarette filters. The paper is first moistened to prevent undue tearing in a longitudinal grooving and lateral stretching treatment, which loosens and exposes fibers, by passage through the nip between heated meshing rollers having alternating circumferential ribs and grooves. Subsequent drying time is shortened by maintaining the web in contact with one of the rollers through an appreciable wrap angle on emergence from the nip. The grooving and stretching treatment may be carried out progressively in successive stages by a train of three or more intermeshing rollers arranged to provide at least two nips therebetween.

3,466,359
METHOD OF ORIENTING NET-LIKE NONWOVEN FABRICS
Johannes Balfour van Burleigh and Cornelia Breas, 10 Park Paaschberg, Ede, Netherlands
Original application Apr. 1, 1963, Ser. No. 269,616, now Patent No. 3,365,352, dated Jan. 23, 1968. Divided and this application Dec. 5, 1966, Ser. No. 615,280
Int. Cl. B29c *15/00*
U.S. Cl. 264—290 3 Claims

Net-like nonwoven fabrics of thermoplastic filaments

are oriented in two directions by passing through and



being permanently flattened by nip rolls, producing stronger junctions where filaments intersect.

3,466,360
METHOD OF MAKING FREQUENCY-STABILIZED METAL-CLAD LAMINATES AND ARTICLE
George P. Chipman, Coshocton, Ohio, assignor to General Electric Company, a corporation of New York
No Drawing. Filed Dec. 27, 1965, Ser. No. 516,769
Int. Cl. B32b *31/20, 15/08*
U.S. Cl. 264—346 10 Claims

1. The process of stabilizing the frequency response of a metal-clad cross-linked polyolefin structure which comprises cycling said structure though about six cycles or more between a uniform upper temperature just below the temperature at which incipient melting occurs and a uniform temperature of about 0° F. until said frequency response remains essentially constant.

3,466,361
TECHNETIUM-99m LABELED CHELATES
Powell Richards, Bayport, and James Baranosky, Stony Brook, N.Y., assignors to the United States of America as represented by the United States Atomic Energy Commission
No Drawing. Filed Apr. 18, 1968, Ser. No. 722,208
Int. Cl. A61k *27/04;* C09k *3/00*
U.S. Cl. 424—1 3 Claims

A process for producing technetium-99m complexes having useful genito-urinary radio-pharmacological properties wherein technetium-99m is joined with calcium-organo chelates in the presence of ferrous sulfate.

3,466,362
WATER-DISPERSIBLE, MEDICAMENT-CONTAINING COMPOSITIONS USEFUL AS VETERINARY MEDICINES
Heinrich Kläui, Riehen, Walter Rehm, Basel, and Wolfgang Schlegel, Riehen, Switzerland, assignors to Hoffmann-La Roche Inc., Nutley, N.J., a corporation of New Jersey
No Drawing. Filed May 13, 1965, Ser. No. 455,582
Claims priority, application Switzerland, May 22, 1964, 6,732/64
Int. Cl. A61k *21/00, 27/00*
U.S. Cl. 424—14 7 Claims

Water-dispersible compositions in the form of finely divided particles, the major portion of which particles have a diameter of between about 50 and 2,000μ are described, such compositions containing (a) an active medicament, (b) a polyethylene glycol which is solid at normal room temperatures and (c) an amphiphilic agent which is solid at normal room temperatures selected from the group consisting of higher fatty alcohols, higher fatty acids and monoglycerides of higher fatty acids.

3,466,363
METHOD OF TREATING ANIMALS INFECTED WITH LARGE ROUNDWORMS USING COBALT ARSENIC COMPOUNDS
Orley J. Mayfield, Charles City, Iowa, assignor, by mesne assignments, to Kewanee Oil Company, Bryn Mawr, Pa., a corporation of Delaware
No Drawing. Filed July 23, 1965, Ser. No. 474,491
Int. Cl. A61k *25/00*
U.S. Cl. 424—295 1 Claim

This invention comprises a composition suitable for any method of treating animals infected with large roundworms comprising a feed composition containing water and cobalt arsenate, cobalt arsanilate, or cobalt phenylarsonate.

3,466,364
METHOD OF TREATING ALOPECIA AND NOVEL COMPOSITIONS THEREFOR
Hidehiko Takahashi, Musashino-shi, Shinichiro Kaga, Tokyo, and Sadao Hirota, Chigasaki-shi, Japan, assignors to Daiichi Seiyaku Company Limited, Chuo-ku, Tokyo, Japan, a corporation of Japan
No Drawing. Filed Sept. 10, 1965, Ser. No. 486,520
Claims priority, application Japan, Nov. 30, 1964, 39/67,329
Int. Cl. A61k *7/06*
U.S. Cl. 424—70 9 Claims

Alopecia is treated by the topical application of (3-carbomethoxypropyl) trimethyl ammonium chloride and a diluent.

3,466,365
ANTIVIRAL COMPOSITIONS AND METHOD OF USE
Walter Schlesinger, Westfield, N.J., assignor to White Laboratories, Inc., Kenilworth, N.J., a corporation of New Jersey
No Drawing. Continuation-in-part of application Ser. No. 547,749, May 5, 1966, which is a continuation-in-part of application Ser. No. 415,199, Dec. 1, 1964. This application July 24, 1967, Ser. No. 655,308
Int. Cl. A61k *27/00*
U.S. Cl. 424—78 5 Claims

Described are formulations for topical and parenteral administration comprising as the essential active ingredient an alkali metal polyvinyl sulfate having an average molecular weight of from about 300 to about 500,000 and wherein the degree of sulfation is from about 25 to about 95 percent. Described as preferred alkali metal polyvinyl sulfates are sodium polyvinyl sulfate and potassium polyvinyl sulfate.

Also described is the use and method of using these formulations as antiviral agents. In particular are described the method of combatting herpes simplex viral infections by administration of sodium polyvinyl sulfate and the method of reducing A_2 influenza viral infections by administration of potassium polyvinyl sulfate.

3,466,366
METHOD OF CONTROLLING BACTERIA WITH AN ORGANOBISMUTH ETHYLENIC CARBOXYLATE AND POLYMER THEREOF
John R. Leebrick, Roselle Park, N.J., assignor to M & T Chemicals Inc., New York, N.Y., a corporation of Delaware
No Drawing. Original application May 15, 1963, Ser. No. 280,720, now Patent No. 3,350,436, dated Oct. 31, 1967. Divided and this application Oct. 21, 1966, Ser. No. 600,312
Int. Cl. A61k *27/00;* C09d *5/14*
U.S. Cl. 424—80 10 Claims

This invention relates to a process for controlling the growth of bacteria with an organobismuth polymer.

3,466,367
PREPARATION OF GROWTH REGULATING COMPOSITIONS COMPRISING THYMUS EXTRACTS
Karl-Heinz Jaeger, Freiburg, Baden, and Hellmut Mittenzwei, Munich, Bavaria, Germany, assignors to Solco Basel AG, Birsfelden, Basel-Land, Switzerland, a corporation of Switzerland
No Drawing. Continuation of application Ser. No. 344,181, Feb. 12, 1964. This application Aug. 14, 1968, Ser. No. 754,106
Claims priority, application Germany, Apr. 27, 1954, J 8,578
Int. Cl. A61k *17/00*
U.S. Cl. 424—95 8 Claims

Novel growth regulating compositions derived from the thymus of vertebrata, especially warm blooded animals, and to a novel process for the preparation of the said growth regulating compositions.

3,466,368
CLEAVAGE OF HUMAN GAMMA GLOBULIN BY MEANS OF CYANOGEN BROMIDE
Michael Sela and Ruth Arnon, Rehovoth, and Miriam Lahav, Tel-Aviv, Israel, assignors to the United States of America as represented by the Secretary, Department of Health, Education, and Welfare
Filed June 2, 1967, Ser. No. 643,165
Int. Cl. A61k *23/00, 27/00;* C07g *7/00*
U.S. Cl. 424—177 9 Claims

A method of cleaving human immunoglobulin by reacting it with CNBr. The cleavage product, denoted $F(ab'')_2$, retains the beneficial properties of the native material, but is free of the well-known disadvantages which preclude the latter from intravenous use.

3,466,369
SATURATED HYDROCARBON IMIDAZOLYL PHOSPHORUS COMPOUNDS AS FUNGICIDES
Paul B. Budde and Henry Tolkmith, Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
No Drawing. Filed Feb. 1, 1966, Ser. No. 523,852
The portion of the term of the patent subsequent to Aug. 2, 1983, has been disclaimed and dedicated to the Public
Int. Cl. A01n *9/36;* C07f *9/22*
U.S. Cl. 424—200 8 Claims

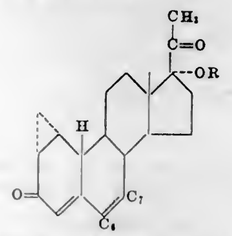
Imidazolyl phosphorothioates wherein the phosphorus atom additionally bears (a) an alkyl or cyclohexyl group and (b) a heteroparaffinic amido, imidazole, or disubstituted amino group in which one substituent is methyl or ethyl and the other substituent is lower alkyl, phenyllower-alkyl, furfuryl, tetrahydrofurfuryl, or 4-pyridylmethyl, the imidazole radicals being optionally substituted with one member selected from lower alkyl and phenyl. These compounds are useful as fungicides. Also disclosed are compositions incorporating these compounds and methods employing these compounds or compositions for use as fungicides.

3,466,370
PROCESS FOR TREATING HELMINTH INFESTATIONS USING BENZANILIDE DERIVATIVES AND COMPOSITIONS FOR USE THEREIN
Arthur William James Broome, Neville Stanton Crossley, and William Glynne Moss Jones, Macclesfield, England, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain
No Drawing. Filed July 30, 1964, Ser. No. 386,392
Claims priority, application Great Britain, Aug. 14, 1963, 32,130/63
Int. Cl. A01n *9/20*
U.S. Cl. 424—233 11 Claims

Compositions and process for treating helminth infestations in animals wherein the active coponent is a benzanilide derivative such as 3,3'5,5',6-pentachloro-2,2'-dihydroxybenzanilide.

3,466,371
1,2α-METHYLENE-STEROIDS AND PROCESS FOR THEIR PRODUCTION
Rudolf Wiechert and Friedmund Neumann, Berlin, Germany, assignors to Schering AG, Berlin, Germany
No Drawing. Filed Nov. 7, 1966, Ser. No. 592,669
Claims priority, application Germany, Nov. 9, 1965, Sch 37,994
Int. Cl. A61k *27/00;* C07c *169/32*
U.S. Cl. 424—240 9 Claims

A compound of the formula:



wherein R represents a member selected from the group consisting of hydrogen and acyl and



represents a single or a double bond.

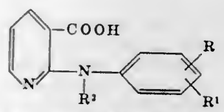
The compounds have an outstanding progestational action and are useful in the treatment of gynecological disorders.

3,466,372
TREATMENT OF INFLAMMATION WITH 4-PHENYL - α - METHYL - PHENYL ACETIC ACID, ITS SALTS, ESTERS OR AMIDE DERIVATIVES
Tsung-Ying Shen, Westfield, and Conrad P. Dorn, Jr., Plainfield, N.J., assignors to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey
No Drawing. Original application May 7, 1964, Ser. No. 365,790. Divided and this application Apr. 14, 1967, Ser. No. 647,302
Int. Cl. A61k *27/00*
U.S. Cl. 424—248 13 Claims

A method of treating inflammation by administering to a patient from 1–2,000 mg./day of 4-phenyl-α-methyl-phenyl-acetic acid or its salts, esters or amide derivatives thereof.

3,466,373
ANALGESIC AND ANTI-INFLAMMATORY COMPOSITION CONSISTING ESSENTIALLY OF 2-(2,3-XYLYLAMINO)-NICOTINIC ACID
Charles Hoffmann, Enghien-les-Bains, Val-d'Oise, and André Faure, Paris, France, assignors to Laboratories U.P.S.A., Gennevilliers, France, a corporation of France
No Drawing. Continuation-in-part of application Ser. No. 418,539, Dec. 15, 1964. This application June 19, 1968, Ser. No. 738,075
Claims priority, application Great Britain, Dec. 19, 1963, 50,274/63; Mar. 25, 1964, 12,723/64; France, Sept. 23, 1966, 77,487
Int. Cl. A61k *27/00*
U.S. Cl. 424—266 1 Claim

Pharmaceutical compositions containing a compound of Formula I



I

have analgesic and anti-inflammatory activity useful in the treatment of gout, rheumatic pelvi-spondylitis, polyarthritis, inflammatory rheumatism of other origins, arthritis of the vertebral column and limbs, and rheumatic pains such as occur in lumbago, torticollis and phlebitis. In the formula, R is hydroxy, lower alkyl or halo-substituted-lower-alkyl, for instance, trifluoromethyl, lower alkoxy, carboxy, carboalkoxy from lower alkyl groups or halogen. R^1 is hydrogen, hydroxy, lower alkyl or haloalkyl of 1–4 carbon atoms, alkoxy from lower alkyl groups, carboxy, carboalkoxy from lower alkyl groups or halogen. R^2 is hydrogen or alkanoyl of 1–4 carbon atoms. Also non-toxic salts may be used.

3,466,374
PROCESS FOR CONTROLLING INSECTS WITH 2-BUTYNYLENE 1,4-BIS(PHENYLCARBAMATES)
Herbert Q. Smith, King of Prussia, and Edward Everett Ivy, Devon, Pa., assignors to Pennsalt Chemicals Corporation, Philadelphia, Pa., a corporation of Pennsylvania
No Drawing. Filed Feb. 16, 1966, Ser. No. 527,771
Int. Cl. A01n *9/20;* C07c *125/06*
U.S. Cl. 424—300 4 Claims

Control of insects with 2-butynylene bis(N-arylcarbamates).

3,466,375
TREATMENT OF EPILEPTIC SEIZURES WITH 2-AMINO - 4' - (DIETHYLAMINO) - 2' - METHYLBENZANILIDE
Gerhard Satzinger, Gundelfingen, Freiburg, Germany, assignor to Warner-Lambert Pharmaceutical Company, Morris Plains, N.J., a corporation of Delaware
No Drawing. Original application July 5, 1966, Ser. No. 562,486. Divided and this application Aug. 20, 1968, Ser. No. 753,895
Int. Cl. A61k *27/00;* C07c *87/28*
U.S. Cl. 424—324 2 Claims

A process for minimizing the occurrence of epileptic seizures in animals which comprises the administration of 2-amino-4'-(diethylamino)-2'-methyl-benzanilide.

3,466,376
ORTHO - ALKENYLPHENOXY - HYDROXYALKYL DERIVATIVES IN THE TREATMENT OF CARDIAC AND VASCULAR DISEASES
Arne Elof Brandstrom, Goteborg, Hans Rudolf Corrodi, Molndal, and Bengt Arne Hjalmar Ablad, Goteborg, Sweden, assignors to Aktiebolaget Hassle, Goteborg, Sweden, a company of Sweden
No Drawing. Continuation-in-part of application Ser. No. 521,436, Jan. 18, 1966. This application June 17, 1966, Ser. No. 558,226
Int. Cl. A61k *27/00;* C07c *93/08*
U.S. Cl. 424—330 14 Claims

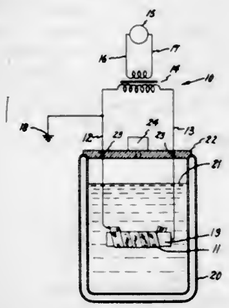
The specification discloses ortho, meta, and para-alkenylphenoxy-hydroxyalkyl derivatives of isopropylamine, specifically, allyl, 2-chloroallyl, 3-chloroallyl, and propenyl substituted phenoxy-hydroxy-isopropylaminopropanes, their preparation, pharmaceutical compositions containing these compounds, and the use thereof in the treatment of cardiac and vascular diseases.

3,466,377
ARALKYL ALIPHATIC SULFOXIDE ORAL, PARENTERAL AND RECTAL DOSAGE UNITS FOR PAIN, FEVER AND INFLAMMATION
Clifford H. Shunk and Tsung-Ying Shen, Westfield, N.J., assignors to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey
No Drawing. Continuation-in-part of application Ser. No. 458,392, May 24, 1965. This application Aug. 1, 1966, Ser. No. 569,054
Int. Cl. A61k *27/00*
U.S. Cl. 424—337 15 Claims

Method of treating inflammation and anti-inflammatory compositions containing an aralkyl aliphatic sulfoxide.

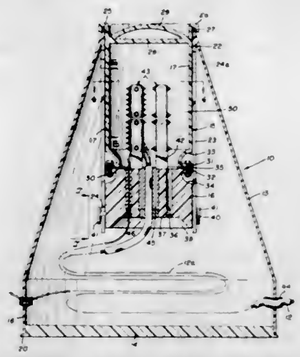
ELECTRICAL

3,466,378
ELECTRICAL INSULATION AND METHOD OF TREATMENT
Kenneth N. Mathes, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York
Filed Aug. 24, 1966, Ser. No. 574,659
Int. Cl. H01b *9/06, 7/34*
U.S. Cl. 174—15 12 Claims



A method is described for forming a stable porous, fibrous, electrical insulation which comprises impregnating the insulation with liquid hydrogen thereby decreasing its dissipation factor with time, and maintaining the insulation in liquid hydrogen. A stable electrical insulation is described which comprises such insulation impregnated with liquid hydrogen, and immersed in liquid hydrogen. A stable insulated conductor is also described which has the above type of insulation impregnated with liquid hydrogen, and immersed in liquid hydrogen.

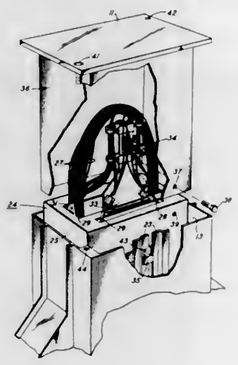
3,466,379
UNDERGROUND UTILITY CABLE OR CONDUIT TERMINAL
Karl L. Lohman, 2100 Whitehall Drive, Winter Park, Fla. 32789
Filed Aug. 25, 1967, Ser. No. 663,253
Int. Cl. H02g *9/00, 3/10*
U.S. Cl. 174—38 6 Claims



A terminal for receiving electrical or telephonic lines or cable or flexible conduit which can buried under-

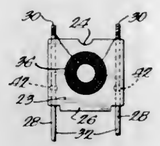
ground and still be readily accessible from the surface. It is designed so that pressure of surrounding ground will tend to keep it buried. It is further designed with a unit to which the cables are connected that can be readily withdrawn from a normal lower enclosed position within an outer housing to a readily exposed position accessible from the surface to facilitate changes in connections or maintenance. This connection unit is of such a fluid-tight design that pressurized cable or conduit can be connected thereto and the pressure will be maintained.

3,466,380
UNDERGROUND DISTRIBUTION CLOSURE
Robert G. Baumgartner, Essex, and Harry J. Graff, Timonium, Md., assignors to Bell Telephone Laboratories, Incorporated, Murray Hill and Berkeley Heights, N.J., a corporation of New York
Filed July 12, 1967, Ser. No. 652,941
Int. Cl. H02g *9/02*
U.S. Cl. 174—38 **4 Claims**



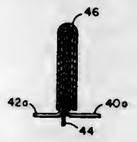
A cable splice closure consisting of a splice platform in a watertight bell jar is mounted for vertical movement between the mouth of a recessed well and its remote interior. The well mouth is installed flush with ground level and when lowered the bell jar top seats on the well rim.

3,466,381
MOUNTED CIRCUIT ELEMENT
Thomas A. Boehmke, Crystal Lake, Ill., assignor to Coilcraft, Inc., Cary, Ill., a corporation of Illinois
Filed Mar. 20, 1967, Ser. No. 624,279
Int. Cl. H01f *15/02;* **H05k** *5/02*
U.S. Cl. 174—52 **12 Claims**



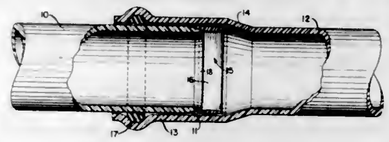
An electronic circuit component mounted to a rectangular thin plastic substrate having parallel terminal wires extending along opposite edges thereof and beyond the substrate at each end, the leads of the component being soldered to one pair of the projecting ends and the other pair being adapted for insertion in a printed circuit board, the whole but for the other pair being encapsulated in a plastic material.

3,466,382
CONTROLLED IMPEDANCE BUS BAR
Alfred J. Rocklitz, St. Paul, Minn., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed Feb. 29, 1968, Ser. No. 709,259
Int. Cl. H01b *11/06;* **H02q** *3/02*
U.S. Cl. 174—72 **7 Claims**



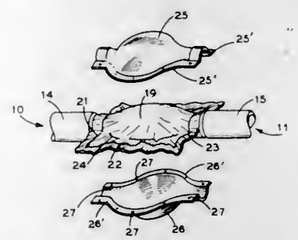
A design of and a method of forming a bus bar for an electrical power distribution system of either DC or high-frequency, short-pulse-duration signals. The bus bar utilizes micro-miniature fabrication techniques to achieve a controlled impedance characteristic and is particularly adapted for use with a connector panel assembly utilizing back panel wiring by an automatic Wire-Wrap machine.

3,466,383
PLASTIC CONDUIT JOINT
Arthur L. Decker, Baton Rouge, La., assignor to Ethyl Corporation, New York, N.Y., a corporation of Virginia
Filed Dec. 12, 1966, Ser. No. 601,093
Int. Cl. H02g *1/14*
U.S. Cl. 174—84 **3 Claims**



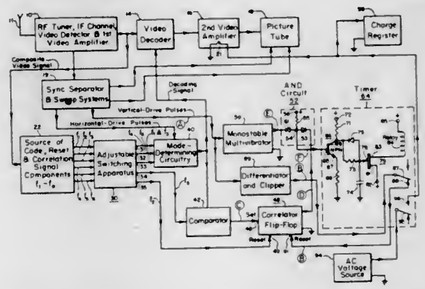
This joint is used in electrical conduits made from a plastic material. The joint is provided with an annular insert having a rounded or other non-engaging interior surface. The insert is placed between the end of the straight cylindrical, or spigot, conduit member and the bottom of the belled portion of the belled end conduit member. The insert prevents hang up of the forward end of either electrical wires or a "fish tape" used to pull the wires through made-up plastic electrical conduit having joints therein.

3,466,384
WATERPROOF CABLE JOINT
Helmut Martin, Hannover, Germany, assignor to Kabel- und Metallwerke Gutehoffnungshutte Aktiengesellschaft, Hannover, Germany, a corporation of Germany
Filed Mar. 29, 1968, Ser. No. 717,279
Claims priority, application Germany, Apr. 1, 1967, K 61,877
Int. Cl. H02g *15/08, 15/24*
U.S. Cl. 174—92 **4 Claims**



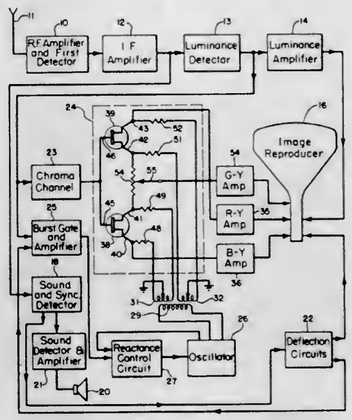
A joint construction for electrical cables having a high degree of impermeability to the transmission of water vapors by enclosing the joint in a metal foil portions seamed welded together and to the cable sheaths.

3,466,385
CORRELATION TESTING ARRANGEMENT FOR A SUBSCRIPTION TELEVISION RECEIVER
Melvin C. Hendrickson, Elmhurst, Ill., assignor to Zenith Radio Corporation, Chicago, Ill., a corporation of Delaware
Filed June 13, 1967, Ser. No. 645,693
Int. Cl. H04n *1/44*
U.S. Cl. 178—5.1 **10 Claims**



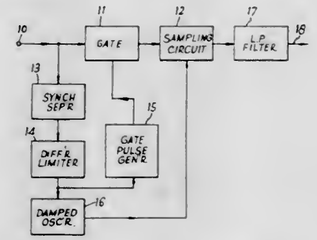
A series of separate time-spaced correlation tests, occurring during a testing period, are made to conclusively determine if a subscription television receiver is appropriately adjusted as required to achieve decoding. If all of the tests indicate correct correlation, a control effect is developed that remains at a constant amplitude throughout the testing period. When the receiver is properly positioned, each test effects the actuation of a multicondition mechanism to its set operating condition from its reset condition in which it is established at a reset time occurring just prior to each test. The output signal of the mechanism is rectangular shaped since its amplitude changes with each change in operating condition. The amplitude variations are eliminated, in order to provide the control effect, by inhibiting the output signal during the intervals from each reset time to the immediately succeeding correlation test.

3,466,386
COLOR DETECTOR
Fleming Dias, Chicago, Carl G. Eilers, Oak Park, and Jouke N. Rypkema, Lombard, Ill., assignors to Zenith Radio Corporation, Chicago, Ill., a corporation of Delaware
Filed Dec. 30, 1966, Ser. No. 606,280
Int. Cl. H04m *5/38, 5/44*
U.S. Cl. 178—5.4 **6 Claims**



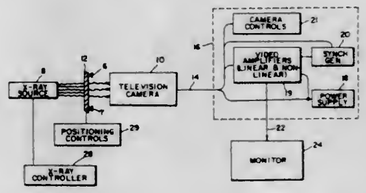
The specification discloses a color demodulator which utilizes a pair of unijunction transistors with a resistor connecting output terminals of each transistor. The color signal is applied to the inputs of both transistors simultaneously. The reference signals are applied across the output terminals of the transistors. The $R-Y$ and $B-Y$ signals are obtained at the output terminals of the transistors, and the $G-Y$ is obtained from a tap on the intermediate resistor.

3,466,387
SOUND DEMODULATOR FOR TELEVISION RECEIVER
Eric Raymond Rout, Reigate, Surrey, England, assignor to The Marconi Company Limited and Standard Telephones & Cables Limited, both of London, England
Filed Dec. 16, 1966, Ser. No. 602,243
Claims priority, application Great Britain, Jan. 19, 1966, 2,545/66
Int. Cl. H04n *7/04, 7/06, 5/60*
U.S. Cl. 178—5.8 **4 Claims**



A demodulator system for the recovery of sound information from a television signal is described. The sound accompanies the television signal in the form of a distinct pulse situated between the sync pulse and the end of the blanking interval (i.e., on the back porch). The sound modulation to be recovered is characterized by the position of the distinct pulse with reference to a recurring feature in the video signal such as one edge of the sync pulse. Actual recovery, or demodulation, is effected by separating the back porch portion of the video signal containing the sound pulse and supplying it to a sampling circuit together with a sine wave derived from a damped oscillator. The output of the sampling circuit constitutes a series of samples representative of the sound information and occurring at the line scanning rate and is then passed through a low pass filter to the audio output stages.

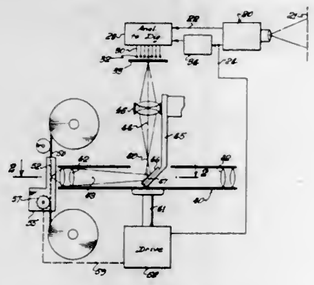
3,466,388
X-RAY TELEVISION INSPECTION SYSTEM WITH SELENIUM CAMERA TUBE TARGET
Robert C. McMaster, Jay P. Mitchell, and Merle L. Rhoten, Columbus, Ohio, assignors to The Ohio State University Research Foundation, a corporation of Ohio
Continuation of application Ser. No. 162,500, Dec. 29, 1961. This application Oct. 13, 1967, Ser. No. 697,249
Int. Cl. H04n *7/02*
U.S. Cl. 178—6 **6 Claims**



A closed circuit television system that provides a continuous in-motion high contrast enlarged X-ray image for remote viewing and inspection of the specimen or mate-

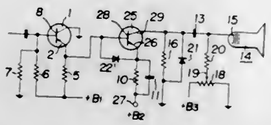
rial. A modified camera tube is provided having a selenium target of a selected thickness, an intensifier layer, and a window of low absorption material. The system is operable in a positive or negative mode.

3,466,389
DIGITAL SCENE DATA RECORDING AND DISPLAY SYSTEM
Robert S. Neiswander, Santa Barbara, and Walter Rhiner, Berkeley, Calif., assignors of The TE Company, Santa Barbara, Calif., a corporation of California
Filed Dec. 15, 1966, Ser. No. 602,038
Int. Cl. H04n *5/84;* **G11b** *7/00;* **H04l** *3/00*
U.S. Cl. 178—6.7 **19 Claims**



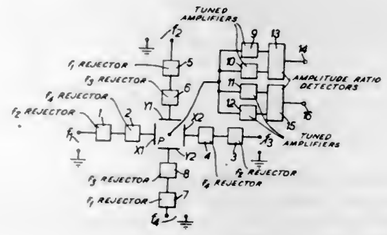
Numerical information associated with a scene, which may be two-dimensional, is recorded in spatial relation corresponding to the scene. The information is recorded in digital form, permitting digital readout. The digital code is so selected that the visual appearance of the record corresponds to the scene, constituting an analog representation from which the numerical information is recoverable visually in at least approximate form. Illustrative apparatus for recording and reading such codes is described, together with illustrative codes, which may be binary or other, and may utilize different colors for respective channels of information.

3,466,390
PROTECTIVE DEVICE FOR TRANSISTOR TELEVISIONS
Tatsuya Inamiya and Goro Suzuki, Tokyo, Masaru Tanikawa, Fujisawa-shi, and Takao Matsui, Yokohama-shi, Japan, assignors to Tokyo Shibaura Electric Co., Ltd., Kawasaki-shi, Japan, a corporation of Japan
Filed Mar. 18, 1965, Ser. No. 440,817
Claims priority, application Japan, Mar. 24, 1964, 39/16,076
Int. Cl. H04n *3/16, 5/44*
U.S. Cl. 178—7.5 **1 Claim**



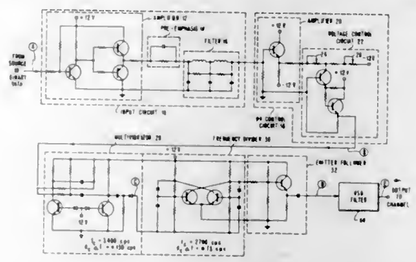
A protective device for transistorized television receivers comprising an image amplifying output transistor to amplify image signals, a load circuit connected to the collector electrode of this transistor, a cathode ray tube connected to the load circuit and a diode connected in parallel with the load circuit. The diode is normally biased so that it will exhibit a high impedance to the image signals.

3,466,391
ELECTRICAL POSITION RESOLVER EMPLOYING CAPACITIVE PROBE COUPLED TO RESISTIVE LAYER CONTAINING TWO PAIRS OF CONDUCTIVE STRIPS ENERGIZED BY FOUR DIFFERENT FREQUENCY SIGNALS
Alfred Brian Edwin Ellis, Essex, England, assignor to The Marconi Company Limited, London, England, a British company
Filed Aug. 21, 1967, Ser. No. 662,179
Claims priority, application Great Britain, Sept. 7, 1966, 40,056/66
Int. Cl. G01r *27/26*
U.S. Cl. 178—18 **3 Claims**



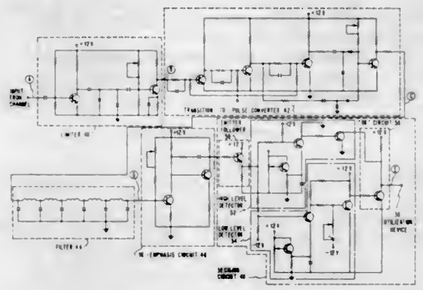
Electrical position resolvers normally have a resistive layer to which two pairs of parallel strips are connected. Two different frequency signals are applied between the strip of each pair. A probe, capacitively coupled to the layer, is moved across it and its position is determined by the amplitude of the two signals it picks up. Errors are caused by variation of the distance (and thus the coupling) between the probe and the layer. The invention applies four different frequency signals to the strips and derives from the probe two output signals independent of the capacity coupling, one proportional to the amplitude ratio of two of the signals and the other proportional to the amplitude ratio of the remaining two.

3,466,392
VESTIGIAL SIDEBAND FREQUENCY SHIFT KEYING MODEM
Richard W. Calfee, San Jose, Emil Hopner and Orman F. Meyer, Los Gatos, and Lynn P. West, San Jose, Calif., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed Mar. 3, 1966, Ser. No. 531,488
Int. Cl. H04l *27/00;* **H04b** *1/00, 1/62*
U.S. Cl. 178—66 **7 Claims**



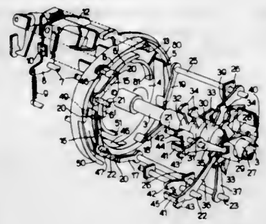
A binary communication system having an oscillator that is frequency modulated by a binary signal that is twice the frequency of the output signal. The output of the oscillator is connected to a vestigial sideband filter

to thereby provide the frequency modulated vestigial sideband output. At the receiving end, there is a detector



that detects transitions to provide an output pulse for each transition which is then filtered to provide an appropriately coded three-level signal.

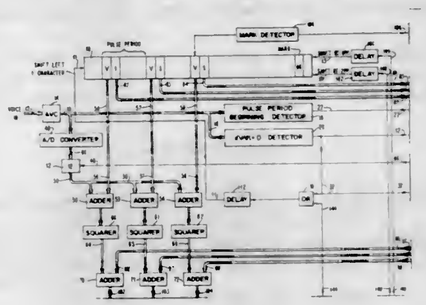
3,466,393
RECEIVING SIGNAL DISTRIBUTOR FOR A HIGH SPEED TELEPRINTER OF THE START-STOP TYPE
Giuseppe Ricciardi and Bruno Sandrone, Ivrea, Italy, assignors to Ing. C. Olivetti & C., S.p.A., Ivrea, Italy, a corporation of Italy
Filed June 2, 1967, Ser. No. 643,230
Claims priority, application Italy, June 7, 1966, 13,216/66
Int. Cl. H04l *15/30, 17/16*
U.S. Cl. 178—89 **7 Claims**



A receiving signal distributor for a high speed teleprinter of the start-stop type, comprises a set of selecting members sequentially settable and associated with a set of transfer members. The transfer members are divided in two groups, the transfer members of a first group being moved with a predetermined delay after the associated selecting members have been so set, the transfer members of the other group being directly moved by the associated selecting members.

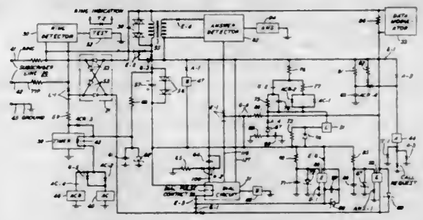
3,466,394
VOICE VERIFICATION SYSTEM
Walter K. French, Montrose, N.Y., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed May 2, 1966, Ser. No. 546,945
Int. Cl. H04m *1/24*
U.S. Cl. 179—1 **14 Claims**

This system provides for identification of an individual by a voiced input which is compared with a previously stored reference or voice signature of that individual. The identification is based upon fine resolution data in the speaker's voice that is distinctive of his voice. This fine resolution data consists of data representative of the first few pitch periods of several pulse periods taken from a particular spoken word. The voiced input is compared with the voice signature and the voiced



input is verified as being the same as the voice signature if the differences are within preselected limits. If within the limits, a verify signal is generated. If not within the limits, a non-verify signal is generated.

3,466,395
AUTOMATIC DATA REPORTING SYSTEM WITH REMOTE POWER DERIVING MEANS
Gerard C. Prins, Long Branch, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Apr. 8, 1966, Ser. No. 541,386
Int. Cl. H04m *11/04*
U.S. Cl. 179—2 **9 Claims**

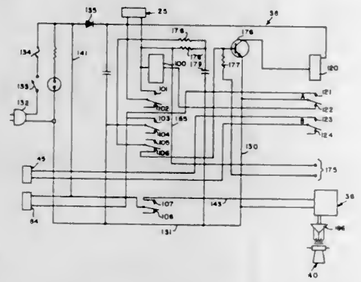


An automatic data alarm reporting system operates over the public dial telephone network completely independent of local power sources. Operating power is derived from the telephone central office battery at low trickle charging levels. The control circuit, responsive to an alarm signal, causes the system in sequential fashion to go off-hook, wait for and detect dial tone, outpulse the dial digits of a central data-gathering station, detect answer tone, connect a data modulator to the telephone line and return to on-hook status after a time-out interval. Repeated attempts to reach the central data-gathering station are made when no answering tone is detected and the alarm persists.

3,466,396
TELEPHONE ANSWERING APPARATUS
Edward B. Guimond, San Jose, Calif., assignor, by direct and mesne assignments, to Quikphone, Inc., a corporation of California
Filed May 23, 1966, Ser. No. 552,270
Int. Cl. H04m *11/10*
U.S. Cl. 179—6 **7 Claims**

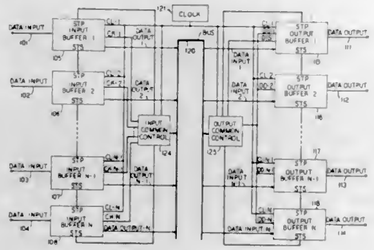
A telephone answering apparatus in which a ringing tone sensing device is energized by an incoming coil to operate a relay. The operation of the relay completes a circuit to operate a handset lifting mechanism to establish

a connection between the subscriber and the incoming caller. The relay also operates a playback mechanism to transmit a pre-recorded message to the incoming caller. The playback mechanism includes an endless tape with a conductor strip to mark the end of the pre-recorded message. The sensing of the conductor strip by a transistor



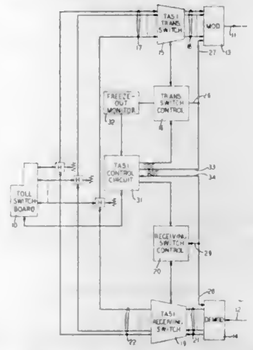
and relay circuit serves to maintain the lifting mechanism in the operated position, deactivate the playback mechanism and to operate a record mechanism to receive an incoming message. An R-C timing circuit turns off the last mentioned circuit after a predetermined time interval to prepare the apparatus for a succeeding incoming call.

3,466,397
CHARACTER AT A TIME DATA MULTIPLEXING SYSTEM
Paul Benowitz, Brooklyn, Michael Ignatowitz, Flushing, and David M. Tutelman, Bronx, N.Y., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Dec. 14, 1965, Ser. No. 513,742
Int. Cl. H04j *3/02*
U.S. Cl. 179—15 **13 Claims**



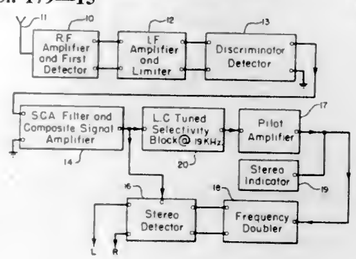
Each input port of a data multiplexing system applies a character at a time rather than a bit at a time to the common highway. After transmitting the character bits, the input port enables the next subsequent port whereby various codes and speeds may be mixed. At the other end of the highway, each output port registers the character from the input port and thereupon enables the next subsequent output port to register the character from its corresponding input port. The receiving end includes equipment for detecting loss of synchronization and for thereupon precluding bit registration by the output ports until synchronization is recovered. A flag bit indicates parity of the character elements and alternatively distinguishes bit sequences for "idle" or "break" conditions from character bits.

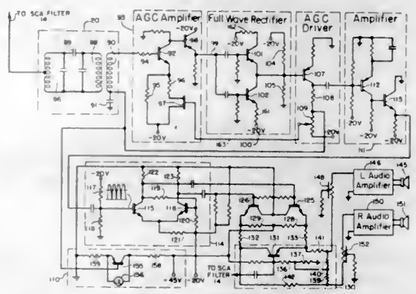
3,466,398
AUTOMATIC LOAD ADJUSTMENT FOR TIME ASSIGNMENT SPEECH INTERPOLATION SYSTEMS
John M. Fraser, Whippany, and Norwood G. Long, Millington, N.J., assignors to Bell Telephone Laboratories, Incorporated, Murray Hill and Berkeley Heights, N.J., a corporation of New York
Filed July 1, 1966, Ser. No. 562,394
Int. Cl. H04j *1/00;* **H04l** *5/00*
U.S. Cl. 179—15 **9 Claims**



A Time Assignment Speech Interpolation (TASI) system is disclosed in which the quality of speech being transmitted, as measured by the freezeout ratio, is monitored and the number of input lines is adjusted so as to maintain the freezeout ratio constant thereby increasing the number of input lines that may be served.

3,466,399
STEREO RECEIVER SUITABLE FOR INTEGRATED CIRCUIT CONSTRUCTION
Fleming Dias, Chicago, Ill., assignor to Zenith Radio Corporation, Chicago, Ill., a corporation of Delaware
Filed Dec. 6, 1966, Ser. No. 599,468
Int. Cl. H04j *3/02*
U.S. Cl. 179—15 **8 Claims**

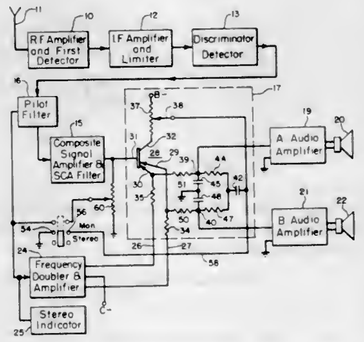




A receiver for stereophonic program signals wherein demodulation of a received stereophonic subcarrier signal

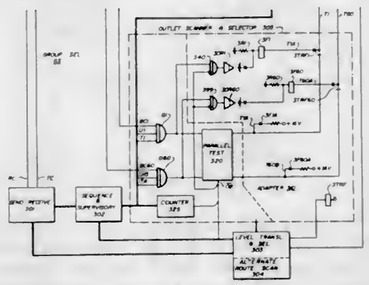
is accomplished by inductorless demodulation circuitry suitable for integrated circuit construction. An L-C type filter, located between the receiver frequency modulation detector and integrated circuit stereo demodulator, and tuned to the pilot carrier frequency, extracts the pilot signal from the composite signal with a sufficiently high signal-to-noise ratio to permit derivation of a continuous-wave demodulation signal at the subcarrier frequency within the integrated-circuit demodulation stages without the provision of further tuned circuitry therein.

3,466,400
COMBINED SYNCHRONOUS DEMODULATOR AND ACTIVE MATRIX
Fleming Dias, Chicago, Ill., assignor to Zenith Radio Corporation, Chicago, Ill., a corporation of Delaware
Filed Dec. 30, 1966, Ser. No. 606,279
Int. Cl. H04j *1/00;* **H03d** *3/18;* **H04n** *5/44*
U.S. Cl. 179—15 **16 Claims**



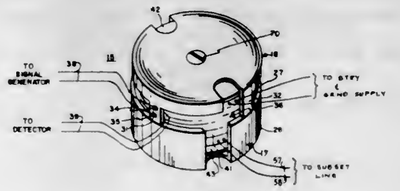
Synchronous demodulator and active matrix network comprising a dual emitter transistor, or a pair of transistors, operating as a push-pull amplifier and separator for a plurality of distinct signals.

3,466,401
TELEPHONE EXCHANGE WITH INTERWORKING OF SWITCHING UNITS OF DIFFERENT TYPES
Alfred S. Cochran, Elmhurst, and Frank B. Sikorski, Des Plaines, Ill., assignors to Automatic Electric Laboratories, Inc., Northlake, Ill., a corporation of Delaware
Filed Mar. 29, 1966, Ser. No. 538,319
Int. Cl. H04m *3/12*
U.S. Cl. 179—16 **11 Claims**



A switching unit having marker controlled crosspoint switching networks, may be added to office having step-by-step switches, to interwork therewith. The crosspoint and step-by-step marker switches are connected to test in parallel for the next switching stages or outgoing trunk circuits. The markers of the common control switching unit have fast electronic scanners for testing and seizing outlets to circuits of its own type. An adapter circuit *in the marker* which is used only when testing outlets to step-by-step type circuits connects a relay to each outlet, corresponding to busy test relays in the step-by-step selectors, with contacts of each relay supplying the test potentials to the electronic scanner, and with the adapter relay arranged to attempt seizure in parallel with any step-by-step selector, so that only one of the units actually seizes the outlet circuit.

3,466,402
APPARATUS FOR MONITORING A PREDETERMINED RANGE OF CURRENT
Frank A. Risky, Cicero, Ill., assignor to Automatic Electric Laboratories, Inc., Northlake, Ill., a corporation of Delaware
Filed Apr. 26, 1966, Ser. No. 545,451
Int. Cl. H04m *3/22*
U.S. Cl. 179—18 **3 Claims**

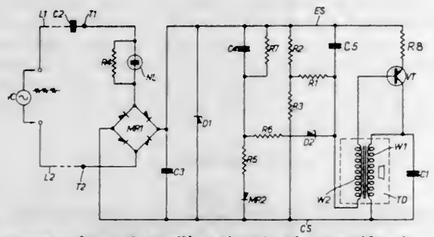


Magnetic apparatus for monitoring the current status in a circuit, wherein a control winding, which in the prefered embodiment comprises a pair of separate sections, is serially connected thereto and mounted within a cup core of linear magnetic material. The cup core is formed by two cup-shaped members having cylindrical portions abutting each other at their open ends, with one of the cylindrical portions having cutouts adjacent the open end to form a plurality of legs for concentrating the flux paths between the cylindrical portions when current flows in the circuit. A pair of apertures formed in one of the legs are threaded with two conductive loops, one being connected to a signal generator and the other to a detector circuit. In this manner two perpendicular non-remanent flux paths are established within the structure of the apparatus. Whenever the current flow in the circuit is of sufficient value to cause the sections of the control winding to create a magnetic saturation of the device, the signal source is decoupled from the detector circuit, whereby the presence or absence of an output from the detector is directly related to the magnitude of the current flow in the monitored circuit.

3,466,403
TELEPHONE CALLING TONE CIRCUIT
John Hayden Combridge, 1 Argyle Road, Cranbrook, Ilford, England, and John Douglas Collingwood, Hillcrest, Clements Road, Chorley Wood, Rickmansworth, England
Filed Oct. 13, 1965, Ser. No. 495,398
Claims priority, application Great Britain, Oct. 15, 1964, 42,137/64
Int. Cl. H04m *1/56*
U.S. Cl. 179—84 **7 Claims**

This specification describes a telephone calling tone circuit in which energy derived from calling signals is used to actuate an electro-acoustic device and continued or repeated application of calling signals causes a sud-

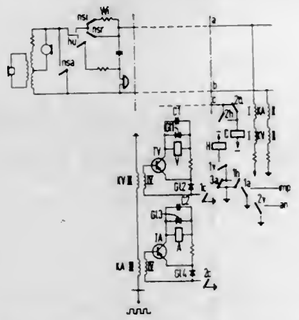
den or progressive increase in the sound level from the electro-acoustic device. This increase may be brought about by an increase in the charge on a capacitor receiving current from the calling signals after rectification, the voltage across the capacitor being applied to a transmitter oscillator to increase the amplitude of oscillation.



3,466,404
PULSE TRANSMISSION ARRANGEMENT FOR TELEPHONE SYSTEMS

Herbert Töpfer, Unterpfaffenhofen, Germany, assignor to Siemens Aktiengesellschaft, Erlangen, Germany

Filed Oct. 21, 1965, Ser. No. 499,413
Claims priority, application Germany, Nov. 18, 1964, S 94,221
Int. Cl. H04m *1/26*
U.S. Cl. 179—90 **5 Claims**

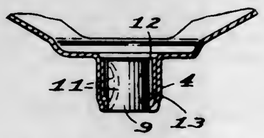


A pulse communication system, for example, for dial selection pulses in telephone systems. A signal is distinguished from a non-signal condition by reducing the current flow in the signal channel to a level different from the current flow in all other conditions.

3,466,405
PERMANENT MAGNET BASKET ASSEMBLY FOR A SPEAKER

Rollin J. Parker, Greenville, Mich., assignor to General Electric Company, a corporation of New York

Filed Dec. 21, 1965, Ser. No. 515,322
Int. Cl. H04r *9/02, 11/06, 13/02*
U.S. Cl. 179—117 **5 Claims**

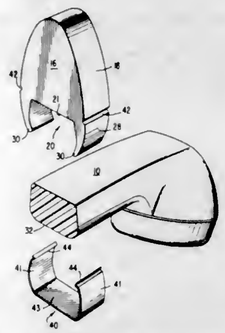


A permanent magnet-basket assembly for a speaker consists essentially only of a permanent magnet and a return path element integral with the basket. The return path element laterally surrounds the permanent magnet and is open at the bottom thereof. The magnet contacts the return path element at a lower extremity thereof and is separated from the return path at an upper extremity thereof to form an air gap to receive the coil of the speaker.

3,466,406
TELEPHONE HANDSET SUPPORT

Lionel A. Davis, 5 Arilla Road, Pymble, New South Wales, Australia

Filed Nov. 8, 1966, Ser. No. 592,777
Claims priority, application Australia, July 8, 1966, 8,045/66
Int. Cl. H04m *1/05*
U.S. Cl. 179—157 **9 Claims**



A handset shoulder support is disclosed which uses a spring clip snapped over the open end of the support to hold it tightly on the handset.

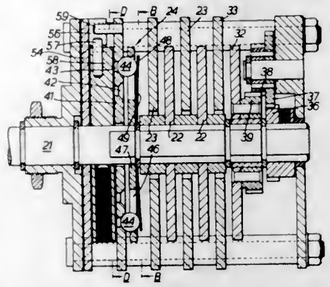
ERRATUM

For Class 200—11 see:
Patent No. 3,466,254

3,466,407
ROTARY SWITCH AND INDEXING MEANS THEREFOR

James Hector MacDonald Will, Farnborough, England, assignor to Datel Limited

Filed Jan. 5, 1967, Ser. No. 607,408
Claims priority, application Great Britain, Jan. 6, 1966, 625/66
Int. Cl. H01h *19/58, 21/78*
U.S. Cl. 200—11 **4 Claims**



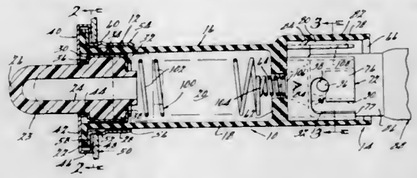
The versatility and adaptability of a rotary switch is increased by providing it with an index mechanism having at least two available sets of indexed positions. This is achieved, for example, by providing an index plate with two (or more) circular rows of recesses each row having a different number of recesses, and spring loaded balls engageable in any one of the rows, as selected. The operating range is further increased by having at least one rotor driven separately from the others through a reduction gearing, and again by providing an optional "double revolution" stop arrangement which permits the rotor to rotate through more than 360° but stops it positively before the end of a second revolution.

There is also described a controller unit, suitable for airborne navigation or communications systems in which a rotary switch is coupled to a film transport mechanism forming part of a display unit, so that a different part of the film, carrying, for example, information about the setting of the switch (such as the frequency selected), is displayed at each setting of the switch.

3,466,408
COMBINATION SWITCH-LAMP ASSEMBLY

Michael J. Basso, 7642 Woodward Ave., Detroit, Mich. 48202

Filed June 1, 1967, Ser. No. 647,289
Int. Cl. H01r *13/70*
U.S. Cl. 200—51 **5 Claims**

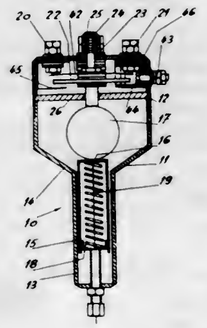


A combination switch-lamp assembly comprising housing means defining a lamp bulb base receiving socket compartment and an elongated cavity having a switch actuating button or plunger reciprocally mounted thereon. A combination terminal-socket member provided in the lamp receiving compartment for operatively supporting a conventional lamp, a resilient coil spring extending between a portion of the lamp base and the plunger member for biasing a contact member carried by the plunger into engagement with a portion of an end cap member mounted on the housing, the end cap member functioning as a terminal means and also means for securing the housing to a retaining clip member adapted to be mounted in a grounded stationary support structure.

3,466,409
CIRCUIT BREAKER FOR VEHICLE IGNITION SYSTEM

Emile Pernet, 17 Blvd. de la Cluse, Geneva, Switzerland

Filed Feb. 20, 1967, Ser. No. 617,308
Claims priority, application Switzerland, Oct. 22, 1966, 15,419/66
Int. Cl. H01h *35/02*
U.S. Cl. 200—61.45 **5 Claims**

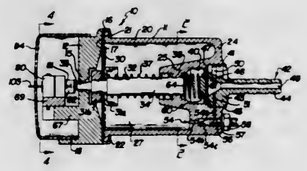


A safety device intended to cut off the power source in a motor vehicle during a collision comprising a circuit breaker having a movable member maintained in closure position by a body which, through inertia at the time of the collision moves and causes opening of the breaker and a remote control device to replace the said body in its normal position when it has moved away therefrom, the body being a ball normally resting on a seat that can be retracted at a distance through the action of a control mechanism acting against the bias of a spring.

3,466,410
VACUUM OPERATED TIMER SWITCH

Leslie H. Jordan, 2021 E. Broadway, Vancouver, British Columbia, Canada, and John Arden, 6049 Portland Ave., Burnaby, British Columbia, Canada

Filed Jan. 19, 1968, Ser. No. 699,130
Int. Cl. H01h *35/40*
U.S. Cl. 200—83 **7 Claims**

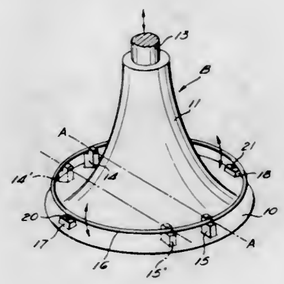


A switch for controlling an electric circuit and having a vacuum chamber enclosing a diaphragm which is deflected to actuate electrical contacts when air is evacuated from the chamber, with means for delaying evacuation of the chamber for a selected period of time and other means for controlling the level of vacuum which will actuate the contacts.

3,466,411
FOOT-OPERATED SWITCH

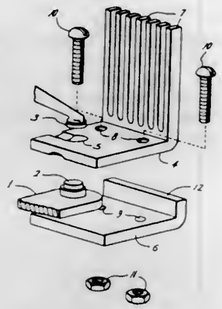
George H. Martin, Chagrin Falls, Ohio, assignor to The Martin Brothers Electric Company, Cleveland, Ohio, a corporation of Ohio

Filed Apr. 17, 1968, Ser. No. 721,968
Int. Cl. H01h *3/14;* **A47c** *3/20;* **H02p** *1/16*
U.S. Cl. 200—86.5 **4 Claims**



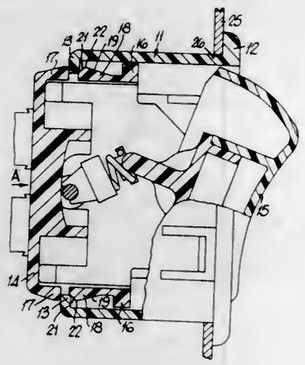
Foot actuated means for controlling the height of a power driven adjustable chair, such as a barber chair, from any position around the chair. In particular a foot-controlled actuating bar surrounding the base of the chair and pivotally supported thereon for rocking movement into actuating engagement of one of two switches mounted on the chair base and connected in controlling relationship to a motor that raises and lowers the chair.

3,466,412
IGNITION POINT HEAT ABSORBER
Vladis P. Mikeska, 7563 Magnolia, Houston, Tex. 77023
Filed Aug. 25, 1967, Ser. No. 663,379
Int. Cl. H01h *1/62*; F03b *15/00*
U.S. Cl. 200—166 1 Claim



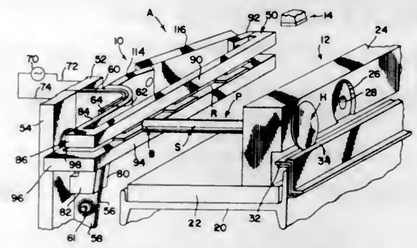
An ignition point heat absorber for use on the ignition system of a combustion engine consisting of a conductive member mounted on the framework of a point breaker and having extended fins through which heat from said breaker will dissipate.

3,466,413
ELECTRICAL SWITCHES
Richard Colin Sharples, Burnley, England, assignor to Joseph Lucas (Industries) Limited, Birmingham, England
Filed Mar. 19, 1968, Ser. No. 714,202
Claims priority, application Great Britain, Mar. 31, 1967, 14,731/67
Int. Cl. H01h *9/02*
U.S. Cl. 200—168 4 Claims



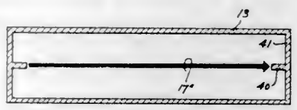
In an electrical switch a sleeve is secured to the facia panel of a road vehicle, and within the sleeve is a body containing the switch mechanism and the operating member of the switch. Resilient co-acting means are provided integral with the sleeve and body for maintaining the body in an operating position, but in the event of a crash the body can move relative to the sleeve to a position in which it will not harm an occupant of the vehicle.

3,466,414
INDUCTOR FOR HEATING A MOVING WORKPIECE
Norbert R. Balzer, Parma, Ohio, assignor to Park-Ohio Industries, Inc., a corporation of Ohio
Filed Jan. 31, 1967, Ser. No. 612,907
Int. Cl. H05b *5/00, 9/00*
U.S. Cl. 219—10.43 10 Claims



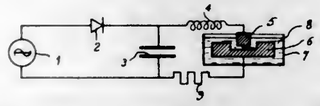
The tip of an elongated workpiece is inductively heated by moving it along an inductor having spaced, parallel conductors with a plurality of spaced copper inserts between the conductors. The inserts cause the tip to be heated by successive heating steps, with little heating between the steps, so that the tip is heated to a more uniform depth before it is quench hardened.

3,466,415
APPARATUS FOR DIELECTRIC HEATING
William J. Bleackley, Ottawa, Ontario, Canada, assignor to Canadian Patents and Development Limited, a corporation of Canada
Filed Sept. 29, 1967, Ser. No. 671,786
Int. Cl. H05b *5/00, 9/06*
U.S. Cl. 219—10.61 2 Claims



A web of material is longitudinally moved through a rectangular waveguide thereby being heated by microwave energy propagated along the waveguide. An electrically conductive vane is disposed in the plane that is occupied by the web, along each or both of the edges thereof, and is electrically connected to the waveguide such that the electric field yielding the energy transfer is prevented from losing intensity at said edges.

3,466,416
SPARK EROSION MACHINING PROCESS
Alfred M. A. Maillet, Versailles, France, assignor to La Soudure Electrique Languepin, La Plaine, Saint-Denis, France, a company of France
Filed Mar. 18, 1965, Ser. No. 440,795
Claims priority, application France, Mar. 20, 1964, 968,149
Int. Cl. B23k *9/16*
U.S. Cl. 219—69 4 Claims



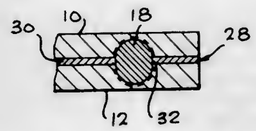
For avoiding wear of the electrodes used in electro-ero-

sion devices, there is employed a capacitor periodically discharged in a circuit including a gap between electrode and workpiece, in which circuit inductance, capacitance and resistance are provided and matched together, so that discharge of the capacitor is non-oscillating and effected in a period of time exceeding .0002 of a second. For discharge circuits without additional resistance or with very low resistance, capacitance should be of at least 100 μf., but inductance should not be greater than 200μh.

3,466,417
ARC WELDING ELECTRODES
Edwin Albert Chapman, Potters Bar, Ronald Leonard Bartlett, Cheshunt, and Brian Phelps, Roydon, near Harlow, Essex, England, assignors to Murex Welding Processes Limited, Waltham Cross, Hertfordshire, England, a British company
No Drawing. Filed June 10, 1966, Ser. No. 556,682
Int. Cl. B23k *9/16, 35/38*
U.S. Cl. 219—74 11 Claims

A process for automatic or semi-automatic welding and an electrode for such welding for use with AC power supply at a current density in the range of 20,000 to 120,000 amperes per square inch. Disclosed is tubular electrode having a diameter in the range of .03 to .11 inch and consisting of a steel sheet enclosing a core containing deoxidizes in an amount of 1 to 4% and arc stabilizers in an amount of 10 to 36%, the arc stabilizers including at least 4% of rutile, at least ½% of an alkali metal oxide and at least 2% of an alkaline earth metal oxide, all the percentages being the percentages by weight of the electrode.

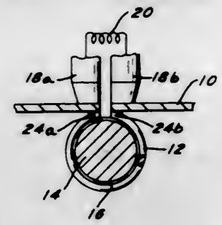
3,466,418
DETERMINATION OF SPOT WELD QUALITY
James E. Webb, Administrator of the National Aeronautics and Space Administration with respect to an invention of Charles J. Kropp, San Diego, Calif.
Filed July 6, 1966, Ser. No. 563,644
Int. Cl. B23k *11/10*
U.S. Cl. 219—91 5 Claims



A non-destructive method of radiographically inspecting a resistance weld is disclosed. The method comprises surrounding the desired weld region between work pieces such as stainless steel with a sheet of material having a substantially different radiopacity such as nickel. The pieces are resistance welded to form a nugget containing said material and surrounded by an unfused portion of the sheet forming an interfacial boundary. A radiographic image of the weld region is then formed which includes a line image of said interfacial boundary.

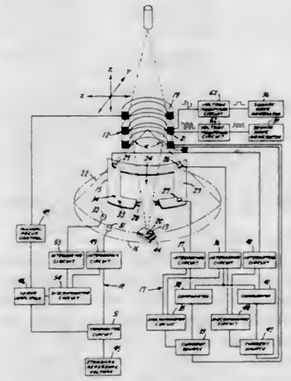
3,466,419
METHOD OF WELDING A METAL PIECE TO FINE WIRES
Walter H. Douglass, Sr., Oreland, Pa., assignor to TRW Inc., a corporation of Ohio
Original application Mar. 20, 1964, Ser. No. 353,433, now Patent No. 3,302,156. Divided and this application May 21, 1966, Ser. No. 565,361
Int Cl. B23k *9/28, 11/10*
U.S. Cl. 219—91 4 Claims

This welding method is based on the use of the heat obtained by the sudden rise in resistance between two closely spaced electrodes when the current between the electrodes is constant and the resistance suddenly rises because of the inability of the conductor between the electrodes to conduct high currents. To achieve this function, a metal piece is placed over the wire to which it is to be



welded, and a pair of closely spaced electrodes are placed on the metal piece over the wire.

3,466,420
ELECTRON BEAM WELDING APPARATUS
Robert D. Downing, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York
Filed July 10, 1967, Ser. No. 652,125
Int. Cl. B23k *9/00*
U.S. Cl. 219—121 4 Claims

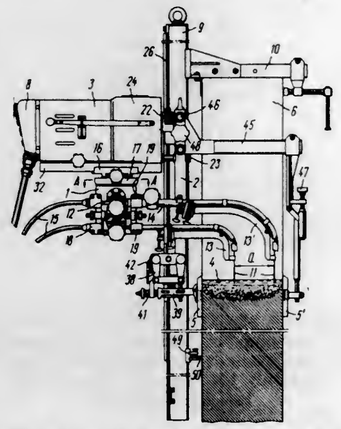


An electron beam is located and stored prior to electron beam welding by a centrally apertured electron beam absorber axially disposed relative to the electron beam. The absorber preferably is located outside the focal plane of the beam and the beam is scanned and swept across both the absorber and the workpiece to be welded by an electromagnetic deflection coil energized with time rate change current pulses. The deflection coil current pulses effect relatively long beam dwell periods upon the surface of the beam absorber with the electron beam sweeps across the workpiece being accomplished during a steeply sloping portion of the deflection current pulses to protect the workpiece from melting. Cooling means are provided within the beam absorber to dissipate heat produced by the non-focused electron beam impinging upon the beam absorber.

3,466,421
RAIL-TYPE APPARATUS FOR ELECTRO-SLAG WELDING OF METAL
Mikhail Gershovich Belfor, Pereulok Chekistov 11/12, kv. 28, and Jury Ivanovich Saprykin, Novo-Zhelyanskaya ulitsa 4, kv. 3, both of Kiev, U.S.S.R.
Filed Aug. 11, 1965, Ser. No. 478,976
Int. Cl. B23k *9/12*
U.S. Cl. 219—126 4 Claims

An apparatus for the electro-slag welding of metal in which an undercarriage is located for movement along a rail column, and at least one welding head having mouth

pieces for feeding a welding wire and supplying current thereto disposed on both sides of the head is rotatably mounted on the undercarriage. The welding head is capable of turning around a vertical axis parallel to the column so it is possible to weld joints located at the right or left side of the column.



3,466,422
WELDING MATERIAL FOR AUSTENITIC DUCTILE IRON

Charles E. Witherell, Pomona, N.Y., assignor to The International Nickel Company, Inc., New York, N.Y., a corporation of Delaware

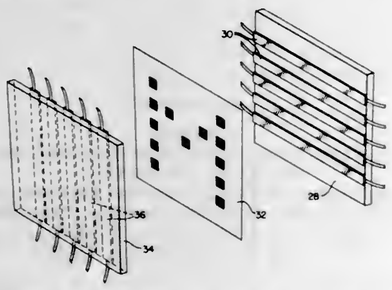
Filed Nov. 21, 1966, Ser. No. 595,927
Int. Cl. B23k *35/22*
U.S. Cl. 219—146 **7 Claims**

Directed to a welding material for producing tough, strong welds in austenitic ductile iron castings comprising a metallic member and a flux wherein the metallic member is a malleable alloy containing about 18% to about 40% nickel and the balance essentially iron and wherein the flux comprises a mixture of powder ingredients including flux-forming and slag-forming ingredients and including, by weight, about 5% to about 20% carbon, about 1.5% to about 3.5% magnesium and up to 30% of rare earth oxides.

3,466,423
THERMAL HALF-SELECT PRINTING MATRIX

John L. Janning, Dayton, Ohio, assignor to The National Cash Register Company, Dayton, Ohio, a corporation of Maryland

Filed June 19, 1967, Ser. No. 646,888
Int. Cl. H05b *3/02*
U.S. Cl. 219—216 **3 Claims**

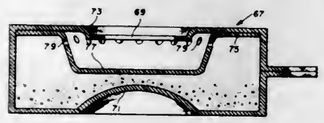


Thermal half-select printing matrices in which printing on an adjacent heat-sensitive material occurs only at those matrix points which have coincident electrical current flowing through crossing electrically resistive thermal printing conductors which define those points.

3,466,424
EVAPORANT SOURCE FOR VAPOR DEPOSITION

George D. Adams, Huntsville, Ala., assignor to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration

Filed Aug. 31, 1967, Ser. No. 665,679
Int. Cl. F22b *1/00;* **C23c** *11/00*
U.S. Cl. 219—275 **7 Claims**

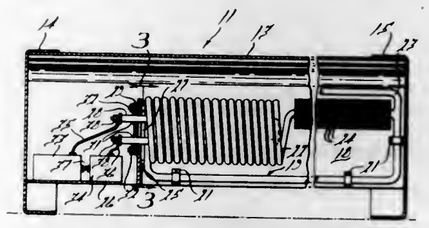


A spatterproof evaporant source for use in vacuum depositing of thin solid films upon a substrate. A metallic cartridge for containing evaporable material has a vapor exit opening formed in the central region of the upper side of the cartridge. An inwardly depressed dimple is formed in a metallic strip beneath the vapor exit opening and the dimple has small perforations in an area offset from vertical alignment with the vapor exit opening. Vapors pass through the perforations and are initially deflected by the portion of the upper side of the cartridge around the vapor exit opening and subsequently re-evaporated or deflected upward through the vapor exit opening to the substrate. Any gross particle spattering through the perforations will be trapped in the dimple cavity or else reflected through the vapor exit opening at such a low trajectory that it will not reach the substrate to damage the film being deposited.

3,466,425
ELECTRICAL SPACE HEATER

George A. Gregg, 13322 E. Eight Mile Road, Detroit, Mich. 48205

Filed Aug. 18, 1966, Ser. No. 573,308
Int. Cl. H05b *3/42;* **F28f** *1/00*
U.S. Cl. 219—341 **2 Claims**

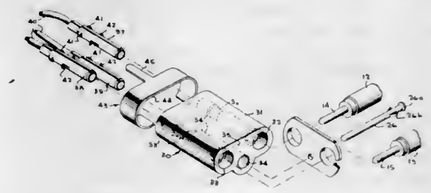


A fluid circulating-type electric baseboard space heater has a fluid filled conduit including intercommunicatively connected coiled portion, finned portion and return portion; the portions together forming a closed fluid circuition path. The conduit is horizontally supported within a baseboard space heater housing. The housing also supports a thermostatically controlled sheathed electric heating unit which extends within the full length of the coiled portion of the conduit for heating the fluid in the conduit. The turns of the coiled portion are spaced to permit radiant heat from the heating unit to pass directly therebetween to impinge directly on the housing. The coiled portion, finned portion, return portion and heating unit are exposed to air flowing through the housing.

3,466,426
PLUG-IN ELECTRICAL HEATING UNIT

Lester R. Kefauver, Jr., Lanham, Md., assignor to Electro-Therm Inc., Laurel, Md., a corporation of Maryland

Filed Oct. 6, 1967, Ser. No. 673,367
Int. Cl. H05b *3/76*
U.S. Cl. 219—451 **12 Claims**



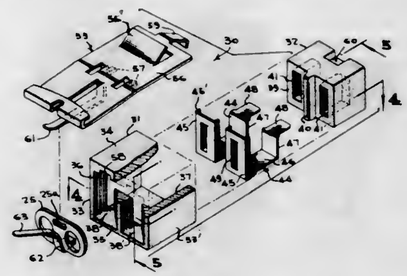
A surface type plug-in electrical heating unit for electric ranges, wherein the surfaces heating unit has a tubular sheathed heating element in a spirally coiled configuration terminating in a pair of laterally spaced, side-by-side end portions or legs having a pair of parallel, elongated contact pins projecting therefrom defining the male contact members. A grounding bracket is secured to and extends between the sheath legs and has an elongated grounding pin extending therefrom in parallelism with the contact pins. A simple female receptacle member defines contact sockets for the contact pins and the grounding pin, and is formed simply of a unitary housing block having a substantially uniform cross-section throughout of electrically insulating, temperature resistant material provided with three parallel cylindrical bores extending entirely therethrough axially aligned with the male contact pins and grounding pin, each of these bores having seated therein hollow conductive tubular sleeves or bushings preconnected to respective lead wires and restrained in position within the bores by shoulder formations and outwardly and rearwardly inclined protrusions spaced therefrom which embrace therebetween oppositely facing abutment surfaces within the bore to securely hold the sleeves against withdrawal. The internal diameters of the sleeves are sized to slidably receive, and establish good electrical contact with, the contact pins and the grounding pin.

3,466,427
PLUG-IN ELECTRIC HEATING ASSEMBLY

Nicholas J. Burger, Silver Spring, Md., assignor to Electro-Therm, Inc., Laurel, Md., a corporation of Maryland

Filed Oct. 13, 1967, Ser. No. 675,240
Int. Cl. H05b *3/76*
U.S. Cl. 219—451 **10 Claims**

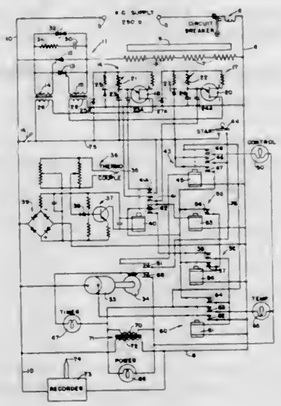
A surface type plug-in electrical heating unit for electric ranges, wherein the surface heating unit has a tubular sheathed heating element in a spirally coiled configuration terminating in a pair of laterally spaced, side-by-side end portions or legs having a pair of parallel elongated contact pins projecting therefrom defining the male contact members. A grounding bracket is secured to and extends between the sheath legs near the contact pins. A female receptacle member defines contact sockets for the contact pins and is formed of an outer ceramic block having a rearwardly opening cavity and a pair of front access slots axially aligned with the male contact pins and an inner ceramic insert fitting into the cavity, between which a pair of female contact members are held. The female contact members have front legs behind the access slots provided with contact slots bounded laterally by rolled edges for wiping contact with the contact pins. A mounting bracket for the female receptacle fitting has means for completing a grounding circuit for the sheath, and in one form comprises a tongue which engages a spring on the grounding bracket on the terminal legs to exert resilient canting forces on the unit counter-balancing and equalizing forces tending to dislodge the unit from proper position in the trim ring.



3,466,428
CONTROL CIRCUIT FOR ELECTRIC HEATER

Peter James Cooper, 61 Sandown Court, Lord St., Southport, England

Filed Jan. 4, 1968, Ser. No. 695,798
Int. Cl. H05b *1/02*
U.S. Cl. 219—501 **10 Claims**



A control circuit is described which regulates an alternating current power supply to produce a desired temperature of an object positioned adjacent to an electric heater. The temperature is sensed by a thermocouple and a plurality of relays control the current to maintain the temperature at a predetermined value for a set period. An adjustable timer normalizes the circuit at the end of the period.

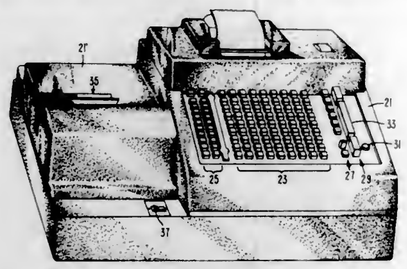
3,466,429
ENCODING APPARATUS ASSOCIATED WITH A CALCULATING MACHINE

Alexander Dunn, Parkhall, Clydebank, and George Turner Livingston, High Mains, Dumbarton, Scotland, and Albert J. Corr, Detroit, Mich., assignors to Burroughs Corporation, Detroit, Mich., a corporation of Michigan

Filed Nov. 6, 1967, Ser. No. 680,767
Int. Cl. G06c *29/00;* **G06k** *19/00*
U.S. Cl. 235—60.11 **10 Claims**

A full keyboard calculator is combined within a unitary case with an amount and transaction number encoder. A

single keyboard provides entry of amounts to be computed or printed on a paper tape, or encoded in magnetic ink on a check or other document. Encoding is accomplished by activating an impressor roller across a plurality of en-

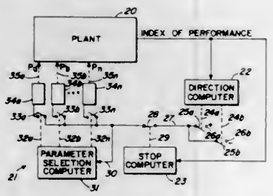


coding wheels in serial fashion. Mechanical and electromechanical means associated with the calculator are activated to selectively index the encoding wheels and to cause the impressor roller to transversely press the check and the magnetic ribbon against each order of the indexed wheels.

ERRATUM

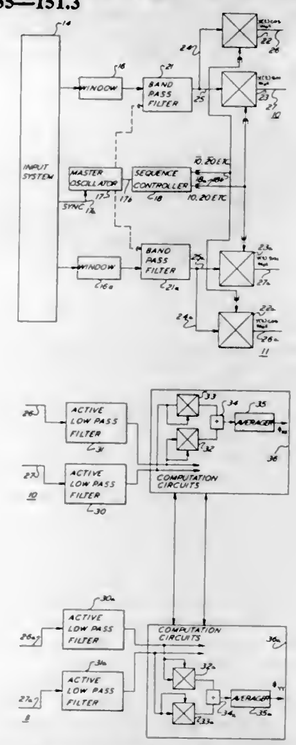
For Class 235—61.11 see:
Patent No. 3,465,960

3,466,430
EXTREME PARAMETER SEARCH CONTROL SYSTEM
Fred W. Hardaway, Arlington, Tex., assignor to Collins Radio Company, Cedar Rapids, Iowa, a corporation of Iowa
Filed Jan. 11, 1967, Ser. No. 608,608
Int. Cl. G06f *15/18*
U.S. Cl. 235—150.1 **12 Claims**



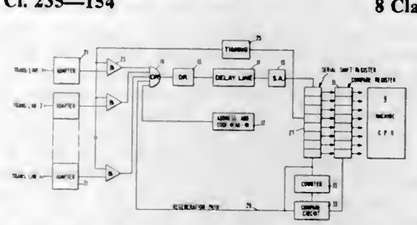
A extreme parameter search control system, for a plant having a plurality of interdependent variable parameters, with a direction computer and controlling circuitry switchable from parameter to parameter for optimizing the control setting of a parameter before subsequent switching to another parameter. It is a system using a DC operational amplifier, in the direction computer, having a feedback circuit with a capacitor and a diode in parallel that is capable of providing a memory function wherein when the diode is forwardly biased it conducts, and then when there is a change in the input to the amplifier, as determined by the IP signal out of the plant being parameter set controlled, such that a reverse bias is developed through the operational amplifier with respect to the diode in the feedback circuit, a charge build up begins on the capacitor in the feedback circuit. This results in an activating voltage build up to a threshold level for threshold controlled circuitry in the direction computer that initiates reversal actuation in the parameter setting drive control of the system. Capacitor discharge switch control circuitry is provided for periodically reset discharging any charge on the feedback capacitor upon each triggered activated control of parameter direction reversal by the direction computer.

3,466,431
D.C. POWER SPECTRUM AND FOURIER TRANSFORM ANALYZER
Abraham M. Fuchs, Rydal, and Salvatore C. Catania, Cornwells Heights, Pa., assignors to Weston Instruments Inc., Newark, N.J., a corporation of Delaware
Filed Dec. 30, 1966, Ser. No. 606,205
Int. Cl. G06g *7/19, 7/36*
U.S. Cl. 235—151.3 **12 Claims**



A DC power spectrum and Fourier transform analyzer for time varying signals which are analyzed over a plurality of analysis frequencies. For computing the power spectrum, a time varying signal is applied through a band pass filter, multiplied by the sine and cosine of an analysis frequency, applied to a low pass filter with the resultant signal being squared and averaged. The analog generation of the sine and cosine analysis frequency is combined with the multiplication function into one resistor-switching operation.

3,466,432
SERIAL DELAY LINE BUFFER-TRANSLATOR
Lester R. Adams, Saratoga, Calif., and Philip A. Lord, Vestal, N.Y., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed Mar. 2, 1965, Ser. No. 436,520
Int. Cl. G06f *5/00*
U.S. Cl. 235—154 **8 Claims**



2. A buffer-translator for converting several different codes on a plurality of incoming lines to a single machine language code, the several codes having a plurality of bit rates and each having a plurality of characters, said buffer-translator comprising

a data recirculation loop including a serial memory device which regenerates within the bit rate of any of the lines,

means connected to said incoming lines and said loop for reading line address information and code information into the loop in succeeding sections for constant regeneration,

said code information comprising all of the characters in each of the codes including, at the end, the machine language code, the count of like characters in the several codes being the same.

means connected to said incoming lines and said loop for reading unknown characters from said incoming lines into the recirculation loop behind their respective line addresses,

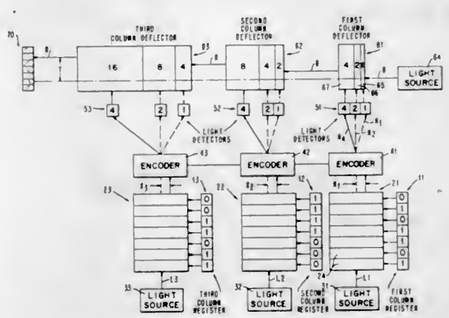
first storage means connected in said recirculation loop and second storage means external of said loop and connected to said loop, a completed unknown character being transferred from said first into said second storage means,

comparing means connected to said first storage means and to said second storage means for comparing the unknown character in said second storage means with each of the code characters circulating in said loop upon passage thereof through said first storage means, and

means connected to said comparing means for counting the code characters of the various codes while comparing and for storing the count at compare,

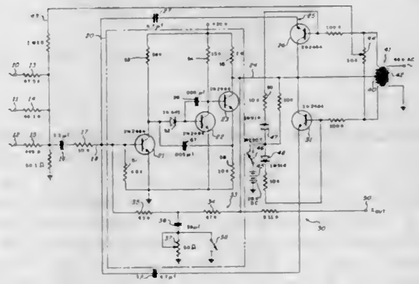
the machine language code character corresponding to the unknown character being transferred from said first storage means when there is a count correspondence with the stored count as the machine language characters are circulated through the first storage means.

3,466,433
OPTICAL PARALLEL ADDER
William L. Duda, Wappingers Falls, Harold Fleisher and Werner W. Kulcke, Poughkeepsie, and Erhard Max, Wappingers Falls, N.Y., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed Dec. 14, 1965, Ser. No. 513,802
Int. Cl. G06f *5/02, 7/385*
U.S. Cl. 235—175 **6 Claims**



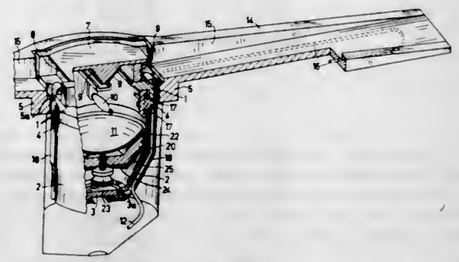
A parallel optical data processing technique is disclosed for simultaneously adding columns of digits in a plurality of weighted binary orders. Individual digits contained in the respective binary orders of several multi-order binary numbers are entered into separate column registers. There is a column of light-deflecting crystals associated with each register and a source of light associated with each column of crystals. Each column of light-deflecting crystals deflects a beam from its associated light source an amount that is related to the sum of digits in its corresponding register. The displacement of each beam is converted by an optical encoding means to electrical output signals, each signal respectively representing a column subtotal weighted binary notation, namely, 1, 2, 4, 8, etc. Such electrical output signals are applied respectively to aligned groups of additional deflecting crystals, and the latter impart displacements to a single beam of light in accordance with the respective column subtotals. The total beam displacement of the various aligned deflecting crystals represents the grand total of the various column subtotals.

3,466,434
DEVICE FOR INTEGRATING A MODULATED A.C. SIGNAL
Raymond Goldstein, North Ridge, Calif., assignor to Sperry Rand Corporation, a corporation of Delaware
Filed Oct. 19, 1965, Ser. No. 497,904
Int. Cl. G06g *7/18*
U.S. Cl. 235—183 **6 Claims**



The invention pertains to an A.C. integrating circuit in which first and second switching transistors disposed in series with first and second capacitors in first and second feedback connections respectively are alternately rendered conductive to provide full wave integration of an amplitude modulated A.C. signal and are simultaneously rendered conductive to reset the capacitors to a quiescent state.

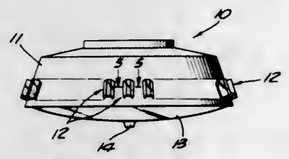
3,466,435
MARKING AND PROJECTION LAMP FOR AIRCRAFT RUNWAYS
Fritz Brunner, Oerlikonerstrasse 35, Zurich, Switzerland
Filed May 15, 1967, Ser. No. 638,253
Claims priority, application Switzerland, June 1, 1966, 7,918/66
Int. Cl. B64f *1/20*
U.S. Cl. 240—1.2 **10 Claims**



The marking and projection lamp for aircraft runways comprises a base plate which is fixedly mounted in the runway, and a sealed, generally cylindrical housing which is removably mounted in an opening in the base plate. A concave mirror is adjustably mounted in a de-

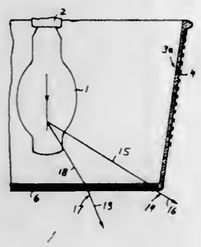
tachable lower part of the housing. A light source is arranged above the concave mirror. An upper part of the housing carries at least one mirror or prism whereby the light reflected upwards by the concave mirror is directed as a slightly inclined beam over the runway surface. In front of the light exit openings of the housing upper part the base plate has radial arms in which there are provided inclined light channels.

3,466,436
REMOVABLE INSERT DEVICE
Edward Spicer, 11631 Dona Alicia Place, Studio City, Calif. 91604
Filed Jan. 27, 1967, Ser. No. 612,196
Int. Cl. F21v 3/04
U.S. Cl. 240—100 10 Claims



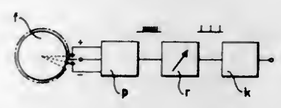
A lighting fixture having a metallic reflector with rectangular windows formed therein. Ornamental plastic inserts are retained in the respective windows. The inserts are rectangular sheets which are resiliently formed into a U-shaped configuration. The inserts have slots at their corners which engage the respective corners of the associated windows. Each window has one end which is elongated in its central portion to permit the insertion or removal of the insert.

3,466,437
REFRACTOR
Donald E. Ruehl, Newark, Ohio, assignor to Holophane Company, Inc., New York, N.Y., a corporation of Delaware
Filed Nov. 3, 1966, Ser. No. 591,834
Int. Cl. F21v 5/00
U.S. Cl. 240—106 11 Claims



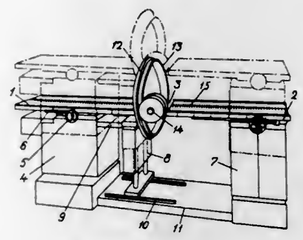
A bottom for a normally open-bottom refractor to control down light from the light source provides diffusion of light along parallel lines within wedge-shaped sections of flutes with the central flute of each wedge-shaped section extending radially and the remaining flutes of each section extending parallel to the central flute, thereby providing light obscuration via parallel diffusion of the varied angles of light emanating from the light source. The bottom also provides annular concentric flutes in the center of the bottom and a system of annular concentric prisms outwardly thereof performing light-depressing functions. The bottom may be removable, and in this respect, clips are provided for disposing the bottom above the lower edge of the refractor to provide an optically closed, but thermally opened bottom permitting ventilation of the refractor by convection.

3,466,438
X-RAY GONIOMETERS HAVING A FILM CARRIER WHICH AUTOMATICALLY TRANSLATES RELATIVE TO A FIXED X-RAY SOURCE AND A ROTATING CRYSTAL SUPPORT
Sixten Abrahamsson, Goteborg, Sweden, assignor to Incentive Research and Development AB, Bromma, Sweden, a corporation of Sweden
Filed Mar. 11, 1968, Ser. No. 711,984
Claims priority, application Sweden, Mar. 13, 1967, 3,470/67
Int. Cl. H01j 37/20; G01n 23/20
U.S. Cl. 250—51.5 1 Claim



A radiation source is provided, and a rotatable crystal support supports a crystal in a path of radiation from said source. A photographic film container is displaceable by drive means relative to the radiation source and the crystal support. Rotation of the crystal support produces electrical pulses in an electrical circuit. A suppression circuit provides predetermined suppression of some of the pulses of said electrical circuit and is adjustable to vary the number of suppressed pulses to match the crystal structure. The output of the suppression circuit is connected to the drive means which displaces the film container.

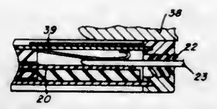
3,466,439
RADIATION TREATMENT APPARATUS WITH TRANSVERSELY GAPPED TABLE
Kai Martin Edvard Setälä, Uudenkaupungintie 8, Helsinki, Finland
Filed Mar. 25, 1966, Ser. No. 537,381
Int. Cl. G01n 23/00
U.S. Cl. 250—54 13 Claims



Radiation treatment apparatus of the type in which a patient to be treated is supported on a horizontal table, the source of radiation being mounted on a support for rotation in a vertical plane about a point in the patient toward which the radiation is constantly directed, the table being separated into two sections by a transverse gap lying in the said plane of rotation; the angle of said gap

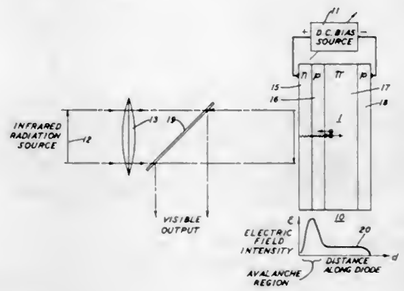
to the longitudinal axis of the table being preferably adjustable.

3,466,440
X-RAY FILM PACKAGE WITH IDENTIFICATION SLOT
Frederick F. Tone, Robert F. Deprez, and Robert I. Edelman, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of Delaware
Filed Mar. 24, 1967, Ser. No. 625,765
Int. Cl. G01n 23/04
U.S. Cl. 250—67 6 Claims



An X-ray cassette having an identification corner which is constructed to be substantially unaffected by X-rays. The cassette identification corner has a slot for the insertion of radiation directing means which is not influenced directly by X-ray radiation. The radiation directing means prints on the film accurate identification information corresponding to the X-ray image being produced.

3,466,441
SEMICONDUCTOR INFRARED-TO-VISIBLE LIGHT IMAGE CONVERTER
Robert L. Batdorf, Reading, Pa., and Charles A. Lee, New Providence, N.J., assignors to Bell Telephone Laboratories, Incorporated, Murray Hill, Berkeley Heights, N.J., a corporation of New York
Filed Apr. 7, 1967, Ser. No. 629,196
Int. Cl. H01j 39/00, 31/50
U.S. Cl. 250—83.3 14 Claims



The invention described is an infrared-to-visible light image converter which utilizes a p-n junction diode biased just below avalanche breakdown.

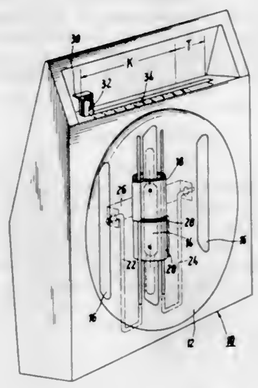
An image of infrared radiation is focused onto a surface of the diode. As photons are absorbed, electron-hole pairs are formed, releasing electrons (or holes) which enter into the avalanche region of the diode where they generate secondary electrons and holes. These, in turn, are accelerated, giving rise to energetic collisions with charged impurities present in the lattice, resulting in the emission of visible light.

Because of the high index of refraction of the diode material, the incident infrared radiation and, hence, the emitted light are confined to well defined regions within the diode, resulting in a high resolution image converter.

3,466,442
APPARATUS FOR THE SELECTION OF METASTABLE ATOMS HAVING A PREDETERMINED POLARIZATION
Joseph L. McKibben, 113 Aztec Ave., White Rock; Gerald G. Ohlsen, 4221 Trinity; and Ralph R. Stevens, Jr., 2800 Walnut, all of Los Alamos, N. Mex. 85744
Filed Apr. 19, 1967, Ser. No. 632,059
Int. Cl. H01j 37/00, 39/00; G01n 23/00
U.S. Cl. 250—84 5 Claims

Metastable particles having a particular spin state are selected by exposing them to a combination of magnetic, radio-frequency and static or low-frequency fields applied in a predetermined direction, frequency and magnitude. The strength of the magnetic field corresponds to the energy level crossings for the group of particles and the radio-frequency field has a frequency corresponding to the difference between the alpha and beta energy of the particles so that those atoms having the desired polarization are retained, and those of a different polarization are quenched to ground state.

3,466,443
RADIATION APPARATUS WITH AN ADJUSTABLE EMISSION OF ULTRAVIOLET RADIATIONS
Hans Roesler, Bruchkobel, near Hanau, and Bernhard R. R. Eisermann, Hanau, Germany, assignors to Quarzlampengesellschaft m.b.H., Hanau am Main, Germany
Filed Jan. 25, 1966, Ser. No. 522,863
Int. Cl. H01j 5/18
U.S. Cl. 250—86 7 Claims

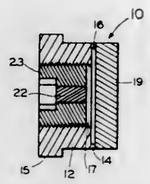


Radiation apparatus for emitting radiation of mixed spectral composition including a mixture of UV–A and UV–B radiation, the ratio of UV–B radiation to UV–A radiation being controllable by a manual control which has a first, low sensitivity adjustment range embracing the low ratios of UV–B to UV–A radiation and a second high sensitivity adjustment range embracing the high ratios of UV–B to UV–A radiation. The manual control determines the position of a UV–B blocking, UV–A passing filter by way of a transmission mechanism which automatically alters the transmission ratio (i.e., the ratio of control motion to filter motion) when passing from one adjustment range to the other.

ERRATUM

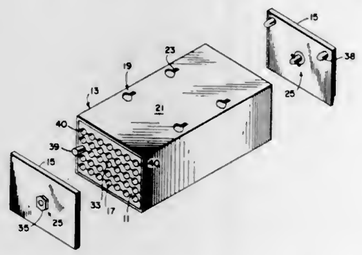
For Class 250—106 see:
Patent No. 3,466,662

3,466,444
DIFFERENTIALLY VENTED CARRYING CASK FOR RADIOACTIVE MATERIALS
Elmer C. Lusk, Columbus, Ohio, assignor, by mesne assignments, to Edward Lead Company, Columbus, Ohio, a corporation of Ohio
Filed Aug. 24, 1965, Ser. No. 483,905
Int. Cl. G21f *5/00*
U.S. Cl. 250—108 **9 Claims**



There is disclosed a carrying cask structure for radioactive materials, and the cask is characterized by having a fusible solid shielding material disposed interiorly thereof in a substantially filled space, there further being in the cask structure a differential material vent, the vent comprising a porous outlet-defining arrangement having pores of a mean pore size in a vent path from the aforementioned space for the pores to vent gas from that space at a pressure at which the pores are substantially impermeable to molten shielding material in the space and to vent molten shielding material at an increased pressure from the space.

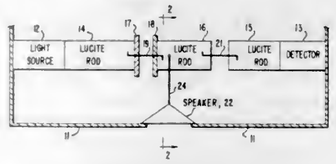
3,466,445
CONTAINER FOR RADIOACTIVE FUEL ELEMENTS
Adolph P. Schlies, Albuquerque, N. Mex., assignor to the United States of America as represented by the United States Atomic Energy Commission
Filed Oct. 6, 1967, Ser. No. 674,068
Int. Cl. G21f *5/00*
U.S. Cl. 250—108 **3 Claims**



A container for holding or transporting nuclear reactor fuel elements comprising a stack of neutron absorbing members having matching longitudinal grooves forming passageways in which the fuel elements may be separately supported and a housing for surrounding and confining the stack having means for engagement of a remotely operated handling device.

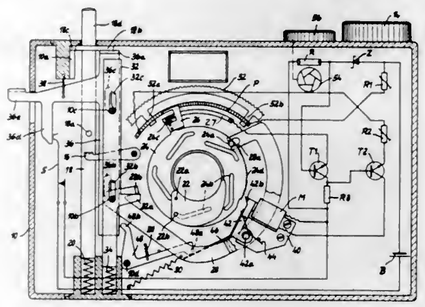
3,466,446
LIGHT-OPERATED SOUND-SIGNAL TELEPHONE TRANSMITTER AND TRANSMISSION SYSTEM
Matthew Fassett, Belmont, Mass., assignor to Stromberg-Carlson Corporation, Rochester, N.Y., a corporation of Delaware
Filed June 21, 1966, Ser. No. 559,325
Int. Cl. H04b *9/00*
U.S. Cl. 250—199 **9 Claims**

A light-operated sound signal transmission system is provided which is comprised by a light source, a pair of light polarizers and light detecting means all in optical alignment. The light polarizers are rotatably supported by suitable torsion wires having a relatively small diameter. One of the light polarizers is coupled to and driven by a diaphragm for converting sound signals to a vibrating translatory motion which is coupled to a suitable ra-



dius lever arm extending from the center of axis of rotation of the light polarizer. As a result of this arrangement, sound energy impinging on the diaphragm causes the light polarizer to be rotated and hereby modulate the light energy transmitted to the light detector in accordance with the sound signal. The torsion wire suspension provides the system with an improved dynamic response.

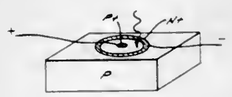
3,466,447
PHOTOELECTRIC OPERATED DIAPHRAGM SETTING MEANS FOR CAMERAS
Paul Fahlenberg, Baierbrunn, Germany, assignor to Compur-Werk Gesellschaft mit beschrankter Haftung & Co., Munich, Germany, a German firm
Filed Nov. 25, 1966, Ser. No. 596,984
Claims priority, application Germany, Dec. 1, 1965, C 37,547
Int. Cl. H01j *39/12*
U.S. Cl. 250—210 **8 Claims**



Disclosed is an electrically controlled, mechanically operated diaphragm especially useful in photographic cameras. The electronic portion comprises a photo resistor to which scene light is directed. In series with the photoresistor is a diode having a compensating logarithmic characteristic curve, whereby the combination of photo resistor and diode has a linear characteristic curve. The photo resistor and diode comprise one branch of a battery powered bridge circuit while the other branch comprises the resistance element of the potentiometer which proferably has a linear characteristic curve. Cooperating with the resistance element of the potentiometer is a slide element. One of the two elements is coupled to a rotatable diaphragm leaf positioning ring which is spring biased to a limit position in which the diaphragm aperture is generally either fully open or fully closed. The ring has circumferentially positioned detent notches for receiving a detent which is operated electromagnetically and by a spring. The other of the two elements (resistance element and slide element) can be coupled to a movable exposure time setting structure. The electromagnet coil is part of

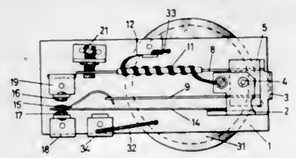
an emitter coupled Schmitt trigger circuit in combination with the bridge circuit. The operation of the trigger circuit is such that under normal operative conditions, when the potentiometer slide is at the balance voltage of the bridge circuit, the detent becomes seated in a detent receiving notch and prevents further rotation of the leaf positioning ring. Mechanical structures are provided for operating the diaphragm leaf positioning ring when the camera trip mechanism is actuated, and for releasing the detent under certain conditions. An auxiliary mechanism is provided for operating the diaphragm without tripping the shutter.

3,466,448
DOUBLE INJECTION PHOTODETECTOR HAVING n^+-p-p^+
Lloyd H. De Vaux, Santa Barbara, Calif., assignor to Santa Barbara Research Center, Goleta, Calif., a corporation of California
Filed Mar. 11, 1968, Ser. No. 712,201
Int. Cl. H01j *39/12*
U.S. Cl. 250—211 **9 Claims**



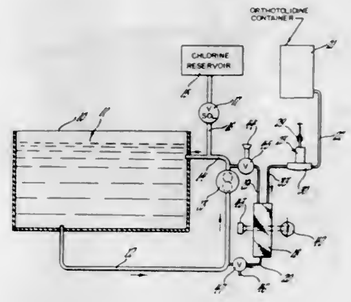
The invention disclosed comprises a material of one conductive type and materials of other conductive types sandwiched in appropriate relation providing a photodetector comprising an n^+-p-p^+ structure. The n^+ region is created in a p-type semiconductor in InSb by any conventional technique. The p-type InSb semiconductor is considered nearly intrinsic. A p^+ small area contact is made on the opposite side of the semiconductor using similar techniques. In its operation situs, the photo detector is mounted on a heat sink for refrigerated cooling with the n^+ region in contact with the sink. Multiple photo injection results from the impingement of the infrared radiation on the detector and electrical measurement directly related to that radiation may be acquired using any one of several conventional techniques.

3,466,449
THERMAL RELAY WITH A HEATED BIMETAL ELEMENT AND A TEMPERATURE COMPENSATING BIMETAL STRIP
Jakob Ellenberger, Altdorf, near Nuremberg, Germany, assignor to Firma Ellenberger & Poensgen G.m.b.H.
Filed Feb. 10, 1967, Ser. No. 615,182
Claims priority, application Germany, Apr. 30, 1966, E 31,572
Int. Cl. H01j *39/12*
U.S. Cl. 250—215 **11 Claims**

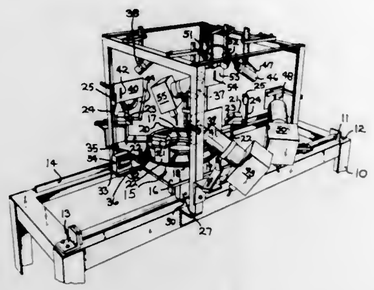


A time-delay snap-action relay which is shock and vibration-resistant and provided with a pair of bimetal strips which are rigidly connected at one end to each other and are pivotable about said end, and wherein one bimetal strip is adapted to be heated by a heating coil and has its other end secured in a fixed position, while the other end of the other bimetal strip which serves for compensating the outside temperature is adapted to actuate the switch contacts with a snap action.

3,466,450
SWIMMING POOL CHLORINE CONCENTRATION CONTROLLER USING REFERENCE RESISTOR IN CONTROL CIRCUIT
William L. Goodman, 1305 Cherry Ave., Charlottesville, Va. 22903
Filed Aug. 4, 1966, Ser. No. 570,291
Int. Cl. G01n *21/26, 21/06, 21/22*
U.S. Cl. 250—218 **8 Claims**

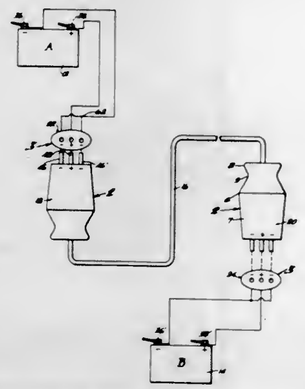


3,466,452
OPTICAL APPARATUS FOR INSPECTING THE FACEPLATE-TO-FUNNEL SEAL AREA OF A TV TUBE
Roland E. Klawitter, Perrysburg, and Ellsworth M. Murley, Jr., Toledo, Ohio, Hans R. Rottmann, Poughkeepsie, N.Y., and Lowell W. Sebring, Toledo, Ohio, assignors to Owens-Illinois, Inc., a corporation of Ohio
Filed Dec. 23, 1966, Ser. No. 604,395
Int. Cl. H01j *39/12*
U.S. Cl. 250—222 **7 Claims**



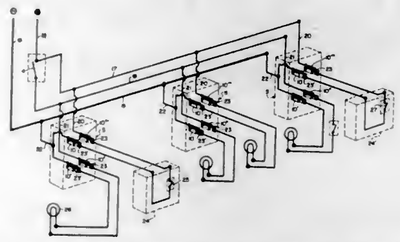
A rotatable and linearly movable cradle supporting TV bulb or glass envelope is provided by which the sides of the rectangular bulb may be moved relative to a plurality of beams of light that are directed through the faceplate portion of the tube to impinge on the inside of the sealing area of the bulb. A plurality of light sensitive pickups are mounted alongside the path of movement of the cradle in fixed relationship to the light sources so that their lines of sight are directed at the illuminated seal are of the tube. The precise positions of the pickups are such that reflections from "checks" in the seal area of the tube will be sensed by the pickups.

3,466,453
ELECTRICAL SYSTEM IMPROVEMENT FOR VEHICLES
Allan W. Greenberg, 917 Algaringo Ave., Coral Gables, Fla. 33134
Filed Jan. 25, 1968, Ser. No. 700,514
Int. Cl. H02j *7/14, 7/34*
U.S. Cl. 307—10 **8 Claims**



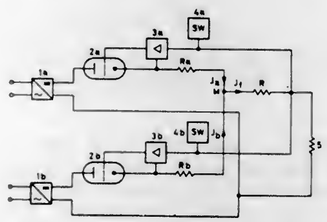
An electrical system for use in starting an engine of a vehicle with a defective battery and interconnecting the same with a vehicle having a charged battery, which system includes a receptacle unit mounted on each vehicle and electrically connected to its associated battery and an electrical connector cable to connect the receptacle units of each vehicle to transmit power for starting the vehicle with a defective battery; and an improved receptacle for utilizing the power generated by an alternator of a vehicle to energize in A.C. type electrical appliance, said improved receptacle including a socket for receiving the male plug of an alternating current type electrical appliance.

3,466,454
ELECTRICAL WALL PLUG
Fred W. Jamison, 1226 Holy Cross Drive, Monroeville, Pa. 15146
Filed May 19, 1966, Ser. No. 551,331
Int. Cl. H02j *3/00*
U.S. Cl. 307—12 **2 Claims**



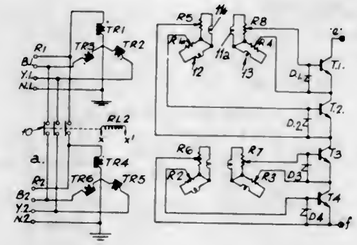
An electrical wiring system and socket in which the socket includes three conductor plates, one serving as a common plate and the other two serving as separate supply plates, and the wiring includes a first line conductor connected to one side of a current supply and dividing into two branch lines connected respectively to the separate supply plates, a wall switch connected in only one of the branch lines for controlling the energization of only one of the supply plates, and a second line conductor connected to the other side of the current supply and to the common conductor plate. With this system, a plug of one appliance may be plugged in to two of the prongs and controlled by the wall switch, and a plug of another appliance may be plugged into the other two prongs without being affected by the wall switch.

3,466,455
CIRCUIT ARRANGEMENT AND METHOD FOR STABILISING THE CURRENT DISTRIBUTION IN PARALLEL-CONNECTED ELECTRONIC REGULATORS
Georg Hecht and Karl Sacher, Nuremberg, Germany, assignors to Felten & Guilleaume Fernmeldeanlagen G.m.b.H., Nuremberg, Germany, a German company
Filed Oct. 18, 1966, Ser. No. 587,565
Claims priority, application Germany, Dec. 14, 1965, F 47,918
Int. Cl. H02j *1/10, 3/38*
U.S. Cl. 307—53 **3 Claims**



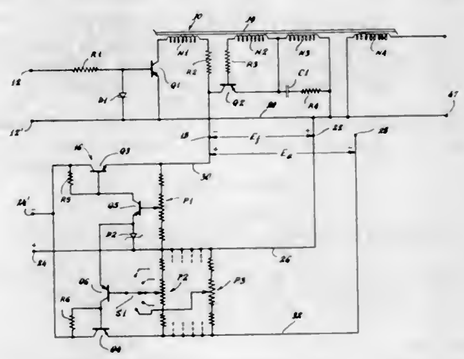
A system for providing a constant load current from parallel connected electronic regulators, each having an electronic valve connected in series with the load and serving as a variable resistor. The circuit utilizes a common resistor through which the current from both regulators pass, and two measuring resistors connected in the current paths between the two regulators and the common resistor. Each regulator is controlled by comparing a reference signal with a control signal generated across the combination of the common resistor and the measuring resistor associated with the regulator being controlled.

3,466,456
APPARATUS FOR CONNECTING TOGETHER TWO MULTI-PHASE A.C. SUPPLIES
Robert Theodore Tolworthy, Hemel Hempstead, England, assignor to Rotax Limited, London, England
Filed June 8, 1966, Ser. No. 556,233
Claims priority, application Great Britain, June 21, 1965, 26,081/65
Int. Cl. H02j *3/34*
U.S. Cl. 307—87 **2 Claims**



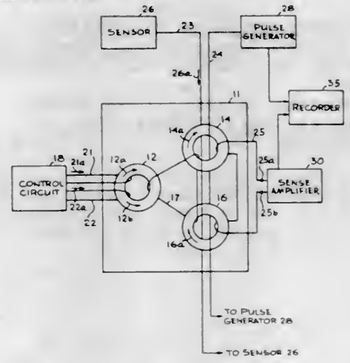
Apparatus for connecting together two multi-phase A.C. supplies comprising a pair of signal generators for each supply for producing signals in frequency and phase relation to phases of the respectively associated supply. Transistor means responsive to said signals and serially connected to provide a signal when all are concurrently conductive indicative of the proper frequency and phase relation for interconnecting the two A.C. supplies. Switching means responsive to the transistor means signal for providing the connection of the A.C. supplies.

3,466,457
ELECTRONIC SWITCHING FOR COUNTERS
Robert S. Lundin, Thomaston, and Edward T. Bosman, Watertown, Conn., assignors to General Time Corporation, New York, N.Y., a corporation of Delaware
Filed May 10, 1965, Ser. No. 454,590
Int. Cl. H01f *27/42*
U.S. Cl. 307—88 **9 Claims**



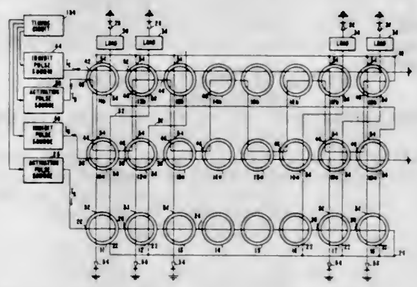
An electronic switching circuit is disclosed that employs a variable magnetic counter that functions to count uniform volt-second input pulses from a pulse source having a fixed supply voltage and a selectably adjustable supply voltage which is held in constant ratio with the fixed voltage. Manual selection of desired counts is established by setting selector switches. When a preselected number of pulses are accrued, a command pulse is delivered to perform a function.

3,466,458
MAGNETIC COMPARING CIRCUIT
Clarence H. Heckler, Palo Alto, and James A. Baer, Menlo Park, Calif., assignors to Stanford Research Institute, Menlo Park, Calif., a corporation of California
Filed July 6, 1965, Ser. No. 469,679
Int. Cl. H03k *5/20*
U.S. Cl. 307—88 **11 Claims**



A magnetic comparing circuit with two identical cores, each being inductively coupled to two separate sources of input signals which are to be compared. A control winding, which inductively couples the two cores, is used to partially switch them from one state of magnetic remanence to another. Only when the amplitudes of both input signals are equal is a zero amplitude output signal present in an output winding, which inductively couples both cores. One input signal source is a sensor, while the other is a generator of pulses of adjustable amplitudes.

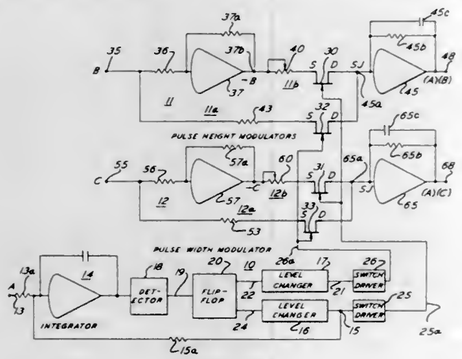
3,466,459
CURRENT STEERING SWITCH
James E. Webb, Administrator of the National Aeronautics and Space Administration, with respect to an invention by Lawrence J. Zottarelli, La Canada, Calif.
Filed May 17, 1967, Ser. No. 640,783
Int. Cl. H02j *1/10, 3/10*
U.S. Cl. 307—88 **13 Claims**



A multistage current steering switch employing magnetic cores. Each stage includes an output core and a plurality of logic cores. All the output cores are inductively coupled in series by a first activating winding, while all the logic cores are inductively coupled by a

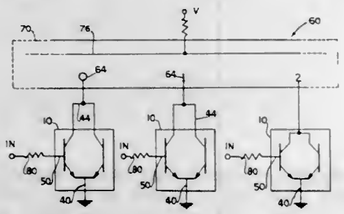
second activating winding. Similarly, each output core is inductively coupled in series by a first control winding, with one logic core of each stage, while a second control winding inductively couples each output core to all the logic cores of its respective stage. An activating pulse drives one of the output cores to the magnetic state of the other cores, inducing a current in the first control winding which tends to switch all the logic cores coupled thereto. However, currents in inhibit windings inhibit all but one logic core from switching. That single core is again switched by a current in the second activating winding, inducing a current in the second control winding which causes the output core coupled thereto to be switched.

3,466,460
TIME DIVISION MULTIPLIER
Joseph J. Connolly, Feasterville, Pa., assignor to Weston Instruments, Inc., Newark, N.J., a corporation of Delaware
Filed Jan. 20, 1967, Ser. No. 610,607
Int. Cl. G06g *7/12;* **H03k** *19/08, 3/26*
U.S. Cl. 307—229 **11 Claims**



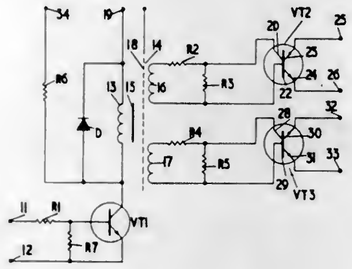
A four quadrant time division multiplier utilizing combined pulse-height and pulse-width modulation of a series of pulses with the average height of the pulses being proportional to the product of two voltage variables. The modulator of the pulse-width comprises an integrator, a flip-flop and a pair of level changers and drivers. The modulator of the pulse-height includes a field effect transistor which is switched by the pulse-width modulator.

3,466,461
SEMICONDUCTOR DEVICE AND CIRCUIT FREE OF AVALANCHE OSCILLATIONS
George E. Holz, North Plainfield, N.J., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan
Filed Dec. 20, 1966, Ser. No. 603,306
Int. Cl. H03k *5/08*
U.S. Cl. 307—237 **4 Claims**



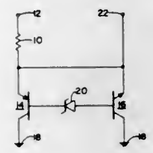
An integrated semiconductor device for operating while preventing avalanche oscillations comprising a body of semiconductor material having two identical transistors formed therein, each having emitter, base, and collector regions formed in the body of semiconductor material. The two emitter regions and the two collector regions are provided with a common ohmic contact which can be connected to external circuits, but only one base electrode is provided with such a contact. This device, when connected in a circuit, operates without the danger of avalanche oscillations occurring.

3,466,462
ELECTRONIC SWITCH
Graham John Hounsome, Feltham, England, assignor to Epsylon Research and Development Company Limited, Bedfont, Feltham, England, a British company
Filed Nov. 29, 1965, Ser. No. 510,248
Claims priority, application Great Britain, Nov. 30, 1964, 48,493/64
Int. Cl. H03k *17/56*
U.S. Cl. 307—240 **3 Claims**



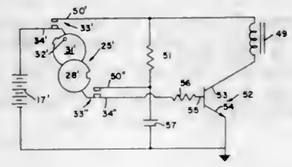
Electronic switch comprising a transformer whose primary winding is in series with the collector of an input transistor and a D.C. source, a second D.C. source connected to the collector of the input transistor, and a chopper transistor as switching element activated by the transformer secondary winding. A switching pulse applied to the input transistor allows current to flow from the first source through the transformer primary and the input transistor and from the second source directly through the input transistor, and at the end of the switching pulse current flows from the second source through the transformer primary in the opposite direction. This provides the maximum switching period for the chopper transistor.

3,466,463
BIPOLAR LIMITING CIRCUIT
Adrian J. Moses, Rush City, Minn., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware
Filed Apr. 11, 1967, Ser. No. 630,048
Int. Cl. H03k *5/08*
U.S. Cl. 307—237 **5 Claims**



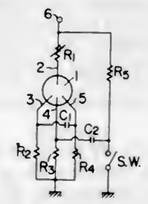
A circuit for providing limiting action in both polarities so that it will provide limiting for both AC and DC signals with no requirements for an external power source.

3,466,464
ELECTROMECHANICAL MEANS USING A SEMICONDUCTOR
James B. Putterbaugh and Joseph E. Wiser, Indianapolis, Ind., assignors to P. R. Mallory & Co., Inc., Indianapolis, Ind., a corporation of Delaware
Original application Mar. 17, 1965, Ser. No. 440,567, now Patent No. 3,294,930, dated Dec. 27, 1966. Divided and this application Aug. 18, 1966, Ser. No. 590,117
Int. Cl. H03k *17/28*
U.S. Cl. 307—246 **1 Claim**



A transistor is included as part of an electrical circuit which is responsive to switches that are controlled by cam means of an electrical mechanical device. The transistor energizes an electrode such as a solenoid.

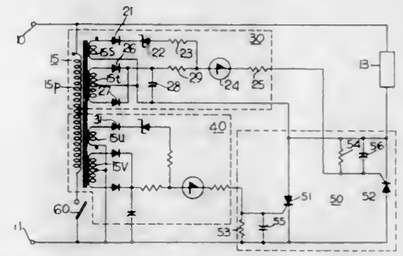
3,466,465
SWITCHING DEVICE USING CRITICAL TEMPERATURE THERMISTOR
Hisao Futaki, Musashino-shi, and Kazutoshi Ikegami, Tokyo-to, Japan, assignors to Kabushiki Kaisha Hitachi Seisakusho, a joint-stock company of Japan
Original application Aug. 21, 1964, Ser. No. 391,129. Divided and this application Jan. 26, 1967, Ser. No. 627,282
Int. Cl. H03k *17/56, 17/74*
U.S. Cl. 307—248 **4 Claims**



A semiconductor switching device using a critical temperature thermistor having an oxide body and four lead wires embedded in the body, one of the lead wires constituting an anode and the other three lead wires cathodes, in which a densely concentrated current flowing from the anode wire to one of the cathode wires located in one side of the group of the cathode wires can be shifted to the other cathode wire located in the opposite side of the group by applying a triggering signal to the centrally located cathode wire, whereby a flip-flop action can be performed. Furthermore, by connecting a plurality of the flip-flop circuits in parallel sequential arrangement, a counter, for example, a Dekatron, is constituted.

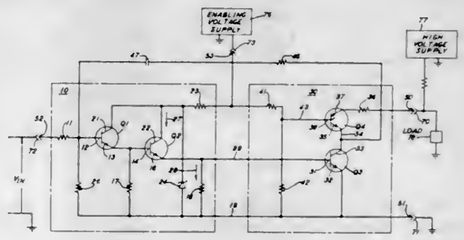
3,466,466
STATIC ALTERNATING CURRENT CIRCUIT BREAKING DEVICE
Manfred E. Neumann, New Berlin, Wis., assignor to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.
Filed Apr. 4, 1966, Ser. No. 539,938
Int. Cl. H03k *17/60, 17/74*
U.S. Cl. 307—252 **13 Claims**

A control circuit fires thyristors at zero crossing points of an AC source. A continuous unidirectional gate control signal is applied to each thyristor at a preselected level of the half cycle of the source during which the said thyristor is reverse biased in anticipation of becoming forward



biased so that the said thyristor begins to conduct when the source voltage passes through zero.

3,466,467
SOLID STATE SWITCHING CIRCUIT
George P. Houcke, Tenafly, N.J., and Todd A. Smith, Brooklyn, N.Y., assignors to Bell Telephone Laboratories, Incorporated, Murray Hill and Berkeley Heights, N.J., a corporation of New York
Filed May 23, 1966, Ser. No. 552,255
Int. Cl. H03k *17/56*
U.S. Cl. 307—252 **17 Claims**

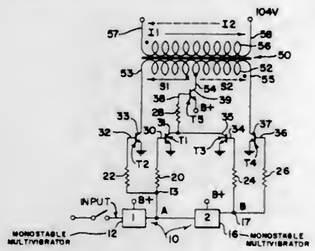


A control transistor and a silicon controlled rectifier (SCR) are arranged in a series AND gate that includes a voltage divider providing an enabling bias to the SCR gate electrode. On and off signals are applied to the control transistor base. Even though high voltage is applied across the series collector-emitter path of the AND gate, the control transistor is not destroyed by punch-through when it is turned off because the control transistor collector potential, as it rises, back biases the gate-cathode junction. This back bias cooperates with decreasing current through the control transistor for turning off the SCR before punch-through occurs.

3,466,468
MONOSTABLE CONTROLLED SATURABLE CORE BLOCKING OSCILLATOR CIRCUIT
Peter G. Bartlett, Davenport, Iowa, and Joseph E. Meschi, Lyons, Ill., assignors to E. W. Bliss Company, Canton, Ohio, a corporation of Delaware
Filed Dec. 19, 1967, Ser. No. 691,897
Int. Cl. H03k *3/30*
U.S. Cl. 307—275 **17 Claims**

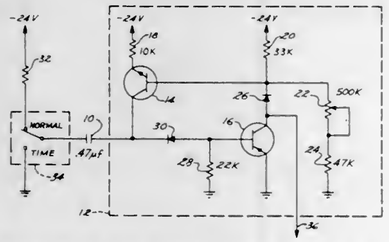
There is provided a blocking oscillator circuit having a saturable core transformer energized by monostable oscillator outputs. A single input pulse triggers a monostable oscillator to start the circuit operation, and through control transistors, the core is saturated first in one direction for a predetermined time and then in the

opposite direction for a like time by a direct current source attached to a primary winding center tap of the transformer, and a bipolar wave form with a positive



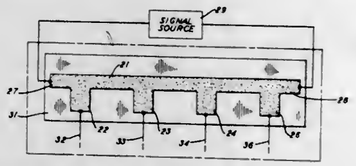
and a negative amplitude with respect to a reference level is generated in the secondary winding of the transformer as a result of the single input pulse.

3,466,469
TIMING CIRCUIT
Robert M. Brown, Arlington County, Va., assignor to The Susquehanna Corporation, a corporation of Delaware
Filed Aug. 19, 1966, Ser. No. 573,620
Int. Cl. H03k *17/26, 17/28*
U.S. Cl. 307—293 **4 Claims**



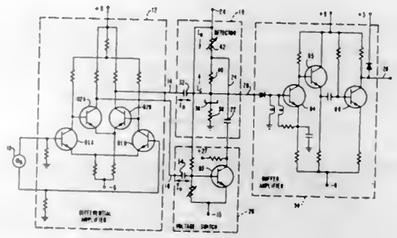
An example of the timing circuit includes a timing capacitor connected to a regenerative switch. This switch is formed by a PNP–NPN transistor pair. A variable voltage divider is connected to the base of one transistor so that it functions as a constant-current source. This results in a linear discharge of the capacitor and, accordingly, precise timing periods can be obtained. The regenerative action of the transistor pair gives a precise indication of the end of the timing period.

3,466,470
SUPERCONDUCTING DEVICE UTILIZING AN ALLOY MATERIAL
John M. Rowell, Readington Township, Hunterdon County, N.J., assignor to Bell Telephone Laboratories, Incorporated, Murray Hill and Berkeley Heights, N.J., a corporation of New York
Filed June 14, 1966, Ser. No. 557,576
Int. Cl. H03k *3/38*
U.S. Cl. 307—306 **7 Claims**



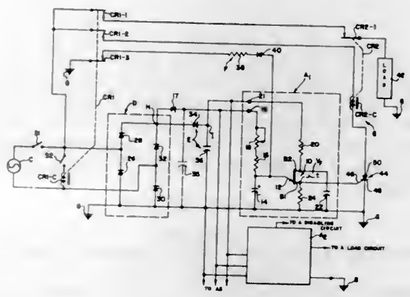
A superconducting device is provided with a strip of superconducting alloy material, the composition of which varies monotonically along the length of the strip. The critical temperature, therefore, also varies monotonically along the strip length. Means are provided for producing a normally conducting to superconducting interface in the strip and for causing the interface to propagate controllably along the strip. The device is useful as an analog to digital converter, a current stabilizer and a current regulator.

3,466,471
CIRCUIT FOR SENSING BINARY SIGNALS FROM A HIGH SPEED MEMORY DEVICE
Paul B. Flagg, Broome, N.Y., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed Dec. 30, 1965, Ser. No. 517,723
Int. Cl. H03k *3/26, 19/08, 23/14*
U.S. Cl. 307—322 **7 Claims**



A high speed sensing circuit includes a difference amplifier with first and second output circuits; the first output circuit is connected to a tunnel detector and operates the detector when a signal representing a binary one is presented; the second output circuit is connected through a transistor switch to the detector, and the switch is operated to disable the detector when a signal representing a binary zero is presented.

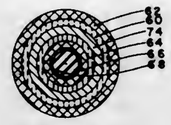
3,466,472
TIMING CIRCUIT METHOD AND APPARATUS
James J. Vandemore, Geneseo, Ill., and Donald E. Henry, Davenport, Iowa, assignors to E. W. Bliss Company, Canton, Ohio, a corporation of Delaware
Filed Apr. 16, 1965, Ser. No. 448,623
Int. Cl. H03k *17/28*
U.S. Cl. 307—293 **10 Claims**



There is provided a relaxation oscillator timing circuit including an electronic control device having an input circuit, a reverse biasing circuit for applying reverse bias voltage to the device, an output circuit, and a timing

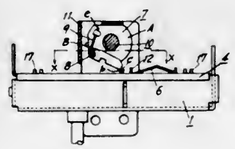
capacitor connected across the input circuit for storing a voltage. The control device will be forward biased when the value of the stored voltage across the capacitor attains a level equal to a characteristic voltage of the control device. The reverse biasing circuit provides a cyclically varying reverse bias voltage of a given polarity from a source of voltage, so that the time at which the control device fires or "avalanches" is dependent on the frequency of the cyclically varying voltage.

3,466,473
HIGH VOLTAGE SONIC PULSE GENERATOR
Merle L. Rhoten, Columbus, Ohio, assignor to The Board of Trustees of the Ohio State University, an institution of Ohio
Filed Dec. 30, 1966, Ser. No. 606,257
Int. Cl. H02n *7/00*
U.S. Cl. 310—8.7 **6 Claims**



This invention relates to a high voltage pulse generator utilizing a plurality of disc shaped piezoelectric crystal assemblies stacked in a column. Circuits arrangements are provided to yield a high voltage pulse or alternatively a high current pulse having a magnitude directly correlatable with the mechanical pressure applied to the assemblies.

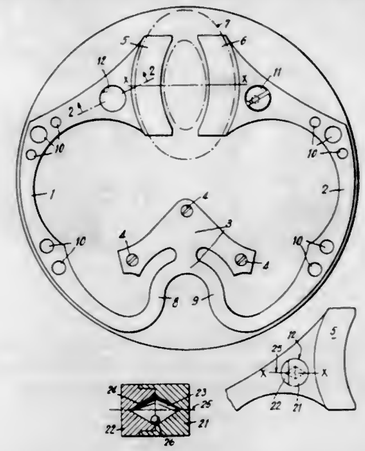
3,466,474
PIEZOELECTRIC IGNITION ELEMENT WITH AN ACTUATOR
Shigeru Ochiai, Neyegawa, Japan
(4–10 Minami, Shinmorishoji, Asahi-ku, Osaka, Japan)
Filed Sept. 26, 1967, Ser. No. 670,728
Int. Cl. H01v *7/00*
U.S. Cl. 310—8.7 **1 Claim**



An actuator for a piezoelectric ignition device in which rotation of a shaft moves a pawl against a linearly movable beater to shift the beater and compress a spring, the pawl cooperating with a cam that frees the beater upon upon continued rotation of the shaft whereupon the beater strikes a piezoelectric element to cause ignition.

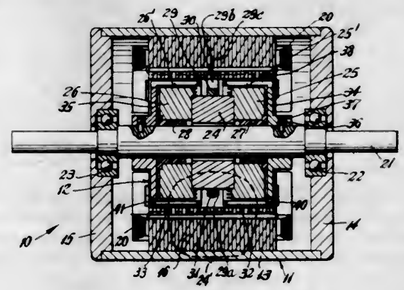
3,466,475
MECHANICAL RESONATOR
Max Hetzel, Bienne, and Rémy Seigneur, Neuchatel, Switzerland, assignors to Centre Electronique Horloger S.A., Neuchatel, Switzerland, a company of Switzerland
Filed Mar. 13, 1968, Ser. No. 712,735
Claims priority, application Switzerland, Mar. 13, 1967, 3,600/67
Int. Cl. H02k *33/04, 35/02*
U.S. Cl. 310—25 **10 Claims**

A mechanical resonator having two arms oscillating in phase opposition and at least one compensating device including a cavity formed in a port integral with one of the arms and at least one mass placed freely in the cavity



to at least partially and automatically compensate the variations of the frequency proper of the resonator due to changes of its orientation in space.

3,466,476
ELECTRIC STEPPING MOTOR WITH A PAIR OF ROTOR CAGES AND STATORS
Arthur E. Snowdon, Bristol, Conn., assignor to The Superior Electric Company, Bristol, Conn., a corporation of Connecticut
Filed Mar. 21, 1967, Ser. No. 624,748
Int. Cl. H02k *37/00*
U.S. Cl. 310—49 **7 Claims**

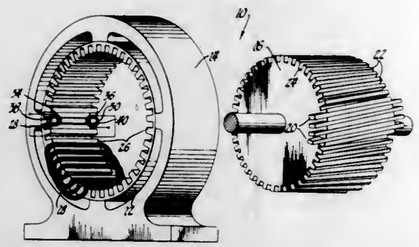


A stepping motor having an outer stator formed with teeth that cooperate with teeth formed on a pair of rotor cages, the latter rotating in synchronism with the change of flux in the stator. The rotor teeth are magnetized by a permanent magnet means forming part of the stator that is held stationary with respect to the rotors to thereby increase the torque to inertia ratio of the motor.

3,466,477
INDUCTION MOTOR SPEED SENSING APPARATUS
William J. Newill, Dayton, Ohio, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed June 7, 1967, Ser. No. 644,368
Int. Cl. H02k *11/00*
U.S. Cl. 310—68 **4 Claims**

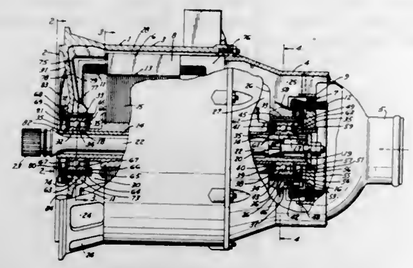
In a preferred embodiment a speed sensing device for a dynamoelectric machine is provided within the machine structure by a pair of magnetic coil transducers

placed on opposite ends of a stator tooth portion. The machine rotor member includes slots oriented at an angle with respect to the axis of the stator so that rotation of



the rotor causes different induced currents in the transducers. The induced currents are combined to produce an output signal responsive to the rotor speed.

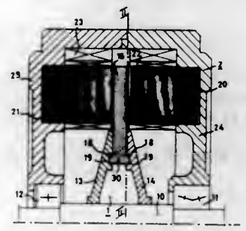
3,466,478
BEARING GAS PRESSURE EQUALIZING STRUCTURE
Stewart E. Gail, Northfield, Ohio, assignor to Lear Siegler, Inc., Santa Monica, Calif., a corporation of Delaware
Filed Jan. 9, 1967, Ser. No. 608,169
Int. Cl. H02k *7/08*
U.S. Cl. 310—90 **12 Claims**



A dynamoelectric machine in which a rotor is supported by a bearing or bearings such as anti-friction bearings, and through which a flow of cooling gas normally provides gas pressure differentials across the bearings, and which has pressure equalizing passages across the bearings and flow restricting structures adjacent one or both sides of the bearings for substantially equalizing the gas pressure on both sides of the bearings to prevent lubricant from being blown out of the bearings or contaminants from being blown into the bearings.

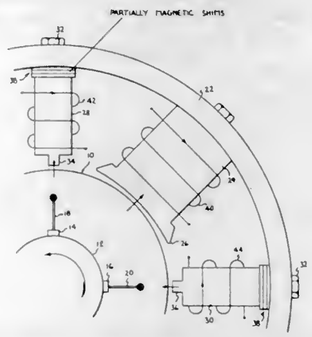
3,466,479
LOW-INERTIA VARIABLE-RELUCTANCE ELECTRICAL MACHINE
Jean Jarret, La Champanelle, Chemin du Clos Baron, Fourqueux, France, and Jacques Jarret, 35 bis Ave. du Belloy, Le Vesinet, France
Filed Sept. 18, 1967, Ser. No. 668,405
Claims priority, application France, Sept. 19, 1966, 76,806
Int. Cl. H02k *19/20, 19/24*
U.S. Cl. 310—168 **4 Claims**

Variable reluctance electrical machine comprising a stator including magnetic poles arranged in two parallel rings separated by a gap parallel to the axis of the machine shaft, the magnetic poles of the two rings being respectively opposite one another, means for producing in said gap a direct-current magnetic field parallel to said axis and alternating current magnetic fields also parallel to said axis between opposite poles, and a rotor including two non-magnetic support members connected to the shaft and teeth formed by a stack of radially alternating magnetic and non-magnetic laminae, said stack being secured



to said support members and being preferably formed by winding together a strip of magnetic material and a strip of non-magnetic material into a circular ring and subsequently deforming said circular ring to give it an angularly periodically varying radius, said teeth consisting of those parts of said deformed ring which have maximum radius.

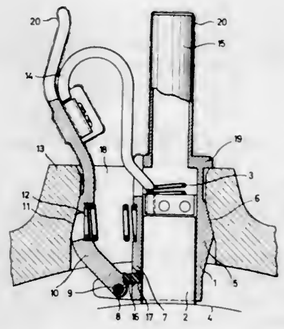
3,466,480
COMMUTATION IMPROVEMENT FOR DYNAMO-ELECTRIC MACHINE
James E. Bunner and Daniel L. Griffis, Erie, Pa., assignors to General Electric Company, a corporation of New York
Filed Apr. 14, 1967, Ser. No. 631,051
Int. Cl. H02k *1/12, 1/18*
U.S. Cl. 310—218 **4 Claims**



Partially magnetic shims made up of both a magnetic substance such as iron and a non-magnetic substance such as air are used between the commutating poles and the yoke of a dynamoelectric machine, having convex shaped black band commutating characteristics which indicate that commutation is poor in the higher load range of the machine, to non-linearly change the commutating characteristics of this machine over its range of loads. In each of these partially magnetic shims, which may comprise materials such as expanded steel or perforated steel, the ratio of the volume of the magnetic substance to the volume of the non-magnetic substance is specifically chosen to allow the magnetic substance to saturate over a preselected range of increasing percentages of full load of the machine to increase the series reluctance of the magnetic circuit of the commutating circuit. The thickness of the partially magnetic shims is specifically chosen to add

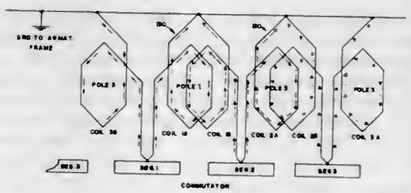
the series reluctance to the commutating circuit which compensates for the poor commutating characteristics of the machine at the higher machine loads where the shims are saturated.

3,466,481
BRUSH HOLDER WITH GRIPPING LEVER FOR ELECTRICAL MACHINES
Walter Sckerl, Bad Godesberg, Germany, assignor to Ringsdorff-Werke G.m.b.H., Bad Godesberg-Mehlem, Germany, a corporation of Germany
Filed Feb. 1, 1966, Ser. No. 523,986
Claims priority, application Germany, Jan. 30, 1965, R 29,937
Int. Cl. H02k *13/10*
U.S. Cl. 310—239 **10 Claims**



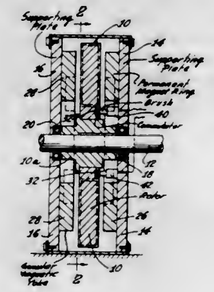
A brush holder for electric machines having a lever pivotally secured to a holder body, said lever being urged away from the holder body by a resilient member into engagement with a brush carriage for releasably securing the brush holder to the brush carriage.

3,466,482
REVERSIBLE DIRECT CURRENT MOTOR
Nicholas Peters, 3399 Lorelei Drive, Yorktown Heights, N.Y. 10598
Original application Aug. 22, 1963, Ser. No. 303,758, now Patent No. 3,376,575, dated Apr. 2, 1968. Divided and this application Sept. 13, 1967, Ser. No. 667,571
Int. Cl. H02k *1/24*
U.S. Cl. 310—269 **3 Claims**



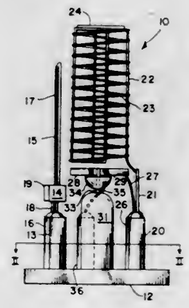
The motor (FIG. 6) has two permanent magnet stator poles and a three pole armature with a three segment commutator and two commutator brushes **52** and **53** (FIG. 7). Each armature pole has at least one winding **131** connected from an associated commutator segment to ground. Application of a D.C. current source between one brush **52** and ground causes motor rotation in one direction. Application of current at the other brush **53** provides rotation in the other direction.

3,466,483
SINTERED ROTOR FOR AN ELECTRIC MOTOR
Keith O. Johnson, Los Angeles, and Kent D. Broadbent, San Pedro, Calif., assignors to Gauss Electrophysics, Inc., Santa Monica, Calif., a corporation of California
Filed Dec. 4, 1967, Ser. No. 687,521
Int. Cl. H02k *1/22*
U.S. Cl. 310—268 **7 Claims**



An electric motor is provided which includes a rotor composed of a thin disc of sintered magnetic insulating material, such as powdered ferrite, and which includes a rotor winding on the disc in the form of a conductive pattern formed on both faces of the disc and mounted in grooves in the disc to extend as a continuous winding, the rotor winding being formed of a sintered electrically conductive material, such as powdered copper. The resulting motor has the advantages over the prior art in that it can be operated at extremely high temperatures since there is no insulation to burn, and relatively small motors constructed in accordance with the invention can develop high horsepower ratings.

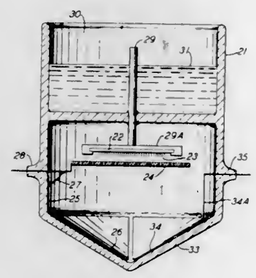
3,466,484
IONIZATION VACUUM GAUGE WITH ALL BUT THE END OF THE ION COLLECTOR SHIELDED
Forrest P. Clay, Jr., Norfolk, and Leonard T. Melfi, Jr., Williamsburg, Va., assignors to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration
Filed Apr. 27, 1967, Ser. No. 635,326
Int. Cl. H01j *7/16, 13/28, 17/24*
U.S. Cl. 313—7 **10 Claims**



The invention is an ionization vacuum gage of the hot filament type having the ion collector buried or completely removed from the grid structure of the gage. A shield is located between the grid structure and the ion collector

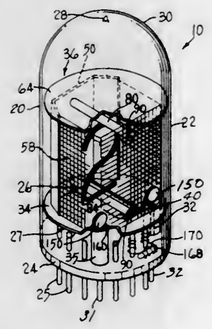
which reduces the number of X-ray incident on the collector. The end of the grid opposite the ion collector is closed in one embodiment and in another embodiment an ion collector and shield are positioned at both ends of the grid structure.

3,466,485
COLD CATHODE EMITTER HAVING A MOSAIC OF CLOSELY SPACED NEEDLES
John R. Arthur, Jr., Murray Hill, Jack A. Morton, South Branch, William G. Pfann, Far Hills, and Richard S. Wagner, Bernardsville, N.J., assignors to Bell Telephone Laboratories, Incorporated, Murray Hill and Berkeley Heights, N.J., a corporation of New York
Filed Sept. 21, 1967, Ser. No. 669,534
Int. Cl. H01j *39/04*
U.S. Cl. 313—95 **7 Claims**



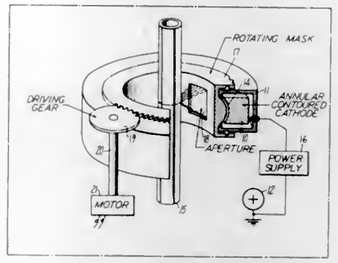
Cold cathode field emitters and arrays thereof of controlled geometry may be obtained by the vapor-liquid-solid crystal growth mechanism or by the freezing of pure components to obtain a rod form eutectic.

3,466,486
ELECTRONIC INDICATOR TUBE HAVING PRIMARY CHARACTERS AND AUXILIARY CHARACTERS
Thomas C. Maloney, Bernardsville, N.J., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan
Filed Sept. 25, 1967, Ser. No. 671,540
Int. Cl. H01j *7/42*
U.S. Cl. 313—109.5 **9 Claims**



The disclosure is of a cold cathode gaseous indicator tube having a plurality of cathode numerals mounted in a rigid assembly and having electrode connections to tube pins sealed in the stem of the tube. The electrode assembly also includes cathode electrodes adapted to be used as decimal points. The structural arrangement for the decimal point, which is mounted directly on a tube pin, is unique and can be carried out before the remainder of the electrode assembly is set in place on the tube pins.

3,466,487
DEVICE FOR MOVING A BEAM OF CHARGED PARTICLES
Jack W. Davis, East Hartford, and Fernand J. Ferreira, Hazardville, Conn., assignors to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware
Filed June 16, 1967, Ser. No. 646,677
Int. Cl. H01j *1/44, 1/52, 35/28*
U.S. Cl. 313—146 **4 Claims**



A nondissipative apertured mask for shaping an electron beam produced from a cathode operating in a glow discharge is shown. Relative movement of the electron beam is obtained by moving the apertured mask relative to the electron emitting surface of the cathode.

3,466,488
ARC DISCHARGE ENVELOPE AND METHOD OF MAKING SAME WITH THREE BUTTED GLASSY TUBES
Wayne Evans, West Peabody, Rudolph Marcucci, Beverly, and Paul Gates, Danvers, Mass., assignors to Sylvania Electric Products Inc., a corporation of Delaware
Filed Aug. 22, 1966, Ser. No. 574,121
Int. Cl. H01j *17/16, 61/30*
U.S. Cl. 313—220 **5 Claims**

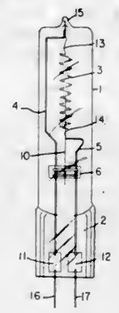


An envelope for a short arc discharge lamp is made by butting two small outer diameter quartz end tubes against a larger outside diameter tube of the same inside diameter, fusing the three tubes in alignment, and hot molding the larger tube during rotation with a paddle mold so that its outside contour is curved outwardly continuously from the outer surface of the end tubes. The envelope thus formed has a substantially constant inner diameter, smooth and free of ripples giving the molded intermediate tube precisely reproducible optical properties.

3,466,489
INCANDESCENT LAMP
Emery G. Audesse, Salem, and Leroy S. Huston, Jr., Marblehead, Mass. (Both % Sylvania Electric Products Inc., 60 Boston St., Salem, Mass. 02146)
Filed Nov. 8, 1967, Ser. No. 681,519
Int. Cl. H01k *1/18*
U.S. Cl. 313—222 **9 Claims**

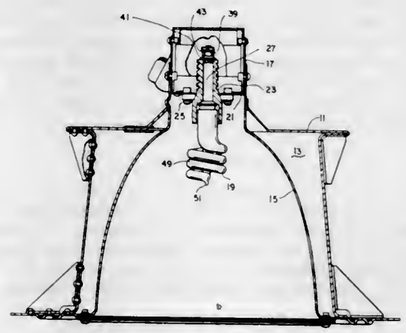
A quartz halogen lamp having a filament mounting

bridge which includes lead-in wires embedded in a quartz rod. The bond between the lead-in wire and the quartz



rod is substantially improved by a coil encircling the lead-in wire within the situs of embedment.

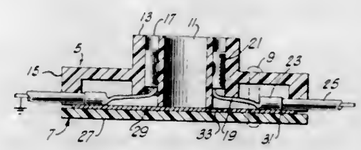
3,466,490
FLASHTUBE FOR MOUNTING ON A SPACE VEHICLE
Francis Sileo, Saratoga County, N.Y., assignor to Espey Mfg. & Electronics Corp., Saratoga Springs, N.Y.
Filed July 3, 1967, Ser. No. 651,352
Int. Cl. H01j *5/48, 5/50*
U.S. Cl. 313—318 **2 Claims**



A flashtube able to withstand temperature, vibration and shock extremes such as those encountered on a space vehicle wherein a quartz glass envelope bulb terminating in legs of a borosilicate glass; the borosilicate glass legs are hermetically bonded to elongated electrode holders made of an alloy having a nominal composition of 29% nickel, 17% cobalt, 0.45% manganese and the balance iron. These electrode holders terminate in threads. No physical contact with the brittle transparent envelope other than that provided by the low stress borosilicate glass to nickel-cobalt-iron alloy seal is necessary to mount this flashtube, thereby minimizing thermal stresses to insure reliable operation when exposed to the extreme environments typical of a space mission.

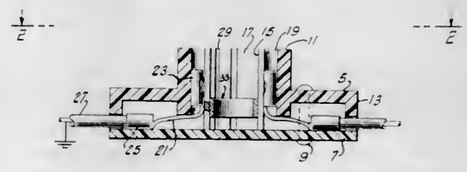
3,466,491
PLANAR SPARK GAP SOCKET
Richard Alan Momberger, Batavia, N.Y., assignor to Sylvania Electric Products Inc., a corporation of Delaware
Filed Sept. 14, 1967, Ser. No. 667,798
Int. Cl. H01j *5/50*
U.S. Cl. 313—331 **8 Claims**

An electron discharge device spark gap socket includes electrical connectors within a body of electrical insulating material and a support member of electrical insulating material having a plurality of electrical conductors on one surface thereof with each of the conductors contacting an



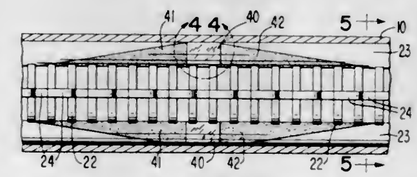
electrical connector and formed to provide a plurality of fixed spark gaps intermediate one of the conductors and the remainder of the conductors.

3,466,492
ELECTRON TUBE SOCKET WITH SPARK GAP
Peter Lewis Crellin, Buffalo, N.Y., assignor to Sylvania Electric Products Inc., a corporation of Delaware
Filed Sept. 14, 1967, Ser. No. 667,686
Int. Cl. H01j *5/50*
U.S. Cl. 313—331 **5 Claims**



A socket for electron tubes includes a wall member forming a central aperture, circumferentially spaced apertures exterior of the wall member, an electrical connector in each exterior aperture, a metal ring having indentations and protuberances disposed in the central aperture, and passageways intermediate the metal ring and the exterior apertures.

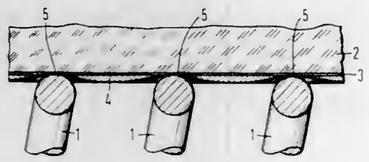
3,466,493
CIRCUIT SEVER FOR PPM FOCUSED TRAVELING WAVE TUBES
Robert M. Phillips, Redwood City, Calif., assignor to Varian Associates, Palo Alto, Calif., a corporation of California
Filed Feb. 21, 1967, Ser. No. 617,685
Int. Cl. H01j *25/34*
U.S. Cl. 315—3.5 **6 Claims**



Conventional circuit severs (zero gain RF absorption regions which permit modulated beams to pass therethrough and inhibit spurious oscillation problems by limiting circuit section gain) are either complex and bulky or inadequate with regard to PPM focused traveling wave tubes which require the smallest possible spacing between the focusing structure and circuit in order to maximize H-field-weight ratios. By utilizing a lossy coating on in-

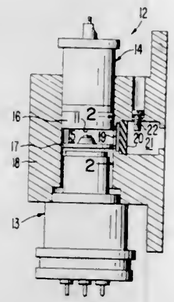
sulating circuit support members e.g. bars, rods in conjunction with a conductive metal intermediate coating section on the rods it is found that arcing and subsequent corrosion problems are eliminated in a compact design which is suitable for PPM (periodic permanent magnet) focused traveling wave tubes.

3,466,494
TRAVELING WAVE TUBE WITH DELAY LINE SUPPORTS HAVING A LOSSY LAYER AND AN INSULATION LAYER
Werner Eichin and Helmut Katz, Munich, Germany, assignors to Siemens Aktiengesellschaft, Berlin, Germany, a corporation of Germany
Filed May 1, 1968, Ser. No. 725,848
Int. Cl. H01j *25/34*
U.S. Cl. 315—3.5 **15 Claims**



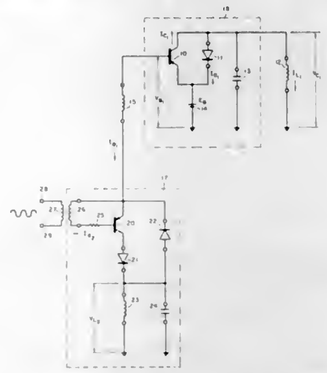
A traveling wave tube comprising a spiral delay line supported by longitudinal supporting rods which are coated with an attenuation layer. An insulation layer is formed over the attenuation layer at least except at the points of contact between the spiral delay line and the supporting rods so as to prevent the dropping of the operating attenuation due to erosion during use.

3,466,495
TEMPERATURE COMPENSATED KLYSTRONS
Curtis E. Ward, Los Altos, Calif., assignor to Varian Associates, Palo Alto, Calif., a corporation of California
Filed Feb. 27, 1967, Ser. No. 618,964
Int. Cl. H01j *25/22*
U.S. Cl. 315—5.23 **7 Claims**



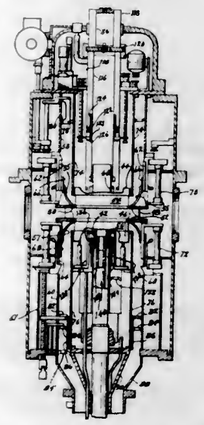
The operating frequency of klystrons which incorporate an iris coupler are quite susceptible to variations in iris dimensions with temperature changes. In order to minimize the effects of such temperature changes a metal insert having greater ductility and larger thermal coefficient of expansion than the surrounding tube body portion forms the internal defining wall portions of the iris in a manner to reduce iris dimensional changes with temperature and thus enhance frequency stability of the klystron.

3,466,496
HORIZONTAL DEFLECTION CIRCUIT
William Geller, Plainview, and Kurt Hillman, Flushing, N.Y., assignors to General Telephone & Electronics Laboratories Incorporated, a corporation of Delaware
Filed Nov. 29, 1967, Ser. No. 686,669
Int. Cl. H01j *29/70*
U.S. Cl. 315—27 **11 Claims**



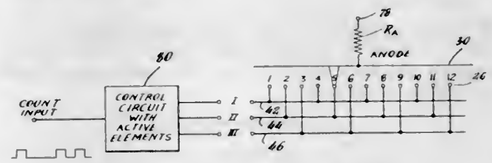
A horizontal deflection circuit for a television receiver is disclosed wherein a single drive stage provides both the turn-on and turn-off drive signals for the output stage containing the deflection coil. The drive stage of the deflection circuit, which contains a transistor, an inductor, a flyback capacitor and damping means, generates a sawtooth turn-on drive signal for the output stage transistor. The turn-off drive signal for the output stage transistor is provided by damping the oscillation between the inductor and the flyback capacitor in the drive stage so that current having a polarity opposite to the turn-on drive signal is supplied to the output stage.

3,466,497
COAXIAL CIRCUIT FOR VACUUM TUBES
Raymond N. Clark, Cherry Hill, N.J., Milan W. Duris, Bethel Park, Pa., and Leslie L. Koros, deceased, late of Haddonfield, Camden, N.J., assignors to the United States of America as represented by the Secretary of the Air Force
Filed Nov. 23, 1966, Ser. No. 600,345
(Filed under Rule 47(a) and 35 U.S.C. 116)
Int. Cl. H01j *19/80*
U.S. Cl. 315—39 **3 Claims**



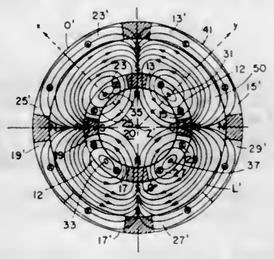
An input and output network for high power vacuum tubes which minimizes the effect of TE modes including a main cavity, a back cavity outside and around the main cavity, coupling slots in the main cavity parallel to the cavity axis, reactive flat line elements in the back cavity for shifting TE mode resonances, where the tuning and loading is accomplished by a coaxial line element in sliding short circulated contact with the outer conductor at one end and open circulated at the other.

3,466,498
TIMEKEEPING SYSTEM UTILIZING GLOW DISCHARGE TUBE
Heinz A. de Koster, Stamford, Conn., and Michael J. Ingenito, Bronx, N.Y., assignors to General Time Corporation, Stamford, Conn., a corporation of Delaware
Filed Sept. 23, 1966, Ser. No. 581,592
Int. Cl. H01j *17/36*
U.S. Cl. 315—84.6 **6 Claims**



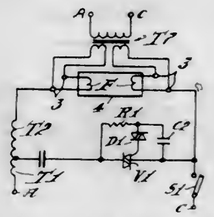
An improved electronic counting system which may be used as a timekeeping system, including a glow discharge tube containing an ionizable gas and a series of spaced internal electrodes. The electrodes are interconnected so as to form two or more operative cathode groups, and all of the groups are connected to a control circuit which applies a transfer potential to the various groups sequentially so as to transfer a glow discharge cyclically from one group to another, and along successive electrodes in the glow discharge tube. The glow discharge is transferred directly between successive cathodes, so that no intermediate transfer cathodes are required. The control circuit which controls the application of the transfer potential to the various electrode groups is connected between the respective groups and is directly responsive to a glow discharge in one of the cathode groups for automatically applying the transfer potential to another cathode group in response to an electrical input signal, which may represent preselected time intervals. Several different embodiments of the control circuit are disclosed.

3,466,499
CANCELLATION OF EXTERNAL MAGNETIC FIELDS BY INNER AND OUTER CYLINDRICAL CURRENT SHEETS
Richard A. Beth, Bellport, N.Y., assignor to the United States of America as represented by the United States Atomic Energy Commission
Filed Mar. 27, 1967, Ser. No. 626,674
Int. Cl. H01j *1/52, 5/02*
U.S. Cl. 315—85 **6 Claims**



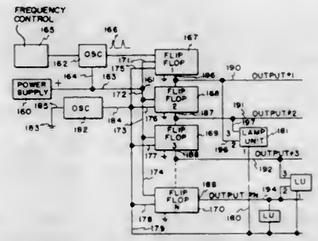
Apparatus providing zero external magnetic fields and high internal magnetic fields by means of inner and outer, longitudinally extending, parallel conductors forming inner and outer, coaxial, cylindrical, current sheets for transporting charged atomic particles along a beam axis.

3,466,500
CONTROL CIRCUIT FOR ARC DISCHARGE DEVICE
Sandford C. Peek, Ipswich, Mass., assignor to Sylvania Electric Products Inc., a corporation of Delaware
Continuation-in-part of application Ser. No. 606,669, Jan. 3, 1967. This application Dec. 29, 1967, Ser. No. 704,498
Int. Cl. H05b *39/04, 41/36*
U.S. Cl. 315—100 **13 Claims**



A semiconductor circuit for discharging a stored starting charge through a negative resistance fluorescent lamp and limiting current through the lamp in operation.

3,466,501
SELF-ILLUMINATING DEVICES AND SYSTEMS
Gordon W. Young, 3600 Paradise Road, Las Vegas, Nev. 89109
Filed Sept. 8, 1966, Ser. No. 577,961
Int. Cl. H05b *37/02*
U.S. Cl. 315—169 **11 Claims**

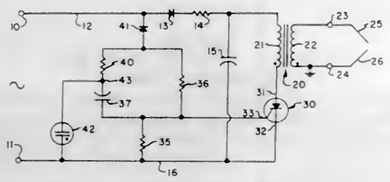


The disclosure of this invention outlines self-illuminating devices and systems for producing changing patterns of light, for decorative purposes. Possible applications include table decorations, illuminated jewelry, and other uses. The disclosure also discusses means for accomplishing the generation of these patterns by using digital counting techniques, motion of the wearer's body (in the case of jewelry), input frequency differences between different elements of a respective system, and other means. A number of different light sources are contemplated in the invention, including gas discharge, electroluminescent, incandescent, and semiconductor devices, all of which are designed to provide a pleasing visual effect.

3,466,502
CONTROLLED RECTIFIER TRIGGERING CIRCUIT
Balthasar H. Pinckaers, Edina, Minn., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware
Filed Mar. 13, 1967, Ser. No. 622,627
Int. Cl. H01j *19/78*
U.S. Cl. 313—238 **7 Claims**

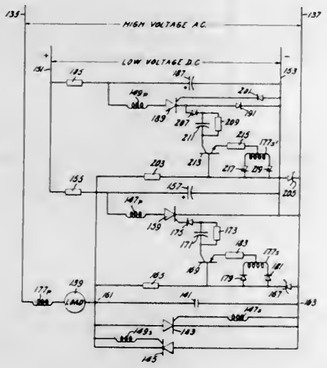
A triggering circuit for a controlled rectifier that discharges a storage capacitor through a transformer primary

winding each half-cycle for the generation of an ignition spark. The controlled rectifier is biased to a nonconductive



state after each discharge period. Each discharge cycle is initiated by the breakdown of a voltage breakdown device which discharges a secondary capacitor.

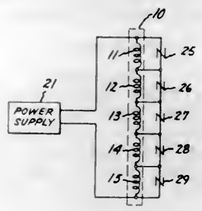
3,466,503
ASSISTED ARC A.C. CIRCUIT INTERRUPTION
Leon J. Goldberg, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York
Filed June 14, 1967, Ser. No. 646,063
Int. Cl. H02h *3/00, 1/00, 7/00*
U.S. Cl. 317—11 **15 Claims**



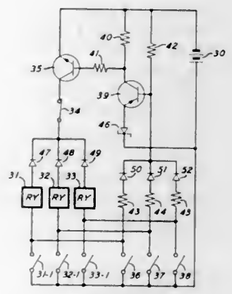
An assisted arc interrupter for A-C power circuits having physically separable contacts and associated arc controlling horn structure is provided with an auxiliary horn for creating two gaps and with at least one assisting diode or controlled avalanche diode so that one gap is un-ionized because the assister diverts or blocks current from that gap, while the other gap arcs over to a current zero and deionizes during the next half cycle. Either single phase or polyphase circuits can be interrupted, and in some applications the assisting diode performs a dual function such as rectifying. For higher voltages the assisting component may be a triggered vacuum gap or ignitron. Substantially arcless interruption is achieved by SCR's or a triac in parallel with the contacts which are triggered on as the contacts start to open and conduct to the next current zero and are prevented from being refired repetitively.

3,466,504
CONTINUOUS SHUNT PROTECTION MEANS FOR SUPERCONDUCTING SOLENOIDS
Howard R. Hart, Jr., Schenectady, N.Y., assignor to General Electric Company, a corporation of New York
Filed June 28, 1967, Ser. No. 649,498
Int. Cl. H02h *7/00, 3/28*
U.S. Cl. 317—13 **7 Claims**

Protection of a superconducting coil is achieved by shunting sections thereof with a high current capacity germanium diode having a low conduction threshold voltage of either polarity. As long as the voltage drop across each section of the coil is below this threshold, the diode across this section is nonconductive and effectively acts as an open circuit in parallel with the section. Once a voltage drop greater than this threshold appears however, the diode conducts, shunting current away from this section of the coil.



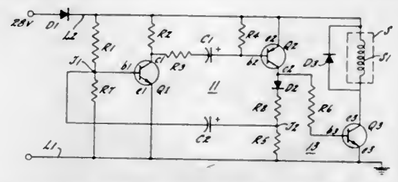
3,466,505
RELAY INTERLOCK CIRCUIT
Robert E. Anderson, North Andover, Mass., assignor to Bell Telephone Laboratories, Incorporated, Berkeley Heights, N.J., a corporation of New York
Filed Aug. 3, 1966, Ser. No. 569,983
Int. Cl. H01h *47/00, 47/32;* **H02b** *1/24*
U.S. Cl. 317—136 **1 Claim**



A relay interlock circuit is described in which the exclusive selection of one relay of any number of relays is accomplished with only one set of hold contacts per relay together with a common transistor relay drive circuit. The relay drive transistor is turned ON only when a single relay is selected for energization. When more than one relay is selected at any one particular time, the relay drive transistor is biased OFF thus de-energizing all relays.

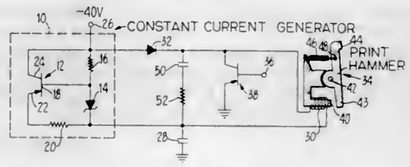
3,466,506
PULSE GENERATOR FOR PERIODICALLY ENERGIZING A TIMER SOLENOID
Matthew Badovinac, Arlington Heights, and Frank P. Broviak, Mundelein, Ill., assignors to General Time Corporation, Stamford, Conn., a corporation of Delaware
Filed May 3, 1967, Ser. No. 635,752
Int. Cl. H01h *47/18, 47/32;* **H03k** *17/00*
U.S. Cl. 317—142 **5 Claims**

A free-running multivibrator using complementary transistors with the output of each connected to the input of the other through separate capacitors which cause the transistors to conduct for brief, regularly time-spaced periods. The resulting pulses are current-amplified by a



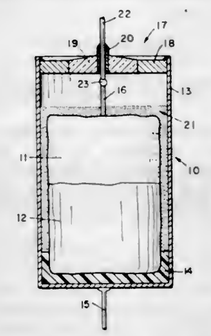
third transistor which drives the solenoid of an elapsed time indicator.

3,466,507
DRIVE CIRCUIT
Robert A. Ragen, Hayward, Calif., assignor to Friden, Inc., a corporation of Delaware
Filed June 2, 1966, Ser. No. 554,811
Int. Cl. H01h *47/32*
U.S. Cl. 317—148.5 **4 Claims**



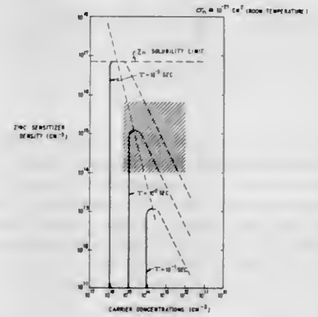
A drive circuit is disclosed having a storage capacitor which is charged by potential source through a constant current regulator and discharged through an inductive load to a reference potential. A unidirectional conducting device is connected between the load and the potential source in order to dissipate the current flowing through the load after the discharge path is interrupted. One such inductive load comprises a coil disposed about a magnetizable core which actuates a pivotable print hammer when the coil is energized. The discharge circuit is adapted to be deactivated in such a manner that the hammer smartly strikes its target in a nonrepetitive fashion.

3,466,508
STABILIZATION OF SOLID ELECTROLYTE CAPACITORS BY MEANS OF ATMOSPHERIC CONTROL
James M. Booe, Indianapolis, Ind., assignor to P. R. Mallory & Co., Inc., Indianapolis, Ind., a corporation of Delaware
Filed June 21, 1967, Ser. No. 647,693
Int. Cl. H01g *9/00*
U.S. Cl. 317—230 **13 Claims**



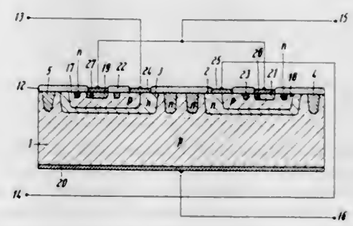
A solid or dry hermetically closed electrolytic capacitor having sealed within the hermetic enclosure an atmospheric control means for further stabilizing the electrical properties of the capacitor.

3,466,509
PHOTOCONDUCTOR MATERIAL AND APPARATUS
Egon E. Loebner, Palo Alto, Thomas J. Diesel, Sunnyvale, and Richard H. Bube, Stanford, Calif., assignors to Hewlett-Packard Company, Palo Alto, Calif., a corporation of California
Filed Mar. 26, 1968, Ser. No. 716,026
Int. Cl. H01l *3/00, 5/00*
U.S. Cl. 317—234 **3 Claims**



Zinc counter-doped n-type silicon semiconductor material is made to respond to electromagnetic radiation at wavelengths up to 1.1 microns with quantum gains in excess of 10^4 at room temperature.

3,466,510
INTEGRATED GRAETZ RECTIFIER CIRCUIT
Hans-Jürgen Maute, Heilbronn-Bockingen, Germany, assignor to Telefunken Patentnerwertungsgesellschaft m.b.H., Ulm (Danube), Germany
Filed Jan. 5, 1968, Ser. No. 695,991
Claims priority, application Germany, Jan. 7, 1967, T 32,939
Int. Cl. H01l *3/00, 5/00, 11/00*
U.S. Cl. 317—234 **18 Claims**

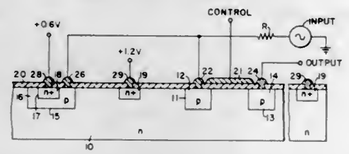


An integrated Graetz rectifier circuit arrangement suitable for use as a full wave rectifier or the like. The circuit arrangement includes a semiconductor body of a first conductivity type; two semiconductive first zones of a second conductivity type disposed, one electrically separated from the other, on the semiconductor body; two semiconductive zones of the first conductivity type each disposed on a respective one of the first zones; and two semiconductive third zones of the second conductivity type each disposed on a respective one of the first zones. Each of the third semiconductive zones is provided with a separate electrical terminal and each pair of adjoining first and second semiconductive zones is provided with a common electrical terminal.

3,466,511
INSULATED GATE FIELD EFFECT TRANSISTORS WITH MEANS PREVENTING OVERVOLTAGE FEEDTHROUGH BY AUXILIARY STRUCTURE PROVIDING BIPOLAR TRANSISTOR ACTION THROUGH SUBSTRATE

Hung Chang Lin, Silver Spring, Md., assignor to Westinghouse Electric Corporation., Pittsburgh, Pa., a corporation of Pennsylvania

Filed May 5, 1967, Ser. No. 636,378
Int. Cl. H011 *11/00, 11/14, 5/00*
U.S. Cl. 317—235 **4 Claims**

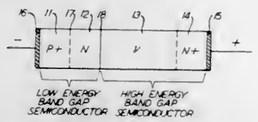


An insulated gate field effect transistor structure that in addition to usual elements has associated therewith an auxiliary structure to prevent feedthrough of spurious overvoltages between the input and output. The auxiliary structure provides bipolar transistor action with the substrate region and includes a base region that may be like the source and drain regions of the field effect transistor, an emitter region within the base region, and a collector region provided by the common substrate. A collector contact region is provided in a configuration that surface isolates the source and drain from the base region. Selected reverse bias voltages are applied to the emitter and collector so that signals applied to the base feed through the bipolar transistor if they are spurious signals exceeding true signal magnitude.

3,466,512
IMPACT AVALANCHE TRANSIT TIME DIODES WITH HETEROJUNCTION STRUCTURE

Thomas E. Seidel, Berkeley Heights, N.J., assignor to Bell Telephone Laboratories, Incorporated, Berkeley Heights, N.J., a corporation of New York

Filed May 29, 1967, Ser. No. 642,123
Int. Cl. H011 *11/00, 15/00*
U.S. Cl. 317—235 **10 Claims**



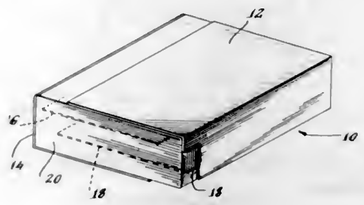
In order to obtain lower power loss in semiconductor diodes of the IMPact Avalanche Transit Time (IMPATT) type, a heterojunction structure is used in which the avalanche zone is made of a lower energy band gap seimiconductor material than the semiconductor material in the drift zone.

3,466,513
ELECTRICAL CAPACITOR

William R. Belko, Jr., 38 Cedarwood Lane, Huntington, Conn. 06484; Thomas F. Cobb, 16 Arch St., Ansonia, Conn. 06401; and Robert G. Varsane, Donovan Road, Oxford, Conn. 06483

Continuation-in-part of application Ser. No. 609,853, Jan. 17, 1967. This application Jan. 24, 1968, Ser. No. 700,097
Int. Cl. H01g *1/00*
U.S. Cl. 317—258 **7 Claims**

A capacitor and a method of making a capacitor having at least one internal electrode and at least one external electrode. Each external electrode covers at least a portion of one major surface of the component and at least a portion of one minor surface of the component. The minor

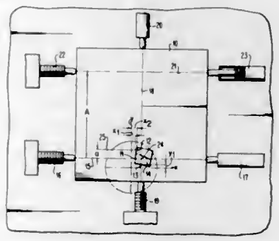


surface portion of the external electrode is in electrical communication with at least one internal electrode and preferably the external electrodes and the internal electrodes are made of different conductive materials.

3,466,514
METHOD AND APPARATUS FOR POSITIONING OBJECTS IN PRESELECTED ORIENTATIONS

Rolf H. Brunner and Edward V. Weber, Poughkeepsie, N.Y., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York

Filed June 26, 1967, Ser. No. 648,814
Int. Cl. H02p *1/54, 5/46, 7/68*
U.S. Cl. 318—18 **24 Claims**



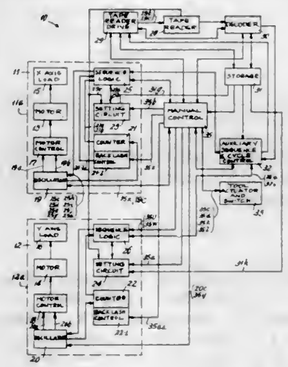
A method for positioning an object in a plane with respect to first and second coordinate axes in a preselected translational (X and Y) and rotary (θ) orientation by the application of three linear forces to the object in said plane. Two of the forces are applied perpendicular to one of said coordinate axes and the third force is applied perpendicular to the other coordinate axis. The method is particularly applicable to the positioning of small structures such as microelectronic components and semiconductor chips, and apparatus for performing the method on such structures is provided.

3,466,515
DIGITALLY PROGRAMMED SERVOCONTROL SYSTEM

Elmer W. Madsen, Bristol, and Albert C. Leenhouts, Granby, Conn., assignors to The Superior Electric Company, Bristol, Conn., a corporation of Connecticut

Filed Aug. 4, 1965, Ser. No. 477,133
Int. Cl. G05b *11/00;* **H02p** *7/18*
U.S. Cl. 318—18 **14 Claims**

A digital control system for producing movement related to a number of steps of a stepping motor in accordance with information stored on storage means such as punched tape in which the information consists of the desired number of steps, an oscillator provides the number of pulses simultaneously to a motor control and to a counting means, the motor control energizes the motor to produce a step for each pulse received and the counting means counts the pulses and stops the oscillator when the number of pulses supplied equals the number of steps in the information and in which there is a second motor required to move a number of steps called for by the information together with a second oscillator that supplies

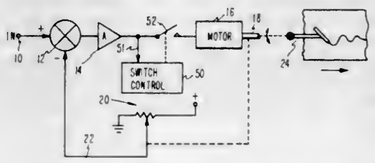


pulses simultaneously to a second motor control means and a second counting means and in which the second oscillator stops supplying pulses when the number of pulses supplied equals the number of steps called for by the information.

3,466,516
NOISE SUPPRESSOR FOR SERVOSYSTEM

Francis A. Goplen, Zumbrota, and John W. McCullough and Richard H. Thomas, Rochester, Minn., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York

Filed Dec. 29, 1965, Ser. No. 517,262
Int. Cl. H02p *1/54, 5/46, 7/68*
U.S. Cl. 318—18 **7 Claims**



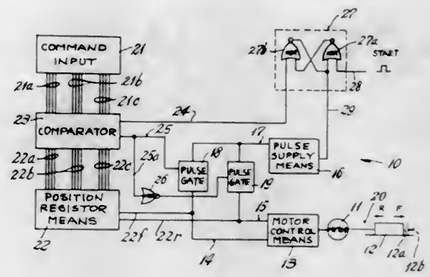
A circuit for controlling a servomechanism having an output device driven in response to an error signal wherein a disabling mechanism is utilized for inhibiting operation of the output device in response to a noise pulse. A noise pulse is identified by concurrent outputs from circuits which indicate that the error signal due to noise has exceeded a predetermined magnitude and predetermined rate of change while error signal control is reestablished by a return of the signal magnitude to a value within the predetermined range.

3,466,517
NUMERICALLY CONTROLLED MOTOR SYSTEM

Albert C. Leenhouts, Granmy, Conn., assignor to The Superior Electric Company, Bristol, Conn., a corporation of Connecticut

Filed Dec. 15, 1966, Ser. No. 601,981
Int. Cl. H02p *1/54, 5/46, 7/68*
U.S. Cl. 318—18 **15 Claims**

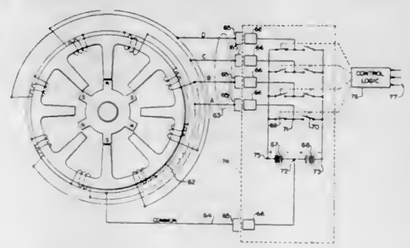
A numerical control system having a stepping motor that moves a discrete increment for each pulse supplied to a motor controller, in which the input information of a desired movement is in absolute form and in which a position register electrically maintains the present location of the motor by the value of its count. The system has an oscillator means that supplies pulses to the motor control and also to the position register means with the latter changing its count as the motor moves. The direction and extent of motor movement is controlled by continuously comparing the count of the position register and the input information and supplying pulses until coincidence occurs. The system further provides for operating the motor at higher speeds during its intermediate portion of movement than at either of its end portions of movement.



3,466,518
ROTARY STEPPING MOTORS AND CONTROL SYSTEMS THEREFOR

Veli Aylikci, Bellbrook, and Harvey J. Rosener, Torrance, Ohio, assignors to The National Cash Register Company, Dayton, Ohio, a corporation of Maryland

Filed Apr. 24, 1968, Ser. No. 723,775
Int. Cl. H02k *29/02*
U.S. Cl. 318—138 **15 Claims**



A rotary stepping motor system employing selective winding excitation means and a stepping motor having electrical windings placed on the stator yoke between the stator teeth axially encircling the yoke in toroidal fashion; in the excitation means, sequentially-designated switching members are activated to excite the stator windings selectively; selective winding excitation is used to produce a movable sequence of stator poles that induce rotor rotation; selective excitation in generating a stator pole causes magnetomotive force from a plurality of windings to combine and to produce a magnetic flux and causes two such magnetic fluxes to combine in forming a magnetic pole.

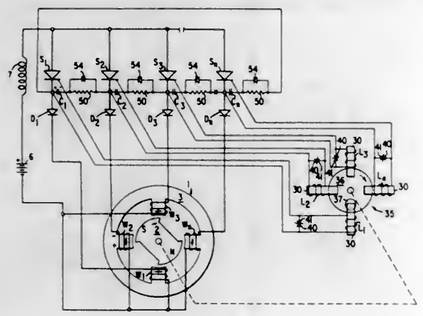
3,466,519
DIRECT CURRENT MOTOR EMPLOYING A STATIC SWITCHING ARRANGEMENT

David Platnick, Hamilton, Ontario, Canada, assignor to Carrier Corporation, Syracuse, N.Y., a corporation of Delaware

Filed Oct. 24, 1966, Ser. No. 588,842
Int. Cl. H02k *29/02*
U.S. Cl. 318—138 **4 Claims**

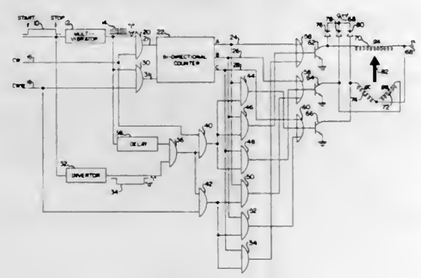
Direct current motor employing a static switching

arrangement operable in a predetermined order to energize the windings including a capacitor and a resistance to limit



the charge on the capacitor and prevent excess current surge.

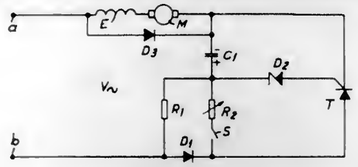
3,466,520
STEPPING MOTOR CONTROL INCLUDING DAMPING
Veli Aylikci, Bellbrook, and Donald R. Doering, Dayton, Ohio, assignors to The National Cash Register Company, Dayton, Ohio, a corporation of Maryland
Filed Jan. 25, 1967, Ser. No. 611,622
Int. Cl. H02p *1/22, 1/40*
U.S. Cl. 318—138 **8 Claims**



A stepping motor control system designed to supply sequential drive pulses to a stepping motor to drive the rotor of the stepping motor either clockwise or counterclockwise is provided with electrical circuitry that supplies a braking pulse to one phase of the motor following the application of a final drive pulse to another phase of the motor.

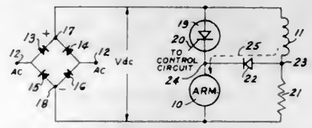
3,466,521
CONTROL SYSTEM FOR UNIVERSAL MOTORS
Jean-Claude Lagier, Onex-Geneva, Switzerland, assignor to Mefina S.A., Fribourg, Switzerland, a corporation of Switzerland
Filed Jan. 26, 1967, Ser. No. 611,983
Claims priority, application Switzerland, Feb. 10, 1966, 1,922/66
Int. Cl. H02p *1/24, 3/18, 5/28*
U.S. Cl. 318—245 **6 Claims**

A control system for alternating current universal motors, forming an econimical and simple circuit dissipating very little heat and wherein the control electrode, which ignites or fires at an adjustable moment, the controlled diode which controls the feed of alternating current to the motor is connected with a charging point connecting the condenser with a variable resistor in the circuit controlling the controlled diode; furthermore, an



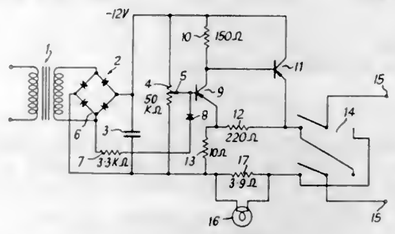
auxiliary resistor and diode circuit provides time constants which are different for the two alternations of the period of the feed current.

3,466,522
SPEED CONTROL CIRCUITS FOR ELECTRIC MOTORS
Prentice Cushing, Jr., Douglaston, N.Y., assignor to G. K. Heller Corp., Las Vagas, Nev., a corporation of Nevada
Filed Oct. 11, 1966, Ser. No. 585,976
Int. Cl. H02k *27/20;* **H02p** *5/00*
U.S. Cl. 318—331 **13 Claims**



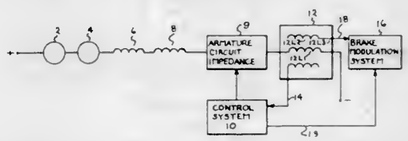
In an electric circuit for operating a DC motor having a shunt field winding and in which the motor speed is regulated by controlling the voltage applied to the motor armature, first and second parallel paths are presented for the field current and respectively provide large and small field voltages when the field current flows in the respective paths, and the flow of field current in the first path is progressively blocked in response to rising counter EMF of the armature with increasing motor speed, to reduce the field current, and hence weaken the field, down to a predetermined minimum value as determined by the small field voltage provided by the second path, thereby to extend the speed range of the motor beyond its base speed.

3,466,523
ELECTRIC MOTOR CONTROL CIRCUIT
John Edwin Brook, 7 Pier St., Lee-on-Solent, England
Filed Feb. 23, 1967, Ser. No. 618,080
Claims priority, application Great Britain, May 17, 1966, 21,962/66
Int. Cl. H02p *5/04;* **H02k** *27/20*
U.S. Cl. 318—332 **10 Claims**



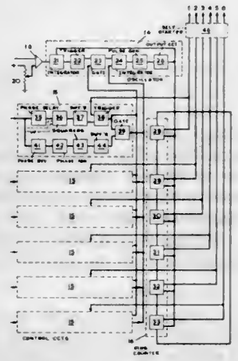
A control circuit for an electric motor. The circuit has means for obtaining a series of regular pulses, means for obtaining a continuous supply voltage, and combining means for combining the supply voltage and the pulses in an adjustable manner to give a combined voltage. The combined voltage comprises a pulse component and a continuous component, the magnitudes and relative proportions of which components are adjustable by adjustable means in the combining means. Output means is provided to which the combined voltage is applied, the output means deriving an output voltage for driving the motor corresponding to at least part of the combined voltage.

3,466,524
SPEED TAPER BRAKE MODULATION SYSTEM
David Cooper, Erie, Pa., assignor to General Electric Company, a corporation of New York
Filed July 6, 1966, Ser. No. 563,266
Int. Cl. H02p *5/04, 7/10, 17/32*
U.S. Cl. 318—363 **17 Claims**



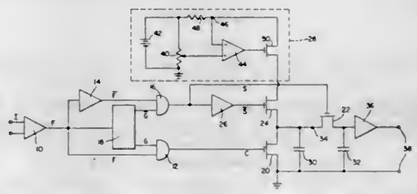
A speed taper brake modulation system wherein the dynamic braking rate is tapered at high speeds. A control circuit varies the armature circuit impedance as a desired function of armature current. A brake effort signal is applied through a summing circuit to effectuate such control. The tapered characteristic is provided by applying a signal related to the counter electromotive force of the motor, such as a speed signal, through a variable gain amplifier to a second input of the summing circuit. The gain of the variable gain amplifier is varied in response to the magnitude of the braking effort signal.

3,466,525
CONTROL CIRCUITS FOR STATIC CONVERTORS
John Desmond Ainsworth, Stafford, England, assignor to The English Electric Company Limited, London, England, a British company
Filed May 5, 1967, Ser. No. 636,398
Claims priority, application Great Britain, May 6, 1966, 20,279/66
Int. Cl. H02m *7/48*
U.S. Cl. 321—5 **12 Claims**



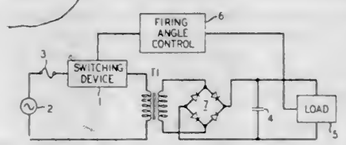
A circuit for controlling the application of firing pulses to a controlled device in a static converter employed for example, in H.V.D.C. schemes. The circuit comprises an oscillator for developing these pulses and having an output frequency dependent on an input signal which is a function of any difference between the actual and desired values of a selected quantity possesed by the A.C. or the D.C. system whereby to influence the pulse frequency and control the firing angle "α" of the controlled devices in such a sense as to reduce the difference towards zero.

3,466,526
FREQUENCY TO D.-C. CONVERTER
Charles N. Cole, Huntsville, Tex., assignor to General Electric Company, a corporation of New York
Filed Jan. 5, 1968, Ser. No. 695,953
Int. Cl. H02m *7/44*
U.S. Cl. 321—8 **4 Claims**



A first capacitor is brought to a known voltage level during a first period of time. A first field effect transistor is used to connect the first capacitor to a constant current source for one cycle (or a multiple thereof) of an input signal. A second field effect transistor is then used to connect the first capacitor to a second capacitor, and the sequence is repeated. A high gain amplifier converts the input signal to a square wave which through logic circuitry is used to apply the necessary gating signals to the field effect transistors.

3,466,527
OVERLOAD PROTECTED SWITCHING REGULATOR
Ping Sun Chun, Morris Township, Morris County, N.J., assignor to Bell Telephone Laboratories, Incorporated, Murray Hill and Berkeley Heights, N.J., a corporation of New York
Filed Nov. 22, 1967, Ser. No. 685,094
Int. Cl. H02m *1/18*
U.S. Cl. 321—14 **5 Claims**

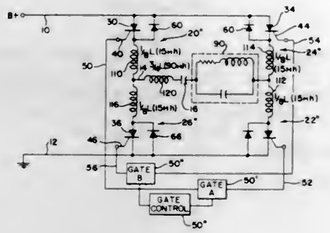


A transformer connected between a bilateral triode switch and a capacitive input load filter is chosen so as to operate close to the extremes of its BH characteristic at a bilateral triode switching or firing angle of 90°. In the event of an overload condition, the firing angle decreases to a value less than 90°, the transformer saturates, and the circuit overload protection device is activated. Overload protection is thus obtained without the need for additional components.

3,466,528
INVERTER FOR INDUCTION HEATING USE
Graham R. Adams, Warrensville Heights, Ohio, assignor to Park-Ohio Industries, Inc., Cleveland, Ohio, a corporation of Ohio
Filed Aug. 29, 1967, Ser. No. 664,077
Int. Cl. H02m *7/44, 7/68*
U.S. Cl. 321—45 **2 Claims**

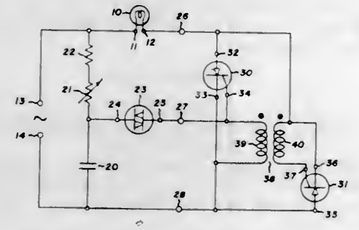
A resonant bridge inverter is modified to place the pre-

dominant inductance of the resonant circuit in the common bridge branch of the inverter and a small part of the



inductance of the resonant circuit in series with the silicon controlled rectifiers of each switching leg of the inverter.

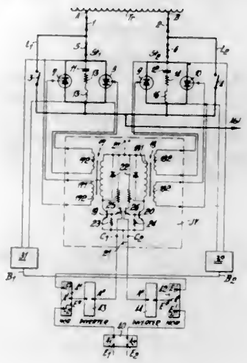
3,466,529
ALTERNATING CURRENT POWER CONTROL CIRCUIT
Denis R. Grafham, Auburn, N.Y., assignor to General Electric Company, a corporation of New York
Filed Mar. 14, 1967, Ser. No. 623,008
Int. Cl. G05f *1/40;* **H02p** *13/14;* **H02m** *3/10*
U.S. Cl. 323—22 **1 Claim**



Alternating current power applied to a load is controlled in a hysteresis-free control by connecting bidirectional gate controlled semiconductor switch means in series with the load and connecting an RC phase shift triggering circuit for the AC switch directly across the alternating current source with the load and switch means connected directly in parallel with the RC phase shift network. The circuit may be used for applications, such as motor speed control, lighting fixtures, and household appliances.

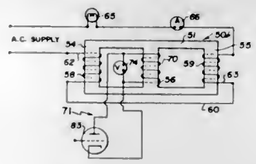
3,466,530
LOGIC-UNIT-CONTROLLED THYRISTOR TAP-CHANGING TRANSFER SWITCH HAVING TRIGGER IMPULSE AMPLIFIER
Manfred Matzl, Regensburg-Zeitlarn, Germany, assignor to Maschinenfabrik Reinhausen Gebruder Scheubeck K.G., Regensburg, Germany
Filed Apr. 4, 1967, Ser. No. 628,490
Claims priority, application Germany, Apr. 16, 1966, M 69,179
Int. Cl. H02p *13/06;* **H02m** *5/12*
U.S. Cl. 323—43.5 **6 Claims**

A transfer switch including thyristors for effecting tap-changing operations in tapped regulating transformers. The tap-changing thyristors are under the control of a trigger impulse amplifier, or trigger impulse amplifying transformer. The latter is, in turn, under the control of digital logic units. Blocking voltage sensing means are connected across the tap-changing thyristors and the output of the blocking voltage sensing means is fed into the aforementioned digital logic units. These digital logic units are also controlled by a bistable circuit and control, in turn, the aforementioned trigger impulse ampli-



fier. The latter triggers tap-changing thyristors only when the bistable circuit is in one predetermined of its stable states, and when the blocking voltage sensing means signal the presence of a predetermined blocking voltage to said digital logic units.

3,466,531
MAGNETIC VOLTAGE CONTROL APPARATUS
Chu Quon Chin, P.O. Box 226, Gold River, British Columbia, Canada
Continuation-in-part of application Ser. No. 487,195, Sept. 14, 1965. This application May 27, 1968, Ser. No. 732,163
Int. Cl. H02p *13/06;* **H02n** *5/22, 5/20*
U.S. Cl. 323—86 **8 Claims**

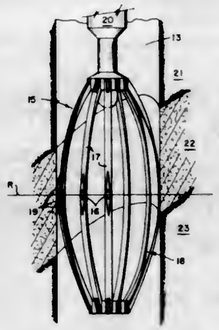


A magnetic voltage controller having series connected load windings wound about the two outer legs of a three legged transformer in such a manner that the voltages induced in a control winding wound on the third leg of the transformer are added to each other. The current flow through the load windings is controlled by controlling the flow of induced current through the control winding.

3,466,532
METHOD FOR DETERMINING THE DIP OF SUBTERRANEAN EARTH FORMATIONS
Robert H. Kolb, Cypress, Tex., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware
Filed June 22, 1967, Ser. No. 648,163
Int. Cl. G01v *3/18*
U.S. Cl. 324—1 **2 Claims**

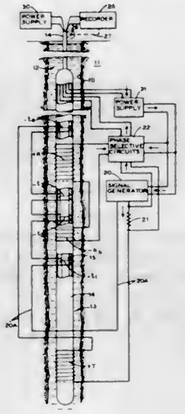
Electronic data indicative of the penetration angle of a borehole relative to earth formation bedding planes may be interpreted directly from a planar visual display of such

data as an orthographic elevational projection of a plurality of sensing points around the periphery of the bore-



hole which lie in a common plane parallel with the dip plane of a respective earth stratum.

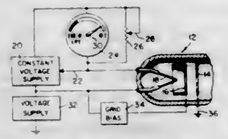
3,466,533
INDUCTION LOGGING APPARATUS WITH REDUCED DIAMETER AUXILIARY COIL MEANS
Henri Georges Doll and Jean L. Dumanoir, New York, N.Y., assignors to Schlumberger Technology Corporation, New York, N.Y., a corporation of Texas
Filed May 1, 1967, Ser. No. 635,140
Int. Cl. G01v *3/12*
U.S. Cl. 324—6 **7 Claims**



Electromagnetic induction type apparatus for investigating subsurface earth formations traversed by a borehole. An induction logging coil system is described which is less sensitive to the presence of short caved-in intervals along the length of the borehole over which the investigation is being conducted. This result is obtained by employing, in addition to the primary coils, various reduced diameter auxiliary coils, each having an effective number of turns of less than unity.

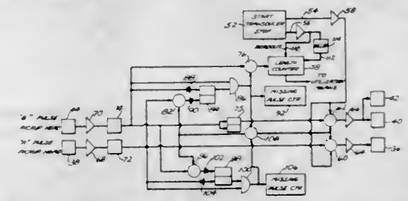
3,466,534
METHOD FOR DETERMINING FILAMENT CONDITION BY CONTINUOUSLY EVALUATING CURRENT FLOW THERETHROUGH
Kurt F. Wallace, Redwood City, Calif., assignor to Ampex Corporation, Redwood City, Calif., a corporation of California
Filed Aug. 19, 1966, Ser. No. 573,670
Int. Cl. G01r *31/22*
U.S. Cl. 324—20 **1 Claim**

Method and apparatus for improved operation of a cathode filament and for continuosuly indicating the condition thereof, by applying a constant voltage to the filament while monitoring the current therethrough. As the filament evaporates, it decreases in size resulting in an



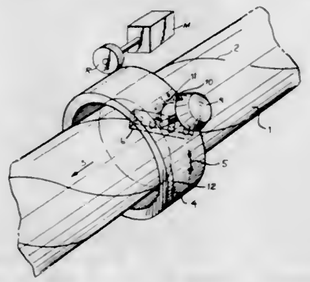
associated decrease in current if the voltage is held constant, whereby monitoring the current provides means for indicating the filament end of life.

3,466,535
METHOD AND APPARATUS FOR MAKING MEASUREMENTS ALONG SURFACES
Robert B. Sterns, Great Neck, and Richard McGuire, Smithtown, N.Y., assignors to Logic Systems, Inc., Great Neck, N.Y., a corporation of New York
Filed Dec. 13, 1966, Ser. No. 601,413
Int. Cl. B23q *17/00;* **G06f** *7/385;* **G11b** *5/48*
U.S. Cl. 324—34 **24 Claims**



Two sets of marker and mark detecting means arranged such that when a surface moves by them each marker means places a new mark on the surface in response to the detection by its associated detecting means of a mark previously made by the marking means. The detecting and marking means in each set are displaced at different fixed distances from each other and means are provided to compare the accumulated counts in the detecting means to compensate for errors resulting from delays in the system.

3,466,536
MAGNETIC TESTING APPARATUS FOR HELICAL WELDS WHICH FOLLOWS THE WELD WITH A RECIPROCATING MOVEMENT
Anders Ingvar Arnelo and Kurt Nils Sture Leuchovius, Vasteras, Sweden, assignors to Easem Metotest AB, Skultuna, Sweden
Filed Jan. 27, 1967, Ser. No. 612,165
Claims priority, application Sweden, Feb. 24, 1966, 2,433/66
Int. Cl. G01r *33/12*
U.S. Cl. 324—37 **2 Claims**



Means in the non-destructive testing of metals for testing the weld of a helically welded tube, which means

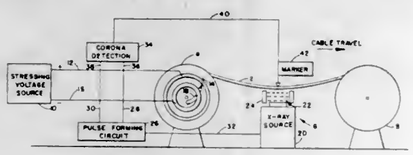
includes a sensor for eddy currents induced in the material during its movement past the coil system; the sensor probing the material of the tube while being rotated relative to the advancing tube and while having the axes of its coils directed mainly radially to the tubular material and permanently located in planes parallel with the helical weld to be tested; and whereby the rotational movement of said sensor comprises a reciprocating component of small amplitude.

3,466,537

CABLE SCANNING METHOD AND APPARATUS UTILIZING SHORT BURSTS OF HIGHLY PENETRATING RADIATION

David Eigen, Passaic, N.J., assignor to The Okonite Company, Passaic, N.J., a corporation of Delaware

Filed Aug. 22, 1966, Ser. No. 573,904
Int. Cl. G01r 31/12
U.S. Cl. 324—54 32 Claims



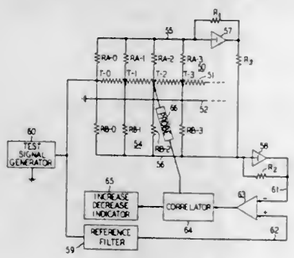
The invention relates to a method and apparatus for detecting discontinuities in an electric cable. A stressing voltage is applied between an electrode external to the cable and a conductor internal to the cable. The magnitude of the stressing voltage is sufficient to cause some ionization of dielectric discontinuities with the cable but below the corona inception level. While the stressing voltage is applied, the cable is irradiated with short bursts of highly penetrating radiation to cause bursts of corona discharge in the dielectric discontinuities. The corona discharge is then detected.

3,466,538

AUTOMATIC SYNTHESIS OF DISTRIBUTED-CONSTANT, RESISTANCE-CAPACITANCE FILTER HAVING ARBITRARY RESPONSE CHARACTERISTIC

Floyd K. Becker, Colts Neck, and Harry R. Rudin, Jr., Lincroft, N.J., assignors to Bell Telephone Laboratories, Incorporated, Murray Hill, N.J., a corporation of New York

Filed May 1, 1967, Ser. No. 635,047
Int. Cl. G01r 27/02
U.S. Cl. 324—57 7 Claims



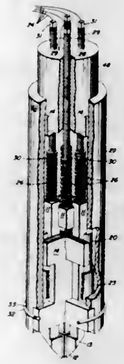
A distributed constant resistance-capacitance filter can be fabricated as a thin-film integrated circuit. By providing resistive voltage dividers at taps on such a filter and proportioning connection points to these resistive dividers for algebraic summation of tap signals a transversal filter with an arbitrary response characteristic can be constructed. Voltages appearing at these taps responsive to an input impulse can be weighted and summed in any desired manner to contain arbitrary response characteristics.

3,466,539

FOUR-POINT PROBE FOR MICROMINIATURIZED CIRCUITRY HAVING INDIVIDUAL BIASING MEANS FOR EACH POINT

Robert Donald Pitts, Cedar Rapids, and Donald R. Zrudsky, Solon, Iowa, assignors to Collins Radio Company, Cedar Rapids, Iowa, a corporation of Iowa

Filed Oct. 31, 1966, Ser. No. 590,665
Int. Cl. G01r 27/02
U.S. Cl. 324—62 6 Claims



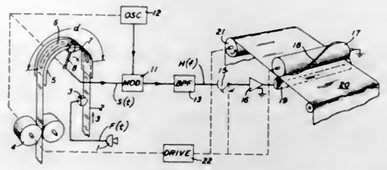
A probe assembly for testing microminiaturized circuitry and elements including means for maintaining the probe contacts in a particular physical configuration. Biasing weights or springs maintain an individual bias on each probe contact.

3,466,540

ANALYSIS OF TIME-SEGMENTED WAVES

George H. Robertson, Summit, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed May 1, 1963, Ser. No. 277,673
Int. Cl. G01r 23/16, 27/02
U.S. Cl. 324—77 6 Claims



1. Apparatus for analyzing an incoming complex wave having components in a frequency range R to determine its composition which comprises

means for storing at least a portion of said wave as it arrives,

means for recovering from storage a wave segment of effective duration T,

means for repeating said recovery $n-1$ times, at intervals 2T,

whereby a gap of duration T is introduced between each recovered wave segment and the following one

an analyzing filter of effective bandwidth

$$B=R/n=1/2T$$

and of effectively variable midband frequency,

means including said filter for examining each of the successive recovered segments over one of a succession of $n=R/B$ contiguous subbands, each of which B,

means for deriving a measure of the energy stored in said filter once for each recovered segment,

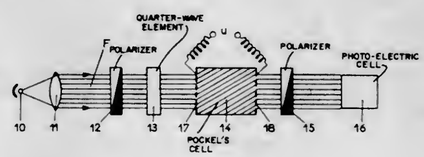
and means for presenting the magnitudes of said measures in time-frequency coordinates.

3,466,541

VOLTAGE MEASURING APPARATUS UTILIZING ELECTRO-OPTICAL COMPONENTS

Georges Bernard, La Tronche, and Yves Pelenc, St. Egreve, France, assignors to Merlin Gerin Societe Anonyme, Grenoble, France

Filed Mar. 10, 1967, Ser. No. 622,275
Claims priority, application France, Mar. 16, 1966. 4,896
Int. Cl. G01r 31/02
U.S. Cl. 324—96 8 Claims



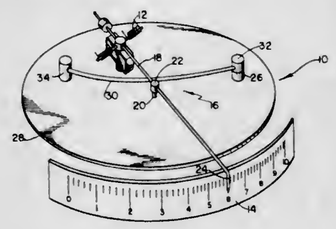
A voltage measuring apparatus utilizing electro-optical components for the measurement of the voltage of an aerial high-voltage conductor. A polarized light beam traverses an electro-optical device composed of a medium rendered birefringent under the influence and as a function of an electric field in said medium. A plurality of electric field producing means is series connected between the high-voltage conductor and earth. The modulated flux of the light beam emerging from said medium is measured.

3,466,542

MAGNETICALLY CONTROLLED METER MOVEMENT APPARATUS

Veikko K. Peltola, Chicago, Ill., assignor to Alnor Instrument Company, Division of Illinois Testing Laboratories, Inc., Chicago, Ill., a corporation of Illinois

Filed Jan. 8, 1968, Ser. No. 696,270
Int. Cl. G01r 15/10
U.S. Cl. 324—132 7 Claims



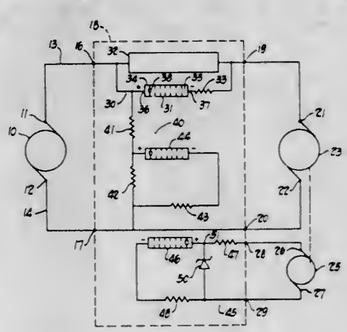
A meter movement apparatus in which a pointer magnet is attached to the pointer of a standard D'Arsonval meter. An arcuately shaped pole shoe coupled to a fixed magnet is positioned in eccentric relationship to the path of the pointer magnet so that as current is applied to the meter, the pointer moves upscale and, due to the magnetic leakage between the pole shoe and fixed magnet, a flux field, which varies exponentially with the input to the apparatus, is created. The varying flux field causes the meter needle to be translated along increments of distance on the scale of the apparatus which are related exponentially to the input to the apparatus.

3,466,543

ELECTRICAL METER SYSTEM EMPLOYING ELECTROLYTIC COULOMETERS AS MEASURING INSTRUMENTS

Leo R. Lombardo, Lyndhurst, Ohio, assignor to Cleveland Technical Center, Inc., Cleveland, Ohio, a corporation of Ohio

Filed Mar. 14, 1968, Ser. No. 713,019
Int. Cl. G01r 7/02, 27/08
U.S. Cl. 324—140 10 Claims



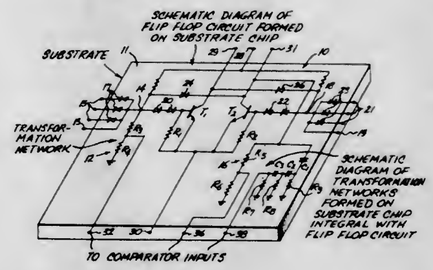
An electrical metering system for determining ampere-hours, volt-hours, hours of operation under load, and total work done by a system of electrically powered machinery particularly a diesel-electric railway locomotive. The meter system comprises a coulometer which is connected with appropriate resistance to constitute an ampere-hour meter, another coulometer with resistance to constitute a volt-hour meter, and another coulometer connected with resistance and voltage regulating means to constitute an elapsed time meter whereby the indications of the various meters may be used separately or may be combined in known equations to yield the desired information.

3,466,544

INTEGRATED CIRCUITS HAVING INTEGRATED TEST TRANSFORMATION NETWORKS INCORPORATED THEREWITH ON COMMON SUBSTRATE CHIPS

Harvey L. Balderston, Seattle, Wash., assignor to The Boeing Company, Seattle, Wash., a corporation of Delaware

Filed Oct. 18, 1965, Ser. No. 496,981
Int. Cl. G01r 17/10
U.S. Cl. 324—158 3 Claims



Integrated circuit systems are disclosed which incorporate on the same substrate chip interconnected operational and test transformation networks mutually adapted to

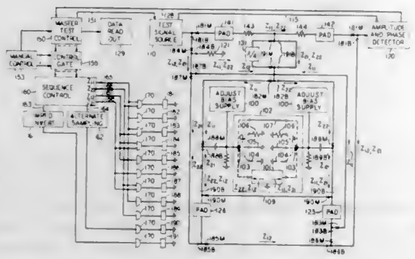
one another to prevent interference therebetween as to their respective operational functions. The test transformation networks convert operating parameters of the operational circuit to test parameters in the transformation network and thus continuously provide test parameters or signals from which to detect operating conditions of the operational circuit, without interference with operational circuit conditions.

3,466,545

APPARATUS AND METHOD TO MINIMIZE AND DEFINE THE EFFECT OF A TRANSMISSION MEASURING APPARATUS ENVIRONMENT IN MEASURING TRANSISTOR PARAMETERS

James G. Evans, Englishtown, N.J., and Dwight W. Grant, Clark, Ind., assignors to Bell Telephone Laboratories, Incorporated, Murray Hill, N.J., a corporation of New York

Filed Aug. 14, 1967, Ser. No. 660,463
Int. Cl. G01r *27/02*
U.S. Cl. 324—158 **13 Claims**



A transmission measuring apparatus measures the transmission parameters of a transistor by sequentially connecting the transistor in a plurality of test path configurations via the sequential switching of a plurality of transmission path components. Attenuating pads are selectively inserted in each test configuration advantageously to isolate the transistor from disturbances in the test paths without adversely affecting the resolution of the measured parameters. By taking additional transmission measurements with calibration networks, the environmental effect of the transmission measuring apparatus on the measured transmission parameters is defined. A constant impedance bias signal network permits the use of a broad frequency range of test signals without significantly attenuating the test signals or adversely affecting the resolution of the various test measurements.

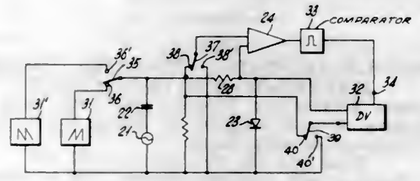
3,466,546

METHOD FOR MEASURING CHARACTERISTICS EMPLOYING AN A.C. SIGNAL RESPONSIVE TO IMPEDANCE CHANGE FOR FIXING THE MEASURED VALUE

Masao Shinohara, Tokyo, Japan, assignor to Nippon Electric Company Limited, Tokyo, Japan, a corporation of Japan

Filed Oct. 16, 1967, Ser. No. 675,654
Claims priority, application Japan, Oct. 18, 1966, 41/68,520
Int. Cl. G01r *27/00, 19/16*
U.S. Cl. 324—158 **1 Claim**

A method for measuring the characteristics of a semiconductor device having a negative resistance, and particularly the measurement of voltage and current values at which an impedance of such a semiconductor device turns to a zero or infinite value in response to a variation in a voltage applied to the device. A sweep signal and a low frequency signal superimposed thereon are applied between two terminals of the device. A measuring instrument is provided for reading a voltage across the terminals or the current through the device. The low frequency signal traces the impedance variation of the device and varies therewith, said impedance being caused to vary by variations in the sweep signal value. The low frequency signal amplitude variations are applied to an



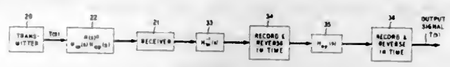
amplitude comparator to compare said amplitude with a predetermined value. The comparator generates a stopping pulse when the low frequency signal amplitude exceeds said predetermined value, thereby fixing the indicator position on the measuring instrument. The position of the stopped indicator accurately indicates the value of the voltage or current at which the impedance is the zero or infinite value.

3,466,547

METHOD FOR REDUCING THE DISTORTION OF MULTIPATH TRANSMISSIONS

James L. Flanagan, Warren Township, Somerset County, N.J., Roger M. Golden, Costa Mesa, Calif., and Manfred R. Schroeder, Gillette, N.J., assignors to Bell Telephone Laboratories, Incorporated, Murray Hill, N.J., a corporation of New York

Filed Apr. 18, 1967, Ser. No. 631,757
Int. Cl. H04b *1/10, 1/62*
U.S. Cl. 325—65 **3 Claims**



A replica of a signal transmitted through a transmission channel characterized by a non-minimum phase transfer function is obtained by first passing the received signal through a filter whose characteristics are the frequency inverse of those of the minimum phase component of the transfer function of the transmission channel. The resulting filtered signal is stored and passed in reverse through the all-pass component of the transfer function of the transmission channnel. A time-reversed replica of the transmitted signal is thereby obtained. A precise replica of the transmitted signal is obtained by reversing this time-reversed replica.

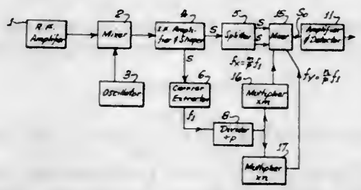
3,466,548

METHOD AND APPARATUS FOR REGENERATED VESTIGIAL SIDEBAND RECEPTION

Joseph Yvon Roy, Laval des Rapides, Quebec, and John Kenneth MacDonald, Rosmere, Quebec, Canada, assignors to Conrac Corporation, a corporation of New York

Filed Oct. 3, 1966, Ser. No. 583,818
Int. Cl. H04b *1/68*
U.S. Cl. 325—331 **26 Claims**

Phase and quadrature distortions in the demodulation of vestigial sideband transmissions are eliminated by recreating the suppressed sideband on a new, harmonically unrelated carrier frequency, translating the non-suppressed sideband to precisely that new frequency, adding the complementary sidebands and presenting the resulting double sideband signal to the detector. The complementary sideband signals are typically produced by mixing the vestigial sideband signal with respective injection signals having frequencies such that one injection frequency equals the difference between the other injection frequency and the carrier frequency f of the vestigial sideband signal. The injection frequencies may be derived as m/p and n/p times f, where m, n and p are integers such that n equals the difference between m and $2p$.



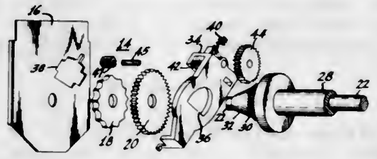
Improved linearity of the phase vs. frequency characteristics of the double sideband signal is obtained by introducing a suitable phase difference between the two injection signals. Incidental phase modulation in the extraction of the carrier frequency from the vestigial sideband transmission is minimized by performing such extraction prior to shaping the signal to conventional spectral distribution, and after translation to a frequency only slightly greater than the line repetition frequency.

3,466,549

ELECTRICAL SWITCHING SYSTEM WHICH DEFEATS AUTOMATIC FINE TUNING CONTROL THROUGH ONE SWITCH CONTACT, ACTUATED DURING EITHER MANUAL CHANNEL CHANGE OR MANUAL FINE TUNING

James Allen Milnes, Nashville, Ind., assignor to RCA Corporation, a corporation of Delaware

Filed Feb. 29, 1968, Ser. No. 709,348
Int. Cl. H04b *1/06;* **H03j** *5/02*
U.S. Cl. 325—457 **3 Claims**



An electric switch for defeating an automatic fine tuning control voltage during channel change and fine tuning adjustment includes two contact members, one of which has a follower arm secured thereto. The follower arm rides on the periphery of the detent wheel which, during rotation, forces the contact members into engagement. Means are provided to displace the first contact member, the second contact member and the follower arm to force the follower arm against the detent wheel and thereby force the contact members into engagement.

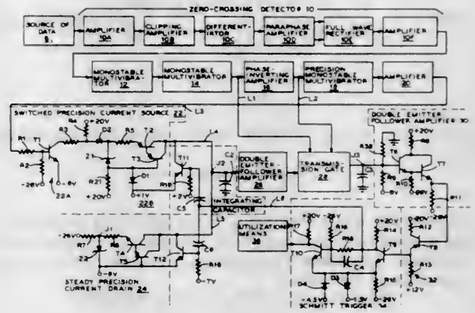
3,466,550

FREQUENCY-TO-VOLTAGE CONVERTER

Edgar Wolf, New Hyde Park, David E. Worster, West Islip, and Francis C. Marino, Huntington, N.Y., assignors to Digitronics Corporation, Albertson, N.Y., a corporation of Delaware

Filed Dec. 6, 1965, Ser. No. 512,037
Int. Cl. H03k *5/20*
U.S. Cl. 328—140 **17 Claims**

Apparatus for converting an input signal shifting between first and second frequencies to a signal switching between first and second levels of voltage comprising means for generating a pulse for each cycle of input signal. A representation of the number of pulses occurring during a specific time interval is accumulated by means and means is provided for generating a first voltage level



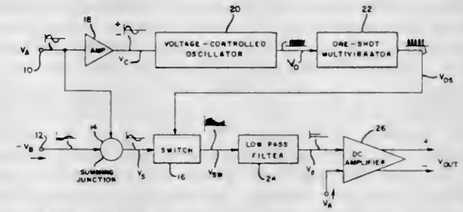
as long as the accumulated pulses are less than a given number and for generating a second voltage level when the accumulated pulses are greater than said given number.

3,466,551

NULL DETECTOR EMPLOYING A PRODUCT DETECTOR THEREIN

Eldon D. Vaughn, Berkeley, Calif., assignor to Warner Lambert Pharmaceutical Company, Morris Plains, N.J., a corporation of Delaware

Filed Dec. 1, 1966, Ser. No. 598,253
Int. Cl. H03k *5/20;* **H03b** *3/02*
U.S. Cl. 328—146 **7 Claims**



Method and means for detecting a null or equality between first and second analog signals wherein the second may contain interference components. The signals are added together in phase opposition to produce a resultant signal which is gated on and off for fixed periods of time at a modulation repetition rate derived from the first signal to produce a frequency modulated signal that is integrated by passage through a low-pass filter to produce a signal having a component proportional to the difference of analog signals regardless of interference components.

3,466,552

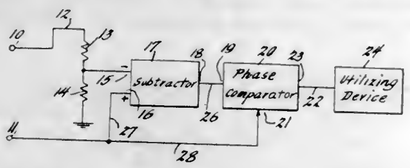
RATIOMETER SYSTEM UTILIZING PHASE COMPARISON TECHNIQUES

Robert L. Sels, Reading, Pa., assignor to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York

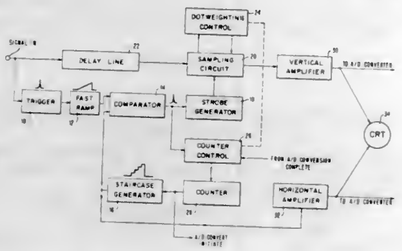
Filed Mar. 10, 1966, Ser. No. 533,345
Int. Cl. G06g *7/14;* **H03k** *5/20*
U.S. Cl. 328—147 **3 Claims**

A first voltage and a fraction of a second voltage are applied as inputs to a differential amplifier and the second voltage and a fraction of the first voltage are applied as inputs to another differential amplifier. The outputs of the differential amplifiers are compared with the original voltages to determine if there is a phase difference therebetween. By adjusting the fraction of the first and second

voltages which are applied to the differential amplifiers, there may be determined when the ratio of the first voltage to the second voltage is outside a predetermined range.



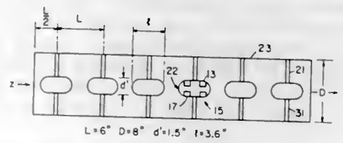
3,466,553
CONTROL CIRCUIT FOR A SAMPLING SYSTEM
Paul E. Stuckert, Katonah, N.Y., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed Jan. 13, 1967, Ser. No. 609,050
Int. Cl. H03k *17/02*
U.S. Cl. 328—151 **16 Claims**



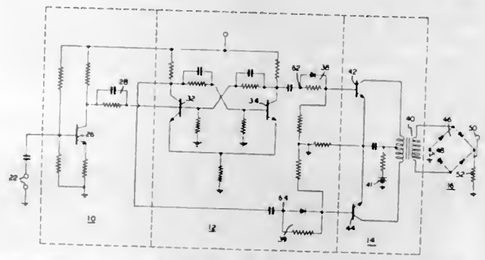
The present invention relates to an improved control system for use with waveform sampling apparatus. More specifically, it relates to such a system whereby the sampling frequency will be automatically changed with changes in the sampling system dot weighting controls. Although the present system has particular utility for use with sampling oscilloscopes, its utility is by no means limited to this particular apparatus as the benefits gained by the presently disclosed system are even more pronounced when, for example, an accurate A/D converter is used to develop an auxiliary output. Briefly, the invention comprises a counter control directly connected to the dot weighting control whereby the output of the counter will cause a greater or lesser number of samples to be taken at a particular point on a sampled waveform depending upon the setting of said dot weighting control. In the normal arrangement the larger the dot weighting (assuming a maximum of unity) the fewer the number of samples it is necessary to take. Conversely with lower dot weightings greater overall accuracy may normally be achieved. However in order to obtain an output closely approximating the instantaneous value of the incoming waveform, it is necessary to take a relatively large number of samples. The present system accomplishes this by providing direct interaction control between the dot weighting circuits and the sampling circuits as outlined above.

3,466,554
ACCELERATOR APPARATUS AND METHOD OF SHAPING CAVITY FIELDS
Salvatore T. Giordano, Port Jefferson, N.Y., assignor to the United States of America as represented by the United States Atomic Energy Commission
Filed Mar. 10, 1967, Ser. No. 623,190
Int. Cl. H01j *23/34*
U.S. Cl. 328—233 **5 Claims**

Apparatus and method of shaping cavity fields in linear accelerator structures having drift tubes by generating $TS(N)_{nml}$ mode, transverse, drift tube, supporting stem resonances with an associated band pass whereby the frequency of the transverse stem resonances alters the field and frequency of the drift tube operation about the TM_{010} mode to provide low beam loading and detuning effects.

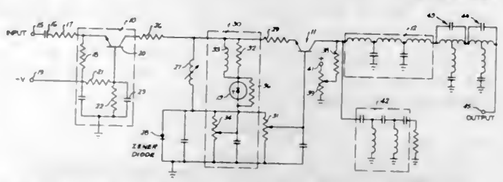


3,466,555
FM DEMODULATOR UTILIZING A SQUARE LOOP CORE
Weldon Richard Harry Vlasak, Fort Lauderdale, Fla., assignor to Airpax Electronics Incorporated, Cambridge, Md., a corporation of Maryland
Filed Oct. 14, 1966, Ser. No. 586,769
Int. Cl. H03d *3/04*
U.S. Cl. 329—127 **16 Claims**



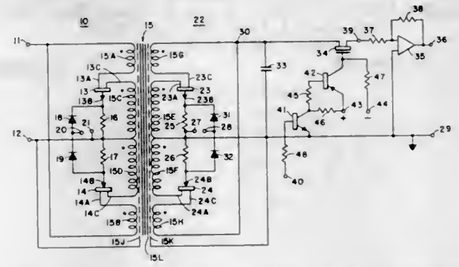
Disclosed is an FM demodulator for voice and other fast rate conversions in the communications field. The demodulator utilizes a saturable transformer having a magnetic core exhibiting a square hysteresis loop. A DC voltage is switched across the square loop transformer so that the transformer saturates on each half cycle to produce an output pulse having an amplitude proportional to the maximum flux density of the core during its saturation.

3,466,556
AMPLITUDE DETECTOR HAVING A TUNNEL DIODE LINEARITY COMPENSATING CIRCUIT
Sellers P. Hoffman, Burlington, N.C., assignor to Western Electric Company Incorporated, New York, N.Y., a corporation of New York
Filed Oct. 4, 1966, Ser. No. 584,147
Int. Cl. H03d *1/10*
U.S. Cl. 329—205 **6 Claims**



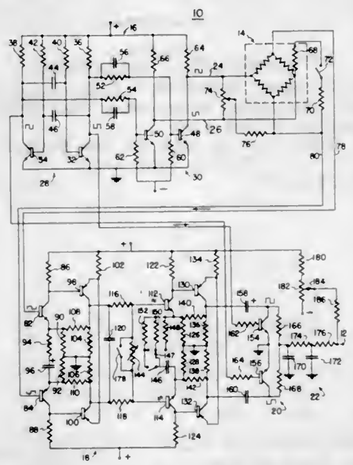
A tunnel diode circuit including (1) a first parallel combination including an inductor in a first resistor and (2) a second parallel combination including a tunnel diode and a second resistor, is connected across the input of a rectifying junction in a detector circuit. The tunnel diode circuit produces an effective gain at low signal magnitudes to compensate for non-linearity of the rectifying junction. The impedance of the tunnel diode circuit is much less than the shunt capacitance impedance of the detector circuit and therefore provides a wide bandpass at high frequencies.

3,466,557
BALANCED DIRECT CURRENT AMPLIFIER WITH SOLID STATE CHOPPING MEANS
Alfred Nazareth, Jr., Rehoboth, Mass., assignor to The Foxboro Company, Foxboro, Mass., a corporation of Massachusetts
Filed Nov. 14, 1966, Ser. No. 594,039
Int. Cl. H03f *3/38*
U.S. Cl. 330—10 **8 Claims**



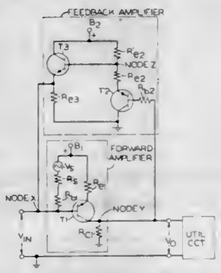
The invention is a direct current isolator employing a balanced solid state chopping means and including transformer isolation between signal input and output, with provision for substantial cancellation of chopping transients.

3,466,558
MEASURING APPARATUS
Leslie W. Partridge, Janesville, Wis., assignor to The Burdick Corporation, Milton, Wis., a corporation of Delaware
Filed Sept. 19, 1966, Ser. No. 580,244
Int. Cl. H03f *3/38*
U.S. Cl. 330—10 **7 Claims**



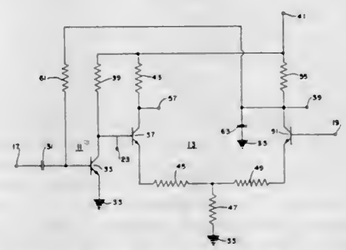
Measuring apparatus for use with a bridge circuit includes a transistor multivibrator and a fast-acting transistor driver stage developing a balanced square wave signal direct coupled to bridge input terminals. The modulated signal from the bridge is direct coupled to the input terminals of a balanced differential amplifier having common signal mode rejection characteristics. The amplifier includes direct coupled stages as well as floating, nongrounded gain and range controls. The amplifier output is detected in a full wave phase sensitive demodulator to provide an indication corresponding to bridge unbalance.

3,466,559
BANDPASS VOLTAGE AMPLIFIER
Joe H. Ruby, Columbus, Ohio, assignor to Bell Telephone Laboratories, Incorporated, Murray Hill, N.J., a corporation of New York
Filed June 16, 1967, Ser. No. 646,690
Int. Cl. H03f *1/08, 1/34*
U.S. Cl. 330—28 **7 Claims**



A bandpass voltage amplifier includes in a forward transmission path a high gain, low pass amplifier. Direct coupled from the output to the input of the forward amplifier, and in a negative voltage feedback arrangement therewith, is a low gain, low pass amplifier having an upper cutoff frequency less than that of the forward amplifier. Bandpass characteristics are obtained, without the use of capacitors or inductors, by utilizing the inherent low pass characteristics of transistor amplifiers.

3,466,560
STABLE AMPLIFIER HAVING A STABLE QUIESCENT POINT
Leonard L. Kleinberg, Greenbelt, Md., assignor to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration
Filed Oct. 22, 1965, Ser. No. 502,750
Int. Cl. H03f *3/68*
U.S. Cl. 330—30 **1 Claim**

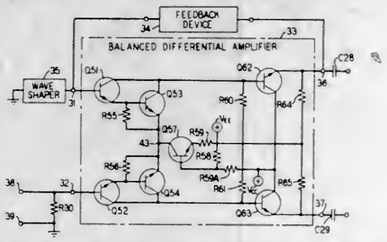


An amplifier utilizing a novel feedback system providing both stability and high gain which is particularly adaptable for monolithic and thin film construction. The quiescent point of the amplifier circuit is maintained at a constant voltage level through the use of feedback from a differential amplifier which amplifies the DC difference between the amplifier output and a stable reference.

3,466,561
ACTIVE EQUALIZER UTILIZING BALANCED DIFFERENTIAL AMPLIFIER
Felix J. Braga, Morristown, N.J., assignor to Bell Telephone Laboratories, Incorporated, Murray Hill and Berkeley Heights, N.J., a corporation of New York
Filed Jan. 25, 1967, Ser. No. 611,753
Int. Cl. H03f *3/68*
U.S. Cl. 330—30 **5 Claims**

An active attenuation equalizer circuit utilizes a balanced differential amplifier with a constant current source.

One input to the circuit receives the signal to be equalized while the other input is connected to a wave shaping network. The constant current source causes reflection of the

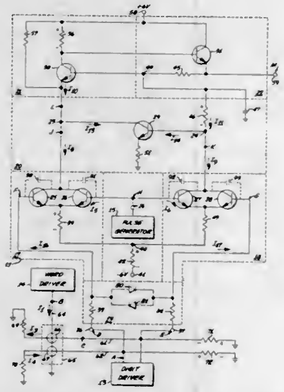


shaping network into the input terminal that receives the signal to be equalized; thus, waveshape compensation is furnished.

3,466,562
GATED DIFFERENTIAL TO SINGLE-ENDED AMPLIFIER

Bohumir Sramek, 5701 N. 41st Drive, Phoenix, Ariz. 85019

Filed Aug. 30, 1968, Ser. No. 756,529
Int. Cl. H03f *3/68*
U.S. Cl. 330—30 **14 Claims**

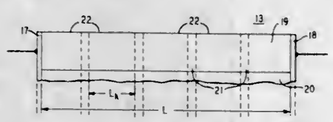


A gated amplifier has a pair of signal-input terminals and a single output terminal. The amplifier has means for amplifying a differential signal applied to the signal-input terminals and for providing an output signal to the output terminal. The amplifier has means for attenuating any common-mode signal applied to the signal-input terminals.

3,466,563
BULK SEMICONDUCTOR DIODE DEVICES

Hartwig W. Thim, Summit, N.J., assignor to Bell Telephone Laboratories, Incorporated, Murray Hill and Berkeley Heights, N.J., a corporation of New York

Filed Nov. 22, 1967, Ser. No. 685,144
Int. Cl. H03f *3/10*
U.S. Cl. 330—34 **13 Claims**

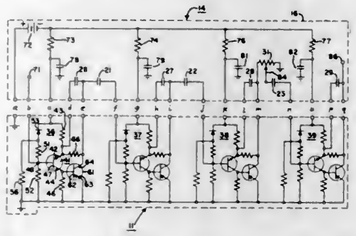


A two-valley semiconductor diode comprises a plurality of alternatively active and passive regions between opposite ohmic contacts. The active regions each have an appropriate (sample length) × (carrier concentration) product to give amplification, while the passive regions have a sufficient length and either a sufficiently high conductivity or cross-sectional area to prevent the space-charge accumulation responsible for high field domain formation. Both amplifier and oscillator embodiments are disclosed.

3,466,564
AMPLIFIER UNIT COMBINED WITH EXTERNALLY MOUNTED COMPONENTS FOR ESTABLISHING OPERATING CHARACTERISTICS THEREOF

Richard C. Weischedel, Camillus, N.Y., assignor to General Electric Company, a corporation of New York

Filed May 11, 1966, Ser. No. 549,267
Int. Cl. H03f *3/18, 3/68*
U.S. Cl. 330—66 **4 Claims**

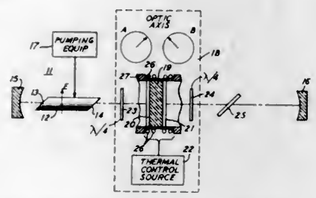


An amplifier arrangement is disclosed, in which a "universal" amplifier unit contains the basic circuitry of a multiple-stage amplifier. Certain components, however, such as coupling capacitors and feedback capacitors, which are to be different sizes or values for different models or applications of the amplifier, are not included in the amplifier unit but are provided in the external circuitry of the main equipment to which the amplifier unit is connected. The arrangement permits mass-production of a single-model amplifier unit which is of compact size and low cost.

3,466,565
LASER MODE SELECTION

William W. Rigrod, Millington, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Dec. 28, 1965, Ser. No. 516,867
Int. Cl. H01s *3/10*
U.S. Cl. 331—94.5 **17 Claims**



Axial-mode-selective lasers are disclosed in which a relatively small secondary resonator tuned to a desired mode is disposed within the primary laser resonator and is oriented to have its axis aligned with the axis of the primary resonator. Unwanted modes are selectively suppressed by placing polarization transformers along the aligned axes in mutually compensating orientations with respect to the desired mode. The polarization transformer positions are chosen to subject some unwanted modes to cumulative polarization transformation in one of the polarization transformers and the rest of the unwanted modes to cumulative polarization transformation in the other transformer. The unwanted modes are then removed from

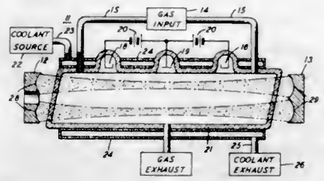
the resonators by a loss mechanism such as a polarizing element or multiple reflections in the absence of any gain.

Both linear resonator embodiments and ring resonator embodiments are disclosed.

3,466,566
OPTICAL RESONATOR FOR LASERS

Chandra K. N. Patel, Chatham, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Feb. 17, 1966, Ser. No. 528,197
Int. Cl. H01s *3/05, 3/22*
U.S. Cl. 331—94.5 **3 Claims**

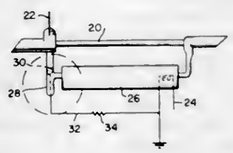


The disclosed optical resonator for gas lasers employs efficient "edge coupling" through a centrally located aperture in a reflector which has its surface oblique to the axis of the laser in the vicinity of the coupling aperture and includes an additional portion of its surface which is normal to the laser axis at a position farther from the axis than the oblique position. A technique for shaping the resultant mode to facilitate Q-switching is also disclosed.

3,466,567
ELECTROSTATIC GAS BY-PASS FOR ION LASERS WITH HOT CATHODES

Robert H. Neusel, Palos Verdes Estates, Calif., assignor to TRW Inc., Redondo Beach, Calif., a corporation of Ohio

Filed Aug. 1, 1966, Ser. No. 569,366
Int. Cl. H01s *3/22*
U.S. Cl. 331—94.5 **6 Claims**



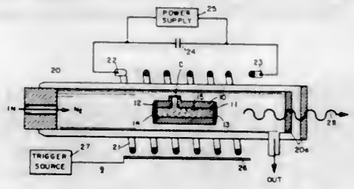
To prevent gas pumping for gas or ion lasers a high electrical impedance is provided along with a low gas impedance by maintaining a screen or grid in the gas bypass tube which is maintained at the potential of one of the electrodes.

3,466,568
LIQUID LASER

Adam Heller, Bayside, N.Y., assignor to General Telephone & Electronics Laboratories Incorporated, a corporation of Delaware

Filed Oct. 3, 1966, Ser. No. 583,549
Int. Cl. H01s *3/20*
U.S. Cl. 331—94.5 **13 Claims**

A liquid laser in which the active medium consists of a solution of a complex solute comprised of a compound of neodymium and an alpha-dihalo-carboxylic acid, and an organic solvent which forms a coordination complex with the neodymium. In a typical medium

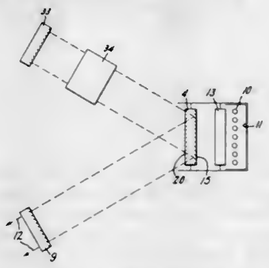


the alpha-dihalo-carboxylic acid is selected from the group consisting of perhaloacids and alpha-dihaloacids and the organic solvent is dimethylsulfoxide-d_6.

3,466,569
LASER DEVICE

Joseph P. Chernoch, Scotia, N.Y., assignor to General Electric Company, a corporation of New York

Filed Oct. 1, 1965, Ser. No. 491,921
Int. Cl. H01s *3/09*
U.S. Cl. 331—94.5 **1 Claim**

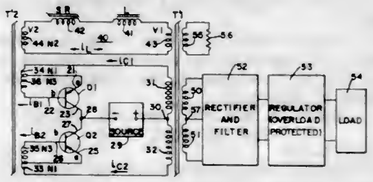


A disk-shaped body of laser material has a first of two opposed end surfaces coated to provide 100% reflection at the laser energy wavelength. The laser disk is optically pumped through the first end surface and a laser beam is emitted through the second end surface. The laser disk may be used in an oscillator or amplifier laser device. In the amplifier configuration, the disk may be utilized in a two-pass configuration wherein an unamplified laser beam is incident on the second surface at an angle relative to the disk normal and is emitted therefrom in amplified form at the conjugate angle.

3,466,570
INVERTER WITH MEANS FOR BASE CURRENT SHAPING FOR SWEEPING CHARGE CARRIERS FROM BASE REGION

James E. Webb, Administrator of the National Aeronautics and Space Administration with respect to an invention of Edward R. Pasciutti, Beltsville, and Michael W. Talbot, Greenbelt, Md.

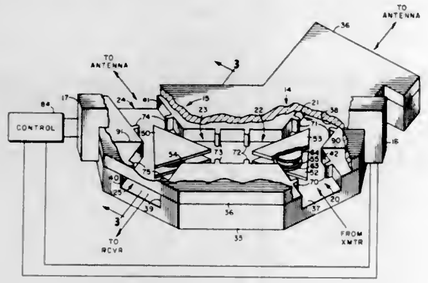
Filed Oct. 17, 1967, Ser. No. 676,387
Int. Cl. H03k *3/28*
U.S. Cl. 331—113 **9 Claims**



Provisioning of both an inductance and a saturable reactor in the frequency determining network of a push-

pull transformer coupled oscillator-inverter to cause favorable base current shaping thereby drastically reducing base storage time, source voltage and current ripple, and completely eliminating overlap inefficiencies.

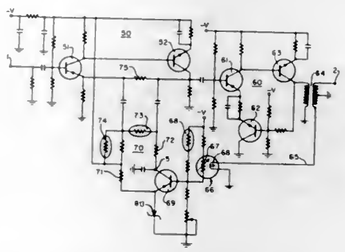
3,466,571
HIGH PEAK POWER WAVEGUIDE JUNCTION CIRCULATORS HAVING INDUCTIVE POSTS IN EACH PORT FOR TUNING CIRCULATOR
Joseph Nicholas Jansen, Scottsdale, and Oscar L. Staggs, Phoenix, Ariz., assignors to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois
Filed Feb. 28, 1968, Ser. No. 709,089
Int. Cl. H01p *1/32*
U.S. Cl. 333—1.1 **12 Claims**



A high peak power circulator having a ferrite post with a Z-axis perpendicular to the broad walls of the circulator junction. A pair of dielectric wafers are in intimate contact with the ends of the ferrite post and in turn are in intimate contact with a pair of susceptance platforms attached to the respective broad walls. Susceptance platforms present a lowered reactive impedance such that the electrical impedance of the junction is not optimum. For improving voltage breakdown characteristics, the susceptance platforms are thinner than required to tune the circulator in accordance with prior teachings. For tuning the circulator, each port communicating with the circulator junction has a pair of facing inductive posts on the respective sidewalls extending between the broad walls and disposed from the Z-axis of the ferrite about one-half wavelength of the desired frequency. The dielectric wafers extend outwardly over the ferrite posts for preventing corona discharge between the ferrite posts and the susceptance plates. A polymeric resin adhesive is disposed over each of the dielectric wafers. Two three-port circulators are constructed in a unitary base by separating the posts of two ports of the respective circulators by one-half wavelength of the desired frequency. The circulators are magnetically biased by a latching ferrite core for providing TR switch capabilities.

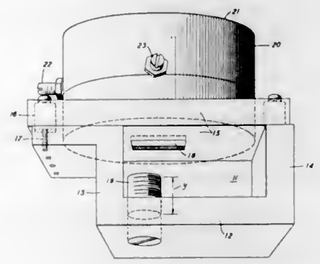
3,466,572
APPARATUS FOR REGULATING SIGNALS IN RESPONSE TO THEIR TOTAL ROOT MEAN SQUARE VALUE
David L. Hanna, San Mateo, and Neale A. Zellmer, Belmont, Calif., assignors, by mesne assignments, to Automatic Electric Laboratories, Inc., Northlake, Ill., a corporation of Delaware
Filed Oct. 14, 1965, Ser. No. 495,960
Int. Cl. H04b *3/04*
U.S. Cl. 333—17 **3 Claims**

Light sensitive resistance devices and indirectly heated thermistors are employed as A.C.-D.C. transfer devices which operate on a RMS basis, rather than on an average power basis, in a feedback path of a regulator to provide a D.C. signal for comparison with a D.C. reference level. A D.C. signal derived from such a com-



parison is employed to control a variolosser in accordance with the total RMS signal in the transmission path.

3,466,573
TUNABLE MICROWAVE TIME DELAY EQUALIZER
Thomas A. Abele, Andover, and Han-Chiu Wang, Lawrence, Mass., assignors to Bell Telephone Laboratories, Incorporated, Murray Hill and Berkeley Heights, N.J., a corporation of New York
Filed Dec. 29, 1966, Ser. No. 605,838
Int. Cl. H03h *5/00*
U.S. Cl. 333—28 **6 Claims**

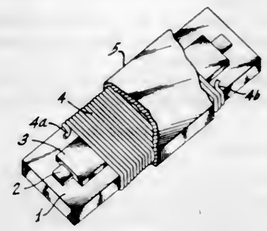


A time delay equalizer of the type in which a cylindrical cavity simultaneously resonant in two orthogonal modes is coupled to a rectangular waveguide. Specifically, the coupling comprises a relatively large transversely movable aperture in a common wall between the end of the cavity and one wide wall of the guide and a relatively large probe extending an adjustable height in the guide from the other wide wall at a point between the axis of the aperture and a narrow wall. Simultaneous adjustment of the aperture position and the height of the probe varies the shape of the time delay vs. frequency characteristics introduced by the cavity without producing an impedance discontinuity.

3,466,574
DELAY LINES
Ernst Rutishauser, Spreitenbach, Switzerland, assignor to RCA Corporation, a corporation of Delaware
Filed Jan. 10, 1967, Ser. No. 608,329
Claims priority, application Great Britain, Jan. 21, 1966, 2,855/66; Nov. 16, 1966, 51,344/66
Int. Cl. H03h *9/30*
U.S. Cl. 333—29 **3 Claims**

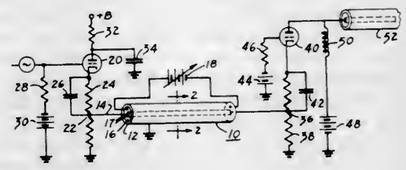
Delay line, suitable for use in luminance channel of a color television receiver, employs a delay line former of "flat" configuration (width-to-thickness ratio significantly greater than 1:1); flat conductive strip, deposited

on one major surface of the former, is covered by a strip of dielectric material. Layer wound coil surrounds the flat



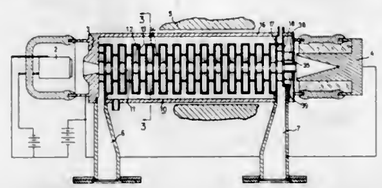
former, overlying the covered conductive strip. Rectangular and oval cross-sectional contours for the flat former are disclosed.

3,466,575
SEMICONDUCTOR DELAY LINE
Kern K. N. Chang, Princeton, N.J., assignor to RCA Corporation, a corporation of Delaware
Filed July 30, 1965, Ser. No. 475,984
Int. Cl. H03h *9/30;* **H03f** *3/16*
U.S. Cl. 333—29 **2 Claims**



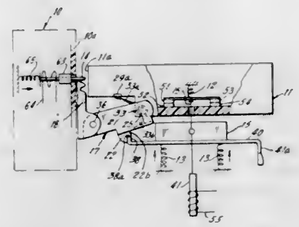
A distortionless delay line which by restoring losses in the line maintains the amplitude of the applied wave as it passes along the line, the delay line including a metal conductor in juxtaposition with, but insulated from, semiconductive material.

3,466,576
IMPEDANCE MATCHED PERIODIC SLOW WAVE STRUCTURE
Alain G. Bert, Gif-sur-Yvette, France, assignor to Thomson-Varian, Paris, France, a company of France
Filed Jan. 25, 1967, Ser. No. 611,730
Claims priority, application France, Jan. 26, 1966, 47,329
Int. Cl. H03h *7/30, 7/38*
U.S. Cl. 333—31 **4 Claims**



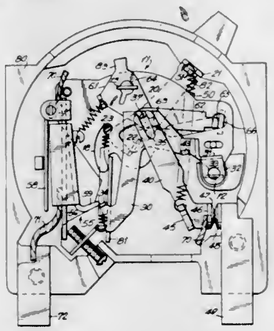
Slow-wave structure of the partitioned waveguide type, comprising cavity-resonators aligned along a longitudinal axis and separated by partitions, central capacitive coupling holes and radial negative inductive coupling slots through said partitions, including a terminal cavity-resonator coupled to an output waveguide, said terminal cavity-resonator comprising two normal post members and two special post members perpendicular to the partitions of said terminal cavity-resonator, said post members being located in alternate sectors delimited by the radial slots, the diameter and mutual distance of the two normal post members being respectively smaller than the diameter and the mutual distance of the two special posts and the line joining the centers of the two special posts being parallel to the transverse section of the output waveguide.

3,466,577
FORCE DIVIDING LINKAGE FOR MECHANICALLY HELD ELECTROMAGNETIC CONTACTOR
Donald F. Letosky, Detroit, and Elwood T. Platz, Grosse Pointe Farms, Mich., assignors, by mesne assignments, to I-T-E Imperial Corporation, Philadelphia, Pa., a corporation of Delaware
Filed Aug. 17, 1967, Ser. No. 661,293
Int. Cl. H01h *9/20*
U.S. Cl. 335—167 **6 Claims**



A mechanical latch designed for operation with a relatively small size electromagnetic contactor is connected for operation with a relatively large size contactor by utilizing a force dividing latch lever pivotally mounted at one end thereof to a fixed portion of the contactor. With the contactor mechanically latched, a point intermediate the ends of the lever, and preferably close to the pivot, engages the portion of the contactor carrying the movable contacts. The end of the lever remote from the lever pivot is engaged by the mechanical latch with this engagement being through a pawl pivoted to the lever and provided because of a space limitation.

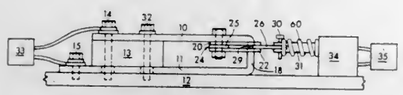
3,466,578
CIRCUIT BREAKER CONTACT SEPARATION INITIATOR
John C. Brumfield, Philadelphia, Pa., assignor, by mesne assignments, to I-T-E Imperial Corporation, Philadelphia, Pa., a corporation of Delaware
Filed June 26, 1967, Ser. No. 648,557
Int. Cl. H01h *71/16, 9/20*
U.S. Cl. 335—172 **6 Claims**



In a circuit breaker having a movable contact supported by an arm, which contact is normally in engagement with a stationary contact; and having a pivotally mounted tripper, comprising a cradle, supported on a latch connected to a tripping mechanism wherein move-

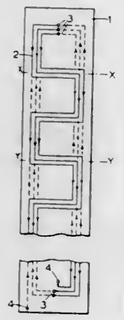
ment of the latch permits the cradle to pivot to a position which causes contact separation; the cradle having a projection thereon which strikes the support arm for the movable contact as the cradle is pivoting and initiates the separation of the movable contact from the stationary contact.

3,466,579
HIGH SPEED SWITCHING DEVICES
Donald B. Montgomery, Wayland, and Norton T. Pierce, Concord, Mass., assignors to Massachusetts Institute of Technology, Cambridge, Mass., a corporation of Massachusetts
Filed Aug. 19, 1966, Ser. No. 573,642
Int. Cl. H01h *9/30*
U.S. Cl. 335—201 **4 Claims**



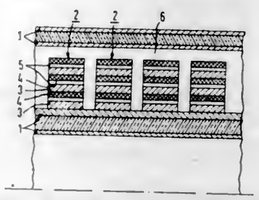
A high speed switching device which uses insulative layers substantially enclosing a pair of conductive members so as to expose only a contact area thereof and a third movable insulative layer slidably supported therebetween. The movable layer has a conductive element positioned in a single opening thereof so that such sliding layer can be moved extremely rapidly between a first position where the conductive element is in contact with the exposed contact areas of the conductive members and a second position where the contact element is in contact with the first and second insulative layers and completely removed from contact with the exposed contact areas of such conductive members.

3,466,580
CIRCUIT ELEMENTS ESPECIALLY FOR USE AS SCANNING COILS
Eric William Bull, Sunbury-on-Thames, England, assignor to Electric & Musical Industries Limited, Hayes, Middlesex, England, a British company
Filed July 20, 1966, Ser. No. 566,648
Claims priority, application Great Britain, July 30, 1965, 32,578/65
Int. Cl. H01h *5/00*
U.S. Cl. 335—213 **10 Claims**



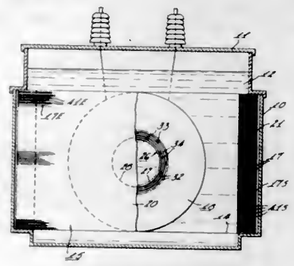
A circuit element which comprises a tape like structure which is intended to be rolled into a cylindrical or like form to constitute a scanning coil assembly for a cathode ray tube has conductive patterns on each side thereof comprising longitudinally extending substantially rectangular waveforms the two patterns being staggered with respect to each other.

3,466,581
WINDING FOR A MAGNET COIL OF HIGH FIELD STRENGTH AND METHOD OF MANUFACTURING THE SAME
Cord Albrecht, Erlangen, and Wilhelm Kafka, Tennenlohe, Germany, assignors to Siemens Aktiengesellschaft, a corporation of Germany
Filed Aug. 1, 1967, Ser. No. 657,642
Claims priority, application Germany, Aug. 18, 1966, S 105,409
Int. Cl. H01f *7/22*
U.S. Cl. 335—299 **9 Claims**



A winding which is particularly adapted for use in the coil of a magnet of high field strength. The winding is composed of an electrically conductive tape having a pair of opposed side edges and a pair of opposed faces which extend between these side edges, and this electrically conductive tape is wound into a plurality of convolutions. At least one additional tape of high tensile strength is separate from but extends along one of the faces of electrically conductive tape and is situated because the convolutions thereof to separate these convolutions from each other. During the manufacture of this structure the pair of tapes are simultaneously unwound from a pair of supply spools at an adjustable tension while the tapes are wound next to each other into the convolutions where the tape of high tensile strength is situated next to the electrically conductive tape to separate the convolutions of the latter from each other.

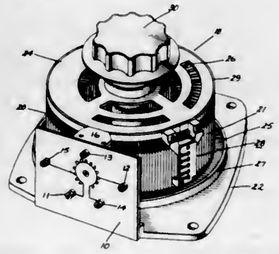
3,466,582
MAGNETIC YOKE FOR SHUNT REACTOR
William C. Sealey, Wauwatosa, and Michael W. Waterman, Milwaukee, Wis., assignors to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.
Filed July 28, 1967, Ser. No. 656,807
Int. Cl. H01f *27/08*
U.S. Cl. 336—60 **15 Claims**



A magnetic yoke for a shunt reactor having a horizontal coil with nonmagnetic means extending axially thereof comprises a stack of magnetic steel laminations in planes parallel to the axis of the coil defining yoke end portions closely adjacent the ends of the coil and yoke side portions connecting the yoke end portions and forming a closed low reluctance path in surrounding relation to the coil. The total magnetic flux in the yoke is a maximum opposite the coil axis and diminishes toward the upper and lower edges of the stack. Horizontal layers of spacers having poor magnetic characteristics are provided in the portions of the yoke wherein the

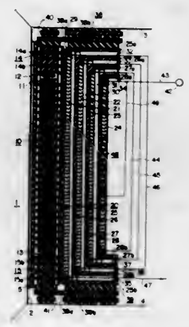
total flux is less than said maximum, and preferably the number of layers of spacers in each inch of stack height is a minimum opposite the coil axis and increases as a function of the total magnetic flux therein toward the upper and lower edges of the stack so that the magnetic flux density is approximately uniform in any cross section through the yoke. The spacers are preferably expanded metal and define cooling ducts between laminations to dissipate heat generated by losses therein.

3,466,583
ADJUSTABLE SLIDING BRUSH TRANSFORMER
Ronald A. Krol, Fort Wayne, Ind., assignor to General Electric Company, a corporation of New York
Continuation of application Ser. No. 614,218, Feb. 6, 1967. This application Sept. 18, 1968, Ser. No. 768,594
Int. Cl. H01f *27/08*
U.S. Cl. 336—60 **2 Claims**



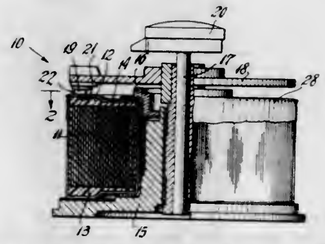
Improved adjustable sliding brush transformer having a coolant passageway between the brush track and brush supporting structure to reduce the transformer hot spot temperature. The brush supporting structure has a bifurcated portion. The bifurcated portion defines an outlet for the discharge of convective air currents in an axial direction away from the brush to reduce the hot spot temperature of the transformer. The brush supporting structure includes a guideway to maintain alignment of the brush relative to the brush track and to prevent binding of the brush in the brush supporting structure during operation.

3,466,584
WINDING FOR A STATIONARY INDUCTION ELECTRICAL APPARATUS
Yoshitake Kashima, Hitachi-shi, Japan, assignor to Hitachi, Ltd., Tokyo-to, Japan
Filed June 22, 1967, Ser. No. 648,084
Claims priority, application Japan, June 22, 1966, 41/40,097; Oct. 26, 1966, 41/70,192; Nov. 21, 1966, 41/106,618
Int. Cl. H01f *15/14, 27/28*
U.S. Cl. 336—70 **19 Claims**



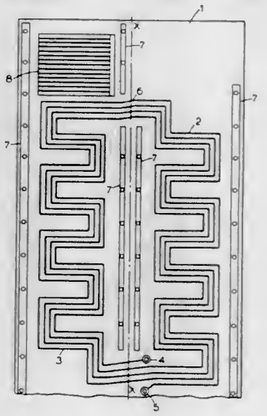
A multi-layer winding assembly for a power transformer is provided with a shielding winding conductor which is disposed between the main winding conductor in either the most exterior winding layer or the most interior winding layer and which is supplied with either the line side potential or the earth-side potential so as to improve the potential distribution in the winding at the instant a sharp impulse voltage or a lightning surge is applied thereto.

3,466,585
ADJUSTABLE VOLTAGE AUTOTRANSFORMER
Louis A. Kucharski, Bristol, Conn., assignor to The Superior Electric Company, Bristol, Conn., a corporation of Connecticut
Filed July 15, 1966, Ser. No. 565,633
Int. Cl. H01f *21/02*
U.S. Cl. 336—148 **3 Claims**



An adjustable voltage autotransformer having a hardened covering in the area of the coil where the commutating surface is formed with the covering substantially filling the interstices between the wires thereat and forming thickened rims encircling the commutating surface by applying the covering in a liquid state and then pressing the liquid covering that is at the commutating surface to force the covering into the interstices with the remainder being forced outwardly to form the rims.

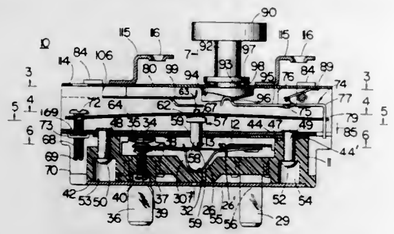
3,466,586
SCANNING COILS
Eric William Bull, Sunbury-on-Thames, and Alfred Marcos Sampeys, Gerrard Cross, England, assignors to Electric & Musical Industries Limited, Hayes, Middlesex, England, a British company
Filed Feb. 13, 1967, Ser. No. 615,738
Claims priority, application Great Britain, Feb. 26, 1966, 8,555/66; Dec. 22, 1966, 57,342/66
Int. Cl. H01f *5/02*
U.S. Cl. 336—200 **3 Claims**



A scanning coil assembly consisting of two preferably longitudinal square wave conductive patterns parallel

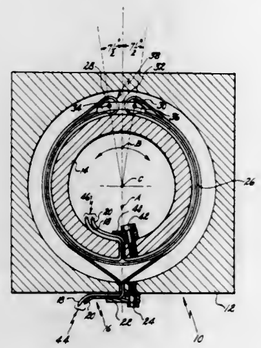
with each other on two adjacent parts of an insulating strip which is then folded to bring the patterns over each other, the folded strip being rolled longitudinally to form a cylinder containing two pairs of saddle coils.

3,466,587
SNAP ACTING SWITCH ASSEMBLY
Jacques C. Rechou, La Celle-Saint-Cloud, France, and John L. Slonneger, Morrison, Ill., assignors to General Electric Company, a corporation of New York
Filed Apr. 28, 1967, Ser. No. 634,646
Int. Cl. H01h *37/12, 37/54, 37/74*
U.S. Cl. 337—347 **9 Claims**



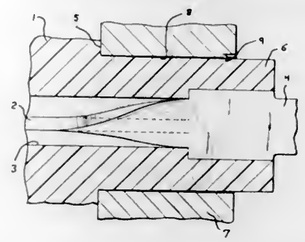
Thermally responsive low energy bimetallic actuating switch unit has low force and temperature differential characteristics, as well as a consistently efficient contact weld-breaking motion, especially desirable for such applications as controlling air conditioning and refrigeration apparatus. A switch blade element and a toggle spring are securely fastened to a support member and a selectively actuable push rod member is biased against the blade member by a bimetallic member intermediate the ends of the blade and bimetallic members. Movement of the bimetallic member intermediate its ends operates the blade element through the push rod against the force exerted on it by the toggle spring to open and close the contacts selectively with the consistently efficient weld-breaking action.

3,466,588
ELECTRIC COUPLING DEVICE
John L. Bradshaw, Hillsdale, N.J., assignor to the United States of America as represented by the Secretary of the Air Force
Filed Jan. 25, 1968, Ser. No. 700,637
Int. Cl. H01r *39/64;* **H02g** *11/00*
U.S. Cl. 339—5 **4 Claims**



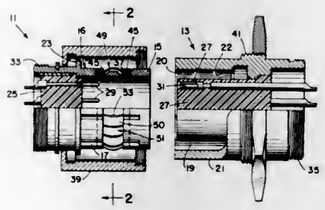
An electric coupling device having a fixed member and a rotatable member mounted therein. Operably associated with these members is a conducting means and a pulley arrangement. The unique relationship between the above elements permits continuous electrical contact between an electrical source and an oscillatory device which is fixedly secured to the rotatable member while allowing the rotatable member 330° of rotation in either direction.

3,466,589
MOUNTING MEANS FOR AN ELECTRICAL CONNECTOR
Robert Wilson Sherman, Harrisburg, and Edward Leal Hadden, Mechanicsburg, Pa., assignors to AMP Incorporated, Harrisburg, Pa.
Filed June 26, 1967, Ser. No. 648,633
Int. Cl. H01r *3/06, 13/20, 13/54*
U.S. Cl. 339—14 **7 Claims**



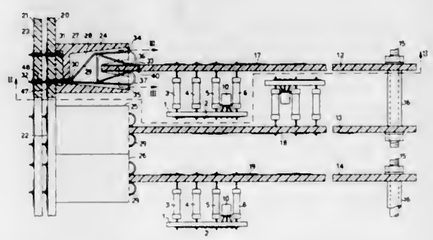
An electrical connector mounting arrangement which constitutes a mounting panel having openings extending therethrough, at least some of the openings provided with inwardly-directed protrusions, an electrical connector including a dielectric housing and electrical terminals disposed in passageways in the housing corresponding to the number of panel openings, section of the terminals extending outwardly from one end of the housing, projections extending outwardly from the one end of the housing and surrounding portions of the sections of the terminals, the housing being positioned on the mounting panel with the one end disposed thereagainst, the projections being disposed within the panel openings and the openings having the protrusions bitingly engaging the projections therein thereby maintaining the connector in position on the panel.

3,466,590
GROUNDING DEVICE IN AN ELECTRICAL CONNECTOR
Robert T. Sylvester, Albuquerque, N. Mex., assignor to the United States of America as represented by the United States Atomic Energy Commission
Filed Jan. 12, 1968, Ser. No. 697,508
Int. Cl. H01r *3/04, 13/46*
U.S. Cl. 339—14 **3 Claims**



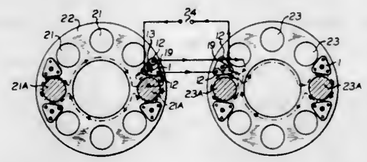
An electrical connector with contact elements having in the periphery of a first mating portion shell an annular groove with overlying marginal lips and an annular grounding spring retained in the groove by edges underlying the groove lips, the grounding spring having an arcuate intermediate section outwardly maintaining the underlying edges and extending beyond the periphery of the first mating portion shell for electrical contact with a second mating portion prior to engagement of the contact elements.

3,466,591
ELECTRICAL CONNECTOR FOR PRINTED-CIRCUIT BOARDS
Edoardo Ecclesia, Ivrea, Torino, Italy, assignor to Ing. C. Olivetti & C., S.p.A., Ivrea, Italy, a corporation of Italy
Filed Oct. 25, 1965, Ser. No. 505,148
Claims priority, application Italy, Oct. 30, 1964, 23,675/64
Int. Cl. H05k *1/12, 13/06;* **H01r** *13/50*
U.S. Cl. 339—17 **1 Claim**



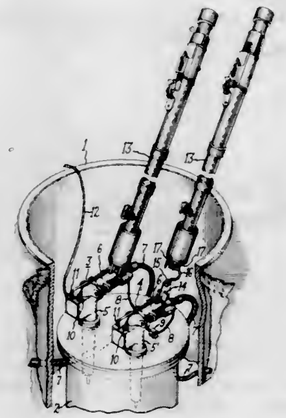
In an electrical connector for printed-circuit boards a series of contact elements made of conductive wire are arranged in cavities of a receptacle of insulating material, said wire being bent to form two loops and its ends being firmly anchored in a point on the bottom of said receptacle so that said loops may be solidly displaced within said cavity by resilient flexure around said anchorage point.

3,466,592
BIVOLTAGE CONNECTION APPARATUS FOR ELECTRIC BRAKES
Telesforo G. Zabalbeitia, Dr. Areilza 44, Bilbao, Spain
Filed May 10, 1967, Ser. No. 637,528
Claims priority, application Spain, Sept. 28, 1966, 331,693
Int. Cl. H01r *29/00;* **B60t** *13/74*
U.S. Cl. 339—18 **5 Claims**



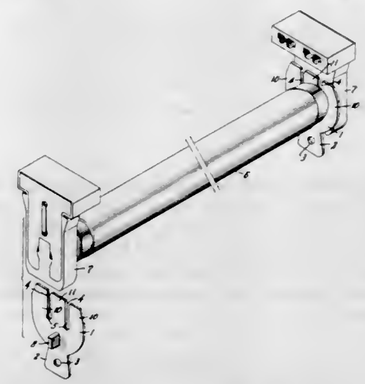
A bivoltage connection device for electric brakes having partition separating brake zones in pairs and in zone a dielectric box is linked by two rods passing through the partition. Each dielectric box includes a base part and a covering housing removably fixed thereupon. A third threaded rod which does not pass through the partition is affixed to each base part. Two of the rods in each brake zone are wired to coils of the brake. A plate-bridge is provided in each box for selective connection to a selected two of the rods, depending on the applied voltage source, other than directly to the two rods which are wired to the coils.

3,466,593
TERMINATION
Richard H. Arndt, Lenox, and Allen G. Craig, Dalton, Mass., assignors to General Electric Company, a corporation of New York
Filed Nov. 14, 1966, Ser. No. 593,774
Int. Cl. H01r *13/62*
U.S. Cl. 339—45 **3 Claims**



An electric power cable termination having stress cone means to relieve electrical stresses, in combination with termination handling and sealing improvements that facilitate use of the termination in underground vaults.

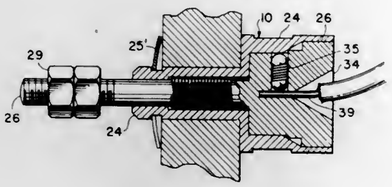
3,466,594
LOCKING DEVICES FOR FLUORESCENT LAMPS
Lewis Detch, 2133 Chalfant St., Pittsburgh, Pa. 15221
Filed Feb. 21, 1968, Ser. No. 707,128
Int. Cl. H01r *33/10, 13/54*
U.S. Cl. 339—54 **12 Claims**



A locking device for fluorescent lamps which will serve to prevent a lamp from becoming disengaged from the lamp holder in the presence of vibration or shock, such locking device being in the form of a relatively thin wafer-like member for insertion between the lamp end and the lamp holder and having open ended slot means terminating inwardly of the device in apertures for engagement of the bi-pins of the lamp upon insertion of the device into locking position with respect thereto, and having lug means offstanding from its face adjacent to said lamp holder and cooperating with the usual slot of the holder

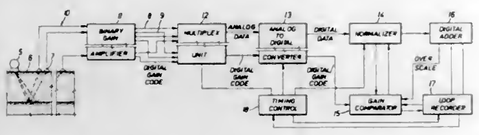
which admits the bi-pins during assembly of the lamp with the holder, such lug means serving to prevent rotation of the lamp, axially, and its disengagement from the holder.

3,466,595
ELECTRICAL CONNECTOR FOR TEST GEAR
James A. Boutilier, Taunton, Mass., assignor to The Foxboro Company, Foxboro, Mass., a corporation of Massachusetts
Filed Sept. 25, 1967, Ser. No. 670,280
Int. Cl. H01r *13/10, 15/26*
U.S. Cl. 339—253 **1 Claim**



An electrical test connector wherein a wire end is held in a recess by compressed ball contact spring pressure applied to the side of the wire end in the recess, providing easily detachable essentially force fit assembly.

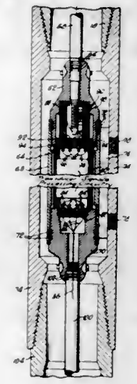
3,466,596
METHOD AND MEANS OF COMPOSITING DATA
Lee E. Siems and W. Clay Reeves, Houston, Tex., assignors to Digital Data Systems, Inc., Houston, Tex., a corporation of Texas
Continuation-in-part of application Ser. No. 698,339, Jan. 16, 1968. This application Nov. 6, 1968, Ser. No. 773,868
Int. Cl. G01v *1/00*
U.S. Cl. 340—15.5 **17 Claims**



Method and means of recording and compositing time-related attenuated signals utilizing amplifiers whose gains change inversely to the attenuation of the signals. Incoming signals are converted to digital data and normalized to previously recorded time-related data. The normalized data and the previously recorded data are then summed and recorded.

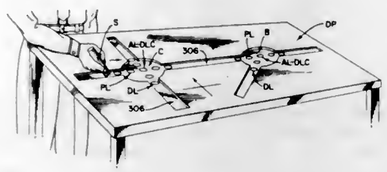
3,466,597
LOGGING WHILE DRILLING SYSTEM
Albert P. Richter, Jr., and James D. Bruner, Houston, Tex., assignors to Texaco Inc., New York, N.Y., a corporation of Delaware
Filed Oct. 10, 1967, Ser. No. 674,335
Int. Cl. G01v *1/40*
U.S. Cl. 340—18 **1 Claim**

Apparatus for logging a borehole in the earth while the borehole is being drilled; said apparatus being incorporated in a drill string and including a special sub located above and in close proximity to a rotary drill bit. The special sub houses at least one transducer for providing signals representative of at least one parameter determined in the borehole. Two additional subs are serially coupled end-to-end with each other and with the special sub to form a configuration of three longitudinally aligned subs, the special sub nearest the drill bit being the lowermost one. Supported coaxially within the two upper additional subs are two sealed capsules, or containers, which are longitudinally spaced apart. One capsule houses, among other things, a recording unit, a power supply and associated circuitry while the other capsule houses a power supply and circuitry for processing signals from the transducer or transducers. Two conduits are provided: one providing communication between the two



capsules and the other providing communication between the transducer in the special sub and the capsule containing the circuitry for processing the transducer signals. The conduits are of such construction as to permit the quick separation of the capsules and the connections to the transducer element or elements. Each of the sealed capsules is supported coaxially within their serially coupled additional subs by multiple longitudinal runners which are welded to the outside surface of the capsules and to the wall of the special subs.

3,466,598
APPARATUS FOR PROGRAMMING TRAFFIC FLOW PATH ROUTES
Robert W. Cruger, Springfield, Edward P. Cheslock, Newton Square, Wilcy I. Moore, Folsom, and James J. Murray, Havertown, Pa., assignors to E. W. Bliss Company, Canton, Ohio, a corporation of Delaware
Continuation of application Ser. No. 551,679, May 20, 1966. This application July 15, 1966, Ser. No. 565,462
Int. Cl. G08g *1/12, 1/07*
U.S. Cl. 340—23 **27 Claims**



1. Apparatus for programming flow routes for routing movable means through a flow path intersection network and comprising:

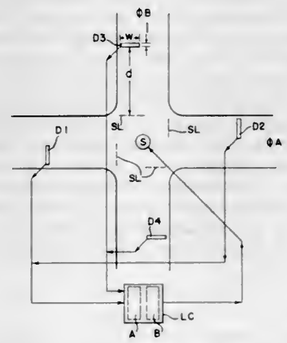
a display panel having grooves defined in the face thereof graphically illustrating said flow path intersection network, said grooves having continuous nonconductive side walls;

an operator's manually movable stylus for tracing a programmed route on said panel's illustrated network, said programmed route being representative of the desired route to be followed by said movable means through the actual network;

a plurality of stylus actuated means associated with the panel's illustrated network; and

control means responsive to actuations of said stylus actuated means for controlling energization of intersection routing means associated with said actual network to route said movable means through said actual network in accordance with the programmed route traced by said stylus.

3,466,599
TRAFFIC CONTROLLER HAVING IMPROVED TIME WAITING-GAP REDUCTION CIRCUIT
Larry Keith Clark, Davenport, and Peter Greenough Bartlett, Scott, Iowa, assignors to E. W. Bliss Company, Canton, Ohio, a corporation of Delaware
Filed Oct. 12, 1966, Ser. No. 586,127
Int. Cl. G08g *1/07*
U.S. Cl. 340—37 **15 Claims**



8. In a traffic controller for alternately allocating go and stop signals to at least two intersecting traffic phases, each having vehicle detection means associated therewith or detecting vehicles in an associated said phase, said controller including a time waiting-gap reduction circuit for initiating a change in allocation of said go and stop signals to said phases as a function of the actual gap time between successively detected vehicles on one of said phases and the time that a detected vehicle is waiting on the other of said phases, when a stop signal is allocated thereto; the improvement wherein said time waiting-gap reduction circuit comprises:

first and second linear timers, each including:

generating means for generating a first signal which progressively varies in a linear manner with elapsed time;

comparing means for comparing said first signal with a reference signal and developing an output signal when said first and reference signals attain a predetermined relationship with respect to each other;

means for resetting said generating means of said first timer for each detection of a vehicle in said one phase to which a go signal is allocated, whereby said first signal generated by said first timer progressively varies in a linear manner with elapsed time between successively detected vehicles in said one phase;

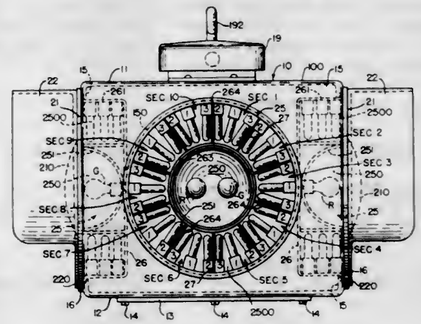
means for energizing said generating means for said second timer in response to a detected vehicle in said other phase to which a stop signal is allocated, whereby said first signal generated by said second timer progressively varies in a linear manner with the elapsed time that said detected vehicle in said other phase is waiting on a said stop signal;

said comparing means of said second timer being coupled to said generating means of said first timer to receive said first signal generated thereby so that said first signal from said first timer serves as the reference signal for the said comparing means of said second timer;

means for disabling said resetting means in response to a said output signal from the comparing means of said second timer, whereby further detections of vehicles in said one phase do not result in resetting the generating means of said first timer; and

means responsive to a said output signal from the comparing means of said first timer to initiate a change in the allocation of said go and stop signals to said phases.

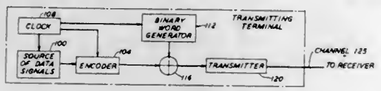
3,466,600
TRAFFIC CONTROL SIGNALS
Edgar J. Smoot, Dearborn, Mich., assignor of one-half to Robert A. Smoot, Dearborn, Mich.
Continuation-in-part of application Ser. No. 501,353, Oct. 22, 1965. This application June 3, 1968, Ser. No. 733,945
Int. Cl. G08g *1/01*
U.S. Cl. 340—43 **2 Claims**



An electrically controlled and illuminated traffic control signal having a plurality of faces for controlling traffic at street intersections, at least one said face including a dominant central circular bull's-eye signal having at least one Red light bulb and at least one Green light bulb therein, said bull's-eye signal being surrounded by an annular sweep signal cluster divided into a plurality of sectors, each sector including one Amber light bulb, one Red light bulb and one Green light bulb, said bull's-eye light bulbs and said sector light bulbs of each said face being connected through timing means to a source of electric current illuminating the bull's-eye and all sectors of said annular bowl: first, all Red, then sequentially and slowly changing illumination in each sector from Red to Amber beginning at the right of top center until all sector lights but those in the last sector are Amber, then changing illumination in said bull's-eye and all sectors to Green, then sequentially changing illumination in each sector beginning at the right of top center from Green to Amber until all sector lights but those in the last sector are Amber, and then changing illumination in said bull's-eye and all sectors to Red, thus providing alternately all Green and then all Red illumination on said one face of said traffic control signal with a cir-

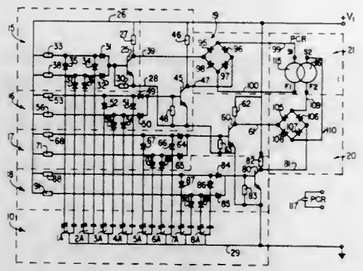
cular sweep of Amber light around each said Green bull's-eye signal and Red bull's-eye signal whereby to inform the motorist with adequate notice as to when said Green bull's-eye signal will turn to Red and said Red bull's-eye signal will turn to Green.

3,466,601
AUTOMATIC SYNCHRONIZATION RECOVERY TECHNIQUES FOR CYCLIC CODES
Shih Y. Tong, Middletown, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Mar. 17, 1966, Ser. No. 535,164
Int. Cl. G06f *11/12*
U.S. Cl. 340—146.1 **30 Claims**



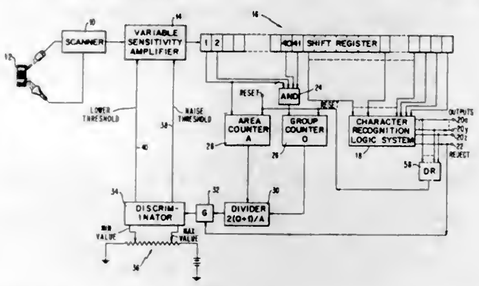
An arrangement of providing automatic synchronization recovery is disclosed for use in data transmission systems which employ error-correcting cyclic codes. Each data word to be transmitted is modified by adding to the word a fixed predetermined sequence. The modified word is then transmitted to the receiving terminal where another predetermined fixed sequence is subtracted from the word. The word is then decoded in accordance with a preselected decoding strategy to determine whether a synchronization slippage has occurred and, if so, the direction of the slippage. Word framing between the transmitting and receiving stations is then adjusted accordingly. With this arrangement, both synchronization errors and errors caused by channel noise can be detected by the decoder and distinguished.

3,466,602
SINGLE ERROR DETECTOR FOR BINARY INFORMATION
Joseph R. Moser, Brookfield, and Odo J. Struger, Milwaukee, Wis., assignors to Allen-Bradley Company, Milwaukee, Wis., a corporation of Wisconsin
Filed May 18, 1966, Ser. No. 551,101
Int. Cl. G06f *11/00, 11/08*
U.S. Cl. 340—146.1 **5 Claims**



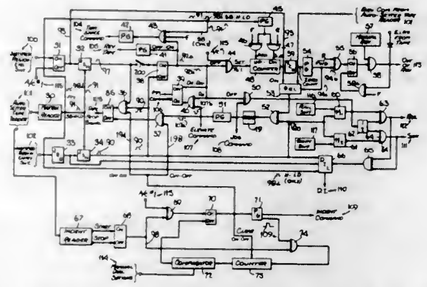
The present invention pertains to data transfer circuitry and to a network for detecting signals in binary coded information formats. More specifically, the invention pertains to a single error detector adapted to simultaneously receive a group of pulse signals of two levels and which detector compares the sum of the pulses within the group to determine if the sum of the signals of either level is odd or even. The detector is further adapted to receive in succession a plurality of the groups and compare the sum of the pulses within each group to determine if the sum of the signals of either level of each group is odd or even.

3,466,603
SCANNER THRESHOLD ADJUSTING CIRCUIT
Glenmore L. Shelton, Jr., Carmel, N.Y., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed June 22, 1965, Ser. No. 466,034
Int. Cl. G06k *9/00*
U.S. Cl. 340—146.3 **13 Claims**



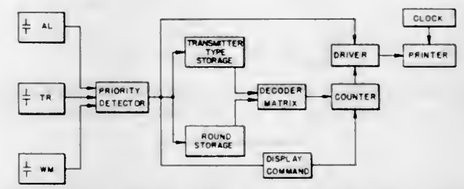
The threshold of an amplifier is adjusted by counting the number of samples contained within the trace of pattern "e." The samples taken by the scanner are thresholded by the amplifier and fed to a shift register. The first position of the register is fed to a counter which is advanced when a sample is taken from within the pattern. A group counter is connected to the shift register through an AND gate having four inputs from four adjacent positions of the shift register. The group counter is advanced when a one bit is in all those four positions. The values in counters are divided in a divider by the function $2(Q+1)/A$. The results of division are compared to minimum and maximum values in a discriminator. If the output of the divider exceeds maximum the threshold is raised. If the divider value is below minimum the threshold is lowered.

3,466,604
APPARATUS FOR AUTOMATIC JUSTIFICATION OF LINE-CASTING MATRICES ASSEMBLED BY A CODED TAPE
David J. Sinnott, Ringwood, N.J., assignor to Powers & Eaton Industries, Inc., South Hackensack, N.J., a corporation of New Jersey
Filed Aug. 10, 1966, Ser. No. 571,493
Int. Cl. H04q *1/18*
U.S. Cl. 340—147 **30 Claims**



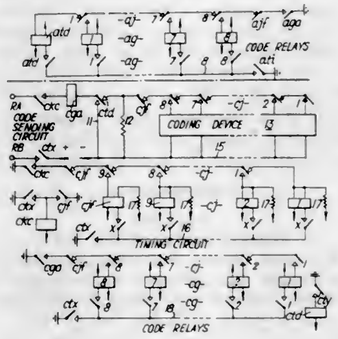
1. Apparatus for automatic justification of a set of matrices assembled on a line-casting machine from codes on an unprogrammed tape comprising means for determining the justifiability of a set of matrices assembled from codes on an unprogrammed tape and creating a justify signal on completion of a justifiable assemblage, means connected to said first means to receive a justify signal to interrupt assemblage of matrices, means connected to said justifiability determining means and said assemblage interrupting means for creating a signal to elevate a justifiable assemblage in response to a justify signal and commence assemblage of a succeeding set of matrices.

3,466,605
ALARM PRINTER
Frank H. W. Schoenwitz, Arlington Heights, Ill., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware
Filed Nov. 28, 1967, Ser. No. 686,079
Int. Cl. H04q *1/20*
U.S. Cl. 340—151 **11 Claims**



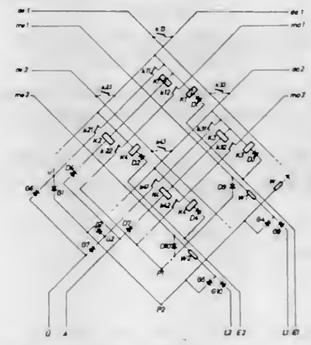
An alarm printer to be used with local, proprietary, and remote fire alarm and security systems. The alarm printer receives pulse coded serial information from electro-mechanical transmitters on three channels of differing priority. The alarm printer electronically decodes the pulse coded information and prints it in clear written form. The contents of the printout shows the transmitter type (fire, waterflow, security, etc.) of an event, the condition of the event (alarm, trouble, restoration, etc.) the zone identification code, the time and the date when the information is received and printed. Three isolated contacts, an alarm contact, a trouble contact and a watchman contact deliver the coded pulses to the alarm printer. The input signals from these three channels pass through a priority detector to be decoded; and if more than one channel is receiving data, only the one of highest priority is accepted for decoding and printing. Solid state circuitry decodes the pulses and this information, taken together with the number of "rounds," is utilized to set up the print wheels and print out the proper information.

3,466,606
BINARY DATA TRANSMISSION AND PULSE COUNTER
Andre Jean Henquet, Boulogne, Robert Victor Cavin, Paris, and Marcel Feuillepain, Ste.-Genevieve-des-Bois, France, assignors to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware
Filed June 4, 1964, Ser. No. 372,599
Claims priority, application France, June 12, 1963, 937,884
Int. Cl. H04q *3/04*
U.S. Cl. 340—164 **5 Claims**



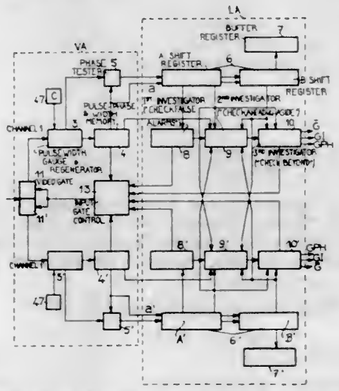
Pulses used to send dial information are also used to time system operations. The dial information is sent by binarily varying the amplitude of the timing pulses between a first and a second amplitude. This way a master station and a number of remote stations may communicate with each other on a two way basis.

3,466,607
CONTROL CIRCUIT FOR GLASS REED MATRIX
Herbert Heitmann, Ludwigsburg-Eglosheim, Germany, assignor to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware
Filed July 6, 1966, Ser. No. 563,178
Claims priority, application Germany, July 15, 1965, St 24,139
Int. Cl. H04q *1/18*
U.S. Cl. 340—166 **6 Claims**



A telephone system switching multiple operating on a guide wire principle and using adhesive relay crosspoints. Two separate leads are used per guide wire, one lead for the offering signal and one lead for the access signals. The access signals are used for setting, releasing the switching relays, and supervising the setting and releasing process. The supervision is carried on over a circuit that includes series of connected break contacts of the switching relays, coupled to the access lead.

3,466,608
DIGITAL-CODE-EXTRACTOR SYSTEM
Félix Floret, Sainte-Genevieve-des-Bois, Serge Mikailoff, Paris, and Georges Peronneau, La Celle-Saint-Cloud, France, assignors to Thomson Informatique & Visualisation T.I.V., Paris, France, a corporation of France
Filed Oct. 20, 1965, Ser. No. 498,829
Claims priority, application France, Nov. 5, 1964, 993,901
Int. Cl. H04q *3/02*
U.S. Cl. 340—167 **18 Claims**



A digital-code extractor used in a secondary radar system has two parallel channels to which incoming code

pulses may be selectively directed. Pulses found to belong to the same code group, and therefore presumed to originate with a single aircraft transponder, are processed in the first channel while other pulses, found to be unrelated to that code group and therefore presumably originating with another transponder, are directed into the second channel if occurring in interleaved relationship with the first code group or immediately after termination but prior to complete processing of the latter. If pulses from the two groups merge, the leading pulse group will still be processed while the other group is suppressed, a garbling signal being given in response to the seemingly increased pulse width.

3,466,609

MODULATED CARRIER RADIO CONTROL APPARATUS

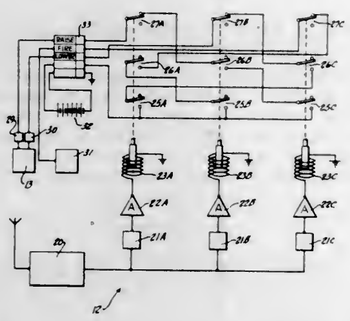
John Alex Ingvar Öhlund, Huskvarna, Sweden, assignor to Saab Aktiebolag, Linkoping, Sweden, a corporation of Sweden

Filed May 9, 1966, Ser. No. 548,707

Claims priority, application Sweden, May 12, 1965, 6,162/65

Int. Cl. H04q *1/00, 5/00, 7/00*

U.S. Cl. 340—171 **1 Claim**



For remote control of a number of servos, a plurality of different tone generators are energized in selected pairs, modulating a transmitted carrier simultaneously with two audio frequencies. Receiver output is fed to filters, one for each audio frequency, each controlling a relay having two normally open switch elements and a normally closed one. Each servo is energized through the normally open switch elements of each of two relays and the normally closed one of a third.

3,466,610

FLUID-CONTROLLED DATA STORAGE APPARATUS

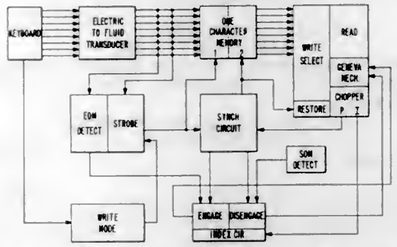
Charles S. Jackowski and Donald F. Jensen, Endicott, Hans R. Müller, Endwell, Melvin R. Noll, Binghamton, and Robert R. Schaffer, Endwell, N.Y., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York

Filed Dec. 22, 1966, Ser. No. 603,972

Int. Cl. G11b *13/00*

U.S. Cl. 340—172.5 **12 Claims**

Buffer storage apparatus for recording and transmitting data in coded form, being particularly adapted for operation and control by pressurized fluid through the use of diaphragm-controlled logic elements. The control circuits operate by fluid pressure signals to provide for data storage, data read out, erasure, movement of the storage medium, and recording of start and end of message codes.



3,466,611

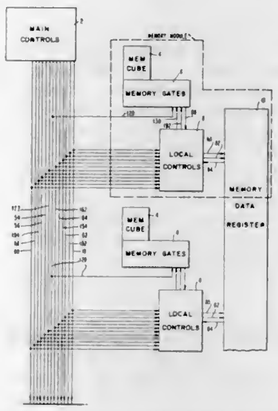
MULTI-WORD MULTI-DIRECTIONAL RANDOM ACCESS MEMORY SYSTEM

Arnold Weinberger, Newburgh, N.Y., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York

Filed Dec. 28, 1966, Ser. No. 605,448

Int. Cl. G11b *13/00;* **G06f** *1/00, 7/00*

U.S. Cl. 340—172.5 **20 Claims**



A novel computer memory configuration wherein multi-word access within the memory is possible in a plurality of directions. Only one sense line is required per accessed memory storage element. Only as many sense lines are required in each memory module as the mixmum number of bits to be accessed therein. A plurality of individually accessed memory modules are utilized wherein corresponding relative positions in each module contain different module contain different bits of the same memory word. As many memory modules are used as there are bits in a machine word. If 10 bit words are desired, 10 memory modules would be necessary. Each module comprises a three dimensional memory cube in which multi-bit access may occur in either the X, Y or Z direction.

3,466,612

WIRED CORE MEMORY

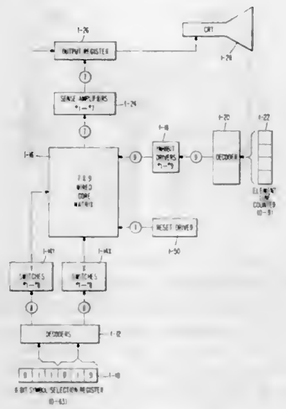
Edward F. Myers, East Lansdowne, and John R. Port, King of Prussia, Pa., assignors to Burroughs Corporation, Detroit, Mich., a corporation of Michigan

Filed Dec. 7, 1966, Ser. No. 599,811

Int. Cl. G11b *13/00, 5/00;* **G08b** *23/00*

U.S. Cl. 340—172.5 **10 Claims**

The present invention discloses a wired core memory useful for permanently storing digital data. It also provides a unique organization for selectively activating the permanently stored data as well as a means for sequentially presenting portions of the data to an output register. This latter feat is basically accomplished by inhibiting all but a singular portion of the selected information being activated. The required symbol or character font so produced may be displayed upon a cathode ray tube operative in a standard television type raster mode and the present wired core memory is therefore especially useful as a symbol generator.



3,466,613

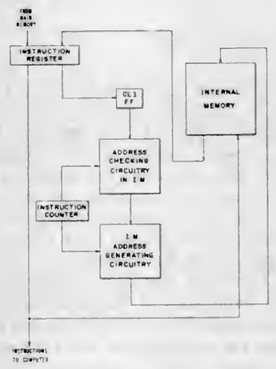
INSTRUCTION BUFFERING SYSTEM

Hans P. Schlaeppi, Chappaqua, N.Y., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York

Filed Jan. 13, 1967, Ser. No. 609,160

Int. Cl. G11b *13/00;* **G06f** *1/00*

U.S. Cl. 340—172.5 **16 Claims**



An Instruction Buffering System including high speed local storage capacity for storing program segments. Program loops may be designated, which the machine transfers into high speed local storage, to obviate repeated main memory access cycles. Means are provided for storing loops larger than the local storage in said local storage whereby only memory access is required for the overflow portion. A determination is made during instruction fetching cycles whether a particular instruction has been or is to be stored in local storage. Main memory and the local storage are accessed accordingly and new instructions placed in local storage as required.

3,466,614

DIGITAL CODE EXTRACTOR

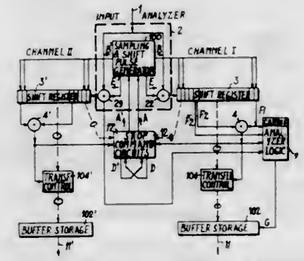
Serge Mikailoff, Paris, Georges Peronneau, La Celle Saint Cloud, and Félix Floret, Sainte Genevieve-des-Bois, France, assignors to Thomson Infomatique & Visualisation T.I.V., Paris, France, a corporation of France

Filed July 18, 1966, Ser. No. 566,038

Claims priority, application France, Aug. 12, 1965, 28,119

Int. Cl. G06f *7/00*

U.S. Cl. 340—172.5 **19 Claims**



A digital-code extractor used in a secondary radar system has two or more parallel channels to which incoming code pulses may be selectively directed under the control of an analyzing network (2) which generates, in response to an initial code pulse of a first code group (C), a first train of sampling pulses (E), with a repetition period equaling that of the code pulses and substantially in phase therewith, as well as a second train of sampling pulses (E′) with the same repetition period but interspersed with the first pulse train, subsequently arriving code pulses being compared with these sampling pulses and being directed to one channel (I) upon substantially registering with pulses (E) of the first train, indicating their inclusion in the first code group (C), or to another channel (II) upon substantially registering with pulses (E′) of the second train, indicating that they form part of a second code group (C′ or C″) received in interleaved relationship with the first code group. If the pulse positions of the two code groups overlap, the resulting merged pulses are directed to the first channel but a garbling signal is generated to tag the extracted information as being due to such merger; similar tagging of the first code group (C) occurs in the first channel (I) if a second code group (C′) is being concurrently processed in the other channel (II), interleaved code groups (C, C″) in both channels being so tagged in the presence of a third code group (C′) overlapping the two other code groups.

3,466,615

READ ONLY MEMORY INCLUDING FIRST AND SECOND CONDUCTIVE LAYERS FOR PRODUCING BINARY SIGNALS

Euval S. Barrekette, New York, and John A. Duffy, Yorktown Heights, N.Y., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York

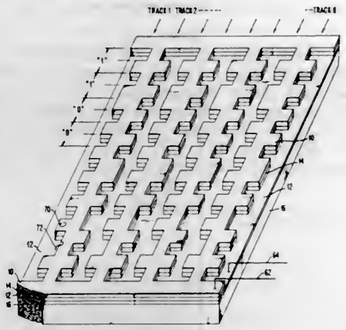
Filed Apr. 29, 1966, Ser. No. 546,334

Int. Cl. G11b *9/00*

U.S. Cl. 340—173 **3 Claims**

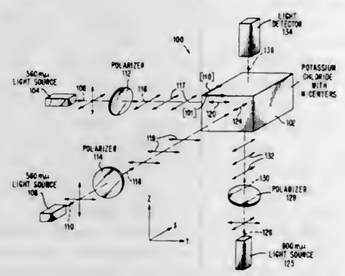
A memory element for storing binary information is provided including a first conductive layer, an insulating layer and a second conductive layer. The insulating layer and the second conductive layer are arranged in a coded

pattern in rows across the first conductive layer. The memory device is read by an electron beam which scans the rows and which produces an output signal from either the first conductive layer or the second conductive layer



in accordance with the pattern which represents binary information. Either output signal is representative of the binary information, however, the two signals combined produce a high amplitude composite signal representative of the binary information.

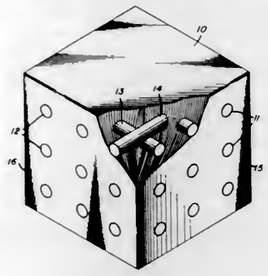
3,466,616
MEMORY DEVICE AND METHOD USING DICHROIC DEFECTS
Walter E. Bron, Briarcliff Manor, and Russell W. Dreyfus, Cross River, N.Y., and William R. Heller, Saratoga, Calif., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed Oct. 22, 1965, Ser. No. 502,041
Int. Cl. G11b *7/00, 9/00*
U.S. Cl. 340—173 **26 Claims**



A memory is provided for storage and retrieval of information by the interaction of optical radiation with a crystalline region. Various information states are established in the crystalline region as particular orientations of localized lower symmetry configurations, e.g., dichroic defects, dispersed therein. The particular spatial orientations of the configurations are established relative to the crystal axes by optical energy. The character of transmission of optical energy by the crystalline region is an identification of the stored information state.

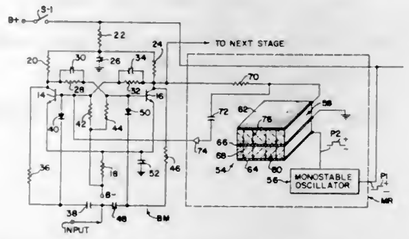
3,466,617
DEVICE FOR THE STORAGE OF INFORMATION BY ELECTROCHEMICAL MEANS
Stanley P. Levy, 145 W. Cuthbert Blvd., Oaklyn, N.J. 08107
Filed Sept. 22, 1966, Ser. No. 581,381
Int. Cl. G11b *5/00*
U.S. Cl. 340—173 **10 Claims**

A device for the storage of data information comprising an alkali halide crystal containing at least two conductor elements therein, said conductor elements leading from the exterior faces of said crystal to an interior portion at which they pass in close proximity, one of said conductors containing diffusible metal material which is the same element as the positive ion of said alkali halide



crystal, means for applying a voltage potential across the aforesaid region between said conductors to cause migration of said metal material into said crystal to form an F center region between said conductors, means for sensing and eliminating said F center and means for placing information into said crystal, sensing and erasing it.

3,466,618
MEMORY RESTORE CIRCUITS FOR BISTABLE MULTIVIBRATORS
Peter G. Bartlett, Bettendorf, Iowa, and Joseph E. Meschi, Moline, Ill., assignors to E. W. Bliss Company, Canton, Ohio, a corporation of Delaware
Filed May 23, 1967, Ser. No. 640,654
Int. Cl. G11b *9/02*
U.S. Cl. 340—173.2 **14 Claims**

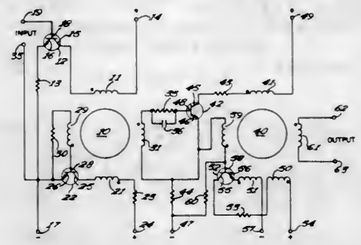


A memory restore circuit for actuating a bistable multivibrator to its last stable state upon removal and then return of power supplying bias potentials to the multivibrator. The memory restore circuit includes a ferroelectric capacitor which monitors the operation of the bistable multivibrator, and is polarized in one of two polarities in accordance with the last stable state of the multivibrator. A driver serves, upon receipt of a signal, to apply mechanical forces to the ferroelectric capacitor which serves to develop an output signal of a polarity in accordance with the last stable state of the multivibrator. This output signal is then applied to the multivibrator in such a manner to restore the multivibrator to its last stable state.

3,466,619
COUNTING CIRCUIT UTILIZING A QUANTIZED MAGNETIC CORE
Edwin H. Schmidt, Minnetonka, Minn., assignor to Honeywell Inc., a corporation of Delaware
Filed Dec. 13, 1963, Ser. No. 330,476
Int. Cl. G11b *5/62*
U.S. Cl. 340—174 **15 Claims**

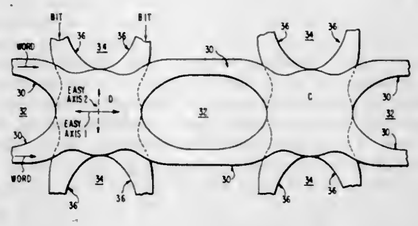
A magnetic counter system which includes magnetic cores and transistor devices for providing an accurate

temperature compensated mount. An active transfer circuit is provided which gives optimum temperature com-



pensation without the necessity of using additional temperature responsive elements and which further amplifies the signal transferred from one core to another.

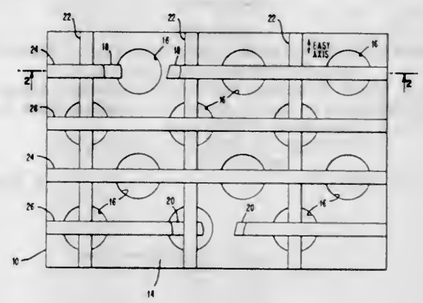
3,466,620
DISC BULK MEMORY
Arnold F. Schmeckenbecher, Poughkeepsie, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Dec. 24, 1964, Ser. No. 420,964
Int. Cl. G11b *5/00*
U.S. Cl. 340—174 **3 Claims**



In a thin film type of memory device, the current carrying members which control and sense storage of information also provide the structural interconnection between the individual memory cells. Each cell comprises a pair of disc-shaped conductor elements separated by a disc-shaped insulating element, plus a film of magnetic material covering the entire disc. The two conductive disc-shaped members for each cell are connected to other memory cells in respective rows and columns by means of conductive necks. The interconnecting necks may be split and widened at their point of connection with the discs to provide a path of least reluctance along the desired magnetization axis.

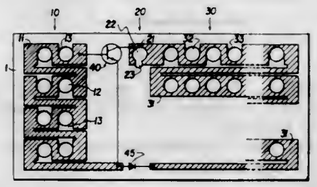
3,466,621
CONTINUOUS FILM MAGNETIC MEMORY ARRAY HAVING MATRIX OF ISLAND-LIKE VOIDS
William E. Flannery, Norristown, Pa., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed June 22, 1965, Ser. No. 465,934
Int. Cl. G11b *5/00, 23/00*
U.S. Cl. 340—174 **9 Claims**

The invention relates to a memory geometry whereby a continuous magnetic sheet has staggered holes located therein by removing equal amount of magnetic materials from beneath the sense line and cancellation line. The inductance of these lines is therefore more closely balanced. Furthermore, the memory areas are less creep sensitive



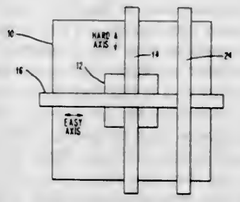
since there are no etched edges to act as nucleation centers for walls.

3,466,622
MEMORY PLANE FOR SOLENOID ARRAY MEMORIES
James M. Donnelly, Carol Stream, Ill., assignor to Automatic Electric Laboratories, Inc., Northlake, Ill., a corporation of Delaware
Filed June 25, 1965, Ser. No. 466,956
Int. Cl. G11b *5/00*
U.S. Cl. 340—174 **4 Claims**



A read only data plane for solenoid array memories has a transistor connected between its access section and its storage section to provide low access current and high reading current while also providing isolation between the two sections.

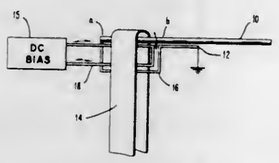
3,466,623
MAGNETIC MEMORY WITH AN OFF-SET BIT LINE TO REDUCE CAPACITANCE COUPLING
Wolodymyr Luciw, Philadelphia, and William E. Flannery, Norristown, Pa., assignors to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed July 2, 1965, Ser. No. 469,207
Int. Cl. G11b *5/00*
U.S. Cl. 340—174 **5 Claims**



This invention relates to a memory which utilizes a bit coupling for a thin film element which comprises using a single line which is off-set from the single sense line. By this arrangement, the capacitance coupling between elements is greatly reduced. This minimizes voltage transient

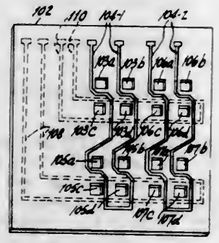
from being coupled from the bit to the sense line during the write cycle and prevents the sense amplifier from being saturated.

3,466,624
ARRANGEMENT FOR LIMITING THE CURRENT IN A FERROMAGNETIC FILM
Woo F. Chow, Horsham, and John B. Schwarz, Abington, Pa., assignors to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed Sept. 29, 1965, Ser. No. 491,259
Int. Cl. G11b *5/00*
U.S. Cl. 340—174 **5 Claims**



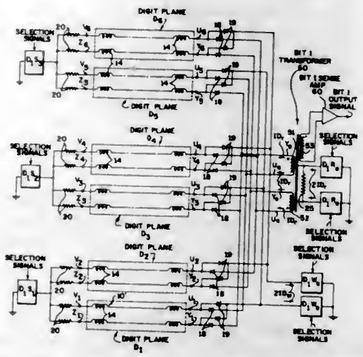
The invention relates to an arrangement for limiting the bit steering current generated in a multiple mismatch to within safe limits such that stored information is not destroyed. This is accomplished by forming a variable inductance loop which is juxtaposed to the memory. By controlling the inductance the impedance can be varied to handle the maximum amount of current through the memory.

3,466,625
READ-ONLY MEMORIES
James C. Miller, Pennington, and Charles M. Wine, Princeton, N.J., assignors to RCA Corporation, a corporation of Delaware
Filed Nov. 26, 1965, Ser. No. 510,002
Int. Cl. G11c *11/08, 17/00*
U.S. Cl. 340—174 **13 Claims**



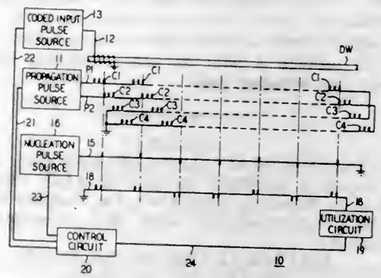
A sheet of insulator material formed with clusters of holes therein, lies on a sheet of magnetic material. Each cluster of holes defines a memory location and there are drive and sense conductors on the sheet of insulator material which pass among the clusters of holes. A second sheet of insulator material lies over the first sheet of insulator material and it has locations corresponding to the memory locations on the first sheet. However, the number of holes (there may be one or more) at each location on the second sheet is fewer than the number of holes in a cluster on the first sheet. The hole or holes at each location on the second sheet align with one or another group of holes, fewer than all, of the cluster of holes at the corresponding location in the first sheet. The last layer of the memory is of magnetic material and passes through the aligned holes in the second sheets and makes contact with the first layer of magnetic material.

3,466,626
COMPUTER MEMORY HAVING ONE-ELEMENT-PER-BIT STORAGE AND TWO-ELEMENTS-PER-BIT NOISE CANCELLATION
Eduardo T. Ulzurrun, Hollywood, Calif., assignor to The National Cash Register Company, Dayton, Ohio, a corporation of Maryland
Filed Feb. 25, 1966, Ser. No. 530,042
Int. Cl. G11b *5/00*
U.S. Cl. 340—174 **25 Claims**



A memory arrangement for storing a plurality of multi-digit words in binary form with each digit being stored in in a bistable element. The arrangement includes a plurality of word lines each serially connecting energizing means of elements corresponding to digits of a plurality of words, and a plurality of sense lines each serially connecting the sensing means of elements corresponding to corresponding digits of different words. The sense lines are coupled together in pairs, the elements coupled to one sense line of a pair being coupled to the same word lines as are the elements of the other sense line of the pair but the two sense lines corresponding to different words. The sense lines of each pair are connected to an output detection means in opposing relation so as to cancel out undesired noise signals generated in the sense lines during readout of a digit stored in a selected element coupled to one of the sense lines.

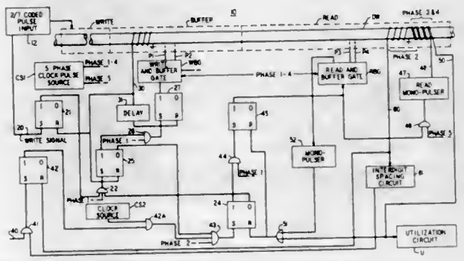
3,466,627
CHARACTER RECOGNIZER CIRCUIT
Umberto F. Gianola, Florham Park, N.J., assignor to Bell Telephone Laboratories Incorporated, Murray Hill, N.J., a corporation of New York
Filed June 13, 1966, Ser. No. 557,241
Int. Cl. G11b *5/00*
U.S. Cl. 340—174 **7 Claims**



1. A combination comprising a magnetic propagation medium including *n* positions, first means providing a magnetic field in an unstable portion of each of said positions, said magnetic fields having coded polarities,

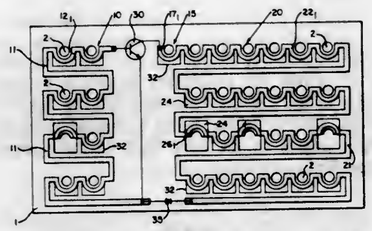
sensing means coupled to said positions for detecting the absence of flux switching in said positions, means responsive to an input code selectively providing a stable magnetic discontinuity at an input position in said medium, means stepping stable magnetic discontinuities from position to position through said medium, and means activating said first means each time stable magnetic discontinuities are advanced one position.

3,466,628
INFORMATION CONVERTER EMPLOYING A MAGNETIC DOMAIN WALL MEDIUM
Reginald A. Kaenel, Chatham, and James L. Smith, Bedminster, N.J., assignors to Bell Telephone Laboratories, Incorporated, Murray Hill, N.J., a corporation of New York
Filed June 15, 1966, Ser. No. 557,810
Int. Cl. G11b *5/00*
U.S. Cl. 340—174 **11 Claims**



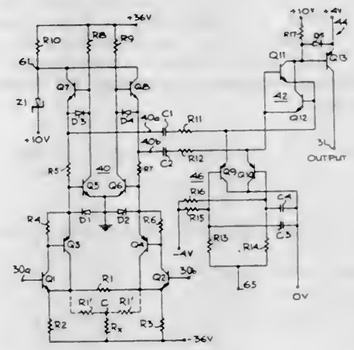
A magnetic domain wall medium is adapted for use as a multifrequency-to-dial-pulse converter by an input configuration which translates each of a set of coded input signals representative of decimal digits into reverse domains of correspondingly different lengths.

3,466,629
REUSABLE DATA PLANES FOR MECHANICALLY ALTERABLE MEMORY SYSTEMS
William A. Reimer, Wheaton, Ill., assignor to Automatic Electric Laboratories, Inc., Northlake, Ill., a corporation of Delaware
Filed June 27, 1966, Ser. No. 560,415
Int. Cl. G11b *5/02*
U.S. Cl. 340—174 **5 Claims**



Reusable data planes for use in a mechanically alterable memory have slits at bit locations which define a plurality of strips hinged to the plane and selectively movable between a first position to code the corresponding bit location to a binary "one" and a second position to code the corresponding bit location to a binary "zero" whereby the coding of the data planes may be altered for reuse by repositioning the strips.

3,466,630
SENSE AMPLIFIER INCLUDING A DIFFERENTIAL AMPLIFIER WITH INPUT COUPLED TO DRIVE-SENSE WINDINGS
David W. Mayne, Torrance, and Loy Leonard Spears, Malibu, Calif., assignors to Ampex Corporation, Culver City, Calif., a corporation of California
Filed Aug. 8, 1966, Ser. No. 571,108
Int. Cl. G11c *7/06, 11/06*
U.S. Cl. 340—174 **10 Claims**



An improved coincident-current digital memory network including an improved sense amplifier means. The amplifier includes a differential amplifier with the input coupled to driven-sense windings and the output to a clamp circuit such that the output is clamped when the memory is in the drive mode in contrast to the sense mode. No reactive components need be included in the differential amplifier so that the amplifier gain is a function of the value ratios of the resistors. The differential amplifier further lends itself to incorporating transistors all of the same polarity. A symmetrical discriminator may be included to enable the sensing of bi-polar signals with the clamp circuit connected to the output of the discriminator.

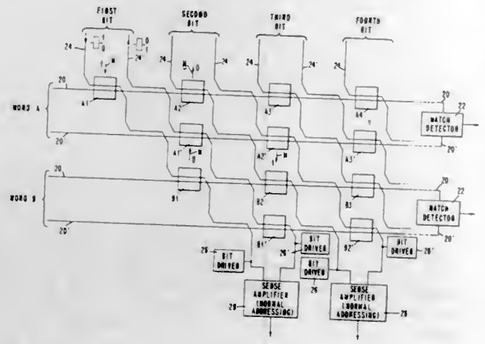
3,466,631
ASSOCIATIVE MEMORY DEVICE
Chu Ping Wang, Putnam Valley, N.Y., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed Dec. 7, 1966, Ser. No. 599,956
Int. Cl. G11b *5/00*
U.S. Cl. 340—174 **3 Claims**

1. A magnetic memory array capable of being nondestructively interrogated comprising:
memory cells arranged in paired true and complement word rows and paired true and complement bit columns, each of said cells comprising first and second anisotropic magnetic films in magnetically coupled relationship with each other,
the first film of each cell being a storage film with relatively high coercivity and having an easy axis that extends in the general direction of its word row,
the second film of each cell being a read film with relatively low coercivity and having an easy axis that is substantially at right angles to the easy axis of the associated storage film, said read film having a hard axis substantially parallel with the easy axis of said storage film along which the magnetization of said read film is biased by the magnetizaton of said storage film,
said films being adapted to store digital information in such fashion that said read film is biased well into saturation in one direction along its hard axis to store a given digital representation

and is biased barely into saturation in the opposite direction along its hard axis to store the opposite digital representation,

each bit storage position in the array containing a pair of said memory cells, one for storing a true representation of a given bit and another for storing a representation of its complement, each true bit representation being stored in a memory cell at the intersection of a true word row and a true bit column, and each complement bit representation being stored in a memory cell at the intersection of a complement word row and a complement bit column;

bit interrogating means including the following elements:



bit lines for the respective bit columns, each of said bit lines being inductively coupled to the memory cells of its respective column and extending across each of the respective read films thereof in a direction substantially paralleling the easy axis of such read film, and

bit drivers for the respective bit lines arranged to pulse the respective bit line pairs in accordance with selected interrogation bits, the arrangement being such that the bit lines in the true bit column are energized to produce interrogating fields that are opposite to the interrogating fields respectively produced by the energized bit lines in the related complement bit columns;

and detection lines for the respective word rows, each of said detection lines being inductively coupled to the memory cells of its respective row for producing output signals in response to changes in the net magnetizations of such cells, thereby to indicate at least certain of the mismatches that may occur between the respective bit patterns of a stored word and an interrogation word.

3,466,632
ASSOCIATIVE MEMORY DEVICE
Chu Ping Wang, Putnam Valley, N.Y., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed Dec. 7, 1966, Ser. No. 599,957
Int. Cl. G11b *5/00*
U.S. Cl. 340—174 **4 Claims**

1. A magnetic memory array capable of being nondestructively interrogated comprising:

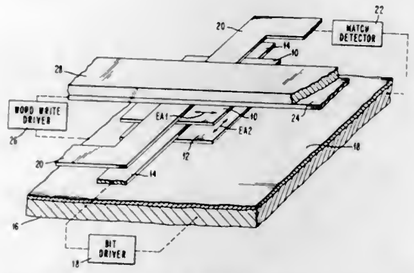
memory cells arranged in word rows and bit columns, each of said cells comprising first and second anisotropic magnetic films in magnetically coupled relationship with each other,

the first film of each cell being a storage film with relatively high coercivity and having an easy axis that extends in the general direction of its word row,

the second film of each cell being a read film with relatively low coercivity and having an easy axis that is substantially at right angles to the easy axis of the associated storage film, said read film being magnetically biased by the associated storage film so that normally the magnetization of said read film is directed along its hard axis in antiparallel relation with the remanent magnetization of said storage film,

the memory cells in each of said word rows being further arranged in pairs, each such pair of cells being disposed respectively in two separate columns and both such cells relating to the same bit storage position in the array,

a bit interrogating means including the following elements:



bit lines respectively extending along at least some of said columns substantially at right angles to the easy axes of the storage films in the array, each such bit line being inductively coupled to the storage films and read films of the memory cells in its respective column, said bit lines being arranged in pairs, one such pair for each respective bit storage position in a word or predetermined portion thereof, and

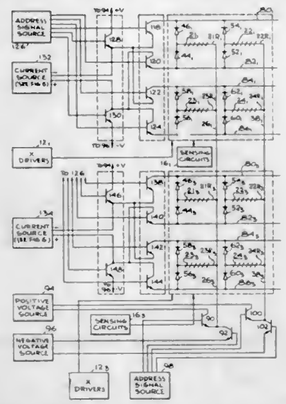
bit drivers for the respective bit lines operable selectively to interrogate the memory cells in the respective columns for stored ONES and ZEROS, said bit drivers being arranged in two sets, of which one set is operable to pulse its associated bit lines selectively with ONE interrogating pulses, and the other set is operable to pulse its associated bit lines selectively with ZERO interrogating pulses, the bit lines in each pair thereof being driven respectively by bit drivers of the two sets,

and a plurality of detection lines, one for each word row, each of said detection lines having portions thereof respectively coupled to the respective memory cells of its row for generating signals in response to changes in the net magnetic flux linking any of such portions, said portions being arranged substantially at right angles to the easy axes of their respective storage films.

3,466,633
SYSTEM FOR DRIVING A MAGNETIC CORE MEMORY
Thomas J. Gilligan, Pales Verdes Estates, and Arthur T. Nozaki, Torrance, Calif., assignors to Electronic Memories, Inc., Hawthorne, Calif., a corporation of California
Filed May 18, 1967, Ser. No. 639,406
Int. Cl. G11b *5/00*
U.S. Cl. 340—174 **8 Claims**

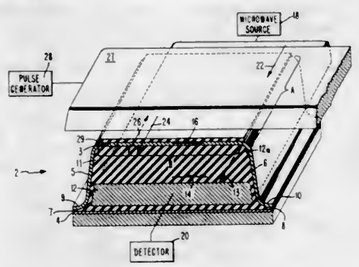
This invention is directed to an improved arrangement for selecting and driving a predetermined number

of magnetic cores in a magnetic core memory for the purpose of storing information in those magnetic cores or for the purpose of reading the information which has been stored in those magnetic cores. By the judicious placement of switches and by the interconnection of



magnetic core matrices, the number of switches required for magnetic core selection is reduced, and also by the interconnection of these switches, the current used to drive the cores for reading or writing is made to re-enter the matrices whereby power requirements are minimized.

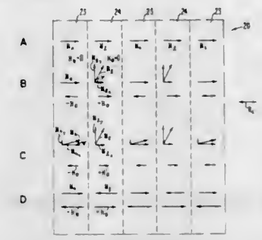
3,466,634
THIN FILM MICROWAVE ABSORPTION STRUCTURE
Rodger L. Gamblin, Vestal, N.Y., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed Aug. 4, 1966, Ser. No. 570,366
Int. Cl. G11c *11/14, 7/00*
U.S. Cl. 340—174 **4 Claims**



A thin film magnetic storage element surrounds a sense line. The magnetic state of the element is sensed by means of microwave energy transmitted down the sense line. The microwave energy absorbed by the element is a function of its magnetic state.

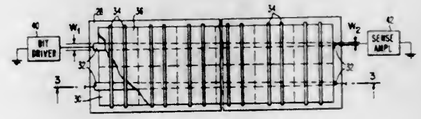
3,466,635
MAGNETIC FILM STORAGE DEVICE WITH NONDESTRUCTIVE READOUT
Simon Middelhoek, Adliswil, Zurich, Switzerland, assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed Feb. 15, 1966, Ser. No. 527,539
Claims priority, application Switzerland, Feb. 23, 1965, 2,473/65
Int. Cl. G11b *5/62*
U.S. Cl. 340—174 **3 Claims**

Nondestructive readout is provided by means of a magnetic film storage element which is divided into alternately arranged hard and soft zones wherein the magnetization vectors normally are pointed in the same direction along an easy axis that extends transversely through the boundaries of all the zones. When this storage element is subjected to a read field applied substan-



tially along the hard axis of the film, the vectors in the soft zones readily rotate into or toward their hard-axis positions, whereas the vectors in the hard zones rotate only slightly or negligibly by comparison so that the hard zones serve to restore the magnetizations of all zones when the read field terminates.

3,466,636
DISTORTIONLESS ARRAY LINES FOR MEMORIES
Wilhelm Anacker, Yorktown Heights, N.Y., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed Jan. 17, 1966, Ser. No. 521,019
Int. Cl. G11b *5/00;* **H03h** *5/00*
U.S. Cl. 340—174 **13 Claims**

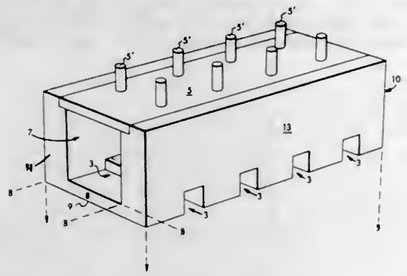


The tendency of long array lines in large memories to degrade the shapes of rectangular current pulses is counteracted by incorporating sufficient leakage (i.e., distributed shunt conductance) between each long array line (e.g., each bit-sense line) and its return path to satisfy, at least approximately, Heaviside's formula for distortionless transmission: $r/l=g/c$. The desired shunt conductance may be provided, for example, by using a lossy dieletric as a partially insulating layer between the bit-sense lines and the conductive ground plane of the array, which serves as the common return path.

3,466,637
MULTITRANSDUCER ARRANGEMENT
Hubert W. Hagadorn, Brighton, Mass., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware
Filed Oct. 24, 1965, Ser. No. 504,874
Int. Cl. G11b *5/28*
U.S. Cl. 340—174.1 **9 Claims**

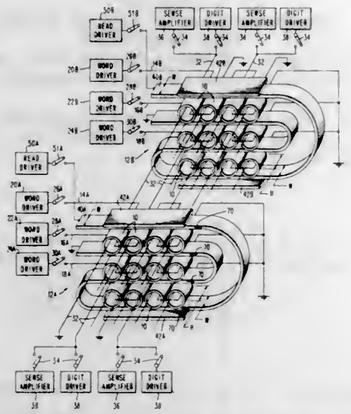
A multitransducer magnetic head assembly and method of manufacture thereof. The method includes the bonding of core leg elements in slots in a block of non-magnetic material, forming bonding grooves in a mating surface of the block transversely to the slots, dividing the composite block along a rectilinear axis and folding the divided portions together in a mating relationship, inserting a gap

shim between the mated portions and bonding the portions together by means of epoxy material flowed into a



bonding recess formed by the matching of the bonding grooves.

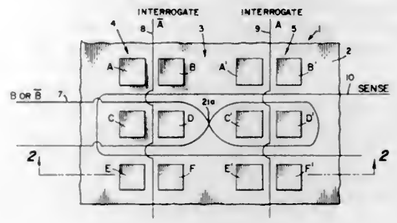
3,466,638
NONDESTRUCTIVE READOUT MAGNETIC MEMORY
Wilhelm Anacker, Yorktown Heights, N.Y., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed Dec. 28, 1965, Ser. No. 516,848
Int. Cl. G11b *5/62*
U.S. Cl. 340—174 **1 Claim**



The memory includes a number of planes, each of which includes a plurality of rows of cores. The cores in each plane are aligned in rows arranged one above the other. A digit drive and sense conductor threads the cores in each row. A word drive conductor threads one core in each plane. A nondestructive interrogate drive conductor is provided for each plane in the form of a flat strip which is woven between the rows so that two segments of this conductor, above and beneath each core, apply a quadrature field to the cores during each readout operation. The adjacent segments of the interrogate conductor are arranged to form a transmission line which has a low character impedance.

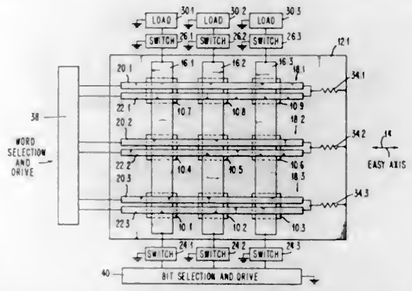
3,466,639
HIGH SPEED HYBRID FERRITE FILM ASSOCIATE APPARATUS
Anthony M. Apicella, Jr., Massillon, and John T. Franks, Jr., Akron, Ohio, assignors to Goodyear Aerospace Corporation, Akron, Ohio, a corporation of Delaware
Filed July 13, 1964, Ser. No. 382,221
Int. Cl. G11b *5/02*
U.S. Cl. 340—174 **5 Claims**

A digital memory storage system wherein words comprising bits of information may be stored in a waffle iron shaped piece of ferrite material and can be read out repeatedly during an associative memory operation without destroying the stored information. Particularly, two pairs of six-post groupings comprise one storage element, and the particular wiring associated with the posts



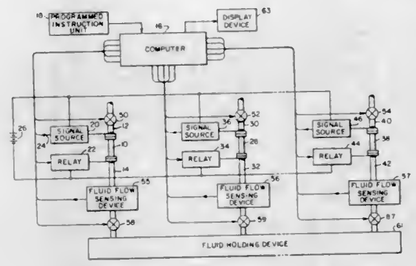
and an intimately connected overlay of square looped magnetic material allow the storage of flux patterns through the posts, the carrying base, and the overlay, which patterns can be varied and read nondestructively to provide an associative operation.

3,466,640
MAGNETIC FILM MEMORIES
George E. Keefe, Montrose, N.Y., and Simon Middelhoek, Kilchberg, Zurich, Switzerland, assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Jan. 7, 1964, Ser. No. 336,166
Int. Cl. G11b *5/78*
U.S. Cl. 340—174 **3 Claims**



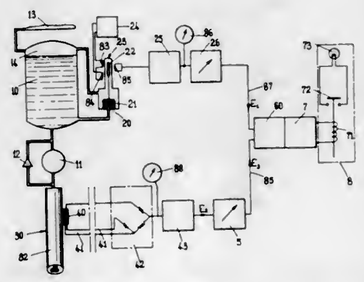
A nondestructive-readout memory device with little or no disturb sensitivity utilizes a magnetic film in which either a "1" or "0" can be stored while the film is in a demagnetized state. The film has a plurality of adjoining domains each extending lengthwise of the easy axis. During the write operation the magnetization vectors of all the domains are rotated into the hard direction. The magnetization of a selected domain or domains is then allowed to rotate back into a desired easy direction depending upon whether a "1" or "0" is to be written. The magnetization of the remaining domain or domains will assume the opposite direction at the end of the write operation. The reading operation involves rotating the magnetization of only a selected one or ones of the domains without disturbing the magnetic orientation of the other domain or domains.

3,466,641
FLUID TRANSFER CONTROL APPARATUS
Richard E. J. Putman, Pittsburgh, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Nov. 10, 1966, Ser. No. 593,435
Int. Cl. G05b *11/01, 19/26, 23/02*
U.S. Cl. 340—222 **5 Claims**



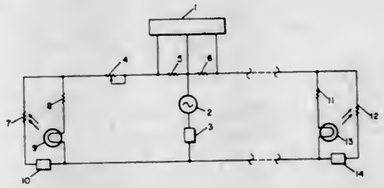
There is disclosed a control apparatus for the transfer of fluids or other suitable materials through one or more coupling members, which includes an electrically conductive circuit for each such coupling member, such that respective monitoring signals can be provided through said circuits to determine when the associated coupling members are properly positioned. A programmed computer is operative to determine when all of the transfer couplings are completed as desired and to control the subsequent transfer operation in accordance with the programmed instructions for the desired transfer operation.

3,466,642
METHOD AND DEVICE FOR AUTOMATIC LEAKAGE DETECTION IN LIQUID-PRESSURE INSULATED POWER CABLES
Guy Terramorsi, Vincennes, France, assignor to Trefimetaux, Paris, France, a French company
Filed Mar. 20, 1967, Ser. No. 624,494
Claims priority, application France, Mar. 31, 1966, 55,812
Int. Cl. G08b *21/00*
U.S. Cl. 340—242 **6 Claims**



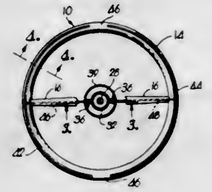
Leakage is automatically detected in a cable filled with an insulating liquid under pressure by monitoring pressure and temperature and comparing corresponding electric signals, and also by adding to the temperature signal a third electric signal which is adjusted so that in case of a leak, a minimum volume of liquid is lost before the alarm is given. Preferably, the third signal varies in accordance with the temperature of expansion reservoirs for the insulating liquid.

3,466,643
TRANSMISSION LINE TAMPERING ALARM SYSTEM
Carlton Swain Moorefield, 4935 Birch Lane, Alexandria, Va. 22312
Filed Mar. 18, 1966, Ser. No. 535,471
Int. Cl. G08b *21/00*
U.S. Cl. 340—253 **5 Claims**



The present invention is a device for the protection of supervised conductors by utilizing an alarm means which is responsive to the non-tracking of a signal of two multimode non-linear matched modules. These elements track a random and dynamic signal and are themselves self adaptive in a tracking manner.

3,466,644
STIMULATOR FOR VEHICLE OPERATORS
Donald T. Dean, 900 E. Ash, Salina, Kans. 67401
Filed Oct. 3, 1966, Ser. No. 583,637
Int. Cl. G08b *21/00*
U.S. Cl. 340—279 **4 Claims**

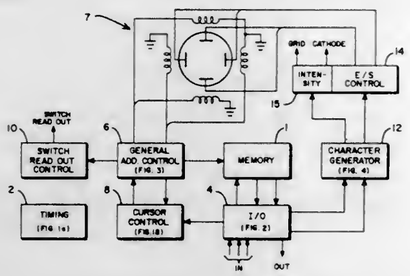


Apparatus coupled with the steering wheel of a vehicle for delivering a mild shock to the operator to thereby stimulate the operator to assure that he will remain alert. The shocks are imparted at irregular time intervals to make it difficult for the operator to become conditioned to a particular pattern and thus develop an immunity to the stimulus.

3,466,645
DIGITAL DATA CRT DISPLAY SYSTEM
Mauritz L. Granberg and Charles A. Kiesling, Minneapolis, Minn., assignors to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed Mar. 1, 1965, Ser. No. 436,174
Int. Cl. H01j *29/46;* **G09f** *9/00*
U.S. Cl. 340—324 **15 Claims**

A solid state cathode ray tube digital display device for use in a real-time computing system either to monitor or edit information from a variety of sources to be stored in a computer or to display and edit information retrieved from the computer. The basic element of the character generator is a matrix having input and output lines selectively coupled with diodes for producing a series of groups of output signals representing both the intensity of a character line segment and the coordinates of an end point thereof. Further, the character generating mat-

rices are arranged in a larger matrix to enable the individual selection of a character with minimum hardware. The unique beam positioning circuit includes a D/A converter which does not subject the power supply to extreme load variations. This is accomplished by

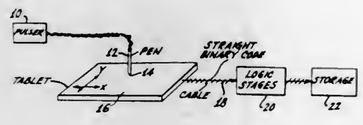


weighting the value of the resistors in a specific manner. Also included in the system are the unique provisions for deleting or inserting a character in a line of existing characters. Also a visual indicator is provided to locate the point of entry of the next character.

3,466,646
ANALOG POSITION TO BINARY NUMBER TRANSLATOR

Morton H. Lewin, Trenton, N.J., assignor to RCA Corporation, a corporation of Delaware

Filed June 29, 1965, Ser. No. 468,076
Int. Cl. H04l *3/00*
U.S. Cl. 340—347 **11 Claims**



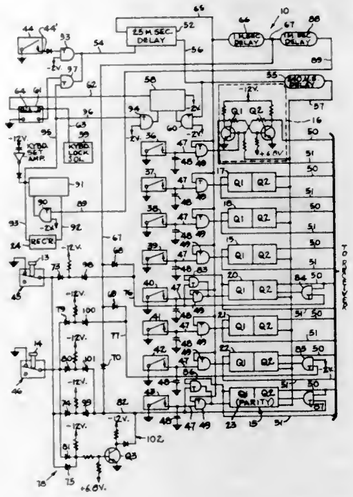
A "pen" produces a magnetic field and applies it to a restricted region of a "tablet." The latter, which includes successive layers of windings, is a signal receiver. One group of windings produces outputs in binary form indicative of the pen position in one coordinate, such as the X coordinate, and another group of windings produces outputs in binary form indicative of the pen position in another coordinate, such as the Y coordinate. Each winding of a group is coded to represent a different order bit in a binary system of notation.

3,466,647
DATA SIGNAL GENERATING APPARATUS

John Guzak, Jr., Waukegan, Ill., assignor to SCM Corporation, New York, N.Y., a corporation of New York

Filed July 31, 1967, Ser. No. 657,392
Int. Cl. G08c *9/08*
U.S. Cl. 340—365 **17 Claims**

There is disclosed apparatus for generating binary code data signals, wherein each signal is composed of a predetermined combination of data bits. A plurality of two-state eletcronic memory devices having data bit outputs are controlled from a keyboard which has signal keys, fewer in number than the maximum number of data signals capable of being provided by the memory devices, and two special keys. When a selected signal key is depressed, a predetermined combination of switches is operated to set the memory devices electrically to states corresponding to the selected signal being generated. De-

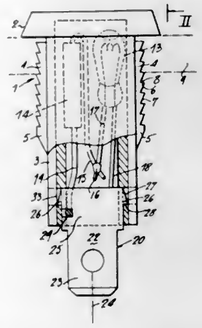


pression of the selected signal key together with one or the other or both special keys changes the states of certain memory devices to provide different data signals than would be provided by depression of only the selected key.

3,466,648
ONE-PIECE LUMINOUS WARNING DEVICE

Victor Russenberger, 40 Ave. de la Source, Nogent-sur-Marne, France

Filed Apr. 4, 1966, Ser. No. 539,698
Claims priority, application France, Apr. 7, 1965, 12,344
Int. Cl. G09f *9/00;* **H02b** *1/06;* **H01r** *13/24*
U.S. Cl. 340—381 **5 Claims**

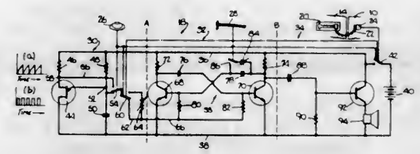


A miniature tell-tale or warning lamp assembly requiring a single molded plastic element comprising a casing having an externally-projecting integral rib for mounting the assembly in a hole of a support, with slots cut in the casing to allow the rib to be compressed inwardly when the assembly is pushed into the hole, and with slots and parallel faces at the rear end of the casing to allow flat terminal blades to be locked in place at the rear end of the assembly.

3,466,649
MULTIPLE ALARM SYSTEM

Robert Colman, New York, N.Y., assignor to General Alarm Corporation, New York, N.Y., a corporation of Delaware

Filed Mar. 1, 1966, Ser. No. 531,000
Int. Cl. G08b *19/00, 3/10*
U.S. Cl. 340—384 **21 Claims**

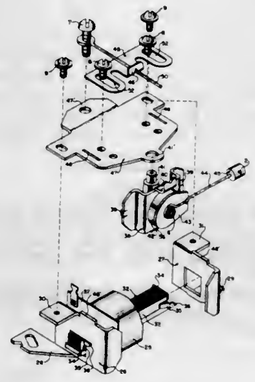


Multiple acoustical alarm system for producing different types of alarm signals according to occurrence of different conditions, including free running tone signal generator for producing signals at audible basic frequency, free running control generator connected to shift output frequency of tone signal generator at subaudible basic frequency, and switch and control means arranged in connection with said generators to establish different basic frequency combinations according to manner in which switch means are operated.

3,466,650
MINIATURE TELEPHONE RINGER

George L. Brown, Evanston, Ill., assignor to Automatic Electric Laboratories, Inc., a corporation of Delaware

Filed Dec. 12, 1966, Ser. No. 601,006
Int. Cl. G10k *1/06*
U.S. Cl. 340—397 **6 Claims**

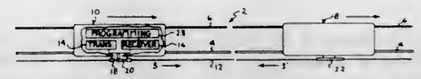


An electromagnetic telephone ringer unit having a single winding mounted on a laminated core, with a retainer clip inserted into each end of the winding alongside the core to lock a pole piece into position over each core end and to prevent lateral movement of the laminations. A straight spring is rigidly mounted at one end on a top plate, with the free end engaging a control flange extending from the midpoint of the polarized armature. A control plate is adjustably mounted on the top plate for engaging the spring to vary the tension exerted on the armature by the free end of the spring to mechanically tune the armature to respond to magnetic flux generated by the coil, when it is energized by a ringing signal of a particular frequency. A lever arrangement is included for moving pivotally mounted gongs either toward or away from a clapper to control the output volume of the ringer.

3,466,651
SIGNALLING SYSTEM

John E. Bigelow, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York

Filed Dec. 23, 1966, Ser. No. 604,377
Int. Cl. G01s *1/06*
U.S. Cl. 343—13 **11 Claims**

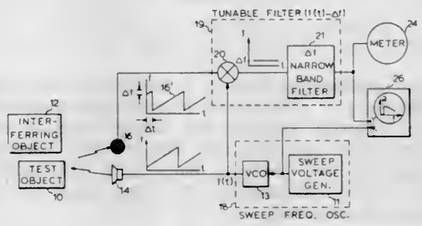


A signalling system having a transmission line carrying signal energy, parallel to the right of way, and incorporating conductors having an associated saturable magnetic shield for minimizing the residual field in the region external to the transmission line. A magnetic member, which may be carried on a vehicle, saturates the transmission line at a localized region adjacent to such member to permit coupling of signal energy between the line and the vehicle and to reflect back signal energy to the source of signal energy.

3,466,652
TIME DELAY SPECTROMETER

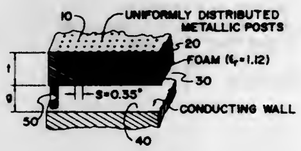
Richard C. Heyser, Tujunga, Calif., assignor to California Institute of Technology, Pasadena, Calif., a corporation of California

Filed Jan. 15, 1968, Ser. No. 697,824
Int. Cl. G01s *9/23*
U.S. Cl. 343—14 **15 Claims**



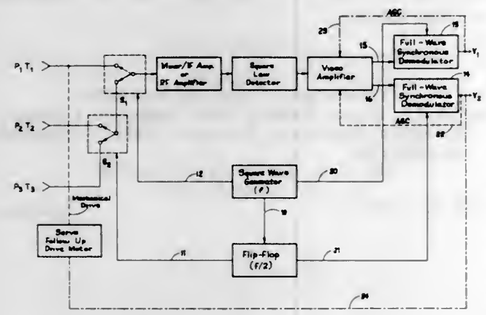
Apparatus for measuring the amount of sound or electromagnetic radiation from a test object at various frequencies while the test object is in an environment containing radiation reflecting objects whose output could easily be confused with output from the test object. In one application for measuring sound reflections from a test object, the apparatus comprises a loudspeaker driven by a sweep frequency oscillator and a microphone whose output is filtered by a sweep frequency filter. The passband frequency of the filter follows the frequency of the oscillator by a delay equal to the time required for sound to travel from the loudspeaker directly to the object and directly back to the microphone. Accordingly, the filter is always tuned to pass the frequency of sound waves following this direct path, and to rejection sound waves which arrive at a later time when the filter has already passed on to a new frequency.

3,466,653
METALLIC-POST REFLECTING WALLS
Roger C. Rudduck and Johnson J. H. Wang, Columbus, Ohio, assignors to The Ohio State University Foundation, Columbus, Ohio
Filed Apr. 26, 1968, Ser. No. 724,404
Int. Cl. H01q 7/36
U.S. Cl. 343—18 7 Claims



The invention is for metallic-post reflecting walls utilizing uniaxial anisotropic properties to obtain reflectivity of same-sense circularly polarized electromagnetic energy.

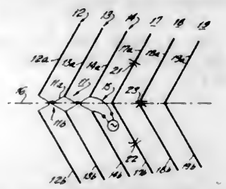
3,466,654
DUAL CHANNEL RADIOMETER
Charles J. Abronson, Marina Del Rey, Calif., assignor to Aerojet-General Corporation, El Monte, Calif., a corporation of Ohio
Filed Oct. 2, 1967, Ser. No. 673,253
Int. Cl. H04b 7/00
U.S. Cl. 343—100 9 Claims



The disclosure relates to a multiple channel radiometer using a plurality of harmonically synchronized radio frequency switches and demodulators to switch between three antennas. Two data channels independent of receiver gain measure temperature differential between various polarizations. An error signal for target tracking is produced.

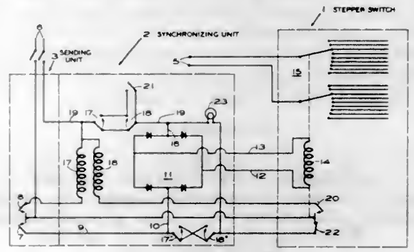
3,466,655
LOG PERIODIC DIPOLE ARRAY WITH DUAL BAND DIRECTORS
Paul E. Mayes, Champaign, and Ronald D. Grant, Urbana, Ill., assignors, by mesne assignments, to JFD Electronics Corporation, Brooklyn, N.Y., a corporation of Delaware
Filed Jan. 27, 1966, Ser. No. 523,447
Int. Cl. H01q 11/10
U.S. Cl. 343—792.5 6 Claims

An antenna array operating in both the VHF and UHF bands comprised of a dipole section arranged in log-periodic fashion and a director positioned in front of the forward end of the dipole section. The dipoles each have a tip-to-tip electrical length of one-half wavelength in the lower operating frequency range and further resonate at odd multiples of a half-wavelength. The directors each have an electrical length which is slightly less than three-halves wavelengths where the wavelengths are selected near the high end of the operating frequency range. The directors will further resonate at those odd multiples of a



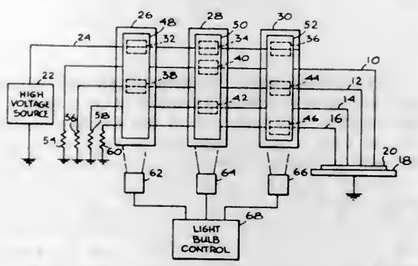
half-wave length which are greater than three-halves wavelengths.

3,466,656
REMOTE SWITCHING DEVICE
Charles B. Boyer, Robert Michael Conaway, and Franklin D. Orcutt, Columbus, Ohio, assignors to The Battelle Development Corporation, Columbus, Ohio, a corporation of Ohio
Filed July 10, 1967, Ser. No. 652,242
Int. Cl. G01d 9/04
U.S. Cl. 346—34 8 Claims



An apparatus for making numerous measurments in a remote area using a minimum number of leads to the area. The apparatus comprises (1) a multipoint recorder, (2) a sending unit that provides a signal synchronously with the recorder and thereby advances a remotely located sensor switch, and (3) a synchronizing unit that receives a signal from both the sending unit and the sensor switch and synchronizes their operation at predetermined check points by either rapidly advancing the sensor switch to the check point or by holding the sensor switch at the check point until the recorder reaches that point.

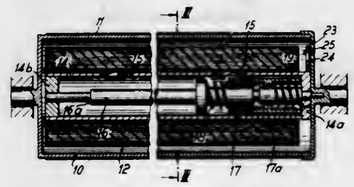
3,466,657
LIGHT ADDRESSED MATRIX PRINTER
Philip J. Rice, Atherton, Calif., assignor to Stanford Research Institute, Menlo Park, Calif., a corporation of California
Filed Jan. 7, 1966, Ser. No. 519,256
Int. Cl. G01d 15/06
U.S. Cl. 346—74 4 Claims



In an arrangement for electrostatic printing which uses photoconductive material as a bridge between high voltage

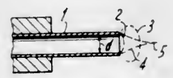
wire and selected wires of a grid matrix so that when the photoconductive material is illuminated these wires can assume a high potential to provide electrostatic deposition from their ends, the improvement which comprises photoconductive material bridging the unselected wires of the bridge matrix and illuminated simultaneously with the original illumination to connect the unselected wires to a ground wire.

3,466,658
RECORDING DRUM ARRANGEMENT
Siegbert Clauss, Esslingen, Kurt Hurst, Stuttgart-Feuerbach, and Alfred Ortlieb, Stuttgart-Vaihingen, Germany, assignors to Robert Bosch G.m.b.H., Stuttgart, Germany
Filed Jan. 12, 1968, Ser. No. 697,435
Claims priority, application Germany, Jan. 20, 1967, B 90,806
Int. Cl. G01d 15/24, 15/26, 15/34
U.S. Cl. 346—138 10 Claims



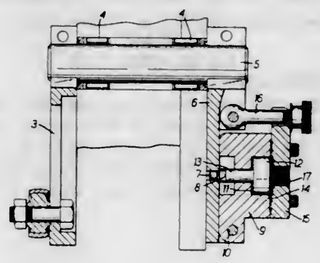
An arrangement in which the recording medium mounted upon the surface of a recording drum, is fed from the interior of the drum. The recording medium is wound upon a roll and supported by a sleeve within the drum. The sleeve is rotatably mounted, in turn, upon a spindle passing through the axis of the drum. The drum has a slot running along the surface of the drum and parallel to the axis thereof. The recording medium may be unwound from the roll within the drum and passed through the slot so as to become tightly wound upon the surface of the drum. A clamping arrangement situated in proximity to the slot clamps the end of the recording medium firmly in place. A braking device within the interior of the drum prevents undesirable rotation of the roll of recording medium. Permanent magnetic elements are used to hold the clamping arrangement firmly in place and pressing against the end of the recording means stretched about the surface of the drum.

3,466,659
TUBULAR NEEDLE, CHIEFLY FOR WRITING WITH A JET OF INK
Enzo Ascoli, Lausanne, Vaud, Switzerland, assignor to Paillard S.A., Sainte-Croix, Vaud, Switzerland, a company of Switzerland
Filed Sept. 8, 1966, Ser. No. 577,992
Claims priority, application Switzerland, Sept. 29, 1965, 13,478/65
Int. Cl. G01d 15/16, 15/18
U.S. Cl. 346—140 5 Claims



A needle for use in electrostatic inking apparatus includes a hollow cylinder whose outermost or front surface is wetted by the meniscus of the ink. This front surface is provided with a higher degree of roughness than the adjacent cylindrical surface from which it is separated by a sharp edge forming an angle of 90° between the two surfaces. The front surface is entirely wetted by the ink but the relatively smooth finish of the adjacent cylindrical surface prevents it from becoming wetted with the result that stability and uniformity of the projected ink image is attained.

3,466,660
APPARATUS FOR FEEDING WIRE OR METAL STRIP
William Eric Mortimore Smith, Havant, England, assignor to J. Evans & Son (Portsmouth) Limited, Portsmouth, Hampshire, England, a British company
Filed July 10, 1967, Ser. No. 652,314
Claims priority, application Great Britain, July 18, 1966, 32,152/66
Int. Cl. B65h 17/36
U.S. Cl. 226—160 1 Claim



Apparatus for feeding metal strip comprises a feed member having a clamping element which grips the strip during the feed movement and is then released to allow the free return movement of the feed member. The apparatus also includes a holding member through which the strip is fed and which has a clamping element which is inoperative during the feeding movement but clamps the strip to prevent reverse feed as the feed member is retracted.

3,466,661
SEAMED JOINTS
Melville John Phillips, Epping, New South Wales, Australia, assignor to Rheem Manufacturing Company, New York, N.Y.
Filed Dec. 28, 1967, Ser. No. 694,251
Claims priority, application Australia, Jan. 6, 1967, 16,182/67
Int. Cl. B21d 51/28; F16l 41/00
U.S. Cl. 113—1 5 Claims



The invention is an improvement in double seam joints, e.g., between the rim of an aperture in a metal drum head

and the adjacent end of a flange located in the aperture. According to the invention the frictional adhesion normally achieved by clenching the seamed joint is substantially improved by providing spaced indentations around the joint by indenting one face of the joint during clenching.

3,466,662

FIREPROOF SHIELDED CONTAINERS FOR RADIOACTIVE MATERIALS

Paul Blum, Saint-Genis-Laval, France, assignor to Societe Lyonnaise de Plomberie Industrielle, Lyon (Rhone), France, a joint-stock company of France

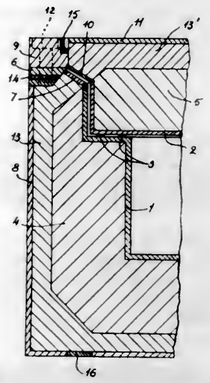
Filed Oct. 11, 1965, Ser. No. 494,697

Claims priority, application France, Oct. 21, 1964, 45,242

Int. Cl. G21h *5/00*

U.S. Cl. 250—106 **4 Claims**

In a container for radio-active materials, of the kind comprising an inner casing, a lead screen closely surrounding this casing and an outer shell, as for instance of steel, there is left between the lead screen and the outer shell an intermediate space which is filled with plaster (hydrated calcium sulphate) to form a refractory protective heat-insulating and water containing layer. The



cover of the container may also comprise a layer of plaster between its lead screen and its outer plate.

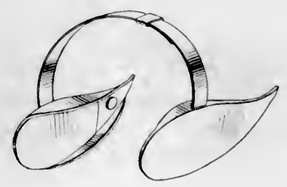
DESIGNS

SEPTEMBER 9, 1969

215,137
HELMET
John Fisher, Dover, Del., assignor to ILC Industries, Inc., Dover, Del., a corporation of Delaware
Filed Mar. 29, 1968, Ser. No. 11,188
Term of patent 14 years
Int. Cl. D2—*03*
U.S. Cl. D2—232



215,138
EAR MUFFS
William E. Mackey, 2309 W. Lawrence, Springfield, Ill. 62704
Filed Feb. 20, 1967, Ser. No. 5,869
Term of patent 14 years
Int. Cl. D2—*03*
U.S. Cl. D2—259



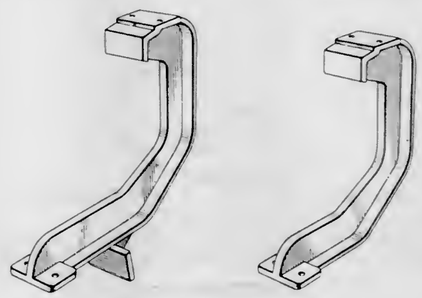
215,139
OVERSHOE
Sam Schwartz, Lake Mahopac, N.Y., assignor to Torch Rubber Company, Inc., New York, N.Y., a corporation of New York
Filed Jan. 8, 1969, Ser. No. 15,259
Term of patent 14 years
Int. Cl. D2—*04*
U.S. Cl. D2—272



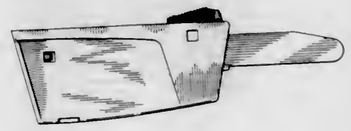
215,140
COMBINED DRAWER PULL AND BACK PLATE THEREFOR
Emil J. Bocade, Grand Rapids, Mich., assignor to Keeler Brass Company, Grand Rapids, Mich., a corporation of Michigan
Filed Aug. 6, 1968, Ser. No. 13,043
Term of patent 14 years
Int. Cl. D8—*03*
U.S. Cl. D8—158



215,141
CONDUCTOR RAIL SUPPORT
Johan L. Harmsen, 68 Hawkridge Ave., Markham, Ontario, Canada
Filed Oct. 7, 1968, Ser. No. 13,854
Term of patent 14 years
Int. Cl. D8—*03*
U.S. Cl. D8—235



215,142
RAZOR BLADE DISPENSER
Donald M. Genaro, Haworth, N.J., assignor to Philip Morris Incorporated, New York, N.Y., a corporation of Virginia
Filed July 16, 1968, Ser. No. 12,791
Term of patent 14 years
Int. Cl. D9—*04*
U.S. Cl. D9—224



215,143
JAR
Richard L. Weckman, Perrysburg, Ohio, assignor to Owens-Illinois, Inc., Toledo, Ohio, a corporation of Ohio
Filed Aug. 14, 1968, Ser. No. 13,134
Term of patent 14 years
Int. Cl. D9—*01*
U.S. Cl. D9—131



215,144
PULL TAB
Herman R. Markert, Hartsville, S.C., assignor to Sonoco Products Company, Hartsville, S.C., a corporation of South Carolina
Filed Mar. 1, 1968, Ser. No. 10,804
Term of patent 14 years
The portion of the term of the patent subsequent to Apr. 30, 1982, has been disclaimed
Int. Cl. D9—*02*
U.S. Cl. D9—256



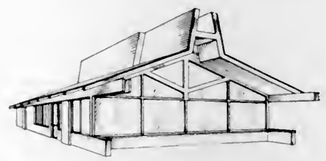
215,145
HANGAR FOR HIGH WING AIRCRAFT
Homer F. Kliewer, deceased, late of Orosi, Calif., by Betty J. Kliewer, administratrix, Orosi, Calif., and John E. Rawson, Dinuba, Calif., assignors of two-sixths to Elmer H. Schuil, Dinuba, Calif.
Filed Sept. 18, 1968, Ser. No. 13,578
Term of patent 14 years
Int. Cl. D25—*04*
U.S. Cl. D13—1



215,146
HANGAR FOR LOW WING AIRCRAFT
Homer F. Kliewer, deceased, late of Orosi, Calif., by Betty J. Kliewer, administratrix, Orosi, Calif., and John E. Rawson, Dinuba, Calif., assignors of two-sixths to Elmer H. Schuil, Dinuba, Calif.
Filed Sept. 18, 1968, Ser. No. 13,579
Term of patent 14 years
Int. Cl. D25—*04*
U.S. Cl. D13—1



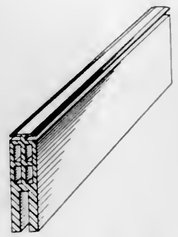
215,147
BUILDING
Anthony M. Rossi, Medinah, Ill., assignor to Henry's Drive In, Inc., a corporation of Illinois
Filed Nov. 18, 1968, Ser. No. 14,522
Term of patent 14 years
Int. Cl. D25—*04*
U.S. Cl. D13—1



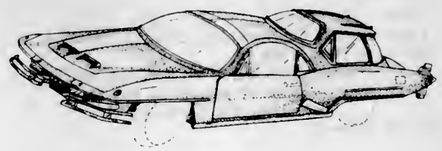
215,148
EXTRUDED SEAL
Ronnal L. Bewyer, 3600 Manatee Drive SE., St. Petersburg, Fla. 33705, and William R. Maynard, Jr., 6790 78th Ave. N., Pinellas Park, Fla. 33565
Filed Aug. 12, 1968, Ser. No. 13,083
Term of patent 14 years
Int. Cl. D25—*01*
U.S. Cl. D13—6



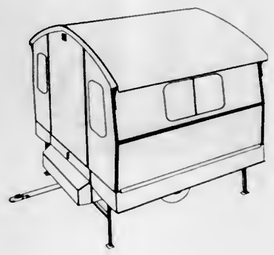
215,149
EXTRUDED SEAL
Ronnal L. Bewyer, 3600 Manatee Drive SE., St. Petersburg, Fla. 33705, and William R. Maynard, Jr., 6790 78th Ave. N., Pinellas Park, Fla. 33565
Filed Aug. 12, 1968, Ser. No. 13,116
Term of patent 14 years
Int. Cl. D25—*01*
U.S. Cl. D13—6



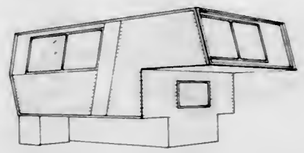
215,150
STEP BODIED AUTOMOBILE
John T. Le Rose, Box 14032, Benjamin Franklin Station, Washington, D.C. 20044
Filed Apr. 12, 1968, Ser. No. 12,346
Term of patent 7 years
Int. Cl. D12—*08*
U.S. Cl. D14—3



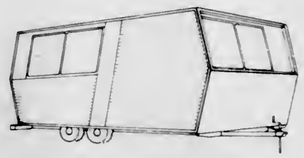
215,151
FOLDING CAMPER
Bjarne Sollie, Jar, Norway, assignor to Wideroe Industri A/S, Oslo, Norway, a Norwegian corporation
Filed July 2, 1968, Ser. No. 12,597
Term of patent 14 years
Int. Cl. D12—*10*
U.S. Cl. D14—3



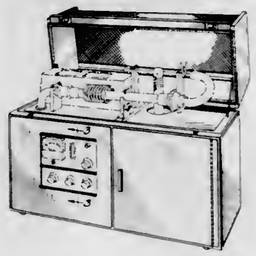
215,152
CAMPER
Delmer James Hill, Grosse Pointe Woods, Mich. (37 Jonathan Road, R.D. 2, Selinsgrove, Pa. 17870)
Filed Jan. 3, 1969, Ser. No. 15,201
Term of patent 14 years
Int. Cl. D12—*10*
U.S. Cl. D14—3



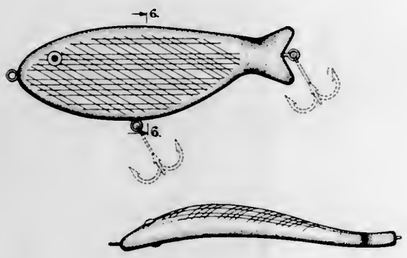
215,153
TRAVEL TRAILER
Delmer James Hill, Grosse Pointe Woods, Mich. (37 Jonathan Road, R.F.D. 2, Selinsgrove, Pa. 17870)
Filed Jan. 3, 1969, Ser. No. 15,202
Term of patent 14 years
Int. Cl. D12—*10*
U.S. Cl. D14—3



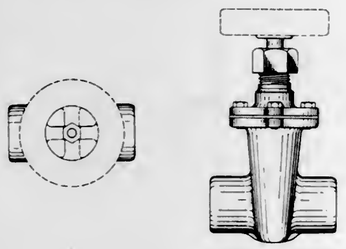
215,154
HOUSING FOR A LOW TEMPERATURE R-F REACTOR UNIT
Gordon J. Waligorski, Lombard, Ill., assignor to The Perkin Elmer Corporation, Maywood, Ill., a corporation of New York
Filed Apr. 15, 1968, Ser. No. 11,455
Term of patent 14 years
Int. Cl. D24—*02*
U.S. Cl. D16—2



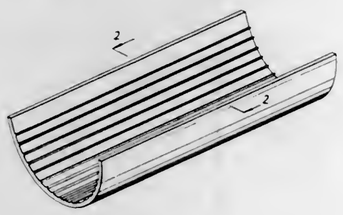
215,155
FISHING LURE
George S. Perrin, Fort Smith, Ark., assignor to Plastics Research and Development Corp., Fort Smith, Ark., a corporation of Arkansas
Filed Oct. 21, 1968, Ser. No. 14,095
Term of patent 14 years
Int. Cl. D22—*07*
U.S. Cl. D22—27



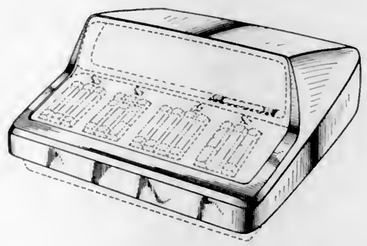
215,156
VALVE
Peter A. Gaglio, Chicago, George E. Hansen, Elmwood Park, and Walter L. Krueger, Villa Park, Ill., assignors to Crane Co., Chicago, Ill., a corporation of Illinois
Filed Sept. 23, 1968, Ser. No. 13,678
Term of patent 14 years
Int. Cl. D23—*01*
U.S. Cl. D23—38



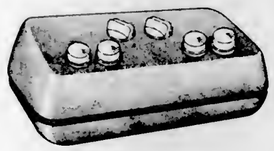
215,157
GUTTER
Ronald Edmondson, Chislehurst, England, assignor to Plastiers Limited, London, England, a British company
Filed Apr. 29, 1968, Ser. No. 11,643
Claims priority, application Great Britain Oct. 30, 1967
Term of patent 14 years
Int. Cl. D23—*01*; D25—*03*
U.S. Cl. D23—45



215,158
CABINET FOR ELECTRONIC APPARATUS
Roy A. Ozaki, Sunnyvale, Calif., assignor to Hewlett-Packard Company, Palo Alto, Calif., a corporation of California
Filed July 16, 1968, Ser. No. 12,786
Term of patent 14 years
Int. Cl. D14—*02*; D18—*01*
U.S. Cl. D26—5

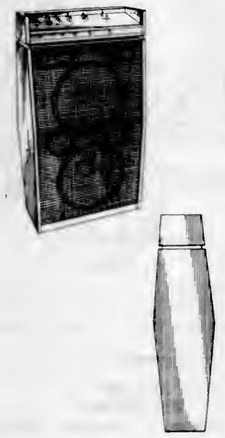


215,159
VIDEOTELEPHONE TRANSCEIVER CONTROL UNIT
Henry Dreyfuss, South Pasadena, Calif., and Rembert R. Stokes, Middletown, N.J., assignors to Bell Telephone Laboratories, Incorporated, Murray Hill, N.J., a corporation of New York
Filed Nov. 24, 1967, Ser. No. 9,549
Term of patent 14 years
Int. Cl. D14—*03*
U.S. Cl. D26—14

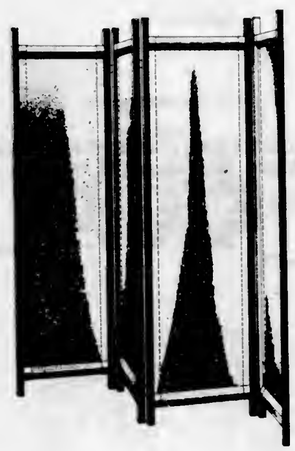




215,160
COMBINATION AMPLIFIER AND SPEAKER CABINET
Robert L. Warren, Mars, and Raymond A. Loturco, Wexford, Pa., assignors to Estey Musical Instrument Corporation, Harmony, Pa.
Continuation of design applications Ser. No. 12,455 and Ser. No. 12,456, June 20, 1968. This application Nov. 15, 1968, Ser. No. 14,675
Term of patent 14 years
Int. Cl. D14—*01, 04*
U.S. Cl. D26—14



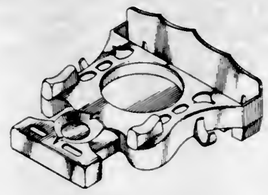
215,161
FOLDING SCREEN
William J. Schickel, O'Bannoville Road, Loveland, Ohio 45140, and Armand Re, Loveland, Ohio; said Re assignor to Schickel
Filed May 17, 1968, Ser. No. 11,987
Term of patent 14 years
Int. Cl. D6—*01*
U.S. Cl. D33—1



215,162
COMBINED DRAWING TABLE AND LAMP THEREFOR
Edmund J. Robichaud, 1813 Stanley St., New Britain, Conn. 06053
Filed May 31, 1968, Ser. No. 12,143
Term of patent 14 years
Int. Cl. D6—*01*
U.S. Cl. D33—14



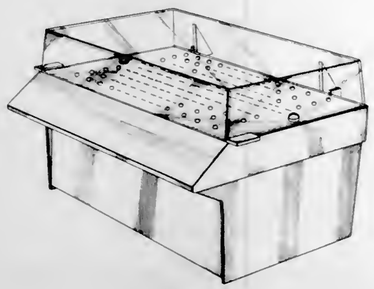
215,163
FIXTURE FOR BATHROOM OR THE LIKE
Joseph Lester Beaman, 8037 Tunney Ave., Reseda, Calif. 91335
Filed Nov. 20, 1968, Ser. No. 14,546
Term of patent 14 years
Int. Cl. D6—*01*
U.S. Cl. D33—26



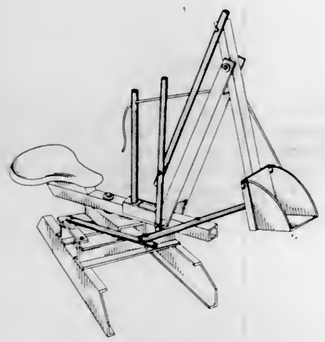
215,164
PLAYGROUND CLIMBER OR SIMILAR DEVICE
Robert S. Wormser, Hillsdale, Mich., assignor to Game Time, Inc., Litchfield, Mich., a corporation of Michigan
Filed Nov. 26, 1968, Ser. No. 14,683
Term of patent 14 years
Int. Cl. D21—*03*
U.S. Cl. D34—5



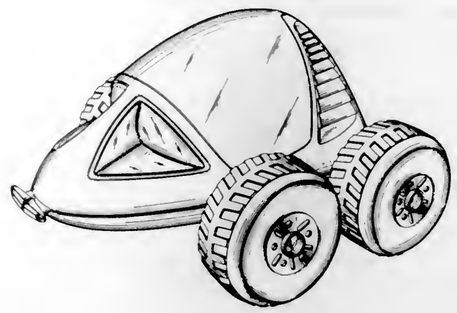
215,165
TOY OVEN
Cecil F. Adickes and Gerald W. Schmidt, Woodland Hills, Calif., assignors to Wham-O Mfg. Co., San Gabriel, Calif., a corporation of California
Filed Aug. 19, 1968, Ser. No. 13,173
Term of patent 14 years
Int. Cl. D21—*02*; D7—*04*
U.S. Cl. D34—15



215,166
TOY STEAM SHOVEL OR SIMILAR ARTICLE
Robert K. Richardson, P.O. Box 1121, Walla Walla, Wash. 99362
Filed Sept. 30, 1968, Ser. No. 13,787
Term of patent 14 years
Int. Cl. D21—*02*
U.S. Cl. D34—15



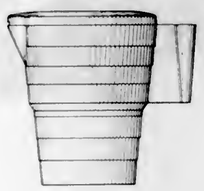
215,167
TOY VEHICLE
Laurie J. Campbell, Erie, Pa., assignor to Louis Marx & Co., Inc., New York, N.Y., a corporation of New York
Filed Mar. 5, 1969, Ser. No. 16,035
Term of patent 14 years
Int. Cl. D21—*02*
U.S. Cl. D34—15



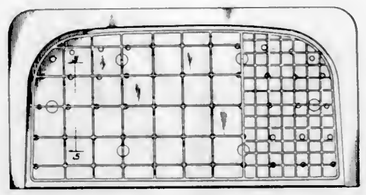
215,168
PITCHER
Glenn B. Beckman, 58 Meadow Brook Apts., Corning, N.Y. 14830
Filed Nov. 22, 1968, Ser. No. 14,599
Term of patent 14 years
Int. Cl. D7—*01*
U.S. Cl. D36—2



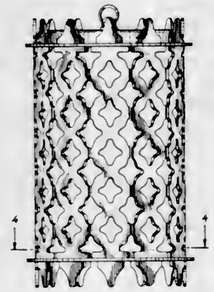
215,169
COMBINED PITCHER AND COVER THEREFOR
Colon M. Stephenson, 562 W. Daric, Olathe, Kans. 66061
Filed Oct. 7, 1968, Ser. No. 13,875
Term of patent 14 years
Int. Cl. D7—*01*
U.S. Cl. D44—21



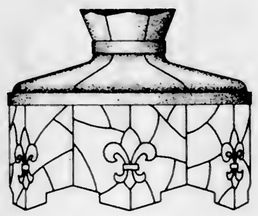
215,170
COMBINED SINK TRAY AND DISH DRAINER
Retha Bachand, 4195 Fisher Road NE., Salem, Oreg. 79303
Filed Sept. 3, 1968, Ser. No. 13,377
Term of patent 14 years
Int. Cl. D7—*06*
U.S. Cl. D44—29



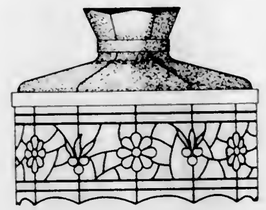
215,171
DECORATIVE PROTECTIVE HOUSING FOR ELECTRICAL FIXTURE
Jack A. Meltzer, 3398 Fairway Road, Oceanside, N.Y. 11572
Filed Apr. 12, 1968, Ser. No. 11,441
Term of patent 14 years
Int. Cl. D26—*06*
U.S. Cl. D48—16



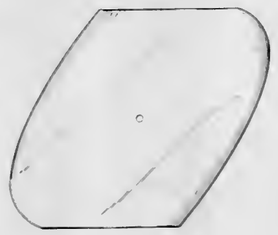
215,172
LAMP SHADE
Ben J. Seger, 5 Mead Lane, Roslyn, N.Y. 11576
Filed Aug. 26, 1968, Ser. No. 13,265
Term of patent 3½ years
Int. Cl. D26—*06*
U.S. Cl. D48—16



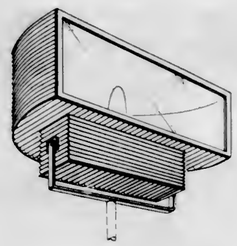
215,173
LAMP SHADE
Ben J. Seger, 5 Mead Lane, Roslyn, N.Y. 11576
Filed Aug. 26, 1968, Ser. No. 13,266
Term of patent 3½ years
Int. Cl. D26—*06*
U.S. Cl. D48—16



215,174
LAMP GLOBE
Richard E. Denson, 15715 Myrtle Ave., Harvey, Ill. 60426
Filed Nov. 19, 1968, Ser. No. 14,536
Term of patent 14 years
Int. Cl. D26—*06*
U.S. Cl. D48—16



215,175
LIGHTING CASING
Edwin F. Osborne, Jr., Houston, Tex., assignor to Esquire, Inc., New York, N.Y., a corporation of Delaware
Original design application Nov. 8, 1967, Ser. No. 9,331. Divided and this application Mar. 1, 1968, Ser. No. 11,226
Term of patent 14 years
Int. Cl. D26—*03*
U.S. Cl. D48—20



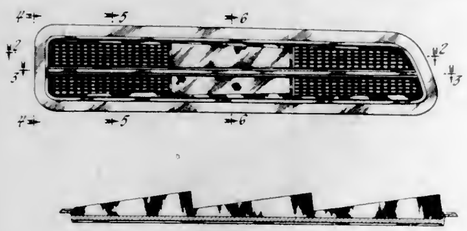
215,176
CIGARETTE LIGHTER
Kenjiro Goto, Tokyo, Japan, assignor to Mansei Kogyo Kabushiki Kaisha, Kawaguchi-shi, Japan
Filed Dec. 5, 1968, Ser. No. 14,799
Term of patent 7 years
Int. Cl. D27—*05*
U.S. Cl. D48—27



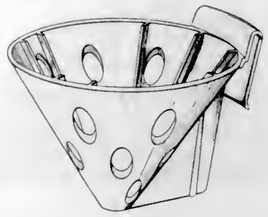
215,177
CIGARETTE LIGHTER
Kenjiro Goto, Tokyo, Japan, assignor to Mansei Kogyo Kabushiki Kaisha, Kawaguchi shi, Japan
Filed Jan. 8, 1969, Ser. No. 15,251
Term of patent 7 years
Int. Cl. D27—*05*
U.S. Cl. D48—27

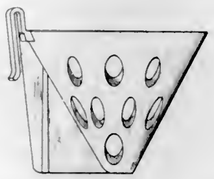


215,178
MOTOR VEHICLE LAMP LENS
George A. Gallion, Detroit, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Sept. 26, 1968, Ser. No. 13,719
Term of patent 7 years
Int. Cl. D12—*99*
U.S. Cl. D48—32

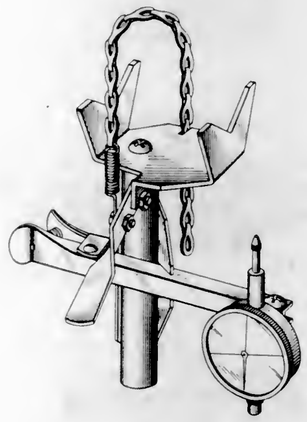


215,179
MOP CONE WRINGER
Frank J. Pudelko and Virginia M. Pudelko, Gordon, and Lloyd T. Hinn and Leslie L. Hinn, Rushville, Nebr., assignors to H & P Manufacturing Corp., Rushville, Nebr., a corporation of Nebraska
Filed Oct. 10, 1968, Ser. No. 13,925
Term of patent 14 years
Int. Cl. D7—*06*
U.S. Cl. D49—29





215,180
UNIVERSAL JOINT TESTER
Avrum Gray, 1077 Elm Ridge Drive, and Sheldon W. Gray, 506 Sheridan Road, both of Glencoe, Ill. 60022
Filed July 29, 1968, Ser. No. 12,941
Term of patent 14 years
Int. Cl. D10—*11*
U.S. Cl. D52—6



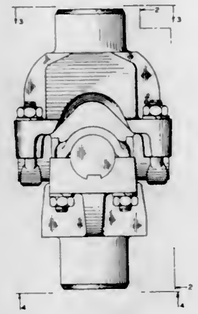
215,181
SPOON OR SIMILAR ARTICLE
Arnold Thaler, Highland Park, Ill., assignor to American Home Products Corporation, New York, N.Y., a corporation of Delaware
Filed June 5, 1968, Ser. No. 12,322
Term of patent 14 years
Int. Cl. D7—*03*
U.S. Cl. D54—12



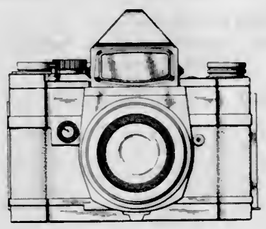
215,182
SPOON OR SIMILAR ARTICLE
Raymond T. Cleeland, Freehold, N.J., assignor to American Home Products Corporation, New York, N.Y., a corporation of Delaware
Filed Oct. 30, 1968, Ser. No. 14,239
Term of patent 14 years
Int. Cl. D7—*03*
U.S. Cl. D54—12



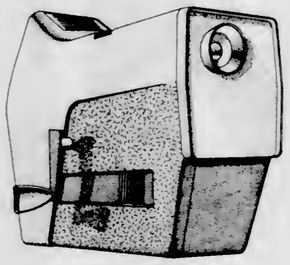
215,183
FLEXIBLE TRANSMISSION COUPLING FOR THREE-WHEELED VEHICLE
James H. Mayland, 173 Southwood Drive, Old Bridge, N.J. 08857
Filed July 11, 1968, Ser. No. 12,710
Term of patent 14 years
Int. Cl. D12—*99*
U.S. Cl. D55—1



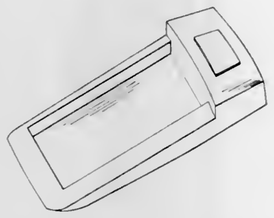
215,184
CAMERA
Harry E. Mazur, 930 Westbourne Drive, Los Angeles, Calif. 90069
Filed July 15, 1968, Ser. No. 12,767
Term of patent 14 years
Int. Cl. D16—*01*
U.S. Cl. D61—1



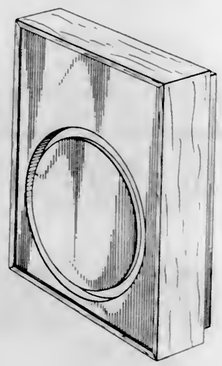
215,185
TOY MOVIE PROJECTOR
Karl A. Utrecht, Cincinnati, Ohio, assignor to Kenner Products Company, Cincinnati, Ohio, a corporation of Delaware
Filed Feb. 25, 1969, Ser. No. 15,910
Term of patent 14 years
Int. Cl. D16—*04*
U.S. Cl. D61—1



215,186
WATERCRAFT
Bruno A. Berticevich, 4114 Pandora St., North Burnaby, Vancouver, British Columbia, Canada
Filed Sept. 27, 1968, Ser. No. 13,758
Term of patent 14 years
Int. Cl. D12—*06*
U.S. Cl. D71—1



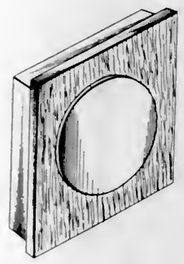
215,187
WALL CHIME
John Doggart, Macclesfield, England, assignor to V & E Friedland Limited, Macclesfield, England, a British company
Filed Sept. 9, 1968, Ser. No. 13,446
Claims priority, application Great Britain Mar. 26, 1968
Term of patent 14 years
Int. Cl. D31
U.S. Cl. D72—1



215,188
WALL CHIME
John Doggart, Macclesfield, England, assignor to V & E Friedland Limited, Macclesfield, England, a British company
Filed Sept. 9, 1968, Ser. No. 13,450
Claims priority, application Great Britain Mar. 26, 1968
Term of patent 14 years
Int. Cl. D31
U.S. Cl. D72—1



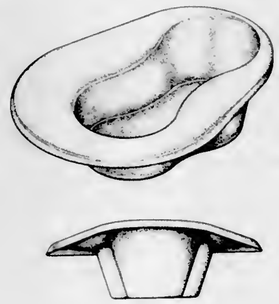
215,189
WALL CHIME
John Doggart, Macclesfield, England, assignor to V & E Friedland Limited, Macclesfield, England, a British company
Filed Sept. 9, 1968, Ser. No. 13,468
Claims priority, application Great Britain Mar. 26, 1968
Term of patent 14 years
Int. Cl. D31
U.S. Cl. D72—1



215,190
JEWELRY DISPLAY STAND
Leonard N. Henrich, Norton, Mass., assignor to Coro, Inc., Providence, R.I., a corporation of New York
Filed Apr. 22, 1968, Ser. No. 11,570
Term of patent 14 years
Int. Cl. D6—*01*
U.S. Cl. D80—9



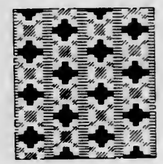
215,191
BED PAN LINER
Wayman R. Spence, 1479 Devonshire Drive, Salt Lake City, Utah 84108
Filed Aug. 15, 1968, Ser. No. 13,153
Term of patent 14 years
Int. Cl. D24—*02*; D28—*01*
U.S. Cl. D83—1



215,192
PIPE HOLDER
Jerome N. Felten, 3517 E. 26th St., Minneapolis, Minn. 55406
Filed Nov. 26, 1968, Ser. No. 14,665
Term of patent 14 years
Int. Cl. D27—*02*
U.S. Cl. D85—8



215,193
CARPET OR SIMILAR ARTICLE
David Nightingale Hicks, 23 St. Leonard's Terrace, London SW3, England
Filed July 15, 1968, Ser. No. 12,780
Term of patent 14 years
Int. Cl. D6—*04*
U.S. Cl. D92—4



LIST OF REISSUE PATENTEES

TO WHOM

PATENTS WERE ISSUED ON THE 9TH DAY OF SEPTEMBER, 1969

NOTE.—Arranged in accordance with the first significant character or word of the name (in accordance with city and telephone directory practice).

Ajem Laboratories, Inc.: *See*—
Fitzpatrick, Richard T., and Moore. Re. 26,657.
Fitzpatrick, Richard T., and Moore. Re. 26,661.

Carando Machine Works: *See*—
McCoy, Thomas A. Re. 26,658.

Dwyer, Richard J., Jr., to Kimberly-Clark Corp. Bulk package for cut size paper. Re. 26,663, 9–9–69, Cl. 206—57.

Fitzpatrick, Richard T., and R. Moore, Jr., to Ajem Laboratories, Inc. Leak testing method and apparatus. Re. 26,657, 9–9–69, Cl. 73—40.

Fitzpatrick, Richard T., and R. Moore, Jr., to Ajem Laboratories, Inc. Leak testing apparatus. Re. 26,661, 9–9–69, Cl. 73—40.

Hall, Lester F. Suspended pressurized gas operated paper cone projector. Re. 26,662, 9–9–69, Cl. 124—11.

Harivel, Jean P. R., to Societe des Accumulateurs Fixes et de Traction (Societe Anonyme). Sealed alkaline cells and electrolytes therefor. Re. 26,660, 9–9–69, Cl. 136—6.

Hitachi, Ltd.: *See*—
Noumi, Makoto. Re. 26,664.

Kimberly-Clark Corp.: *See*—
Dwyer, Richard J., Jr. Re. 26,663.

Marateck, Harold: *See*—
Marateck, Jack M. and H. Re. 26,666.

Marateck, Jack M. and H. Fixture with drawers. Re. 26,666, 9–9–69, Cl. 312—343.

McCoy, Thomas A., to Carando Machine Works. Welding unit for lap-welding machines. Re. 26,658, 9–9–69, Cl. 219—64.

Moore, Ray, Jr.: *See*—
Fitzpatrick, Richard T., and Moore. Re. 26,657.
Fitzpatrick, Richard T., and Moore. Re. 26,661.

Noumi, Makoto, to Hitachi, Ltd. Brushless motors wherein commutation is controlled by an impedance responsive to rotor movement. Re. 26,664, 9–9–69, Cl. 318—138.

O'Brien Mfg. Corp.: *See*—
Siegal, Burton L. Re. 26,659.

Powell, Fred H., to Reynolds Metals Co. Metal rolling system. Re. 26,665, 9–9–69, Cl. 18—2.

Reynolds Metals Co.: *See*—
Powell, Fred H. Re. 26,665.

Siegal, Burton L., to O'Brien Mfg. Corp. Hydraulically-operated sewer cleaning machine. Re. 26,659, 9–9–69, Cl. 15—104.3.

Societe des Accumulateurs Fixes et de Traction (Societe Anonyme): *See*—
Harivel, Jean P. R. Re. 26,660.

LIST OF DESIGN PATENTEES

Adickes, Cecil F., and G. W. Schmidt, to Wham-O Mfg. Co. Toy oven. 215,165, 9–9–69, Cl. D34—15.

American Home Products Corp.: *See*—
Cleeland, Raymond T. 215,182.
Thaler, Arnold. 215,181.

Bachand, Retha. Combined sink tray and dish drainer. 215,170, 9–9–69, Cl. D44—29.

Beaman, Joseph L. Fixture for bathroom or the like. 215,163, 9–9–69, Cl. D33—26.

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Barber, Anthony Clifford, and Farmer, Francis John Vernon, to Imperial Metal Industries (Kynoch) Limited. Method of making superconductor stock. 3,465,430, Cl. 029-599.
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Branch, Chester W. Pickup truck bed mounted camper tent. 3,466,082, Cl. 296-023.

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Byrd, Joseph L., and Allen, William M., 3,466,041.

Bruson, Herman A., and Plant, Howard L., to Olin Mathieson Chemical Corporation. Beta-disubstituted alpha-indanones and the process for preparing them from aryl- substituted aliphatic halides. 3,466,332, Cl. 260-590.

Bruson, Herman A., and Plant, Howard L., to Olin Mathieson Chemical Corporation. Process for preparing beta-disubstituted alpha-indanones. 3,466,333, Cl. 260-590.

Brychta, Ondrej, Tlucko, Josef, Kolik, Ondrej, and Capla, Miroslav, to Chirana, Zavody zdravotnickej techniky, odborovy Podnik. Apparatus for the control of pressure respirator. 3,465,752, Cl. 128-145.8

Bschorer, Konrad, Muller, Johann, and Ostler, Josef, to Friedrich Deckel Prazisions Mechanik und Maschinenbau. Copying milling machine. 3,465,642, Cl. 090-013.1

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Bull, Eric William, and Sampeys, Alfred Marcos, to Electric & Musical Industries Limited. Scanning coils. 3,466,586, Cl. 336-200.

Bundus, Robert H., and Luksas, Anthony J., to Beatrice Foods Company. Bread flavor. 3,466,174, Cl. 099-090.

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Bundus, Robert H., and Luksas, Anthony J., to Beatrice Foods Company. Bread flavor concentrate. 3,466,177, Cl. 099-140.

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Clark, Larry Keith, and Bartlett, Peter Greenough, to Bliss, E. W., Company. Traffic controller having improved time waiting gap reduction circuit. 3,466,599, Cl. 340-037.

Clark, Raymond N., Duris, Milan W., and Koros, Leslie L., deceased, to United States of America, Air Force. Coaxial circuit for vacuum tubes. 3,466,497, Cl. 315-039.

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Cushwa, George Victor. Apparatus for manufacturing brick. 3,465,395, Cl. 025-002.

Dahl, Ernest A., Jr. File structure. 3,465,460, Cl. 040-105.5

Daigh, Harold D., and Collins, Clifford H., to Atlantic Richfield Company. Exhaust recycle control mechanism. 3,465,736, Cl. 123-119.

Daiichi Seiyaku Company Limited: *See—*
Takahashi, Hidehiko, Kaga, Shinichiro, and Hirota, Sadao, 3,466,364.

Daisy Manufacturing Company: *See—*
Daniel, Richard I., and Wesley, Robert O., 3,465,741.

Dalenberg, John F., Todd, Elmer H., and Carpenter, John W., to Combustion Engineering, Inc. Deflector arrangement for use in a grinding mill. 3,465,971, Cl. 241-053.

Daly, David A., to Beloit Eastern Corporation. High speed trim system. 3,465,625, Cl. 083-100.

Daniel, Richard I., and Wesley, Robert O., to Daisy Manufacturing Company. Popgun with extended barrel for projecting puff of air. 3,465,741, Cl. 124-001.

Datel Limited: *See—*
Will, James Hector MacDonald, 3,466,407.

Daumard, Claude: *See—*
Sicard, Louis, and Daumard, Claude 3,466,151.

Davies, Anthony Roger, and O'Donoghue, John Peter, to Lucas, Joseph, (Industries) Limited. Hydro-static thrust bearings. 3,466,103, Cl. 308-160.

Davis, Jack W., and Ferreira, Fernand J., to United Aircraft Corporation. Device for moving a beam of charged particles. 3,466,487, Cl. 313-146.

Davis, Kenneth G., to Mobil Oil Corporation. Coating compositions comprising dispersion grade vinyl resin, carboxyl containing acrylic resin and epoxidized novolac resin for adherently coating metal. 3,466,347, Cl. 260-837.

Davis, Lionel A. Telephone handset support. 3,466,406, Cl. 179-157.

Davis, Pauls, and Vogt, Herwart C., to Wyandotte Chemicals Corporation. Halogen containing ether epoxides. 3,466,305, Cl. 260-348.

Dawson, James A., to McDonnell Douglas Corporation. Press-fit connection for fluid couplings and structures. 3,466,066, Cl. 285-039.

Day, Howard E., to Calumet & Hecla Corporation, mesne. Method of making cuprous oxide. 3,466,143, Cl. 023-147.

Dayco Corporation: *See—*
Edwards, Charles E., 3,465,508.

Dean, Donald T. Stimulator for vehicle operators. 3,466,644, Cl. 340-279.

Deasy, Richard E., to Collins Radio Company. Three position RF circuit rotary switch. 3,466,254, Cl. 200-011.

De Berry, James F., 1/2 interest to Ramsey, O. W. Fishing apparatus including animated lure. 3,465,464, Cl. 043-019.2

De Bo, Maurice J.: *See—*
Kienzle, John F., and De Bo, Maurice J. 3,465,838.

De Boer, Hendrik J., and Gettle, Robert E., to Mosler Safe Co., The. Night depository. 3,465,955, Cl. 232-044.

Decker, Arthur L., to Ethyl Corporation. Plastic conduit joint. 3,466,383, Cl. 174-084.

Declark, Inc.: *See—*
Hancock, James E., 3,465,454.

Decor Specialties, Inc.: *See—*
Sulkes, Emanuel M., 3,465,806.

De Cotiis, Constant John: *See—*
Riordan, Hugh F., De Cotiis, Constant John, and Straut, Harold J. 3,465,600.

de Coye de Castelet, Gaetan, to Societe des Aciers Fins de l'Est. Plants for the continuous casting of steel. 3,465,811, Cl. 164-281.

Deere & Company: *See—*
Erdman, Leon Paul, 3,465,607.

DeGaetano, Joseph F., and Deinet, Adolph J., to Tenneco Chemicals, Inc. Process for the control of plant growth with N- (substituted benzylidene)alkyl amines. 3,466,164, Cl. 071-121.

De Graff, Richard R., and Perga, Martin W., to Universal Oil Products Company. Solvent extraction of aromatic hydrocarbons. 3,466,344, Cl. 260-674.

De Graff, Richard R., and Perga, Martin W., to Universal Oil Products Company. Aromatic hydrocarbon recovery process. 3,466,345, Cl. 260-674.

De Graff, Richard R., and Perga, Martin W., to Universal Oil Products Company. Method for aromatic hydrocarbon recovery. 3,466,346, Cl. 260-674.

De Grusso, Don. Seat holding device. 3,466,091, Cl. 297-390.

DeHarde, Robert. Liquid metering and dispensing apparatus. 3,465,915, Cl. 222-066.

Deinet, Adolph J.: *See—*
DeGaetano, Joseph F., and Deinet, Adolph J. 3,466,164.

de Koning, Arie Adrianus: *See—*
Vedrilla, Stefan, de Koning, Arie Adrianus, and de Koning, Kornelis Korstiaan Karel 3,466,300.

de Koning, Kornelis Korstiaan Karel: *See—*
Vedrilla, Stefan, de Koning, Arie Adrianus, and de Koning, Kornelis Korstiaan Karel 3,466,300.

de Koster, Heinz A., and Ingenito, Michael J., to General Time Corporation. Timekeeping system utilizing glow discharge tube. 3,466,498, Cl. 315-084.6

Delaney, Edward Axel: *See—*
Barton, Bernard Charles, Nudenberg, Walter, and Delaney, Edward Axel 3,466,268.

De Larm, Gerald L. Farm implement lift assembly and drawbar combination. 3,465,832, Cl. 172-491.

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DeMair, William M., to Wallace & Tiernan, Inc. Indicator element follower structure. 3,465,596, Cl. 073-432.

De Mesquita, Seymour: *See—*
Grandy, Andrew J., Spinelli, Angelo S., De Mesquita, Seymour, and Batezell, Alfred P. 3,465,463.

De Muth Steel Products Company: *See—*
Weihnuller, Walter N., 3,466,095.

Dental Orthopedics, Inc.: *See—*
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Denys Fisher Group Limited: *See—*
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Department of Agriculture and Inspection of the State of Nebraska: *See—*
Prahl, Helmut F., and Hart, Frederick M., 3,466,252.

Deplante, Henri, to Avions Marcel Dassault. Telescopic tubes. 3,466,062, Cl. 285-165.

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Derfer, John M., to SCM Corporation, mesne. Terpene resin compositions. 3,466,267, Cl. 260-080.7

de Ridder, Rene R., to Manufacture de Produits Pharmaceutiques a Christiaens Societe Anonyme. Fluoreno-[1,9-ef]-1,4-diazepine-1-oxides and 1,3- diazafluoroanthene-1-oxides. 3,466,274, Cl. 260-239.

Deringer, Wayne A., to Smith, A. O., Corporation. Method of forming glass coated steel articles. 3,465,424, Cl. 029-527.2

DeRose, Ralph A., to International Telephone and Telegraph Corporation. Printed circuit board library rack. 3,465,891, Cl. 211-041.

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Detch, Lewis. Locking devices for fluorescent lamps. 3,466,594, Cl. 339-054.

Detert, Klaus: *See—*
Assmus, Fritz, Boll, Richard, Detert, Klaus, Ganz, Dietrich, Ibe, Gerhard, and Pfeifer, Friedrich 3,466,201.

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Diamond Machinery Company: *See—*
Landry, Robert G., and Jenney, Sherman R., 3,465,690.

Diamond, Martin J., to United States of America, Agriculture. Preparation of omega-hydroxyalkanoic acids. 3,466,310, Cl. 260-413.

Dias, Fleming, to Zenith Radio Corporation. Stereo receiver suitable for integrated circuit construction. 3,466,399, Cl. 179-015.

Dias, Fleming, to Zenith Radio Corporation. Combined synchronous demodulator and active matrix. 3,466,400, Cl. 179-015.

Dias, Fleming, Eilers, Carl G., and Rypkema, Jouke N., to Zenith Radio Corporation. Color detector. 3,466,386, Cl. 178-005.4

Dickerson, Richard T., to Dow Chemical Company, The. Preparation of 1,1,2,2,3-pentabromopropane. 3,466,342, Cl. 260-658.

Diehl, Karl, to Bauer, Carl. Fastener driving tool. 3,465,942, Cl. 227-010.

Diener, Hans: *See—*
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Diesel, Thomas J.: *See—*
Loebner, Egon E., Diesel, Thomas J., and Bube, Richard H. 3,466,509.

Dieters, William I., and Paddock, Bernard H., to Martin-Marietta Corporation. Heater bar system. 3,465,812, Cl. 164-361.

Dietz, Henry. Shelters. 3,465,765, Cl. 135-003.

Dietze, Manfred, Kraft, Wolfgang, Scheller, Hans, and Ullrich, Hansjurgen, to Vickers-Zimmer Aktiengesellschaft, Planung und Bau von Industricanlagen. Polycondensation reactor. 3,466,150, Cl. 023-285.

Digital Data Systems, Inc.: *See—*
Siems, Lee E., and Reeves, W. Clay, 3,466,596.

Digitronics Corporation: *See—*
Wolf, Edgar, Worster, David E., and Marino, Francis C., 3,466,550.

Dixon, Rod P., to American Oil Shale Corporation. Undercutting of nuclearly detonated formations by subsequent nuclear detonations at greater depth and uses thereof in the recovery of various minerals. 3,465,818, Cl. 166-247.

Dixon, Rod P., to American Oil Shale Corporation. Use of nuclear detonations in producing hydrocarbons from an underground formation. 3,465,819, Cl. 166-247.

Dobler, Hans, to Attenhofer, A., AG. Heel holder for cableless ski bing ding. 3,466,057, Cl. 280-011.35

Dodge, Gerald F., III, to General Electric Company. Frost detector for refrigerant evaporators. 3,465,535, Cl. 062-151.

Doering, Donald R.: *See—*
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Doll, Henri Georges, and Dumanoir, Jean L., to Schlumberger Technology Corporation. Induction logging apparatus with reduced diameter auxiliary coil means. 3,466,533, Cl. 324-006.

Donath, Siegfried, and Gahler, Werner, to General Motors Corporation. Internal combustion engine oil lubrication systems. 3,465,847, Cl. 184-006.

Donnelley, R. R., & Sons Company: *See—*
Swanson, Kermit E., 3,466,030.

Donnelly, James M., to Automatic Electric Laboratories, Inc. Memory plane for solenoid array memories. 3,466,622, Cl. 340-174.

Donner, Edmund B., to Solar Engineering & Equipment Company. Single file column forming apparatus. 3,465,868, Cl. 198-030.

Donner, Fred Albert, to Vermiculite Manufacturing Company. Process for fast curing alkali metal silicate bonded product. 3,466,354, Cl. 264-057.

Donohoe, Robert W. Electro-pneumatic porosity test method and means. 3,465,562, Cl. 072-031.

Donovan, David A., to RCA Corporation. Automobile control manipulating apparatus. 3,465,577, Cl. 073-116.

Dorn, Conrad P., Jr.: *See—*
Shen, Tsung-Ying, and Dorn, Conrad P., Jr. 3,466,372.

Dorn, Henry J., and Brockett, Halford E., to Continental Can Company, Inc. Closure seal for containers having screw threaded necks. 3,465,907, Cl. 215-040.

Dorr-Oliver Incorporated: *See—*
Cookney, Ernest W., 3,465,887.
Jablon, Theodore M., 3,465,888.
Jablon, Theodore M., 3,466,016.

Doudet, Michel, to Presses et Materiels Hydrauliques Morane-Somua. Guide for the slide of a vertical press. 3,465,669, Cl. 100-214.

Douglas, Robert Stoddart. Chassis dynamometer. 3,465,578, Cl. 073-117.

Douglass, Walter H., Sr., to TRW Inc. Method of welding a metal piece to fine wires. 3,466,419, Cl. 219-091.

Dow Chemical Company, The: *See—*
Bublitz, Donald E., 3,466,283.
Budde, Paul B., and Tolkmith, Henry, 3,466,369.
Dickerson, Richard T., 3,466,342.
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Jernigan, Jack W., 3,466,259.
Kucera, Clare H., 3,465,824.
Smith, William E., and Neumann, Fred W., 3,466,337.
Vincent, Gerald G., and Saunders, Frank L., 3,466,207.
Walles, Wilhelm E., and Nagy, Donald J., 3,465,674.
Weissenberg, Ulrich W., 3,466,299.

Downing, Robert D., to General Electric Company. Electron beam welding apparatus. 3,466,420, Cl. 219-121.

Dreisin, Alexander, to Allis-Chalmers Manufacturing Company. Fuel injection system. 3,465,737, Cl. 123-139.

Dresser Industries, Inc.: *See—*
Hoke, Howard L., and Halterman, James W., 3,466,069.

Drewry, Montrose K. Art of heating air for gas turbine use. 3,465,517, Cl. 060-039.06

Dreyfus, Russell W.: *See—*
Bron, Walter E., Dreyfus, Russell W., and Heller, William R. 3,466,616.

Dual Jet Refrigeration Co.: *See—*
Vogel, Robert E., Hermanson, Bernard A., and Kuykendall, Earl G., 3,465,536.

Duarte International Sales Co., Inc.: *See—*
Duarte, Joseph S., 3,466,035.

Duarte, Joseph S., to Duarte International Sales Co., Inc. Disassemblable top rail for a billiard table. 3,466,035, Cl. 273-009.

Duda, William L., Fleisher, Harold, Kulcke, Werner W., and Max, Erhard, to International Business Machines Corporation. Optical parallel adder. 3,466,433, Cl. 235-175.

Duddy, Joseph C., to ESB Incorporated. Battery having lead dioxide cathode, magnesium or zinc anode, and potassium acid sulfate electrolyte. 3,466,194, Cl. 136-100.

Duff, Samuel. Battery cages. 3,465,722, Cl. 119-018.

Duffy, John A.: *See—*
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Duffy, Robert Joseph: *See—*
Freid, Wilbert Bernard, Duffy, Robert Joseph, and Sargisson, Donald Farley 3,465,950.

Dumanoir, Jean L.: *See—*
Doll, Henri Georges, and Dumanoir, Jean L. 3,466,533.

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Bamford, Clement Henry, Duncan, Frederic James, and Reynolds, Reginald John William 3,466,182.

Dunkel, Eckhard, and Thiele, Wolfgang, to Metallgesellschaft Aktiengesellschaft. Process for improving grain structure of aluminum silicon alloys. 3,466,170, Cl. 075-148.

Dunn, Alexander, Livingston, George Turner, and Corr, Albert J., to Burroughs Corporation. Encoding apparatus associated with a calculating machine. 3,466,429, Cl. 235-060.11

Du Pont de Nemours, E. I., and Company: *See—*
Flook, William M., Jr., 3,465,589.
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Loux, Harvey M., 3,466,285.

Dupre, Edwin V. Cushioned wheel. 3,465,804, Cl. 152-011.

Duris, Milan W.: *See—*
Clark, Raymond N., Duris, Milan W., and Koros, Leslie L., deceased 3,466,497.

Duymelinck, Jacobus Henricus, and Schootstra, Rients. Valve, mainly from synthetic material such as plastic, for air tubes and method of manufacturing of the shaft of such a valve. 3,465,780, Cl. 137-234.5

Duyverman, Coenraad J., to Stamicarbon N.V. Conversion of acrolein and methacrolein into the corresponding unsaturated alcohols. 3,466,339, Cl. 260-638.

E. B. V. Systems, Inc.: *See—*
Kleeberg, Gunther K. E., 3,466,005.

Earth Sciences, Inc.: *See—*
Stevens, Douglas N., Bloom, Duane N., and Bisque, Ramon E., 3,465,593.

Eastman Kodak Company: *See—*
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Blood, Alden E., Vinyard, Herschel T., and Phillips, Glenn L., 3,466,149.
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Jucker, Ernst, Ebnother, Anton, and Bastian, Jean-Michael 3,466,291.

Ecclesia, Edoardo, to Ing. C., Olivetti & C., S.p.A. Electrical connector for printed-circuit boards Locking devices for fluorescent lamps. 3,466,591, Cl. 339-017.

Eckert, John S., to Norton Company, mesne. Vibratory mill. 3,465,974, Cl. 241-153.

Edelman, Robert I.: *See—*
Tone, Frederick F., Deprez, Robert F., and Edelman, Robert I. 3,466,440.

Edelson, Kenneth J., to General Sportcraft Company Limited. Protective pad. 3,465,364, Cl. 002-022.

Edouard Dubied & Cie, Societe Anonyme: *See—*
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Edward Lead Company: *See—*
Lusk, Elmer C., 3,466,444.

Edwards, Charles E., to Dayco Corporation. Power transmitting means. 3,465,508, Cl. 056-295.

Edwards, Evan A., Ulmschneider, Lawrence A., and Roman, Robert J., to Eastman Kodak Company. Reel and film retaining means. 3,465,980, Cl. 242-074.1

Edwards, John E.: *See—*
Rhodes, Alex, and Edwards, John E. 3,465,559.

Eggers, Robert G., and Grant, Arthur R., to Towmotor Corporation. Detent lockout for hydraulic control valves. 3,465,649, Cl. 091-426.

Eichin, Werner, and Katz, Helmut, to Siemens Aktiengesellschaft. Traveling wave tube with delay line supports having a lossy layer and an insulation layer. 3,466,494, Cl. 315-003.5

Eidnes, Dag J.: *See—*
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Eigen, David, to Okonite Company, The. Cable scanning method and apparatus utilizing short bursts of highly penetrating radiation. 3,466,537, Cl. 324-054.

Eilers, Carl G.: *See—*
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Electric & Musical Industries Limited: *See—*
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Bull, Eric William, and Sampeys, Alfred Marcos, 3,466,586.

Electro-Therm, Inc.: *See—*
Burger, Nicholas J., 3,466,427.
Kefauver, Lester R., Jr., 3,466,426.

Electronic Memories, Inc.: *See—*
Gilligan, Thomas J., and Nozaki, Arthur T., 3,466,633.

Ellenberger, Jakob, to Ellenberger & Poensgen GmbH, Firma. Thermal relay with a heated bimetal element and a temperature compensating bimetal strip. 3,466,449, Cl. 250-215.

Ellenberger & Poensgen GmbH, Firma: *See—*
Ellenberger, Jakob, 3,466,449.

Elliott, Michael, and Janes, Norman Frank, to National Research Development Corporation. Preparation of furan-substituted methanols. 3,466,304, Cl. 260-347.8

Ellis, Alfred Brian Edwin, to Marconi Company Limited, The. Electrical position resolver employing capacitive probe coupled to resistive layer containing two pairs of conductive strips energized by four different frequency signals. 3,466,391, Cl. 178-018.

Ellis, Charles B., to Lennox Industries Inc. Compressor supporting means. 3,465,954, Cl. 230-235.

Emerick, George, to Rolls-Royce Limited, mesne. Gas turbine power plants. 3,465,526, Cl. 060-269.

Emery, William M. Patient elevating means for use in the process of spontaneous elimination. 3,465,367, Cl. 004-112.

Emshwiller, Mac Lellan, to Bell Telephone Laboratories, Incorporated. Low noise pulse expansion using a scanned optical correlator. 3,466,112, Cl. 350-161.

Enders, Heinz, and Diener, Hans, to Chemische Fabrik Pfersee G.m.b.H. Process of manufacturing concentrated aqueous emulsions and emulsions produced by such process. 3,466,178, Cl. 106-002.
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Keenan, Julian J., Lilja, Sten A., and Kramos, Charles B., 3,465,419.
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Epsylon Research and Development Company Limited: *See—*
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Erb, Robert A., to United States of America, Interior. Method for improving heat transfer in condensers. 3,466,189, Cl. 117-132.
Ercoli, Nicholas, to Robins, A. H., Company, Incorporated. Derivatives of dialkyl-cysteines and allied compounds. 3,466,312, Cl. 260-440.
Erdman, Leon Paul, to Deere & Company. Belt drive apparatus for tractor-mounted implement. 3,465,607, Cl. 074-227.
Ermanco Incorporated: *See—*
Paulsen, John D., 3,465,870.
Ernest, Richard B., and Swanstrom, Kenneth A., to Penn Engineering & Manufacturing Corporation. Automated machine or press for assembling a fastener to a work piece. 3,465,410, Cl. 029-208.
Ernest, Richard B., and Swanstrom, Kenneth A., to Penn Engineering & Manufacturing Corporation. Captive screw device and a method for securing together the parts thereof. 3,465,803, Cl. 151-069.
Erwin, John R., to General Electric Company. Radial outflow turboshaft engine. 3,465,518, Cl. 060-039.16
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Espey Mfg. & Electronics Corporation: *See—*
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Etat Francais, represente par le Ministre, des Armees, Delegation Ministerielle pour l'Armement (Direction des Poudres): *See—*
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Ethyl Corporation: *See—*
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Evans, J., & Son (Portsmouth) Limited: *See—*
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Evans, James G., and Grant, Dwight W., to Bell Telephone Laboratories, Incorporated. Apparatus and method to minimize and define the effect of a transmission measuring apparatus environment in measuring transistor parameters. 3,466,545, Cl. 324-158.
Evans Products Company: *See—*
Hyatt, Floyd A., 3,465,692.
Evans, Wayne, Marcucci, Rudolph, and Gates, Paul, to Sylvania Electric Products, Inc. Arc discharge envelope and method of making same with three butted glassy tubes. 3,466,488, Cl. 313-220.
Everett, Hazen F. Blood oxygenator. 3,466,148, Cl. 023-258.5
Everhard, Fredric U., to RCA Corporation. Electrically operated throttle device. 3,465,790, Cl. 138-045.
Everlast World's Boxing Headquarters Corporation: *See—*
Golomb, David L., 3,466,039.
Eversman, Carl A. Water diverter system. 3,465,368, Cl. 004-148.
Exotech Incorporated: *See—*
Cooley, William C., 3,465,639.
Ezekiel, Frederick D., and Miller, Richard W., to Foxboro Company, The. In-line flow powered viscometer. 3,465,574, Cl. 073-059.
F & E Manufacturing Company: *See—*
Francis, Joseph E., and Amey, Arnold L., 3,465,735.
Faerber, Gerhard, and Kersken, Wilhelm, to Deutsche Solvay-Werke GmbH. Polymerization catalysts containing an acycycloalkane sulfonyl peroxide, fatty acid and water. 3,466,255, Cl. 260-023.
Fahlenberg, Paul, to Compur-Werk Gesellschaft mit beschrankter Haftung & Co. Photoelectric operated diaphragm setting means for cameras. 3,466,447, Cl. 250-210.
Falconbridge Nickel Mines Limited: *See—*
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Falls Engineering & Machine Company, The: *See—*
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Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning: *See—*
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Barber, Anthony Clifford, and Farmer, Francis John Vernon 3,465,430.
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Fassett, Matthew, to Stromberg-Carlson Corporation. Light-operated sound-signal telephone transmitter and transmission system. 3,466,446, Cl. 250-199.
Fatosme, Albert Rene, and Coste, Henri Georges. Building of walls. 3,465,487, Cl. 052-241.
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Feder, Donald P., to Eastman Kodak Company. Four component objective lens. 3,466,117, Cl. 350-220.
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Femia, Joseph E., to United States of America, Army. Delay action device. 3,466,081, Cl. 294-083.
Fenn, John B. Method and apparatus for separation of components from gaseous streams. 3,465,500, Cl. 055-017.
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Gulick, William K., to General Electric Company. Spring-biased valve with anti-chattering feature. 3,465,787, Cl. 137-539.5

Gull, Proctor W., to Gulf Research & Development Company. Ear corn sampler. 3,465,758, Cl. 130-009.

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Guth, Lauren W., to General Electric Company. Dishwashing machine. 3,465,762, Cl. 134-058.

Guth, Lauren W., to General Electric Company. Door-operated rack extending and retracting means for a front-opening appliance cabinet. 3,466,105, Cl. 312-274.

Guth, Lauren W., to General Electric Company. Door-operated rack extending and retracting means for a front-opening appliance cabinet. 3,466,108, Cl. 312-274.

Guzak, John, Jr., to SCM Corporation. Data signal generating apparatus. 3,466,647, Cl. 340-365.

Gwidt, Steve J. Apparatus for injecting fresh air into outboard motor underwater exhaust. 3,465,706, Cl. 115-017.

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Hackenberg, Hubert, to Agfa-Gevaert Aktiengesellschaft. Photographic camera with a film take-up spool. 3,465,658, Cl. 095-031

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Hambly, John Arthur, to Aluminium Laboratories Limited. Method of preparing spherical alumina hydrate from seeded aluminate liquor. 3,466,142, Cl. 023-143.

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Hanna, David L., and Zellmer, Neale A., to Automatic Electric Laboratories, Inc. Apparatus for regulating signals in response to their total root mean square value. 3,466,572, Cl. 333-017.

Hanni, Eduard. Plate-working machine. 3,465,561, Cl. 072-036.

Hansen, Holger V., Klutchko, Sylvester, and Meltzer, Robert Israel, to Warner-Lambert Pharmaceutical Company. 9,4α-Iminoethanoanthracenes and indeno [2,1-j]. 3,466,288, Cl. 260-286.

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Hargis, Charles W., to Eastman Kodak Company. Method for the preparation of esters of unsaturated acids from the corresponding nitriles. 3,466,320, Cl. 260-486.

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Harris, Alva F., to Monsanto Company. Process for polymerizing monovinylidene aromatic hydrocarbon monomer formulations. 3,466,350, Cl. 260-886.

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Jablon, Theodore M., to Dorr-Oliver Incorporated. Agitating apparatus for flocculating treatment of suspensions. 3,466,016, Cl. 259-100.

Jackowski, Charles S., Jensen, Donald F., Muller, Hans R., Noll, Melvin R., and Schaffer, Robert R., to International Business Machines Corporation. Fluid-controlled data storage apparatus. 3,466,610, Cl. 340-172.5

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Jansen, Joseph Nicholas, and Staggs, Oscar L., to Motorola, Inc. High peak power waveguide junction circulators having inductive posts in each port for tuning circulator. 3,466,571, Cl. 333-001.1

Jantze, Clyde E., Arnott, Edward A., and Scott, Earl V., to Continental Can Company, Inc. Double-seaming method and apparatus for can closing machine. 3,465,703, Cl. 113-030.

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Jarret, Jean, and Jarret, Jacques. Low-inertia variable-reluctance electrical machine. 3,466,479, Cl. 310-168.

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Jernigan, Jack W., to Dow Chemical Company, The. Thickened thermosetting vinyl ester resins. 3,466,259, Cl. 260-037.

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Jordan, Frank G. Game device. 3,465,470, Cl. 046-037.

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Jordan, William E., and Kottler, Franklin D., to Eastman Kodak Company. Focus adjusting circuitry for a slide projector. 3,466,125, Cl. 353-101.

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Jumper, Henry M., to Wix Corporation. Fuel-water separator and filter. 3,465,883, Cl. 210-307.

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Kashima, Yoshitake, to Hitachi, Ltd. Winding for a stationary induction electrical apparatus. 3,466,584, Cl. 336-070.

Kashiwaba, Yukio, to Tsuchiya Manufacturing Company Limited. Clogging indicator for air cleaners. 3,465,707, Cl. 116-070.

Kashiwase, Toshio, to Nippon Kogaku K.K. Zoom lens barrel for cameras. 3,465,662, Cl. 095-045.

Kast, Howard B., to General Electric Company. Combined pressure control valve and pressure relief valve having a flat pressure-flow characteristic. 3,465,778, Cl. 137-117.

Kattchee, Nicholas, to Physics International Company. Piezoelectric control valve. 3,465,732, Cl. 123-032.

Katz, Helmut: *See—*
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Katz, Silas: *See—*
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Kautz, Wilbert G., and Florence, Donald M., to Aro Corporation, The. Semi-integrated (fluidic) logic system. 3,465,774, Cl. 137-081.5

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Kepes, Andre, to Ethylene-Plastique. Process and apparatus for determining the viscosity and elasticity properties of a solid or liquid viscoelastic medium. 3,465,575, Cl. 073-060.

Kerns, Max E., to New York Central Railroad Company, The. Rail positioning system. 3,465,687, Cl. 104-002.

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Kidder Smith, George E. Window air conditioner units. 3,465,539, Cl. 062-262.

Kienzle, John F., and De Bo, Maurice J. Portable platform scale. 3,465,838, Cl. 177-256.

Kiernan, Henry E. Exhaust chute warmer for snow removal vehicle. 3,465,455, Cl. 037-012.

Kiernan, Robert M. Commercial tricycle construction. 3,466,059, Cl. 280-261.

Kiesler, Allan, Moffatt, William G., and Walker, James L., to General Electric Company. Process of making aluminum bonded stainless steel article. 3,465,423, Cl. 029-527.7

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Kimber, Melvin R. Wedge-cutting fixture for a table saw. 3,465,797, Cl. 143-169.

Kimber, Melvin R. Wedge-cutting fixture for a radial arm saw. 3,466,025, Cl. 269-053.

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Kirch, John H., to Amchem Products, Inc. Efficient arsonate herbicide composition and method of use. 3,466,163, Cl. 071-097.

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Kirpich, Aaron, to United States of America, Air Force. Ports for pressure measurements on ablating surfaces. 3,465,594, Cl. 073-388.

Kisling, James W., III, to Schlumberger Technology Corporation. Retainer packers having a rotating valve. 3,465,820, Cl. 166-128.

Kitazawa, Kazuo. Butterfly valve. 3,466,008, Cl. 251-297.

Kiuchi, Yuji, and Shimizu, Kazuo, to Tokyo Shibaura Electric Co., Ltd. Method of manufacturing photoconductive layers. 3,466,183, Cl. 117-034.

Klaui, Heinrich, Rehm, Walter, and Schlegel, Wolfgang, to Hoffmann-La Roche, Inc. Water-dispersible, medicament-containing compositions useful as veterinary medicines. 3,466,362, Cl. 424-014.

Klawitter, Roland E., Murley, Ellsworth M., Jr., Rottmann, Hans R., and Sebring, Lowell W., to Owens-Illinois, Inc. Optical apparatus for inspecting the faceplate-to- funnel seal area of a TV tube. 3,466,452, Cl. 250-222.

Kleeberg, Gunther K. E., to E. B. V. Systems, Inc., mesne. Remote control valve operating mechanism. 3,466,005, Cl. 251-069.

Klein, Frederick A., to Phillips Petroleum Company. Thermal oil stimulation process. 3,465,822, Cl. 166-256.

Klein, Herbert H., to Unarco Industries, Inc. Connections for tiered storage rack units. 3,465,898, Cl. 211-177.

Kleinberg, Leonard L., to United States of America, National Aeronautics and Space Administration. Stable amplifier having a stable quiescent point. 3,466,560, Cl. 330-030.

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Kluth, Lewis A., Melville, Richard J., and Thompson, Robert D., to Taylor Instrument Consumer Products, mesne. Thermometer. 3,465,590, Cl. 073-356.

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Kolecki, Richard E., to Clark Equipment Company. Brake adjuster. 3,465,854, Cl. 188-196.

Kolik, Ondrej: *See—*
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Komendowski, Henry, and Whitfield, James E., Jr., to Armstrong-Blum Manufacturing Company. Hinge type horizontal band saw with improved control system. 3,465,628, Cl. 083-201.07

Konefal, Robert S., to Improved Machinery, Incorporated. Sealing assemblies for containers. 3,465,923, Cl. 222-498.

Koninklijke Nederlandsche Gist-en Spiritus-fabriek N.V.: *See—*
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Konrat, Jean Paul: *See—*
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Koor Industries and Crafts Co. Ltd.: *See—*
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Koros, Leslie L.: *See—*
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Kramer, Richard M., to Lambert Brake Corporation, mesne. Automatic adjuster for a disc brake. 3,465,855, Cl. 188-196.

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Kravchenko, Vasily Afanasievich. Device and method for treating vascular and other diseases of extremities. 3,465,748, Cl. 128-024.

Kreidel, Hans, Sr., to Inventex GmbH. Sealing ring with circular cutting edges for pipe connection. 3,466,068, Cl. 285-341.

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Krivit, Lawrence R. Pin-driving device. 3,465,835, Cl. 173-170.

Krol, Ronald A., to General Electric Company. Adjustable sliding brush transformer. 3,466,583, Cl. 336-060.

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Krueger, Theodore H., deceased (by Krueger, Cecelie M. Moore, Howard L. Krueger, Theodore H., Jr Chemical Bank New York Trust Company, executors), to Better Packages, Inc. Motor driven tape dispenser. 3,465,629, Cl. 083-205.

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Krueger, Theodore H., to Better Packages, Inc. Hand tape dispenser tool. 3,466,215, Cl. 156-378.

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Kucera, Clare H., to Dow Chemical Company, The. Aqueous cementing composition and method of use. 3,465,824, Cl. 166-293.

Kucharski, Louis A., to Superior Electric Company, The. Adjustable voltage autotransformer. 3,466,585, Cl. 336-148.

Kuhar, Ludwig J., to Singer Company, The. Loop takers for sewing machines. 3,465,700, Cl. 112-228.

Kulcke, Werner W.: *See—*
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Kunichika, Sango, and Sakakibara, Yasumasa, to Chiyoda Kako Kensetsu Kabushiki Kaisha. Method of manufacturing methacrylic esters from allene. 3,466,324, Cl. 260-486.

Kuntz, Irving, and Thomas, Robert M., to Esso Research and Engineering Company. Bis[4,4'-diphenylmethyl]bibenzyl-bis (hexachloroantimonate). 3,466,313, Cl. 260-446.

Kuper, Donald G., to Phillips Petroleum Company. Cyano acetals. 3,466,317, Cl. 260-465.6

Kuts, Richard M., and Rehman, John L., to Falls Engineering & Machine Company, The. Indexing apparatus. 3,465,863, Cl. 192-143.

Kuwabara, Susumu, to Beltek Kabushiki Kaisha. Interchangeable four-track and eight-track magnetic recording and reproducing device. 3,465,940, Cl. 226-176.

Kuykendall, Earl G.: *See—*
Vogel, Robert E., Hermanson, Bernard A., and Kuykendall, Earl G. 3,465,536.

Kwik, John H., Jr., to United States of America, Army. Paper folding machine. 3,466,027, Cl. 270-079.

Laboratories U.P.S.A.: *See—*
Hoffmann, Charles, and Faure, Andre, 3,466,373.

Lachowicz, Donald R., Simmons, Todd S., and Kreuz, Kenneth L., to Texaco Inc. Method for producing alkanedioic acid and nitrogen containing intermediates from cycloalkene. 3,466,326, Cl. 260-537.

La Croix, Francis A. Device for carrying and supporting pets in motor vehicles. 3,465,930, Cl. 224-042.42

Ladd Research Industries, Inc.: *See—*
Ladd, William Alexander, 3,465,621.

Ladd, William Alexander, to Ladd Research Industries, Inc. Locking tweezers. 3,465,621, Cl. 081-043.

Lagier, Jean-Claude, to Mefina S.A. Control system for universal motors. 3,466,521, Cl. 318-245.

La Grassa, Antonio: *See—*
Polk, Edgwin R., and La Grassa, Antonio 3,466,214.

Lahav, Miriam: *See—*
Sela, Michael, Arnon, Ruth, and Lahav, Miriam 3,466,368.

Lambert, Arthur, Makinson, George Kenneth, and Hill, Arthur, deceased (by Hill, Dora Margaret Hill, Keith Alan, joint administrators), to Imperial Chemical Industries Limited. Process for the production of 1-cyano-1,3- butadiene by dehydrogenation of a 1-cyanobutene. 3,466,318, Cl. 260-465.9

Lambert Brake Corporation: *See—*
Kramer, Richard M., 3,465,855.

Landeborg, Lars Erik, Henriksson, Sune Torsten, and Muotka, Ragnar Ludvig. Method and a device for purifying the exhaust gases from motor-driven mining trucks. 3,466,093, Cl. 298-001.

Landry, Robert G., and Jenney, Sherman R., to Diamond Machinery Company. Linear advancing mechanism. 3,465,690, Cl. 104-162.

Langbein, Adolf: *See—*
Merz, Herbert, Schroeder, Hans-Detlef, Langbein, Adolf, and Zeile, Karl 3,466,277.

Larson, Welsey S., Panicci, Richard L., Thomson, Richard N., and Osmalov, Jerome S., to Morris, Philip, Incorporated. Manufacture of continuous tubular article. 3,466,213, Cl. 156-245.

La Soudure Electrique Languepin: *See—*
Maillet, Alfred M. A., 3,466,416.

Lass, James L., to General Electric Company. Nuclear fuel element. 3,466,226, Cl. 176-068.

Lattin, Jocelyn C.: *See—*
Clark, Kendall, Herrmann, Theodor, Lattin, Jocelyn C., and Medwid, John 3,465,408.

Launder, James M., to HUPSI Corporation. Drinking valve. 3,466,007, Cl. 251-145.

La Velle, Martin J. Closed combustion cycle for cement kilns. 3,466,351, Cl. 263-053.

Lawrence Brothers, Inc.: *See—*
Foltz, Robert E., 3,465,380.

Lawrence, Owen Napier, to Lucas, Joseph, (Industries) Limited. Devices for translating forces. 3,465,643, Cl. 091-047.

Lawrie, Donald, and Findlay, Campbell, to Singer Company, The. Hinge for sewing machines. 3,465,381, Cl. 016-142.

Leach, Harry S., and Slate, Johnny L., to Monsanto Company. Alcohol purification process. 3,466,340, Cl. 260-643.

Lear Siegler, Inc.: *See—*
Gail, Stewart E., 3,466,478.

Learn, Arthur J.: *See—*
Spriggs, Rueben S., Learn, Arthur J., and Scott-Monck, John A. 3,465,428.

Le Blond, R. K., Machine Tool Company: *See—*
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Lechtenberg, Leo J.: *See—*
Harkness, Joseph R., and Lechtenberg, Leo J. 3,465,740.

Lee, Charles A.: *See—*
Batdorf, Robert L., and Lee, Charles A. 3,466,441.

Leebrick, John R., to M & T Chemicals Inc. Method of controlling bacteria with an organobismuth ethylenic carboxylate and polymer thereof. 3,466,366, Cl. 424-080.

Leenhouts, Albert C.: *See—*
Madsen, Elmer W., and Leenhouts, Albert C. 3,466,515.

Leenhouts, Albert C., to Superior Electric Company, The. Numerically controlled motor system. 3,466,517, Cl. 318-018.

Leidenfrost, Reinhold. Process for the manufacture of gap or labyrinth seals. 3,465,425, Cl. 029-527.7

Leitz, Ernst, G.m.b.H.: *See—*
Frenk, Helmut, 3,466,130.

Lennartz, Walter. Insert sheet for file folders having a paper fastening device thereon. 3,466,133, Cl. 402-004.

Lennox Industries Inc.: *See—*
Cawley, Richard E., 3,465,949.
Ellis, Charles B., 3,465,954.

Leopold, F. B., Company, Inc.: *See—*
Young, Frederick L., Jr., 3,465,889.

Lepeintre, Marcel: *See—*
Mahieu, Claude, Lepeintre, Marcel, and Monjou, Jacques 3,466,238.

Letosky, Donald F., and Platz, Elwood T., to I-T-E Imperial Corporation, mesne. Force dividing linkage for mechanically held electromagnetic contactor. 3,466,577, Cl. 335-167.

Letwin, Bruce K., and Sroka, Kenneth J., to Ford Motor Company. Remote control linkage mechanism for a multiple ratio power transmission system. 3,465,612, Cl. 074-473.

Leuchovius, Kurt Nils Sture: *See—*
Arnelo, Anders Ingvar, and Leuchovius, Kurt Nils Sture 3,466,536.

Leveskis, Newton G. Method of preparing microscope slides using terpolymers of vinyl benzene, methyl methacrylate, and acrylate ester. 3,466,209, Cl. 156-057.

Levinstein, Moses A., and Butts, William R., to General Electric Company. Method for making a hollow metal article. 3,466,166, Cl. 075-000.5

Levy, Donald, Rusz, Tibor, and Szekely, Steven M., to Milab Incorporated. Gas analyzer-controller equipment. 3,465,753, Cl. 128-188.

Levy, Murray N., Shinbaum, Marvin S., and Strance, John S., to Bliss, E. W., Company. On board vehicle fire protection system. 3,465,827, Cl. 169-002.

Levy, Stanley P. Device for the storage of information by electrochemical means. 3,466,617, Cl. 340-173.

Lewin, Morton H., to RCA Corporation. Analog position to binary number translator. 3,466,646, Cl. 340-347.

Lexsuco, Inc.: *See—*
Curtis, Frank W., 3,466,222.

Lilja, Sten A.: *See—*
Keenan, Julian J., Lilja, Sten A., and Kramos, Charles B. 3,465,419.

Lilly, Eli, and Company: *See—*
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Soper, Quentin F., 3,466,329.

Lin, Hung Chang, to Westinghouse Electric Corporation. Insulated gate field effect transistors with means preventing overvoltage feedthrough by auxiliary structure providing bipolar transistor action through substrate. 3,466,511, Cl. 317-235.

Lincoln Laboratories Inc.: *See—*
Hein, Gary L., 3,465,717.

Lindstrom, Kenneth. Brake adjusting mechanism. 3,465,603, Cl. 074-089.14

Linkow, Leonard I. Ring-type implant for artificial teeth. 3,465,441, Cl. 032-010.

Linz, Robert M., and Bednarczuk, Frederick P., to General Electric Company. Tuning indicator. 3,465,708, Cl. 116-124.1

Liquid Controls Corporation: *See—*
Blomgren, Oscar C., 3,465,683.

Litton Systems, Inc.: *See—*
Fonda-Bonardi, Giusto, 3,466,061.

Livingston, George Turner: *See—*
Dunn, Alexander, Livingston, George Turner, and Corr, Albert J. 3,466,429.

Livingston, Richard J. Safety device for automatic washers and the like. 3,466,006, Cl. 251-129.

LKB-Produkter AB: *See—*
Brandt, Gunnar Walter, 3,465,957.

Lockwood, Leona, and Tolk, Harriet. Brassiere. 3,465,754, Cl. 128-425.

Lodige, Alois. Supporting roller arrangement for a rack, particularly a large-capacity rack. 3,465,864, Cl. 193-035.

Lodige, Fritz: *See—*
Lodige, Wilhelm, Lodige, Fritz, and Lucke, Josef 3,466,015.

Lodige, Wilhelm, Lodige, Fritz, and Lucke, Josef. Process of and apparatus for wetting bulk materials. 3,466,015, Cl. 259-009.

Loebner, Egon E., Diesel, Thomas J., and Bube, Richard H., to Hewlett-Packard Company. Photoconductor material and apparatus. 3,466,509, Cl. 317-234.

Logic Systems, Inc.: *See—*
Sterns, Robert B., and McGuire, Richard, 3,466,535.

Lohman, Karl L. Underground utility cable or conduit terminal. 3,466,379, Cl. 174-038.

Lombardo, Leo R., to Cleveland Technical Center, Inc. Electrical meter system employing electrolytic coulometers as measuring instruments. 3,466,543, Cl. 324-140.

Long, Norwood G.: *See—*
Fraser, John M., and Long, Norwood G. 3,466,398.

Lopata, Ira L. Method and apparatus for filling soft-baked goods. 3,465,693, Cl. 107-001.

Lord, Philip A.: *See—*
Adams, Lester R., and Lord, Philip A. 3,466,432.

Loriston-Clarke, Anthony Grahame: *See—*
Page, Reginald Bannerman, and Loriston-Clarke, Anthony Grahame 3,465,844.

Loux, Harvey M., to Du Pont de Nemours, E. I., and Company. 3-Amino-5,5-dihalo-6-alkyl-6-alkoxy hydrouracils. 3,466,280, Cl. 260-247.2

Loux, Harvey M., to Du Pont de Nemours, E. I., and Company. 3-Heterocyclicamimo uracils. 3,466,285, Cl. 260-256.4

Lowery, Charles A., Jr., and Videka, Mark J., to Zenith Radio Corporation. Electron-discharge devices. 3,465,401, Cl. 029-025.16

Lucas, Joseph, (Industries) Limited: *See—*
Cheary, Walter Graham, 3,465,404.
Davies, Anthony Roger, and O'Donoghue, John Peter, 3,466,103.
Lawrence, Owen Napier, 3,465,643.
Mowbray, Dorian Farrar, 3,465,770.
Rayner, Christopher Stephen, and Thomas, David, 3,465,476.
Sharples, Richard Colin, 3,466,413.

Lucci, Joseph A. Table ball game. 3,466,042, Cl. 273-085.

Luciw, Wolodymyr, to Sperry Rand Corporation. Magnetic memory with an off-set bit line to reduce capacitance coupling. 3,466,623, Cl. 340-174.

Lucke, Josef: *See—*
Lodige, Wilhelm, Lodige, Fritz, and Lucke, Josef 3,466,015.

Ludwig, Lawrence P., to United States of America, National Aeronautics and Space Administration. Foil seal. 3,466,052, Cl. 277-025.

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Luksas, Anthony J.: *See—*
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Bundus, Robert H., and Luksas, Anthony J. 3,466,176.
Bundus, Robert H., and Luksas, Anthony J. 3,466,177.

Lundin, Robert S., and Bosman, Edward T., to General Time Corporation. Electronic switching for counters. 3,466,457, Cl. 307-088.

Lusk, Elmer C., to Edward Lead Company, mesne. Differentially vented carrying cask for radioactive materials. 3,466,444, Cl. 250-108.

Lutz, Kenneth V. Bulldozer corner bit. 3,465,833, Cl. 172-719.

Lyall, Charles E., to Culligan, Inc. Compact water softener and brine storage tank. 3,465,880, Cl. 210-136.

Lyman, Hugh M. Drive means for partitions and the like. 3,465,805, Cl. 160-023.

Lynch Corporation: *See—*
Cady, Mark J., and Eidnes, Dag J., 3,465,580.

Lynch, William J., and Kunc, Frank C., to North American Rockwell Corporation. Filter cleaning and coating apparatus. 3,465,715, Cl. 118-070.

Lyon, Cameron K., and Applewhite, Thomas H., to United States of America, Agriculture. Adducts of hexahalocyclopentadienes and ricinoleates and production of polyurethane plastics therefrom. 3,466,253, Cl. 260-002.5

Lyons, Charles E., McDaniel, Donald M., and Wade, Jack R., Jr., to United States of America, Army. Missile plastic container. 3,465,871, Cl. 206-003.

M & T Chemicals Inc.: *See—*
Leebrick, John R., 3,466,366.

MacArthur, Donald M., to Bell Telephone Laboratories, Incorporated. Manufacture of nickel electrodes for alkaline cells. 3,466,231, Cl. 204-056.

MacDermid Incorporated: *See—*
Slominski, Leo J., 3,466,208.

MacDonald, John Kenneth: *See—*
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MacGregor-Comarain, Incorporated: *See—*
Beas, Urban J., 3,465,807.

Maclay, Holmes B. Stock feed loader for feeding bunks. 3,465,725, Cl. 119-052.

MacLean, Robert Sisterson, Mc Clintock, Andrew Lindsay Muir, and Sharp, Royds, to National Research Development Corporation. Digital measuring systems. 3,465,570, Cl. 073-037.5

Maclevy, Monty: *See—*
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Mac Phee, John, to Hittman Associates, Inc., mesne. Pulsing nuclear reactor. 3,466,225, Cl. 176-062.

Madsen, Elmer W., and Leenhouts, Albert C., to Superior Electric Company, The. Digitally programmed servo control system. 3,466,515, Cl. 318-018.

Mahieu, Claude, Lepeintre, Marcel, and Monjou, Jacques, to Commissariat a l'Energie Atomique. Electrolytic reference cell. 3,466,238, Cl. 204-195.

Mahncke, William H., to Kliklok Corporation. Method and device for bonding the sealing flap of a hinge-cover folding box. 3,465,490, Cl. 053-038.

Mahnken, George R. Envelope attaching apparatus and method. 3,465,411, Cl. 029-407.

Maillet, Alfred M. A., to La Soudure Electrique Languepin. Spark erosion machining process. 3,466,416, Cl. 219-069.

Maincon, Maurice: *See—*
Conseiller, Yvon, and Maincon, Maurice 3,465,501.

Makinson, George Kenneth: *See—*
Lambert, Arthur, Makinson, George Kenneth, and Hill, Arthur 3,466,318.

Mala, Alain, to Regie Nationale des Usines Renault Billancourt. Power assisted steering systems of automotive vehicles. 3,465,645, Cl. 091-051.

Maldacker, Antal A. Multi-headed mallets. 3,465,635, Cl. 084-422.

Malloch, Alexander Stirling: *See—*
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Mallory, P. R., & Co., Inc.: *See—*
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Booe, James M., and Hood, Joseph T., 3,465,402.
Booe, James M., 3,466,508.
Putterbaugh, James B., and Wiser, Joseph E., 3,466,464.

Maloney, Thomas C., to Burroughs Corporation. Electronic indicator tube having primary characters and auxiliary characters. 3,466,486, Cl. 313-109.5

Malvin, Mark A. Ultrasonic wave generator. 3,466,017, Cl. 259-114.

Mammel, Walter K., to Western Electric Company, Incorporated. Pressurized fluid pickup device. 3,466,079, Cl. 294-064.

Man, Marinela: *See—*
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Mansfield Sanitary, Inc.: *See—*
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Manufacture de Produits Pharmaceutiques a Christiaens Societe Anonyme: *See—*
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Marconi Company Limited, The: *See—*
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Marino, Francis C.: *See—*
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Markey, Joseph Thomas, to Gillette Company, The. Apparatus for detection of transverse curvature. 3,465,571, Cl. 073-037.7
Marsh, Richard C. Cutting accessory for a power tool. 3,465,438, Cl. 030-359.
Marsland, Jack Ronald, and Malloch, Alexander Stirling, to Worthington-Simpson Limited. Liquid pumping systems. 3,465,779, Cl. 137-118.
Martin Brothers Electric Company, The: *See*—
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Martin, Daryl T., to Hoerner-Waldorf Corporation. Glass packing pad. 3,465,877, Cl. 206-065.
Martin, Ernest Norman, to Imperial Chemical Industries Limited. Gain-adaptive control system. 3,465,768, Cl. 137-014.
Martin, Frank Samuel, to Gillette Company, The. Strip handling system. 3,465,935, Cl. 225-103.
Martin, George H., to Martin Brothers Electric Company, The. Foot-operated switch. 3,466,411, Cl. 200-086.5
Martin, Helmut, to Kabel-und Metallwerke Gutenhoffnungshutte Aktiengesellschaft. Waterproof cable joint. 3,466,384, Cl. 174-092.
Martin-Marietta Corporation: *See*—
Conklin, Clement L., Jr., and Holland, Thomas M., Jr., 3,465,648.
Dieters, William I., and Paddock, Bernard H., 3,465,812.
Freeman, Peter A., 3,466,002.
Martin, William C.: *See*—
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Marx Arthur Friedich, and Van der Waard, Willem Frederik, to Koninklijke Nederlandsche Gist-en Spiritus-fabriek N.V. Conessine derivatives. 3,466,279, Cl. 260-239.5
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Massey-Ferguson Services N.V.: *See*—
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Matisa Materiel Industriel S.A.: *See*—
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Matsui, Kazuo: *See*—
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Matsushita Electric Industrial Co., Ltd.: *See*—
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Matulich, Dan S., and Skinner, Harold S., to Garrett Corporation, The. Electro-pneumatically controlled air conditioning system. 3,465,962, Cl. 236-012.
Matunaga, Yasuhiko. Automatically operating laying nest box for poultry. 3,465,723, Cl. 119-048.
Matzl, Manfred, to Maschinenfabrik Reinhausen Gebruder Scheubeck K.G. Logic-unit-controlled thyristor tap-changing transfer switch having trigger impulse amplifier. 3,466,530, Cl. 323-043.5
Maute, Hans-Jurgen, to Telefunken Patentverwertungsgesellschaft m.b.H. Integrated Graetz rectifier circuit. 3,466,510, Cl. 317-234.
Mauz, Otto, to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning. Polyolefins stabilized by thioesters of antimonious acid. 3,466,261, Cl. 260-045.75
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Mayfield, Orley J., to Kewanee Oil Company, mesne. Method of treating animals infected with large roundworms using cobalt arsenic compounds. 3,466,363, Cl. 424-295.
Mayne, David W., and Spears, Loy Leonard, to Ampex Corporation. Sense amplifier including a differential amplifier with input coupled to drive-sense windings. 3,466,630, Cl. 340-174.
McAlvay, John C., and Hubbard, Glenn R., to Webster Electric Company, Inc. Hydraulic flow controlling apparatus. 3,465,519, Cl. 060-052.
McBride, Lyle E., Jr., to Texas Instruments, Incorporated. Temperature control apparatus. 3,465,961, Cl. 236-009.
McCammon, Robert F., and Parker, Darrell D., to Honeywell Inc. Stabilizing apparatus for a thin flexible member. 3,465,938, Cl. 226-088.
McCarthy, Thomas F.: *See*—
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Mc Graw, Leslie D.: *See*—
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McGuire, Richard: *See*—
Sterns, Robert B., and McGuire, Richard 3,466,535.
McHugh, James H. Integral pneumatic tire and wheel construction and method of making the same. 3,466,211, Cl. 156-123.
McIlvenny, James, 1/3 to Gruber, Robert, and Simmons, Bruce. Axial tumbler cylinder lock with pick guard. 3,465,556, Cl. 070-423.
McIntosh, Euell K., and Howse, Paul T., Jr., to Monsanto Company. Method of manufacturing a melt-spinning spinneret. 3,465,618, Cl. 076-107.
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McLauchlan, Thomas A., and Arnold, Eugene W., to Weyerhaeuser Company. Band mill. 3,465,794, Cl. 143-017.
McMaster, Robert C., Mitchell, Jay P., and Rhoten, Merle L., to Ohio State University Research Foundation, The. X-ray television inspection system with selenium camera tube target. 3,466,388, Cl. 178-006.
McPherson, Edwin M., to Schoeneman, J., Incorporated. Apparatus for fabric cutting. 3,465,671, Cl. 101-114.
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McRoskey, John W.: *See*—
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McRoskey, Leonard H., and McRoskey, John W., to Republic Tool & Manufacturing Corporation. Combined passing race track and self-propelled vehicles. 3,466,043, Cl. 273-086.
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Medwid, John: *See*—
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Meeker, David A., Grunewald, Ernst, and Vallor, Ben J., to Hobart Manufacturing Company, The. Apparatus for washing glasses, dishes and the like. 3,465,761, Cl. 134-058.
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Pierce, William B., to United States of America, Atomic Energy Commission. Diode sensors for liquid level detection. 3,465,587, Cl. 073-295.

Pieren, Heinz, and Toptani, Ilias, to Topia SA. Anti-lock device for the braked wheels of motor vehicles. 3,466,098, Cl. 303-021.

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Pierson, William D., Jr., deceased (by Pierson, Rilla May Curtis, administratrix), to General Electric Company. Concealed trim clamp for electrical panelboards and telephone cabinets. 3,465,914, Cl. 220-024.3

Pilarczyk, Karol, to DeLaval Turbine, Inc. Collection and imput apparatus for a bath undergoing gravitational classification. 3,465,886, Cl. 210-520.

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Pintarelli, Ralph. Self-adjusting ear clip. 3,465,542, Cl. 063-014.

Piske, Wilfried, to Wild Heerbrugg AG. Pivotal support or mounting. 3,465,997, Cl. 248-350.

Pitts, Robert Donald, and Zrudsky, Donald R., to Collins Radio Company. Four point probe for microminiaturized circuitry having individual biasing means for each point. 3,466,539, Cl. 324-062.

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Polese, James P., to Varian Associates. Method of making cylindrical mesh electrode for electron tubes. 3,465,400, Cl. 029-025.14

Polk, Edgwin R., and La Grassa, Antonio, to Keene Packaging Associates. Method and apparatus for treating and covering an insert with thermoplastic material. 3,466,214, Cl. 156-213.

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Pori, Hugo A. Swivel swing. 3,466,033, Cl. 272-085.

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Pottgens, Anton. Switching actuator for a concrete vibrating tool. 3,466,014, Cl. 259-001.

Power Replacements, Inc.: *See—*
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Powers, Milton A. Dental cleaning and gum massaging device. 3,465,751, Cl. 128-066.

Powers Regulator Company: *See—*
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PPG Industries, Inc.: *See—*
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Prahl, Helmut F., and Hart, Frederick M., to Department of Agriculture and Inspection of the State of Nebraska. Polyurethane resins derived from polyoxyalkylated arylated carbohydrates and method of making the same. 3,466,252, Cl. 260-002.5

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Presses et Materiels Hydrauliques Morane-Somua: *See—*
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Price, Herbert, and Kesten, Seymour, to Associated Electrical Industries Limited. Adjustable picture frame. 3,465,461, Cl. 040-155.

Priede, Teodore, and Wilkins, Jan, to C.A.V. Limited. Liquid fuel injection nozzles. 3,465,969, Cl. 239-533.

Priestley, Ronald. Gas-liquid contact packing sheets. 3,466,019, Cl. 261-112.

Prins, Gerard C., to Bell Telephone Laboratories, Incorporated. Automatic data reporting system with remote power deriving means. 3,466,395, Cl. 179-002.

Procter & Gamble Company, The: *See—*
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Production Machines, Inc.: *See—*
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Pruiksma, Arthur B.: *See—*
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Pulskamp, Gerald S., and Harshbarger, William E., to Crown Controls Corporation. Reversible electric motor speed control. 3,465,841, Cl. 180-065.

Putman, Richard E. J., to Westinghouse Electric Corporation. Fluid transfer control apparatus. 3,466,641, Cl. 340-222.

Putterbaugh, James B., and Wiser, Joseph E., to Mallory, P. R., & Co., Inc. Electromechanical means using a semiconductor. 3,466,464, Cl. 307-246.

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Rasmussen, Villium Benedikt Kann. Windows. 3,465,478, Cl. 049-169.

Rau, Mathias. Apparatus for assembling a sleeve bearing. 3,465,407, Cl. 029-200.

Rayner, Christopher Stephen, and Thomas, David, to Lucas, Joseph, (Industries) Limited. Safety arrangements for power operated windows in road vehicles. 3,465,476, Cl. 049-028.

RCA Corporation: *See—*
Chang, Kern K. N., 3,466,575.
Donovan, David A., 3,465,577.
Everhard, Fredric U., 3,465,790.
Lewin, Morton H., 3,466,646.
Miller, James C., and Wine, Charles M., 3,466,625.
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Rutishauser, Ernst, 3,466,574.

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Reagan, Cleo A., to Indiana Brass Co., Inc., The. Lavatory drain. 3,465,372, Cl. 004-204.

Rechou, Jacques C., and Slonneger, John L., to General Electric Company. Snap acting switch assembly. 3,466,587, Cl. 337-347.

Rector, Walter. Trocar button. 3,465,398, Cl. 027-021.

Reece, Orvil Y., to United States of America, National Aeronautics and Space Administration. Low temperature flexure fatigue cryostat. 3,465,569, Cl. 073-015.4

Reed, Gaylard O. Structural brace. 3,466,071, Cl. 287-020.92

Reeder, George E., Jr., to Beloit Eastern Corporation. Self sharpening slitter. 3,465,631, Cl. 083-500.

Reenberg, Knud Roeland. Cardboard box. 3,465,945, Cl. 229-034.

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Reimer, William A., to Automatic Electric Laboratories, Inc. Reusable data planes for mechanically alterable memory systems. 3,466,629, Cl. 340-174.

Reinecke, Erich, to Westinghouse Bremsen- und Apparatebau G.m.b.H. Free wheel clutch. 3,465,858, Cl. 192-045.1

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Reiss, Max, to Eastman Kodak Company. Four component objective lens. 3,466,116, Cl. 350-220.

Renfro, John C. Dam construction. 3,465,530, Cl. 061-030.

Renoux, Robert, to CSF-Compagnie Generale de Telegraphie Sans Fil. Miniature record-players. 3,466,051, Cl. 274-015.

Republic Tool & Manufacturing Corporation: *See—*
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Reuter, Gottfried, and Plymale, Julian K., to Bucyrus-Erie Company. Telescoping boom for hydraulic crane. 3,465,899, Cl. 212-055.

Rex Chainbelt Inc.: *See—*
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Reynolds, Reginald John William: *See—*
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Reynolds, Wilbur F., Ruda, Joseph C., and Marzani, Bruno W., Jr., to Capitol Records, Inc. Film punch. 3,465,633, Cl. 083-693.

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Rhodes, Alex, and Edwards, John E., to Ford Motor Company. Remote transmission control and parking brake apparatus for automotive vehicles. 3,465,559, Cl. 070-248.

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Rhoten, Merle L., to Ohio State University, The Board of Trustees of the. High voltage sonic pulse generator. 3,466,473, Cl. 310-008.7

Rhys, David Wade, to International Nickel Company, Inc., The. Compound precious metal article having layer containing iridium or ruthenium. 3,466,158, Cl. 029-199.

Rhys, David Wade, Gainsbury, Peter Edward, and Savage, Ronald, to International Nickel Company, Inc., The. Production of refractory platinum-group metal spheroidal articles. 3,466,165, Cl. 075-000.5

Ricciardi, Giuseppe, and Sandrone, Bruno, to Ing. C. Olivetti & C., S.p.A. Receiving signal distributor for a high speed teleprinter of the start-stop type. 3,466,393, Cl. 178-089.

Rice, Philip J., to Stanford Research Institute. Light addressed matrix printer. 3,466,657, Cl. 346-074.

Richards, Edward Gordon: *See—*
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Richards, Powell, and Baranosky, James, to United States of America, Atomic Energy Commission. Technetium-99m labeled chelates. 3,466,361, Cl. 424-001.

Richie, Carlton A., to Owens-Illinois, Inc. Container closure having integral strip opening means. 3,465,910, Cl. 220-054.

Richter, Albert P., Jr., and Bruner, James D., to Texaco Inc. Borehole logging system. 3,465,582, Cl. 073-152.

Richter, Albert P., Jr., and Bruner, James D., to Texaco Inc. Logging while drilling system. 3,466,597, Cl. 340-018.

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Ricker, Dennis J.: *See—*
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Riepe, Helmuth, to Rapidograph, Inc., mesne. Writing head for a tube writing pen. 3,466,132, Cl. 401-259.

Rigrod, William W., to Bell Telephone Laboratories, Incorporated. Laser mode selection. 3,466,565, Cl. 331-094.5

Ring, Douglas H., to Bell Telephone Laboratories, Incorporated. Optical beam redirector. 3,466,111, Cl. 350-054.

Ringsdorff-Werke GmbH: *See—*
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Riordan, Hugh E., Weisbord, Leon, and Paros, Jerome M., to General Precision, Inc. Vibrating-column accelerometer. 3,465,597, Cl. 073-517.

Riordan, Hugh F., De Cotiis, Constant John, and Straut, Harold J., to Singer-General Precision, Inc. Gyro with pneumatic pulse duration modulation pick-off. 3,465,600, Cl. 074-005.6

Risky, Frank A., to Automatic Electric Laboratories, Inc. Apparatus for monitoring a predetermined range of current. 3,466,402, Cl. 179-018.

Ritchie, Alexander Crawford, Cheesman, Dennis George, Garside, Peter, and Waring, Juliet Mary, to Allen and Hamburys Limited. 1-Amino-2,3-or 4-phenyl pyridinium salts and derivatives. 3,466,295, Cl. 260-296.

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Robertson, George H., to Bell Telephone Laboratories, Incorporated. Analysis of time-segmented waves. 3,466,540, Cl. 324-077.

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Robinson, Alfred G., III: *See—*
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Robinson, Herman E., to Boas Box Company. Box construction. 3,465,944, Cl. 229-005.5

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Stamm, Alex F., 3,465,545.

Rodia, Frank J., and Connelly, William J. Golf club having adjustable weights. 3,466,047, Cl. 273-171.

Roeder, John, Jr., to Whirlpool Corporation. Absorption refrigeration. 3,465,541, Cl. 062-476.

Roesler, Hans, and Eisermann, Bernhard R. R., to Quarzlampengesellschaft m.b.H. Radiation apparatus with an adjustable emission of ultraviolet radiations. 3,466,443, Cl. 250-086.

Rogallo, Vernon L. Ballistocardiograph. 3,465,747, Cl. 128-002.05

Rogers, Gerald H. Control mechanism for water softening systems. 3,465,881, Cl. 210-143.

Rogoff, Leonard S. Advertising displays. 3,465,459, Cl. 040-028.1

Rohmer, Richard H. System for the underground storage of liquids. 3,465,527, Cl. 061-000.5

Rohweder, Gerald D.: *See—*
Callegari, William A., Matthews, Ralph W., Ohaver, David S., Pearce, Shairyl I., and Rohweder, Gerald D. 3,465,851.

Rolin, Etienne D. Structural unit for beam structures and flotation hulls and method of manufacture. 3,465,486, Cl. 052-222.

Rollamatic Roofs, Incorporated: *See—*
Miller, David S., 3,465,483.

Rolls-Royce Limited: *See—*
Cowley, Sidney Ian, Wilde, Goeffrey Light, and Honey, Alfred John, 3,465,525.
Emerick, George, 3,465,526.

Roman, Robert J.: *See—*
Edwards, Evan A., Ulmschneider, Lawrence A., and Roman, Robert J. 3,465,980.

Romanick, John F., and Pruiksma, Arthur B., to PPG Industries, Inc. Sprayable rubber adhesives. 3,466,256, Cl. 260-027.

Romie, Fred E.: *See—*
Bromberg, Robert, and Romie, Fred E. 3,465,813.

Rosaen, Borje O.: *See—*
Rosaen, Nils O., Rosaen, Borje O., and Rosaen, Oscar E. 3,465,413.

Rosaen, Nils O., Rosaen, Borje O., and Rosaen, Oscar E., to Universal Filters, Inc., mesne. Method of manufacturing pleated filters. 3,465,413, Cl. 029-428.

Rosaen, Oscar E.: *See—*
Rosaen, Nils O., Rosaen, Borje O., and Rosaen, Oscar E. 3,465,413.

Rose, Robert K., to General Electric Company. Temperature-insensitive fluid control circuits and flueric devices. 3,465,775, Cl. 137-081.5

Rosemount Engineering Company Limited: *See—*
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Rosenberg, Arthur: *See—*
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Aylikci, Veli, and Rosener, Harvey J. 3,466,518.

Rosenwald, Robert H., to Universal Oil Products Company. Antiozonant mixture containing a phenylenediamine and a N-alkyl-aminophenol or a N-alkyl-alkoxyaniline. 3,466,248, Cl. 252-403.

Ross, Ian M.: *See—*
Clark, James E., and Ross, Ian M. 3,465,943.

Rotax Limited: *See—*
Tolworthy, Robert Theodore, 3,466,456.

Rothmayr, Willy, to Afico S.A. Cryodesiccation apparatus. 3,465,452, Cl. 034-092.

Rottmann, Hans R.: *See—*
Klawitter, Roland E., Murley, Ellsworth M., Jr., Rottmann, Hans R., and Sebring, Lowell W. 3,466,452.

Roudebush, Melvin T., to National Cash Register Company, The. Positioning apparatus. 3,465,655, Cl. 095-004.5

Rout, Eric Raymond, to Marconi Company Limited, The, and Standard Telephones & Cables Limited. Sound demodulator for television receiver. 3,466,387, Cl. 178-005.8

Routsis, Kostas: *See—*
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Rowell, John M., to Bell Telephone Laboratories, Incorporated. Superconducting device utilizing an alloy material. 3,466,470, Cl. 307-306.

Roy, Joseph Yvon, and MacDonald, John Kenneth, to Conrac Corporation. Method and apparatus for regenerated vestigial side-band reception. 3,466,548, Cl. 325-331.

Rubbermaid Incorporated: *See—*
Taylor, William D., 3,465,892.

Ruben, Paul L., to Eastman Kodak Company. Four element triplet photographic objective. 3,466,114, Cl. 350-206.

Ruben, Paul L., to Eastman Kodak Company. Four component wide aperture lens. 3,466,115, Cl. 350-220.

Ruben, Paul L., to Eastman Kodak Company. Four element triplet projection lens. 3,466,118, Cl. 350-227.

Ruby, Joe H., to Bell Telephone Laboratories, Incorporated. Bandpass voltage amplifier. 3,466,559, Cl. 330-028.

Ruda, Joseph C.: *See—*
Reynolds, Wilbur F., Ruda, Joseph C., and Marzani, Bruno W., Jr. 3,465,633.

Rudduck, Roger C., and Wang, Johnson J. H., to Ohio State University Research Foundation, The. Metallic-post reflecting walls. 3,466,653, Cl. 343-018.

Rudin, Harry R., Jr.: *See—*
Becker, Floyd K., and Rudin, Harry R., Jr. 3,466,538.

Ruegg, Rudolf, and Schwieter, Ulrich, to Hoffmann-La Roche, Inc. Process for making the triaryl phosphonium salt of vitamin A alcohol. 3,466,335, Cl. 260-606.5

Ruehl, Donald E., to Holophane Company, Inc. Refractor. 3,466,437, Cl. 240-106.

Ruf, Walter: *See—*
Titchenal, Oliver R., Jark, Fred, Coombes, William S., and Ruf, Walter 3,465,876.

Ruhm, Hans-Georg: *See—*
Schiffer, Gunther, and Ruhm, Hans-Georg 3,465,551.

Rum, Thomas J., to Gillette Company, The. Apparatus for processing of strip metal in a continuous manner to remove undesired curvature. 3,466,022, Cl. 266-003.

Rupert, Samuel J., to Hoover Ball and Bearing Company. Method of automatically trim finishing blow molded plastic articles. 3,465,931, Cl. 225-001.

Russell Tool Co.: *See—*
Huckaby, Harold, 3,465,623.

Russenberger, Victor. One-piece luminous warning device. 3,466,648, Cl. 340-381.

Rust, Gustav: *See—*
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Rusz, Tibor: *See—*
Levy, Donald, Rusz, Tibor, and Szekely, Steven M. 3,465,753.

Rutishauser, Ernst, to RCA Corporation. Delay lines. 3,466,574, Cl. 333-029.

Ryder, Francis E., to Illinois Tool Works, Inc. Freezer lock assembly. 3,465,557, Cl. 070-139.

Ryder, Geoffrey Lionel: *See—*
Saunders, John Frank, and Ryder, Geoffrey Lionel 3,465,837.

Rypkema, Jouke N.: *See—*
Dias, Fleming, Eilers, Carl G., and Rypkema, Jouke N. 3,466,386.

Saab Aktiebolag: *See—*
Ohlund, John Alex Ingvar, 3,466,609.

Sabala, Ronald A.: *See—*
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Sacher, Karl: *See—*
Hecht, Georg, and Sacher, Karl 3,466,455.

Saeki, Fumio, to Taisei Kako Kabushiki Kaisha. Method for the production of plastic tubes. 3,465,917, Cl. 222-107.

Saila, Tauno, to Sundstrand Corporation. Hydraulic pump or motor unit. 3,465,680, Cl. 103-038.

Sakakibara, Yasumasa: *See—*
Kunichika, Sango, and Sakakibara, Yasumasa 3,466,324.

Sakamoto, Yoshichika. Slide-holding frame and a file plate for filing such frames. 3,466,126, Cl. 353-108.

Salmon, Leonard O.: *See—*
Smith, George H., and Salmon, Leonard O. 3,465,376.

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Salzgitter Stahlbau G.m.b.H.: *See—*
Schumann, Eduard, and Horn, Heinz, 3,465,897.

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Sams, Robert H., and McCready, Newton W., to Philadelphia Quartz Company. Expanded silicate insulation. 3,466,221, Cl. 161-133.

Sandoz A.G.: *See—*
Jucker, Ernst, Ebnother, Anton, and Bastian, Jean-Michael, 3,466,290.

Jucker, Ernst, Ebnother, Anton, and Bastian, Jean-Michael, 3,466,291.

Sandoz Ltd.: *See—*
Benz, Jakob, and Schweizer, August, 3,466,286.
Hochreuter, Richard, and Keller, Robert Christian, 3,466,278.
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Jucker, Ernst, Ebnother, Anton, and Bastian, Jean-Michael, 3,466,291.

Sandrone, Bruno: *See—*
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Sandy, Julius W., to Microtherm Limited. Packaging machine. 3,465,493, Cl. 053-124.

Santa Barbara Research Center: *See—*
De Vaux, Lloyd H., 3,466,448.

Saprykin, Jury Ivanovich: *See—*
Belfor, Mikhail Gershovich, and Saprykin, Jury Ivanovich 3,466,421.

Sargent, Raymond E. Game device. 3,466,034, Cl. 273-001.

Sargisson, Donald Farley: *See—*
Freid, Wilbert Bernard, Duffy, Robert Joseph, and Sargisson, Donald Farley 3,465,950.

Sarvis, John William. Link for disintegrating ammunition belt. 3,465,640, Cl. 089-035.

Sato, Akihiko, to Nippon Kogaku K.K. Cartridge control means associated with a hinge-type camera lid. 3,465,659, Cl. 095-031.

Sato, Kenji: *See—*
Sowa, Tuneo, Sato, Kenji, Ouchi, Shunji, Ohsawa, Takeyoshi, and Senoo, Saburo 3,466,273.

Sato, Mikio: *See—*
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Satzinger, Gerhard, to Warner-Lambert Pharmaceutical Company. Treatment of epileptic seizures with 2-amino-4'- (diethylamino)-2'-methyl benzanilide. 3,466,375, Cl. 424-324.

Saucercraft, Inc.: *See—*
Bowshier, Ernest E., 3,465,989.

Saufferer, Warren B., to Farmhand, Inc. Portable feed mills and the like. 3,466,100, Cl. 241-163.

Saunders, Frank L.: *See—*
Vincent, Gerald G., and Saunders, Frank L. 3,466,207.

Saunders, John Frank, and Ryder, Geoffrey Lionel, to Bristol Siddeley Engines Limited. Fluid pressure operated apparatus. 3,465,837, Cl. 175-026.

Sauterel, Gerard, to Matisa Materiel Industriel S.A. Railway track ballast tamping machine. 3,465,688, Cl. 104-012.

Savage, Ronald: *See—*
Rhys, David Wade, Gainsbury, Peter Edward, and Savage, Ronald 3,466,165.

Schaffer, Robert R.: *See—*
Jackowski, Charles S., Jensen, Donald F., Muller, Hans R., Noll, Melvin R., and Schaffer, Robert R. 3,466,610.

Schawalder, Albert, to Maclevy, Monty. Body exerciser apparatus for the home. 3,465,750, Cl. 128-057.

Scheller, Hans: *See—*
Dietze, Manfred, Kraft, Wolfgang, Scheller, Hans, and Ullrich, Hansjurgen 3,466,150.

Scherer, R. P., Corporation: *See—*
Moreland, Stephen T., and Kazmierczak, Walter S., 3,465,749.

Schering AG: *See—*
Wiechert, Rudolf, and Neumann, Friedmund, 3,466,371.

Schering Corporation: *See—*
Sherlock, Margaret H., 3,466,284.

Scheuring, George R.: *See—*
Zorn, Peter A., and Scheuring, George R. 3,465,913.

Schiffer, Gunther, and Ruhm, Hans-Georg, to Kleinewefers, Joh., Sons. Device for continuous bleaching. 3,465,551, Cl. 068-022.

Schipper, Alwin. Means providing a sliding surface. 3,465,653, Cl. 094-007.

Schippers, Heinz, and Ostertag, Karl, to Glanzstoff AG. Method and apparatus for spinning organic high polymers. 3,466,357, Cl. 214-176.

Schjeldahl, G. T., Company: *See—*
Blais, Maurice E., 3,465,634.

Schlaeppi, Hans P., to International Business Machines Corporation. Instruction buffering system. 3,466,613, Cl. 340-172.5

Schlegel, Wolfgang: *See—*
Klaui, Heinrich, Rehm, Walter, and Schlegel, Wolfgang 3,466,362.

Schlesinger, Walter, to White Laboratories, Inc. Antiviral compositions and method of use. 3,466,365, Cl. 424-078.

Schlies, Adolph P., to United States of America, Atomic Energy Commission. Container for radioactive fuel elements. 3,466,445, Cl. 250-108.

Schloemann Aktiengesellschaft: *See—*
Groos, Horst Hans, 3,465,565.

Schlumberger Technology Corporation: *See—*
Berryman, William O., 3,465,821.
Bowers, William E., and Whitfill, William A., 3,465,447.
Doll, Henri Georges, and Dumanoir, Jean L., 3,466,533.
Fields, Roger Q., 3,465,836.
Kisling, James W., III, 3,465,820.
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Schmeckenbecher, Arnold F., to International Business Machines Corporation. Disc bulk memory. 3,466,620, Cl. 340-174.

Schmid & Wezel: *See—*
Wezel, Hans, and Schuhmann, Kurt, 3,465,601.

Schmidt, Edwin H., to Honeywell Inc. Counting circuit utilizing a quantized magnetic core. 3,466,619, Cl. 340-174.

Schmidt, Gustave Francis, Jr. Self-closing safety pin. 3,465,392, Cl. 024-158.

Schmidt, Thomas: *See—*
Hummelshoj, Gustav E., 3,465,396.

Schnell, Joseph P. Life guard chest waders. 3,465,375, Cl. 009-343.

Schoeneman, J., Incorporated: *See—*
McPherson, Edwin M., 3,465,671.

Schoenwitz, Frank H. W., to Honeywell Inc. Alarm printer. 3,466,605, Cl. 340-151.

Scholz, Raymond J.: *See—*
Southern, William C., Wagner, Herbert M., and Scholz, Raymond J. 3,466,000.

Schootstra, Rients: *See—*
Duymelinck, Jacobus Henricus, and Schootstra, Rients 3,465,780.

Schottanes, Martin. Multiple vacuum bottle container. 3,465,905, Cl. 215-006.

Schou, Carl E., to Rockwell-Standard Company, mesne. Vehicle drive. 3,465,616, Cl. 074-870.

Schrewelius, Nils Gustav, to Aktiebolaget Kanthal. Tail-pipe nozzle for rocket motors. 3,465,965, Cl. 239-265.15

Schroeder, Hans-Detlef: *See—*
Merz, Herbert, Schroeder, Hans-Detlef, Langbein, Adolf, and Zeile, Karl 3,466,277.

Schroeder, Manfred R.: *See—*
Flanagan, James L., Golden, Roger M., and Schroeder, Manfred R. 3,466,547.

Schuhmann, Kurt: *See—*
Wezel, Hans, and Schuhmann, Kurt 3,465,601.

Schultz, Harold B., to Bendix Corporation, The. Fluid pressure control valve. 3,466,099, Cl. 303-052.

Schulz, Johann G. D.: *See—*
McCracken, John H., Schulz, Johann G. D., and Whitaker, Arthur C. 3,466,301.

Schumann, Eduard, and Horn, Heinz, to Salzgitter Stahlbau G.m.b.H. Storage arrangement. 3,465,897, Cl. 211-151.

Schuplin, Jerome T., to Tinnerman Products, Inc. Fastening device. 3,465,992, Cl. 248-071.

Schuster, Wilhelm: *See—*
Nowak, Rudolf, and Schuster, Wilhelm 3,466,169.

Schwankl, Clarence H. Saw aiming device. 3,465,796, Cl. 143-032.

Schwartz, Herbert S., to United States of America, Air Force. Fiber reinforced plastic composite material. 3,466,219, Cl. 161-057.

Schwartz, Natalie Pels, Voller, Norman L., Hamman, Denver C., and Chapman, Robert E., to Countess Natalie, Inc., mesne. Collapsible wig stand. 3,465,926, Cl. 223-067.

Schwartz, Robert, and Cooperman, Harry N., to Dental Orthopedics, Inc. Orthopedic relator assembly. 3,465,443, Cl. 032-032.

Schwarz, John B.: *See—*
Chow, Woo F., and Schwarz, John B. 3,466,624.

Schweiger, Manfred U.: *See—*
Sutton, Walter T., Jr., Broyles, James D., and Schweiger, Manfred U. 3,465,534.

Schweitzer, William L. Lift for aiding persons in and out of bathtubs. 3,465,371, Cl. 004-185.

Schweizer, August: *See—*
Benz, Jakob, and Schweizer, August 3,466,286.

Schwieter, Ulrich: *See—*
Ruegg, Rudolf, and Schwieter, Ulrich 3,466,335.

Sckerl, Walter, to Ringsdorff-Werke GmbH. Brush holder with gripping lever for electrical machines. 3,466,481, Cl. 310-239.

SCM Corporation: *See—*
Derfer, John M., 3,466,267.
Guzak, John, Jr., 3,466,647.

Scott, Earl V.: *See—*
Jantze, Clyde E., Arnott, Edward A., and Scott, Earl V. 3,465,703.

Scott, L. J., Jr.: *See—*
Hook, Fred E., Kucera, Clare H., and Scott, L. J., Jr. 3,465,825.

Scott-Monck, John A.: *See—*
Spriggs, Rueben S., Learn, Arthur J., and Scott-Monck, John A. 3,465,428.

Scragg, Ernest, & Sons: *See—*
Parker, Walter, and Forward, Philip, 3,465,509.

Sealey, William C., and Waterman, Michael W., to Allis-Chalmers Manufacturing Company. Magnetic yoke for shunt reactor. 3,466,582, Cl. 336-060.

Sebring, Lowell W.: *See—*
Klawitter, Roland E., Murley, Ellsworth M., Jr., Rottmann, Hans R., and Sebring, Lowell W. 3,466,452.

Sebulsky, Raynor T.: *See—*
Giannetti, Joseph P., Henke, Alfred M., Sebulsky, Raynor T., and Starnes, William C. 3,466,250.

Seidel, Thomas E., to Bell Telephone Laboratories, Incorporated. Impact avalanche transit time diodes with heterojunction structure. 3,466,512, Cl. 317-235.

Seifert, Gerd W. Thermostatic clutches for fans. 3,465,861, Cl. 192-082.

Seigneur, Remy: *See—*
Hetzel, Max, and Seigneur, Remy 3,466,475.

Seitetsu Kagaku Co., Ltd.: *See—*
Fukui, Kenichi, Kagiya, Tsutomu, Yokota, Hisao, and Horie, Misato, 3,466,251.

Sela, Michael, Arnon, Ruth, and Lahav, Miriam, to United States of America, Health, Education, and Welfare. Cleavage of human gamma globulin by means of cyanogen bromide. 3,466,368, Cl. 424-177.

Sels, Robert L., to Western Electric Company, Incorporated. Ratiometer system utilizing phase comparison techniques. 3,466,552, Cl. 328-147.

Senoo, Saburo: *See*—
Sowa, Tuneo, Sato, Kenji, Ouchi, Shunji, Ohsawa, Takeyoshi, and Senoo, Saburo 3,466,273.

Sertich, Michael P.Pivot positioner for a baseball player's rear foot. 3,466,040, Cl. 273-026.

Setala, Kai Martin Edvard. Radiation treatment apparatus with transversely gapped table. 3,466,439, Cl. 250-054.

Setecka, John C. Portable food service device for tables and the like. 3,465,894, Cl. 211-129.

Sewell, Peter B.: *See*—
Cohen, Morris, and Sewell, Peter B. 3,466,234.

Sexton, Harvey E., to Bliss, E. W., Company. Air booster for clam-type drum brake. 3,465,850, Cl. 188-075.

Sganga, Francis Thomas, to St. Regis Paper Company. Mathematical comparison device. 3,465,453, Cl. 035-034.

Sharp, Royds: *See*—
MacLean, Robert Sisterson, Mc Clintock, Andrew Lindsay Muir, and Sharp, Royds 3,465,570.

Sharples, Richard Colin, to Lucas, Joseph, (Industries) Limited. Electrical switches. 3,466,413, Cl. 200-168.

Shaw, David N., to Carrier Corporation. Compressor lubrication arrangement. 3,465,953, Cl. 230-206.

Shell Oil Company: *See*—
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Shelton, Glenmore L., Jr., to International Business Machines Corporation. Scanner threshold adjusting circuit. 3,466,603, Cl. 340-146.3

Shen, Tsung-Ying: *See*—
Shunk, Clifford H., and Shen, Tsung-Ying 3,466,377.

Shen, Tsung-Ying, and Dorn, Conrad P., Jr., to Merck & Co., Inc.Treatment of inflammation with 4-phenyl-α-methyl- phenyl acetic acid, its salts, esters or amide derivatives. 3,466,372, Cl. 424-248.

Sherlock, Margaret H., to Schering Corporation. 3,4-Dihydro quinazolines and method for preparation thereof. 3,466,284, Cl. 260-251.

Sherrod, Eugene L., 1/2 interest to Sherrod, Robert T. Self-clearing rotating conveyor. 3,465,685, Cl. 103-049.

Sherrod, Robert T.: *See*—
Sherrod, Eugene L., 3,465,685.

Shibata, Tooru: *See*—
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Shimizu, Kazuo: *See*—
Kiuchi, Yuji, and Shimizu, Kazuo 3,466,183.

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Levy, Murray N., Shinbaum, Marvin S., and Strance, John S. 3,465,827.

Shinohara, Masao, to Nippon Electric Company Limited. Method for measuring characteristics employing an A.C. signal responsive to impedance change for fixing the measured value. 3,466,546, Cl. 324-158.

Shionogi & Co., Ltd.: *See*—
Tanida, Hiroshi, and Muneyuki, Ryonosuke, 3,466,330.

Shioyama, Yutaka: *See*—
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Shoemaker, Kerry S., to Gerber Products Company. Apparatus for continuous measurement of liquiform product consistency. 3,465,573, Cl. 073-054.

Sholund, Richard J. Auxiliary handle for a shovel. 3,466,078, Cl. 294-057.

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Kiester, George S., and Short, R Stanford 3,465,646.

Showalter, Joseph S., to Boone Bait Co., Inc. Fish hook for artificial bait. 3,465,466, Cl. 043-044.8

Shulman, Garson P., and Young, Freeman M., to Ashland Oil and Refining Company, mesne. Polycarboxylic acids derived from substituted alkylcyclohexenes. 3,466,302, Cl. 260-346.8

Shulock, Charles, and Straslicka, William A., to Carrier Corporation. Governor trip valve with temperature compensation means. 3,465,769, Cl. 137-031.

Shunk, Clifford H., and Shen, Tsung-Ying, to Merck & Co., Inc. Aralkyl aliphatic sulfoxide oral parenteral and rectal dosage units for pain, fever and inflammation. 3,466,377, Cl. 424-337.

Sicard, Louis, and Daumard, Claude, to Societe Anonyme dite: Tissmetal, Lionel-Dupont, Teste & Cie. Fluid exchange column. 3,466,151, Cl. 023-288.

Siebert, Louie P., to Cropland Industries, Inc. Ambulatory irrigating device. 3,465,766, Cl. 137-001.

Siemens Aktiengesellschaft: *See*—
Albrecht, Cord, and Kafka, Wilhelm, 3,466,581.
Eichin, Werner, and Katz, Helmut, 3,466,494.
Topfer, Herbert, 3,466,404.

Siems, Lee E., and Reeves, W. Clay, to Digital Data Systems, Inc. Method and means for compositing data. 3,466,596, Cl. 340-015.5

Sikorski, Frank B.: *See*—
Cochran, Alfred S., and Sikorski, Frank B. 3,466,401.

Sileo, Francis, to Espey Mfg., & Electronics Corporation. Flashtube for mounting on a space vehicle. 3,466,490, Cl. 313-318.

Silvon, Kay, to Omark Industries, Inc. Quick-detachable sharpeners for chain saws. 3,465,617, Cl. 076-025.

Simmen, Robert, to Mefina S.A. Safety system for the fuse of a gyratory missile. 3,465,676, Cl. 102-080.

Simmons, Bruce: *See*—
Mellvenny, James, 3,465,556.

Simmons, Lawrence C., to Cleveland Technical Center, Inc. Tiedown system. 3,465,691, Cl. 105-368.

Simmons, Todd S.: *See*—
Lachowicz, Donald R., Simmons, Todd S., and Kreuz, Kenneth L. 3,466,326.

Simms, T. S., & Co., Limited: *See*—
Allison, Philip J., 3,465,641.

Simon, Ivan, to General Motors Corporation, mesne. Diamagnetic accelerometer. 3,465,598, Cl. 073-517.

Simpson, James Roxby, to National Research Development Corporation. Biological treatment of waste water containing organic matter. 3,466,241, Cl. 210-017.

Sinclair-Koppers Company: *See*—
Zorn, Peter A., and Scheuring, George R., 3,465,913.

Sindlinger, Norman E., to Ideal Toy Corporation. Multi-message phonograph mechanism. 3,466,050, Cl. 274-001.

Singer Company, The: *See*—
Hacklander, Hans W., 3,465,698.
Kuhar, Ludwig J., 3,465,700.
Lawrie, Donald, and Findlay, Campbell, 3,465,381.
Van Hart, James E., Jr., and Rea, Kenneth R., 3,465,699.
Walling, Francis L., 3,465,701.

Singer-General Precision, Inc.: *See*—
Riordan, Hugh F., De Cotiis, Constant John, and Straut, Harold J., 3,465,600.

Sinnott, David J., to Powers & Easton Industries, Inc. Apparatus for automatic justification of line- casting matrices assembled by a coded tape. 3,466,604, Cl. 340-147.

Sizer, William C. Device for storing and dispensing hot food. 3,465,919, Cl. 222-146.

Skarvinko, Eugene R., to International Business Machines Corporation. Method of using photographic vesicular and diazo films having diazo antihalation layers. 3,466,172, Cl. 096-049.

Skinner, Harold S.: *See*—
Matulich, Dan S., and Skinner, Harold S. 3,465,962.

Skuja, Ivars M., to Audiscan Corporation. Film projection cartridge. 3,466,123, Cl. 352-034.

Slate, Johnny L.: *See*—
Leach, Harry S., and Slate, Johnny L. 3,466,340.

Slavin, Michael, to Bendix Corporation, The. Floatless electrical fluid level gauge. 3,465,588, Cl. 073-304.

Sletzinger, Meyer: *See*—
Firestone, Raymond A., Reinhold, Donald F., and Sletzinger, Meyer 3,466,315.

Slominski, Leo J., to MacDermid Incorporated. Solution and method for dissolving copper. 3,466,208, Cl. 156-018.

Slonneger, John L.: *See*—
Rechou, Jacques C., and Slonneger, John L. 3,466,587.

Smialowski, Antoni J.: *See*—
Blachut, Theodore J., and Smialowski, Antoni J. 3,465,444.

Smith, A. O., Corporation: *See*—
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3,465,794	3,466,544	3,465,492	3,465,685	3,465,903	3,466,210
3,465,901	54 : 3,466,032	3,465,507	3,465,704	3,465,916	3,466,252
3,465,928	3,466,316	3,465,517	3,465,706	3,465,919	3,466,466
3,466,089	55 : 3,465,377	3,465,519	3,465,740	3,465,975	3,466,558
3,466,104	3,465,399	3,465,607	3,465,765	3,466,080	3,466,582
3,466,123	3,465,405	3,465,615	3,465,788	3,466,095	3,466,602
3,466,227	3,465,424	3,465,665	3,465,816	3,466,195	56 : 3,465,744

Design Patents

5 : 215,155	6 : 215,184	17 : 215,154	26 : 215,152	34 : 215,183	39 : 215,185
6 : 215,145	9 : 215,162	215,156	215,153	36 : 215,139	41 : 215,170
215,146	10 : 215,137	215,174	215,164	215,168	42 : 215,160
215,146	11 : 215,150	215,180	215,178	215,171	215,167
215,158	12 : 215,148	215,181	27 : 215,192	215,172	45 : 215,144
215,159	215,149	20 : 215,169	31 : 215,179	215,173	48 : 215,175
215,163	17 : 215,138	25 : 215,190	34 : 215,142	39 : 215,143	49 : 215,191
215,165	215,147	26 : 215,140	215,182	215,161	53 : 215,166

U.S. DEPARTMENT OF COMMERCE
OFFICIAL GAZETTE of the UNITED STATES PATENT OFFICE
September 9, 1969 Volume 866 Number 2

TRADEMARKS
NOTICES

Department of the Treasury
Bureau of Customs
(T.D. 69-188)

MURRAY-ALLEN

Notice of Recordation of Trade Name

On June 21, 1969, there was published in the Federal Register (34 F.R. 9721) a notice of application for the recordation under section 42 of the Act of July 5, 1946, as amended (15 U.S.C. 1124) of the trade name MURRAY-ALLEN used by Murray-Allen Imports, Inc., a New York corporation. The notice advised that prior to final action on the application, filed pursuant to section 11.16, Customs Regulations (19 CFR 11.16), consideration would be given to relevant data, views, or arguments submitted in opposition to the recordation and received not later than 30 days from the date of publication of the notice. No responses were received in opposition to the application.

The name "MURRAY-ALLEN" is hereby recorded as the trade name of Murray-Allen Imports, Inc., a corporation organized under the laws of the State of New York, located at 30 Pine Street, New Rochelle, New York 10801, when applied to confectionery, chocolates, biscuits, baked goods, jams, preserves and snack items, manufactured in Italy, France, Poland, England, Holland, Argentina, Denmark, Belgium, Ireland, Germany, Finland, Central America, Israel and Canada.

(Signed) MYLES J. AMBROSE,
Aug. 11, 1969. *Commissioner of Customs.*

Trademark Suits

Notices under 15 U.S.C. 1116; Trademark Act of July 5, 1946

Reg. No. 82,124 (WALTHAM), Waltham Watch Company, Watches, watchcases, watch-movements, and parts thereof, **filed** Dec. 10, 1964, D.C., S.D.N.Y., Doc. 64-C-3796, *Waltham Watch Company* v. *Clifford Siegmeister et al.* Stipulation and order of dismissal with prejudice, June 16, 1969.

Reg. No. 220,747 (HUDSON'S BAY "POINT"), The Governor and Company of Adventurers of England Trading Into Hudson's Bay, doing business as Hudson's Bay Company, Woolen blankets; **Reg. No. 223,137** (PRO PELLE CUTEM AND DESIGN OF SHIELD), same, Blankets made of wool; **Reg. No. 310,276** (YE OLD HUDSON'S BAY), Rum; **Reg. No. 312,230** ("SPECIAL" ETC. AND DESIGN), same, Whisky; **Reg. No. 312,274** ("HUDSON'S BAY COMPANY" AND DESIGN), same, Brandy; **Reg. No. 376,025** (HUDSON'S BAY 1670), same, Whisky and cognac; **Reg. No. 664,838** (HUDSON'S BAY AND COAT OF ARMS DESIGN), same, Whisky and brandy, **filed** June 28, 1968, D.C., C.D. Calif. (Los Angeles), Doc. 68-1062-AAH, *The Governor and Company of Adventurers of England Trading Into Hudson's Bay* v. *Hudson's Bay Company of California, Inc.* By stipulation, defendant permanently enjoined, June 27, 1969.

Reg. No. 223,137. (See Reg. No. 220,747.)
Reg. No. 310,276. (See Reg. No. 220,747.)
Reg. No. 312,230. (See Reg. No. 220,747.)
Reg. No. 312,274. (See Reg. No. 220,747.)

CONDITION OF TRADEMARK APPLICATIONS AS OF JULY 31, 1969

Total number of applications awaiting action [excluding renewals and Sec. 12(c)]	14,039
Date of oldest new application	October 9, 1968
Date of oldest amended application (filing date)	April 1, 1966

C. M. WENDT, Director, Trademark Examining Operation

TRADEMARK EXAMINING DIVISIONS, EXAMINERS AND TRADEMARK CLASSES UNDER EXAMINATION	Oldest Application: New	Oldest Application: Amended
(I) L. J. BETTENDORF, Classes 2, 3, 4, 5, 7, 9, 10, 11, 27, 28, 30, 32, 33, 37, 38, 39, 40, 41, 42, 43, 50; Certification Marks, Classes A and B	2-17-69	5-3 -66
(II) F. H. WETHERBEE, Classes 1, 6, 15, 18, 45, 46, 47, 48, 49, 51, 52; Collective Membership Mark, Class 200	10-28-68	5-24-66
(III) P. S. BALL, Classes 19, 21, 23, 26, 31, 34, 35, 36	12-18-68	11-10-66
(IV) M. E. ABRAMSON, Classes 8, 12, 13, 14, 16, 17, 20, 22, 24, 25, 29, 44; Service Marks, Classes 100, 101, 102, 103, 104, 105, 106, and 107	10-9 -68	4-1 -66
Renewals (All Classes)	6-3 -69	.....
Sec. 12(c) Publications (All Classes)	6-16-69	.....

Applications filed during the month of July 1969—2,747

Registrations Issued ----------513—No. 876,281 to No. 876,793
Renewals Issued ----------150

The TRADEMARK SECTION of the OFFICIAL GAZETTE, issued weekly, is mailed under the direction of the Superintendent of Documents, Government Printing Office, Washington, D.C., 20402 to whom all subscriptions should be made payable and all communications addressed; subscription price, $20.50 per annum, foreign mailing $5.75 additional; single copies, 40 cents each.

PRINTED COPIES OF TRADEMARK REGISTRATIONS are furnished by the Patent Office for 20 cents each. Address orders to the Commissioner of Patents, Washington, D.C. 20231.

Reg. No. 376,025. (See Reg. No. 220,747.)

Reg. No. 619,268 (HOT SHOT), R–H Products Company, Liquid insecticide; **Reg. No. 822,118** (SPOT SHOT), Sifers Chemicals, Inc., Spotting compound for rugs, **filed** June 26, 1969, D.C. Kans. (Wichita), Doc. W–4186, *Hot Shot Quality Products, Inc.* v. *Sifers Chemicals, Inc.*

Reg. No. 664,838. (See Reg. No. 220,747.)

Reg. No. 669,234 (WHITE), White Sewing Machine Corporation, Sewing machines, **filed** June 23, 1969, D.C. Ariz. (Phoenix), Doc. C–69–268, *White Sewing Machine Company* v. *John P. Rooney et ux., Sewing Distributors, Inc. et al.*

Reg. No. 670,255 (MUSIDISC), Nilo Santos, Pinto, Grooved phonograph records, **filed** June 25, 1969, D.C., S.D.N.Y., Doc. 69–C–2746, *Nilo Santos Pinto, Records Distributors of America Inc.* v. *Talmadge Productions Inc.*

Reg. No. 670,566 (BOBCAT), Sherman Products, Inc., Backhoes for attachment to trucks, tractors, trailers and the like and parts therefor; **Reg. No. 822,806** (MELROE BOBCAT AND DESIGN), Melroe Manufacturing Company, Self-propelled front end loader vehicles, **filed** Mar. 21, 1969, D.C. N. Dak. (Fargo), Doc. C–4441, *Melroe Company* v. *Otis Elevator.*

Reg. No. 675,796 (CAR-FRESHENER), Car-Freshener Corporation, Absorbent bodies impregnated with a perfumed air deodorant, **filed** Feb. 21, 1967, D.C., S.D.N.Y., Doc. 67–C–743, *Car-Freshener Corporation* v. *Turtle Wax, Inc.* Notice of voluntary dismissal, June 30, 1969.

Reg. No. 714,249. (See Reg. No. 722,375.)

Reg. No. 722,375 (BURGER-KING), Burger King of Florida, Inc., Drive in restaurant services; **Reg. No. 782,990** (HOME OF THE WHOPPER), same; **Reg. No. 714,249** (DESIGN OF A KING ON A BUN), same, **filed** Oct. 22, 1968, D.C., S.D. Fla. (Miami), Doc. 68–1213 (Eaton), *Burger King Corporation, and Davmor Industries, Inc.* v. *Burger Castle Systems, Inc.* Order of dismissal with prejudice, Jan. 10, 1969.

Reg. No. 762,414 (WATER PIK), Aqua-Tec Corporation, Readily portable oral hygiene appliance utilizing a pulsed jet of water for massaging the gums and cleaning spaces adjacent the teeth; **Reg. No. 785,673** (WATER PIK AND DESIGN), same; **Reg. No. 809,624** (AQUA PIK), same, **filed** Jan. 16, 1967, D.C. Colo. (Denver), Doc. 67–C–20, *Aqua Tec Corporation* v. *Skaggs Drug Centers, Incorporated.* Consent judgment plaintiff owner of trademarks, Aug. 22, 1967.

Reg. No. 782,990. (See Reg. No. 722,375.)

Reg. No. 785,673. (See Reg. No. 762,414.)

Reg. No. 809,624. (See Reg. No. 762,414.)

Reg. No. 822,118. (See Reg. No. 619,268.)

Reg. No. 822,806. (See Reg. No. 670,566.)

MARKS PUBLISHED FOR OPPOSITION

SECTION 1

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Application for the registration of these marks in more than one class has been filed as provided in section 30 of said act as amended by Public Law 772, 87th Congress, approved Oct. 9, 1962, 76 Stat. 769. Opposition under section 13 may be filed within thirty days of this publication. See Rules 2.101 to 2.105.

A separate fee of twenty-five dollars for each class opposed must accompany the opposition.

[NOTE: For publication of marks presented in applications for registration in one class, see section 2.]

SN 267,707. Selfpack Ges. m.b.H., Klagenfurt, Austria. Filed Mar. 28, 1967.

selfpack

Priority claimed under Sec. 44(d) on Austrian application filed Jan. 20, 1967; Reg. No. 59,362, dated Apr. 19, 1967.

Class 14—Metals and Metal Castings and Forgings

For Wrapping Material of Metal Foil (Int. Cl. 6).

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Packaging and Wrapping Machines (Int. Cl. 7).

Class 37—Paper and Stationery

For Wrapping Materials Consisting of Synthetic Material, of Paper, Cardboard, and Cellulose Films (Int. Cl. 16).

SN 270,041. The Bandage Corporation, Sheboygan, Wis. Filed Apr. 26, 1967.



Class 31—Filters and Refrigerators

For Filter Discs, Filter Bags, and Filter Tubes for Use in the Dairy Industry (Int. Cl. 11).

Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

For Cheese Bandages, Press Cloth Circles and Wraps (Int. Cl. 24).

First use Mar. 20, 1967.

SN 270,063. Iseberg Musicland, Inc., Joliet, Ill. Filed Apr. 26, 1967.

ISEBERG MUSICLAND

Class 101—Advertising and Business

For Retail Music Store Services (Int. Cl. 35).

Class 103—Construction and Repair

For Repairing of Musical Instruments (Int. Cl. 37).

Class 107—Education and Entertainment

For Providing Instructions on Musical Instruments (Int. Cl. 41).

First use June 15, 1966.

SN 271,305. Siemens Aktiengesellschaft, Munich, Germany. Filed May 12, 1967.

SIEMENS

Owner of U.S. Reg. Nos. 599,591 and 621,779.

Class 103—Construction and Repair

For Construction, Repair, Maintenance and Supervision of Building, Engineering, and Other Projects, Including Power Plants, Water Reservoirs, Aqueducts, Bridges, Subways, Railways, Airports, Industrial and Municipal Buildings; Construction, Maintenance and Supervision of Electrical Power and Communication Systems, Machines, Devices, Appliances, Including Repair of Radio and Television, Maintenance and Repair of Intra-Office Telephone and Other Communication Installations and Equipment, Measuring and Fault-Locating Services; Service and Repair of Electron Microscopes and X-Ray Diffraction Equipment; Service and Repair of X-Ray and Other Medical and Dental Equipment (Int. Cl. 37).

Class 106—Material Treatment

For Processing and Treatment of Materials and Products in the Fields of Electrical Engineering, Electronics, Chemical Engineering and Structural and Civil Engineering—Namely, Mechanical Processing and Forming Such as Pressing, Sintering and Metal-Working Methods Employed in Metallurgy, Electrolytic Processes, Current-Less Chemical Processes, High-Speed Forming, Magnetic Forming for Others (Int. Cl. 40).

First use on or about June 5, 1936; in commerce on or about Dec. 21, 1954.

SN 272,511. Mond Industries Limited, Toronto, Ontario, Canada. Filed May 26, 1967.

MOND

Priority claimed under Sec. 44(d) on Canadian application Filed Dec. 28, 1966; Reg. No. 155,223, dated Jan. 26, 1968.

Class 21—Electrical Apparatus, Machines, and Supplies

For Television Cameras, Closed Circuit Television Systems—Namely, Television Picture Monitors, Classroom Monitors, Television Radio Frequency Tuners, Television Channel Modulators, Microwave Transmitters, Microwave Receivers, Microwave Multiplex Equipment, Lighting Equipment (Namely, Special Camera Lighting Equipment and Arc Lamps), Video Tape Recorders, Video Tape Dropout Eliminators, Audio Mixing and Switching Equipment, Audio Distribution Amplifiers, Microphones, Microphone Stands and Booms, Tone Multiplex Systems, Encoders, Masking Amplifiers, Colour Bar Generators, Grating Generators, Video Distribution Amplifiers, Pulse Distribution Amplifiers, Video Switcher/Faders, Monoscope Generators, Stabilizing Amplifiers, Prompting Devices, Weather-Proof Housings, and Radiation Resistant Housings (Int. Cls. 9 and 11).

Class 26—Measuring and Scientific Appliances

For Fixed Television Lenses, Remote Controlled Television Lenses, Optical Multiplexers, Synchronizing Pulse Generators, Colour Frequency Standards, Colour Vector Oscilloscopes, Television Waveform Monitors, Flying Spot Scanners, Test Patterns, Scan Conversion Equipment, Lasers, Laser Television Cameras, Hollographic Cameras, Hollographic Reproduction Equipment, Remote Pan/Tilt Units (Int. Cl. 9).

SN 272,605. Hasler A.-G., Bern, Switzerland. Filed May 29, 1967.

HASLER

Owner of Swiss Reg. No. 161,088, dated May 18, 1956; and U.S. Reg. No. 731,322.

Class 21—Electrical Apparatus, Machines, and Supplies

For Electric and Electronic Communication Systems—Namely, Telephone Equipment, Carrier Frequency Equipment, Automatic Systems for Correcting Telecommunication Errors by Retransmitting Mutilated Signals, Pulse Code Modulated Telecommunication Transmission Systems, and Radio Pagers (Int. Cl. 9).
First use 1900; in commerce 1952.

Class 26—Measuring and Scientific Appliances

For Revolution Counters, Tachometers, Tachographs, Cash Registers, and Reading Machines (Int. Cl. 9).
First use 1900; in commerce 1921.

SN 282,143. Richard W. Snyder, d.b.a. Snyder & Snyder, Bloomsburg, Pa. Filed Oct. 9, 1967.

Tuffy

Class 19—Vehicles

For Boat Fenders and Mooring Buoys (Int. Cl. 12).
First use July 6, 1964.

Class 22—Games, Toys, and Sporting Goods

For Ring Buoys and Ski Belts (Int. Cl. 28).
First use Nov. 25, 1965.

SN 291,301. APL Corporation, Linden, N.J. Filed Feb. 19, 1968.

TUFFY MISS



The portrait on the drawing is fanciful. The hatch-markings on the drawing do not indicate specific colors, but do indicate a plaid pattern. Owner of Reg. Nos. 823,637 and 824,122.

Class 2—Receptacles

For Disposable Bags for Vacuum Cleaners; Laundry Bags; Clothespin Bags (Int. Cl. 21).
First use February 1967.

Class 4—Abrasives and Polishing Materials

For Dust Cloth Impregnated With Polishing Material (Int. Cl. 21).
First use Dec. 15, 1965.

Class 7—Cordage

For Clothes Lines (Int. Cl. 22).
First use April 1967.

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

For Pans for Cooking and Mixing; Cookie Sheets (Int. Cl. 13).
First use September 1966.

Class 24—Laundry Appliances and Machines

For Copper Iron Rests (Int. Cl. 21).
First use April 1966.

Class 29—Brooms, Brushes, and Dusters

For Mops; Mop Refills; Mop Parts; Buffer Pads; Wax Appliers; and Refills for Wax Appliers (Int. Cl. 21).
First use April 1966.

Class 37—Paper and Stationery

For Shelf Paper (Int. Cl. 16).
First use February 1966.

Class 39—Clothing

For Lingerie; Ballerina Slippers (Int. Cl. 25).
First use November 1965.

Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

For Plastic Tablecovers; Pillow Protectors; Pillowcases; Potholders; Oven Mitts (Int. Cls. 21 and 24).
First use January 1966.

SN 292,231. The Jim Dandy Company, Birmingham, Ala., by change of name from Western Grain Co., Inc., d.b.a. Western Grain Company, Birmingham, Ala. Filed Feb. 29, 1968.

JIM DANDY WINNERS CIRCLE

The name "Jim Dandy" is fanciful and does not refer to any living individual. Owner of Reg. Nos. 176,763 and 816,195.

Class 18—Medicines and Pharmaceutical Preparations

For Livestock Minerals (Int. Cl. 31).

Class 46—Foods and Ingredients of Foods

For Animal Feeds—Namely, Concentrated Ration for Calves and All Farm Animals, Balanced Top Dressing for Horses, Calf Milk Replacer (Int. Cl. 31).

First use Dec. 27, 1967.

SN 292,997. The Engineered Products Company, Flint, Mich. Filed Mar. 12, 1968.

EPCO

Class 12—Construction Materials

For Glass Partition Posts and Panoramic Assemblies (Int. Cl. 19).
First use at least as early as Sept. 1, 1953.

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

For Magnetic Catches, Pulls and Knobs for Doors and Drawers, and Tracks, Guides and Accessories for Sliding Glass and Panel Doors (Int. Cl. 6).
First use at least as early as December 1950.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Fuel Injection Nozzles (Int. Cl. 11).
First use at least as early as December 1950.

SN 294,604. ESP Property Factors, Inc., Portland, Oreg., by change of name from Emery/Selling, Property Factors, Inc., Portland, Oreg. Filed Apr. 1, 1968.

esp

The drawing is lined for the color reddish-orange; however, no claim is made to color as an essential feature of the mark.

Class 101—Advertising and Business

For Real Estate Brokerage Services (Int. Cl. 35).
First use Mar. 15, 1966.

Class 102—Insurance and Financial

For Investment Services—Namely, the Location and Selection for Investor Clients of Realty Suitable for Capital Appreciation and/or Income Yield (Int. Cl. 36).
First use Sept. 16, 1966.

SN 294,704. G. H. Wood and Company, Limited, Toronto, Ontario, Canada. Filed Apr. 2, 1968.

MAGNIFIQUE

Owner of Canadian Reg. Nos. 152,650, dated Aug. 18, 1967; and 153,327, dated Sept. 22, 1967.

Class 2—Receptacles

For Waste Receptacles and Soap Dispensers (Int. Cl. 21).

Class 4—Abrasives and Polishing Materials

For Waxes for Floors and Similar Surfaces (Int. Cl. 3).

Class 16—Protective and Decorative Coatings

For Synthetic Resin Finishes, Stains, and Oil Coating Preparations for Floors and Other Surfaces; Grain Filling and Sealing Coating Compositions for Floor and Similar Surfaces (Int. Cl. 2).

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Floor Scrubbing and Polishing Machines (Int. Cl. 7).

Class 52—Detergents and Soaps

For General Purpose Detergents and Liquid and Powdered Hand Soaps (Int. Cl. 3).

SN 296,738. Ashland Oil & Refining Company, Ashland, Ky. Filed Apr. 29, 1968.

Ashland

Owner of Reg. Nos. 558,675, 840,704, and others.

Class 6—Chemicals and Chemical Compositions

For Antifreeze for Automobile Radiators and Chemical Preparations for the Prevention of Rust or Corrosion (Int. Cls. 1 and 2).

Class 15—Oils and Greases

For Gasoline, Kerosene, Lubricating Oils, Lubricating Greases, Coal Spray Oil To Control Dust, Fuel Oil, Motor Oil, and Paraffin Oil (Int. Cl. 4).

First use Dec. 9, 1966.

SN 297,825. Villager Industries, Inc., Philadelphia, Pa., by change of name from The Villager, Inc., Philadelphia, Pa. Filed May 10, 1968.



Owner of Reg. No. 805,994.

Class 3—Baggage, Animal Equipments, Portfolios, and Pocketbooks

For Handbags, Beach Bags, and Tote Bags (Int. Cl. 18).
First use at least as early as December 1962.

Class 39—Clothing

For Wearing Apparel—Namely, Belts; Blazers; Blouses; Coats; Culottes; Cummerbunds; Dickies; Dresses; Dress Ensembles—Namely, Skirts and Blouses, Blouses and Slacks, Sweaters and Slacks, Sweaters and Skirts, and Blazer and Skirt Sets; Hats; Hosiery; Jackets; Kerchiefs; Kilts; Knitwear—Namely, Culottes, Dresses, Hosiery, Pullovers, Shells, Shirts, and Tights; Lingerie; Neckwear; Nightwear—Namely, Nightgowns, Pajamas, and Nightrobes; Pant-Dresses and Pant-Skirts; Raincoats; Sashes; Shells; Shirts; Skirts; Slacks; Shorts; Shoes; Suits; Suspenders; Sweaters; Swimwear—Namely, Beachrobes, Beach Dresses, Beach Cover-Ups, Beach Shirts, Swim Dresses and Swimsuits; and Vests (Int. Cl. 25).
First use at least as early as November 1962.

SN 304,641. Teijin Kabushiki Kaisha (Teijin Limited), Osaka, Japan. Filed Aug. 8, 1968.

SOFEENE

Class 39—Clothing

For Dresses for Women and Girls; Foundation Garments; Men's, Women's and Children's Clothing—Namely, Pants, Slacks, Suits, Gloves, Coats, Jackets, Sleepwear, Swim Wear, Beach Wear, and Underwear (Int. Cl. 25).

Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

For Piece Goods Made of Polyester Fibers and/or Other Natural and Man-Made Fibers Comprising Cotton, Wool, Silk and Rayon; and Blends Thereof for Use in Articles of Apparel (Int. Cl. 24).

First use Mar. 13, 1968; in commerce Mar. 13, 1968.

SN 307,007. Climate Cosmetics Corp., New York, N.Y. Filed Sept. 10, 1968.

AMBIANCE

Class 51—Cosmetics and Toilet Preparations

For Perfumes, Colognes, Personal Deodorants, Bath Oils, Bath Powder, Bath Gels, Moisturizing Creams and Lotions, Night Creams, Hand, Body and Face Creams and Lotions, Lipsticks, Make-Up Foundations, Sun Tan Gels, Bubble Bath Gels, Toilet Waters, Body Sachet, Body Balms and Hair Spray (Int. Cls. 3 and 5).

Class 52—Detergents and Soaps

For Toilet Soap (Int. Cl. 3).

First use September 1965.

SN 307,059. National Association of Meat Purveyors, Chicago, Ill. Filed Sept. 11, 1968.

NATIONAL ASSOCIATION NAMP OF MEAT PURVEYORS

Applicant disclaims any rights in the representation of the map apart from the mark as shown.

Class 38—Prints and Publications

For Meat Buyer's Guides, Booklets Containing Membership Rosters and a Newsletter (Int. Cl. 16).

Class 200

For Indicating Membership in Applicant's Association.

First use in or before 1965.

SN 308,072. Aimco Industries Limited, d.b.a. Aimco Automotive Industries, Cooksville, Ontario, Canada. Filed Sept. 24, 1968.



Class 19—Vehicles

For Unlined Brake Shoes, Unlined Disc Brake Backing Plates, Brake Drums, Wiper Motors, Washer Pumps and Parts Thereof, All Being Automotive Parts and Accessories (Int. Cl. 12).

First use at least July 1958; in commerce July 1958.

Class 21—Electrical Apparatus, Machines, and Supplies

For Alternators and Parts Thereof, Starter Motors and Parts Thereof, Generators and Parts Thereof, Spark Plugs, Condensers, Ignition Points, Ignition Coils, Solenoids and Parts Thereof, Voltage Regulators, Armatures, Used Cores for Rebuilding Alternators, Starter Motors and Generators, All Being Automotive Parts and Accessories (Int. Cls. 9 and 12).

First use 1958; in commerce 1958.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Clutch Covers, Pressure Plates, Clutch Hubs, Clutch Diaphragms, Rocker Arm Assemblies and Parts Thereof, Starter Drives and Parts Thereof, Oil Pumps and Parts Thereof, Water Pump Impellers, Water Pump Bodies and Water Pump Hubs, and Generator Pulleys, All Being Automotive Parts and Accessories (Int. Cl. 9).

First use 1962; in commerce 1962.

SN 308,138. Princetonian Hairstyling for Men, Princeton, N.J. Filed Sept. 24, 1968.

Princetonian

Class 51—Cosmetics and Toilet Preparations

For Men's Hair Lotions—Namely, Hair Setting Lotion (Int. Cl. 3).

Class 52—Detergents and Soaps

For Hair Shampoo (Int. Cl. 3).

First use on or about June 15, 1967.

SN 311,085. Teijin Kabushiki Kaisha (Teijin Limited), Osaka, Japan. Filed Nov. 1, 1968.

SOFTEENE

Owner of Japanese Reg. Nos. 741,623, dated May 11, 1967; and 747,337, dated July 12, 1967.

Class 39—Clothing

For Dresses for Women and Girls; Foundation Garments; Men's, Women's and Children's Clothing—Namely, Pants, Slacks, Suits, Gloves, Coats, Jackets, Sleep Wear, Swim Wear, Beach Wear, and Underwear (Int. Cl. 25).

Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

For Piece Goods Made of Polyester Fibers and/or Other Natural and Man-Made Fibers Comprising Cotton, Wool, Silk and Rayon; and Blends Thereof for Use in Articles of Apparel (Int. Cl. 24).

SN 314,013. Advanced Communication Techniques, Inc., Westport, Conn. Filed Dec. 10, 1968.

act

The lining on the drawing is a feature of the mark and is not symbolic of color.

Class 100—Miscellaneous

For Consulting Services in Television and Videotape Techniques (Int. Cl. 42).

Class 107—Education and Entertainment

For Conducting Educational Seminars in the Fields of Television and Videotape Technique (Int. Cl. 41).

First use on or about July 26, 1966.

SN 314,014. Advanced Communication Techniques, Inc., Westport, Conn. Filed Dec. 10, 1968.

ACT

Class 100—Miscellaneous

For Consulting Services in Television and Videotape Techniques (Int. Cl. 42).

Class 107—Education and Entertainment

For Conducting Educational Seminars in the Fields of Television and Videotape Technique (Int. Cl. 41).

First use on or about July 26, 1966.

SN 317,272. Durolith Corporation, Easton, Md. Filed Jan. 23, 1969.

durolith

Owner of Reg. Nos. 685,353 and 688,828.

Class 6—Chemicals and Chemical Compositions

For Chemical Coatings and Compositions Used in Making Lithographic Plates (Int. Cl. 1).

Class 50—Merchandise Not Otherwise Classified

For Lithographic Plates (Int. Cl. 16).

First use Jan. 2, 1962.

SN 317,348. Loring Laboratories, Inc., Chanhassen, Minn. Filed Jan. 23, 1969.

SAKKARA

Class 51—Cosmetics and Toilet Preparations

For Bubble Bath, Bath Oil, Powdered and Liquid Bubbling Milk Bath (Int. Cl. 3).

First use Aug. 10, 1967.

Class 52—Detergents and Soaps

For Hand Soap, Hard Milled Soaps and Aerated Guest Soaps (Int. Cl. 3).

First use Dec. 10, 1968.

SN 319,015. The G. M. McKelvey Co., Youngstown, Ohio. Filed Feb. 13, 1969.

McKELVEY'S LOFT

Class 3—Baggage, Animal Equipments, Portfolios, and Pocketbooks

For Handbags (Int. Cl. 18).

Class 39—Clothing

For Women's and Girls' Suits, Coats, Dresses, Skirts, Handkerchiefs, Underwear of Knitted, Netted or Textile Fabric, Nightgowns, Pajamas, Night and Day Robes, Bath Robes, Beach Robes, Raincoats, Blouses, Vests, Sweaters, Neckties, Scarves, Collar and Cuff Sets, Hats, Hosiery, Hose Supporters, Corsets, Brassieres, Negligees, Lingerie, Petticoats, Slips, Bathing Suits, Slippers, Sandals, Shoes, Boots, Overshoes, Caps, Gloves, Beach Shoes, Shorts, Garters, Belts for Personal Wear, Girdles, Foundations, Aprons, Cloaks, Shawls, Blouses, Kimonos, Fur Coats, Fur Capes, Fur Wraps, Fur Neckpieces, Fur Collars and Fur Jackets; and Men's and Boys' Dress Shirts, Ties, Handkerchiefs, Scarfs, Gloves, Hosiery, Underwear, Pajamas and Robes, Hats, Shoes, Sport Shirts (Knit, Cut and Sewn) (All Types), Slacks, Walk Shorts (All Types), Sweaters (All Types), Jackets (All Types), Suits, Sport Coats, Top Coats, All Weather Coats, Headwear and Neckwear (Int. Cl. 25).

First use at least as early as August 1968.

SN 322,765. Avon Products, Inc., New York, N.Y. Filed Mar. 26, 1969.

BY APPOINTMENT

Class 51—Cosmetics and Toilet Preparations

For Cologne and Talcum Powder (Int. Cl. 3).

Class 52—Detergents and Soaps

For Toilet Soap (Int. Cl. 3).

First use Jan. 15, 1969.

SN 322,766. Avon Products, Inc., New York, N.Y. Filed Mar. 26, 1969.

ENTWINE

Class 51—Cosmetics and Toilet Preparations

For Perfume, Cologne, and Dusting Powder (Int. Cl. 3).

Class 52—Detergents and Soaps

For Toilet Soap (Int. Cl. 3).

First use Jan. 15, 1969.

SN 322,767. Avon Products, Inc., New York, N.Y. Filed Mar. 26, 1969.

EVERY WOMAN HAS THE RIGHT TO BE ELUSIVE

Class 51—Cosmetics and Toilet Preparations

For Perfume, Dusting Powder, and Cologne (Int. Cl. 3).

Class 52—Detergents and Soaps

For Toilet Soap (Int. Cl. 3).

First use Jan. 15, 1969.

SN 322,768. Avon Products, Inc., New York, N.Y. Filed Mar. 26, 1969.

LOVELIFE

Class 51—Cosmetics and Toilet Preparations

For Perfume, Cologne, and Dusting Powder (Int. Cl. 3).

Class 52—Detergents and Soaps

For Toilet Soap (Int. Cl. 3).

First use Jan. 15, 1969.

SN 322,769. Avon Products, Inc., New York, N.Y. Filed Mar. 26, 1969.

SHOOTING STAR

Class 51—Cosmetics and Toilet Preparations

For Perfume, Dusting Powder, and Cologne (Int. Cl. 3).

Class 52—Detergents and Soaps

For Toilet Soap (Int. Cl. 3).

First use Jan. 15, 1969.

SN 322,770. Avon Products, Inc., New York, N.Y. Filed Mar. 26, 1969.

UNLESS

Class 51—Cosmetics and Toilet Preparations

For Cologne, Perfume, and Dusting Powder (Int. Cl. 3).

Class 52—Detergents and Soaps

For Toilet Soap (Int. Cl. 3).

First use Jan. 15, 1969.

SN 325,276. Del Monte Corporation, San Francisco, Calif. Filed Apr. 23, 1969.



The drawing is lined for the colors green, red and yellow.
Owner of Reg. Nos. 120,014, 828,266, and others.

Class 45—Soft Drinks and Carbonated Waters

For Soft Drinks (Int. Cl. 32).
First use Apr. 23, 1964.

Class 46—Foods and Ingredients of Foods

For Fresh and Canned Vegetables, Fresh and Canned Fruits, Canned Fruit and Vegetable Juices, Canned Fish, Dried Fruits, Pickles, Vegetable Relishes, Hot Peppers and Catsup (Int. Cls. 29, 30, 31, and 32).
First use Oct. 30, 1964.

SN 325,278. Del Monte Corporation, San Francisco, Calif. Filed Apr. 23, 1969.

DEL MONTE

Owner of Reg. Nos. 75,958, 827,921, and others.

Class 45—Soft Drinks and Carbonated Waters

For Soft Drinks (Int. Cl. 32).
First use Apr. 23, 1964.

Class 46—Foods and Ingredients of Foods

For Fresh and Canned Vegetables, Fresh and Canned Fruits, Canned Fruit and Vegetable Juices, Canned Fish, Dried Fruits, Pickles, Vegetable Relishes, Hot Peppers, and Catsup (Int. Cls. 29, 30, 31, and 32).
First use Oct. 1, 1891

SECTION 2

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Opposition under section 13 may be filed within thirty days of publication. See Rules 2.101 to 2.105.
A fee of twenty-five dollars must accompany the opposition.

[NOTE: For publication of marks presented in a combined application for registration in more than one class, see section 1.]

Class 1—Raw or Partly Prepared Materials

SN 301,938. Great Lakes Mink Association, Kenosha, Wis. Filed July 3, 1968.

BLACKGLAMA

For Mink Fur Pelts (Int. Cl. 18).
First use May 22, 1968.

SN 303,601. Ursul R. Dixon, d.b.a. Plasco, Alvord, Tex. Filed July 25, 1968.

LUNASTONE

For Two-Part Package of Powder and Crystals for Use in Making a Mix-in-Place Synthetic Marble Casting Material (Int. Cl. 19).
First use Feb. 1, 1966.

SN 311,771. Cargill, Incorporated, Minneapolis, Minn. Filed Nov. 12, 1968.

CARGILL

Owner of Reg. Nos. 592,335 and 745,002.
For Farm Seeds—Namely Hybrid Corn Seeds, Hybrid Sorghum Sudan-Grass and Hybrid Grain Sorghum (Int. Cl. 31).
First use Jan. 6, 1953.

SN 316,702. Wellman, Inc., Boston, Mass. Filed Jan. 15, 1969.

FILLWELL

For Polyester Staple Fiber (Int. Cl. 22).
First use Aug. 13, 1968.

SN 318,003. Minnesota Mining and Manufacturing Company, St. Paul, Minn. Filed Jan. 31, 1969.

3M

Owner of Reg. Nos. 749,591, 855,354, and others.
For Artificial Leather for Use in the Shoe Industry as a Shoe Upper Material (Int. Cl. 18).
First use Dec. 19, 1968.

Class 2—Receptades

SN 309,056. M. Korn Packaging Co., Inc., New York, N.Y. Filed Oct. 7, 1968.

TAPER FIT

For Plastic Film Bags (Int. Cl. 20).
First use Sept. 24, 1968.

SN 309,058. M. Korn Packaging Co., Inc., New York, N.Y. Filed Oct. 7, 1968.

SNUG FIT

For Plastic Film Bags (Int. Cl. 20).
First use Sept. 24, 1968.

SN 311,056. Mark E. Powell, Salem, Oreg. Filed Oct. 31, 1968.

TATTLE MAIL

For Signals for Rural Mail Boxes (Int. Cl. 6).
First use Sept. 10, 1967.

SN 315,547. Fleming Metal Fabricators, Los Angeles, Calif. Filed Jan. 2, 1969.

Scotchline

For Empty Metal Boxes and Cases (Int. Cl. 6).
First use Oct. 3, 1968.

SN 321,477. C. R. Daniels, Inc., Daniels, Md. Filed Mar. 12, 1969.

DANDUX

Owner of Reg. No. 255,548.
For Baskets, Hampers, Plastic Boxes and Carrying Cases (Int. Cls. 18 and 21).
First use December 1936.

Class 3—Baggage, Animal Equipments, Portfolios, and Pocketbooks

SN 317,898. Y-Tex Corporation, San Antonio, Tex. Filed Jan. 29, 1969.

LONE STAR

For Animal Tags (Int. Cl. 18).
First use Oct. 16, 1968.

SN 321,697. Swank, Inc., Attleboro, Mass. Filed Mar. 13, 1969.

SENATOR

Owner of Reg. No. 510,887.
For Wallets or Billfolds (Int. Cl. 18).
First use December 1945.

Class 4—Abrasives and Polishing Materials

SN 319,462. National Service Industries, Inc., d.b.a. Zep Manufacturing Company, Atlanta, Ga. Filed Feb. 18, 1969.

ZEPERFEX

Owner of Reg. Nos 681,037, 696,197, and others.
For Combination Washing, Cleaning and Polishing Preparation for Automobile Finishes and the Like (Int. Cl. 3).
First use June 1, 1964.

SN 319,464. National Service Industries, Inc., d.b.a. Zep Manufacturing Company, Atlanta, Ga. Filed Feb. 18, 1969.

ZEPERMEX

Owner of Reg. Nos. 681,037, 696,197, and others.
For Self-Polishing Floor Finishing Preparation (Int. Cl. 3).
First use June 1, 1962.

SN 319,465. National Service Industries, Inc., d.b.a. Zep Manufacturing Company, Atlanta, Ga. Filed Feb. 18, 1969.

ZEP TRIUMPH

Owner of Reg. Nos. 681,037, 696,197, and others.
For Scuff Resistant Floor Wax (Int. Cl. 3).
First use Mar. 1, 1966.

Class 5—Adhesives

SN 306,371. Henningsen Foods, Inc., New York, N.Y. Filed Aug. 30, 1968.

ALBEX

For Adhesives for Applying Liners to Closures (Int. Cl. 1).
First use about November 1958.

SN 310,518. Fosfatbolaget AB, Stockholm, Sweden. Filed Oct. 25, 1968.



Owner of Swedish Reg. No. 120,409, dated July 14, 1967.
For Binding Agents and Adhesives for Industrial Purposes (Int. Cl. 1).

SN 321,006. Philadelphia Quartz Company, Philadelphia, Pa. Filed Mar. 7, 1969.

STIXSO OO

Owner of Reg. Nos. 351,045, 405,157, and 839,396.
For Sodium Silicate, Sold as an Adhesive (Int. Cl. 1).
First use 1940.

SN 321,007. Philadelphia Quartz Company, Philadelphia, Pa. Filed Mar. 7, 1969.

STIXSO NN

Owner of Reg. Nos. 351,045, 405,157, and 839,396.
For Sodium Silicate, Sold as an Adhesive (Int. Cl. 1).
First use 1940.

SN 321,008. Philadelphia Quartz Company, Philadelphia, Pa. Filed Mar. 7, 1969.

STIXSO DD

Owner of Reg. Nos. 351,045, 405,157, and 839,396.
For Sodium Silicate, Sold as an Adhesive (Int. Cl. 1).
First use in 1939.

Class 6 — Chemicals and Chemical Compositions

SN 281,591. Masanori Konaka, Tokyo, Japan. Filed Oct. 2, 1967.



The English translation of the Japanese symbol is "perfumed odor."
For Incense (Int. Cl. 3).
First use Apr. 10, 1962; in commerce May 15, 1962.

SN 302,251. United Fireclay Products Limited, West Lothian, Scotland. Filed June 14, 1968.

SPEEKAL

Owner of British Reg. No. 909,618, dated May 19, 1967.
For Chemical Agent Used as a Barrier Coating on Solid Metal Surfaces To Prevent Adhesion and Erosion of Said Surfaces When in Contact With Molten Metals (Int. Cl. 1).

SN 311,770. Cargill, Incorporated, Minneapolis, Minn. Filed Nov. 12, 1968.

CARGILL

Owner of Reg. Nos. 592,086 and 764,132.
For Salt—Namely, Rock Salt, Granulated Salt, and Salt Pellets; Industrial Vegetable Derivative Products—Namely, Linseed Oil Soybean Oil, Safflower Oil, Corn Oil, Sunflower Oil, Coconut Oil, and Corn Starch (Int. Cls. 1 and 4).
First use 1942.

SN 312,601. Pennsalt Chemicals Corporation, Philadelphia, Pa. Filed Nov. 19, 1968.

PENNAD

For Corrosion Inhibitor for Aqueous Systems (Int. Cl. 2).
First use July 1968.

SN 312,604. William Recht Co., Inc., New York, N.Y. Filed Nov. 19, 1968.

DUPLEX

For Water Fountain Solution Concentrate, Used as an Additive on Duplicating and Small Offset Printing Presses (Int. Cl. 1).
First use Apr. 30, 1964.

SN 312,608. William Recht Co., Inc., New York, N.Y. Filed Nov. 19, 1968.

END-O-STAT

For Liquid Spray for Eliminating Static Electricity in Printing Machinery and Related Equipment (Int. Cl. 1).
First use Apr. 30, 1966.

SN 317,683. Geigy Chemical Corporation, Ardsley, N.Y. Filed Jan. 28, 1969.

AAtrex

Owner of Reg. No. 839,011.
For Herbicides (Int. Cl. 5).
First use Jan. 6, 1969.

SN 319,459. National Service Industries, Inc., d.b.a. Zep Manufacturing Company, Atlanta, Ga. Filed Feb. 18, 1969.

ZEPREMIER

Owner of Reg. Nos. 681,037, 696,197, and others.
For Weed Killers, Insecticides, Disinfectants, and Deodorants (Int. Cl. 5).
First use Jan. 2, 1965.

SN 319,500. National Service Industries, Inc., d.b.a. Zep Manufacturing Company, Atlanta, Ga. Filed Feb. 18, 1969.

ZEPRESERVE

Owner of Reg. Nos. 681,037, 696,197, and others.
For Rust Preventive Preparation (Int. Cl. 2).
First use Jan. 2, 1964.

Class 9 — Explosives, Firearms, Equipments, and Projectiles

SN 300,382. The Susquehanna Corporation, Alexandria, Va. Filed June 13, 1968.

AEROLAB

For Rockets (Int. Cl. 13).
First use in or about January 1961.

Class 10 — Fertilizers

SN 310,517. Fosfatbolaget AB, Stockholm, Sweden. Filed Oct. 25, 1968.



Owner of Swedish Reg. No. 120,409, dated July 14, 1967.
For Natural Fertilizers and Synthetic Fertilizers (Int. Cl. 1).

Class 11 — Inks and Inking Materials

SN 313,512. Lith-O-Way Graphic Supplies, Mamaroneck, N.Y. Filed Dec. 3, 1968.

THINK INK

The word "Ink" is disclaimed separate and apart from the mark as shown.
For Printing Inks (Int. Cl. 2).
First use July 1968.

Class 12 — Construction Materials

SN 288,068. Amercoat Corporation, Brea, Calif. Filed Jan. 4, 1968.

NUkem

Owner of Reg. No. 517,966.
For Chemical Resistant Cements, Mortars, Grouts and Concrete—Namely, Polyester Resin Cement, Epoxy Cement, Phenolic Resin Cement, Silicate Cement, Sulfur Base Cement, Furfuryl Alcohol Resin Cement, and Resin Bonded Concretes (Int. Cl. 19).
First use in or about April 1935.

SN 288,071. Amercoat Corporation, Brea, Calif. Filed Jan. 4, 1968.

NUkem

Owner of Reg. No. 517,966.
For Chemical Resistant Floor Toppings—Namely, Polyester, Epoxy and Furan Resin Toppings (Int. Cl. 19).
First use in or about April 1959.

SN 297,056. N.V. Gelders Overijsselse Betonsteen Industrie GOBI, Zutphen, Netherlands. Filed May 1, 1968.

GOBIMAT

Priority claimed under Sec. 44(d) on Netherlands application filed Jan. 24, 1968; Reg. No. 166,083, dated Mar. 1, 1968.
For Construction Materials Used Primarily for Building Roads, Dikes and Weirs—Namely, Concrete Blocks and Articulated Mattresses of Concrete Blocks (Int. Cl. 19).
First use at least as early as July 1967; in commerce at least as early as September 1967.

SN 301,193. Cariboo Lumber Manufacturers' Association, Williams Lake, British Columbia, Canada. Filed June 24, 1968.



For Lumber (Int. Cl. 19).
First use Feb. 26, 1968; in commerce May 10, 1968.

SN 304,240. Edward Page, d.b.a. Page Products, Westwood, N.J. Filed Aug. 2, 1968.

PAGE

For Pet Doors (Int. Cl. 19).
First use November 1962.

SN 306,544. Armstrong Cork Company, Lancaster, Pa. Filed Sept. 4, 1968.

CORENTI

For Fiber Panels and Boards for Use as Ceilings (Int. Cl. 19).
First use Sept. 29, 1967.

SN 310,499. Slip-Pruf Service Corporation, Baton Rouge, La. Filed Oct. 24, 1968.

LIQUI-ROAD

For Resinous Asphalt Based Liquid Concentrate for Spraying Onto Roadways To Seal Cracks, Prevent Oxidation, and Spalling (Int. Cl. 19).
First use Feb. 6, 1968.

SN 312,735. American Plywood Association, Tacoma, Wash. Filed Nov. 21, 1968. COLLECTIVE MARK.

STURD-I-WALL

Owner of Reg. Nos. 579,860, 758,232, and 783,006.
For Plywood (Int. Cl. 19).
First use Oct. 25, 1963.

SN 313,844. C. H. Tripp Finishing Company, San Diego, Calif. Filed Dec. 6, 1968.

TIQUEWOOD

For Antique-Simulating Plant-Ons for Application to Wood (Int. Cl. 19).
First use Nov. 5, 1968.

Class 13 — Hardware and Plumbing and Steam-Fitting Supplies

SN 294,521. McCreary Tire & Rubber Company, Indiana, Pa. Filed Mar. 29, 1968.

SLIP-LOCK

For Molded Elastomeric Thread and End Protectors for Pipes, Casings, Rods, and Other Cylindical Objects (Int. Cl. 17).
First use Aug. 14, 1966.

SN 296,195. Pump-Mates, Inc., Long Beach, Calif. Filed Apr. 22, 1968.



The drawing is lined for the color orange.
For Pulsation Dampeners and Shock Arrestors To Control Hydraulic Surge (Int. Cl. 6).
First use Nov. 30, 1967.

SN 303,624. National Lock Co. Rockford, Ill. Filed July 25, 1968.

VILLAGE FORGE

For Cabinet Hardware—Namely, Pulls, Knobs, Backplates, and Hinges (Int. Cl. 6).
First use July 9, 1968.

SN 304,108. National Lock Co., Rockford, Ill. Filed Aug. 1, 1968.



For Cold Heading, Cold Forming and Automatic Screw Products and Parts Thereof—Namely, Fasteners, Studs, Caster Stems and Axles, Glide Stems and Axles, Levelers, Valve Stems, Heel Dowels, Threaded Shafts, Connectors, Couplings, and Levers (Int. Cl. 6).
First use Dec. 20, 1967.

SN 309,239. Continental Oil Company, Ponca City Okla. Filed Oct. 9, 1968.

FIELD SOAK

For Perforated Conduit (Int. Cl. 6).
First use Apr. 18, 1968.

SN 319,283. Continental Manufacturing Company, Cincinnati, Ohio. Filed Feb. 17, 1969.



Owner of Reg. No. 856,345.
For Valves (Int. Cl. 6).
First use July 11, 1967.

SN 319,849. The Enterprise Aluminum Company, Massillon, Ohio. Filed Feb. 24, 1969.



Owner of Reg. No. 501,985.
For Base Metal Cooking Hollow Ware—Namely, Drip Coffee Makers, Teakettles, Percolators, Covered Sauce Pans, Covered Sauce Pots, Covered Kettles, Double Boilers, Combination Cookers, Lipped Sauce Pans, Fry Pans and Polyimide Finish Cookware (Int. Cl. 21).
First use During 1930.

SN 322,658. Zirconium Technology Corporation, Albany, Oreg. Filed Mar. 24, 1969.

ZIRTECH

For Seamless Metal and Alloy Tubing (Int. Cl. 6).
First use Jan. 16, 1969.

Class 14 — Metals and Metal Castings and Forgings

SN 303,832. The Southern Cross Steel Company (Proprietary) Limited, Johannesburg, Republic of South Africa. Filed July 29, 1968.



The mark consists of the design form of the letter "S" and the device of a cross.
For Iron, Steel, Stainless Steel, Aluminum, Brass, and Copper Alloys in Ingot, Plate, Sheet, Coil, and Strip Form (Int. Cl. 6).
First use Apr. 12, 1967; in commerce June 14, 1967.

SN 309,856. Federal Mogul Corporation, Southfield, Mich. Filed Oct. 17, 1968.



For Metal Stampings for Use in Fabrication of Parts for Vehicles (Int. Cl. 6).
First use in or about 1952.

Class 15 — Oils and Greases

SN 311,010. Bonded Oil Company, Springfield, Ohio. Filed Oct. 31, 1968.

BONDED

Owner of Reg. Nos. 599,241, 646,286, and 646,359.
For Gasoline (Int. Cl. 4).
First use at least as early as 1932.

Class 16 — Protective and Decorative Coatings

SN 291,758. Monolite Plastics, Inc., Batavia, N.Y. Filed Feb. 23, 1968.

MONOLITE

For Plastic Coating Material Similar to Paint (Int. Cl. 2).
First use Dec. 27, 1966.

SN 292,897. Dow Corning Corporation, Midland, Mich. Filed Mar. 11, 1968.

PAN SHIELD

Applicant disclaims the word "Pan" apart from the mark as shown. Owner of Reg. Nos. 516,570 and 668,837.
For Antistick Coating for Cooking Utensils (Int. Cl. 1).
First use September 1966.

SN 295,765. Polyneering Enterprises, Inc., Tulsa, Okla. Filed Apr. 16, 1968.

PHENOXY

For Synthetic and Resinous Based Coatings and Finishes Incorporating Metal Pigments and/or Non-Metal Pigments and Synthetic and Resinous Based Clear, Non-Pigmented Coatings and Finishes Used for Industrial and Commercial Purposes (Int. Cl. 2).
First use September 1960.

Class 18 — Medicines and Pharmaceutical Preparations

SN 291,587. Colgate-Palmolive Company, New York, N.Y. Filed Feb. 21, 1968.

SPRITZL

For Laxative (Int. Cl. 5).
First use Jan. 30, 1968.

SN 291,897. Royal Chemical Corporation, Carteret, N.J. Filed Feb. 26, 1968.

VICTORY BRACE

For Animal Antiseptic Skin Preparation for Treatment of Sprains or Strains, Minor Injuries, Pain and Stiffness Caused by Exposure (Int. Cl. 5).
First use Jan. 25, 1968.

SN 292,831. White Laboratories, Inc., Kenilworth, N.J. Filed Mar. 8, 1968.

MONEX

For Otic Solution (Int. Cl. 5).
First use Jan. 4, 1967.

SN 293,564. Organic Nutrients, Inc., Houston, Tex. Filed Mar. 18, 1968.

OSTEOTROPHIN-C

For Dietary Supplement in Tablet Form Containing Veal Bone and Vitamin C (Int. Cl. 5).
First use Feb. 23, 1965.

SN 293,604. USV Pharmaceutical Corporation, New York, N.Y. Filed Mar. 18, 1968.

ANGITRATE

For Coronary Vasodilator for Prophylactic Treatment of Angina Pectoris (Int. Cl. 5).
First use Mar. 4, 1968.

SN 295,825. Knoll A.G. Chemische Fabriken, Ludwigshafen (Rhine), Germany. Filed Apr. 17, 1968.

TALOPTIN

Owner of Italian Reg. No. 213,759, dated Sept. 4, 1967.
For Medicine and Drug for the Treatment of Cardiac Insufficiencies, Senile Heart Conditions, and in the Follow-Up Treatment of Cardiac Infarction (Int. Cl. 5).

SN 305,096. Foster-Milburn Company, Buffalo, N.Y. Filed Aug. 14, 1968.

DOAN'S

Owner of Reg. Nos. 45,864, 198,812, and 245,552.
For Pharmaceutical Preparation for the Relief of Backache, Headache, Muscular Aches and Pains, and Other Physical Discomforts (Int. Cl. 5).
First use at least as early as May 1894.

SN 305,373. Miles Laboratories, Inc., Elkhart, Ind. Filed Aug. 19, 1968.

COLD RALLY

No Claim is made to the exclusive right to use the word "Cold," apart from the mark as shown, but applicant waives none of its common law rights therein.
For Effervescent Analgesic and an Effervescent Cold Preparation (Int. Cl. 5).
First use on or before Apr. 4, 1968.

Class 19—Vehicles

SN 256,387. Tsuyama Manufacturing Company Limited, Sumiyoshi-ku, Osaka, Japan. Filed Oct. 13, 1966.



CATEYE

For Bicycles (Int. Cl. 12).
First use Sept. 1, 1957; in commerce Sept. 1, 1957.

SN 286,074. Amax Industries, Inc., Elgin, Ill. Filed Dec. 4, 1967.

WHEELIE BARS

Applicant disclaims the word "Bars" apart from the mark as shown.
For Bolt-On Traction Bars for Mounting to the Rear Axle of an Automobile To Prevent the Axle Housing From Rotating Under Severe Torque Applications (Int. Cl. 12).
First use on or about May 2, 1967.

SN 295,414. Amax Industries, Inc., Elgin, Ill. Filed Apr. 11, 1968.



For Lift Kits, for Installation at One or the Other End of an Automobile Chassis To Raise the Same, and Bolt-On Traction Bars for Mounting to the Rear Axle of an Automobile To Prevent the Axle Housing From Rotating Under Severe Torque Applications (Int. Cl. 12).
First use on or about Jan. 1, 1967.

SN 298,307. Aristocrat Travel Products, Morgan Hill, Calif. Filed May 16, 1968.

LANDMARK

For Travel Trailers and Pick-Up Campers (Int. Cl. 12).
First use Oct. 4, 1967.

SN 298,308. Aristocrat Travel Products, Morgan Hill, Calif. Filed May 16, 1968.

Lo-Liner

For Travel Trailers and Pick-Up Campers (Int. Cl. 12).
First use Jan. 8, 1960.

SN 298,375. Vivienne H. Wolfe, d.b.a. Trinka Imports, Clayton, Mo. Filed May 16, 1968.

WHA-STAND

For Bicycle Kick Stands (Int. Cl. 12).
First use Dec. 16, 1967.

SN 300,669. Aluminum Goods Limited, Toronto, Ontario, Canada. Filed June 18, 1968.



Owner of Canadian Reg. No. 121,088, dated Feb. 10, 1961.
For Aluminum Boats (Int. Cl. 12).

SN 309,374. The General Tire & Rubber Company, Akron, Ohio. Filed Oct. 10, 1968.



For Bicycles (Int. Cl. 12).
First use Sept. 10, 1968.

SN 310,885. The General Tire & Rubber Company, Akron, Ohio. Filed Oct. 30, 1968.

GTR



Owner of Reg. Nos. 585,352, 837,130, and others.
For Bicycles (Int. Cl. 12).
First use Sept. 27, 1968.

SN 311,477. The General Tire & Rubber Company, Akron, Ohio. Filed Nov. 6, 1968.

GTR HUGGER

Owner of Reg. No. 595,352 and others.
For Bicycles (Int. Cl. 12).
First use Sept. 27, 1968.

SN 311,610. Mitsubishi Jukogyo Kabushiki Kaisha, Chiyoda-ku, Tokyo, Japan. Filed Nov. 7, 1968.

MU-2

For Airplanes (Int. Cl. 12).
First use Sept. 14, 1963; in commerce September 1965.

SN 311,684. Helio Aircraft Corporation, Bedford, Mass. Filed Nov. 8, 1968.

C/STOL

Applicant disclaims the term "Stol" apart from the mark as shown.
For Aircraft (Int. Cl. 12).
First use April 1967.

SN 312,882. Ellcon-National, Inc., Totowa, N.J. Filed Nov. 22, 1968.

PEACOCK

Owner of Reg. No. 221,739.
For Brake Mechanisms for Railway Cars—Namely, Hand Brakes and Slack Adjusters, and Parts Therefor (Int. Cl. 12).
First use 1904.

SN 313,353. Tanzer Industries Ltd., Dorion, Quebec, Canada. Filed Nov. 29, 1968.

TANZER

For Sail Boats (Int. Cl. 12).
First use Aug. 6, 1968; in commerce Aug. 6, 1968.

Class 21—Electrical Apparatus, Machines, and Supplies

SN 257,696. Crouse-Hinds Company, Syracuse, N.Y. Filed Nov. 1, 1966.

TRAFLO

Owner of Reg. No. 266,316.
For Vehicular Traffic Control Equipment— Namely, Traffic Signal Heads; Traffic Signal Controllers, Including Electronic, Electromechanical, and Electrical Apparatus for Selectively Illuminating the Lamps in the Traffic Signal Heads; Magnetic Vehicle Detectors; Sonic Vehicle Detectors; and Pressure Sensitive Vehicle Detectors (Int. Cl. 9).
First use Sept. 1, 1966.

SN 284,165. Cobar Corporation, Dearborn, Mich.. Filed Nov. 6, 1967.



The design appearing as part of the mark consists of two letters "C," joined together, the first in conventional form, the second being reversed, and showing the center of the design somewhat in the shape of a dumbbell.
For Headrests Containing Stereophonic Speaker Systems (Int. Cl. 9).
First use Aug. 11, 1967.

SN 285,003. Electro Dispersion Corporation, Long Island City, N.Y. Filed Nov. 16, 1967.

ACCELETRONIC

For Electrostatic Accelerator for Use in Heat Treatment of Foodstuffs (Int. Cl. 11).
First use Aug. 31, 1967.

SN 292,281. Microwave Chemicals Laboratory, Inc., New York, N.Y. Filed Mar. 1, 1968.



For Magnetic Materials—Namely, Ferrites and Metal Oxides (Int. Cl. 1).
First use at least as early as Jan. 1, 1966.

SN 297,613. Stovall Batteries, Inc., Athens, Ala. Filed May 7, 1968.

REBCO

For Wet Cell, Vehicle Storage Batteries (Int. Cl. 9).
First use June 16, 1966.

SN 299,003. Control Data Corporation (Delaware corporation, Minneapolis, Minn., assignee of Control Data Corporation (Minnesota corporation), Minneapolis, Minn. Filed May 24, 1968.

STABILTROL

For Automatic, Anti-Hunt, Electrical Pumping Controls for Liquid Distribution and Supply Systems (Int. Cl. 9).
First use Jan. 31, 1968.

SN 299,600. United Aircraft Corporation, East Hartford, Conn. Filed June 3, 1968.

CATHOBEAM

For Electron Beam Generator (Int. Cl. 9).
First use Apr. 15, 1968.

SN 300,144. Velmex, Inc. Holcomb, N.Y. Filed June 10, 1968.

UNILEX

For Electromagnetic Actuators (Int. Cl. 9).
First use Feb. 27, 1968.

SN 300,439. Galaxy Electronics, Inc., Council Bluffs, Iowa. Filed June 14, 1968.



The mark consists of a stylized letter "G."
For Transceivers, Remote Controllers for Transceivers, and Linear Amplifiers (Int. Cl. 9).
First ues June 1, 1964.

SN 300,568. Dialarm, Inc., North Hollywood, Calif. Filed June 17, 1968.

Dialarm

For Automatic Dialing Unit and Communicator Utilizing Telephone Lines To Activate an Alarm (Int. Cl. 9).
First use May 1, 1966.

SN 301,084. Mogull Associates, Inc., Union, N.J. Filed June 21, 1968.

HERITAGE

For Transceivers and Intercoms (Int. Cl. 9).
First use Mar. 1, 1967.

SN 301,452. Sealomatic Electronics Corporation, Brooklyn, N.Y. Filed June 26, 1968.

AQUASONIC

For Electrically Powered Ultrasonic Cleaning Systems and Components Therefor—Namely, Transducerized Tanks and Generators (Int. Cl. 9).
First use Aug. 2, 1962.

SN 306,202. Minnesota Mining and Manufacturing Company, d.b.a. 3M Company, St. Paul, Minn. Filed Aug. 29, 1968.

SCOTCH

For Translucent Dielectric Sealant Grease for Preventing Moisture Penetration of Conduit (Int. Cl. 17).
First use Aug. 13, 1968.

SN 308,588. HTV Systems, Inc., East Rochester, N.Y. Filed Oct. 3, 1968.

VISTA 20 SERIES

No claim is made to the word "Series" apart from the mark as shown.
For Electronic Amplifiers for Use in Co-Axial Cable Distribution Systems (Int. Cl. 9).
First use May 27, 1968.

SN 308,644. Tri-Point Industries, Inc., Commack, N.Y. Filed Oct. 1, 1968.

TRI-MATIC

For Small Electrical Insulators Using Polytetrafluoroethylene (Int. Cl. 17).
First use Sept. 25, 1968.

SN 309,304. Servo Corporation of America, Hicksville, N.Y. Filed Oct. 9, 1968.

SERVOTRON

Owner of Reg. No. 503,164.
For Electronic Apparatus for Regulating Voltage—Namely, Regulated Power Supplies (Int. Cl. 9).
First use July 3, 1945.

SN 310,190. Sola Basic Industries, Inc., Milwaukee, Wis. Filed Oct. 22, 1968.

scrdc-III

For Electric Power Supplies (Int. Cl. 9).
First use July 29, 1968.

SN 311,881. Dynamic Classics, Ltd., New York, N.Y. Filed Nov. 13, 1968.

magic MIXER bar

Applicant disclaims the words "Mixer" and "Bar" except as used in the mark as shown.
For Battery Operated Mixer for Bar Use (Int. Cl. 7).
First use May 13, 1968.

SN 311,960. Frederick Weinstein, Laurelton, N.Y. Filed Nov. 12, 1968.

LIGHTSAROUND

For Electrical Lamps (Int. Cl. 11).
First use Aug. 23, 1968.

SN 312,319. Normda Industries, Inc., San Diego, Calif. Filed Nov. 15, 1968.

NORMDA

For Electronic Equipment—Namely, Ultrasonic Intruder Detection Systems, Comprising Ultrasonic Generators and Detectors, Ultrasonic Motion Detectors, Tape Recorders and Automatic Telephone Dialers (Int. Cl. 9).
First use Nov. 1, 1968.

SN 312,321. Oak Electro/netics Corp., Crystal Lake, Ill. Filed Nov. 15, 1968.

MULTIDEX

For Electric Switches (Int. Cl. 9).
First use Oct. 23, 1968.

SN 322,026. Kaman Corporation, Bloomfield, Conn. Filed Mar. 18, 1969.

FREQ-LITE

Lamps for Stage Lighting, and an Electronic Control for Varying the Intensity Thereof in Accordance With the Intensity of Music Signals (Int. Cl. 11).
First use April 1968.

Class 22—Games, Toys, and Sporting Goods

SN 289,393. Gentex Corporation, New York, N.Y. Filed Jan. 23, 1968.

SEA SPORT

The word "Sport" is disclaimed apart from the mark as shown. Owner of Reg. No. 813,698.
For Life Jackets (Int. Cl. 9).
First use Apr. 24, 1967.

SN 291,037. Colt's Inc., Hartford, Conn. Filed Feb. 14, 1968.

PONY

Owner of Reg. No. 416,687.
For Toy Guns, Pistols, Rifles, and Holster Sets (Int. Cl. 28).
First use January 1968.

SN 291,335. Aktiebolaget Urfabriken, Svangsta, Sweden. Filed Feb. 19, 1968.

AMBASSADEUR

Owner of Swedish Reg. No. 103,847, dated Sept. 14, 1962; and U.S. Reg. No. 642,051.
For All kinds of Fishing Equipment Except Nets and Yarns (Int. Cl. 28).

SN 291,757. Michael Stanfield Holdings Limited, London, England. Filed Feb. 23, 1968.

HATE

Owner of British Reg. No. 918,935, dated Dec. 27, 1967.
For Equipment for Playing a Dart Game, and Parts Thereof Sold Separately (Int. Cl. 28).

SN 292,823. Henry L. Sullivan, Lewisville, Tex. Filed Mar. 8, 1968.

WAR ON POVERTY

For Equipment Sold as a unit for Playing a Board Game (Int. Cl. 28).
First use February 1968.

SN 293,017. Brooke, Reid & Company, Limited, Leeds, England. Filed Mar. 12, 1968.

GLOOK

Owner of British Reg. No. 888,203, dated Dec. 14, 1965.
For Animal Type Stuffed Toys (Int. Cl. 28).

SN 297,817. Emile Veron, Lyon (Rhone), France. Filed May 9, 1968.

MAJORETTE

Owner of French Reg. No. 33,930, dated Aug. 1, 1963 (Lyon); Natl. Inst. No. 210,569.
For Toy Racing Cars, Automobiles, Trucks, and Similar Type Vehicles (Int. Cl. 28).

SN 299,488. Rexall Drug and Chemical Company, d.b.a. The Seamless Rubber Company, Los Angeles, Calif. Filed May 31, 1968.

VALENCIA

For Dive Mask for Swimmers and Skin Divers (Int. Cl. 28).
First use November 1966.

SN 299,489. Rexall Drug and Chemical Company, d.b.a. The Seamless Rubber Company, Los Angeles, Calif. Filed May 31, 1968.

IBIZA

For Dive Mask for Swimmers and Skin Divers (Int. Cl. 28).
First use November 1966.

SN 299,572. The Metron Corporation, Dallas, Tex. Filed June 3, 1968.



Applicant disclaims the words "The Bible" apart from the mark as used.
For Equipment Sold as a Unit for Playing a Question-and-Answer Parlor Game (Int. Cl. 28).
First use May 3, 1968.

SN 300,284. Harry D. Macy, d.b.a. Daybreak Dynamics, Wheaton, Ill. Filed June 12, 1968.

KABBANETTE

For Sportsmen's Shelters (Int. Cl. 28).
First use Nov. 28, 1964.

SN 300,991. True Temper Corporation, Cleveland, Ohio. Filed June 20, 1968.

TRAVELLER

For Fishing Rods and Fishing Reels (Int. Cl. 28).
First use on or about Feb. 16, 1956.

SN 306,524. Tyco Industries, Inc., Woodbury Heights, N.J. Filed Sept. 3, 1968.

TYCO

Owner of Reg. No. 686,847.
For Toy Scale Model Units—Namely, Model Train and Road Racing Sets; Model Trains, Track, Parts, and Accessories; Model Road Racing Autos, Track, Parts, and Accessories; and Model Street and Railway Scene Parts and Accessories (Int. Cl. 28).
First use in or about about August 1953.

SN 309,310. Stratton & Terstegge Company, Inc., Louisville, Ky. Filed Oct. 9, 1968.

TACKLEMASTER

For Fishing Tackle Boxes (Int. Cl. 28).
First use May 1, 1964.
Subj. to Intf. with SN 318,388.

SN 310,969. Mattel, Inc., Hawthorne, Calif. Filed Oct. 31, 1968.

PLUS-PAK

For Make and Play Toys, Comprising Accessory Packages of Plastic Materials, Molds, and Cooling Tray (Int. Cl. 28).
First use Sept. 24, 1968.

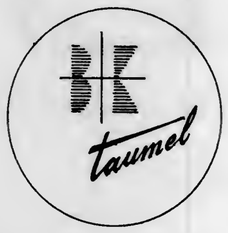
Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

SN 276,329. Masury-Columbia Company, Melrose Park, Ill. Filed July 19, 1967.

FINNELL

For Industrial Type Floor Maintenance Machines—Namely, Scrubber, Vacuum, Scrubber-Vacuum, Polishing and Sanding Machines (Int. Cl. 7).
First use 1914.

SN 280,006. Bodmer, Maschinenbau, Inh. G. & E. Bodmer, Kusnacht, Zurich, Switzerland. Filed Sept. 11, 1967.



The lining appearing in the mark on the drawing does not indicate a color, but is an integral part of the mark.
For Riveting Machines and Their Parts (Int. Cl. 7).
First use October 1961; in commerce July 1967.

SN 286,377. Sperry Rand Corporation, New York, N.Y. Filed Dec. 6, 1967.

SPERRY RAND

For Fluid Power Packages Comprising One or More of the Following Fluid Units; Transmissions, Motors, Pumps, Cylinders, Control Panels, Storage Accumulators, Switches, Power Take-Offs, Ratio Speed Changers, Winches, and Parts Therefor (Int. Cl. 7).
First use Aug. 16, 1967.

SN 288,852. RJS Corporation, Akron, Ohio. Filed Jan. 15, 1968.



For Rubber or Plastic Forming, Building and Fabricating Machines for Use in the Manufacture or Repair of Tires, and Parts Thereof (Int. Cl. 7).
First use in 1957.

SN 289,884. FMC Corporation, Chicago, Ill. Filed Jan. 30, 1968.

BALL RING

For Rotary Table Feeders for Handling Particulate Materials, and Parts Thereof (Int. Cl. 7).
First use Oct. 17, 1967.

SN 291,154. Hall Marine Corporation, Princeton, N.J. Filed Feb. 15, 1968.

HALL JET

The word "Jet" is disclaimed apart from the mark as shown.
For Marine Jet Propulsion Axial Flow Pump Units (Int. Cl. 7)
First use Jan. 11, 1967.

SN 293,167. Oceanautic Manufacturing and Research Company, Cincinnati, Ohio. Filed Mar. 13, 1968.



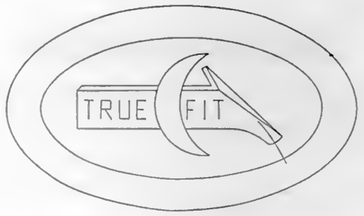
For Machinery for Use in Oceanautic and Underwater Applications—Namely, Power Driven Drills, Rotary Saws, Chippers, Descalers, Reciprocating Saws, Hammers, Wrenches, Screw Drivers, Nut and Bolt Tighteners, Jigs and Fixtures, and Parts for All the Foregoing Products (Int. Cls. 7 and 8).
First use Feb. 23, 1968.

SN 294,084. Seilon, Inc., Toledo, Ohio. Filed Mar. 25, 1968.

MARK-ette

For Agricultural Machinery—Namely, Potato Harvesters (Int. Cl. 7).
First use on or about May 10, 1964.

SN 295,920. Crescent Forge & Shovel Co., Inc., Havana, Ill. Filed Apr. 18, 1968.



For Plowshares, Lister-Shares, Middle Breaker Shares, and Cultivator-Shovels (Int. Cl. 7).
First use July 1, 1910.

SN 297,294. Imperial Knife Associated Companies, Inc., Providence, R.I. Filed May 3, 1968.

WIND ROSE

For Stainless Steel Knives, Forks, and Spoons (Int. Cl. 8).
First use Apr. 5, 1968.

SN 299,111. Day/Ton Progress Corp., Dayton, Ohio. Filed May 27, 1968.

OVA

For Locator, Alignment and Lock Type Pins for Punch and Die Plates and the Like (Int. Cl. 8).
First use June 19, 1967.

SN 301,130. Metal Improvement Company, Carlstadt, N.J. Filed June 24, 1968.



For Equipment and Apparatus for Treating, Cleaning or Forming Metal Work Pieces, and Components Thereof—Namely, Shot Peening Machines, Shot Classifiers, Shot Peening Forming Machines, and Parts Thereof (Int. Cl. 7).
First use on or about Aug. 15, 1958.

SN 309,164. R. Hoe & Company, Inc., Bronx, N.Y., assignee of Decomatic Corporation, Mansfield, Ohio. Filed Oct. 8, 1968.

DECOMATIC

For Packaging Machinery—Namely, Package Handling, Conveying, Sidewall, Lid and Crate Printing, Feeding From Nested Stacks, Bagging and Delivery Machinery (Int. Cl. 7).
First use Sept. 21, 1965.

SN 309,614. Phillips Drill Company, Inc., Indianapolis, Ind., assignee of Phillips Drill Company, Michigan City, Ind. Filed Oct. 14, 1968.

ROTO STOP

For Coupling Attachment for a Rotary Percussive Hammer (Int. Cl. 7).
First use on or about Sept. 16, 1968.

SN 312,875. Hanson Stainless Steel, Inc., Worcester, Mass. Filed Nov. 22, 1968.

KRISTINA

For Stainless Steel Flatware (Int. Cl. 8).
First use Oct. 26, 1968.

SN 313,927. General Radiator, Inc., Mount Vernon, Ill. Filed Dec. 9, 1968.

GENERAL

For Auxiliary Oil Coolers for Automatic Automotive Transmissions (Int. Cl. 12).
First use as early as Aug. 30, 1968.

Class 26—Measuring and Scientific Appliances

SN 279,852. Asenath Petrie, Cambridge, Mass. Filed Sept. 7, 1967.

PETRIE R.A. METER

For Psychoneurological Test Material and Equipment—Namely, a Kit Containing Objects of Varying Shapes, Sizes and Textures for Measuring Kinesthetic Reactions (Int. Cl. 9).
First use Aug. 23, 1967.

SN 280,354. Electroglas, Inc., Menlo Park, Calif. Filed Sept. 11, 1967.

ELECTROGLAS

Owner of Reg. No. 734,189.
For Diffusion Furnaces and Furnace Controllers for Laboratory Applications, Automatic and Motorized Wafer Probers and Components Thereof, Optical Mask Alignment Devices, Interferometers, Diffusion Accessories, Including Diffusion Doping Devices, Oxide Devices Capable of Oxide Growth From Wet or Dry Gases, Quartz Diffusion Boats, Source Boats and Furnace Tubes, Split Field Microscope and Exposure Systems, Microscope Illuminators, Wafer Processing Equipment, and Stepping Motor Control Systems (Int. Cl. 9).
First use Nov. 11, 1960.

SN 287,180. Systron-Donner Corporation, Concord, Calif. Filed Dec. 18, 1967.

SYSTRON DONNER

Owner of Reg. Nos. 690,199 and 732,716.
For Counter-Timers, Plug-In Frequency Extenders for Counter-Timers, Frequency Meters, Plug-In Frequency Extenders for Frequency Meters, Plug-In Frequency Converters, Time Interval Measurement Plug-Ins, Time Interval and Dual Measurement Plug-Ins, Preset Plug-Ins, Video Amplifier Plug-Ins, Pre-Scaler Plug-Ins, Frequency Counters, Frequency to D.C. Converters, Digit-Set Universal Counters, Digital Recorders, Remote In-Line Indicators, D.C. to Time Converters, High Speed Digital Volt Meters, Time Interval Meters, Digital Limit Detectors, Digital Volt Meters, Digital Clocks, Electronic Counters, Automatic Checkout Equipment, Single and Multi-Channel Data Processors, Voltage to Time Converters, Electronic Data Acquisition Systems, Analog Computers, Summers, Integrators, Multipliers, Inverters for Analog Computers, Variable Diode Function Generators, Comparators, Digital Logic Control Modules, Operational Amplifiers, Summers/Inverters, Function Relays, Electronic Switches, Function Switches, Coefficient Potentiometers, Flip Flops, Gates, Power Supplies for Analog Computers, Analog Computer Problem Boards, Linear and Angular Servo Accelerometers, Servo Accelerometer Power Supplies, Electronic Filters for Accelerometers, Inertial Stabilizing Systems, Acceleration Switches, Velocity Sensors, Velocity Preset Electronics Modules, Gyros, Time Code Generators and Tape Search Systems (Int. Cl. 9).
First use May 10, 1962; Feb. 1, 1957 as to "Systron"; May 10, 1954 as to "Donner."

SN 292,466. Isay Balinkin, Cincinnati, Ohio. Filed Mar. 5, 1968.

SPECTRO-FILTERSCOPE

For Color Demonstration Device (Int. Cl. 9).
First use Oct. 13, 1967.

SN 297,434. Omega Louis Brandt et Frere S.A., Bienne, Switzerland. Filed May 6, 1968.

PHOTOSPRINT

Owner of Swiss Reg. No. 205,178, dated July 3, 1964.
For Cameras for Photographic and Time Recording for Sports and Science (Int. Cl. 9).

SN 298,807. Consolidated Analysis Centers Inc., Santa Monica, Calif. Filed May 22, 1968.

SIMSCRIPT I.5

For Program Compilers for Computers (Int. Cl. 9).
First use Dec. 10, 1965.

SN 301,661. Educational Computer Systems, Inc., Phoenix, Ariz. Filed July 16, 1968.

TESTMASTER

For Portable Examination Grading Computers (Int. Cl. 9).
First use May 29, 1968.

SN 306,035. Miles Laboratories, Inc., Elkhart, Ind. Filed Aug. 27, 1968.

URIN-TEK

For Clinical Laboratory Apparatus—Namely, Test Tubes, Collection Cups, Urine Containers, and Carrying Racks for Specimen Cups; and Instruments for Partial or Complete Studies of Urine (Int. Cl. 9).
First use at least as early as Jan. 11, 1965.

SN 309,069. Opto Specs, Ltd., New York, N.Y. Filed Oct. 7, 1968.

OptO KING

For Sunglasses (Int. Cl. 9).
First use July 22, 1968.

SN 309,070. Opto Specs, Ltd., New York, N.Y. Filed Oct. 7, 1968.

OptO QUEEN

For Sunglasses (Int. Cl. 9).
First use July 22, 1968.

SN 310,628. Associated Photographers, Inc., Kansas City, Mo. Filed Oct. 28, 1968.

DELTACHROME

For Equipment for Use in the Photographic Industry—Namely, Densitometers, Pack Analyzers, Additive Computers, and Subtractive Computers (Int. Cl. 9).
First use June 28, 1968.

SN 311,906. Modutec Incorporated, Norwalk, Conn. Filed Nov. 12, 1968.



The mark may be considered as a stylized Letter "M."
For Ammeters and Voltmeters (Int. Cl. 9).
First use Sept. 20, 1968.

SN 313,182. Metronics Associates, Inc., Palo Alto, Calif. Filed Nov. 27, 1968.

DYNACAL

For Permeation Tubes for Air Analysis Calibration (Int. Cl. 9).
First use Apr. 13, 1968.

SN 316,578. Wm. Ainsworth, Inc., Denver, Colo. Filed Jan. 15, 1969.

DIGIMETRIC

For Automatic Weigh Balances or Scales (Int. Cl. 9).
First use Nov. 25, 1968.

SN 317,666. Carl-Zeiss-Stiftung, d.b.a. Carl Zeiss, Heidenheim (Brenz), Wurttemberg, Germany. Filed Jan. 22, 1969.

CYTOSCAN

Owner of German Reg. No. 852,969, dated Dec. 17, 1968.
For Microscopes and Their Parts, in Particular, for the Analysis of Microscopic Objects (Int. Cl. 9).
First use July 15, 1968; in commerce July 15, 1968.

SN 318,149. Automated Control Technology, Inc., Palo Alto, Calif. Filed Feb. 3, 1969.

act

For Test Probes for Visually Indicating the Logic Condition of Digital Devices (Int. Cl. 9).
First use Dec. 6, 1968.

Class 27 — Horological Instruments

SN 295,631. Michael C. Fina Company, New York, N.Y. Filed Apr. 15, 1968.

NOVARA

For Watches (Int. Cl. 14).
First use August 1967.

SN 310,583. Nivada A.G. (Nivada, S.A., Nivada, Ltd.), Solothurn, Switzerland. Filed Oct. 25, 1968.

QUARTZONIC

Priority claimed under Sec. 44(d) on Swiss Reg. No. 232,244, dated May 7, 1968.
For Quartz Watches and Watch Parts (Int. Cl. 14).

Class 28 — Jewelry and Precious-Metal Ware

SN 293,875. Abraham Zacroisky & Sons, Inc., Miami, Fla. Filed Mar. 21, 1968.

SKYLINE

For Metals and Metal Castings and Forgings Used in Jewelry (Int. Cl. 14).
First use Jan. 2, 1963.

SN 318,041. Fortunoff Silver Sales of Westbury, Inc., Westbury, N.Y. Filed Jan. 31, 1969.

fs

For Jewelry Including Rings and Pins (Int. Cl. 14).
First use June 1968.

SN 319,184. Oneida Ltd., Oneida, N.Y. Filed Feb. 14, 1969.

MELISSA

For Flatware Made of, or Coated With Precious Metal (Int. Cl. 8).
First use Jan. 24, 1969.

SN 321,510. Kulick Wholesale Jewelers, Inc., d.b.a. East Asia Gems, Ltd., Los Angeles, Calif. Filed Mar. 12, 1969.

E.A.

For Jewelry—Namely, Rings (Int. Cl. 14).
First use Jan. 15, 1968.

Class 29 — Brooms, Brushes, and Dusters

SN 304,061. The Drackett Company, Cincinnati, Ohio. Filed Aug. 1, 1968.

THE WHISTLE

Owner of Reg. Nos. 688,844 and 857,636.
For Sponge Mop (Int. Cl. 21).
First use May 28, 1968.

SN 306,289. Weiler Brush Company, Cresco, Pa. Filed Aug. 29, 1968.

WEILER

Owner of Reg. Nos. 760,833 and 810,440.
For Rotary Type Brushes (Int. Cl. 7).
First use Jan. 10, 1961.

SN 318,539. Raymond C. Gilbert, d.b.a. Indispensable Disposables of Iowa, Eldora, Iowa. Filed Feb. 6, 1969.

RADORA-CLOTH

For Disposable Dust Cloths (Int. Cl. 21).
First use Oct. 14, 1968.

Class 30 — Crockery, Earthenware, and Porcelain

SN 313,191. Nikko Ceramics, Inc., New York, N.Y. Filed Nov. 27, 1968.

Mitani

The word "Mitani" is a surname in the Japanese language, and also has a meaning, when translated into English, which is "three valleys."
For China Dinnerware (Int. Cl. 21).
First use Oct. 14, 1968.

SN 316,670. Nikko Ceramics, Inc., New York, N.Y. Filed Jan. 15, 1969.

Kingstone

For China Dinnerware (Int. Cl. 21).
First use Dec. 2, 1968.

Class 31 — Filters and Refrigerators

SN 282,433. Borg-Warner Corporation (Delaware corporation), Chicago, Ill., assignee of Borg-Warner Corporation (Illinois corporation), Chicago, Ill. Filed Oct. 13, 1967.

DELTRIC

For Automatic Electric Defrost Units for Use in Cold Storage Facilities, and Parts Thereof for Replacement and Repair (Int. Cl. 11).
First use on or prior to Apr. 1, 1960.

SN 318,383. Appleton Wire Works Corp., Appleton, Wis. Filed Feb. 5, 1969.



For Fibrous Non-Woven Filter Material (Int. Cl. 1).
First use Jan. 29, 1969.

Class 32 — Furniture and Upholstery

SN 294,721. Califoam Corporation of America, Compton, Calif. Filed Apr. 2, 1968.

STO-A-WAY

For Bedding—Namely, Mattresses and Box Springs and Other Supports for Mattresses (Int. Cl. 20).
First use Nov. 2, 1967.

SN 297,763. Canterbury House, Inc., Peru, Ind. Filed May 9, 1968.

DENSIFOAM

For Cushions and Cushioning for Chairs, Sofas, Sectionals, Loveseats, and Ottomans (Int. Cl. 20).
First use on or about Oct. 11, 1967.

SN 303,529. Kent B. Huson, Scottsdale, Ariz. Filed July 24, 1968.

CAMPER'S VALET

The word "Camper's" is disclaimed apart from the mark.
For Portable Washstand for Camping (Int. Cl. 20).
First use June 22, 1967.

SN 304,988. Strässle Söhne & Co., Kirchberg, St. Gall, Switzerland. Filed Aug. 12, 1968.

COLLECTION STRÄSSLE INTERNATIONAL S

The word "Collection" is disclaimed separate and apart from the mark as shown.
For Furniture—Namely, Arm Chairs, Settees, Tables, Chairs and Office Chairs, Beds, and Chaise Lounges (Int. Cl. 20).
First use April 1965; in commerce December 1965.

SN 308,932. Strässle Söhne & Co., Kirchberg, St. Gall, Switzerland. Filed Oct. 4, 1968.

KING CHAIR S

The words "King Chair" are disclaimed separate and apart from the mark as shown.
For Upholstered Furniture (Int. Cl. 20).
First use December 1965; in commerce January 1966.

SN 320,866. Simmons Company, New York, N.Y. Filed Mar. 5, 1969.

LA GRANDE

Owner of Reg. No. 511,415.
For Bed Springs and Mattresses (Int. Cl. 20).
First use Apr. 28, 1925.

SN 320,956. Invincible Metal Furniture Co., Manitowoc, Wis. Filed Mar. 6, 1969.

INVINCIBLE MODERNAIRE

Owner of Reg. No. 518,565.
For Office Furniture—Namely, Desks, Filing Cabinets, Tables, Chests, Telephone Stands, Credenzas, Bookcases, Cabinets, Files, Desk Trays and Letter Trays, Continuous Tops for Multiple Units, and Parts Thereof (Int. Cls. 16 and 20).
First use April 1937.

SN 321,216. Hamilton Cosco, Inc., Columbus, Ind. Filed Mar. 10, 1969.

EZE-gang

For Chairs (Int. Cl. 20).
First use Mar. 6, 1967.

SN 322,150. Divers International, Inc., New Haven, Conn. Filed Mar. 19, 1969.

MAD

For Indoor and Outdoor Inflatable Furniture (Int. Cl. 20).
First use Mar. 7, 1969.

SN 322,199. U.S. Industries, Inc., d.b.a. United Chair Company, Leeds, Ala. Filed Mar. 19, 1969.

united chair

Applicant disclaims the word "Chair" and the pictorial representation of a chair apart from the remainder of the mark.
For Chairs (Int. Cl. 20).
First use October 1961.

Class 33 — Glassware

SN 313,201. Prismo Safety Corporation, Huntingdon, Pa. Filed Nov. 27, 1968.



The drawing is lined for the color orange. The words "Glass Spheres" and the word "Kristal" are disclaimed apart from the mark as shown.
For Glass Spheres for Use on Highway Markers (Int. Cl. 21).
First use Sept. 25, 1968.

Class 34 — Heating, Lighting, and Ventilating Apparatus

SN 261,206. Dri-Heat Food System, Inc., Chicago, Ill. Filed Dec. 21, 1966.



For Food Warming Ovens, and Parts Thereof—Namely, Oven Stands, Oven Traycarts, Plate Holders, and Plate Covers (Int. Cl. 11).
First use Mar. 15, 1966.

SN 291,423. Pomona Air, Inc., d.b.a. Allied Air Conditioning, Pomona, Calif. Filed Feb. 19, 1968.

POMONAIR

For Heating, Air Conditioning, and Dehumidifying Units (Int. Cl. 11).
First use Apr. 4, 1967.
Subj. to Intf. with SN 314,393.

SN 299,622. Becton, Dickinson and Company, East Rutherford, N.J. Filed June 4, 1968.

ENVIRAFLO

For Laminar Flow Equipment—Namely, Modules for Providing and Control of Air for Clean Rooms (Int. Cl. 11).
First use Nov. 22, 1967.

SN 301,105. Trolex Corporation, Kenilworth, N.J. Filed June 21, 1968.

TROL-A-TEMP

For Zone Controls for Air Heating and Cooling Systems—Namely, Automatic Registers, Dampers and Diffusers (Int. Cl. 9).
First use April 1964.

SN 303,029. Armstrong Cork Company, Lancaster, Pa. Filed July 18, 1968.

SPEEDFOIL

For Infrared Electrical Industrial Heater for Accelerated Drying and Curing of Finishes, Coatings and Films (Int. Cl. 11.
First use June 25, 1968.

SN 314,393. Glenmart Company, Inc., Los Angeles, Calif. Filed Dec. 13, 1968.

POMONAIR

For Environmental Air Modules for Control of Computer, Data-Processing, and Other Electronic Areas and Centers (Int. Cl. 11).
First use in or about February 1966.
Subj. to Intf. with SN 291,423.

SN 316,954. Aero-Flow Dynamics, Inc., Linden, N.J. Filed Jan. 21, 1969.

ENTHALEX

Owner of Reg. No. 760,729.
For Heat Energy Exchanger for Heating, Ventilating, or Air Conditioning System (Int. Cl. 11).
First use Oct. 15, 1968.

SN 317,294. Air Reduction Company, Incorporated, New York, N.Y. Filed Jan. 23, 1969.

SUPER-COR

For Welding Electrodes (Int. Cl. 9).
First use Feb. 9, 1968.

SN 317,296. Air Reduction Company, Incorporated, New York, N.Y. Filed Jan. 23, 1969.

TUF-COR

For Welding Electrodes (Int. Cl. 9).
First use Mar. 15, 1968.

SN 317,554. Govern Electric Heater Corp., Brooklyn, N.Y. Filed Jan. 27, 1969.

COVE

For Electric Heaters (Int. Cl. 11).
First use Sept. 28, 1966.

SN 324,563. Radio Corporation of America, New York, N.Y. Filed Apr. 15, 1969.

RCA

Owner of Reg. Nos. 167,591, 859,484, and others.
For Thermoelectric Air Conditioners (Int. Cl. 11).
First use at least as early as 1962.

SN 324,568. Radio Corporation of America, New York, N.Y. Filed Apr. 15, 1969.

RCA

Owner of Reg. Nos. 167,591, 859,484, and others.
For Thermoelectric Air Conditioners (Int. Cl. 11).
First use October 1968; at least as early as 1962 as to the mark "RCA."

Class 35 — Belting, Hose, Machinery Packing, and Nonmetallic Tires

SN 320,139. The Fluorocarbon Company, Anaheim, Calif. Filed Feb. 26, 1969.

FCS

For Mechanical Ring Seals (Int. Cl. 17).
First use Feb. 17, 1969.

SN 320,265. Hydro-Flex Corporation, Inc., Topeka, Kans. Filed Feb. 27, 1969.

HYDRO-FLEX

Owner of Reg. No. 856,854.
For Automotive Radiator Hoses (Int. Cl. 17).
First use Jan. 15, 1969.

SN 321,030. Atlas Supply Company, Springfield, N.J. Filed Mar. 7, 1969.

ATLAS

Owner of Reg. Nos. 291,995, 761,359, and others.
For Water Outlet Gasket for Use on Internal Combustion Engines (Int. Cl. 17).
First use Dec. 16, 1968.

SN 321,255. Monsanto Company, St. Louis, Mo. Filed Mar. 10, 1969.

FLEX-PRENE

For Garden Hose (Int. Cl. 17).
First use Jan. 22, 1967.

SN 321,797. The Goodyear Tire & Rubber Company, Akron, Ohio. Filed Mar. 14, 1969.

TALISMAN

For Tires (Int. Cl. 12).
First use Dec. 18, 1968.

SN 323,427. Atlas Supply Company, Springfield, N.J. Filed Apr. 2, 1969.

GOLDENTRAC

Owner of Reg. No. 261,088 and others.
For Rubber Tires (Int. Cl. 12).
First use Mar. 7, 1969.

SN 324,363. Regional Services Corporation, Washington, D.C. Filed Apr. 14, 1969.

AUTO CLUB

Without waiving any of its common law rights, applicant disclaims exclusive right to use of the word "Auto" except in the combination shown. Owner of Reg. No. 862,413.
For Tires (Int. Cl. 12).
First use Mar. 25, 1969.

SN 324,365. Regional Services Corporation, Washington, D.C. Filed Apr. 14, 1969.

MOTOR CLUB

Owner of Reg. No. 862,413.
First use Mar. 25, 1969.

SN 324,988. Oliver Tire & Rubber Company, Oakland, Calif. Filed Apr. 21, 1969.

HI-HAULER

For Tire Tread Rubber (Int. Cl. 12).
First use Mar. 12, 1969.

Class 36 — Musical Instruments and Supplies

SN 299,132. Joseph S. Horn, d.b.a. Trans Global Records of America, Bayard, Nebr. Filed May 27, 1968.

TGR

For Phonograph Records (Int. Cl. 9).
First use May 24, 1968.

SN 303,546. Sue Records, Ltd., New York, N.Y. Filed July 24, 1968.

SUE

For Phonograph Records (Int. Cl. 9).
First use January 1957.

SN 304,308. Columbia Broadcasting System, Inc., New York, N.Y. Filed Aug. 5, 1968.



Owner of Reg. Nos. 622,736, 794,720, and others.
For Phonograph Records, Wire Recordings, Magnetic Tapes, Pre-Recorded Magnetic Tapes, and Magnetic Tape Cartridges and Cassettes (Int. Cl. 9).
First use at least as early as October 1960.

SN 312,166. Sono-Mag Corporation, Bloomington, Ill. Filed Nov. 14, 1968.

CAROUSEL

For Rotary Magnetic Tape Cartridge Player (Int. Cl. 9).
First use at least as early as Dec. 20, 1962.

SN 313,547. Strum & Drum, Inc., Wheeling, Ill. Filed Dec. 4, 1968.

ENSENADA

The word "Ensenada" means a "small bay," "inlet," "cove," or "creek" in the Spanish language.
For Musical Instruments—Namely, guitars, Ukuleles, Banjos, Tambourines, Drums, Cymbals, Guitar Connector Cords, Guitar Strings, Mandolins, Picks, and Amplifiers, Microphones, and Neck Straps, All for Use With Musical Instruments (Int. Cls. 9 and 15).
First use Nov. 6, 1968.

SN 315,178. Columbia Broadcasting System, Inc., New York, N.Y. Filed Dec. 26, 1968.

COLUMBIA

Owner of Reg. Nos. 379,020, 586,317, and others.
For Phonograph Records, Wire Recordings, Magnetic Tapes, Pre-Recorded Magnetic Tapes, and Magnetic Tape Cartridges and Cassettes (Int. Cl. 9).
First use at least as early as August 1957.

SN 316,912. Shelby Singleton Productions, Inc., Nashville, Tenn. Filed Jan. 17, 1969.

plantation

For Phonograph Records (Int. Cl. 9).
First use July 2, 1968.

SN 320,791. Budget Sound, Inc., Burbank, Calif. Filed Mar. 5, 1969.

ALSHIRE

For Pre-Recorded Magnetic Tape and Phonograph Records (Int. Cl. 9).
First use Apr. 1, 1966.

SN 324,567. Radio Corporation of America, New York, N.Y. Filed Apr. 15, 1969.

VIBRANT

For Blank, Magnetic Tape (Int. Cl. 9).
First use July 1960.

SN 324,569. Radio Corporation of America, New York, N.Y. Filed Apr. 15, 1969.

RED SEAL

For Blank Magnetic Tape and Recorder Tape (Int. Cl. 9).
First use 1958.

SN 324,847. Curtis R. Steen, Madison, Tenn. Filed Apr. 17, 1969.

TRAIL

For Phonograph Records (Int. Cl. 9).
First use Dec. 26, 1966.

Class 37—Paper and Stationery

SN 305,573. Soul Brands, Inc., Memphis, Tenn. Filed Aug. 20, 1968.

SOUL BRANDS

The word "Brands" is disclaimed apart from the mark as shown. The mark is lined for the colors red and blue.
For Notebooks, Memo Pads, and Letter Paper (Int. Cl. 16).
First use June 24, 1968.

SN 314,396. Kwik-File, Inc., Minneapolis, Minn. Filed Dec. 13, 1968.

ADD·A·TAB

For Three-Surface Index Tags Positioned Within a Triangular Transparent Holder (Int. Cl. 16).
First use Nov. 1, 1968.

SN 319,308. Greet Our Babies, Inc., Memphis, Tenn. Filed Feb. 17, 1969.

THIS IS MY LIFE

Owner of Reg. No. 847,381.
For Diary-Type Record Book (Int. Cl. 16).
First use Jan. 1, 1965.

SN 320,454. Sami Dodsworth Company, Kansas City, Kans. Filed Mar. 3, 1969.

CHEXOTIC

For Bank Checks (Int. Cl. 16).
First use Jan. 20, 1969.

SN 320,700. Bliss-Nielsen, Chicago, Ill. Filed Mar. 4, 1969.
Owner of Reg. No. 742,839.

SPEE-D-TAX

For Business Forms Particularly Intended for Tax Accounting and Reporting (Int. Cl. 16).
First use Aug. 30, 1960.

SN 320,723. International Paper Company, New York, N.Y. Filed Mar. 4, 1969.

BLISTER-MATE

For Bleached Paperboard (Int. Cl. 16).
First use Jan. 13, 1969.

Class 38—Prints and Publications

SN 278,476. The Reuben H. Donnelley Corporation, New York, N.Y. Filed Aug. 17, 1967.

Quick Reference TRAVEL PLANNER

Applicant disclaims the words "Travel Planner" apart from the mark as shown. Owner of Reg. Nos. 720,700, 812,569, and others.
For Periodical Directory Containing Travel Information Arranged by Destination (Int. Cl. 16).
First use on or before Dec. 12, 1966.

SN 287,871. B. F. Ascher & Company, Inc., Kansas City, Mo. Filed Jan. 2, 1968.

StarteRx

The symbol "℞" is disclaimed except as a part of the mark as shown.
For Printed Prescription Forms (Int. Cl. 16).
First use Nov. 17, 1967.

SN 289,192. The Greater Trenton Chamber of Commerce, Trenton, N.J. Filed Jan. 19, 1968.

TRENTON

For Magazine (Int. Cl. 16).
First use June 1924.

SN 298,249. Rexall Drug and Chemical Company, d.b.a. Riker Laboratories, Los Angeles, Calif. Filed May 15, 1968.

PULMONITOR

For Publication Disseminated to the Medical Profession Relating to Pulmonary Function Measurements (Int. Cl. 16).
First use Apr. 13, 1968.

SN 299,483. The Petroleum Engineer Publishing Company, Dallas, Tex. Filed May 31, 1968.

ENERGY NEWS

For Newsletter Published Periodically (Int. Cl. 16).
First use Apr. 1, 1968.

SN 306,542. American Express Company, New York, N.Y. Filed Sept. 4, 1968.

AMERICAN EXPRESS

The drawing is lined for blue, but no claim is made to color.
Owner of Reg. Nos. 526,406, 838,067, and others.
For Travelers' Guidebooks, Travel Brochures, Area Directories of Hotels, Motels, Restaurants, Car Rental Agencies and Night Clubs, Promotional Travel Literature, Company House Organs, and Financial Reports (Int. Cl. 16).
First use May 29, 1963.

SN 311,389. Motor & Equipment Manufacturers Association, New York, N.Y. Filed Nov. 5, 1968.

AUTOMOTIVE INSIGHT

For Trade Publication Printed Variously in the Form of a Magazine, Brochure or Newsletter Specializing in the Automotive Aftermarket (Int. Cl. 16).
First use March 1965.

SN 316,119. Newhall Newspapers Incorporated, Newhall, Calif. Filed Jan. 8, 1969.

THE NEWHALL SIGNAL AND EAGLES ENTERPRISE

For Newspaper Published Weekly (Int. Cl. 16).
First use prior to 1919.

SN 317,994. GAF Corporation, New York, N.Y. Filed Jan. 31, 1969.

GAF

Owner of Reg. Nos. 509,124, 837,005, and others.
For Photographic Prints, Enlargements, Pictures, Transparencies and Slides; Mounted Photographs; Picture and Film Cards; Trade Publications, Especially Trade Magazines, Periodical Publications, Published Catalogues, Booklets and Pamphlets; Developed Photographic and Cinematographic Film and Color Film; Developed Copying and Photographic Paper and Color Paper; Processed Diazotype Prints and Copies (Int. Cls. 9 and 16).
First use January 1965.

SN 321,338. World Wide Baraca and Philathea Union, Mount Vernon, Va. Filed Feb. 19, 1969.

BARACA-PHILATHEA

For Magazines, Brochures, and Pamphlets (Int. Cl. 16).
First use Apr. 16, 1912.

SN 321,339. World Wide Baraca and Philathea Union, Mount Vernon, Va. Filed Feb. 19, 1969.

BARACA PHILATHEA

For Magazines, Brochures, and Pamphlets (Int. Cl. 16).
First use Apr. 16, 1912.

SN 323,666. The American Kennel Club, Incorporated, New York, N.Y. Filed Apr. 4, 1969.

AMERICAN KENNEL CLUB A·K·C INCORPORATED

For Books, Monthly Magazines, and Pamphlets (Int. Cl. 16).
First use at least as early as Jan. 5, 1909.

SN 324,020. Grosset & Dunlap, Inc., New York, N.Y. Filed Apr. 9, 1969.

MADISON SQUARE PRESS

For Books (Int. Cl. 16).
First use July 17, 1967.

SN 324,130. Elmcraft, Inc., Chicago, Ill. Filed Apr. 10, 1969.

HOLIDAY CHARM

For Greeting Cards (Int. Cl. 16).
First use May 3, 1968.

Class 39 — Clothing

SN 290,557. Alfred Dunhill Limited, London, England. Filed Feb. 8, 1968.

dunhill

Concurrent use with Dunhill Tailored Clothes, Inc., a New York corporation, located and doing business at 65 E. 57th St., New York, N.Y. may use "Dunhill Tailors" on men's suits, overcoats, and haberdashery—namely, shirts, ties, socks and underwear; provided however, that whenever Dunhill Tailored Clothes, Inc. so makes any use of "Dunhill Tailors," the word "Tailors" shall always be horizontally juxtaposed to "Dunhill" and shall always be in the same form, font, style, size, color, and as prominent as "Dunhill," and provided further that Dunhill Tailored Clothes, Inc. shall not use "Dunhill Tailors" in lowercase type. See 119 USPQ 325. Owner of Reg. Nos. 155,951, 634,071, and others.
For Men's Clothing—Namely, Suits, Overcoats, Sport Coats, and Slacks (Int. Cl. 25).
First use Oct. 10, 1961, on sport coats and slacks; in commerce Oct. 10, 1961.

SN 298,727. Kayser-Roth Corporation, New York, N.Y. Filed May 21, 1968.

CONTROL MATES

For Ladies' and Girls' Panties, Girdles, Hosiery, and Panty Hose (Int. Cl. 25.
First use May 1, 1968.

SN 310,322. Wm. Gluckin & Co., Inc., New York, N.Y. Filed Oct. 23, 1968.

SLINX

For Girdles (Int. Cl. 25).
First use Sept. 19, 1968.

SN 314,401. Shannon Mfg. Co., North Hollywood, Calif. Filed Dec. 13, 1968.

Hidden Circlette

Owner of Reg. No. 818,707.
For Girdles (Int. Cl. 25).
First use Aug. 29, 1968.

SN 318,811. Present Adel Morgan Inc., Kansas City, Mo. Filed Feb. 10, 1969.

QUEEN MODES

The word "Modes" is disclaimed apart from the mark as shown.
For Ladies' Coats (Int. Cl. 25).
First use July 1, 1960.

SN 319,449. Ithaca Textiles, Inc., Ithaca, N.Y. Filed Feb. 18, 1969.

mini·hitch

For Women's Panty and Hose (Int. Cl. 25).
First use Nov. 4, 1968.

Class 40 — Fancy Goods, Furnishings, and Notions

SN 297,836. American Velcro, Inc., Manchester, N.H. Filed May 10, 1968.



For Nylon Tape or Other Synthetic Fasteners of the Hook and Loop Type Including the Components, the Hook Tape and the Loop Tape (Int. Cl. 26).
First use Apr. 25, 1968.

SN 320,415. American Velcro, Inc., Manchester, N.H. Filed Mar. 3, 1969.

VELFOAM

For Fastener, Sold in Roll Form by the Yard or Less, Consisting of Two Elements of Nylon or Other Man-Made Fiber, One of Which is a Loop-Type Material Bonded to Foam Rubber and the Other Covered With Hooks, Which Adhere as a Closure or Fastener When Pressed Together (Int. Cl. 26).
First use Jan. 20, 1969.

Class 41 — Canes, Parasols, and Umbrellas

SN 322,578. Finkel Outdoor Products, Inc., Garfield, N.J. Filed Mar. 24, 1969.

LIFTOMAT

Owner of Reg. No. 531,185.
For Garden Umbrellas (Int. Cl. 18).
First use Oct. 22, 1965.

Class 42 — Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

SN 285,928. Lintex Co. Inc., Lynbrook, N.Y. Filed Nov. 30, 1967.

SPONGDRY

For Table Cloths, Towels, Bath Mats, Place Mats, Sheets, Pillow Cases, Bedspreads, and Blankets (Int. Cl. 24).
First use Oct. 1, 1967.

SN 300,282. Ludlow Corporation, Needham Heights, Mass. Filed June 12, 1968.

BOND-BAK

For Sponge Rubber Padding for Laminating to Textile Floor Coverings (Int. Cl. 17).
First use Apr. 15, 1968.

SN 303,000. Vargo Industries, Inc., New York, N.Y. Filed July 17, 1968.

PALVERA

For Textile Piece Goods for Making Into Ladies' Dresses, Blouses, Coats, Suits and Slacks, and as Interlining and Interfacing for the Same (Int. Cl. 24).
First use July 13, 1967.

SN 303,001. Vargo Industries, Inc., New York, N.Y. Filed July 17, 1968.

SPINWAY

For Textile Piece Goods for Interlining and Interfacing of Ladies' and Men's Wearing Apparel and Draperies (Int. Cl. 24).
First use Mar. 22, 1956.

SN 307,904. The Micracell Corporation, Gardena, Calif. Filed Sept. 20, 1968.

EASI-DOWN

For Carpet Cushions (Int. Cl. 27).
First use Feb. 1, 1967.

SN 311,754. E. T. Barwick Industries, Inc., Chamblee, Ga. Filed Nov. 12, 1968.

KITCHEN CLASSICS

Without waiving any common law rights, applicant disclaims any exclusive right in the word "Kitchen" apart from the mark as shown. Owner of Reg. No. 598,837.
For Carpets (Int. Cl. 27).
First use Nov. 15, 1967.

SN 312,124. E. T. Barwick Industries, Inc., Chamblee, Ga. Filed Nov. 14, 1968.

LORD AVON

Owner of Reg. No. 617,914.
For Carpets (Int. Cl. 27).
First use Nov. 6, 1967.

SN 312,131. E. T. Barwick Industries, Inc., Chamblee, Ga. Filed Nov. 14, 1968.

SYLVAN

Owner of Reg. No. 604,524.
For Carpets (Int. Cl. 27).
First use Apr. 23, 1967.

SN 313,637. J. Manes Co., Inc., New York, N.Y. Filed Nov. 26, 1968.

GABBY

For Textile Fabrics Made of Rayon and Cotton (Int. Cl. 24).
First use July 23, 1968.

SN 317,606. Pande, Cameron & Co. of New York, Inc., New York, N.Y. Filed Jan. 27, 1969.

KHALABAR

For Rugs and Carpets (Int. Cl. 27).
First use August 1936.

SN 323,993. Deering Milliken, Inc., New York, N.Y. Filed Apr. 9, 1969.

MILLISKIN

For Textile Fabrics Made of Wool, Cotton, and Synthetic Fibers, and Combinations Thereof (Int. Cl. 24).
First use Mar. 21, 1969.

Class 44 — Dental, Medical, and Surgical Appliances

SN 299,834. E.B.K. Industries, Inc., Brooklyn, N.Y. Filed June 6, 1968.

AQUA-GENIC

For Tooth and Mouth Cleaning Device Employing a Stream of Liquid Under Pressure (Int. Cl. 10).
First use Jan. 6, 1968.

SN 313,833. Physio-Control Corporation, Seattle, Wash. Filed Dec. 6, 1968.

QUIK-LOOK

For Defibrillation and Monitoring Electrodes for Heart Monitoring and Defibrillation Equipment (Int. Cl. 10).
First use at least as early as Nov. 18, 1968.

SN 323,416. Brunswick Manufacturing Company, Inc., North Quincy, Mass. Filed Apr. 2, 1969.

CPR

For Cardio Pulmonary Resuscitator (Int. Cl. 10).
First use Mar. 28, 1969.

SN 323,648. Minnesota Mining and Manufacturing Company, St. Paul, Minn. Filed Apr. 4, 1969.

VETRAP

For Strips of Elastic Bandaging Material (Int. Cl. 5).
First use Mar. 18, 1969.

Class 46 — Foods and Ingredients of Foods

SN 258,942. U-Tote'm, Inc., Houston, Tex. Filed Nov. 17, 1966.

U-TOTE'M

Owner of Reg. No. 815,051.
For Cheese; Canned, Fresh, Dried and Frozen Fruits; Frozen and Canned Fruit and Vegetable Juices; Fresh, Frozen, Canned and Dried Vegetables; Fresh, Frozen, Canned and Dried Meats; Frozen and Canned Seafoods; Pickles; Salad Dressings; Vegetable and Meat Based Sandwich Spreads; Peppers; Meat and Seafood Sauces; Vinegar; Jellies; Table Syrup; Flavoring Syrups for Food Purposes; Evaporated, Instant and Whole Milk; Whole and Powdered Cream; Coffee; Tea; Cornmeal; Food Starch; Baking Soda; Flour; Cake Mix; Cooking and Salad Oils; Animal and Vegetable Derived Shortenings; Salt; Sugar; Spices; Rice; Spaghetti; Noodles; Pastry; Breakfast Cereals; Gelatins for Food Purposes; Pudding Powders; Popcorn; Ice Cream; Toppings—Namely, Flavored Syrups, Fruit, Nut or Marshmallow; Soups; Dogfood; Catfood; Candy; Meat Pies; Pies; Cakes; Waffles; Frozen and Canned Enchiladas; Frozen and Canned Tamales; Tortillas; Pizzas; Butter; Yeast; Oleomargarine; Biscuits, Frozen and Baked Rolls and Cookies; and Vegetable and Cheese Based Dips (Int. Cls. 29, 30, 31, and 32).
First use June 1964.

SN 284,630. Mountain Empire Dairymen's Association, Inc., Denver, Colo., by change of name from Denver Milk Producers, Inc., Denver, Colo. Filed Nov. 13, 1967.



The word "Milk" is disclaimed apart from the mark as shown.
For Dairy Products—Namely, Fluid Milk, Chocolaote Milk, Skim Milk, Two Percent Milk, Cream, Cottage Cheese, and Ice Cream (Int. Cl. 29).
First use on or about May 19, 1967.

SN 294,211. Savarin Corporation, New York, N.Y. Filed Mar. 26, 1968.



The English translation of the foreign words which appear in the mark are as follows: The foreign words appearing immediately above and to the left of the word "Marmara"" translate as "registered mark"; the foreign word appearing directly below the word "Flour" translates "Marmara"; the foreign words appearing directly below the foreign word meaning Marmara translate as "family wheat flour." Applicant disclaims the exclusive use of the words "Brand" and "Flour," the three sheafs of wheat, and the foreign words meaning "registered mark," "family wheat flour" except as used in connection with the mark.
For Wheat Flour (Int. Cl. 30).
First use May 3, 1954.

SN 295,386. Taterstate Frozen Foods, Washburn, Maine. Filed Apr. 10, 1968.

SNOW FLAKE

Owner of Reg. No. 696,500.
For Frozen Cooked Vegetables—Namely, Frozen French Fried Potatoes and Frozen Mashed Potatoes, and Dehydrated Potato Flakes (Int. Cl. 29.
First use May 2, 1952.

SN 298,768. Wakefern Food Corporation, Elizabeth, N.J. Filed May 21, 1968.

SHOP-RITE

Owner of Reg. Nos. 738,144, 812,306, and others.
For Frozen Fish, Vegetables, Fruit, Meat, Ice Cream Fruit Pies; Bread, Rolls, Doughnuts, Pastries; Cold Cuts, Pork Roll, Bacon, Cheese, Smoked Ham and Beef, Franks; Canned Vegetables, Pork and Beans, Kidney Beans, Tomato Puree and Mushrooms; Fruit and Fruit Juices; Canned Fish; Soups; Dog and Cat Food; Olives and Pickles, Spaghetti, Gravy, Catsup, Chile Sauce, Mustard, Vinegar, Peanut Butter, Evaporated Milk, and Chocolate Syrup (Int. Cls. 29, 30, 31, and 32).
First use at least as early as 1955 on canned vegetables.
Subj. to Intf. with SN 319,023.

SN 298,984. Van Buren Packing Company, Hartford, Mich. Filed May 23, 1968.

IT'S WHAT'S INSIDE THAT COUNTS

For Fresh Vegetables (Int. Cl. 31).
First use Mar. 6, 1968.

SN 299,656. Diamond Crystal Salt Company, St. Clair, Mich. Filed June 4, 1968.



Packet
BRAND

For the purposes of registration, applicant disclaims exclusive rights to the use of the words "Packet" and "Brand" apart from the composite mark shown, but applicant does not waive any of its common law rights therein.
For Individual Packets or Pouches Containing Individual Servings of Flavoring Materials—Namely, Ketchup, Mustard, Jellies, Salt and Pepper (Int. Cls. 29 and 30).
First use May 15, 1965.
Subj. to Intf. with SN 298,048.

SN 299,990. Walter M. Lowney Company, Limited, Sherbrooke, Quebec, Canada. Filed June 7, 1968.



Priority claimed under Sec. 44(d) on Canadian application filed Mar. 27, 1968; Reg. No. 161,041, dated Feb. 7, 1969.
For Chocolate Bars, Peanuts, Candied Raisins, Jellies, Chocolate Buds, Candy Wafers, Caramels, Barley Sugar Candy, Fruit Drops, Lemon Acid Drops, Crystal Mints, Hard Candy, Fudge, Chocolate Covered Peanuts and Raisins, Candied Maraschino Cherries, Hard Candy on a Stick, Caramel Corn, and Peppermint Patties (In. Cl. 30).

SN 301,324. American Whipped Products, Inc., Glendale, N.Y. Filed June 25, 1968.

KING KOW

For Prepared Milk Product—Namely, a Filled Milk With Vegetable Fat Replacing Butter Fat (Int. Cl. 29).
First use Mar. 20, 1968.

SN 301,921. Clarence A. Donati, d.b.a. Western Chili Processors, Santa Maria, Calif. Filed July 3, 1968.



No claim is made to the representation of the goods apart from the mark as shown.
For Chili Pods (Int. Cl. 31).
First use Mar. 6, 1968.

SN 302,971. A. H. Robins Company, Incorporated, Richmond, Va. Filed July 17, 1968.

P.T.O.'s

For Potato Chips (Int. Cl. 29).
First use May 24, 1968.

SN 302,989. Tohato Tokyo Seika Kabushiki Kaisha, Suginami-ku, Tokyo-to, Japan. Filed July 17, 1968.

Tohato

For Biscuits, Cookies, Crackers, Rice Crackers, Corn Chips, Peanuts, Cake and Bread (Int. Cls. 29, 30).
First use Oct. 17, 1949; in commerce Sept. 11, 1964.

SN 303,731. Foodmaker, Inc., San Diego, California. Filed July 31, 1968.

BONUSBURGER

For Ready-To-Eat Hamburgers, Sold Exclusively From Restaurants (Int. Cl. 29).
First use at least as early as 1963.
Subj. to Intf. with SN 292,429.

SN 303,897. Delsoy Products Corporation, Dearborn, Mich. Filed July 30, 1968.

COFFEE FRESH

The word "Fresh," comprising a part of the mark, is disclaimed.
For Non-Dairy Substitute for Cream (Int. Cl. 29).
First use July 10, 1968.

SN 304,718. Fred Usinger, Inc., d.b.a. Usinger's, Milwaukee, Wis. Filed Aug. 8, 1968.



The representation of the goods is disclaimed apart from the mark. Owner of Reg. Nos. 632,378, 678,182, and 750,278.
For Cooked, Dried, and Semi-Dry Sausages (Int. Cl. 29).
First use Aug. 30, 1965.

SN 308,070. American Dairy Queen Corporation, Minneapolis, Minn. Filed Aug. 27, 1968.

QUEEN PAK

Applicant disclaims the term "Pak" separate and apart from the mark as shown. Owner of Reg. Nos. 728,894, 763,209, and 776,277.
For Ice Cream and Ice Milk Confections (Int. Cl. 30).
First use Apr. 2, 1962.

SN 308,364. Country Lad Foods, Inc., Atlanta, Ga. Filed Sept. 27, 1968.

COUNTRY LAD

For High Protein Food Beverage Containing Vegetable Fat Rather Than Butterfat (Int. Cl. 29).
First use May 13, 1968.

SN 308,714. C. J. Patterson Company, Kansas City, Mo. Filed Oct. 2, 1968.

BAVARIAN MINTS

The word "Mints" is disclaimed apart from the mark shown.
Owner of Reg. No. 502,594.
For Mint Candy (Int. Cl. 30).
First use 1931.

SN 309,669. Ecomar-Empresa Comercial do Ultramar, Lda., Lisbon, Portugal. Filed Oct. 15, 1968.

ECOMAR

For Coffee Beans (Int. Cl. 30).
First use 1952; in commerce 1952.

SN 311,813. Beatrice Foods Co., Chicago, Ill. Filed Nov. 12, 1968.

CRUNCH-A-RINOS

Owner of Reg. No. 843,331.
For Candy (Int. Cl. 30).
First use Oct. 10, 1968.

SN 311,814. Beatrice Foods Co., Chicago, Ill. Filed Nov. 12, 1968.

CRUNCH-A-ROOS

For Candy (Int. Cl. 30).
First use Oct. 10, 1968.

SN 313,086. Drew Chemical Corporation, New York, N.Y. Filed Nov. 26, 1968.

DREWKREME

Owner of Reg. Nos. 539,495, 782,532, and 817,099.
For Edible Vegetable Fat (Int. Cl. 29).
First use at least as early as April 1963.

SN 313,171. Green Giant Company, Le Sueur, Minn. Filed Nov. 27, 1968.

GREEN GIANT

Owner of Reg. Nos. 230,035, 826,189, and others.
For Canned Peas Beans and Canned Pork and Beans (Int. Cl. 29).
First use Mar. 25, 1968.

SN 313,172. Green Giant Company, Le Sueur, Minn. Filed Nov. 27, 1968.

NIBLET EARS

Without waiver or abandonment of any common law rights, applicant disclaims the word "Ears," apart from the mark as a whole. Owner of Reg. Nos. 342,503, 753,810, and others.
For Frozen Corn on the cob (Int. Cl. 29).
First use at least as early as April 1966.

SN 313,673. Beatrice Foods Co., Chicago, Ill. Filed Dec. 5, 1968.

TYKES

Owner of Reg. No. 847,119.
For Candy (Int. Cl. 30).
First use Nov. 6, 1968.

SN 313,674. Beatrice Foods Co., Chicago, Ill. Filed Dec. 5, 1968.

FLOPPETS

Owner of Reg. No. 847,119.
For Candy (Int. Cl. 30).
First use Nov. 6, 1968.

SN 313,882. Aroma Coffee Company, Inc., Chicago, Ill. Filed Dec. 9, 1968.

CUISINIER'S CHOICE

For Coffee (Int. Cl. 30).
First use Oct. 1, 1968.

SN 314,043. American Mushroom Corporation, Wilmington, Del. Filed Dec. 10, 1968.



The configuration of the mushroom is disclaimed apart from the mark as shown. Owner of Reg. No. 836,402.
For Canned Mushrooms (Int. Cl. 29).
First use July 20, 1966.

SN 314,251. Pet Incorporated, St. Louis, Mo. Filed Dec. 11, 1968.

"VERY"

For Liquid and Powdered Diet Foods Which Serve as Nutritionally Complete Meals (Int. Cl. 5).
First use Feb. 17, 1967.

SN 314,861. Wholesale Pizza Co., Nashville, Tenn. Filed Dec. 19, 1968.

PEPE'S PIZZA

Applicant disclaims the word "Pizza" apart from the mark as a whole.
For Refrigerated Pizza Pies (Int. Cl. 30).
First use May 5, 1965.
Subj. to Intf. with SN 262,125.

SN 315,115. Sunline, Inc., St. Louis, Mo. Filed Dec. 23, 1968.

KOOKIE COCO

The word "Coco" is disclaimed apart from the mark as shown.
For Candy (Int. Cl. 30).
First use Dec. 5, 1968.

SN 316,393. Schleider Foods, Inc., Baltimore, Md. Filed Jan. 13, 1969.

PK

The right to exclusive use of the representation of the Star of David is disclaimed apart from the mark as shown.
For Frozen Kosher Foods—Namely, Stuffed Kishke, Potato Knishes, Meat Kreplach, Meat Knishes, and Stuffed Cabbage (Int. Cl. 29).
First use Mar. 11, 1968.

SN 317,467. Popped-Right Corn Company, Marion, Ohio. Filed Jan. 24, 1969.

MUNCH MATES

For Plain, Seasoned, and Flavored Popped Popcorn, Seasoned and Flavored Expanded Corn Meal, Caramel Coated Popped Popcorn, and Fried Extruded Corn Meal (Int. Cls. 29 and 30).
First use June 26, 1968.

SN 317,821. Central Dairy Products Company, d.b.a. Timothy Farms, Oklahoma City, Okla. Filed Jan. 29, 1969.

TIMBURGER

For Frozen Meat Patties (Int. Cl. 29).
First use Nov. 9, 1968.

SN 318,371. Rapid Foods, Inc., Miami, Fla. Filed Feb. 5, 1969.

RAPID FOODS

For Frozen Meats (Int. Cl. 29).
First use on or about Oct. 30, 1968.

SN 318,476. Wellgro, Inc., Greeley, Colo. Filed Feb. 5, 1969.

WELLGRO

For Dried Beans (Int. Cl. 29).
First use Sept. 1, 1966.

SN 324,866. Ralston Purina Company, St. Louis, Mo. Filed Apr. 18, 1969.

GRASS STRETCHER

For Livestock Feed (Int. Cl. 31).
First use at least as early as May 1, 1968.

Class 49 — Distilled Alcoholic Liquors

SN 321,214. Glenmore Distilleries Company, Louisville, Ky. Filed Mar. 10, 1969.

MALLARD

For Bourbon Whiskey (Int. Cl. 33).
First use Feb. 3, 1969.

Class 50—Merchandise Not Otherwise Classified

SN 313,671. James D. Basigner, Elsinore, Calif. Filed Dec. 5, 1968.

GARDEN GUARDIAN

The word "Garden" is disclaimed apart from the mark as shown.
For Unit for Covering and Protecting Garden Plants, Consisting of a Protective Covering Material and Mounting Rollers and Fixtures Therefor (Int. Cl. 22).
First use Oct. 4, 1968.

SN 319,727. Plasti-Kote Corp., Medina, Ohio. Filed Feb. 20, 1969.

PERMA-LOC

For Closures for Spray Cans (Int. Cl. 20).
First use Nov. 18, 1968.

SN 320,291. Rexall Drug and Chemical Company, d.b.a. Thompson Industries, Los Angeles, Calif. Filed Feb. 27, 1969.

STYROLIDS

Owner of Reg. No. 768,563.
For Covers for Plastic Containers and Cups (Int. Cl. 20).
First use Feb. 3, 1989.

SN 324,989. Quality Products Manufacturing Co., Inc., Gardena, Calif. Filed Apr. 21, 1969.

GLAMOR

For Foam Rubber Vinyl Covered Mats (Int. Cl. 27).
First use Feb. 26, 1969.

Class 51—Cosmetics and Toilet Preparations

SN 289,141. Yardley of London, Inc., Totowa, N.J. Filed Jan. 18, 1968.

OLIVER PINK

Applicant disclaims the word "Pink" apart from the mark as shown.
For Nail Polish, Lipstick and Lip Polish (Int. Cl. 3).
First use Jan. 3, 1968.

SN 290,578. Jacqueline Cochran, Inc., New York, N.Y., by merger from Carven Distributors, Inc., New York, N.Y. Filed Feb. 8, 1968.

EAU VIVE

"Eau Vive" means "running water."
For Eau de Cologne (Int. Cl. 3).
First use Oct. 14, 1966.

SN 292,349. Colgate-Palmolive Company, New York, N.Y. Filed Mar. 4, 1968.

CREAM 'N CLEAN

For Cosmetic Facial Washing Cream (Int. Cl. 3).
First use Jan. 30, 1968.

SN 292,363. Elizabeth Arden Sales Corporation, New York, N.Y. Filed Mar. 4, 1968.

SUN BLUFF

Applicant disclaims the word "Sun" apart from the mark as shown. Owner of Reg. Nos. 396,303, 579,705, and 828,670.
For Sun Lotion (Int. Cl. 3).
First use Jan. 31, 1968.

SN 298,459. Steven Lewis, d.b.a. The Steven Lewis Company, Los Angeles, Calif. Filed May 17, 1968.

OCEAN MIST

Applicant disclaims the word "Mist" apart from the mark as shown.
For Men's Cologne (Int. Cl. 3).
First use Dec. 29, 1966.

SN 298,925. Elizabeth of Sweden Limited, Kingston, Jamaica. Filed May 23, 1968.

Tropic Ice

For Cologne and Body Lotion (Int. Cl. 3).
First use January 1960; in commerce Mar. 31, 1962.

SN 300,911. Da Vida Cosmetics Inc., d.b.a. Da Vida, New York, N.Y. Filed June 20, 1968.

AFRICAN LURE

For Cologne (Int. Cl. 3).
First use on or about June 4, 1968.

SN 304,521. Ugo Ravizza S.A.S. per l'Industria Chimica e Farmaceutica, Muggio, Milan, Italy. Filed Aug. 6, 1968.

EXIRIA

For Italian Reg. No. 213,622, dated June 19, 1967.
For Cosmetic Cleansing Milk and Creams; Skin Moisturizing, Nourishing and Blemish Creams; Cosmetic Lotions and Tonics for Cleaning and Toning the Skin; and Personal Deodorants (Int. Cls. 3 and 5).

SN 308,462. C.L.I. Cosmetics, Inc., Brooklyn, N.Y. Filed Sept. 30, 1968.

White Tusk

For Men's Cologne, After Shave Lotion, Bath Powder, Talcum Powder, and Personal Deodorants (Int. Cls. 3 and 5).
First use Sept. 5, 1968.

SN 308,791. Lelord Kordel, d.b.a. Nutrition Enterprises, Detroit, Mich. Filed Oct. 3, 1968.

DERMA TIME

Without waiving any of its common law rights, applicant disclaims the word "Derma" apart from the mark as shown.
For Skin Conditioning Lotion (Int. Cl. 3).
First use October 1961.

SN 313,581. Houbigant, Inc., New York, N.Y. Filed Dec. 4, 1968.

ESPRIT DE NOEL

"Esprit de Noel" means "spirit of Christmas."
For Perfume, Cologne, Toilet Water, Perfumed Moisture Balm, Bath Oil, Dusting Powder, Spray Body Talc, Perfumed Bubble Bath, Hand Lotion, Lipstick, Rouge, Face Powder, and Skin Cream (Int. Cl. 3).
First use Aug. 15, 1967.

SN 316,500. Lander Co., Inc., d.b.a. Emily Rogers, New York, N.Y. Filed Jan. 14, 1969.

EMILY ROGERS

"Emily Rogers" is not the name of any living individual.
For Lipstick, Eye Shadow, Skin Freshener, Hand Cream, Cold Cream, Dry Skin Cream, Cosmetic Facial Washing Cream, and Foundation Makeup (Int. Cl. 3).
First use at least as early as 1956, on hand cream, cold cream, and dry skin cream.

SN 319,266. Beecham Inc., Clifton, N.J. Filed Feb. 17, 1969. Filed Feb. 17, 1969.

MORNING FRESH

Applicant disclaims the word "Fresh" apart from the mark as shown.
For Mouthwash (Int. Cl. 3).
First use Jan. 16, 1969.

SN 321,184. Bristol-Myers Company, New York, N.Y. Filed Mar. 10, 1969.

ULTRABAN

Owner of Reg. Nos. 218,261, 628,408, and 836,437.
For Antiperspirant Deodorant (Int. Cl. 5).
First use Dec. 17, 1968.

SN 321,400. Perma, Paris, France. Filed Mar. 11, 1969.

LUMICREM

Owner of French Reg. No. 490,777, dated Sept. 27, 1960 (Seine); Natl. Inst. No. 151,440.
For Hair Conditioning Products (Int. Cl. 3).

SN 321,817. The Madam C. J. Walker Manufacturing Co., Inc., Indianapolis, Ind. Filed Mar. 14, 1969.



Applicant disclaims the right to exclusive use of the word "Pomade" apart from the mark as shown. The name "Madame C. J. Walker" is fanciful. Owner of Reg. Nos. 255,740 and 611,542.
For Pomade (Int. Cl. 3).
First use February 1966; Mar. 1, 1928, as to "Madame C. J. Walker" and "Wonder Pomade."

SN 322,404. Borden, Inc., New York, N.Y. Filed Mar. 21, 1969.

WIG-NU

For Hair Spray (Int. Cl. 3).
First use on or about Oct. 24, 1968.

SN 322,943. Carter-Wallace, Inc., New York, N.Y. Filed Mar. 27, 1969.

SMUG

For After Shave Lotion (Int. Cl. 3).
First use Nov. 30, 1967.

SN 323,198. Majestic Drug Co., Inc., Bronx, N.Y. Filed Apr. 1, 1969.

WINTERUB

For Skin Coolant and Refresher (Int. Cl. 3).
First use Dec. 31, 1959.

Class 52—Detergents and Soaps

SN 296,987. S. & S. Soap Co., Bronx, N.Y. Filed Apr. 30, 1968.

SANI-PINK

For Detergent Compounds for Washing of Dishes, Glass ware, Pots and Pans, Linoleum, Porcelain and Enamel Surfaces (Int. Cl. 3).
First use on or about July 1, 1951.

SN 302,622. Kem Manufacturing Corporation, Tucker, Ga. Filed July 12, 1968.

MICRO-CELLERATE

For Drain Pipe Cleaners (Int. Cl. 3).
First use May 10, 1968.

SN 303,576. Lever Brothers Company, New York, N.Y. Filed July 25, 1968.

THE HUNGRY DETERGENT

Applicant disclaims any rights in the word "Detergent" apart from the mark as shown.
For Detergents for General Washing and Cleansing (Int. Cl. 3).
First use July 12, 1968.

SN 305,195. Amway Corporation, Ada, Mich. Filed Aug. 15, 1968.

SMASHING WHITE

Applicant disclaims the word "White" apart from the mark.
For Laundry Additive, Specifically a Pre-Soak Agent and/or a Laundry Booster (Int. Cl. 3).
First use on or about July 3, 1968.

SN 316,385. The Proctor & Gamble Company, Cincinnati, Ohio. Filed Jan. 13, 1969.

BONUS

Owner of Reg. Nos. 413,703 and 813,151.
For Sudsing Household Dishwashing and Laundry Soap and Detergent (Int. Cl. 3).
First use Oct. 9, 1944.

SN 317,914. Lanvin-Charles of the Ritz, Inc., New York, N.Y. Filed Jan. 30, 1969.

AKIMBO

For Heel and Elbow Cosmetic Treatment Cream (Int. Cl. 3).
First use Jan. 9, 1969.

SN 319,460. National Service Industries, Inc., d.b.a. Zep Manufacturing Company, Atlanta, Ga. Filed Feb. 18, 1969.

ZEPREMIER

Owner of Reg. Nos. 681,037, 696,197, and others.
For Whitewall Cleaners, Steam Cleaners, Degreasers and Cold Cleaning Solvents, Multipurpose Cleaners, Cleaning Preparations Having Incidental Germicidal Properties, Carburetor and Small Automotive Parts Cleaners, Aluminum Cleaning and Brightening Preparations, and Hand Cleaning Preparations (Int. Cl. 3).
First use Jan. 2, 1965.

SN 319,485. National Service Industries, Inc., d.b.a. Zep Manufacturing Company, Atlanta, Ga. Filed Feb. 18, 1969.

ZEP PLUS

Owner of Reg. Nos. 681,037, 696,197, and others.
For Multi-Purpose Cleaning Preparation (Int. Cl. 3).
First use 1945.

SN 319,486. National Service Industries, Inc., d.b.a. Zep Manufacturing Company, Atlanta, Ga. Filed Feb. 18, 1969.

ZepValor

Owner of Reg. Nos. 681,037, 696,197, and others.
For Dishwashing Detergent (Int. Cl. 3).
First use June 1, 1965.

SN 319,487. National Service Industries, Inc., d.b.a. Zep Manufacturing Company, Atlanta, Ga. Filed Feb. 18, 1969.

ZEP-OFF

Owner of Reg. Nos. 681,037, 696,197, and others.
For Paint Remover (Int. Cl. 3).
First use Jan. 2, 1959.

SN 319,489. National Service Industries, Inc., d.b.a. Zep Manufacturing Company, Atlanta, Ga. Filed Feb. 18, 1969.

ZEPRESTO

Owner of Reg. Nos. 681,037, 696,197, and others.
For Multi-Purpose Cleaner for Use on Carburetors, Transmissions, Small Parts of Internal Combustion and Diesel Engines, and the Like (Int. Cl. 3).
First use Mar. 1, 1966.

SN 319,491. National Service Industries, Inc., d.b.a. Zep Manufacturing Company, Atlanta, Ga. Filed Feb. 18, 1969.

ZEPRIDE

Owner of Reg. Nos. 681,037, 696,197, and others.
For General Purpose Cleaning and Degreasing Preparation (Int. Cl. 3).
First use Mar. 22, 1962.

SN 319,492. National Service Industries, Inc., d.b.a. Zep Manufacturing Company, Atlanta, Ga. Filed Feb. 18, 1969.

ZEPGO

Owner of Reg. Nos. 681,037, 696,197, and others.
For Spot and Stain Removing Preparation (Int. Cl. 3).
First use Jan. 2, 1966.

SN 319,493. National Service Industries, Inc., d.b.a. Zep Manufacturing Company, Atlanta, Ga. Filed Feb. 18, 1969.

ZEP OLD SMOKY

Owner of Reg. Nos. 681,037, 696,197, and others.
For Multi-Purpose Cleaning Preparation (Int. Cl. 3).
First use Dec. 18, 1961.

SN 319,494. National Service Industries, Inc., d.b.a. Zep Manufacturing Company, Atlanta, Ga. Filed Feb. 18, 1969.

ZEPRO

Owner of Reg. Nos. 681,037, 696,197, and others.
For Cleaning Preparation for Rugs, Upholstery, Carpeting, and the Like (Int. Cl. 3).
First use June 1, 1967.

SN 319,495. National Service Industries, Inc., d.b.a. Zep Manufacturing Company, Atlanta, Ga. Filed Feb. 18, 1969.

ZEP-FLO

Owner of Reg. Nos. 681,037, 696,197, and others.
For Liquid Drain Cleaner and Opener (Int. Cl. 3).
First use Jan. 2, 1965.

SN 319,497. National Service Industries, Inc., d.b.a. Zep Manufacturing Company, Atlanta, Ga. Filed Feb. 18, 1969.

ZEPSECURE

Owner of Reg. Nos. 681,037, 696,197, and others.
For Multi-Purpose Cleaning Preparation Having Incidental Sanitizing and Deodorizing Properties (Int. Cl. 3).
First use Jan. 2, 1967.

SN 319,498. National Service Industries, Inc., d.b.a. Zep Manufacturing Company, Atlanta, Ga. Filed Feb. 18, 1969.

ZEP-A-LUME

Owner of Reg. Nos. 681,037, 696,197, and others.
For Cleaning and Brightening Preparation for Use on Aluminum Surfaces (Int. Cl. 3).
First use Sept. 10, 1964.

SERVICE MARKS

Class 100 — Miscellaneous

SN 294,910. The Bendix Corporation, Detroit, Mich., assignee of Bendix Field Engineering Corporation, Owings Mills, Md. Filed Apr. 4, 1968.

Bendix

Owner of Reg. Nos. 403,444, 781,749, and others.
For Integrated Field Engineering and Management Services to U.S. and Foreign Governments, to Industry Providing Services in Operation, Maintenance, Logistic Planning, System Engineering, Documentation, Training, Data Acquisition and Presentation, in the Electronic, Electro-Mechanical Disciplines Associated With Space Exploration, Ocean Environments, Air and Water Pollution, Air Traffic Control, and Bio-Medicine (Int. Cl. 42).
First use Apr. 17, 1967.

SN 305,327. Griffs of America, Inc., Dallas, Tex. Filed Aug. 16, 1968.

"THE DRIVE-IN WITH THE RAINBOW COLORS"

The words "Drive-In" are disclaimed apart from the mark as shown.
For Restaurant Services (Int. Cl. 42).
First use during April 1968.

SN 311,463. Chicken Holiday Take Out Shop, Inc., Edison Township, N.J. Filed Nov. 6, 1968.

CHICKEN HOLIDAY

Without relinquishing any of its common law rights, applicant disclaims the word "Chicken" apart from the mark as shown.
For Take-Out and Delivery Food Shop Services, Including the Preparation of Meals for Off-the-Premises Consumption and Delivery of Same (Int. Cl. 42).
First use Sept. 1, 1967.

SN 313,387. Restaurant Associates Industries, Inc., New York, N.Y. Filed Dec. 2, 1968.

BIG ALICE'S KITCHEN

Applicant disclaims the exclusive right to the word "Kitchen" apart from the mark as shown.
For Restaurant Services (Int. Cl. 42).
First use Nov. 18, 1968.

SN 313,660. Babe Ruth League, Inc., Trenton, N.J. Filed Dec. 5, 1968.

BABE RUTH BASEBALL

Applicant disclaims the word "Baseball" and its representation except as used as part of and in conjunction with the mark. Owner of Reg. No. 614,107.
For Services in the Nature of Stimulating and Maintaining Interest in Good Sportsmanship, Citizenship, and Baseball Activities Through Organizing Baseball Teams and Leagues Throughout the United States for Boys Between 12 and 19 Years of Age and Furnishing Advice and Guidance to Participants Therein (Int. Cl. 42).
First use Oct. 7, 1968.

SN 313,661. Babe Ruth League, Inc., Trenton, N.J. Filed Dec. 5, 1968.

BABE RUTH BASEBALL

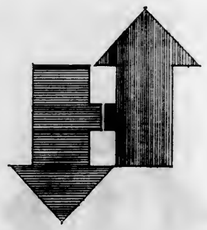
Applicant disclaims the word "Baseball" apart from the mark as shown. Owner of Reg. No. 614,107.
For Services in the Nature of Stimulating and Maintaining Interest in Good Sportsmanship, Citizenship, and Baseball Activities Through Organizing Baseball Teams and Leagues Throughout the United States for Boys Between 12 and 19 Years of Age and Furnishing Advice and Guidance to Participants Therein (Int. Cl. 42).
First use July 1, 1966.

SN 315,462. Fast Foods International, Inc., Orlando, Fla. Filed Dec. 31, 1968.

Ferdy's ROAST BEEF

No Claim is made to the wording "Roast Beef Sandwiches" apart from the mark.
For Restaurant Services (Int. Cl. 42).
First use Oct. 1, 1968.

SN 316,273. James W. Hardy Inc., Elk Grove Village, Ill. Filed Jan. 10, 1969.



The drawing is lined for the colors red and blue.
For Engineering Services—Namely, the Designing of Heating, Ventilating, and Cooling Apparatus, and the Design of Installations of Such Apparatus for Others (Int. Cl. 42).
First use June 15, 1968.

SN 317,628. The Shrimp Boats, Inc., Macon, Ga. Filed Jan. 27, 1969.

Shrimp Boats

Applicant disclaims right to exclusive use of the word "Shrimp" apart from the mark as shown. Owner of Reg. No. 853,393.
For Restaurant Services (Int. Cl. 42).
First use Oct. 8, 1967.

SN 319,540. Gold Platter, Inc., Macon, Ga. Filed Feb. 19, 1969.



"James Brown" identifies a living individual whose consent is of record.
For Restaurant Services (Int. Cl. 42).
First use Dec. 24, 1968.

Class 101 — Advertising and Business

SN 259,668. T. Bragg McLeod, Charlotte, N.C. Filed Nov. 29, 1966.

SAFETY

For Distribution and Redemption of Merit Award Stamps for Employee Safety Incentive Plans (Int. Cl. 35).
First use Nov. 25, 1966.

SN 274,353. Swap-Meet, Inc., Atlantic City, N.J. Filed June 20, 1967.

Swap Meet

For Exchange Services Where Persons Can Barter Goods With One Another (Int. Cl. 35).
First use June 5, 1967.

SN 275,594. Adams, Martin & Nelson, Inc., Minneapolis, Minn. Filed July 10, 1967.

YU-WYN

For Promoting the Sale of the Goods and/or Services of Others Through the Distribution of Printed Materials and Advertising Designed for Promotional Contests (Int. Cl. 35).
First use June 5, 1967.

SN 275,683. Plantation Foods Corporation, Miami, Fla. Filed July 10, 1967.



For Distributorship Services in the Field of Foodstuffs (Int. Cl. 35).
First use on or about May 1, 1961.

SN 281,390. Harold M. Pitman Company, Chicago, Ill. Filed Sept. 28, 1967.

PITMAN

For Distributorship Services in the Field of Photographic Materials, Metals, Chemicals, and Supplies for the Graphic Arts (Int. Cl. 35).
First use Oct. 22, 1914.

SN 283,723. Seedkem, Inc., Evansville, Ind. Filed Oct. 30, 1967.



For Distributorship Services in the Field of Lawn, Garden and Farming Supplies (Int. Cl. 35).
First use December 1959.

SN 283,724. Seedkem, Inc., Evansville, Ind. Filed Oct. 30, 1967.

SEEDKEM

For Distributor Services in the Field of Lawn, Garden and Farming Supplies (Int. Cl. 35).
First use December 1959.

SN 294,383. Four Pi, Inc., Oak Park, Ill. Filed Mar. 28, 1968.



The lining on the drawing is a feature of the mark, and is not intended to represent color. The mark includes a representation of the mathematical symbol known as "pi."
For Computer Programming Services (Int. Cl. 35).
First use Mar. 30, 1966.

SN 294,956. National Design Center Delaware Inc., New York, N.Y. Filed Apr. 4, 1968.

PPLR

For Marketing Research Services—Namely, Providing Product Specifications for Commercial and Industrial Construction Projects to Potential Suppliers of Such Products (Int. Cl. 35).
First use on or about Dec. 4, 1967.

SN 294,957. National Design Center Delaware Inc., New York, N.Y. Filed Apr. 4, 1968.

CAR

For Market Research Services—Namely, Providing a Statistical Comparative Analysis of a Marketer's Competitive Market Position for His Product Category in Existing Commercial and Industrial Projects (Int. Cl. 35).
First use on or about Dec. 4, 1967.

SN 294,960. National Design Center Delaware Inc., New York, N.Y. Filed Apr. 4, 1968.

IDAC

For Market Research Services for the Building Products and Contract Furnishings Industries (Int. Cl. 35).
First use on or about Dec. 4, 1967.

SN 294,962. National Design Center Delaware Inc., New York, N.Y. Filed Apr. 4, 1968.

OAR

For Market Research Services—Namely, Providing a Statistical Measurement of Acceptance by Architects or Other Market Specifiers of a Marketer's Offering of His Product in a Reference Source Publication (Int. Cl. 35).
First use on or about Dec. 4, 1967.

SN 296,169. Institutional Food Brokers, Inc., Waltham, Mass. Filed Apr. 22, 1968.



The mark comprises a fanciful representation of the letters "IFB."
For Food Brokerage Services (Int. Cl. 35).
First use Jan. 29, 1968.

SN 298,752. National Data Communications, Inc., Dallas, Tex. Filed May 21, 1968.

NATIONAL DATA COMMUNICATIONS

For Processing of Hospital Data in Connection With a Central Computer Utility Including Patient Scheduling, Reminder Medical Record Maintenance and Review, Laboratory Reporting, Service Department Scheduling, Patient Billing, Accounts Receivable, Payroll and General Ledger Accounting Functions (Int. Cl. 35).
First use Apr. 19, 1968.

SN 298,933. Fredericks Services, Inc., New York, N.Y. Filed May 23, 1968.

Fredericks APPELLATE SERVICE

Without prejudice to its common law rights, applicant disclaims "Appellate Service" apart from the mark shown.
For Service for Attorneys Relating to Appeals Filed in State and Federal Courts—Namely, Typing and Reproduction of Briefs and Procedural Assistance in the Preparation of Records From the Lower Court and Filing Briefs and Record in an Appellate Court and Serving Copies of Such Records on Opposing Counsel (Int. Cl. 35).
First use Mar. 4, 1968.

SN 299,691. National Data Communications, Inc., Dallas, Tex. Filed June 4, 1968.



For Processing of Hospital Data in Connection With a Central Computer Utility Including Patient Scheduling, Reminder Medical Record Maintenance and Review, Laboratory Reporting, Service Department Scheduling, Patient Billing, Accounts Receivable, Payroll and General Ledger Accounting Functions (Int. Cl. 35).
First use Apr. 19, 1968.

SN 303,212. Pinpoint Advertising, Inc., Columbus, Ga. Filed July 5, 1968.

PINPOINT

For Advertising Agency Services (Int. Cl. 35).
First use July 1, 1967.

SN 305,866. Wood County Agricultural Society, Bowling Green, Ohio. Filed Aug. 23, 1968.

NATIONAL TRACTOR PULLING CHAMPIONSHIPS

No claim is made to the wording "Tractor Pulling Championships" and "Bowling Green, Ohio 43402," apart from the mark as shown.

For Promoting the Sale of Goods of Others by Means of a Tractor Pulling Contest (Int. Cl. 35).

First use on or about Mar. 1, 1968; Mar. 1, 1967 in a different form.

SN 306,673. Donnel D. Jones, d.b.a. Donnel D. Jones Associates, Dayton, Ohio. Filed Sept. 5, 1968.

I'POM

For Management Counseling Services—Namely, Evaluation and Assistance in Formation of Company Policies, Evaluating and Improving Work Effectiveness of Management and Personnel, and Continuing Training Programs To Improve Work Effectiveness Patterns in Written and Oral Communications (Int. Cl. 35).

First use Nov. 1, 1967.

SN 308,715. Petroleum Service Advertising, Inc., Blue Island, Ill. Filed Oct. 2, 1968.

KICK OFF FOR CASH

For Promotion of Gasoline and Oil Service Station Services and Goods for the Benefit of Others by Means of a Program Carried Out Through Advertising, Store Window Advertising Displays and Signs, Game Cards and Instructions, Promotional Literature and Promotional Games (Int. Cl. 35).

First use Sept. 1, 1968.

SN 309,561. Employment Unlimited, Inc., Albuquerque, N. Mex. Filed Oct. 14, 1968.

OIL

The drawing is lined for the color greenish blue.
For Employment Agency Services (Int. Cl. 35).
First use Aug. 27, 1967.

SN 312,189. Glendinning Companies, Inc., Westport, Conn. Filed Nov. 14, 1968.

MENU MONEY

Applicant disclaims the word "Money" apart from the mark as shown.

For Promoting the Sale of Goods and/or Services of Others Through the Distribution of Printed Material and Advertising Designs for Promotional Contests (Int. Cl. 35).

First use Oct. 3, 1968.

SN 312,190. Glendinning Companies, Inc., Westport, Conn. Filed Nov. 14, 1968.

MILLIONAIRE BINGO

Applicant disclaims the word "Bingo" apart from the mark as shown.

For Promoting the Sale of Goods and/or Services of Others Through the Distrbution of Printed Material and Advertising Designs for Promotional Contests (Int. Cl. 35).

First use Jan. 11, 1968.

SN 312,891. Inforonics, Inc., Maynard, Mass. Filed Nov. 22, 1968.

INFORONICS

For Organizing, Processing, and Presenting Computer Based Information (Int. Cl. 35).

First use at least as early as June 1962.

SN 315,948. Nancy Nolan, Inc., d.b.a. Nancy Nolan Agency, Los Angeles, Calif. Filed Jan. 6, 1969.

NANCY NOLAN

The name "Nancy Nolan" does not identify any known living individual.

For Employment Agency Services (Int. Cl. 35).

First use Apr. 15, 1956.

SN 320,763. Blackman Hicksville Co., Inc., Hicksville, N.Y. Filed Mar. 5, 1969.

PLUMBING HEATING
BLACKMAN
INDUSTRIAL COOLING

Applicant disclaims the term "Plumbing, Heating, and Industrial Cooling" apart from the mark as shown.

For Distributorship Services in Plumbing, Heating, and Air Conditioning Supplies (Int. Cl. 35).

First use Oct. 3, 1966.

SN 325,255. Clover Realty Company, Atlanta, Ga. Filed Apr. 16, 1969.

CLOVER REALTY COMPANY

For Real Estate Agency Services (Int. Cl. 35).
First use Jan. 2, 1960.

SN 325,256. Clover Realty Company, Atlanta, Ga. Filed Apr. 16, 1969.

BE LUCKY—PICK CLOVER

For Real Estate Agency Services (Int. Cl. 35).
First use Jan. 2, 1960.

Class 102 — Insurance and Financial

SN 293,057. Sigma Alpha Mu Fraternity, Inc., New York, N.Y. Filed Mar. 12, 1968.

BOUNCE FOR BEATS

For Charitable Services—Namely, Conducting Fund-Raising Activities for Charities (Int. Cl. 36).

First use November 1965.

SN 293,153. Lincoln Rochester Trust Company, Rochester, N.Y. Filed Mar. 13, 1968.

UNIBANK

For Banking Services (Int. Cl. 36).
First use Mar. 4, 1968.

SN 299,871. School Employers Trust, Lansing, Mich. Filed June 6, 1968.

SET

For Administration of a Group Life Insurance Program for School Employees (Int. Cl. 36).

First use Sept. 1, 1965.

SN 314,415. First Federal Savings and Loan Association of Wisconsin, Milwaukee, Wis. Filed Dec. 13, 1968.

INSTANT FUTURES

For Combined Savings Account-Life Insurance Plans (Int. Cl. 36).

First use Nov. 18, 1968.

SN 314,879. Financial Collection Agencies Ltd., Montreal, Quebec, Canada. Filed Dec. 19, 1968.

FCA

For Collection Agency Services (Int. Cl. 36).

First use at least as early as 1934; in commerce at least as early as Oct. 29, 1947.

SN 316,892. Investors Diversified Services, Inc., Minneapolis, Minn. Filed Jan. 17, 1969.

IDS

Owner of Reg. No. 839,746 and others.

For Investment Services—Namely, Advising Investment Companies; and the Brokerage of Investment Securities (Int. Cl. 36).

First use Jan. 23, 1967.

SN 317,453. Investors Syndicate Life Insurance and Annuity Company, Minneapolis, Minn. Filed Jan. 24, 1969.

IDS

Owner of Reg. No. 839,311 and others.

For Underwriting Life Insurance and Disability Insurance (Int. Cl. 36).

First use Jan. 23, 1967.

SN 324,778. Franklin National Bank, Mineola, N.Y. Filed Apr. 17, 1969.

THE CASHABLES

For Banking Services To Enable Customers Readily To Obtain Funds While Traveling or While Inaccessible to Applicant's Banking Offices, Consisting in Providing the Customer With an Identification Card and Blank Checks Which Checks When Completed and Issued, Constitute Obligations of the Applicant (Int. Cl. 36).

First use Sept. 16, 1968.

Class 103 — Construction and Repair

SN 303,768. Campanella Corporation, Warwick, R.I. Filed July 29, 1968.

For Construction Services—Namely, Road Construction, Bridge Building, Marine Construction, Bituminous and Ready-Mixed Concrete Paving, and Utility Construction (Int. Cl. 37).

First use on or about Apr. 5, 1968.

SN 314,860. Wholesale Pizza Co., Nashville, Tenn. Filed Dec. 19, 1968.

PEPE'S PIZZA

Applicant disclaims the word "Pizza" apart from the mark as a whole.

For Services to Restaurants and Retail Carry-Outs—Namely, the Installation and Maintenance of an Oven, and the Familiarization of Personnel in the Use Thereof, and the Regular Inspection of the Same (Int. Cl. 37).

First use May 5, 1965.

Subj. to Intf. with SN 262,125.

SN 314,992. Tompkins' Label Service, Philadelphia, Pa. Filed Dec. 20, 1968.

MetalliGraphic

For Custom Manufacture of Labels to the Orders of Others (Int. Cl. 37).

First use Dec. 13, 1968.

SN 324,025. Rock Road Construction Co., Chicago, Ill. Filed Apr. 9, 1969.



For Highway Construction Services and the Like (Int. Cl. 37).
First use Dec. 16, 1968.

Class 105 — Transportation and Storage

SN 307,318. Delta Air Lines, Inc., Atlanta, Ga. Filed Sept. 13, 1968.

OWLY BIRD

Owner of Reg. Nos. 523,611, 802,405, and others.
For Air Transportation of Persons, Property, and Mail (Int. Cl. 39).
First use Apr. 24, 1967.

SN 319,774. Mail Delivery Service Co., Inc., d.b.a. Mail Dispatch Service, San Francisco, Calif. Filed Feb. 24, 1969.



The drawing is stippled to indicate contrast only and does not indicate color. Owner of Reg. No. 759,385.
For Mail Delivery Service (Int. Cl. 39).
First use July 1, 1968.

Class 106 — Material Treatment

SN 286,405. Jack R. Aday, d.b.a. Jack the Stripper, Memphis, Tenn. Filed Dec. 7, 1967.

JACK THE STRIPPER

Applicant disclaims the term "Stripper" apart from the mark as shown.
For Treatment of Wooden and Metallic Elements and Products in Order To Remove Existing Finishes Therefrom, and to Prepare for the Refinishing Thereof (Int. Cl. 40).
First use on or about Mar. 1, 1965.

SN 303,141. Coast Plating, Inc., Gardena, Calif. Filed July 19, 1968.



The mark comprises a fanciful showing of the letters "CP."
For Metal Processing and Finishing Services—Namely, Nondestructive Testing, Cleaning, Painting, Anodizing, Electroplating, Lubricating, Passivating, Pickling, Descaling, Chromodizing, and Phosphate Coating (Int. Cl. 40).
First use Mar. 31, 1967.

Class 107 — Education and Entertainment

SN 281,609. Motown Record Corporation, Detroit, Mich. Filed Oct. 2, 1967.

MOTOWN

Owner of Reg. Nos. 800,977 and 858,961.
For Providing Popular Musical Entertainment (Int. Cl. 41).
First use Oct. 16, 1966.

SN 309,791. Service Engineering Associates, Inc., Atlanta, Ga. Filed Oct. 16, 1968.



The mark is a fanciful representation of the letters "sea."
For Education Services—Namely, Sponsoring and Conducting Seminars in Housekeeping Management and Supervision (Int. Cl. 41).
First use June 26, 1968.

SN 310,930. St. Louis Blues Hockey Club, Inc., St. Louis, Mo. Filed Oct. 30, 1968.



For Entertainment Services—Namely, Ice Hockey Exhibitions and Games Rendered Live and Through Radio and Television (Int. Cl. 41).
First use Jan. 24, 1966.

SN 310,976. Pittsburgh Steelers Sports, Inc., Pittsburgh, Pa. Filed Oct. 31, 1968.



The drawing is lined for the colors red, blue, and orange.
For Entertainment Services—Namely, Football Exhibitions Rendered Live in Stadia and Through the Media of Radio and Television Broadcasts (Int. Cl. 41).
First use 1962.

SN 314,478. WSM, Incorporated, Nashville, Tenn. Filed Dec. 13, 1968.

OPRYLAND, USA

Owner of Reg. Nos. 527,589 and 645,898.
For Entertainment Services Rendered Through the Medium of Radio—Namely, Folk Music and Variety Presentations (Int. Cl. 41).
First use May 3, 1968.

COLLECTIVE MEMBERSHIP MARKS

Class 200

SN 287,077. Los Angeles River Yacht Club, Assn., Los Angeles, Calif. Filed Dec. 18, 1967.



Applicant disclaims the words "Los Angeles" and "River Yacht Club" as it may apply to clubs engaged in yachting activities.
For Indicating Membership in Applicant.
First use Jan. 15, 1967.

SN 311,613. National Campers & Hikers Association, Inc. Buffalo, N.Y. Filed Nov. 7, 1968.



For Indicating Membership in Applicant.
First use 1958.

TRADEMARK REGISTRATIONS ISSUED

PRINCIPAL REGISTER

Class 1 — Raw or Partly Prepared Materials

S76,281. NAUGA. Uniroyal, Inc. SN 291,111. Pub. 6-24-69. Filed 2-14-68.

S76,282. BROWN AND DESIGN. Brown Diamond, Inc. MULTIPLE CLASS (Classes 1 and 23). SN 296,480. Pub. 6-24-69. Filed 4-25-68.

S76,283. TRI-ROD. Tri-Point Industries, Inc. SN 306,601. Pub. 6-24-69. Filed 9-4-68.

S76,284. PETGLAS. Rexall Drug and Chemical Company, d.b.a. Fiberfil. SN 307,755. Pub. 6-24-69. Filed 9-19-68.

S76,285. COWBRETTA. Seton Leather Company. SN 308,401. Pub. 6-24-69. Filed 9-27-68.

S76,286. TORAY. Toyo Rayon Co., Ltd. MULTIPLE CLASS (Classes 1 and 39). SN 308,652. Pub. 4-15-69. Filed 10-2-68.

S76,287. SHAG. Allied Kid Company (Delaware corporation), assignee of Allied Kid Company (Massachusetts corporation. SN 312,973. Pub. 6-24-69. Filed 11-25-68.

S76,288. PEERLESS. R. T. Vanderbilt Company, Inc. SN 313,531. Pub. 6-24-69. Filed 12-3-68.

S76,289. BI-LOFT. Monsanto Company. SN 315,429. Pub. 6-24-69. Filed 12-30-68.

Class 2 — Receptades

S76,290. HOPPER-MATIC. Behlen Manufacturing Company, Inc. SN 295,008. Pub. 6-24-69. Filed 4-5-68.

S76,291. BEAUTYWARE. Lincoln Metal Products Corporation. MULTIPLE CLASS (Classes 2 and 29). SN 295,589. Pub. 10-8-68. Filed 4-15-68.

S76,292. GUCCI. Gucci Shops Inc. MULTIPLE CLASS (Classes 2, 3, 37, 39, and 41). SN 300,192. Pub. 6-24-69. Filed 6-11-68.

S76,293. HEX-O-TAINER. Federal Paper Board Company, Inc. SN 303,989. Pub. 6-24-69. Filed 7-31-68.

S76,294. LILYKLEER. Lily-Tulip Cup Corporation. SN 304,234. Pub. 6-24-69. Filed 8-2-68.

S76,295. PORT-O-KUP. Haskon, Inc. SN 308,007. Pub. 6-24-69. Filed 9-23-68.

S76,296. STI-LIFE ETC. AND DESIGN. Steel Tank Institute. SN 309,917. Pub. 6-24-69. Filed 10-17-68.

S76,297. BULKITIER. Pennsylvania Box & Lumber Company, Inc. SN 314,912. Pub. 6-24-69. Filed 12-19-68.

S76,298. MULTI-TOTE. International Paper Company. SN 315,484. Pub. 6-24-69. Filed 12-31-68.

S76,299. WORLD OF COLOR BY COR-BOX. Cor-Box, Inc. SN 316,294. Pub. 6-24-69. Filed 1-10-69.

Class 3 — Baggage, Animal Equipments, Portfolios, and Pocketbooks

S76,292. (See Class 2 for this trademark.)

Class 4 — Abrasives and Polishing Materials

S76,300. FREESEAL. Texize Chemicals, Inc. SN 307,514. Pub. 6-24-69. Filed 9-16-68.

S76,301. DELTASHINE. Delta American Corporation. SN 310,447. Pub. 6-24-69. Filed 10-24-68.

S76,302. AUNTY-FOG. Sargeant Products Corporation. SN 315,500. Pub. 6-24-69. Filed 12-31-68.

Class 5 — Adhesives

S76,303. MISCELLANEOUS DESIGN. Caterpillar Tractor Co. MULTIPLE CLASS (Classes 5, 6, 19, 21, 23, 34, 35, and 38). SN 290,206. Pub. 6-24-69. Filed 2-5-68.

S76,304. AA. Toa Gosei Chemical Industry Co. Ltd. SN 297,899. Pub. 6-24-69. Filed 5-10-68.

S76,305. GOLDEN T. T. G. & Y. Stores Company. SN 314,119. Pub. 6-24-69. Filed 12-10-68.

S76,306. M (DESIGN). Masonite Corporation. SN 317,352. Pub. 6-24-69. Filed 1-23-69.

S76,307. MASONITE. Masonite Corporation. SN 317,353. Pub. 6-24-69. Filed 1-23-69.

Class 6 — Chemicals and Chemical Compositions

S76,303. (See Class 5 for this trademark.)

S76,308. STOPS LIVING DIRT. Lever Brothers Company. SN 242,901. Pub. 12-13-66. Filed 4-7-66.

S76,309. WW. Woodward Wanger Company. MULTIPLE CLASS (Classes 6, 13, 23, and 35). SN 271,868. Pub. 6-24-69. Filed 5-18-67.

S76,310. STABISIL. Aktiengeseilschaft für Brauerei-Industrie. MULTIPLE CLASS (Classes 6 and 31). SN 289,252. Pub. 6-24-69. Filed 1-22-68.

S76,311. SUMILIZER. Sumitomo Chemical Co., Ltd. SN 291,441. Pub. 6-24-69. Filed 2-19-68.

S76,312. EDCO. Standard Oil Company. SN 296,258. Pub. 6-24-69. Filed 4-23-68.

S76,313. MORTEX. William J. Stegmeier, d.b.a. Mortex and Company. MULTIPLE CLASS (Classes 6 and 12). SN 301,119. Pub. 6-24-69. Filed 6-24-68.

S76,314. POLYCARB. W. R. Grace & Co. SN 301,937. Pub. 4-1-69. Filed 7-3-68.

S76,315. DENNISON. Dennison Manufacturing Company. MULTIPLE CLASS (Classes 6, 26, and 37). SN 316,495. Pub. 6-24-69. Filed 1-14-69.

Class 8 — Smokers' Articles, Not Including Tobacco Products

S76,316. TOP AND DESIGN. R. J. Reynolds Tobacco Company. MULTIPLE CLASS (Classes 8 and 17). SN 303,485. Pub. 6-24-69. Filed 7-24-68.

S76,317. JARL. Jarl Pibefabrik & Traedrejeri. MULTIPLE CLASS (Classes 8 and 17). SN 312,257. Pub. 6-24-69. Filed 11-15-68.

Class 10 — Fertilizers

S76,318. FAIRFIELD. The Fairfield Engineering Company. SN 315,153. Pub. 6-24-69. Filed 12-24-68.

Class 12 — Construction Materials

S76,313. (See Class 6 for this trademark.)

S76,319. SOULE AND RECTANGLE DESIGN. Soulé Steel Company. MULTIPLE CLASS (Classes 12 and 13). SN 259,478. Pub. 6-24-69. Filed 11-25-66.

S76,320. SOULE AND TRIANGLE DESIGN. Soulé Steel Company. MULTIPLE CLASS (Classes 12 and 13). SN 259,479. Pub. 6-24-69. Filed 11-25-66.

S76,321. CORSON METALSEAL X. G. & W. H. Corson, Incorporated. SN 277,891. Pub. 6-24-69. Filed 8-9-67.

S76,322. THIOCAULK. Steelcote Manufacturing Co. SN 280,347. Pub. 4-29-69. Filed 9-14-67.

S76,323. MONERAMIC. Monier Research & Development Pty. Limited. SN 286,769. Pub. 6-24-69. Filed 12-12-67.

S76,324. DAMTITE. Thomas Paint Manufacturing Co. MULTIPLE CLASS (Classes 12 and 16). SN 287,773. Pub. 6-24-69. Filed 12-28-67.

S76,325. PUTTY STIK. Forest Interiors Corporation. SN 292,315. Pub. 6-24-69. Filed 3-4-68.

S76,326. INSTANT RECREATION POOL. Chester Products, Inc. SN 295,617. Pub. 6-24-69. Filed 4-15-68.

S76,327. CARE-FREE. General Aluminum Products, Inc. SN 297,059. Pub. 6-24-69. Filed 5-1-68.

S76,328. RIGID-BORD. Johns-Manville Corporation. SN 297,066. Pub. 6-24-69. Filed 5-1-68.

S76,329. E-Z STRIP. National Gypsum Company. SN 297,207. Pub. 6-24-69. Filed 5-2-68.

S76,330. VELVETEX. Masonite Corporation. SN 298,738. Pub. 4-15-69. Filed 5-21-68.

S76,331. CORAL P-75. Dresser Industries, Inc. SN 301,519. Pub. 6-24-69. Filed 6-27-68.

S76,332. PERMACRETE. National Permacrete Company, Inc. SN 301,950. Pub. 6-24-69. Filed 7-3-68.

S76,333. MISCELLANEOUS DESIGN. Temple Industries, Inc. SN 302,653. Pub. 6-24-69. Filed 7-12-68.

S76,334. EASY SWING. Ellason Refrigerator Company. SN 302,729. Pub. 6-24-69. Filed 7-15-68.

S76,335. DEE. Dee Concrete Accessories Co. SN 310,547. Pub. 6-24-69. Filed 10-25-68.

Class 13 — Hardware and Plumbing and Steam-Fitting Supplies

S76,309. (See Class 6 for this trademark.)

S76,319. (See Class 12 for this trademark.)

S76,320. (See Class 12 for this trademark.)

S76,336. VENETIAN. Venetian International, Inc., assignee of Venetian Marble Company. SN 300,855. Pub. 6-24-69. Filed 6-19-68.

S76,337. LADY VENUS FIGURE. Venetian International, Inc., assignee of Venetian Marble Company. SN 300,857. Pub. 6-24-69. Filed 6-19-68.

S76,338. TIRETRAC. Siepmann-Werke KG. SN 304,973. Pub. 6-24-69. Filed 8-12-68.

S76,339. INTERTWINED CHAIN-LINKS (DESIGN). Siepman-Werke KG. SN 304,974. Pub. 6-24-69. Filed 8-12-68.

S76,340. E-Z. E. H. Tate Company. SN 311,950. Pub. 6-24-69. Filed 11-12-68.

S76,341. CLIEN-O-METER. Lien Chemical Company. SN 312,312. Pub. 6-24-69. Filed 11-15-68.

Class 14 — Metals and Metal Castings and Forgings

S76,342. SSK AND DESIGN. S. S. Kresge Company. SN 306,923, Pub. 6-24-69. Filed 9-9-68.

S76,343. K MART. S. S. Kresge Company. SN 306,924. Pub. 6-24-69. Filed 9-9-68.

Class 15 — Oils and Greases

S76,344. CLOUD MASTER. Diamond Shamrock Corporation. SN 314,141. Pub. 6-24-69. Filed 12-11-68.

Class 16 — Protective and Decorative Coatings

S76,324. (See Class 12 for this trademark.)

S76,345. HULL UVA KOTE. Annapolis Chemical Company. SN 264,720. Pub. 6-24-69. Filed 2-15-67.

S76,346. STOP-OFF. Alpha Metals, Inc. SN 286,983. Pub. 6-24-69. Filed 12-15-67.

S76,347. LAB LIQUID CRYSTAL. Imoco Corporation. SN 287,733. Pub. 6-24-69. Filed 12-28-67.

S76,348. TONE-N-TIQUE. C. H. Tripp Finishing Company. SN 307,519. Pub. 6-24-69. Filed 9-16-68.

S76,349. GROUNDZOL. Bee Chemical Company. SN 309,740. Pub. 6-24-69. Filed 10-16-68.

Class 17 — Tobacco Products

S76,316. (See Class 8 for this trademark.)

S76,317. (See Class 8 for this trademark.)

Class 18 — Medicines and Pharmaceutical Preparations

S76,350. ASPER-INSTANT. Churchill Laboratories, Ltd. SN 283,870. Pub. 6-24-69. Filed 11-1-67.

S76,351. CALCINYNE. Warner-Lambert Pharmaceutical Company. SN 284,411. Pub. 6-24-69. Filed 11-8-67.

S76,352. DURABONE. Fluoritab Corporation. SN 286,117. Pub. 6-24-69. Filed 12-4-67.

S76,353. INHALVAC. Evsco Pharmaceutical Co. SN 297,773. Pub. 4-15-69. Filed 5-9-68.

S76,354. COXYTROL. Ciba Corporation, d.b.a. The Gland-O-Lac Company. SN 297,972. Pub. 6-24-69. Filed 5-13-68.

S76,355. CLINITREND. Bristol-Myers Company. SN 299,206. Pub. 6-24-69. Filed 5-28-68.

S76,356. G.U. PREP. Gray Pharmaceutical Co. SN 299,559. Pub. 6-24-69. Filed 6-3-68.

S76,357. DERMA-SHEEN. Dawe's Laboratories, Inc. SN 299,654. Pub. 6-24-69. Filed 6-4-68.

S76,358. T TOPCO AND DESIGN. Topco Associates, Inc. SN 301,102. Pub. 6-24-69. Filed 6-21-68.

S76,359. INTAL. Fisons Pharmaceuticals Limited. SN 301,219. Pub. 4-22-69. Filed 6-24-68.

S76,360. ISONOX. UCB (Union Chimique-Chemische Bedrijven). SN 306,525. Pub. 6-24-69. Filed 9-3-68.

S76,361. QUIDE. The Dow Chemical Company. SN 306,897. Pub. 6-24-69. Filed 9-9-68.

S76,362. TRANTOIN. Foremost-McKesson, Inc., d.b.a. McKesson Laboratories. SN 307,099. Pub. 6-24-69. Filed 9-11-68.

S76,363. DEPARTURE. Foremost-McKesson, Inc., d.b.a. McKesson Laboratories. SN 307,100. Pub. 6-24-69. Filed 9-11-68.

S76,364. BON VOYAGE. Foremost-McKesson, Inc., d.b.a. McKesson Laboratories. SN 307,101. Pub. 6-24-69. Filed 9-11-68.

S76,365. BLUBORO. Marion Laboratories, Inc. SN 307,337. Pub. 6-24-69. Filed 9-13-68.

S76,366. DICHLORMAN. Shell Oil Company. SN 307,356. Pub. 6-24-69. Filed 9-13-68.

876,367. PYROZONE. Foremost-McKesson, Inc., d.b.a. McKesson Laboratories. SN 307,450. Pub. 6–24–69. Filed 9–16–68.

876,368. MADAME C. J. WALKER SCALP OINTMENT ETC. AND DESIGN. The Madam C. J. Walker Manufacturing Co., Inc. SN 307,814. Pub. 6–24–69. Filed 9–20–68.

876,369. RUC-DANE. Rucker Pharmacal Co., Inc. SN 307,946. Pub. 1–21–69. Filed 9–23–68.

876,370. EASY DAY. Carter-Wallace, Inc. SN 314,852. Pub. 4–29–69. Filed 12–19–68.

876,371. SPORTADE. Becton, Dickinson and Company. SN 316,045. Pub. 6–24–69. Filed 1–8–69.

876,372. LIDAFORM-HC. Miles Laboratories, Inc. SN 318,322. Pub. 6–24–69. Filed 2–4–69.

Class 19—Vehicles

876,303. (See Class 5 for this trademark.)

876,373. VELOCIDAD. Velocidad, Inc., d.b.a. Fiberfab. SN 249,366. Pub. 6–24–69. Filed 6–30–66.

876,374. AMMCO INTERNATIONAL AND DESIGN. American Marine and Machinery Co., Inc. MULTIPLE CLASS (Classes 19 and 23). SN 274,296. Pub. 6–24–69. Filed 6–20–67.

876,375. EAGLE DESIGN (RIGHT HAND DIRECTION). North American Rockwell Corporation. SN 292,412. Pub. 6–24–69. Filed 3–4–68.

876,376. PETREL, Aluminum Goods Limited. SN 300,241. Pub. 6–24–69. Filed 6–12–68.

876,377. MOUNTAIN GOAT ETC. AND DESIGN. Roger Smith, d.b.a. Peppertree Automotive. SN 301,763. Pub. 6–24–69. Filed 7–1–68.

876,378. PROTECT-AIRE. Kennel-Aire Mfg. Co. SN 304,473. Pub. 6–24–69. Filed 8–6–68.

876,379. BAZOOKA-HUB. Michigan Wheel Company. SN 308,302. Pub. 6–24–69. Filed 9–26–68.

876,380. SCENICRUISER. The Greyhound Corporation. SN 311,143. Pub. 6–24–69. Filed 11–1–68.

876,381. EVO. Lodal, Inc. SN 311,279. Pub. 6–24–69. Filed 11–4–68.

876,382. JAVELIN. American Motors Corporation. SN 312,977. Pub. 6–24–69. Filed 11–25–68.

876,383. JET-A-BOUT. Velocidad, Inc., d.b.a. Fiberfab. SN 314,281. Pub. 6–24–69. Filed 12–11–68.

876,384. AIR-PUSH. Sprague Devices, Inc. SN 315,270. Pub. 6–24–69. Filed 12–26–68.

Class 21—Electrical Apparatus, Machines, and Supplies

876,303. (See Class 5 for this trademark.)

876,385. AGMAG. Amaco Magnetics Incorporated. SN 264,010. Pub. 8–27–68. Filed 2–6–67.

876,386. RIB-LOC. E. F. Johnson Company. SN 270,390. Pub. 6–24–69. Filed 5–1–67.

876,387. ASTROLAB. Astrolab, Inc. SN 279,917. Pub. 6–24–69. Filed 9–8–67.

876,388. ASTROLAB INC. AND DESIGN. Astrolab, Inc. SN 279,918. Pub. 6–24–69. Filed 9–8–67.

876,389. ASTROLAB INC. AND DESIGN. Astrolab, Inc. SN 279,919. Pub. 6–24–69. Filed 9–8–67.

876,390. AV-ALARM. Santa Rita Technology, Inc. SN 281,122. Pub. 6–24–69. Filed 9–25–67.

876,391. ACU-RAM. Siltronics, Inc. SN 282,142. Pub. 6–24–69. Filed 10–9–67.

876,392. PANFIX. Nichiban Co., Ltd. SN 283,691. Pub. 6–24–69. Filed 10–30–67.

876,393. REGGIANI LAMPADARI AND DESIGN. Ditta Reggiani Goffredo. SN 286,757. Pub. 6–24–69. Filed 12–12–67.

876,394. AMERICON AND DESIGN. Americon Corporation, assignee of Microwave Development Laboratories, Inc. SN 299,032. Pub. 6–24–69. Filed 5–24–68.

876,395. LINOBATE. Crystal Technology, Inc. SN 287,351. Pub. 6–24–69. Filed 12–21–67.

876,396. GRAND PRIX. Bantamlite, Inc. SN 289,764. Pub. 6–24–69. Filed 1–29–68.

876,397. BRENTWOOD. Lasko Metal Products, Inc. MULTIPLE CLASS (Classes 21 and 34). SN 293,283. Pub. 6–24–69. Filed 3–14–68.

876,398. SIMM-R-MATIC. Westinghouse Electric Corporation. SN 293,654. Pub. 6–24–69. Filed 3–19–68.

876,399. MUFAX COURIER. Muirhead & Co. Limited. SN 294,745. Pub. 6–24–69. Filed 4–2–68.

876,400. NORDMENDE AND DESIGN. Norddeutsche Mende Rundfunk KG., Co. MULTIPLE CLASS (Classes 21, 26, and 36). SN 296,230. Pub. 6–24–69. Filed 4–23–68.

876,401. TAG RING. Glenair, Inc. SN 296,532. Pub. 6–24–69. Filed 4–25–68.

876,402. LANCER. The Louis Allis Company. SN 298,135. Pub. 6–24–69. Filed 5–14–68.

876,403. IMCOOL. IMC Magnetics Corp. SN 299,134. Pub. 6–24–69. Filed 5–27–68.

876,404. Q BEAM. Burch Electronics, Inc. SN 299,942. Pub. 6–24–69. Filed 6–7–68.

876,405. IONEX. Special Electric Company, Inc. SN 300,488. Pub. 6–24–69. Filed 6–14–68.

876,406. AMERACE. Amerace Corporation. SN 301,297. Pub. 6–24–69. Filed 6–25–68.

876,407. OUT-HOUSE. Connector Products Corporation. SN 303,509. Pub. 6–24–69. Filed 7–24–68.

876,408. SE AND DESIGN. The Superior Electric Company. SN 308,325. Pub. 6–24–69. Filed 9–26–68.

876,409. UNI-RON. Shure Brothers Incorporated. SN 308,402. Pub. 6–24–69. Filed 9–27–68.

876,410. SLENDYNE. Shure Brothers Incorporated. SN 308,404. Pub. 6–24–69. Filed 9–27–68.

876,411. AV-LINE. General Electric Company. SN 308,484. Pub. 6–24–69. Filed 9–30–68.

876,412. GOLDFLEX. H. K. Porter Company, Inc. SN 309,892. Pub. 6–24–69. Filed 10–17–68.

876,413. D AND DESIGN. Dominion Electric Corporation. SN 310,550. Pub. 6–24–69. Filed 10–25–68.

876,414. CARTRODE. Scientific Components, Inc. SN 310,591. Pub. 6–24–69. Filed 10–25–68.

876,415. WRANGLER. Union Carbide Corporation. SN 310,721. Pub. 6–24–69. Filed 10–28–68.

876,416. ENKA. American Enka Corporation. SN 310,743. Pub. 6–24–69. Filed 10–29–68.

876,417. CUSTOMATIC. Antenna Designs, Inc. SN 310,831. Pub. 6–24–69. Filed 10–30–68.

876,418. ATKOMATIC SOLENOID VALVES ETC. AND DESIGN. Atkomatic Valve Company, Inc. SN 311,640. Pub. 6–24–69. Filed 11–8–68.

876,419. KTR. Raytheon Company. SN 311,658. Pub. 6–24–69. Filed 11–7–68.

876,420. BELL AND DESIGN. Bell Electric Co. SN 311,665. Pub. 6–24–69. Filed 11–8–68.

876,421. PET. Portatronic Systems, Inc. SN 312,909. Pub. 6–24–69. Filed 11–22–68.

876,422. ENKASEAL. American Enka Corporation. SN 314,170. Pub. 6–24–69. Filed 12–11–68.

Class 22—Games, Toys, and Sporting Goods

876,423. SHOE (DESIGN). A. R. Hyde & Sons Company. MULTIPLE CLASS (Classes 22 and 39). SN 260,158. Pub. 5–7–68. Filed 12–6–66.

876,424. MAILLINOX. Etablissements A. Fouineteau. SN 275,046. Pub. 6–24–69. Filed 6–29–67.

876,425. CMI AND DESIGN. Commercial Mechanisms, Inc. MULTIPLE CLASS (Classes 22 and 23). SN 279,811. Pub. 3–25–69. Filed 9–7–67.

876,426. TOTE-A-GAME. Miner Industries Inc. SN 287,664. Pub. 6–24–69. Filed 12–27–67.

876,427. TIGER. Onitsuka Co. Ltd. MULTIPLE CLASS (Classes 22 and 39). SN 290,517. Pub. 6–24–69. Filed 2–7–68.

876,428. SPACEMOBILE. Pop America Corporation. SN 292,288. Pub. 6–24–69. Filed 3–1–68.

876,429. X–101. Northwestern Golf Company. SN 292,706. Pub. 6–24–69. Filed 3–7–68.

876,430. PRIMARY TRYBOARD. Kohner Bros., Inc. SN 296,838. Pub. 6–24–69. Filed 4–29–68.

876,431. SPIROTOT. Denys Fisher Group Limited, by change of name from Denys Fisher (Spirograph) Limited. SN 299,180. Pub. 6–24–69. Filed 5–27–68.

876,432. DOUBLE G. The General Tire & Rubber Company. SN 300,925. Pub. 6–24–69. Filed 6–20–68.

876,433. QUICK FREEZE. Hasbro Industries, Inc., by change of name from Hassenfeld Bros. Inc. SN 302,322. Pub. 6–24–69. Filed 7–9–68.

876,434. BLUE MAX. Bernard J. McLoughlin. SN 304,105. Pub. 6–24–69. Filed 8–1–68.

876,435. POWER TIP. Top Brands, Inc. SN 304,717. Pub. 6–24–69. Filed 8–8–68.

876,436. SILVER CUP. Dunlop Tire and Rubber Corporation. SN 305,115. Pub. 6–24–69. Filed 8–14–68.

876,437. WORLD CUP. Dunlop Tire and Rubber Corporation. SN 305,116. Pub. 6–24–69. Filed 8–14–68.

876,438. GO-FAR. Dearborn Gage Company. SN 305,211. Pub. 6–24–69. Filed 8–15–68.

876,439. HILLBILLY. AMT Corporation. SN 305,291. Pub. 6–24–69. Filed 8–16–68.

876,440. CONFIDENCE. Robert J. Mader, d.b.a. Mader Products. SN 305,466. Pub. 6–24–69. Filed 8–19–68.

876,441. RAWHIDE. Wonder Products Company. SN 305,586. Pub. 6–24–69. Filed 8–20–68.

876,442. VINYL-FLEX. Ron-Vik, Inc. SN 307,045. Pub. 6–24–69. Filed 9–10–68.

876,443. FINAGLE. Mattel, Inc. SN 308,959. Pub. 6–24–69. Filed 10–7–68.

876,444. BABY FEATHER. Mattel, Inc. SN 308,962. Pub. 6–24–69. Filed 10–7–68.

876,445. A WONDER FINDER TOY. Mattel, Inc. SN 308,974. Pub. 6–24–69. Filed 10–7–68.

876,446. SPACE POWER SUIT. Mattel, Inc. SN 308,976. Pub. 6–24–69. Filed 10–7–68.

876,447. SUPER-CHARGER. Mattel, Inc. SN 308,977. Pub. 6–24–69. Filed 10–7–68.

876,448. KARMA. Mattel, Inc. SN 308,986. Pub. 6–24–69. Filed 10–7–68.

876,449. BABY FANCY-TALK. Mattel, Inc. SN 308,987. Pub. 6–24–69. Filed 10–7–68.

876,450. BABY PRETTY-TALK. Mattel, Inc. SN 308,988. Pub. 6–24–69. Filed 10–7–68.

876,451. VERRY INTERESTING! Mattel, Inc. SN 308,996. Pub. 6–24–69. Filed 10–7–68.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

876,282. (See Class 1 for this trademark.)

876,303. (See Class 5 for this trademark.)

876,309. (See Class 6 for this trademark.)

876,374. (See Class 19 for this trademark.)

876,425. (See Class 22 for this trademark.)

876,452. SWINGLINE 3. Swingline Inc. SN 124,387. Pub. 6–24–69. Filed 7–20–61.

876,453. MISCELLANEOUS DESIGN. The Cincinnati-Forte Company, assignee of Forte Equipment Company, Incorporated. SN 282,362. Pub. 6–24–69. Filed 10–12–67.

876,454. ADAMATIC AND DESIGN. Adam Equipment Corp. MULTIPLE CLASS (Classes 23 and 34). SN 283,608. Pub. 6–24–69. Filed 10–30–67.

876,455. ECONOMIST AND DESIGN. Wilkerson Corporation. SN 283,835. Pub. 4–22–69. Filed 10–31–67.

876,456. FIBERSLIP. Ampep Industrial Products Limited. SN 285,983. Pub. 6–24–69. Filed 12–1–67.

876,457. UNI-SYNCRO. Allied Welder Corporation. SN 286,486. Pub. 6–24–69. Filed 12–8–67.

876,458. VIKING (DESIGN). Industri Aktiebolaget Skomab. SN 288,018. Pub. 6–24–69. Filed 1–3–68.

876,459. SNR. Societe Nouvelle de Roulements. SN 288,545. Pub. 6–24–69. Filed 1–10–68.

876,460. SCHRAMM PNEUMAGOPHER AND DESIGN. Schramm, Inc. SN 290,109. Pub. 4–8–69. Filed 2–1–68.

876,461. AUTOGUN. Clyde Corporation. SN 291,965. Pub. 6–24–69. Filed 2–27–68.

876,462. THE CHEETAH. George W. Eby, d.b.a. E & H Machine Works. SN 293,918. Pub. 6–24–69. Filed 3–22–68.

876,463. MILLI VAC. Leiman Bros., Inc. SN 296,971. Pub. 6–24–69. Filed 4–30–68.

876,464. PERFECTO. MSL Industries, Inc. SN 298,018. Pub. 6–24–69. Filed 5–13–68.

876,465. THE UNIQUE CAB. Techni-Fab, Inc. SN 298,056. Pub. 6–24–69. Filed 5–13–68.

876,466. SOSSNER. Sossner Tap & Tool Corporation. SN 298,156. Pub. 6–24–69. Filed 5–14–68.

876,467. SILVER FROST. Imperial Knife Associated Companies, Inc. SN 299,024. Pub. 6–24–69. Filed 5–24–68.

876,468. DOCAVATOR. Vermette Machine Company, Inc. SN 299,816. Pub. 6–24–69. Filed 6–6–68.

876,469. PAVEMENT PLUCKER. Tarrant Manufacturing Company. SN 300,853. Pub. 6–24–69. Filed 6–19–68.

876,470. COUNTRY DOCTOR'S FLAVOR MAGIC INJECTOR AND DESIGN. Darrell R. Shipley, d.b.a. The Country Doctor's. SN 301,453. Pub. 6–24–69. Filed 6–26–68.

876,471. PVI. Palsti-Vac, Inc. SN 303,068. Pub. 6–24–69. Filed 7–18–68.

876,472. POW-R-PAC. Aero-Motive Manufacturing Company. SN 303,585. Pub. 4–22–69. Filed 7–25–68.

876,473. STYLIZED S (DESIGN). Shepherd Machinery Co. SN 305,026. Pub. 6–24–69. Filed 8–13–68.

876,474. SERF. Simplicity Manufacturing Company, Inc. SN 308,143. Pub. 6–24–69. Filed 9–24–68.

876,475. YEOMAN. Simplicity Manufacturing Company, Inc. SN 308,144. Pub. 6–24–69. Filed 9–24–68.

876,476. SOVEREIGN. Simplicity Manufacturing Company, Inc. SN 308,145. Pub. 6–24–69. Filed 9–24–68.

876,477. COE SKOOG AND DESIGN. The Coe Manufacturing Company. SN 308,274. Pub. 6–24–69. Filed 9–26–68.

876,478. ROTATRUDER. Werkzeugmaschinenfabrik Oerlikon-Buehrle A/G. SN 309,318. Pub. 6–24–69. Filed 10–9–68.

876,479. THERM-O-SHRINK. Ramseur's, Incorporated. SN 310,132. Pub. 6–24–69. Filed 10–21–68.

876,480. KENGRIP AND DESIGN. Kennametal Inc. SN 310,670. Pub. 6–24–69. Filed 10–28–68.

876,481. SOMERSET. Multi-Clean Products, Incorporated. SN 310,907. Pub. 6–24–69. Filed 10–30–68.

876,482. TIPTRAK. Uniroyal Ltd. SN 310,956. Pub. 6–24–69. Filed 9–9–68.

876,483. LITTER-WHISK AND DESIGN. Sarlo Power Mowers, Inc. SN 311,411. Pub. 6–24–69. Filed 11–5–68.

876,484. MINIPACK. Cooper Industries, Inc. SN 311,574. Pub. 6–24–69. Filed 11–7–68.

876,485. LINE-O-MATIC. Henry Jorgensen, d.b.a. General Machine & Tool Co. SN 312,045. Pub. 6–24–69. Filed 11–13–68.

876,486. JACOBSEN J AND DESIGN. Jacobsen Manufacturing Company. SN 312,301. Pub. 6–24–69. Filed 11–15–68.

876,487. LA BELLE. Textron Inc. SN 312,514. Pub. 6-24-69. Filed 11-18-68.

876,488. PC AND DESIGN. The Park City Supply Company. SN 312,689. Pub. 6-24-69. Filed 11-20-68.

876,489. TPR. Pamarco, Incorporated. SN 313,017. Pub. 6-24-69. Filed 11-25-68.

876,490. MULTI-FLEUR. Margaret E. Weymouth, d.b.a. Studio Twelve. SN 313,046. Pub. 6-24-69. Filed 11-25-68.

876,491. MAGNI-FLEUR. Margaret E. Weymouth, d.b.a. Studio Twelve. SN 313,047. Pub. 6-24-69. Filed 11-25-68.

876,492. PHILISHAVE. N.V. Philips' Gloeilampenfabrieken. SN 313,198. Pub. 6-24-69. Filed 11-27-68.

876,493. COSCO AND DESIGN. Consolidated Foods Corporation. SN 313,401. Pub. 6-24-69. Filed 12-2-68.

876,494. KEMET. Engis Limited. SN 313,498. Pub. 6-24-69. Filed 12-3-68.

876,495. TELECOVER. Maysteel Products Corp. SN 313,714. Pub. 6-24-69. Filed 12-5-68.

876,496. AUTOPAX. The Roberts Company. SN 313,728. Pub. 6-24-69. Filed 12-5-68.

876,497. CHEVRON. Oneida Ltd. SN 314,438. Pub. 6-24-69. Filed 12-13-68.

876,498. CHATEAU. Oneida Ltd. SN 314,439. Pub. 6-24-69. Filed 12-13-68.

876,499. BARBARA. Oneida Ltd. SN 314,440. Pub. 6-24-69. Filed 12-13-68.

876,500. RIO. Oneida Ltd. SN 314,445. Pub. 6-24-69. Filed 12-13-68.

876,501. PROPOSAL. Oneida Ltd. SN 314,446. Pub. 6-24-69. Filed 12-13-68.

876,502. PLANTATION. Oneida Ltd. SN 314,447. Pub. 6-24-69. Filed 12-13-68.

876,503. PENDANT. Oneida Ltd. SN 314,448. Pub. 6-24-69. Filed 12-13-68.

876,504. PARAMOUNT. Oneida Ltd. SN 314,449. Pub. 6-24-69. Filed 12-13-68.

876,505. GENESEE. Oneida Ltd. SN 314,450. Pub. 6-24-69. Filed 12-13-68.

876,506. NEW ERA. Oneida Ltd. SN 314,451. Pub. 6-24-69. Filed 12-13-68.

876,507. FOREVER. Oneida Ltd. SN 314,452. Pub. 6-24-69. Filed 12-13-68.

876,508. FENWAY. Oneida Ltd. SN 314,453. Pub. 6-24-69. Filed 12-13-68.

876,509. SVEN-SAW. Swen Products, Inc. SN 315,795. Pub. 6-24-69. Filed 1-3-69.

876,510. AXITROL. Aronson Machine Company, Inc. SN 316,070. Pub. 6-24-69. Filed 1-8-69.

876,511. BIAXITROL. Aronson Machine Company, Inc. SN 316,071. Pub. 6-24-69. Filed 1-8-69.

876,512. TRIAXITROL. Aronson Machine Company, Inc. SN 316,072. Pub. 6-24-69. Filed 1-8-69.

876,513. SPRING BALLAD. Oneida Ltd. SN 316,672. Pub. 6-24-69. Filed 1-15-69.

876,514. LA MANCHA. Textron Inc. SN 316,845. Pub. 6-24-69. Filed 1-16-69.

876,515. PACE AND DESIGN. Pace, Inc. SN 316,869. Pub. 6-24-69. Filed 1-17-69.

876,516. TORIN. The Torrington Manufacturing Company. SN 316,949. Pub. 6-24-69. Filed 1-21-69.

876,517. ASM. Midland Products Co. SN 318,444. Pub. 6-24-69. Filed 2-5-69.

876,518. VOLSTRO. Volstro Manufacturing Company, Inc. SN 318,884. Pub. 6-24-69. Filed 2-11-69.

876,519. STRIDE AND DESIGN. Stridsberg, Inc. SN 319,122. Pub. 6-24-69. Filed 2-14-69.

Class 24 — Laundry Appliances and Machines

876,520. MR. KEN'S. Ken F. James Enterprises, Inc. SN 312,302. Pub. 6-24-69. Filed 11-15-68.

Class 26 — Measuring and Scientific Appliances

876,315. (See Class 6 for this trademark.)

876,400. (See Class 21 for this trademark.)

876,521. AUTOCOLOR. Conair, Inc. SN 283,231. Pub. 6-24-69. Filed 10-24-67.

876,522. PAI (DESIGN). Process Analyzers, Inc. SN 289,334. Pub. 6-24-69. Filed 1-22-68.

876,523. L AND DESIGN. Lowrance Electronics Mfg. Corp. SN 289,938. Pub. 6-24-69. Filed 1-31-68.

876,524. ZEHNTEL. Zehntel, Inc. SN 300,499. Pub. 6-24-69. Filed 6-14-68.

876,525. ARMETER. McGraw-Edison Company. SN 304,104. Pub. 6-24-69. Filed 8-1-68.

876,526. NAVTRAK. Edo Western Corporation. SN 305,819. Pub. 6-24-69. Filed 8-23-68.

876,527. DOT-O-TRON. Royal Industries, Inc., assignee of Royal Industries. SN 307,756. Pub. 6-24-69. Filed 9-19-68.

876,528. COMIC. Davidson and Hemmendinger, Inc. SN 310,546. Pub. 6-24-69. Filed 10-25-68.

876,529. STOR-PAK. Ipco Hospital Supply Corporation. SN 314,796. Pub. 6-24-69. Filed 12-18-68.

876,530. DIGICETTE. International Computer Products, Inc. SN 314,888. Pub. 6-24-69. Filed 12-19-68.

876,531. RLCO AND DESIGN. R.L. Electronic Communications Co., Inc. SN 315,957. Pub. 6-24-69. Filed 1-6-69.

876,532. CONSOLAB. Art-O-Graph, Inc. SN 316,069. Pub. 6-24-69. Filed 1-8-69.

Class 27 — Horological Instruments

876,533. NFL AND DESIGN. National Football League Properties, Inc. MULTIPLE CLASS (Classes 27, 37, and 39). SN 298,169. Pub. 6-24-69. Filed 5-15-68.

Class 28 — Jewelry and Precious-Metal Ware

876,534. TORONADO. Oneida Ltd. SN 241,172. Pub. 3-14-67. Filed 3-16-66.

Class 29 — Brooms, Brushes, and Dusters

876,291. (See Class 2 for this trademark.)

Class 31 — Filters and Refrigerators

876,310. (See Class 6 for this trademark.)

876,535. XONIX. Tom Peterson's, Inc. SN 313,721. Pub. 6-24-69. Filed 12-5-68.

Class 32 — Furniture and Upholstery

876,536. ACORD-A-PLEAT. Decor Specialties, Inc. SN 298,582. Pub. 6-24-69. Filed 5-20-68.

875,537. VERTI-RACK AND DESIGN. Graham Paper Company. SN 309,377. Pub. 6-24-69. Filed 10-10-68.

Class 34 — Heating, Lighting, and Ventilating Apparatus

876,303. (See Class 5 for this trademark.)

876,397. (See Class 21 for this trademark.)

876,454. (See Class 23 for this trademark.)

876,538. VAPORSTREAM. Vaporstream Humidifier Corporation. SN 279,759. Pub. 3-18-69. Filed 9-6-67.

876,539. FLUXCOWELD. Air Products and Chemicals, Inc. SN 281,248. Pub. 6-24-69. Filed 9-8-67.

Class 35 — Belting, Hose, Machinery Packing, and Nonmetallic Tires

876,303. (See Class 5 for this trademark.)

876,309. (See Class 6 for this trademark.)

876,540. EDCO. Standard Oil Company. SN 296,262. Pub. 6-24-69. Filed 4-23-68.

876,541. K BLOCK. Royal Industries, Inc., assignee of Royal Industries. SN 301,259. Pub. 6-24-69. Filed 6-24-68.

876,542. GUARD-O-BOND INNER LINER. The Jetzon Tire & Rubber Co., Inc. SN 320,400. Pub. 6-24-69. Filed 3-3-69.

Class 36 — Musical Instruments and Supplies

876,400. (See Class 21 for this trademark.)

876,543. EXECUTAPE SYSTEMS. Executape Systems, Inc. MULTIPLE CLASS (Classes 36 and 107). SN 271,980. Pub. 6-24-69. Filed 5-22-67.

876,544. LIVING CASE HISTORY. The Research Institute of America, Inc. SN 312,723. Pub. 6-24-69. Filed 11-21-68.

876,545. RHYTHM RAIL. Hammond Corporation. SN 314,789. Pub. 6-24-69. Filed 12-18-68.

876,546. MOVIETONE. Twentieth Century-Fox Film Corporation. SN 320,194. Pub. 6-24-69. Filed 2-26-69.

876,547. POWER AND HAND DESIGN. Synthetic Plastics Company. SN 320,294. Pub. 6-24-69. Filed 2-27-69.

876,548. LA MANCHA GUITARS AND DESIGN. Juan David. SN 320,444. Pub. 6-24-69. Filed 3-3-69.

Class 37 — Paper and Stationery

876,292. (See Class 2 for this trademark.)

876,315. (See Class 6 for this trademark.)

876,533. (See Class 27 for this trademark.)

876,549. UNILAM. Tee-Pak, Inc. SN 265,507. Pub. 6-24-69. Filed 2-16-67.

876,550. GROOVY. Eldridge Stationary Corporation. SN 291,848. Pub. 6-24-69. Filed 2-26-68.

876,551. PUDDLES. Concel Inc. SN 312,984. Pub. 6-24-69. Filed 11-25-68.

876,552. LY AND DESIGN. The Lawton-York Corporation. SN 317,066. Pub. 6-24-69. Filed 1-21-69.

Class 38 — Prints and Publications

876,303. (See Class 5 for this trademark.)

876,553. DENTAL DIARY. Dr. Barvo N. Walker, d.b.a. Dr. Carl Kenyon. SN 285,211. Pub. 6-24-69. Filed 11-20-67.

876,554. PLASTILON. Western Publishing Company, Inc. SN 288,732. Pub. 6-24-69. Filed 1-12-68.

876,555. CLARIN AND DESIGN. Arte Grafico Editorial Argentino S.A. SN 289,761. Pub. 6-24-69. Filed 1-29-68.

876,556. INDEPENDENT JOURNAL. California Newspapers, Inc. SN 289,965. Pub. 6-24-69. Filed 1-31-68.

876,557. KOOKY TATTOO-ONS AND DESIGN. Button World Mfg., Inc. SN 291,832. Pub. 4-22-69. Filed 2-26-68.

876,558. CAMPUS MAGAZINE. Mark S. Zeller, d.b.a. Campus Magazine. SN 295,205. Pub. 6-24-69. Filed 4-8-68.

876,559. CANON. Double Sixteen Company. SN 297,987. Pub. 6-24-69. Filed 5-13-68.

876,560. AROUND THE WORLD. McGraw-Hill, Inc. SN 305,664. Pub. 6-24-69. Filed 8-21-68.

876,561. COMPUSCAN. McGraw-Hill, Inc. MULTIPLE CLASS (Classes 38 and 107). SN 306,727. Pub. 6-24-69. Filed 9-6-68.

876,562. CONSTRUCTION WEEK. McGraw-Hill, Inc. SN 306,795. Pub. 6-24-69. Filed 9-6-68.

876,563. LIVING CASE HISTORY. The Research Institute of America, Inc. SN 312,724. Pub. 6-24-69. Filed 11-21-68.

876,564. COLOR KING. W. M. Cline Company. CONSOLIDATED CERTIFICATE. SN 314,409, pub. 6-24-69, filed 12-13-68, Cl. 38; SN 314,410, pub. 6-24-69, filed 12-13-68, Cl. 38; SN 314,411, pub. 6-17-69, filed 12-13-68, Cl. 106.

876,565. SOURCES. Blue Cross Association. SN 314,696. Pub. 6-24-69. Filed 12-17-68.

876,566. SENSE. Lippincott & Margulies, Inc. SN 314,894. Pub. 6-24-69. Filed 12-19-68.

876,567. CHRISTMAS FROLICS. H. S. Crocker Co., Inc., d.b.a. California Artists. SN 319,670. Pub. 6-24-69. Filed 2-20-69.

Class 39 — Clothing

876,286. (See Class 1 for this trademark.)

876,292. (See Class 2 for this trademark.)

876,423. (See Class 22 for this trademark.)

876,427. (See Class 22 for this trademark.)

876,533. (See Class 27 for this trademark.)

876,568. ALL PURPOSE "TOOTSIE." Gem Sleepwear Co. SN 232,124. Pub. 6-24-69. Filed 11-4-65.

876,569. DESARBRE AND DESIGN. Societe des Etablissements Desarbre S.a.r.l. SN 282,405. Pub. 6-24-69. Filed 10-12-67.

876,570. SANTA'S BEST. Rennoc Games & Toys, Inc. MULTIPLE CLASS (Classes 39 and 50). SN 282,822. Pub. 6-24-69. Filed 10-18-67.

876,571. MISS DIORSINI. National Shoes, Inc. SN 283,811. Pub. 6-24-69. Filed 10-31-67.

876,572. PRES-TU-LAST. Horace Small Manufacturing Company. SN 292,427. Pub. 6-24-69. Filed 3-4-68.

876,573. SUPPORTARE. Robert H. Thompson, d.b.a. The House of Thompson. SN 293,061. Pub. 6-24-69. Filed 3-12-68.

876,574. SUPPORTFLEX. Pichon Freres. SN 293,297. Pub. 6-24-69. Filed 3-14-68.

876,575. BREEZE BREAKER. Hanes Corporation. SN 294,045. Pub. 6-24-69. Filed 3-25-68.

876,576. CARRIBOOTS. J. D. Carrier Shoe Co. Limited. SN 295,112. Pub. 6-24-69. Filed 4-8-68.

876,577. ITASCA MOC. Sears, Roebuck and Co. SN 295,377. Pub. 6-24-69. Filed 4-10-68.

876,578. PIMA CHARM. Sears, Roebuck and Co. SN 295,378. Pub. 6-24-69. Filed 4-10-68.

876,579. OLD MAINE TROTTERS AND DESIGN. Old Town Shoe Company. SN 295,699. Pub. 6-24-69. Filed 4-16-68.

876,580. POLYDAUM. Sun Valley Manufacturing Co. SN 296,593. Pub. 6-24-69. Filed 4-25-68.

876,581. TUF-LEX. The Fibre-Metal Products Company. SN 301,335. Pub. 6-24-69. Filed 6-25-68.

876,582. SUPER VISOR. Randall W. Bartz. SN 301,508. Pub. 6-24-69. Filed 6-27-68.

876,583. VETMO-TERM. Vetmentos AG. SN 305,262. Pub. 6-24-69. Filed 8-15-68.

876,584. I. APPEL. I. Appel & Co., Inc. SN 305,908. Pub. 6-24-69. Filed 8-26-68.

876,585. FIANCEE. Clark Shoe Company, Inc. SN 311,327. Pub. 6-24-69. Filed 11-5-68.

876,586. SEASPORT. Seasport, Inc. SN 311,448. Pub. 4-15-69. Filed 11-6-68.

876,587. DESIGN OF HEAD OF STATUE. Giancarlo Ltd. SN 311,479. Pub. 6-24-69. Filed 11-6-68.

876,588. THEWS NO BUCKLE BELT AND DESIGN. Thews Belts Ltd., Inc. SN 311,951. Pub. 6-24-69. Filed 11-12-68.

876,589. RAINSHIRT. Haymaker Sports, Inc. SN 312,154. Pub. 4-15-69. Filed 11-14-68.

876,590. NI-NEL BY MR. BAZAAR. Ni-Nel Garments, Inc. SN 313,963. Pub. 6-24-69. Filed 12-9-68.

876,591. L.T.L. Burlington Industries, Inc. SN 314,050. Pub. 6-24-69. Filed 12-10-68.

876,592. PANTALOONY. Sportline Associates, Inc. SN 314,366. Pub. 6-24-69. Filed 12-12-68.

876,593. PARTOLA. Palmroth Shoemanufacturers. SN 314,667. Pub. 6-24-69. Filed 10-28-68.

876,594. WALTER HOLMES. Krugman-Holmes Corp. SN 315,158. Pub. 6-24-69. Filed 12-24-68.

876,595. PERTOOSH. Neiman-Marcus Company. SN 315,327. Pub. 6-24-69. Filed 12-27-68.

876,596. PUGGS. Paintset Fashions, Inc. SN 315,667. Pub. 6-24-69. Filed 12-30-68.

876,597. BOOTINOS. The B. F. Goodrich Company. SN 315,908. Pub. 6-24-69. Filed 1-6-69.

876,598. PAUL JARDIN. Carlton Shirt Co., Inc. SN 316,046. Pub. 6-24-69. Filed 1-28-69.

876,599. EVERY-BODY. Royal London, Ltd. SN 317,762. Pub. 6-24-69. Filed 1-8-69.

876,600. TAM O'SHANTER. Tam O'Shanter Inc. SN 317,773. Pub. 6-24-69. Filed 1-28-69.

876,601. DON QUIXOTE. Imex Corporation. SN 317,844. Pub. 6-24-69. Filed 1-29-69.

876,602. CHASTI-KEY. Jack Gasnick. SN 318,300. Pub. 6-24-69. Filed 2-4-69.

876,603. JR. EDITIONS. Manny Krosney, Incorporated. SN 318,435. Pub. 6-24-69. Filed 2-5-69.

876,604. BRING US TOGETHER AND DESIGN. Norwich Mills Inc. SN 318,453. Pub. 6-24-69. Filed 2-5-69.

876,605. FREEZ-NO-MOR. Freez-No-Mor, Incorporated. SN 318,605. Pub. 6-24-69. Filed 2-7-69.

876,606. LAZARA. L. E. Massey Shoes, Incorporated. SN 318,660. Pub. 6-24-69. Filed 2-7-69.

876,607. RACING TURTLE. Racing Turtle. SN 318,677. Pub. 6-24-69. Filed 2-7-69.

876,608. RIVIERA. Genesco Inc. SN 318,706. Pub. 6-24-69. Filed 2-10-69.

876,609. SET-UPS. Genesco Inc. SN 318,707. Pub. 6-24-69. Filed 2-10-69.

876,610. IC (DESIGN). Isaacson-Carrico Manufacturing Company. SN 318,933. Pub. 6-24-69. Filed 2-12-69.

876,611. CHIPPER. Gregg Draddy, Inc. SN 319,117. Pub. 6-24-69. Filed 2-14-69.

876,612. LOVE POEMS. The Lovable Company. SN 319,416. Pub. 6-24-69. Filed 2-18-69.

876,613. TURTLE KING. California Swimwear Co. SN 319,530. Pub. 6-24-69. Filed 2-19-69.

876,614. FANCIFUL TURTLE DESIGN. California Swimwear Co. SN 319,531. Pub. 6-24-69. Filed 2-19-69.

876,615. TOM MEET ME FACE TO FACE AND DESIGN. Tom Murray Company. SN 319,676. Pub. 6-24-69. Filed 2-20-69.

Class 40 — Fancy Goods, Furnishings, and Notions

876,616. LE SUORAC. Carousel Products Inc. SN 310,860. Pub. 6-24-69. Filed 10-30-68.

876,617. PIN-UP. Leeding Sales Co. Inc. SN 312,050. Pub. 6-24-69. Filed 11-13-68.

876,618. WILD AND WOOLY. Courier Products, Inc. SN 313,270. Pub. 6-24-69. Filed 11-29-68.

876,619. PUSSY CAT AND DESIGN. Master Trading Corporation. SN 314,583. Pub. 6-24-69. Filed 12-16-68.

Class 41 — Canes, Parasols, and Umbrellas

876,292. (See Class 2 for this trademark.)

876,620. MINIMATIC. Kortenbach & Rauh Kommanditgesellschaft. SN 313,709. Pub. 6-24-69. Filed 12-5-68.

Class 42 — Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

876,621. INSTALEZE. The Dehner Co.-St. Louis, SN 287,900. Pub. 6-24-69. Filed 1-2-68.

876,622 COMFORTCORE. Robertson Carpet Corp. SN 292,713. Pub. 6-24-69. Filed 3-7-68.

876,623. CHRISALI. Chrisali Fabrics, Inc. SN 303,277. Pub. 6-24-69. Filed 7-22-68.

876,624. TRITESSA. Ascot Textile Corp. SN 304,047. Pub. 6-24-69. Filed 8-1-68.

876,625. KOLKA DOT. John M. Linnet. SN 304,694. Pub. 6-24-69. Filed 8-8-68.

876,626. SEQUOYAH. Sequoyah Industries, Inc. SN 305,496. Pub. 6-24-69. Filed 8-19-68.

876,627. URSULA. Alex J. Glonet. SN 314,067. Pub. 6-24-69. Filed 12-10-68.

876,628. DURALITE. Cannon Mills Company. SN 314,181. Pub. 6-24-69. Filed 12-11-68.

876,629. BRIGAMOOR. Burlington Industries, Inc. SN 314,698. Pub. 6-24-69. Filed 12-17-68.

876,630. TAMAN. Taman Enterprises, Inc. SN 314,829. Pub. 6-24-69. Filed 12-18-68.

876,631. MARTEX. West Point-Pepperell, Inc. SN 314,839. Pub. 6-24-69. Filed 12-18-68.

876,632. TALISMAN. Mohasco Industries, Inc. SN 316,230. Pub. 6-24-69. Filed 1-9-69.

876,633. THE RAG SHOP. Mobile Fabrics, Inc. SN 316,328. Pub. 6-24-69. Filed 1-10-69.

876,634. BLACK MAGIC. Deering Milliken, Inc. SN 319,230. Pub. 6-24-69. Filed 2-17-69.

Class 43 — Thread and Yarn

876,635. SPORTELLE. Lion Brand Yarn Company. SN 313,948. Pub. 6-24-69. Filed 12-9-68.

876,636. MISTY. Spinnerin Yarn Co., Inc. SN 314,463. Pub. 6-24-69. Filed 12-13-68.

876,637. SONY. Sony Corporation. SN 317,148. Pub. 6-24-69. Filed 1-21-69.

Class 44 — Dental, Medical, and Surgical Appliances

876,638. FIDELITY. Fidelity Electronics, Ltd. SN 293,247. Pub. 6-24-69. Filed 3-14-68.

876,639. CELOG. Societe Anonyme des Laboratoires Robert & Carriere. SN 293,406. Pub. 6-24-69. Filed 3-15-68.

876,640. TRICHODEMOLIST. Ann Risch Fowler. SN 301,927. Pub. 6-24-69. Filed 7-3-68.

876,641. VALMOR. Standard Products Corporation. SN 312,707. Pub. 6-24-69. Filed 11-20-68.

876,642. SILKOLATEX. Willy Rüsch. SN 314,745. Pub. 6-24-69. Filed 12-17-68.

876,643. VM AND DESIGN. Vitaminerals, Inc. SN 315,978. Pub. 6-24-69. Filed 1-7-69.

876,644. VITAMINERALS. Vitaminerals, Inc. SN 315,980. Pub. 6-24-69. Filed 1-7-69.

876,645. AMBEC. Beck Industries, Inc. SN 319,269. Pub. 6-24-69. Filed 2-17-69.

876,646. PULSAR. Foremost-McKesson, Inc., d.b.a. American Sun Mark Company. SN 319,415. Pub. 6-24-69. Filed 2-18-69.

Class 46 — Foods and Ingredients of Foods

876,647. UF. Universal Foods Corporation. SN 245,261. Pub. 1-16-68. Filed 5-9-66.

876,648. SHAMROCK. Food Guild Corporation. SN 252,563. Pub. 6-24-69. Filed 8-17-66.

876,649. MR. MALTIE. American Dairy Queen Corporation. SN 264,011. Pub. 4-29-69. Filed 2-6-67.

876,650. ATLANTIC QUEEN. Atlantic Queen Sea Foods Limited, assignee of Gully Fish & Food Products Co. Ltd. SN 270,571. Pub. 6-24-69. Filed 5-3-67.

876,651. MON CHERI. P. Ferrero & C. S.p.A. SN 271,459. Pub. 6-24-69. Filed 5-15-67.

876,652. SPARKLE AND DESIGN. General Mills, Inc. SN 274,387. Pub. 6-24-69. Filed 6-21-67.

876,653. BAKA-SNAK. National Starch and Chemical Corporation. SN 284,228. Pub. 6-24-69. Filed 11-6-67.

876,654. GODDESS OF THE ROCKIES. Mountain Empire Dairymen's Association, Inc., by change of name from Denver Milk Producers, Inc. SN 284,629. Pub. 6-24-69. Filed 11-13-67.

876,655. SCHEHERAZADE AND DESIGN. Coachella Groves. SN 288,939. Pub. 6-24-69. Filed 1-16-68.

876,656. LYCASIN. Lyckeby Stärkelseförädling Aktiebolag. SN 290,395. Pub. 6-24-69. Filed 2-6-68.

876,657. FROM THE VALLEY OF THE JOLLY GREEN GIANT. Green Giant Company. SN 290,848. Pub. 6-24-69. Filed 2-12-68.

876,658. SINNER. Sinner A.G. SN 293,595. Pub. 6-24-69. Filed 3-18-68.

876,659. FIESTAS. Sunshine Biscuits, Inc. SN 295,473. Pub. 6-24-69. Filed 4-11-68.

876,660. SWEETONA. Boots Pure Drug Company Limited. SN 295,507. Pub. 12-31-68. Filed 4-12-68.

876,661. HI-SO-PRO. Pacific Union Association of Seventh-Day Adventists, d.b.a. Loma Linda Foods. SN 296,186. Pub. 6-24-69. Filed 4-22-68.

876,662. MULTIGEN. Pacific Union Association of Seventh-Day Adventists, d.b.a. Loma Linda Foods. SN 296,187. Pub. 6-24-69. Filed 4-22-68.

876,663. COUNTRY SUPPER. Armour Grocery Products Company. SN 296,784. Pub. 6-24-69. Filed 4-29-68.

876,664. FRITO-LAY'S. Frito-Lay, Inc. SN 296,954. Pub. 6-24-69. Filed 4-30-68.

876,665. SYCO DI-LICK. Kandy-Pak, Inc. SN 298,337. Pub. 6-24-69. Filed 5-16-68.

876,666. SOUL BRANDS AND DESIGN. Soul Brands, Inc. SN 299,059. Pub. 6-24-69. Filed 5-27-68.

876,667. HESMER'S OLD HEIDELBERG AND DESIGN. Hesmer Foods, Inc. SN 301,066. Pub. 6-24-69. Filed 6-21-68.

876,668. MINI MILK. Tuscan Dairy Farms, Inc. SN 302,991. Pub. 4-29-69. Filed 7-17-68.

876,669. UOP. Universal Oil Products Company, d.b.a. UOP Food Products Division. SN 302,994. Pub. 6-24-69. Filed 7-17-68.

876,670. MON CHERI AND HAND DESIGN. P. Ferrero & C. S.p.A. SN 304,742. Pub. 6-24-69. Filed 8-9-68.

876,671. TWIN STAR. Kern County Land Company. SN 304,930. Pub. 6-24-69. Filed 8-12-68.

876,672. TWIN STAR AND DESIGN. Kern County Land Company. SN 304,932. Pub. 6-24-69. Filed 8-12-68.

876,673. 101. John Sexton & Co. SN 305,497. Pub. 4-8-69. Filed 8-19-68.

876,674. POSTMAN'S ANKLE. A. H. Robins Company, Incorporated. SN 305,757. Pub. 6-24-69. Filed 8-22-68.

876,675. CELUTAB. Penick & Ford, Limited. SN 310,421. Pub. 3-18-69. Filed 10-24-68.

876,676. TROPIC PRIDE. Rio-Tex Citrus Association. SN 311,063. Pub. 6-24-69. Filed 10-31-68.

876,677. LUANNA. Young's Market Company. SN 311,216. Pub. 4-29-69. Filed 11-4-68.

876,678. DESIGN DEPICTING BUILDINGS, SUN, ETC. The Page Dairy Company. SN 311,295. Pub. 6-24-69. Filed 11-4-68.

876,679. HEAD MAN. Dave Walsh Company, Inc., d.b.a. Dave Walsh Co. SN 311,973. Pub. 6-24-69. Filed 10-17-68.

876,680. KINGS AND DESIGN. Ore-Ida Foods, Inc. SN 312,322. Pub. 6-24-69. Filed 11-15-68.

876,681. CLEOPATRA. Yorba Orange Growers Association. SN 313,051. Pub. 6-24-69. Filed 11-25-68.

876,682. TRI-PODS. Kellogg Company. SN 313,115. Pub. 6-24-69. Filed 11-26-68.

876,683. TEE-PEES. Kellogg Company. SN 313,123. Pub. 6-24-69. Filed 11-26-68.

876,684. BRASH OF LONDON BB AND DESIGN. Brash Brothers (Tea) Limited. SN 313,489. Pub. 6-24-69. Filed 12-3-68.

876,685. TATTLE TALES. De Met's, Inc., d.b.a. Franklin Candy Co. SN 313,862. Pub. 6-24-69. Filed 12-9-68.

876,686. DRYLEM AND DESIGN. The Angostura-Wuppermann Corporation. SN 314,044. Pub. 6-24-69. Filed 12-10-68.

876,687. HAY MARKET. Martha White Foods, Inc., d.b.a. Hay Market Mills. SN 314,744. Pub. 6-24-69. Filed 12-17-68.

876,688. GOLDEN CHERRY. Perugina S.p.A. Cioccolato & Confetture. SN 314,766. Pub. 6-24-69. Filed 12-18-68.

Class 47 — Wines

876,689. MD 20 20. Mogen David Wine Corporation. SN 303,187. Pub. 6-24-69. Filed 7-19-68.

Class 48 — Malt Beverages and Liquors

876,690. SONY. Sony Corporation. SN 317,150. Pub. 6-24-69. Filed 1-21-69.

Class 49 — Distilled Alcoholic Liquors

S76,691. SINNER. Sinner A.G. SN 293,596. Pub. 6-24-69. Filed 3-18-68.

S76,692. KING ROBERT II. Fresh Springs Blending Limited. SN 314,063. Pub. 6-24-69. Filed 12-10-68.

S76,693. CAPA NEGRA. Geo. G. Sandeman Sons & Co. Limited. SN 314,822. Pub. 6-24-69. Filed 12-18-68.

S76,694. VAI BROS. United Vintners, Inc., d.b.a. Petri Wineries. SN 315,861. Pub. 6-24-69. Filed 1-6-69.

S76,695. DUMBARTON CASTLE. Hiram Walker & Sons (Scotland) Limited. SN 316,852. Pub. 6-24-69. Filed Jan. 16, 1969.

Class 50 — Merchandise Not Otherwise Classified

S76,570. (See Class 39 for this trademark.)

S76,696. EZ²C AND DESIGN. Pallet Devices, Inc. SN 292,415. Pub. 6-24-69. Filed 3-4-68.

S76,697. PROFIT-PAK. Illinois Bronze Powder and Paint Co. SN 298,827. Pub. 6-24-69. Filed 5-22-68.

S76,698. MAGIC EYE. Alexander Sarantos. SN 307,508. Pub. 6-24-69. Filed 9-16-68.

S76,699. GALLERY SERIES. Craft Master Corporation. SN 310,543. Pub. 6-24-69. Filed 10-25-68.

S76,700. IDENTA-SNAP. G. G. Tauber Company, Inc. SN 312,510. Pub. 6-24-69. Filed 11-18-68.

S76,701. AKRO AND DESIGN. The Akro Corporation. SN 313,247. Pub. 6-24-69. Filed 11-29-68.

S76,702. FANCIFUL A (DESIGN). The Akro Corporation. SN 313,248. Pub. 6-24-69. Filed 11-29-68.

S76,703. PICTORIAL ILLUSTRATION. Head-To-Toe Products, assignee of David Jaffe, d.b.a. Head-To-Toe Products. SN 314,889. Pub. 6-24-69. Filed 1-2-69.

S76,704. METALITE. Metaframe Corporation. SN 316,111. Pub. 6-24-69. Filed 1-8-69.

S76,705. THALCO. United Merchants and Manufacturers, Inc. SN 319,685. Pub. 6-24-69. Filed 2-20-69.

Class 51 — Cosmetics and Toilet Preparations

S76,706. CHEW 'N CLEAN. Colgate-Palmolive Company. SN 144,336. Pub. 6-24-69. Filed 5-11-62.

S76,707. ZIRCOPASTE AND DESIGN. Daron Products, Inc. SN 250,360. Pub. 6-20-67. Filed 7-15-66.

S76,708. FLUFFLES. Avon Products, Inc. SN 293,684. Pub. 6-24-69. Filed 3-20-68.

S76,709. BLUE STUFF. Gaetano A. Scoma, d.b.a. Scoma's. SN 296,990. Pub. 6-24-69. Filed 4-30-68.

S76,710. OVERLAPPING CIRCLES (DESIGN). Block Drug Company, Inc. SN 298,102. Pub. 6-24-69. Filed 5-14-68.

S76,711. GUY FELIX. Gayle Lyn Products & Distributing Co., Inc. SN 302,933. Pub. 6-24-69. Filed 7-17-68.

S76,712. KING TUT. Synergistic Industries, Inc. SN 310,005. Pub. 6-24-69. Filed 10-18-68.

S76,713. PINSTRIPE. Dunhill Tailored Clothes, Inc. SN 313,228. Pub. 6-24-69. Filed 11-29-68.

Class 52 — Detergents and Soaps

876,714. DIXAN. Henkel & Cie G.m.b.H. SN 284,199. Pub. 6-24-69. Filed 11-6-67.

S76,715. QUEEN BEE ETC. AND DESIGN. Specialty Items Company. SN 294,681. Pub. 6-24-69. Filed 4-1-68.

S76,716. CLEAN SILK. Clairol Incorporated. SN 304,760. Pub. 6-24-69. Filed 8-9-68.

S76,717. SPLASH. Evyan Perfumes, Inc. SN 312,578. Pub. 6-24-69. Filed 11-19-68.

S76,718. EASE. Colgate-Palmolive Company. SN 312,852. Pub. 6-24-69. Filed 11-22-68.

Service Marks

Class 100 — Miscellaneous

S76,719. M & T (DESIGN). Manufacturers and Traders Trust Company. MULTIPLE CLASS (Classes 100, 101, and 102). SN 269,906. Pub. 6-24-69. Filed 4-24-67.

S76,720. GENERAL DATA AND DESIGN. Holiday Inns of America, Inc. SN 271,250. Pub. 6-24-69. Filed 5-11-67.

S76,721. GENERAL DATA. Holiday Inns of America, Inc. SN 271,251. Pub. 6-24-69. Filed 5-11-67.

S76,722. BUCHANAN. Buchanan Hearing Aid Co., Inc. SN 273,598. Pub. 6-24-69. Filed 6-12-67.

S76,723. A CARTOON FIGURE. McDonald's Corporation. SN 279,672. Pub. 6-24-69. Filed 9-5-67.

S76,724. LARGE FAMILIES OF AMERICA. Large Families of America, Inc. SN 280,072. Pub. 6-24-69. Filed 9-11-67.

S76,725. AQUAPULSE. Western Geophysical Company of America. SN 283,295. Pub. 6-24-69. Filed 10-24-67.

S76,726. IMA. Institutional Mart of America. SN 287,067. Pub. 6-24-69. Filed 11-16-67.

S76,727. IMA INSTITUTIONAL MART OF AMERICA AND DESIGN. Institutional Mart of America. SN 287,068. Pub. 6-24-69. Filed 11-16-67.

S76,728. PACKLAM. Faustel, Inc. SN 288,204. Pub. 6-24-69. Filed 1-5-68.

S76,729. FFF (DESIGN). Foam Fashion Forum. SN 292,478. Pub. 6-24-69. Filed 3-5-68.

S76,730. THE STEW POT AND DESIGN. Stew Pot International, Inc. SN 293,863. Pub. 6-24-69. Filed 3-21-68.

S76,731. BIRD & BOTTLE. Garrison Estates, Inc. SN 295,636. Pub. 6-24-69. Filed 4-15-68.

S76,732. ASA AND DESIGN. American Subcontractors Association, Inc. SN 299,420. Pub. 6-24-69. Filed 5-31-68.

S76,733. OG (DESIGN). Oceans General, Inc. SN 306,798. Pub. 6-24-69. Filed 9-6-68.

S76,734. INTERNATIONAL AND GLOBE DESIGN. International Funeral Services, Inc. SN 308,009. Pub. 6-24-69. Filed 9-23-68.

S76,735. AMERICA'S SANDWICH-MASTER. Stand 'n Snack of America, Inc. SN 319,784. Pub. 6-24-69. Filed 2-24-69.

Class 101 -- Advertising and Business

S76,719. (See Class 100 for this trademark.)

S76,736. ZIP PRINTING. Daniel Liberman, d.b.a. Zip Printing. SN 255,942. Pub. 6-24-69. Filed 10-6-66.

S76,737. RES-Q. Personnel Exchange of America, Inc., d.b.a. Glynn-Mullen. SN 270,000. Pub. 6-24-69. Filed 4-25-67.

S76,738. CIRCULAR ARRANGEMENT OF PR AROUND MAP OF SOUTH AMERICA. Herman Muller, d.b.a. Harry Muller & Associates South America. SN 272,622. Pub. 6-24-69. Filed 5-29-67.

S76,739. DIAL TODAY. Mary Wakefield Buxton. SN 273,741. Pub. 6-24-69. Filed 6-13-67.

S76,740. MODERN GIRL. Wall Industries, Inc., d.b.a. Modern Girl. SN 280,119. Pub. 6-24-69. Filed 9-11-67.

S76,741. C AND DESIGN. Affiliated Home Centers, Inc. SN 287,397. Pub. 6-24-69. Filed 12-22-67.

S76,742. FARM STORES. Farm Stores, Incorporated. SN 287,812. Pub. 6-24-69. Filed 12-29-67.

S76,743. TOBACCO VILLAGE. Tobacco Village, Inc. SN 291,537. Pub. 6-24-69. Filed 2-20-68.

S76,744. LANCELOT. Lancelot Management Company. SN 294,058. Pub. 6-24-69. Filed 3-25-68.

S76,745. MEAL MART. Meal Mart, Inc. SN 297,688. Pub. 6-24-69. Filed 5-8-68.

S76,746. ASK AND DESIGN. Donald E. Grempler Realty, Inc. SN 299,018. Pub. 6-24-69. Filed 5-24-68.

S76,747. LATINO. ABC International Television, Inc. SN 300,220. Pub. 6-24-69. Filed 6-12-68.

S76,748. SUNNY DOLLARS PLUS. Sun Oil Company. SN 300,412. Pub. 6-24-69. Filed 6-14-68.

S76,749. AUTO-MATE. Auto-Mate, Inc. SN 317,927. Pub. 6-24-69. Filed 1-30-69.

Class 102 — Insurance and Financial

S76,719. (See Class 100 for this trademark.)

S76,750. CHECKMATE. National Bank of Detroit. SN 280,878. Pub. 5-28-68. Filed 9-21-67.

S76,751. W AND DESIGN. Waldner & Company. SN 292,311. Pub. 6-24-69. Filed 3-1-68.

S76,752. CRAFTS AND TRADES. Crafts and Trades Agency, Inc. SN 303,279. Pub. 6-24-69. Filed 7-22-68.

Class 103 — Construction and Repair

S76,753. DESIGN OF SLATE. Memphis Building Maintenance Company. SN 300,471. Pub. 6-24-69. Filed 6-14-68.

Class 104 — Communication

S76,754. ACOUSTA-VOICING. LTV Ling Altec, Inc. SN 273,080. Pub. 6-24-69. Filed 6-5-67.

S76,755. WELLS FARGO AND DESIGN. Baker Industries, Inc. SN 284,149. Pub. 8-27-68. Filed 11-6-67.

S76,756. WELLS FARGO. Baker Industries, Inc. SN 284,151. Pub. 8-27-68. Filed 11-6-67.

Class 105 — Transportation and Storage

S76,757. WTC HANG-AIR AND DESIGN. WTC Air Freight. SN 291,795. Pub. 6-24-69. Filed 2-23-68.

S76,758. ACCENT EXCELLENCE AND DESIGN. North American Van Lines, Inc. (Delaware corporation), assignee of North American Van Lines, Inc. (Indiana corporation). SN 299,577. Pub. 6-24-69. Filed 6-3-68.

S76,759. MISCELLANEOUS DESIGN. Temple Industries, Inc. SN 302,656. Pub. 6-24-69. Filed 7-12-68.

S76,760. TAI. Transportation Associates, Inc. SN 315,020. Pub. 6-24-69. Filed 12-23-68.

Class 106 — Material Treatment

S76,564. CONSOLIDATED CERTIFICATE. See Class 38.

S76,761. ANOLOK. Aluminum Company of Canada Limited. SN 274,485. Pub. 10-1-68. Filed 6-22-67.

S76,762. LIFE PHOTO CO. Perfection Photo Co., Inc. SN 280,629. Pub. 3-18-69. Filed 9-18-67.

S76,763. PERMACLAD. American Permac, Inc. SN 289,954. Pub. 6-24-69. Filed 1-31-68.

Class 107 — Education and Entertainment

S76,561. (See Class 38 for this trademark.)

S76,764. THE ORIGINAL CASTE. Charles Bruce Innes. SN 292,486. Pub. 6-24-69. Filed 3-5-68.

S76,765. THE SOURCE. 20th Century Trends Institute, Inc. SN 295,570. Pub. 6-24-69. Filed 4-12-68.

Collective Membership Mark

Class 200

S76,766. TOONA. Truck Owners and Operators National Association, Inc. SN 296,993. Pub. 6-24-69. Filed 4-30-68.

SUPPLEMENTAL REGISTER

These registrations are not subject to opposition.

Class 1 — Raw or Partly Prepared Materials

S76,767. Adams Industries, Inc., Huntington Woods, Mich., by change of name from Adams Paper Converting Company, Monroe, La. SN 284,144. Filed P.R. 11-6-67; Am. S.R. 5-26-69.

PLASTIKLOTH

For Flexible Plastic Sheet Material Used To Reinforce Packaging Material (Int. Cl. 17).
First use Oct. 16, 1967.

Class 2 — Receptacles

S76,768. CTP Industries Inc., Brooklyn, N.Y. SN 293,225. Filed P.R. 3-14-68; Am. S.R. 6-5-69.

TOTE-N-FOLD

For Plastic Bags (Int. Cl. 20).
First use Jan. 29, 1968.

Class 21 — Electrical Apparatus, Machines, and Supplies

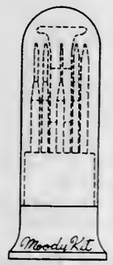
S76,769. General Battery and Ceramic Corp., Reading, Pa. SN 308,699. Filed P.R. 10-2-68; Am. S.R. 4-22-69.

STARTRITE

For Storage Batteries (Int. Cl. 9).
First use Jan. 13, 1965.

Class 23 — Cutlery, Machinery, and Tools, and Parts Thereof

876,770. Moody Machine Products Co., Inc., Providence, R.I. SN 304,740. Filed 8-9-68.



For Small Tools—Namely, Wrenches, Screwdrivers, Awls, Needles, Taps, and Drills (Int. Cl. 8).
First use approximately 1950.

876,771. Thomas Collators, Inc., Linden, N.J. SN 305,576. Filed 8-20-68.

AUTO-SORTER

For Sheet Sorters—Namely, Machines for Distributing One of a Plurality of Sheets Into Each of a Plurality of Pockets (Int. Cl. 7).
First use on or about July 15, 1966.

876,772. Towle Manufacturing Company, Newburyport, Mass. SN 308,328. Filed P.R. 9-26-68; Am. S.R. 4-24-69.

BYFIELD

For Cutlery—Namely, Steak Sets and Carving Sets (Int. Cl. 8).
First use Feb. 29, 1968.

876,773. Friedr. Schuler, Muhlacker, Germany. SN 315,599. Filed P.R. 1-2-69; Am. S.R. 6-26-69.

SCHULER

For Metal Circular Saws and Milling Cutters (Int. Cl. 7).
First use in 1965; in commerce in 1965.

Class 26 — Measuring and Scientific Appliances

876,774. Auto Safety Devices, Inc., Winter Park, Fla. SN 290,066. Filed P.R. 2-1-68; Am. S.R. 5-12-69.

TIRE ALERT

For Automotive Electronic Warning Systems for Alerting Drivers to the Existence of Abnormal Wheel or Tire Conditions and Faulty Shock Absorbers (Int. Cl. 9).
First use Nov. 16, 1967.

876,775. August Sauter K.G., Ebingen, Wurttemberg, Germany. SN 290,460. Filed P.R. 2-7-68; Am. S.R. 5-22-69.

sauter

For Scales and Accessories for Scales—Namely, Hydrostatic Apparatus for Specific Weight Determination, Price Computing Scales and Number Printing Mechanisms, Devices for Indicating, Transferring and Recording Weight, Electrical, Electronic, Hydraulic and Pneumatic Control Devices for Scales, Load Levelling Devices, Weighing Pans, Weight Measuring and Indicating Heads, Magnifying Glasses, Weighing Cupboards, Electrical and Electronic Scales for Supplying Measured Values, Electronic and Electrical Counting Devices for Use in Connection With Scales (Int. Cl. 9).
First use January 1966; in commerce Apr. 1, 1966.

876,776. Homer D. Lansdowne, d.b.a. Title Slide Co., Kirtland, Ohio. SN 291,879. Filed P.R. 2-26-68; Am. S.R. 4-18-69.

TYPE·A·TITLE

For Photographic Supplies—Namely, Title Slides Used in Conjunction With Photographic Projection Equipment (Int. Cl. 9).
First use on or about Nov. 11, 1967.

876,777. Kay Electric Company, Pine Brook, N.J. SN 297,419. Filed P.R. 5-6-68; Am. S.R. 5-7-69.

SYNTHA-SWEEP

For Digitally Controlled, Precision, Narrow Band, Sweeping Oscillator (Int. Cl. 9).
First use Apr. 2, 1968.

876,778. United Kingdom Atomic Energy Authority, London, England. SN 308,053. Filed 9-23-68.

HARWELL

Owner of British Reg. No. B850,499, dated June 18, 1963.
For Scientific and Electrical Apparatus and Instruments—Namely, Nucleonic Instruments, Cryogenic Apparatus for Producing Low Temperatures, Radiation Shielding Equipment, and Transport Containers for Active Nuclear Materials (Int. Cl. 9).

Class 32 — Furniture and Upholstery

876,779. Hamilton Cosco, Inc., Columbus, Ind. SN 284,659. Filed P.R. 11-13-67; Am. S.R. 5-1-69.

CRADLETTE

For Infants' Chairs (Int. Cl. 20).
First use Aug. 23, 1966.

876,780. Simmons Company, New York, N.Y. SN 288,543. Filed P.R. 1-10-68; Am. S.R. 4-11-69.

TWIN KING

For Mattresses and Bed Springs (Int. Cl. 20).
First use Dec. 27, 1967.

Class 33 — Glassware

876,781. Asahi Glass Company, Limited, Chiyoda-ku, Tokyo, Japan. SN 282,875. Filed P.R. 10-19-67; Am. S.R. 6-5-69.

GLARE-PRUF

For Sheet Glass for Picture Frame (Int. Cl. 21).
First use Sept. 28, 1967; in commerce Sept. 28, 1967.

Class 34 — Heating, Lighting, and Ventilating Apparatus

876,782. Superior Continental Corporation, Hickory, N.C., by change of name from Superior Cable Corporation, Hickory, N.C. SN 279,576. Filed P.R. 9-1-67; Am. S.R. 5-7-69.

FRIGIDRYER

For Refrigeration-Type Air Driers Utilized in Electrical Cable Pressurization Systems (Int. Cl. 11).
First use December 1963.

Class 37 — Paper and Stationery

876,783. Beaverite Products, Inc., Lowville, N.Y. SN 276,808. Filed P.R. 7-26-67; Am. S.R. 5-12-69.

KOGLOK

For Loose Leaf Binders (Int. Cl. 16).
First use summer of 1966.

876,784. Nekoosa-Edwards Paper Company, Port Edwards, Wis. SN 299,152. Filed P.R. 5-27-68; Am. S.R. 5-7-69.

WINSLOW

For Bond, Ledger, Writing and Printing Paper (Int. Cl. 16).
First use Oct. 15, 1965.

Class 38 — Prints and Publications

876,785. Decker Communications, Inc., New York, N.Y. SN 271,034. Filed P.R. 5-9-67; Am. S.R. 4-21-69.

NEW PRODUCTS REPORT

For Newsletter (Int. Cl. 16).
First use April 1967.

876,786. Krauss Screen Process, Inc., Lawton, Okla. SN 275,854. Filed P.R. 7-12-67; Am. S.R. 5-21-69.

Krauss

For Heat Transfer Decals (Int. Cl. 16).
First use Oct. 13, 1966.

876,787. Society for Visual Education, Inc., Chicago, Ill. SN 280,103. Filed P.R. 9-11-67; Am. S.R. 4-30-69.

TALKING PICTURE-STORY STUDY PRINTS

For Study Print Accompanied by a Related Phonograph Record (Int. Cl. 16).
First use on or before Sept. 20, 1966.

876,788. Tower Press, Inc., Danvers, Mass. SN 292,869. Filed P.R. 3-11-68; Am. S.R. 4-21-69.

BARGAIN$

For Monthly Magazine Containing Written Articles Discussing the Manufacture and Sale of Goods and Advertising Offering Merchandise and Services at Quoted Prices (Int. Cl. 16).
First use in or about 1951.

876,789. William Maass, d.b.a. Design Technology, New York, N.Y. SN 298,236. Filed P.R. 5-15-68; Am. S.R. 5-20-69.

DESIGN TECHNOLOGY

For Monthly Newsletter (Int. Cl. 16).
First use May 1, 1968.

876,790. William Maass, d.b.a. Bio-Medical Technology, New York, N.Y. SN 299,361. Filed P.R. 5-29-68; Am. S.R. 5-20-69.

BIO-MEDICAL TECHNOLOGY

For Monthly Newsletter (Int. Cl. 16).
First use May 15, 1968.

876,791. Deseret News Publishing Company, Salt Lake City, Utah. SN 317,006. Filed P.R. 1-21-69; Am. S.R. 5-22-69.

DO-IT MAN

For Newspaper Column (Int. Cl. 16).
First use Feb. 22, 1967.

Class 39 — Clothing

876,792. Balfour Shirtmakers Ltd., New York, N.Y. SN 300,676. Filed P.R. 6-18-68; Am. S.R. 6-17-69.

LADY BALFOUR

For Ladies' Shirts and Blouses (Int. Cl. 25).
First use June 13, 1968.

876,793. Leonardo Rabanal Crespo, Valencia, Spain. SN 303,176. Filed P.R. 7-19-68; Am. S.R. 6-17-69.



The design of the girl appearing on the drawing is fanciful.
For Wearing Apparel—Namely, Swimming Suits (Int. Cl. 25).
First use June 12, 1963; in commerce June 12, 1963.

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73,640. REPRESENTATION OF A MAN HOLDING A WEIGHT. Cl. 22 (Int. Cl. 28). 5–4–09.
75,258. RESINOL. Cl. 18 (Int. Cl. 5). 9–14–09.
249,089. GOLDEN DAWN. Cl. 42 (Int. Cl. 24). 11–6–28.
252,810. KRINKLETTE. Cl. 42 (Int. Cl. 24). 2–12–29.
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253,734. "GOODYEAR BLACK DIAMOND" AND DESIGN. Cl. 39 (Int. Cl. 25). 3–5–29.
254,851. "MOSHA'S" ETC. AND DESIGN. Cl. 46 (Int. Cl. 30). 4–2–29.
255,869. NEW CENTURY. Cl. 38 (Int. Cl. 16). 4–30–29.
255,899. "THE NEW CENTURY DICTIONARY" AND DESIGN. Cl. 38 (Int. Cl. 16). 4–30–29.
257,462. GULF. Cl. 46 (Int. Cl. 31). 6–11–29.
257,859. TENSILLITE. Cl. 14 (Int. Cl. 6). 6–18–29.
257,897. SAGROTAN. Cl. 51 (Int. Cl. 5). 6–18–29.
258,223. "ESEMCO" AND BACKGROUND DESIGN. Cl. 23 Int. Cls. 8 and 34). 7–2–29.
258,385. "GOOD LUCK" ETC. AND DESIGN. Cl. 39 (Int. Cl. 25). 7–9–29.
258,441. BOB CAT. Cl. 46 (Int. Cls. 29 and 31). 7–9–29.
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258,874. MAPLEAROME. Cl. 46 (Int. Cl. 30). 7–16–29.
259,043. PRINCESS. Cl. 15 (Int. Cl. 4). 7–23–29.
259,338. AROME BENEDICTINE. Cl. 46 (Int. Cl. 30). 7–30–29.
260,163. "BLUE MILL" ETC. AND DESIGN. Cl. 46 (Int. Cl. 29). 8–20–29.
261,556. AFI-TOX. Cl. 6 (Int. Cl. 5). 9–17–29.
261,690. MAYFAIR. Cl. 32 (Int. Cl. 20). 9–24–29.
261,810. VOLUNTEER. Cl. 12 (Int. Cl. 19). 9–24–29.
261,811. "VOLUNTEER" AND DESIGN. Cl. 12 (Int. Cl. 19). 9–24–29.
261,917. "TINY-TOWN TOGS" ETC. AND DESIGN. Cl. 39 (Int. Cl. 25). 9–24–29.
262,615. CERESAN. Cl. 6 (Int. Cl. 5). 10–15–29.
263,331. YAN-KI-BOY. Cl. 46 (Int. Cl. 30). 11–5–29.
263,377. MONTICELLO BELLE. Cl. 39 (Int. Cl. 25). 11–5–29.
263,433. CELTA. Cl. 43 (Int. Cl. 23). 11–5–29.
264,236. NATIONAL. Cl. 26 (Int. Cl. 9). 11–19–29.
264,561. ACME. Cl. 37 (Int. Cl. 16). 11–26–29.
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442,598. LUMI-TONE. Cl. 21 (Int. Cl. 11). 5–3–49.
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442,996. AERO-CRAFT AND DESIGN. Cl. 19 (Int. Cl. 12). 6–28–49.
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443,159. THINTEX. Cl. 16 (Int. Cl. 2). 7–26–49.
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TRADEMARK REGISTRATIONS—NEW CERTIFICATES

New Certificates issued under sections 7(c), 7(f), 7(g) of the Trademark Act of 1946 for the unexpired term of the original registrations.

341,507. SERVALL. Cl. 1. Godchaux Sugars, Inc. 12-8-36. New Cert. Sec. 7(c) to McCarthy Sales Co., Inc., New Orleans, La.

393,085. MEDICONE. Cl. 6. Medicone Company. 1-27-42. New Cert. Sec. 7(c) to Medicone Company, New York, N.Y.

503,979. GIBSON. Cl. 38. The Gibson Art Company. 11-16-48. New Cert. Sec. 7(c) to Gibson Greeting Cards, Inc., Cincinnati, Ohio.

568,286. SERVALL-STAZDRY. Cl. 1. Godchaux Sugars, Inc. 12-23-52. New Cert. Sec. 7(c) to McCarthy Sales Co., Inc., New Orleans, La.

592,230. REFLEXO-NYL. Cl. 39. Full-Knit Hosiery Mills, Inc. 7-6-54. New Cert. Sec. 7(c) to Chadbourne Gotham, Inc., Charlotte, N.C.

689,666. VIVANA. Cl. 1. The Dow Chemical Company. 12-15-59. New Cert. Sec. 7(c) to Dow Badische Company, Williamsburg, Va.

703,815. ORY-CIN. Cl. 18. First Texas Chemical Manufacturing Company. 9-6-60. New Cert. Sec. 7(c) to Richardson-Merrell Inc., New York, N.Y.

805,484. SPAN AND DESIGN. Cl. 19. Boats, Inc. 3-15-66. New Cert. Sec. 1(c) to Span Boats, Inc., Cameron, Wis.

869,999. ARM AND DESIGN. Cl. 21. Microwave Development Laboratories, Inc. 5-27-69. New Cert. Sec. 7(c) to Americon Corporation, Waltham, Mass.

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AMPEP Industrial Products Ltd., Clevedon, Somerset, England. 876,456, pub. 6-24-69. Cl. 23.
AMT Corp., Troy, Mich. 876,439, pub. 6-24-69. Cl. 22.
Adam Equipment Corp., Asbury Park, N.J. 876,454, pub. 6-24-69. Multiple Class (Classes 23 and 34).
Adams Industries, Inc., Huntington Woods, Mich., from Adams Paper Converting Co., Monroe, La. 876,767. Cl. 1.
Adams Paper Converting Co.: *See*—
Adams Industries, Inc.
Adams Rite Mfg. Co., Glendale, Calif., to United-Carr Inc., Boston, Mass. 514,007, ren. 9-9-69. Cl. 13.
Aero-Motive Mfg. Co., Kalamazoo, Mich. 876,472, pub. 4-22-69. Cl. 23.
Affiliated Home Centers, Inc., Bethlehem, Pa. 876,741, pub. 6-24-69. Cl. 101.
Aileen Mills Inc., Biscoe, N.C., to Springs Mills, Inc., Fort Mill, S.C. 252,810, ren. 9-9-69. Cl. 42.
Air Products & Chemicals, Inc., Allentown, Pa. 876,539, pub. 6-24-69. Cl. 34.
Akro Corp., The, Canton, Ohio. 876,701-2, pub. 6-24-69. Cl. 50.
Aktiengesellschaft fur Brauerei-Industrie, Basel, Switzerland. 876,310, pub. 6-24-69. Multiple Class (Classes 6 and 31).
Allgood, Robert H., d.b.a. Windotint Coating Co., Los Angeles, Calif. 753,127, canc. Cl. 6.
Allied Kid Co., from Allied Kid Co., Boston, Mass. 876,287, pub. 6-24-69. Cl. 1.
Allied Welder Corp., Detroit, Mich. 876,457, pub. 6-24-69. Cl. 23.
Allis, Louis, Co., The, Milwaukee, Wis. 876,402, pub. 6-24-69. Cl. 21.
Alpha Metals, Inc., Jersey City, N.J. 876,346, pub. 6-24-69. Cl. 16.
Aluminum Co. of Canada Ltd., Montreal, Quebec, Canada. 876,761, pub. 10-1-68. Cl. 106.
Aluminum Goods Ltd., Toronto, Ontario, Canada. 876,376, pub. 6-24-69. Cl. 19.
Amaco Magnetics Inc., Moline, Ill. 876,385, pub. 8-27-68. Cl. 21.
Amerace Corp., New York, N.Y. 876,406, pub. 6-24-69. Cl. 21.
American Dairy Queen Corp., Minneapolis, Minn. 876,649, pub. 4-29-69. Cl. 46.
American Enka Corp., Enka, N.C. 876,416, pub. 6-24-69. Cl. 21.
American Enka Corp., Enka, N.C. 876,422, pub. 6-24-69. Cl. 21.
American Home Products Corp.: *See*—
Brach, E. J., & Sons.
American Marine & Machinery Co., Inc., Nashville, Tenn. 876,374, pub. 6-24-69. Multiple Class (Classes 19 and 23).
American Motors Corp., Kenosha, Wis. 876,382, pub. 6-24-69. Cl. 19.
American Permac, Inc., Garden City, N.Y. 876,763, pub. 6-24-69. Cl. 106.
American Screen Products Co., Chicago, Ill. 753,179, canc. Cl. 12.
American Subcontractors Association, Inc., Washington, D.C. 876,732, pub. 6-24-69. Cl. 100.
American Sun Mark Co.: *See*—
Foremost-McKesson, Inc.
Americon Corp.: *See*—
Microwave Development Laboratories, Inc.
Americon Corp., Waltham, from Microwave Development Laboratories, Inc., Needham Heights, Mass. 876,394, pub. 6-24-69. Cl. 21.
Ames, B. C., Co., Waltham, Mass. 516,141, ren. 9-9-69. Cl. 26.
Anderson, Clayton & Co., Houston, Tex. 753,096, canc. Cl. 1.
Angostura-Wuppermann Corp., The, Elmhurst, N.Y. 876,686, pub. 6-24-69. Cl. 46.
Annapolis Chemical Co., Chestertown, Md. 876,345, pub. 6-24-69. Cl. 16.
Antenna Designs, Inc., Burlington, Iowa. 876,417, pub. 6-24-69. Cl. 21.
Appel, I., & Co., Inc., New York, N.Y. 876,584, pub. 6-24-69. Cl. 39.
Arenco Aktiebolag, Stockholm, Sweden. 443,386, ren. 9-9-69. Cl. 23.
Armor: *See*—
Societe a Responsabilite Limitee: Galland & Brochard.
Armour Grocery Products Co., Chicago, Ill. 876,663, pub. 6-24-69. Cl. 46.
Aronson Machine Co., Inc., Arcade, N.Y. 876,510-12, pub. 6-24-69. Cl. 23.
Artcraft Hosiery Sales Corp., Darby, Pa., to Joseph Bancroft & Sons Co., New York, N.Y. 518,177, ren. 9-9-69. Cl. 39.
Arte Grafico Editorial Argentino S.A., Buenos Aires, Argentina. 876,555, pub. 6-24-69. Cl. 38.
Art-O-Graph, Inc., Minneapolis, Minn. 876,532, pub. 6-24-69. Cl. 26.
Asahi Glass Co., Ltd., Tokyo, Japan. 876,781. Cl. 33.
Ascot Textile Corp., New York, N.Y. 876,624, pub. 6-24-69. Cl. 42.
Ashland Oil & Refining Co.: *See*—
Freedom-Valvoline Oil Co.
Associated Professional Launderers of America, Inc., Charlotte, N.C. 753,481, canc. Cl. 103.
Astrolab, Inc., Linden, N.J. 876,387-9, pub. 6-24-69. Cl. 21.
Atkomatic Valve Co., Inc., Indianapolis, Ind. 876,418, pub. 6-24-69. Cl. 21.
Atlantic Queen Sea Foods Ltd., Halifax, Nova Scotia, from Gully Fish & Food Products Co. Ltd., New Brunswick, Canada. 876,650, pub. 6-24-69. Cl. 46.
Auto Safety Devices, Inc., Winter Park, Fla. 876,774. Cl. 26.
Auto-Mate, Inc., Hartford, Conn. 876,749, pub. 6-24-69. Cl. 101.
Avon Products, Inc., New York, N.Y. 869,106, canc. Cl. 51.
Avon Products, Inc., New York, N.Y. 876,708, pub. 6-24-69. Cl. 51.
Babcock Mfg. Co., Oakland, Calif. 753,221, canc. Cl. 19.
Babcock Mfg. Co., Oakland, Calif. 753,229, canc. Cl. 21.
Baker Industries, Inc., Newark, N.J. 876,755-6, pub. 8-27-68. Cl. 104.
Balfour Shirtmakers Ltd., New York, N.Y. 876,792. Cl. 39.
Bancroft, Joseph, & Sons Co.: *See*—
Artcraft Hosiery Sales Corp.
Bantamlite, Inc., New York, N.Y. 876,396, pub. 6-24-69. Cl. 21.
Barrett-Cravens Co., Northbrook, Ill. 510,841, ren. 9-9-69. Cl. 23.
Bartz, Randall W., Rochester, Minn. 876,582, pub. 6-24-69. Cl. 39.
Bassin, Charles S., Chicopee, Mass. 753,249, canc. Cl. 22.
Bayer-Semesan Co., Inc., New York, N.Y., to E. I. du Pont de Nemours & Co., Wilmington, Del. 262,615, ren. 9-9-69. Cl. 6.
Beaverite Products, Inc., Lowville, N.Y. 876,783. Cl. 37.
Beck Industries, Inc., Boulder, Colo. 876,645, pub. 6-24-69. Cl. 44.
Becton, Dickinson & Co., East Rutherford, N.J. 876,371, pub. 6-24-69. Cl. 18.
Bee Chemical Co., Lansing, Ill. 876,349, pub. 6-24-69. Cl. 16.
Behlen Mfg. Co., Inc., Columbus, Nebr. 876,290, pub. 6-24-69. Cl. 2.
Bell Electric Co., Chicago, Ill. 876,420, pub. 6-24-69. Cl. 21.
Benedictine, Distillerie la Liqueur de l'Ancienne Abbaye de Fecamp: *See*—
Societe Anonyme de la Benedictine, Distillerie de la Liqueur de l'Ancienne Abbaye de Fecamp.
Berco Industries Corp., Westbury, N.Y. 753,121, canc. Cl. 5.
Bio-Medical Technology: *See*—
Maass, William.
Bisonite Co., Inc.: *See*—
McDougall-Butler Co., Inc.
Blake, W. R., d.b.a. W. R. Blake Co., Baxter Springs, Kans. 753,259, canc. Cl. 22.
Blake, W. R., Co.: *See*—
Blake, W. R.
Block Drug Co., Inc., Jersey City, N.J. 876,710, pub. 6-24-69. Cl. 51.
Blue Cross Assn., Chicago, Ill. 876,565, pub. 6-24-69. Cl. 38.
Boatbath, Inc., Los Angeles, Calif. 753,108, canc. Cl. 2.
Boats, Inc., to Span Boats, Inc., Cameron, Wis. 805,484, new cert. Cl. 19.
Boots Pure Drug Co. Ltd., Nottingham, England. 876,660, pub. 12-31-68. Cl. 46.
Borden, Inc.: *See*—
Columbus Coated Fabrics Corp.
Borg-Warner Corp., Chicago, Ill., to Fedders Corp., Edison, N.J. 514,790, ren. 9-9-69. Cl. 24.
Bowman, A. Smith, Distillery, Inc., Sunset Hills, from Marketers Plus, Inc., d.b.a. Virginia Gentleman Gifts, Forest, Va. 753,417, canc. Cl. 46.
Brach, E. J., & Sons, Chicago, Ill., to American Home Products Corp., New York, N.Y. 515,679, ren. 9-9-69. Cl. 46.
Brach, E. J., & Sons, Chicago, Ill., to American Home Products Corp., New York, N.Y. 516,342, ren. 9-9-69. Cl. 46.
Bradford Dyeing Assn. (U.S.A.), to Bradford Dyeing Assn. (U.S.A.) Inc., Westerly, R.I. 517,277-8, ren. 9-9-69. Cl. 106.
Bradford Dyeing Assn. (U.S.A) Inc.: *See*—
Bradford Dyeing Assn. (U.S.A.).
Brash Bros. (Tea) Ltd., London, England. 876,684, pub. 6-24-69. Cl. 46.
Breuil Boat Co., Inc., North Miami Beach, Fla. 753,480, canc. Cl. 103.
Brickseal Refractory Co., to J. F. and R. H. Govan, d.b.a. Brickseal Refractory Co., Hoboken, N.J. 516,189, ren. 9-9-69. Cl. 12.
Bridgestone Tire Co. Ltd., Tokyo, Japan. 753,218-19, canc. Cl. 19.
Bristol-Myers Co., New York, N.Y. 876,355, pub. 6-24-69. Cl. 18.
Brown Diamond, Inc., Providence, R.I. 876,282, pub. 6-24-69. Multiple Class (Classes 1 and 23).
Brown & Williamson Tobacco Corp., Louisville, Ky. 753,204, canc. Cl. 17.

Buchanan Hearing Aid Co., Inc., Washington, D.C. 876,722, pub. 6–24–69. Cl. 100.
Burch Electronics, Inc., College Station, Tex. 876,404, pub. 6–24–69. Cl. 21.
Burlington Industries, Inc., New York, N.Y. 876,591, pub. 6–24–69. Cl. 39.
Burlington Industries, Inc., New York, N.Y. 876,629, pub. 6–24–69. Cl. 42.
Burroughs Wellcome & Co. (U.S.A.) Inc., Tuckahoe, N.Y. 512,613, ren. 9–9–69. Cl. 18.
Button World Mfg., Inc., Brooklyn, N.Y. 876,557, pub. 4–22–69. Cl. 38.
Buxton, Mary W., Williamsburg, Va. 876,739, pub. 6–24–69. Cl. 101.
CASH, Inc., Indianapolis, Ind. 753,473, canc. Cl. 101.
CTP Industries Inc., Brooklyn, N.Y. 876,768. Cl. 2.
Cabrera Vulcan Shoe Corp., Hialeah, Fla. 814,580, canc. Cl. 39.
California Artists: *See*—
Crocker, H. S., Co., Inc.
California Newspapers, Inc., San Rafael, Calif. 876,556, pub. 6–24–69. Cl. 38.
California Swimwear Co., Los Angeles, Calif. 876,613–14, pub. 6–24–69. Cl. 39.
Campus Magazine: *See*—
Zeller, Mark S.
Canada Malting Co. Ltd., Toronto, Ontario, Canada. 442,951, ren. 9–9–69. Cl. 46.
Cannolene Co., Atlanta, Ga. 753,450, canc. Cl. 51.
Cannon Mills Co., Kannapolis, N.C. 876,628, pub. 6–24–69. Cl. 42.
Carling Brewing Co., Inc.: *See*—
Columbia Breweries, Inc.
Carlton Shirt Co., Inc., New York, N.Y. 876,598, pub. 6–24–69. Cl. 39.
Carousel Products Inc., Brooklyn, N.Y. 876,616, pub. 6–24–69. Cl. 40.
Carrier, J. D., Shoe Co. Ltd., Toronto, Ontario, Canada. 876,576, pub. 6–24–69. Cl. 39.
Carson-Newton Corp., Belleville, N.J. 753,289–90, canc. Cl. 23.
Carter-Wallace, Inc., New York, N.Y. 876,370, pub. 4–29–69. Cl. 18.
Caterpillar Tractor Co., Peoria, Ill. 876,303, pub. 6–24–69. Multiple Class (Classes 5, 6, 19, 21, 23, 34, 35, and 38).
Central Canning Co., A.S., Stavanger, Norway. 260,163, ren. 9–9–69. Cl. 46.
Century Co., The, New York, N.Y., to Meredith Corp., Des Moines, Iowa. 255,869, ren. 9–9–69. Cl. 38.
Century Co., The, New York, N.Y., to Meredith Corp., Des Moines, Iowa. 255,899, ren. 9–9–69. Cl. 38.
Chadbourne Gotham, Inc.: *See*—
Full-Knit Hosiery Mills, Inc.
Chase Brass & Copper Co. Inc., Cleveland, Ohio. 512,436, ren. 9–9–69. Cl. 13.
Chemflex Corp., Fort Worth, Tex. 858,376, canc. Cl. 52.
Chester Products, Inc., Hamilton, Ohio. 876,326, pub. 6–24–69. Cl. 12.
Chicago Tribune-New York News Syndicate, Inc., New York, N.Y. 516,602, ren. 9–9–69. Cl. 38.
Chrisali Fabrics, Inc., Los Angeles, Calif. 876,623, pub. 6–24–69. Cl. 42.
Churchill Laboratories, Ltd., Brooklyn, N.Y. 876,350, pub. 6–24–69. Cl. 18.
Ciba Corp., d.b.a. The Gland-O-Lac Co., Summit, N.J. 876,354, pub. 6–24–69. Cl. 18.
Cincinnati-Forte Co., The, from Forte Equipment Co., Inc., Niles, Ill. 876,453, pub. 6–24–69. Cl. 23.
Cinderella International Co., Inc., Chicago, Ill. 753,457, canc. Cl. 52.
Cinesell International: *See*—
York, Rubin & Belport, Inc.
Clairol Inc., New York, N.Y. 876,716, pub. 6–24–69. Cl. 52.
Clark Equipment Co., to Clark Equipment Co., Buchanan, Mich. 509,255, ren. 9–9–69. Cl. 23.
Clark Shoe Co., Inc., Boston, Mass. 876,585, pub. 6–24–69. Cl. 39.
Cline, W. M., Co., Chattanooga, Tenn. 876,564, pub. 6–24–69. Consolidated Certificate (Classes 38, 38, and 106).
Clyde Corp., Troy, Mich. 876,461, pub. 6–24–69. Cl. 23.
Coachella Grooves, Coachella, Calif. 876,635, pub. 6–24–69. Cl. 46.
Coca-Cola Co., The: *See*—
Maxcy, L., Inc.
Coe Mfg. Co., The, Painesville, Ohio. 876,477, pub. 6–24–69. Cl. 23.
Colgate-Palmolive Co., New York, N.Y. 876,706, pub. 6–24–69. Cl. 51.
Colgate-Palmolive Co., New York, N.Y. 876,718, pub. 6–24–69. Cl. 52.
Columbia Breweries, Inc., Tacoma, Wash., to Carling Brewing Co., Inc., Cleveland, Ohio. 511,326, ren. 9–9–69. Cl. 48.
Columbia Ribbon & Carbon Mfg. Co., Inc., Glen Cove, N.Y. 513,279, ren. 9–9–69. Cl. 11.
Columbus Coated Fabrics Corp., Columbus, Ohio, to Borden, Inc., New York, N.Y. 442,702, ren. 9–9–69. Cl. 42.
Commercial Mechanisms, Inc., Kansas City, Mo. 876,425, pub. 3–25–69. Multiple Class (Classes 22 and 23).
Compania Vinicola Del Norte De Espana, Bilbao, Spain. 517,707, ren. 9–9–69. Cl. 47.
Conair, Inc., Franklin, Pa. 876,521, pub. 6–24–69. Cl. 26.
Concel Inc., New York, N.Y. 876,551, pub. 6–24–69. Cl. 37.
Conchemco, Inc.: *See*—
Davis, H.B., Co., The.
Concrete Pipe & Products Co. Inc., Richmond, Va. 516,482, ren. 9–9–69. Cl. 12.
Connector Products Corp,, Birmingham, Ala. 876,407, pub. 6–24–69. Cl. 21.
Connie's Collars Inc., San Diego, Calif. 753,113, canc. Cl. 3.
Consolidated Foods Corp., Chicago, Ill. 876,493, pub. 6–24–69. Cl. 23.
Consolidated Olive Growers: *See*—
Lindsay Ripe Olive Co.
Continental Paint & Varnish Co., Chicago, Ill. 510,078, ren. 9–9–69. Cl. 16.
Continental Steel Corp., Kokomo, Ind. 515,625, ren. 9–9–69. Cl. 13.
Cooper Industries, Inc., Houston, Tex. 876,484, pub. 6–24–69. Cl. 23.
Cor-Box, Inc., York, Pa. 876,299, pub. 6–24–69. Cl. 2.
Cornelius Wax Refining Corp., Edison, N.J. 753,146–8, canc. Cl. 6.
Corson, G. & W. H., Inc., Plymouth Meeting, Pa. 876,321, pub. 6–24–69. Cl. 12.
Cosgenic Labs.: *See*—
Nethercutt Laboratories.
Country Doctor's, The: *See*—
Shipley, Darrel R.
Courier Products, Inc., New York, N.Y. 876,618, pub. 6–24–69. Cl. 40.
Craft Master Corp., Toledo, Ohio. 876,699, pub. 6–24–69. Cl. 50.
Crafts & Trades Agency, Inc., Memphis, Tenn. 876,752, pub. 6–24–69. Cl. 102.
Crane Co., Johnstown, Pa. 753,193, canc. Cl. 13.
Crescendoe Gloves, Inc., Johnstown, N.Y. 753,503, canc. Cl. 39.
Crespo, Leonardo Rabanal, Valencia, Spain. 876,793. Cl. 39.
Crocker, H. S., Co., Inc., d.b.a. California Artists, San Bruno, Calif. 876,567, pub. 6–24–69. Cl. 38.
Crocker Industries, Inc., Chicago, Ill. 753,154, canc. Cl. 6.
Crystal Technology, Inc., Mountain View, Calif. 876,395, pub. 6–24–69. Cl. 21.
Cummiskey, Joseph V., Elmira Heights, N.Y. 753,440, canc. Cl. 50.
Cunningham, Anna, d.b.a. A.F.P. Co., Chicago, Ill. 753,241, canc. Cl. 21.
D.J. Records, Auburndale, Fla. 753,339, canc. Cl. 36.
Daron Products, Inc., Margate City, N.J. 876,707, pub. 6–20–67. Cl. 51.
David, Juan, Madrid, Spain. 876,548, pub. 6–24–69. Cl. 36.
Davidson & Hemmendinger, Inc., Easton, Pa. 876,528, pub. 6–24–69. Cl. 26.
Davis, H. B., Co., The, Baltimore, Md., to Conchemco, Inc., Kansas City, Mo. 443,305, ren. 9–9–69. Cl. 16.
Dawe's Laboratories, Inc., Chicago, Ill. 876,357, pub. 6–24–69. Cl. 18.
Dearborn Gage Co., Garden City, Mich. 876,438, pub. 6–24–69. Cl. 22.
Decker Communications, Inc., New York, N.Y. 876,785. Cl. 38.
Decor Specialties, Inc., Detroit, Mich. 876,536, pub. 6–24–69. Cl. 32.
Dee Concrete Accessories Co., Chicago, Ill. 876,335, pub. 6–24–69. Cl. 12.
Dee-Gee Enterprises, Redondo Beach, Calif. 753,463, canc. Cl. 52.
Deering Milliken, Inc., New York, N.Y. 876,634, pub. 6–24–69. Cl. 42.
Dehner Co., The, St. Louis, Mo. 876,621, pub. 6–24–69. Cl. 42.
Delta American Corp., Wheeling, Ill. 876,301, pub. 6–24–69. Cl. 4.
Delta Brush Mfg. Corp., Mount Vernon, N.Y. 511,368, ren. 9–9–69. Cl. 29.
De Met's, Inc., d.b.a. Franklin Candy Co., Chicago, Ill. 876,685, pub. 6–24–69. Cl. 46.
Dennison Mfg. Co., Framingham, Mass. 876,315, pub. 6–24–69. Multiple Class (Classes 6, 26, and 37).
Denver Milk Producers, Inc.: *See*—
Mountain Empire Dairymen's Assn., Inc.
Denys Fisher Group Ltd., from Denys Fisher (Spirograph) Ltd., Boston Spa, England. 876,431, pub. 6–24–69. Cl. 22.
Deseret News Publishing Co., Salt Lake City, Utah. 876,791. Cl. 38.
Design Technology: *See*—
Maass, William.
De Vilbiss Co., The, Toledo, Ohio. 753,295, canc. Cl. 23.
De Witt, E. C., & Co. Inc., to De Witt International Corp., Chicago, Ill. 517,899, ren. 9–9–69. Cl. 18.
De Witt International Corp.: *See*—
De Witt, E. C., & Co. Inc.
Diamond Shamrock Corp., Cleveland, Ohio. 876,344, pub. 6–24–69. Cl. 15.
Dickinson, Clarence B., Highland Park, Ill. 753,511, canc. Cl. 101.
Diebold, Inc., Canton, Ohio. 510,038, ren. 9–9–69. Cl. 32.
Ditta Reggiani Goffredo, Milan, Italy. 876,393, pub. 6–24–69. Cl. 21.
Dominion Electric Corp., Mansfield, Ohio. 876,413, pub. 6–24–69. Cl. 21.
Double Sixteen Co., Wheaton, Ill. 876,559, pub. 6–24–69. Cl. 38.
Dow Badische Co.: *See*—
Dow Chemical Co., The.
Dow Chemical Co., The, to Dow Badische Co., Williamsburg, Va. 689,666, new cert. Cl. 1.
Dow Chemical Co., The, Midland, Mich. 876,361, pub. 6–24–69. Cl. 18.
Drackett Co. of Canada, Ltd., The, Toronto, Ontario, Canada. 753,118, canc. Cl. 4.
Draddy, Gregg, Inc., New York, N.Y. 876,611, pub. 6–24–69. Cl. 39.
Dresser Industries, Inc., Dallas, Tex. 876,331, pub. 6–24–69. Cl. 12.
Drexel Enterprises, Inc.: *See*—
Drexel Furniture Co.

Drexel Furniture Co., to Drexel Enterprises, Inc., Drexel, N.C. 518,073, ren. 9–9–69. Cl. 32.
Drug Research Corp., New York, N.Y. 753,443, canc. Cl. 51.
Dunhill Tailored Clothes, Inc., New York, N.Y. 876,713, pub. 6–24–69. Cl. 51.
Dunlop Tire & Rubber Corp., Buffalo, N.Y. 511,928, ren. 9–9–69. Cl. 22.
Dunlop Tire & Rubber Corp., Buffalo, N.Y. 753,330, canc. Cl. 35.
Dunlop Tire & Rubber Corp., Buffalo, N.Y. 876,436–7, pub. 6–24–69. Cl. 22.
Du Pont de Nemours, E. I., & Co.: *See*—
Bayer-Semesan Co., Inc.
Du Pont Rayon Co., Buffalo, N.Y., to Societe de la Viscose Suisse, Emmenbrucke, Switzerland. 263,433, ren. 9–9–69. Cl. 43.
Dura Commodities Corp., New York, N.Y. 753,159, canc. Cl. 6.
Dura-Tech Corp., Boca Raton, Fla. 753,188, canc. Cl. 12.
Durban's S.p.A., Milan, Italy. 753,125, canc. Cl. 6.
Dynamics Corp. of America: *See*—
Pyle-National Co., The.
E & H Machine Works: *See*—
Eby, George W.
Eastern Dehydrating Co., Lexington, N.C. 753,168, canc. Cl. 10.
Eby, George W., d.b.a. E & H Machine Works, Oregon City, Oreg. 876,462, pub. 6–24–69. Cl. 23.
Edo Western Corp., Salt Lake City, Utah. 876,526, pub. 6–24–69. Cl. 26.
Eldridge Stationery Corp., North Hollywood, Calif. 876,550, pub. 6–24–69. Cl. 37.
Electrographic Corp., d.b.a. Typographic Service Co., New York, N.Y. 753,363, canc. Cl. 38.
Eliason Refrigerator Co., Kalamazoo, Mich. 876,334, pub. 6–24–69. Cl. 12.
Elysium Inc., Los Angeles, Calif. 753,357–8, canc. Cl. 38.
Engis Ltd., Maidstone, Kent, England. 876,494, pub. 6–24–69. Cl. 23.
Erde, Morris, Inc., Brooklyn, N.Y. 254,851, ren. 9–9–69. Cl. 46.
Etablissements A. Foulneteau, Haute-Saone, France. 876,424, pub. 6–24–69. Cl. 22.
Excelsior Shoe Co., The, Portsmouth, Ohio, to Genesco Inc., Nashville, Tenn. 258,385, ren. 9–9–69. Cl. 39.
Executape Systems, Inc., Lincoln, Nebr. 876,543, pub. 6–24–69. Multiple Class (Classes 36 and 107).
Extraction & Chemical Co., Inc.: *See*—
Naamlooze Vennootschap Chemicalienhandel Odol Co. (Odol Mattschappij).
Evsco Pharmaceutical Co., Oceanside, N.Y. 876,353, pub. 4–15–69. Cl. 18.
Evyan Perfumes, Inc., New York, N.Y. 876,717, pub. 6–24–69. Cl. 52.
Fairfield Engineering Co., The, Marion, Ohio. 876,318, pub. 6–24–69. Cl. 10.
Fairway Foods, Inc.: *See*—
Twin City Wholesale Grocer Co.
Falcon Alarm Co., Inc., Summit, N.J. 753,107, canc. Cl. 2.
Farm Stores, Inc., Miami, Fla. 876,742, pub. 6–24–69. Cl. 101.
Farrington Mfg. Co., New York, N.Y. 510,913, ren. 9–9–69. Cl. 23.
Farrington Mfg. Co., New York, N.Y. 511,494, ren. 9–9–69. Cl. 3.
Farrington Mfg. Co., New York, N.Y. 512,162, ren. 9–9–69. Cl. 14.
Fashion Park, Inc., Rochester, to Fashion Park, Inc., New York, N.Y. 516,450, ren. 9–9–69. Cl. 39.
Faustel, Inc., Butler, Wis. 876,728, pub. 6–24–69. Cl. 100.
Fawcett Publications, Inc., Greenwich, Conn. 515,429, ren. 9–9–69. Cl. 38.
Fedders Corp.: *See*—
Borg-Warner Corp.
Federal Paper Board Co., Inc., Bogota, N.J. 876,293, pub. 6–24–69. Cl. 2.
Ferrero, P., & C. S.p.A., Alba, Cuneo, Italy. 876,651, pub. 6–24–69. Cl. 46.
Ferrero, P., & C. S.p.A., Alba, Cuneo, Italy. 876,670, pub. 6–24–69. Cl. 46.
Fiberfab: *See*—
Velocidad, Inc.
Fiberfil: *See*—
Rexall Drug & Chemical Co.
Fibre-Metal Products Co., The, Chester, Pa. 876,581, pub. 6–24–69. Cl. 39.
Fidelity Electronics, Ltd., Chicago, Ill. 876,638, pub. 6–24–69. Cl. 44.
Fil-T-Vac Cleaner Co., Ltd.: *See*—
Furness, Leo G.
First Texas Chemical Mfg. Co., to Richardson-Merrell Inc., New York, N.Y. 703,815, new cert. Cl. 18.
Fischer, Heinrich, & Co.: *See*—
Fischer Industries, Inc.
Fischer Industries, Inc., to Fischer-Davila Industries, Inc., d.b.a. Heinrich Fischer & Co., Cincinnati, Ohio. 513,001, ren. 9–9–69. Cl. 52.
Fischer Industries, Inc., to Fischer-Davila Industries, Inc., d.b.a. Heinrich Fischer & Co., Cincinnati, Ohio. 516,034, ren. 9–9–69. Cl. 52.
Fischer-Davila Industries, Inc.: *See*—
Fischer Industries, Inc.
Fisher, Denys, (Spirograph) Ltd.: *See*—
Fisher, Denys, Group Ltd.
Fisher, Leon E., Co. Inc., Albany, N.Y. 753,310, canc. Cl. 28.
Fisons Pharmaceuticals Ltd., Loughborough, Leicestershire, England. 876,359, pub. 4–22–69. Cl. 18.
Fleming Co., Inc., The, Topeka, Kans. 507,414, ren. 9–9–69. Cl. 38.
Florasynth, Inc.: *See*—
Florasynth Laboratories, Inc.
Florasynth Laboratories, Inc., New York, to Florasynth, Inc., Bronx, N.Y. 258,874, ren. 9–9–69. Cl. 46.
Fluoritab Corp., Flint, Mich. 876,352, pub. 6–24–69. Cl. 18.
Foam Fashion Forum, Newark, N.J. 876,729, pub. 6–24–69. Cl. 100.
Food Guild Corp., Evanston, Ill. 876,648, pub. 6–24–69. Cl. 46.
Foremost-McKesson, Inc.: *See*—
Golden State Co., Ltd.
Foremost-McKesson, Inc., d.b.a. McKesson Laboratories, New York, N.Y. 876,362–4, pub. 6–24–69. Cl. 18.
Foremost-McKesson, Inc., d.b.a. McKesson Laboratories, New York, N.Y. 876,367, pub. 6–24–69. Cl. 18.
Foremost-McKesson, Inc., d.b.a. American Sun Mark Co., New York, N.Y. 876,646, pub. 6–24–69. Cl. 44.
Forest Interiors Corp., Seattle, Wash. 876,325, pub. 6–24–69. Cl. 12.
Forte Equipment Co., Inc.: *See*—
Cincinnati-Forte Co., The.
Fowler, Ann R., Hayward, Calif. 876,640, pub. 6–24–69. Cl. 44.
Franklin Candy Co.: *See*—
De Met's, Inc.
Freedom-Valvoline Oil Co., Freedom, Pa., to Ashland Oil & Refining Co., Ashland, Ky. 514,071, ren. 9–9–69. Cl. 15.
Freez-No-Mor, Inc., Menasha, Wis. 876,605, pub. 6–24–69. Cl. 39.
Freres, Pichon, Saint-Etienne (Loire), France. 876,574, pub. 6–24–69. Cl. 39.
Fresh Springs Blending Ltd., London, England. 876,692, pub. 6–24–69. Cl. 49.
Friel, S. E. W., Queenstown, Md. 518,116, ren. 9–9–69. Cl. 46.
Frito-Lay, Inc., Dallas, Tex. 876,664, pub. 6–24–69. Cl. 46.
Fruitvale Canning Co., Oakland, Calif., to The Kroger Co., Cincinnati, Ohio. 516,754, ren. 9–9–69. Cl. 46.
Fuld Publishing Co. Inc., San Pedro, Calif. 753,260, canc. Cl. 22.
Fuller-O'Brien Corp.: *See*—
Nason, R. N., & Co.
Full-Knit Hosiery Mills, Inc., to Chadbourne Gotham, Inc., Charlotte, N.C. 592,230, new cert. Cl. 39.
Furness, Leo G., d.b.a. Fil-T-Vac Cleaner Co., Ltd., Phoenix, Ariz. 753,237, canc. Cl. 21.
Galperin, Levi I., Havertown, Pa. 753,340, canc. Cl. 36.
Garrison Estates, Inc., Garrison, N.Y. 876,731, pub. 6–24–69. Cl. 100.
Gasnick, Jack, New York, N.Y. 876,602, pub. 6–24–69. Cl. 39.
Geigy Chemical Corp.: *See*—
Toledo Rex Spray Co., The.
Gem Sleepwear Co., New York, N.Y. 876,568, pub. 6–24–69. Cl. 39.
General Aluminum Products, Inc., Charlotte, Mich. 876,327, pub. 6–24–69. Cl. 12.
General Battery & Ceramic Corp., Reading, Pa. 876,769. Cl. 21.
General Electric Co., Plainville, Conn. 876,411, pub. 6–24–69. Cl. 21.
General Luminescent Corp., Chicago, Ill., to Voltarc Tubes, Inc., Fairfield, Conn. 442,598, ren. 9–9–69. Cl. 21.
General Machine & Tool Co.: *See*—
Jorgensen, Henry.
General Mills, Inc., Minneapolis, Minn. 876,652, pub. 6–24–69. Cl. 46.
General Tire & Rubber Co., The, Akron, Ohio. 876,432, pub. 6–24–69. Cl. 22.
Genesco Inc.: *See*—
Excelsior Shoe Co., The.
Genesco Inc., Nashville, Tenn. 876,608–9, pub. 6–24–69. Cl. 39.
Giancarlo Ltd., New York, N.Y. 876,587, pub. 6–24–69. Cl. 39.
Gibson Art Co., The, to Gibson Greeting Cards, Inc., Cincinnati, Ohio. 503,979, new cert. Cl. 38.
Gibson Greeting Cards, Inc.: *See*—
Gibson Art Co., The.
Gibson-Homans Co., The: *See*—
Plastic Products Co.
Gionet, Alex J., Wells, Maine. 876,627, pub. 6–24–69. Cl. 42.
Gland-O-Lac Co., The: *See*—
Ciba Corp.
Glaverbel, Societe Anonyme, Brussels, Belgium. 753,182, canc. Cl. 12.
Glenair, Inc., Glendale, Calif. 876,401, pub. 6–24–69. Cl. 21.
Glynn-Mullen: *See*—
Personnel Exchange of America, Inc.
Godchaux Sugars, Inc., to McCarthy Sales Co., Inc., New Orleans, La. 341,507, new cert. Cl. 1.
Godchaux Sugars, Inc., to McCarthy Sales Co., Inc., New Orleans, La. 568,286, new cert. Cl. 1.
Golden State Co., Ltd., to Foremost-McKesson, Inc., San Francisco, Calif. 516,735, ren. 9–9–69. Cl. 46.
Goodman & Suss Clothes Corp., New York, N.Y. 515,375–6, ren. 9–9–69. Cl. 39.
Goodrich, B. F., Co., The, Akron, Ohio. 876,597, pub. 6–24–69. Cl. 39.
Goodyear Tire & Rubber Co., The: *See*—
Phillips-Baker Rubber Co.
Goodyear Tire & Rubber Co., The, Akron, Ohio. 512,592, ren. 9–9–69. Cl. 52.
Govan, J. F.: *See*—
Brickseal Refractory Co.
Govan, R. H.: *See*—
Brickseal Refractory Co.
Grace, W. R., & Co., New York, N.Y. 876,314, pub. 4–1–69. Cl. 6.

Graham Paper Co., St. Louis, Mo. 876,537, pub. 6–24–69. Cl. 32.
Graniteville Co., Graniteville, S.C. 753,395, canc. Cl. 42.
Gravco, Inc., St. Louis, Mo. 753,247, canc. Cl. 22.
Gray Pharmaceutical Co., Yonkers, N.Y. 876,356, pub. 6–24–69. Cl. 18.
Green Giant Co., Le Sueur, Minn. 876,657, pub. 6–24–69. Cl. 46.
Grempler, Donald E., Realty, Inc., Towson, Md. 876,746, pub. 6–24–69. Cl. 101.
Greyhound Corp., The, Chicago, Ill. 876,380, pub. 6–24–69. Cl. 19.
Griffin Buggy Co., Griffin, Ga. 246,323, canc. Cl. 39.
Gucci Shops Inc., New York, N.Y. 876,292, pub. 6–24–69. Multiple Class (Classes 2, 3, 37, 39, and 41).
Gulf Distributing Co.: *See*—
Gulf Vegetable & Fruit Co.
Gulf Vegetable & Fruit Co., to Gulf Distributing Co., Weslaco, Tex. 257,462, ren. 9–9–69. Cl. 46.
Gully Fish & Food Products Co. Ltd.: *See*—
Atlantic Queen Sea Foods Ltd.
Gussie & Becky, Inc., New York, N.Y. 753,379, canc. Cl. 39.
Gyneco Products Inc., Roslyn, Pa. 753,213, canc. Cl. 18.
Hager & Meisinger G.m.b.H.: *See*—
Meisinger Co.
Hamilton Cosco, Inc., Columbus, Ind. 876,779. Cl. 32.
Hammer Co., The, Cleveland, Ohio. 511,390, ren. 9–9–69. Cl. 47.
Hammermill Paper Co.: *See*—
Howard Paper Mills, Inc.
Hammond Corp., Deerfield, Ill. 876,545, pub. 6–24–69. Cl. 36.
Hanes Corp.: *See*—
Hanes, P. H., Knitting Co.
Hanes Corp., Winston-Salem, N.C. 876,575, pub. 6–24–69. Cl. 39.
Hanes, P. H., Knitting Co., to Hanes Corp., Winston-Salem, N.C. 511,239–40, ren. 9–9–69. Cl. 39.
Harwill, Inc., St. Charles, Mich. 442,996, ren. 9–9–69. Cl. 19.
Hasbro Industries, Inc., from Hassenfeld Bros. Inc., Pawtucket, R.I. 876,433, pub. 6–24–69. Cl. 22.
Haskon, Inc., Long Island City, N.Y. 876,295, pub. 6–24–69. Cl. 2.
Hassenfeld Bros. Inc.: *See*—
Hasbro Industries, Inc.
Hay Market Mills: *See*—
White, Martha, Foods, Inc.
Haymaker Sports, Inc., New York, N.Y. 876,589, pub. 4–15–69. Cl. 39.
Head-to-Toe Products, Rahway, from D. Jaffe, d.b.a. Head-to-Toe Products, Scotch Plains, N.J. 876,703, pub. 6–24–69. Cl. 50.
Heil, Ruth M., Cleveland, N. Dak. 753,388, canc. Cl. 42.
Heiman, H., Co.: *See*—
Heiman, Henry.
Heiman, Henry, d.b.a. H. Heiman Co., to Henry Heiman Co., Inc., New York, N.Y. 442,985, ren. 9–9–69. Cl. 46.
Heiman, Henry, Co., Inc.: *See*—
Heiman, Henry.
Henkel & Cie G.m.b.H., Dusseldorf, Germany. 876,714, pub. 6–24–69. Cl. 52.
Hesmer Foods, Inc., Evansville, Ind. 876,667, pub. 6–24–69. Cl. 46.
Hester Battery Mfg. Co., Inc., Nashville, Tenn. 510,671, ren. 9–9–69. Cl. 21.
Hickok Mfg. Co. Inc., Rochester, N.Y. 511,414, ren. 9–9–69. Cl. 39.
Hickok Mfg. Co. Inc., Rochester, N.Y. 515,573, ren. 9–9–69. Cl. 40.
Hillyard Chemical Co., to Hillyard Enterprises, Inc., St. Joseph, Mo. 518,415, ren. 9–9–69. Cl. 21.
Hillyard Enterprises, Inc.: *See*—
Hillyard Chemical Co.
Holiday Inns of America, Inc., Memphis, Tenn. 876,720–1, pub. 6–24–69. Cl. 100.
House of Thompson, The: *See*—
Thompson, Robert H.
House of Windsor, Inc.: *See*—
Wolf Bros. & Co.
Houze Glass Corp., Point Marion, Pa. 753,085, canc. Cl. 1.
Howard Paper Mills, Inc., Dayton, Ohio, to Hammermill Paper Co., Erie, Pa. 510,853, ren. 9–9–69. Cl. 37.
Howell, R. R., Co., Minneapolis, Minn. 512,034, ren. 9–9–69. Cl. 23.
Huffman Full Fashioned Mills, Inc., to Morganton Hosiery Mills, Inc., Morganton, N.C. 516,440, ren. 9–9–69. Cl. 39.
Hyde, A. R., & Sons Co., Cambridge, Mass. 876,423, pub. 5–7–68. Multiple Class (Classes 22 and 39).
Hygrade Food Products Corp.: *See*—
Kennel Food Supply Co. Inc., The.
IMC Magnetics Corp., Westbury, N.Y. 876,403, pub. 6–24–69. Cl. 21.
Ideal Basic Industries: *See*—
Volunteer Portland Cement Co.
Illinois Bronze Powder & Paint Co., Lake Zurich, Ill. 876,697, pub. 6–24–69. Cl. 50.
Imex Corp., Houston, Tex. 876,601, pub. 6–24–69. Cl. 39.
Imoco Corp., Chicago, Ill. 876,347, pub. 6–24–69. Cl. 16.
Imperial Ice Cream Co., Pasadena, Calif. 753,426, canc. Cl. 46.
Imperial Knife Associated Companies, Inc., Providence, R.I. 876,467, pub. 6–24–69. Cl. 23.
Industri Aktiebolaget Skomab, Nasbypark, Sweden. 876,458, pub. 6–24–69. Cl. 23.
Innes, Charles B., Calgary, Alberta, Canada. 876,764, pub. 6–24–69. Cl. 107.
Institutional Mart of America, Memphis, Tenn. 876,726–7, pub. 6–24–69. Cl. 100.
International Cellucotton Products Co., Chicago, Ill., to Kimberly-Clark Corp., Neenah, Wis. 518,406, ren. 9–9–69. Cl. 23.
International Computer Products, Inc., Dallas, Tex. 876,530, pub. 6–24–69. Cl. 26.
International Funeral Services, Inc., Des Moines, Iowa. 876,734, pub. 6–24–69. Cl. 100.
International Paper Co., New York, N.Y. 753,355, canc. Cl. 37.
International Paper Co., New York, N.Y. 876,298, pub. 6–24–69. Cl. 2.
International Shoe Co., St. Louis, Mo. 753,373, canc. Cl. 39.
Ipco Hospital Supply Corp., New York, N.Y. 876,529, pub. 6–24–69. Cl. 26.
Isaacson-Carrico Mfg. Co., El Campo, Tex. 876,610, pub. 6–24–69. Cl. 39.
JDD Lubricants Co., Sioux City, Iowa. 753,281, canc. Cl. 23.
Jacobsen Mfg. Co., Racine, Wis. 876,486, pub. 6–24–69. Cl. 23.
Jaffe, David: *See*—
Head-to-Toe Products.
James, Ken F., Enterprises, Inc., Kansas City, Mo. 876,520, pub. 6–24–69. Cl. 24.
Janitors Supply House, Inc., Baltimore, Md. 511,403, ren. 9–9–69. Cl. 16.
Jarl Pibefabrik & Traedrejeri, Kolding, Bramdrupdam, Denmark. 876,317, pub. 6–24–69. Multiple Class (Classes 8 and 17).
Jetzon Tire & Rubber Co., Inc., The, Montgomeryville, Pa. 876,542, pub. 6–24–69. Cl. 35.
Johns-Manville Corp., New York, N.Y. 876,328, pub. 6–24–69. Cl. 12.
Johnson, E. F., Co., Waseca, Minn. 876,386, pub. 6–24–69. Cl. 21.
Jorgensen, Henry, d.b.a. General Machine & Tool Co., Dyer, Ind. 876,485, pub. 6–24–69. Cl. 23.
Journal of Commerce Corp., to Twin Coast Newspapers, Inc., New York, N.Y. 258,747, ren. 9–9–69. Cl. 38.
Kandy-Pak, Inc., Roslindale, Mass. 876,665, pub. 6–24–69. Cl. 46.
Kay Electric Co., Pine Brook, N.J. 876,777. Cl. 26.
Kellogg Co., Battle Creek, Mich. 876,682–3, pub. 6–24–69. Cl. 46.
Kennametal Inc., Latrobe, Pa. 876,480, pub. 6–24–69. Cl. 23.
Kennedy Sinclaire, Inc., Wayne, N.J. 514,587, ren. 9–9–69. Cl. 38.
Kennel Food Supply Co., Inc., The, Fairfield, Conn., to Hygrade Food Products Corp., Detroit, Mich. 510,805, ren. 9–9–69. Cl. 46.
Kennel-Aire Mfg. Co., St. Paul, Minn. 876,378, pub. 6–24–69. Cl. 19.
Kenyon, Carl, Dr.: *See*—
Walker, Barvo N., Dr.
Kern County Land Co., San Francisco, Calif. 876,671–2, pub. 6–24–69. Cl. 46.
Kidde, Walter, & Co., Inc., to Walter Kidde & Co., Inc., Belleville, N.J. 515,545–6, ren. 9–9–69. Multiple Class (Classes 2, 6, 21, 23, and 26).
Kimberly-Clark Corp.: *See*—
International Cellucotton Products Co.
Kimberly-Clark Corp., Neenah, Wis. 753,112, canc. Cl. 2.
Kimberly-Clark Corp., Neenah, Wis. 753,186, canc. Cl. 12.
Kimberly-Clark Corp., Neenah, Wis. 753,353, canc. Cl. 37.
Kirby, Block & Co., Inc., New York, N.Y. 753,366, canc. Cl. 38.
Kohner Bros., Inc., East Paterson, N.J. 876,430, pub. 6–24–69. Cl. 22.
Kondo Electrical Industrial Co. Ltd., Tokyo, Japan. 753,233, canc. Cl. 21.
Kortenbach & Rauh Kommanditgesellschaft, Wolingen-Weyer, Germany. 876,620, pub. 6–24–69. Cl. 41.
Krauss Screen Process, Inc., Lawton, Okla. 876,786. Cl. 38.
Kresge, S. S., Co., Detroit, Mich. 876,342–3, pub. 6–24–69. Cl. 14.
Kroger Co., The: *See*—
Fruitvale Canning Co.
Krosney, Manny, Inc., New York, N.Y. 876,603, pub. 6–24–69. Cl. 39.
Krugman-Holmes Corp., Chicago, Ill. 876,594, pub. 6–24–69. Cl. 39.
Kuehnle-Wilson Inc., Philadelphia, Pa. 515,812, ren. 9–9–69. Cl. 103.
LTV Ling Altec, Inc., Anaheim, Calif. 876,754, pub. 6–24–69. Cl. 104.
L'Aiglon Apparel, Inc., New York, N.Y. 513,769, ren. 9–9–69. Cl. 39.
Lancelot Management Co., Portage, Pa. 876,744, pub. 6–24–69. Cl. 101.
Lansdowne, Homer D., d.b.a. Title Slide Co., Kirtland, Ohio. 876,776. Cl. 26.
Large Families of America, Inc., Fairfield, Conn. 876,724, pub. 6–24–69. Cl. 100.
Lasko Metal Products, Inc., West Chester, Pa. 876,397, pub. 6–24–69. Multiple Class (Classes 21 and 34).
Lawton-York Corp., The, New York, N.Y. 876,552, pub. 6–24–69. Cl. 37.
Leeding Sales Co. Inc., New York, N.Y. 876,617, pub. 6–24–69. Cl. 40.
Leeds & Northrup Co., North Wales, Pa. 258,503, ren. 9–9–69. Cl. 26.
Lehn & Fink, Inc., Bloomfield, N.J., to Sterling Drug Inc., New York, N.Y. 257,897, ren. 9–9–69. Cl. 51.
Leiman Bros., Inc., East Rutherford, N.J. 876,463, pub. 6–24–69. Cl. 23.
Leipzig & Lippe, Inc., New York, N.Y. 753,490, canc. Cl. 2.
Lever Bros. Co., New York, N.Y. 876,308, pub. 12–31–66. Cl. 6.

Les Usines de Melle, Melle, Deux-Sevres, France. 753,123, canc. Cl. 6.
Liberman, Daniel, d.b.a. Zip Printing, Los Angeles, Calif. 876,736, pub. 6–24–69. Cl. 101.
Lien Chemical Co., Franklin Park, Ill. 876,341, pub. 6–24–69. Cl. 13.
Lilbry Biochem Laboratories, Inc.: *See*—
Lilbry Bio-Chem Laboratories, Inc.
Lilbry Bio-Chem Laboratories, Inc., d.b.a. Lilbry Biochem Laboratories, Inc., Arcadia, Calif. 753,150, canc. Cl. 6.
Lily-Tulip Cup Corp., New York, N.Y. 876,294, pub. 6–24–69. Cl. 2.
Lincoln Metal Products Corp., Brooklyn, N.Y. 876,291, pub. 10–8–68. Multiple Class (Classes 2 and 29).
Lindsay Ripe Olive Co., to Consolidated Olive Growers, Lindsay, Calif. 513,026, ren. 9–9–69. Cl. 46.
Linnet, John M., Shamokin, Pa. 876,625, pub. 6–24–69. Cl. 42.
Lion Brand Yarn Co., New York, N.Y. 876,635, pub. 6–24–69. Cl. 43.
Lippincott & Margulies, Inc., New York, N.Y. 876,566, pub. 6–24–69. Cl. 38.
Lipton, Alexander, Van Nuys, from Alexander Lipton, Inc., Los Angeles, Calif. 753,502, canc. Cl. 39.
Lipton, Alexander, Inc.: *See*—
Lipton, Alexander.
Lodal, Inc., Kingsford, Mich. 876,381, pub. 6–24–69. Cl. 19.
Loma Linda Foods: *See*—
Pacific Union Assn. of Seventh-Day Adventists.
Lovable Co., The, Atlanta, Ga. 876,612, pub. 6–24–69. Cl. 39.
Lowrance Electronics Mfg. Corp., Tulsa, Okla. 876,523, pub. 6–24–69. Cl. 26.
Lyckeby Starkelseforadling Aktiebolag, Lyckeby, Sweden. 876,656, pub. 6–24–69. Cl. 46.
Lyn, Gayle, Products & Distributing Co., Inc., Minneapolis, Minn. 876,711, pub. 6–24–69. Cl. 51.
MSL Industries, Inc., Chicago, Ill. 876,464, pub. 6–24–69. Cl. 23.
Maass, William, d.b.a. Design Technology, New York, N.Y. 876,789–90. Cl. 38.
Mader Products: *See*—
Mader, Robert J.
Mader, Robert J., d.b.a. Mader Products, Torrance, Calif. 876,440, pub. 6–24–69. Cl. 22.
Maher Color & Chemical Co., to Maher Color & Chemical Co., Chicago, Ill. 442,239, ren. 9–9–69. Cl. 6.
Manufacture de Caoutchouc Michelin (Puiseux, Boulanger et Cie), to Michelin & Cie, Clermont-Ferrand, France. 509,781, ren. 9–9–69. Cl. 35.
Manufacturers & Traders Trust Co., Buffalo, N.Y. 876,719, pub. 6–24–69. Multiple Class (Classes 100, 101, and 102).
Marion Laboratories, Inc., Kansas City, Mo. 876,365, pub. 6–24–69. Cl. 18.
Market Forge Co., Everett, Mass. 753,225, canc. Cl. 19.
Marketers Plus, Inc.: *See*—
Bowman, A. Smith, Distillery, Inc.
Martin, Barry, Pharmaceuticals, Inc., Coral Gables, Fla. 752,799, canc. Cl. 18.
Masonite Corp., Chicago, Ill. 876,306–7, pub. 6–24–69. Cl. 5.
Masonite Corp., Chicago, Ill. 876,330, pub. 4–15–69. Cl. 12.
Massey, L. E., Shoes, Inc., Washington, D.C. 876,606, pub. 6–24–69. Cl. 39.
Master Trading Corp., New York, N.Y. 876,619, pub. 6–24–69. Cl. 40.
Mattel, Inc., Hawthorne, Calif. 753,254, canc. Cl. 22.
Mattel, Inc., Hawthorne, Calif. 876,443–51, pub. 6–24–69. Cl. 22.
Maxad, Inc.: *See*—
Southern California Plastic Co.
Maxcy, L., Inc., Frostproof, Fla., to The Coca-Cola Co., Atlanta, Ga. 258,441, ren. 9–9–69. Cl. 46.
Maysteel Products Corp., Mayville, Wis. 876,495, pub. 6–24–69. Cl. 23.
Maywood Packing Co., Corning, Calif. 514,100, ren. 9–9–69. Cl. 46.
McCann Products Co.: *See*—
McCann, Robert F.
McCann, Robert F., d.b.a. McCann Products Co., Pompano Beach, Fla. 753,210, canc. Cl. 18.
McCarthy Sales Co., Inc.: *See*—
Godchaux Sugars, Inc.
McDonald's Corp., Chicago, Ill. 876,723, pub. 6–24–69. Cl. 100.
McDougall-Butler Co., Inc., Buffalo, to Bisonite Co., Inc., Tonawanda, N.Y. 517,728, ren. 9–9–69. Cl. 16.
McGraw-Edison Co., South Milwaukee, Wis. 876,525, pub. 6–24–69. Cl. 26.
McGraw-Hill, Inc., New York, N.Y. 876,560–2, pub. 6–24–69. Cl. 38.
McKesson Laboratories: *See*—
Foremost-McKesson, Inc.
McKesson & Robbins, Inc., New York, N.Y. 753,434, canc. Cl. 49.
McLoughlin, Bernard J., Troy, N.Y. 876,434, pub. 6–24–69. Cl. 22.
Meal Mart, Inc., Homewood, Ill. 876,745, pub. 6–24–69. Cl. 101.
Medart, Fred, Mfg. Co., St. Louis, Mo., to Nissen Corp., Cedar Rapids, Iowa. 73,640, ren. 9–9–69. Cl. 22.
Medical Economics, Inc., Oradell, N.J. 753,369, canc. Cl. 38.
Medicone Co., to Medicone Co., New York, N.Y. 393,085, new cert. Cl. 6.
Meinecke & Co., Inc., New York, N.Y. 753,398, canc. Cl. 44.
Meisinger Co., New York, N.Y., to Hager & Meisinger G.m.b.H., Dusseldorf, Germany. 510,891, ren. 9–9–69. Cl. 44.
Memphis Building Maintenance Co., Memphis, Tenn. 876,753, pub. 6–24–69. Cl. 103.
Meredith Corp.: *See*—
Century Co., The.
Merit Packing Co.: *See*—
Terven, Lewis A., Co.
Metaframe Corp., Maywood, N.J. 876,704, pub. 6–24–69. Cl. 50.
Michelin & Cie: *See*—
Manufacture de Caoutchouc Michelin (Puiseux, Boulanger et Cie).
Michigan Co., Ltd., Tokyo, Japan. 876,392, pub. 6–24–69. Cl. 21.
Michigan Wheel Co., Grand Rapids, Mich. 876,379, pub. 6–24–69. Cl. 19.
Microwave Development Laboratories, Inc.: *See*—
Americon Corp.
Microwave Development Laboratories, Inc., to Americon Corp., Waltham, Mass. 869,999, new cert. Cl. 21.
Middlshade Co., Inc., The, Philadelphia, Pa. 516,543, ren. 9–9–69. Cl. 39.
Midland Products Co., Midland Park, N.J. 876,517, pub. 6–24–69. Cl. 23.
Midsal, Inc., New York, N.Y. 753,424, canc. Cl. 46.
Miles Laboratories, Inc., Elkhart, Ind. 876,372, pub. 6–24–69. Cl. 18.
Minaret Records, Inc., Val Paraiso, Fla. 753,341, canc. Cl. 36.
Miner Industries Inc., New York, N.Y. 876,426, pub. 6–24–69. Cl. 22.
Minton Ltd.: *See*—
Minstons Ltd.
Mintons Ltd., to Minton Ltd., Stoke-on-Trent, England, 443,562, ren. 9–9–69. Cl. 34.
Mobile Fabrics, Inc., Hawthorne, N.J. 876,633, pub. 6–24–69. Cl. 42.
Mogen David Wine Corp., Chicago, Ill. 876,689, pub. 6–24–69. Cl. 47.
Mohasco Industries, Inc., Amsterdam, N.Y. 876,632, pub. 6–24–69. Cl. 42.
Monier Research & Development Pty. Ltd., Villawood, near Sydney, Australia. 876,323, pub. 6–24–69. Cl. 12.
Monsanto Co., St. Louis, Mo. 876,289, pub. 6–24–69. Cl. 1.
Moody Machine Products Co., Inc., Providence, R.I. 876,770. Cl. 23.
Morganton Hosiery Mills, Inc.: *See*—
Huffman Full Fashioned Mills, Inc.
Morrell, John, & Co., Chicago, Ill. 768,043, canc. Cl. 46.
Mortex & Co.: *See*—
Stegmeier, William J.
Mosinee Paper Mills Co., Mosinee, Wis. 512,453, ren. 9–9–69. Cl. 37.
Mountain Empire Dairymen's Association, Inc., from Denver Milk Producers, Inc., Denver, Colo. 876,654, pub. 6–24–69. Cl. 46.
Modern Girl: *See*—
Wall Industries, Inc.
Muirhead & Co. Ltd., Beckenham, Kent, England. 876,399, pub. 6–24–69. Cl. 21.
Muller, Harry, & Associates: *See*—
Muller, Herman.
Muller, Herman, d.b.a. Harry Muller & Associates, Buenos Aires, Argentina. 876,738, pub. 6–24–69. Cl. 101.
Multi-Clean Products, Inc., St. Paul, Minn. 876,481, pub. 6–24–69. Cl. 23.
Murray, Tom, Co., Chicago, Ill. 876,615, pub. 6–24–69. Cl. 39.
N.V. Philips' Gloeilampenfabrieken, Eindhoven, Netherlands. 876,492, pub. 6–24–69. Cl. 23.
Naamlooze Vennootschap Chemicalienhandel Odol Co. (Odol Maatschappij), Amsterdam, Netherlands, to Extraction & Chemical Co., Inc., New York, N.Y. 514,139, ren. 9–9–69. Cl. 6.
Nannette Mfg. Co., Inc., Philadelphia, Pa. 514,827, ren. 9–9–69. Cl. 39.
Nason, R. N., & Co., San Francisco, to Fuller-O'Brien Corp., Menlo Park, Calif. 441,001, ren. 9–9–69. Cl. 16.
National Bank of Detroit, Detroit, Mich. 876,750, pub. 5–28–68. Cl. 102.
National Cash Register Co., The, Dayton, Ohio. 264,236, ren. 9–9–69. Cl. 26.
National Football League Properties, Inc., Encino, Calif. 876,533, pub. 6–24–69. Multiple Class (Classes 27, 37, and 39).
National Guard Products, Inc., Memphis, Tenn. 753,441, canc. Cl. 50.
National Gypsum Co., Buffalo, N.Y. 876,329, pub. 6–24–69. Cl. 12.
National Permacrete Co., Inc., Devon, Pa. 876,332, pub. 6–24–69. Cl. 12.
National Plastic Products Co., Inc., Odenton, Md. 753,104, canc. Cl. 1.
National Shoes, Inc., Bronx, N.Y. 876,571, pub. 6–24–69. Cl. 39.
National Starch & Chemical Corp., New York, N.Y. 876,653, pub. 6–24–69. Cl. 46.
Neiman-Marcus Co., Dallas, Tex. 876,595, pub. 6–24–69. Cl. 39.
Nekoosa-Edwards Paper Co., Port Edwards, Wis. 876,784. Cl. 37.
Nestle Co., Inc., The: *See*—
Nestle's Milk Products, Inc.
Nestle's Milk Products, Inc., New York, to The Nestle Co., Inc., White Plains, N.Y. 517,171, ren. 9–9–69. Cl. 46.
Nethercutt Laboratories, d.b.a. Cosgenic Labs., Hollywood, Calif. 753,464, canc. Cl. 52.
Ni-Nel Garments, Inc., New York, N.Y. 876,590, pub. 6–24–69. Cl. 39.

Nissen Corp.: *See*—
Medart, Fred, Mfg. Co.
Noble, Don, & Co., Inc., Chicago, to Strum & Drum, Inc., Wheeling, Ill. 514,353, ren. 9–9–69. Cl. 36.
Norddeutsche Mende Rundfunk KG, Funkschneise, Germany. 876,400, pub. 6–24–69. Multiple Class (Classes 21, 26, and 36).
North American Rockwell Corp., Pittsburgh, Pa. 876,375, pub. 6–24–69. Cl. 19.
North American Tile Corp., Montreal, Quebec, Canada. 753,184, ren. 9–9–69. Cl. 12.
North American Van Lines, Inc., from North American Van Lines, Inc., Fort Wayne, Ind. 876,758, pub. 6–24–69. Cl. 105.
Northwestern Golf Co., Chicago, Ill. 876,429, pub. 6–24–69. Cl. 22.
Norwich Mills Inc., Norwich, N.Y. 876,604, pub. 6–24–69. Cl. 39.
Nypac, Inc., Elizabeth, N.J. 753,138, canc. Cl. 6.
Nypac, Inc., Elizabeth, N.J. 753,142, canc. Cl. 6.
Nypac, Inc., Elizabeth, N.J. 753,151–3, canc. Cl. 6.
O.K. Rubber Welders, Inc., Littleton, Colo. 753,200, canc. Cl. 15.
Oceans General, Inc., Wilmington, Del. 876,733, pub. 6–24–69. Cl. 100.
Old Town Shoe Co., Boston, Mass. 876,579, pub. 6–24–69. Cl. 39.
Oliver Instrument Co., Adrian, Mich. 512,119, ren. 9–9–69. Cl. 23.
Oneida Ltd., Oneida, N.Y. 876,497–508, pub. 6–24–69. Cl. 23.
Oneida Ltd., Oneida, N.Y. 876,513, pub. 6–24–69. Cl. 23.
Oneida Ltd., Oneida, N.Y. 876,534, pub. 3–14–67. Cl. 28.
Onitsuka Co., Ltd., Hyogo Prefecture, Japan. 876,427, pub. 6–24–69. Multiple Class (Classes 22 and 39).
Ore-Ida Foods, Inc., Boise, Idaho. 876,680, pub. 6–24–69. Cl. 46.
Pace, Inc., Silver Spring, Md. 876,515, pub. 6–24–69. Cl. 23.
Pacific Union Assn. of Seventh-Day Adventists, d.b.a. Loma Linda Foods, La Sierra, Riverside, Calif. 876,661–2, pub. 6–24–69. Cl. 46.
Page Dairy Co., The, Toledo, Ohio. 876,678, pub. 6–24–69. Cl. 46.
Paintset Fashions, Inc., New York, N.Y. 876,596, pub. 6–24–69. Cl. 39.
Pallet Devices, Inc., Des Plaines, Ill. 876,696, pub. 6–24–69. Cl. 50.
Palmroth Shoemanufacturers, Tampere, Finland. 876,593, pub. 6–24–69. Cl. 39.
Pamarco, Inc., Roselle, N.J. 876,489, pub. 6–24–69. Cl. 23.
Panther Oil & Grease Mfg. Co., to Texas Refinery Corp., Fort Worth, Tex. 510,999, ren. 9–9–69. Cl. 38.
Park City Supply Co., The, Bridgeport, Conn. 876,488, pub. 6–24–69. Cl. 23.
Patio Party Products, Inc., Marshall, Tex. 753,099, canc. Cl. 1.
Pearson, Anthony P., d.b.a. Pearson Enterprises, Seattle, Wash. 753,257, canc. Cl. 22.
Pearson Enterprises: *See*—
Pearson, Anthony P.
Peavey Co.: *See*—
Peavey, F. H., & Co.
Peavey, F. H., & Co., to Peavey Co., Minneapolis, Minn. 517,582, ren. 9–9–69. Cl. 46.
Penick & Ford, Ltd., Cedar Rapids, Iowa. 876,675, pub. 3–18–69. Cl. 46.
Penley Bros., West Paris, Maine. 518,067, ren. 9–9–69. Cl. 24.
Penney, J. C., Co., Inc.: *See*—
Robinson & Golluber.
Pennsylvania Box & Lumber Co., Inc., Warminster, Pa. 876,297, pub. 6–24–69. Cl. 2.
Peppertree Automotive: *See*—
Smith, Roger.
Perfection Photo Co., Inc., Greensburg, Pa. 876,762, pub. 3–18–69. Cl. 106.
Perrotts Ltd., Manchester, England. 753,483, canc. Cl. 106.
Personnel Exchange of America, Inc., d.b.a. Glynn-Mullen, Kansas City, Mo. 876,737, pub. 6–24–69. Cl. 101.
Perugina S.p.A. Cioccolato & Confetture, Perugia, Italy. 876,688, pub. 6–24–69. Cl. 46.
Peterson's, Tom, Inc., Portland, Oreg. 876,535, pub. 6–24–69. Cl. 31.
Petri Wineries: *See*—
United Vintners, Inc.
Phillips-Baker Rubber Co., Providence, R.I., to The Goodyear Tire & Rubber Co., Akron, Ohio. 253,733–4, ren. 9–9–69. Cl. 39.
Pincus Brothers, Inc., to Pincus Bros., Inc., Philadelphia, Pa. 515,363, ren. 9–9–69. Cl. 39.
Pioneer Aerodynamic Systems, Inc., Manchester, Conn. 753,-999, canc. Cl. 19.
Plastic Products Co., Detroit, Mich., to The Gibson-Homans Co., Cleveland, Ohio. 516,412, ren. 9–9–69. Cl. 12.
Plasti-Vac, Inc., Charlotte, N.C. 876,471, pub. 6–24–69. Cl. 23.
Pop America Corp., Montebello, Calif. 876,428, pub. 6–24–69. Cl. 22.
Pope & Talbot Inc., San Francisco, Calif. 753,181, canc. Cl. 12.
Portatronic Systems, Inc., New York, N.Y. 876,421, pub. 6–24–69. Cl. 21.
Porter, H. K., Co., Inc., Pittsburgh, Pa. 753,183, canc. Cl. 12.
Porter, H. K., Co., Inc., Pittsburgh, Pa. 753,325, canc. Cl. 35.
Porter, H. K., Co., Inc., Pittsburgh, Pa. 876,412, pub. 6–24–69. Cl. 21.
Process Analyzers, Inc., Houston, Tex. 876,522, pub. 6–24–69. Cl. 26.
Public Relations Research Service, Inc., Pittsburgh, Pa. 753,-471, canc. Cl. 101.
Pyle-National Co., The, Chicago, Ill., to Dynamics Corp. of America, New York, N.Y. 515,658, ren. 9—9–69. Cl. 34.
R.L. Electronic Communications Co., Inc., Ventura, Calif. 876,531, pub. 6–24–69. Cl. 26.
Racing Turtle, New York, N.Y. 876,607, pub. 6–24–69. Cl. 39.
Ramseur's, Inc., Greenville, S. C. 876,479, pub. 6–24–69. Cl. 23.
Rau Fastener Co., Providence, R. I. 516,714, ren. 9–9–69. Cl. 40.
Raytheon Co., Lexington, Mass. 876,419, pub. 6–24–69. Cl. 21.
Red Spot Paint & Varnish Co. Inc., Evansville, Ind. 443,159, ren. 9–9–69. Cl. 16.
Rennoc Games & Toys, Inc., Millville, N.J. 876,570, pub. 6–24–69. Multiple Class (Classes 39 and 50).
Research Institute of America, Inc., The, New York, N.Y. 876,544, pub. 6–24–69. Cl. 36.
Research Institute of America, Inc., The, New York, N.Y. 876,563, pub. 6–24–69. Cl. 38.
Resinol Chemical Co., Baltimore, Md. 75,258, ren. 9–9–69. Cl. 18.
Rexall Drug & Chemical Co., d.b.a. Fiberfil, Los Angeles, Calif. 876,284, pub. 6–24–69. Cl. 1.
Reynolds, R. J., Tobacco Co., Winston-Salem, N.C. 876,316, pub. 6–24–69. Multiple Class (Classes 8 and 17).
Richardson-Merrell Inc.: *See*—
First Texas Chemical Mfg. Co.
Rio-Tex Citrus Association, Edinburg, Tex. 876,676, pub. 6–24–69. Cl. 46.
Roberts Co., The, Sanford, N.C. 876,496, pub. 6–24–69. Cl. 23.
Robertson Carpet Corp., New York, N.Y. 876,622, pub. 6–24–69. Cl. 42.
Robins, A. H., Co., Inc., Richmond, Va. 876,674, pub. 6–24–69. Cl. 46.
Robinson & Golluber, to J. C. Penney Co., Inc., New York, N.Y. 249,089, ren. 9–9–69. Cl. 42.
Roger & Gallet, to Roger & Gallet, S.A., Paris, France. 33,093, ren. 9–9–69. Cl. 51.
Roger & Gallet, S.A.: *See*—
Roger & Gallet.
Roma Macaroni Co.: *See*—
Roma Macaroni Factory.
Roma Macaroni Factory, d.b.a. Roma Macaroni Co., San Francisco, Calif. 753,414, canc. Cl. 46.
Ron-Vik, Inc., Minneapolis, Minn. 876,442, pub. 6–24–69. Cl. 22.
Ross, Amy, Inc., Bartow, Fla. 753,377, canc. Cl. 39.
Royal Industries: *See*—
Royal Industries, Inc.
Royal Industries, Inc., from Royal Industries, Pasadena, Calif. 867,527, pub. 6–24–69. Cl. 26.
Royal Industries, Inc., from Royal Industries, Pasadena, Calif. 876,541, pub. 6–24–69. Cl. 35.
Royal London, Ltd., New York, N.Y. 876,599, pub. 6–24–69. Cl. 39.
Rucker Pharmacal Co., Inc., Shreveport, La. 876,369, pub. 1–21–69. Cl. 18.
Rusch, Willy, Rommelshausen, Germany. 876,642, pub. 6–24–69. Cl. 44.
Ryerson, Joseph T., & Son, Inc., Chicago, Ill. 513,182, ren. 9–9–69. Cl. 46.
Sandeman, Geo. G., Sons & Co. Ltd., London, England. 876,-693, pub 6–24–69. Cl. 49.
Sandvikens Jernverks Aktiebolag, Sandviken, Sweden. 512,159, ren. 9–9–69. Cl. 14.
Santa Rita Technology, Inc., Menlo Park, Calif. 876,390, pub. 6–24–69. Cl. 21.
Sarantos, Alexander, Norwalk, Conn. 876,698, pub. 6–24–69. Cl. 50.
Sargeant Products Corp., Highland Mills, N.Y. 876,302, pub. 6–24–69. Cl. 4.
Sarlo Power Mowers, Inc., Fort Myers, Fla. 876,483, pub. 6–24–69. Cl. 23.
Saurer, Adolphe, Societe Anonyme, Arbon, Switzerland. 512,-769, ren. 9–9–69. Cl. 23.
Sauter, August, K.G., (Wurtt.), Germany. 876,775. Cl. 26.
Savage Laboratories, Inc., Houston, Tex. 753,212, canc. Cl. 18.
Scholl Mfg. Co. Inc., The, Chicago, Ill. 517,407, ren. 9–9–69. Cl. 14.
Schramm, Inc., West Chester, Pa. 876,460, pub. 4–8–69. Cl. 23.
Schuler, Friedr., Muhlacker, Goldshaldenstr., Germany. 876,-773. Cl. 23.
Scientific Components, Inc., Linden, N.J. 876,414, pub. 6–24–69. Cl. 21.
Scoma's: *See*—
Scoma, Gaetano A.
Scoma, Gaetano A., d.b.a. Scoma's, La Salle, Ill. 876,709, pub. 6–24–69. Cl. 51.
Sears, Roebuck & Co., Chicago, Ill. 876,577–8, pub. 6–24–69. Cl. 39.
Seasport, Inc., Uncasville, Conn. 876,586, pub. 4–15–69. Cl. 39.
Sel-Mor Garment Co., Inc., St. Louis, Mo. 812,576, canc. Cl. 39.
Selto (Eastbourne) Ltd., Eastbourne, England. 510,666, ren. 9–9–69. Cl. 51.
Sensenbrenner, A., Sons, Los Angeles, Calif., to Universal International Cigar Corp., New York, N.Y. 515,906, ren. 9–9–69. Cl. 17.
Sequoia Industries, Inc., Anadarko, Okla. 876,626, pub. 6–24–69. Cl. 42.
Seton Leather Co., Newark, N.J. 876,285, pub. 6–24–69. Cl. 1.
Sexton, John, & Co., Chicago, Ill. 876,673, pub. 4–8–69. Cl. 46.
Shaw, Elitha A., d.b.a. Mrs. Lyman W. Shaw, Pocatello, Idaho. 753,413, canc. Cl. 46.

Shaw, Mrs. Lyman W.: *See*—
Shaw, Elitha A.
Shell Oil Co., New York, N.Y. 876,366, pub. 6–24–69. Cl. 18.
Shepherd Machinery Co., City of Industry, Calif. 876,473, pub. 6–24–69. Cl. 23.
Sherwin-Williams Co., The, Cleveland, Ohio. 510,867–8, ren. 9–9–69. Cl. 11.
Shiman Mfg. Co. Inc., to Shiman Mfg. Co., Inc., Newark, N.J. 258,223, ren. 9–9–69. Cl. 23.
Shipley, Darrel R., d.b.a. The Country Doctor's, Clarksville, Tenn. 876,470, pub. 6–24–69. Cl. 23.
Shure Bros. Inc., Evanston, Ill. 876,409–10, pub. 6–24–69. Cl. 21.
Siepmann-Werke KG, Belecke/Moehne, Germany. 876,338–9, pub. 6–24–69. Cl. 13.
Siltronics, Inc., Oakmont, Pa. 876,391, pub. 6–24–69. Cl. 21.
Simmons Co., New York, N.Y. 876,780. Cl. 32.
Simplicity Mfg. Co., Inc., Port Washington, Wis. 876,474–6, pub. 6–24–69. Cl. 23.
Simplicity Pattern Co. Inc., New York, N.Y. 514,739, ren. 9–9–69. Cl. 26.
Single Sideband Amateur Radio Assn., New York, N.Y. 753,370, canc. Cl. 38.
Sinner A.G., Karlsruhe-Grunwinkel, Germany. 876,658, pub. 6–24–69. Cl. 46.
Sinner A.G., Karlsruhe-Grunwinkel, Germany. 876,691, pub. 6–24–69. Cl. 49.
Sisk, Albert W., & Son, to Albert W. Sisk & Son, Inc., Preston, Md. 517,864, ren. 9–9–69. Cl. 46.
Sisk, Albert W., & Son, to Albert W. Sisk & Son, Inc., Preston, Md. 517,867, ren. 9–9–69. Cl. 46.
Small, Horace, Mfg. Co., Nashville, Tenn. 876,572, pub. 6–24–69. Cl. 39.
Smith, Roger, d.b.a. Peppertree Automotive, Costa Mesa, Calif. 876,377, pub. 6–24–69. Cl. 19.
Societe a Responsabilite Limitee: Galland & Brochard, to Armor, Nantes-Chantenay, France. 513,448, ren. 9–9–69. Cl. 11.
Societe Anonyme de la Benedictine, Distillerie de la Liqueur de l'Ancienne Abbaye de Fecamp, to Benedictine, Distillerie la Liqueur de l'Ancienne Abbaye de Fecamp, Fecamp, France. 259,338, ren. 9–9–69. Cl. 46.
Societe Anonyme des Laboratoires Robert & Carriere, Paris, France. 876,639, pub. 6–24–69. Cl. 44.
Societe de la Viscose Suisse: *See*—
Du Pont Rayon Co.
Societe des Etablissements Desarbre S.A.R.L., Roanne, Loire, France. 876,569, pub. 6–24–69. Cl. 39.
Societe Nouvelle de Roulements, Haute-Savoie, France. 876,459, pub. 6–24–69. Cl. 23.
Society for Visual Education, Inc., Chicago, Ill. 876,787. Cl. 38.
Sony Corp., Tokyo, Japan. 876,637, pub. 6–24–69. Cl. 43.
Sony Corp., Tokyo, Japan. 876,690, pub. 6–24–69. Cl. 48.
Sossner Tap & Tool Corp., Lynbrook, N.Y. 876,466, pub. 6–24–69. Cl. 23.
Soul Brands, Inc., Memphis, Tenn. 876,666, pub. 6–24–69. Cl. 46.
Soule Steel Co., San Francisco, Calif. 876,319–20, pub. 6–24–69. Multiple Class (Classes 12 and 13).
Southern California Plastic Co., to Maxad, Inc., Glendale, Calif. 514,492, ren. 9–9–69. Cl. 2.
Southern Cross Industries, Inc.: *See*—
Southern Spring Bed Co.
Southern Spring Bed Co., to Southern Cross Industries, Inc., Atlanta, Ga. 261,690, ren. 9–9–69. Cl. 32.
Space-General Corp., Glendale, Calif. 753,470, canc. Cl. 100.
Span Boats, Inc.: *See*—
Boats, Inc.
Special Electric Co., Inc., Milwaukee, Wis. 876,405, pub. 6–24–69. Cl. 21.
Specialty Items Co., Menlo Park, Calif. 876,715, pub. 6–24–69. Cl. 52.
Specialty Products Co., The, to The Specialty Products Co., New Orleans, La. 510,250, ren. 9–9–69. Cl. 51.
Spill-Stop Mfg. Co., Chicago, to Spill-Stop Mfg. Co., Melrose Park, Ill. 512,729, ren. 9–9–69. Cl. 23.
Spinnerin Yarn Co., Inc., South Hackensack, N.J. 876,636, pub. 6–24–69. Cl. 43.
Sportline Associates, Inc., New York, N.Y. 876,592, pub. 6–24–69. Cl. 39.
Sprague Devices, Inc.., Michigan City, Ind. 876,384, pub. 6–24–69. Cl. 19.
Spring Mills, Inc.: *See*—
Aileen Mills Inc.
Staley, A. E., Mfg. Co., Decatur, Ill. 514,132, ren. 9–9–69. Cl. 6.
Stand 'N Snack of America, Inc., Jacksonville, Fla. 876,735, pub. 6–24–69. Cl. 100.
Standard Oil Co., Flemington, N.J. 876,312, pub. 6–24–69. Cl. 6.
Standard Oil Co., Flemington, N.J. 876,540, pub. 6–24–69. Cl. 35.
Standard Products Corp., Whitman, Mass. 876,641, pub. 6–24–69. Cl. 44.
Stanley Home Products, Inc., Westfield, Mass. 514,081, ren. 9–9–69. Cl. 6.
Steel Tank Institute, Chicago, Ill. 876,296, pub. 6–24–69. Cl. 2.
Steelcote Mfg. Co., St. Louis, Mo. 876,322, pub. 4–29–69. Cl. 12.
Stegmeier, William J., d.b.a. Mortex & Co., Concord, Calif. 876,313, pub. 6–24–69. Multiple Class (Classes 6 and 12).
Stein Bros. Mfg. Co., Chicago, Ill. 753,115, canc. Cl. 3.
Sterling Drug Inc.: *See*—
Lehn & Fink, Inc.
Stern Dental Laboratory Co., Houston, Tex. 735,510, canc. Cl. 52.
Stew Pot International, Inc., Dallas, Tex. 876,730, pub. 6–24–69. Cl. 100.
Stridsberg, Inc., New York, N.Y. 876,519, pub. 6–24–69. Cl. 23.
Stromeyer, J., Co., Philadelphia, Pa. 263,331, ren. 9–9–69. Cl. 46.
Strum & Drum, Inc.: *See*—
Noble, Don, & Co., Inc.
Studio Girl: *See*—
Studio Girl-Hollywood, Inc.
Studio Girl-Hollywood Inc., d.b.a. Studio Girl, Glendale, Calif. 753,453–4, canc. Cl. 51.
Studio Twelve: *See*—
Weymouth, Margaret E.
Sumitomo Chemical Co., Ltd., Osaka, Japan. 876,311, pub. 6–24–69. Cl. 6.
Sun Chemical Corp., New York, N.Y. 443,563, ren. 9–9–69. Cl. 6.
Sun Oil Co., Philadelphia, Pa. 876,748, pub. 6–24–69. Cl. 101.
Sun Valley Mfg. Co., Boston, Mass. 876,580, pub. 6–24–69. Cl. 39.
Sunshine Biscuits, Inc., New York, N.Y. 876,659, pub. 6–24–69. Cl. 46.
Superior Cable Corp.: *See*—
Superior Continental Corp.
Superior Continental Corp., from Superior Cable Corp., Hickory, N.C. 876,782. Cl. 34.
Superior Electric Co., The, Bristol, Conn. 876,408, pub. 6–24–69. Cl. 21.
Swain, Frank E., Leicester, England. 753,191, canc. Cl. 13.
Swen Products, Inc., Minneapolis, Minn. 876,509, pub. 6–24–69. Cl. 23.
Swingline Inc., Long Island City, N.Y. 876,452, pub. 6–24–69. Cl. 23.
Synergistic Industries, Inc., San Rafael, Calif. 876,712, pub. 6–24–69. Cl. 51.
Synthetic Plastics Co., Newark, N.J. 876,547, pub. 6–24–69. Cl. 36.
T.G. & Y. Stores Co., Oklahoma City, Okla. 876,305, pub. 6–24–69. Cl. 5.
Tabin, Adrian, Corp., Chicago, Ill. 753,384, canc. Cl. 39.
Tam O'Shanter Inc., Manchester, N.H. 876,600, pub. 6–24–69. Cl. 39.
Taman Enterprises, Inc., Phoenixville, Pa. 876,630, pub. 6–24–69. Cl. 42.
Tao Gosei Chemical Industry Co. Ltd., Tokyo, Japan. 876,304, pub. 6–24–69. Cl. 5.
Tarrant Mfg. Co., Saratoga Springs, N.Y. 876,469, pub. 6–24–69. Cl. 23.
Tate, E. H., Co., Boston, Mass. 876,340, pub. 6–24–69. Cl. 13.
Tauber, G. G., Co., Inc., Washington, D.C. 876,700 pub. 6–24–69. Cl. 50.
Techni-Fab Inc., Mankato, Minn. 876,465, pub. 6–24–69. Cl. 23.
Tee-Pak, Inc., Chicago, Ill. 876,549, pub. 6–24–69. Cl. 37.
Telefonaktiebolaget LM Ericsson, Stockholm, Sweden. 753,-238–9, canc. Cl. 21.
Temple Industries, Inc., Diboll, Tex. 876,333, pub. 6–24–69. Cl. 12.
Temple Industries, Inc., Diboll, Tex. 876,759, pub. 6–24–69. Cl. 105.
Terven, Lewis A., Co., assor. to Merit Packing Co., to Merit Packing Co., Salinas, Calif. 518,383, ren. 9–9–69. Cl. 46.
Texas Refinery Corp.: *See*—
Panther Oil & Grease Mfg. Co.
Texize Chemicals, Inc., Greenville, S.C. 876,300, pub. 6–24–69. Cl. 4.
Textron Inc., Providence, R.I. 876,487, pub. 6–24–69. Cl. 23.
Textron Inc., Providence, R.I. 876,514, pub. 6–24–69. Cl. 23.
Thews Belts Ltd., Inc., Dallas, Tex. 876,588, pub. 6–24–69. Cl. 39.
Thomas Collators, Inc., Linden, N.J. 876,771. Cl. 23.
Thomas Paint Mfg. Co., Atlanta, Ga. 876,324, pub. 6–24–69. Multiple Class (Classes 12 and 16).
Thompson, Robert H., d.b.a. The House of Thompson, Wewoka, Okla. 876,573, pub. 6–24–69. Cl. 39.
Tiny-Town Togs, Inc., New York, N.Y. 261,917, ren. 9–9–69. Cl. 39.
Title Slide Co.: *See*—
Lansdowne, Homer D.
Tobacco Village, Inc., Moorestown, N.J. 876,743, pub. 6–24–69. Cl. 101.
Todd Recording Corp., Nashville, Tenn. 752,125, canc. Cl. 36.
Toledo Rex Spray Co., The, Toledo, Ohio, to Geigy Chemical Corp., Ardsley, N.Y. 261,556, ren. 9–9–69. Cl. 6.
Ton-Tex Corp., Grand Rapids, Mich. 516,436, ren. 9–9–69. Cl. 35.
Top Brands, Inc., Oshkosh, Wis. 876,435, pub. 6–24–69. Cl. 22.
Topco Associates, Inc., Skokie, Ill. 876,358, pub. 6–24–69. Cl. 18.
Torrington Mfg. Co., The, Torrington, Conn. 876,516, pub. 6–24–69. Cl. 23.
Tower Press, Inc., Danvers, Mass. 876,788. Cl. 38.
Towle Mfg. Co., Newburyport, Mass. 876,772. Cl. 23.
Toyo Rayon Co., Ltd., Tokyo, Japan. 876,286, pub. 4–15–69. Multiple Class (Classes 1 and 39).
Trans World Airlines, Inc.: *See*—
Transcontinental & Western Air, Inc.
Transcontinental & Western Air, Inc., Kansas City, Mo., to Trans World Airlines, Inc., New York, N.Y. 517,273, ren. 9–9–69. Cl. 105.
Transportation Associates, Inc., Smithtown, N.Y. 876,760, pub. 6–24–69. Cl. 105.

Tribotron Corp., Petaluma, Calif. 753,322, canc. Cl. 34.
Tri-Point Industries, Inc., Commack, N.Y. 876,283, pub. 6–24–69. Cl. 1.
Tripp, C. H., Finishing Co., San Diego, Calif. 876,348, pub. 6–24–69. Cl. 16.
Truck Owners & Operators National Assn., Inc., Pittsburgh, Pa. 876,766, pub. 6–24–69. Cl. 200.
Tuscan Dairy Farms, Inc., Union, N.J. 876,668, pub. 4–29–69. Cl. 46.
Twentieth Century-Fox Film Corp., New York, N.Y. 876,546, pub. 6–24–69. Cl. 36.
20th Century Trends Institute, Inc., Darien, Conn. 876,765, pub. 6–24–69. Cl. 107.
Twin City Wholesale Grocer Co., to Fairway Foods, Inc., St. Paul, Minn. 511,329, ren. 9–9–69. Cl. 39.
Twin Coast Newspapers, Inc.: *See*—
Journal of Commerce Corp.
Tye Enterprises, Cheyenne, Wyo. 753,496, canc. Cl. 22.
Typographic Service Co.: *See*—
Electrographic Corp.
UCB (Union Chimique-Chemische Bedrijven), Societe Anonyme, Saint-Gilles, Belgium. 876,360, pub. 6–24–69. Cl. 18.
UOP Food Products Division: *See*—
Universal Oil Products Co.
Uneeda Doll Co. Inc., Brooklyn, N.Y. 752,880, canc. Cl. 22.
Union Carbide Corp., New York, N.Y. 876,415, pub. 6–24–69. Cl. 21.
Uniroyal, Inc., New York, N.Y. 876,281, pub. 6–24–69. Cl. 1.
Uniroyal Ltd., Montreal, Quebec, Canada. 876,482, pub. 6–24–69. Cl. 23.
United Kingdom Atomic Energy Authority, London, England. 876,778. Cl. 26.
United Merchants & Manufacturers, Inc., New York, N.Y. 753,390, canc. Cl. 42.
United Merchants & Manufacturers, Inc., New York, N.Y. 876,705, pub. 6–24–69. Cl. 50.
United Vintners, Inc., d.b.a. Petri Wineries, San Francisco, Calif. 876,694, pub. 6–24–69. Cl. 49.
United-Carr Fastener Corp., Cambridge, to United-Carr Inc., Boston, Mass. 514,006, ren. 9–9–69. Cl. 13.
United-Carr Inc.: *See*—
Adams Rite Mfg. Co.
United-Carr Fastener Corp.
Universal Foods Corp., Milwaukee, Wis. 759,789–90, canc. Cl. 46.
Universal Foods Corp., Milwaukee, Wis. 763,228–9, canc. Cl. 46.
Universal Foods Corp., Milwaukee, Wis. 796,052, canc. Cl. 46.
Universal Foods Corp., Milwaukee, Wis. 876,647, pub. 1–16–68. Cl. 46.
Universal International Cigar Corp.: *See*—
Sensenbrenner, A., Sons.
Universal Oil Products Co., d.b.a. UOP Food Products Division, Des Plaines, Ill. 876,669, pub. 6–24–69. Cl. 46.
Universal Trailer Corp., North Bergen, N.J. 753,224, canc. Cl. 19.
Vanderbilt, R. T., Co., Inc., New York, N.Y. 876,288, pub. 6–24–69. Cl. 1.
Vaporstream Humidifier Corp., Chestertown, Md. 876,538, pub. 3–18–69. Cl. 34.
Velocidad, Inc., d.b.a. Fiberfab, Sunnyvale, Calif. 876,373, pub. 6–24–69. Cl. 19.
Velocidad, Inc., d.b.a. Fiberfab, Santa Clara, Calif. 876,383, pub. 6–24–69. Cl. 19.
Venetian International, Inc., from Venetian Marble Co., Dallas, Tex. 876,336–7, pub. 6–24–69. Cl. 13.
Venetian Marble Co.: *See*—
Venetian International, Inc.
Vermette Machine Co., Inc., Hammond, Ind. 876,468, pub. 6–24–69. Cl. 23.
Vernco Corp., Columbus, Ind. 753,323, canc. Cl. 34.
Vetmentos AG, Zurich, Switzerland. 876,583, pub. 6–24–69. Cl. 39.
Virginia Gentleman Gifts: *See*—
Bowman, A. Smith.
Virginia Maid Hosiery Mills, Inc., Pulaski, Va. 263,377, ren. 9–9–69. Cl. 39.
Visual Art Industries, Inc., Brooklyn, N.Y. 753,438, canc. Cl. 50.
Vitaminerals, Inc., Glendale, Calif. 876,643–4, pub. 6–24–69. Cl. 44.
Vitamix Pharmaceuticals, Inc., Philadelphia, Pa. 753,492, canc. Cl. 18.
Volstro Mfg. Co., Inc., Philadelphia, Pa. 876,518, pub. 6–24–69. Cl. 23.
Voltarc Tubes, Inc.: *See*—
General Luminescent Corp.
Volunteer Portland Cement Co., Wilmington, Del., and Knoxville, Tenn., to Ideal Basic Industries, Denver, Colo. 261,810–11, ren. 9–9–69. Cl. 12.
WTC Air Freight, Los Angeles, Calif. 876,757, pub. 6–24–69. Cl. 105.
Waegemans, E., & Son, Inc., Bridgeport, Conn. 514,140, ren. 9–9–69. Cl. 17.
Waldner & Co., Kansas City, Mo. 876,751, pub. 6–24–69. Cl. 102.
Walker, Dr. Barvo N., d.b.a. Dr. Carl Kenyon, Fort Worth, Tex. 876,553, pub. 6–24–69. Cl. 38.
Walker, Hiram, & Sons (Scotland) Ltd., Dumbarton, Scotland. 876,695, pub. 6–24–69. Cl. 49.
Walker, Madam C. J., Mfg. Co., Inc., The, Indianapolis, Ind. 876,368, pub. 6–24–69. Cl. 18.
Wall Industries, Inc., d.b.a. Modern Girl, Cambridge, Mass. 876,740, pub. 6–24–69. Cl. 101.
Wallace & Tiernan Inc., Belleville, N.J. 753,145, canc. Cl. 6.
Walsh, Dave, Co.: *See*—
Walsh, Dave, Co., Inc.
Walsh, Dave, Co., Inc., d.b.a. Dave Walsh Co., Oxnard, Calif. 876,679, pub. 6–24–69. Cl. 46.
Wanger, Woodward, Co., Philadelphia, Pa. 876,309, pub. 6–24–69. Multiple Class (Classes 6, 13, 23, and 35).
Warner-Lambert Pharmaceutical Co., Morris Plains, N.J. 876,-351, pub. 6–24–69. Cl. 18.
Wells & Wade Fruit Co., Wenatchee, Wash. 514,020, ren. 9–9–69. Cl. 46.
Werkzeugmaschinenfabrik Oerlikon-Buehrle A/G, Zurich, Switzerland. 876,478, pub. 6–24–69. Cl. 23.
West Chemical Products, Inc.: *See*—
West Disinfecting Co.
West Disinfecting Co., to West Chemical Products, Inc., Long Island City, N.Y. 264,712, ren. 9–9–69. Cl. 52.
West Disinfecting Co., to West Chemical Products, Inc., Long Island City, N.Y. 516,258, ren. 9–9–69. Cl. 29.
West Point-Pepperell, Inc., West Point, Ga. 876,631, pub. 6–24–69. Cl. 42.
West Virginia Pulp & Paper Co., New York, N.Y. 753,350, canc. Cl. 37.
Westab Inc.: *See*—
Western Tablet & Stationery Corp.
Western Geophysical Co. of America, Houston, Tex. 876,725, pub. 6–24–69. Cl. 100.
Western Publishing Co., Inc., Racine, Wis. 876,554, pub. 6–24–69. Cl. 38.
Western Tablet & Stationery Corp., to Westab Inc., Dayton, Ohio. 264,561, ren. 9–9–69. Cl. 37.
Westfield Chemical Corp., Westfield, Mass. 813,209, canc. Cl. 16.
Westinghouse Electric Corp., Mansfield, Ohio. 876,398, pub. 6–24–69. Cl. 21.
Weymouth, Margaret E., d.b.a. Studio Twelve, Costa Mesa, Calif. 876,490–1, pub. 6–24–69. Cl. 23.
Wheeling Steel Corp., to Wheeling-Pittsburgh Steel Corp., Wheeling, W. Va. 257,859, ren. 9–9–69. Cl. 14.
Wheeling-Pittsburgh Steel Corp.: *See*—
Wheeling Steel Corp.
White, Martha, Foods, Inc., d.b.a. Hay Market Mills, Nashville, Tenn. 876,687 pub. 6–24–69. Cl. 46.
Wilkerson Corp., Englewood, Colo. 876,455, pub. 4–22–69. Cl. 23.
Will & Baumer Candle Co., Inc., Syracuse, N.Y. 259,043, ren. 9–9–69. Cl. 15.
Wilmsen B., Inc., Philadelphia, Pa. 753,436, canc. Cl. 50.
Wilson Plastics, Inc., Sandusky, Ohio. 753,109, canc. Cl. 2.
Wilton Corp.: *See*—
Wilton Tool Mfg. Co.
Wilton Tool Mfg. Co., Chicago, to Wilton Corp., Schiller Park, Ill. 443,083, ren. 9–9–69. Cl. 23.
Windotint Coating Co.: *See*—
Allgood, Robert H.
Winer, Herbert, Norwood, Mass. 753,412, canc. Cl. 46.
Wintronics, Ltd., New York, N.Y. 753,226, canc. Cl. 21.
Wiss, J., & Sons Co., Newark, N.J. 753,399, canc. Cl. 44.
Wolf Bros. & Co., Red Lion, to House of Windsor, Inc., Windsor, Pa. 510,654, ren. 9–9–69. Cl. 17.
Wolff, Edwin F., Indianapolis, Ind. 753,501, canc. Cl. 37.
Wonder Products Co., Collierville, Tenn. 876,441, pub. 6–24–69. Cl. 22.
Woodard, Viviane, Corp., Panorama City, Calif. 753,446, canc. Cl. 51.
Yorba Orange Growers Association, Anaheim, Calif. 876,681, pub. 6–24–69. Cl. 46.
York, Rubin & Belport, Inc., d.b.a. Cinesell International, New York, N.Y. 753,474, canc. Cl. 101.
Young's Market Co., Los Angeles, Calif. 876,677, pub. 4–29–69. Cl. 46.
Zehntel, Inc., Berkeley, Calif. 876,524, pub. 6–24–69. Cl. 26.
Zeller, Mark S., d.b.a. Campus Magazine, Ogden, Utah. 876,-558, pub. 6–24–69. Cl. 38.
Zip Printing: *See*—
Liberman, Daniel.

U.S. GOVERNMENT PRINTING OFFICE: 0—1969

U.S. DEPARTMENT OF COMMERCE
OFFICIAL GAZETTE of the UNITED STATES PATENT OFFICE
September 16, 1969 Volume 866 Number 3

PATENTS
NOTICES

Board of Appeals Decisions Rendered in the Month of August 1969

Examiner affirmed	110
Examiner affirmed in part	7
Examiner reversed	21
Total	138

Orders for Copies of Foreign Patents and/or Published Applications

Some foreign countries are not publishing their patents and/or applications in numerical order. Since the U.S. Patent Office will begin supplying orders for copies of these foreign documents from master microfilm reels made up on weekly or other periodic publishing sequences, effective immediately all orders must include the country, patent or application number, and the publication date (if known) of the ordered document. Reference should be made to Section 901.05(a) of the Manual of Patent Examining Procedure to assist in determining the publication date of the commonly encountered foreign patents and applications.

W. R. ARMSTRONG,
Aug. 21, 1969. *Director, Office of Patent Services.*

Disclaimers

3,187,479.—*Robert H. Ganz,* Bergenfield, N.J. PACKAGING MACHINE FOR CARTON WITH END IDENTIFICATION PANEL AND METHOD. Patent dated June 8, 1965. Disclaimer filed July 29, 1969, by the assignee, *Continental Can Company, Inc.*

Hereby enters this disclaimer to claim 24 of said patent.

3,210,166.—*Norman G. Carlson,* White Bear Lake Township, Ramsey County, Minn. CAST POROUS METAL. Patent dated Oct. 5, 1965. Disclaimer filed Aug. 11, 1969, by the inventor; the assignee, *Minnesota Mining and Manufacturing Company,* consenting.

Hereby enters this disclaimer to claims 1 and 2 of said patent.

3,364,574.—*Charles R. Stelljes* and *Gerhardt A. Dobslaw,* Fayetteville, and *Leonard Cordone,* East Syracuse, N.Y. WOOD CUTTING SAW BLADE ATTACHMENT FOR HEDGE TRIMMER. Patent dated Jan. 23, 1968. Disclaimer filed July 7, 1969, by the inventors and the assignee, *Rockwell Manufacturing Company.*

Hereby enter this disclaimer to claim 1 of said patent.

Certificates of Correction for the Week of Sept. 16, 1969

D. 207,029	3,368,968	3,380,201
D. 210,594	3,370,004	3,380,388
3,252,595	3,372,422	3,380,823
3,252,790	3,373,026	3,380,975
3,293,327	3,374,144	3,381,705
3,305,071	3,375,094	3,381,716
3,337,433	3,376,247	3,381,999
3,338,680	3,376,943	3,382,064
3,342,607	3,377,058	3,382,096
3,347,351	3,377,187	3,382,175
3,347,684	3,377,197	3,382,213
3,349,288	3,377,341	3,382,226
3,350,405	3,377,342	3,383,485
3,351,145	3,378,375	3,384,069
3,359,551	3,378,987	3,384,476
3,353,080	3,378,513	3,384,515
3,354,452	3,378,561	3,384,619
3,360,414	3,379,271	3,384,832
3,365,583	3,379,530	3,387,953
3,366,276	3,379,743	3,391,013
3,366,608	3,379,745	3,391,157
3,366,848	3,380,131	

New Applications Received During July 1969

Patents	8577
Designs	512
Plant Patents	15
Reissues	9
Total	9113

Issue—September 16, 1969

Patents	1301—No. 3,466,663 to No.	3,467,963, incl.
Designs	66—No. 215,194 to No.	215,259, incl.
Plant Patents	2—No. 2,918 to No.	2,919, incl.
Total	1369	

PATENT EXAMINING CORPS

R. A. WAHL, Assistant Commissioner

CONDITION OF PATENT APPLICATIONS AS OF AUGUST 25, 1969

PATENT EXAMINING GROUPS	Actual Filing Date of Oldest New Case Awaiting Action
*Denotes oldest new application.	
CHEMICAL EXAMINING GROUPS	
GENERAL CHEMISTRY AND PETROLEUM CHEMISTRY, GROUP 110—M. STERMAN, Director. Inorganic Compounds; Inorganic Compositions; Organo-Metal and Organo-Metalloid Chemistry; Metallurgy; Metal Stock; Electro Chemistry; Batteries; Hydrocarbons; Mineral Oil Technology; Lubricating Compositions; Gaseous Compositions; Fuel and Igniting Devices.	8-04-67
GENERAL ORGANIC CHEMISTRY, GROUP 120—I. MARCUS, Director. Heterocyclic; Amides; Alkaloids; Azo; Sulfur; Misc. Esters; Carbohydrates; Herbicides; Poisons; Medicines; Cosmetics; Steroids; Oxo and Oxy; Quinones; Acids; Carboxylic Acid Esters; Acid Anhydrides; Acid Halides.	12-14-66*
HIGH POLYMER CHEMISTRY, PLASTICS AND MOLDING; GROUP 140—L. J. BERCOVITZ, Director. Synthetic Resins; Rubber; Proteins; Macromolecular Carbohydrates; Mixed Synthetic Resin Compositions; Synthetic Resins With Natural Polymers and Resins; Natural Resins; Reclaiming; Pore-Forming; Compositions (Part) e.g.: Coating; Molding; Ink; Adhesive and Abrading Compositions; Molding, Shaping, and Treating Processes.	2-23-67
COATING AND LAMINATING, BLEACHING, DYEING AND PHOTOGRAPHY, GROUP 160—A. P. KENT, Director. Coating; Processes and Misc. Products; Laminating Methods and Apparatus; Stock Materials; Adhesive Bonding; Special Chemical Manufactures; Special Utility Compositions; Bleaching; Dyeing and Photography.	2-13-67
SPECIALIZED CHEMICAL INDUSTRIES AND CHEMICAL ENGINEERING, GROUP 170—W. B. KNIGHT, Director. Fertilizers; Foods; Fermentation; Analytical Chemistry; Reactors; Sugar and Starch; Paper Making; Glass Manufacture; Gas; Heating and Illuminating; Cleaning Processes; Liquid Purification; Distillation; Preserving; Liquid and Solid Separation; Gas and Liquid Contact Apparatus; Refrigeration; Concentrative Evaporators; Mineral Oils Apparatus; Misc. Physical Processes.	2-13-67
ELECTRICAL EXAMINING GROUPS	
INDUSTRIAL ELECTRONICS AND RELATED ELEMENTS, GROUP 210—W. S. COLE, Director. Generation and Utilization; General Applications; Conversion and Distribution; Heating and Related Art Conductors; Switches; Miscellaneous.	1-18-68
SECURITY, GROUP 220—S. BOYD, Director. Ordnance, Firearms and Ammunition; Radar, Underwater Signalling, Directional Radio, Torpedoes, Seismic Exploring, Radio-Active Batteries; Nuclear Reactors, Powder Metallurgy, Rocket Fuels; Radio-Active Material.	11-18-66*
INFORMATION TRANSMISSION, STORAGE AND RETRIEVAL, GROUP 230—J. F. COUCH, Director. Communications; Multiplexing Techniques; Facsimile; Data Processing, Computation and Conversion; Storage Devices and Related Arts.	1-13-67
ELECTRONIC COMPONENT SYSTEMS AND DEVICES, GROUP 250—W. L. CARLSON, Director. Semi-Conductor and Space Discharge Systems and Devices; Electronic Component Circuits; Wave Transmission Lines and Networks; Optics; Radiant Energy; Measuring.	6-07-67
PHYSICS, GROUP 280—R. L. EVANS, Director. Photography; Sound and Lighting; Indicators and Optics; Measuring and Testing; Geometrical Instruments.	11-16-67
DESIGNS, GROUP 290—S. BOYD, Director. Industrial Arts; Household, Personal and Fine Arts.	11-27-68
MECHANICAL EXAMINING GROUPS	
HANDLING AND TRANSPORTING MEDIA, GROUP 310—A. BERLIN, Director. Conveyors; Hoists; Elevators; Article Handling Implements; Store Service; Sheet and Web Feeding; Dispensing; Fluid Sprinkling; Fire Extinguishers; Coin Handling; Check Controlled Apparatus; Classifying and Assorting Solids; Boats; Ships; Aeronautics; Motor and Land Vehicles and Appurtenances; Railways and Railway Equipment; Brakes; Rigid Flexible and Special Receptacles and Packages.	4-03-68
MATERIAL SHAPING, ARTICLE MANUFACTURING, TOOLS, GROUP 320—N. BERGER, Director. Manufacturing Processes, Assembling, Combined Machines, Special Article Making; Metal Deforming; Sheet Metal and Wire Working; Metal Fusion—Bonding, Metal Founding; Metallurgical Apparatus; Plastics Working Apparatus; Plastic Block and Earthenware Apparatus; Machine Tools for Shaping or Dividing; Work and Tool Holders Woodworking; Tools; Cutlery; Jacks.	12-04-67*
AMUSEMENT, HUSBANDRY, PERSONAL TREATMENT, INFORMATION, GROUP 330—A. RUEGG, Director. Amusement and Exercising Devices; Projectors; Animal and Plant Husbandry; Butchering; Earth Working and Excavating; Fishing, etc.; Tobacco; Artificial Body Members; Dentistry; Jewelry; Surgery; Toiletry; Printing; Typewriters; Stationery; Information Dissemination.	1-03-68
HEAT AND POWER ENGINEERING, GROUP 340—C. F. GAREAU, Director. Power Plants; Combustion Engines; Fluid Motors; Pumps; Turbines; Heat Generation and Exchange; Refrigeration; Ventilation; Drying; Vaporizing; Temperature and Humidity Regulation; Machine Elements; Power Transmission.	7-09-68
FIXED CONSTRUCTIONS, SUPPORTS, AND HARDWARE, GROUP 350—T. J. HICKEY, Director. Joints; Fasteners; Rod, Pipe and Electrical Connectors; Miscellaneous Hardware; Locks; Building Structures; Closure Operators; Bridges; Closures; Earth Engineering; Drilling; Mining; Furniture; Receptacles; Supports; Cabinet Structures.	6-10-68
TEXTILES, CLEANING AND FLUID HANDLING, GROUP 360—F. H. BRONAUGH, Director. Fluid Handling, including Valves; Conduits; Filling Receptacles; Lubrication; Joint Packing; Bathroom Fixtures; Centrifugal Separators; Cleaning; Coating; Pressing; Agitating; Foods; Textiles; Apparel and Shoes and their Manufacture; Sewing Machines; Winding and Reeling.	2-12-68

Total number of pending applications (excluding Designs)	185,356
Total number of Design applications pending	3,125

Expiration of patents: The patents within the range of numbers indicated below expire during August 1969, except those which may have expired earlier due to shortened terms under the provisions of Public Law 690, 79th Congress, approved August 8, 1946 (60 Stat. 940) and Public Law 619, 83rd Congress, approved August 23, 1954 (68 Stat. 764), or which may have had their terms curtailed by disclaimer under the provisions of 35 U.S.C. 253. Other patents, issued after the dates of the range of numbers indicated below, may have expired before the full term of 17 years for the same reasons, or have lapsed under the provisions of 35 U.S.C. 151.

Patents	Numbers 2,605,466 to 2,608,686, inclusive
Plant Patents	Numbers 1,117 to 1,123, inclusive

DECISIONS IN PATENT AND TRADEMARK CASES

U.S. Court of Customs and Patent Appeals

IN RE GENE E. GROSHEIM AND ALBERT J. HEEB

No. 7835. Decided January 25, 1968

[56 CCPA —; 390 F.2d 718; 156 USPQ 338]

1 APPEAL TO U.S. COURT OF CUSTOMS AND PATENT APPEALS—MATTER BEFORE COURT—CLAIMS CONSIDERED TOGETHER.

"The appealed claims have been considered together by the Board, and by the appellants in their brief before the court. The claims may therefore be considered to stand or fall together."

2. SAME—SAME—AFFIRMANCE ON PRIMARY REFERENCE ALONE.

"Walsh neither claims nor specifies any particular thickness for the strips except to suggest that 'a suitable thickness for the strips, when spruce is employed, has been found to be approximately one-fourth of an inch.' Contending that the dimensions claimed in their application, particularly the thickness, are 'critical,' appellants argue that the Board erred in combining Walsh (or Fairchild) with Hansen as a combination of references, this, because, they say, Hansen (which does disclose a thickness dimension) is in a completely different art from that to which Walsh is directed and even if the references could be properly combined the invention of the application would still be unobvious. Whether this point is well taken need not be decided because we think it very clear that the invention of the application is no more than an obvious development of that of the Walsh patent."

3. PATENTABILITY—PRODUCT—OBVIOUSNESS—RECONSTITUTED WOOD PRODUCTS.

"We are of the opinion that a worker of ordinary skill in the art of reconstituted wood products would find no difficulty in improving the Walsh plywood structure by adopting a desirable thickness for the strips and would not be surprised to find that the use of thinner strips resulted in a board with fewer imperfections. It may be that the board of the applicants' exhibit is somewhat superior to that of the Walsh exhibit, but we have examined the exhibits and find the difference to be very slight, whether one calls it a difference in degree or an obvious variation."

4. SAME—PARTICULAR SUBJECT MATTER—RECONSTITUTED WOOD BOARDS.

The refusal of certain claims to reconstituted wood boards, as unpatentable over the prior art, is affirmed.

APPEAL from Patent Office. Serial No. 95,685.

AFFIRMED.

James T. Dunn (*William P. Spielman*, of counsel) for appellants.

Joseph Schimmel (*Jack E. Armore*, of counsel) for the Commissioner of Patents.

Before WORLEY, *Chief Judge*, RICH, SMITH, ALMOND, *Associate Judges*, and WILLIAM H. KIRKPATRICK *

KIRKPATRICK, *J.*, delivered the opinion of the court.

This is an appeal from a decision of the Board of Appeals affirming the Examiner's rejection as obvious over combined prior art of claims 8–11 of appellants' application relating to reconstituted wood boards. No claims have been allowed.

The invention is readily understandable from claim 8 of the application which reads as follows:

8. A reconstituted board comprising a plurality of individual wood strands arranged in layers of parallel plies and a matrix of an organic adhesive material, said strands having a length of at least 9", a width varying between 0.0625" and 3" and a thickness varying between 0.015" and 0.150", said adhesive coated

* Senior District Judge, Eastern District of Pennsylvania, sitting by designation.

strands being oriented along the longitudinal axis of the reconstituted board so that the strands in each layer are substantially parallel to one another and the entire assembly is consolidated into a unitary structure.

Claim 9 differs from claim 8 in that the organic adhesive material is restricted to a synthetic resin adhesive. Claim 10 differs from claim 8 in that at least one layer of the individual strands is oriented through a 90° angle when considered in light of at least one other layer in the reconstituted board as determined in relationship with its axis. Claim 11 differs from claim 10 in that the organic adhesive material is restricted to a synthetic resin adhesive. **[1]** The appealed claims have been considered together by the Board, and by the appellants in their brief before the court. The claims may therefore be considered to stand or fall together.

The references are:

Walsh et al., 1,465,383, Aug. 21, 1923.
Fairchild, 2,392,844, Jan. 15, 1946.
Hansen, 2,539,904, Jan. 30, 1951.

Walsh discloses a composite lumber of a plurality of layers of soft wood held together by cement or an equivalent and then subjected to pressure. Wood is cut into thin strips in such manner that the grain of the wood runs lengthwise of the strip. The strips or board thus formed are then cut into desired lengths and are superimposed one above the other so as to form a plurality of layers, with the grain of the wood in one layer running at an angle to the grain of the wood in the adjacent layer.

Fairchild discloses molded wood made of small wood lay-up pieces. The pieces are precoated with a suitable adhesive, e.g. a heat-responsive resin, and molded by heat and pressure. They are described as generally ovate in shape, 6 inches in the shorter diameter and about 10 inches in length. The center portion of each lay-up piece may be on the order of 1/16 inch in thickness. The preferred practice is to lay the several pieces of any given ply with their grain running generally in the same direction. It is also preferable that each ply be laid up with the grains of the component pieces in alternate plies laid at angles to each other and in each instance to the preceding ply.

Hansen discloses a cement wool building material made by combining wood shavings, Portland cement, water, calcium chloride, and calcium sulfate. The wood shavings, approximately 40–50 cm. (15.6 to 19.6 inches) in length, 0.015 of an inch in thickness and ⅛ of an inch wide are randomly dispersed and comprise 24.9% by weight of the finished sheet form of the cement wool material.

The Examiner rejected claims 8–11 as unpatentable over either Fairchild or Walsh, each in view of Hansen. As stated in his answer before the Board of Appeals:

> The wood piece sizes claimed by applicants are admittedly old in Hansen. To provide the wood pieces in Walsh et al. and Fairchild with the dimensions of the wood pieces of Hansen is deemed obvious.

The Board of Appeals found no reversible error in the rejection of the claims by the Examiner. This finding is the basis of this appeal.

[2] Walsh neither claims nor specifies any particular thickness for the strips except to suggest that "a suitable thickness for the strips, when spruce is employed, has been found to be approximately one-fourth of an inch." Contending that the dimensions claimed in their application, particularly the thickness, are "critical," appellants argue

that the Board erred in combining Walsh (or Fairchild) with Hansen as a combination of references, this, because, they say, Hansen (which does disclose a thickness dimension) is in a completely different art from that to which Walsh is directed and even if the references could be properly combined the invention of the application would still be unobvious. Whether this point is well taken need not be decided because we think it very clear that the invention of the application is no more than an obvious development of that of the Walsh patent. One need only read the claim 8 of the application and compare it with the disclosure of Walsh to see that the margin of difference between them is limited to the fact that the claim specifies the dimensions of the strips while Walsh does not, except to the extent that comparatively thin strips are disclosed by the drawings and general description of the patent and one-fourth of an inch is suggested for the thickness of spruce in the single example mentioned above. Is that difference a sufficient basis for finding that appellants' invention is unobvious in view of Walsh? We think not.

The Board considered an affidavit offered by appellants and filed, together with two exhibits which compared the appellants' reconstituted board with a board "apparently corresponding to Walsh et al." The exhibits are boards of identical composition and preparation except that the thickness of the wooden strips in the one embodying the appellants' disclosure is 0.15 inch (the upper limit of the range defined in the claims on appeal) while the thickness of the strands in the one corresponding to Walsh is 0.25 inch (outside that range). There are some slight imperfections in the Walsh board but the Board of Appeals found the difference between the two to be "one merely in degree and * * * [was] * * * not persuaded that the appellants' board patentably distinguishes over the cited art."

[3] We are of the opinion that a worker of ordinary skill in the art of reconstituted wood products would find no difficulty in improving the Walsh plywood structure by adopting a desirable thickness for the strips and would not be surprised to find that the use of thinner strips resulted in a board with fewer imperfections. It may be that the board of the applicants' exhibit is somewhat superior to that of the Walsh exhibit, but we have examined the exhibits and find the difference to be very slight, whether one calls it a difference in degree or an obvious variation.

[4] The decision is affirmed.

AFFIRMED.

SMITH, *J.* dissenting.

Initially, I observe that the Board of Appeals here consisted of an examiner-in-chief and two acting examiners-in-chief. Appellants do not challenge the legality of that board. For the reasons expressed in my dissenting opinion in *In re Wiechert*, 54 CCPA 957, 370 F.2d 927, 152 USPQ 247 (1967), the decision of such a board in my view is a legal nullity which I feel should be raised *sua sponte* whenever it occurs. However, even accepting the majority's view on this issue as decided in the *Wiechert* case, I would reverse rather than affirm the decision of the Board.

I fully agree with what seems to be the reasoning of the majority that no reasonable basis exists for selecting the claimed dimensions from the Hansen reference. To do so is to ignore the teachings of Hansen as a whole. Furthermore, I see no reasonable basis in the art of

record which would suggest selecting all of the claimed dimensions for the strips of wood forming the reconstituted wood structure.

I am unwilling to do as the majority seems to have done and substitute my expertise for the consideration given to the claims by the Patent Office. Appellants' specification asserts that the dimensions of the individual wood particles before compression into a reconstituted wooden article is "fairly critical." Unfortunately, he does not say *why* or in what *way* these dimensions are "critical." In any event, appellants chose to assert such "critical" dimensions in their claims.

Both the Examiner and the Board, properly I think, gave attention to these claimed limitations, and chose to resolve the deficiency of either Fairchild or Walsh et al. with selected teachings of Hansen. Appellants' affidavit under Rule 132 and the accompanying exhibits were submitted to establish that there is a "critical" difference between using wooden strands that are 0.150″ thick, within the scope of the appellants' claims, and 0.250″ thick, outside appellants' claimed strand thickness. According to the affidavit, less surface planning on the product of appellant's invention was needed. I would give weight to appellants' affidavit and exhibits since the selection of particle thickness is not taught, disclosed or suggested by Walsh et al.

The error of the majority resides, I think, in its casting aside of the recognition by the Patent Office of the deficiencies of Walsh et al. with respect to appellants' specific claims. Our review should be narrowly confined to the record and to the decision of the Board. The stated basis for the rejection on either of the basic references requires a consideration of the Hansen reference. I think the use of the teachings of Hansen is prompted by hindsight and is thus in error. Therefore, the rejections, as stated, must fall. Consequently, I would reverse the decision of the Board.

U.S. Court of Customs and Patent Appeals

FOOD SPECIALTY CO., INC. *v.* STANDARD PRODUCTS COMPANY, INC.

No. 8110. Decided March 13, 1969

[56 CCPA —; 408 F.2d 1397; 161 USPQ 46]

1. TRADEMARK—OPPOSITION—VALIDITY OF REGISTRATION NOT TESTED IN OPPOSITION PROCEEDING.
   Held, in an opposition proceeding, that "the validity of the registration of a mark may be tested only by a cancellation proceeding."
2. SAME—DESCRIPTIVENESS—"KITTY" FOR CAT FOOD.
   "Clearly * * * the word 'kitty' is not descriptive of cat food or suggestive of any quality or property thereof."
3. SAME—CONFUSING SIMILARITY—"PRETTY KITTY" AND "KITTY" FOR CAT FOOD.
   "* * * notwithstanding the 'obvious meaning' of 'Kitty' and use of this word or a misspelling thereof in marks of other cat food manufacturers, we disagree with the Board insofar as it concluded that confusion is unlikely when 'Kitty' and 'Pretty Kitty' are both applied to cat food."

APPEAL from Patent Office. Opposition No. 43,319.

REVERSED.

Robert W. Beach (*George R. Jones*, *Beale & Jones*, of counsel) for appellant.

J. Hanson Boyden, *D. C. Roylance* for appellee.

Before WORLEY, *Chief Judge*, RICH, ALMOND and BALDWIN, *Associate Judges*

RICH, *J.*, delivered the opinion of the court.

This appeal is from a decision of the Patent Office Trademark Trial and Appeal Board, 151 USPQ 649 (1966), dismissing appellant's opposition to appellee's registration on the Principal Register of "Pretty Kitty" for cat food, application Serial No. 148,668, filed July 9, 1962, claiming first use June 6, 1962. Appellant's opposition is based on its registration [1] and prior use of "Kitty" also for cat food.

The only issue before us is whether "Pretty Kitty" so resembles "Kitty," as to be likely, when both marks are applied to cat food, to cause confusion or mistake or to deceive under section 2(d) of the Trademark Act (15 U.S.C. 1052(d)). Appellee attempts to introduce another issue by attacking the validity of appellant's mark and the registration thereof. Specifically, appellee asserts that "Kitty" as applied to cat food "is merely descriptive and generic * * * and is incapable of exclusive appropriation," all but one page of appellee's eleven-page argument being addressed to this contention. **[1]** We think it sufficient merely to point out that the validity of the registration of a mark may be tested only by a cancellation proceeding.[2] *Contour Chair-Lounge Co.* v. *Englander Co.*, 51 CCPA 833, 324 F.2d 186, 139 USPQ 285 (1963) and *Manchester (Home & Export) Ltd.* v. *The Printz Biederman Co.*, 35 CCPA 1245, 168 F.2d 758, 78 USPQ 149 (1948).

On the way to holding that there is no likelihood of confusion between "Kitty" and "Pretty Kitty," the Board stated, inter alia:

> In light * * * of the *obvious meaning of the word "Kitty" as applied to food for cats and/or kittens* and the fact that this word has been adopted by others as a part of their marks for cat food, opposer's mark is obviously entitled to a limited scope of protection. See: *The Murray Corporation of America* v. *Red Spot Paint and Varnish Co., Inc.*, * * * and *The Fleetwood Company* v. *Mende* * * *.[3] [Emphasis added.]

We agree with appellant that the emphasized passage is somewhat obscure, but we assume it was merely intended to be a recognition that "Kitty" is not entirely arbitrary as applied to cat food, inasmuch as it is one of the names often given to the ultimate consumer of the product. **[2]** Clearly, however, the word "kitty" is not descriptive of cat food or suggestive of any quality or property thereof. Although it is sometimes meaningful to speak of marks as being "weak" or "strong," or "suggestive" or "arbitrary," [4] we should not lose sight of the ultimate question that must be answered, namely, whether there is a likelihood of confusion, mistake, or deception.

[3] In the present situation, notwithstanding the "obvious meaning" of "Kitty" and use of this word or a misspelling thereof in marks of other cat food manufacturers, we disagree with the Board insofar as it concluded that confusion is unlikely when "Kitty" and "Pretty Kitty" are both applied to cat food.

The decision of the Board is therefore reversed.

REVERSED.

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[1] Principal Register Registration No. 702,658, issued August 9, 1960, on an application filed January 30, 1956, claiming first use in 1924.

[2] Appellee did initiate such a cancellation proceeding (No. 8,400) to cancel the registration of "Kitty" which appellant relies on here. The petition to cancel, however, was dismissed by the Board, 151 USPQ 647, apparently because of the following finding: Not only does the majority of [appellant's] advertising promote "Kitty" *as a trademark* for its products but there is evidence of record that *it is recognized as such by purchasers.* [Emphasis added.] Appellee has not appealed from the board's dismissal.

[3] 47 CCPA 1152, 280 F.2d 158, 126 USPQ 390 (1960) and 49 CCPA 907, 298 F.2d 797, 132 USPQ 458 (1962), respectively.

[4] These distinctions are more significant where the two marks in question are not applied to the identical goods.

U.S. Court of Customs and Patent Appeals

IN RE VLADIMIR PETROW, ALAN JEFFERY THOMAS AND OLIVER STEPHENSON

No. 7970. Decided November 7, 1968

[56 CCPA —; 402 F.2d 485; 159 USPQ 449]

1. REISSUE—COMPOUND—CONSTRUCTION OF CLAIMS—DIFFERENCE IN SCOPE.

"It seems to us that the Solicitor's argument that the claims are directed to the identical compound fails to take into consideration that section 251 requires that the patent reissue for *the invention* disclosed in the original patent. We feel that the fact that claim 10 recites more inherent properties of the disclosed compound than does claim 4, so as to more fairly 'fingerprint' it, results, under the circumstances shown, in a claim differing in form * * * as well as presenting a claim having a different scope of legal protection. While claim 10 may be directed to the same subject matter, that is, the disclosed invention, it does not necessarily follow that the scope of legal protection afforded it is the same as that of claim 4."

2. SAME—ERROR—CLAIM CANCELLED IN ORIGINAL APPLICATION.

Where the claim in a reissue application was a substitution "in proper form for a claim [4] believed to be formally defective under 35 U.S.C. 112 but not rejected by the Examiner for this reason" [in the original application], *Held* that "We hold specifically that the cancellation of claim 4 in the original application was, under the circumstances of this case, an 'error' within the meaning of 35 U.S.C. 251."

APPEAL from Patent Office. Serial No. 348,838.

REVERSED.

Bacon & Thomas (*Jesse B. Grove, Jr.*, of counsel) for appellants.

Joseph Schimmel (*Leroy B. Randall*, of counsel) for the Commissioner of Patents.

Before WORLEY, *Chief Judge*, RICH, SMITH, ALMOND, and BALDWIN, *Associate Judges*

ALMOND, *J.*, delivered the opinion of the court.

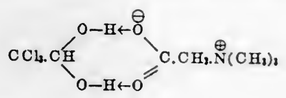
This is an appeal from the decision of the Patent Office Board of Appeals affirming the rejection of claim 10 of appellants' application for a reissue patent.[1]

The claimed invention is a novel chemical compound formed by the reaction of chloral and betaine. The description of the compound is set forth in the specification as follows:

We have made the unexpected discovery that chloral and its hydrate combine exothermically with betaine, a physiologically inactive, naturally-occurring base, to form a new compound of empirical formula $C_7H_{11}O_4NCl_3$ which may be obtained in crystalline form from solvents such for example as water or ethanol. Infrared examination of this new compound reveals that it no longer possesses the hydroxyl bands characteristic of chloral hydrate, but only a shoulder on the high frequency side of the main band of the dispersing medium (viz, liquid paraffin B.P.) at 3000 $cm.^{-1}$, and one broad carbonyl band at 1615 $cm.^{-1}$ (betaine carboxylate). This indicates strong hydrogen-bonding between the hydroxyl groups of chloral hydrate and the $CO\overline{O}$ group of betaine which is held with charge by the stable positive

$$-\overset{+}{N}(CH_3)_3$$

group. This new compound is probably 6-trichloromethyl-4,8-dihydra-1,3,5,7-tetroxacyclooct-2-ato-trimethylammoniomethane of formula:



[1] Serial No. 348,838, filed February 6, 1964, for reissue of Patent 3,028,420, issued April 3, 1963.

which formula represents a structural type hitherto unknown in organic chemistry.

According to the present invention there is provided a compound of betaine or betaine hydrate and chloral or chloral hydrate having the empirical formula $C_7H_{11}O_4NCl_3$ and M.P. 122.5° to 124.5° C.

* * * * * * *

The new compound according to the present invention separates from solvents such for example as water or ethanol in the form of large crystals of M.P. 122.5° to 124.5° C. (corr.). These crystals are free from the odour of chloral and its hydrate. The new compound may be converted into pharmaceutical preparations such as tablets. which tablets are free from chloral-like odour and when taken with a glass of water are essentially free from unpleasant chloral-like taste. The new compound is fully effective clinically as an hypnotic agent and thus represents a new and significant advance in chloral therapy.

The sole claim before us on this appeal is product claim 10, process claims having been allowed:

10. A compound having the empirical formula $C_7H_{11}O_4NCl_3$ corresponding to an equimolar ratio of chloral, betaine, and water, said compound having the hypnotic and sedative properties of chloral while being essentially free from unpleasant chloral-like taste and odor, said compound on infra-red examination in liquid paraffin as the dispersing medium having no hydroxyl bands characteristic of chloral hydrate, but only a shoulder on the high frequency side of the main band of the dispersing medium at 3000 $cm.^{-1}$, and one broad carbonyl band at 1615 $cm.^{-1}$, and said compound being crystallizable from water and ethanol in the form of crystals having a melting point of 122.5° C. to 124.5° C.

This claim was rejected on the ground that appellants had given up true product claims during prosecution of their original application in order to obtain a patent containing product-by-process claims, and that this abandonment of true product claims created an estoppel which prevents appellants from recapturing a true product claim by reissue.

The pertinent claim which appellants abandoned during prosecution of their original application and upon which the alleged estoppel is based was claim 4, which reads as follows:

4. A compound of betaine and chloral having the empirical formula $C_7H_{11}O_4NCl_3$ and M.P. 122.5° to 124.5° C.

The Examiner twice rejected this claim as being an "improper product-by-process" claim, but did not make the second rejection final. Appellants' attorney, being as mystified as this court as to why the Examiner thought this was a product-by-process claim at all, let alone an improper one, held an interview with the Examiner. Appellants' attorney concluded at the interview that the Examiner's real concern was his feeling that no true product claim could issue based upon this specification, but that a proper product-by-process claim would be allowable. Appellants' attorney therefore canceled his true product claim, and replaced it "by one proper product-by-process claim, namely, claim 6."

Claim 6, as subsequently amended, is as follows:

6. The compound of betaine and chloral produced by the process of claim 1, said compound having the empirical formula $C_7H_{11}O_4NCl_3$ and M.P. 122.5° to 124.5° C.

Appellants' patent subsequently issued containing this product-by-process claim and three process claims. After issuance, appellants concluded that the product-by-process claim is not as broad a claim as they had a right to, and they filed the reissue application now before us in an attempt to obtain a true product claim.

The issue here is whether appellants committed "error" within the meaning of 35 U.S.C. 251. Determination of that issue requires con-

sideration of the specific question of whether the circumstances shown by the record are such as to establish that the cancellation of claim 4 was such an action as would estop appellants from obtaining, through reissue, the appealed claim. In deciding the question, it will be necessary to compare appealed claim 10 with canceled claim 4.

We think it well to state at the outset that we are guided herein by the language in *In re Willingham*, 48 CCPA 727, 282 F.2d 353, 127 USPQ 211, where this court observed:

> The deliberate cancellation of a claim of an original application in order to secure a patent cannot ordinarily be said to be an "error" and will in most cases prevent the applicant from obtaining the cancelled claim by reissue. The extent to which it may also prevent him from obtaining other claims differing in form or substance from that cancelled necessarily depends upon the facts in each case and particularly on the reasons for the cancellation.

In appealing to this court, appellants have noted the case law which holds that an applicant who has abandoned a claim is estopped from recapturing a claim of equal scope in a reissue. Appellants argue that these cases are inapplicable because the claim presented in the reissue application is of much different scope than abandoned claim 4. They argue that claim 4, listing only a melting point and an empirical formula, which is no more than an elemental analysis, does not pinpoint a specific compound because it could describe a plurality of compounds having identical melting points and empirical formulae. They contrast this with claim 10 which they say contains a sufficient recitation of properties to insure that a single compound only is encompassed within the claim. They also argue that claim 4 is clearly different from claim 10 because it is unpatentable under the tests laid down by the Board of Appeals in *Ex parte Brian*, 118 USPQ 242, whereas claim 10 is patentable.

In view of these arguments, it is appellants' position that:

> * * * the controlling feature in the present case is the fact that applicants are not attempting to recapture the same or an immaterially different claim from that cancelled * * *.

The Solicitor responds to these arguments by pointing out that the specification discloses one and only one compound. Claim 4 is therefore directed to the identical compound as is claim 10. He states that appellants' current position that claim 4 is so broad in scope as to cover other compounds is inconsistent with their statements during prosecution indicating that claim 4 "identifies the new compound." He argues that the Patent Office never indicated that claim 4 was so broad as to cover products outside the scope of the invention.

[1] It seems to us that the Solicitor's argument that the claims are directed to the identical compound fails to take into consideration that section 251 requires that the patent reissue for *the invention* disclosed in the original patent. We feel that the fact that claim 10 recites more inherent properties of the disclosed compound than does claim 4, so as to more fairly "fingerprint" it, results, under the circumstances shown, in a claim differing in form, as contemplated by the language quoted from *In re Willingham*, supra, as well as presenting a claim having a different scope of legal protection. While claim 10 may be directed to the same subject matter, that is, the disclosed invention, it does not necessarily follow that the scope of legal protection afforded it is the same as that of claim 4.

Appellants' argument that claim 4 was unpatentable is apparently based upon their conclusion reached after the interview with the Examiner. Unfortunately, the record does not reveal what occurred at the interview between appellants' attorney and the Examiner. However, appellants' belief then that no true product claim could issue based upon this specification appears to be shared by the Examiner in the instant case, as noted in his answer:

> Aside from the question of whether a reissue patent is proper, the question of presenting a compound claim which meets the requirement of 35 U.S.C. 112 is raised. Here again it was the Examiner's position in application S.N. 33,637 that the disclosure did not contain sufficient characterization of the product to enable applicants to define it other than by process limitations. The Examiner in the instant case takes exactly the same position. * * *

It is significant, moreover, that claim 4 was never rejected for this reason and the Board's response to the Examiner's treatment of claim 10 was as follows:

> Claim 10 also stands rejected as indefinite because it does not particularly point out and distinctly claim the compound. We find the claim presents sufficient of the distinctive properties and characteristics of the compound to adequately define the compound. See *Ex parte Brian et al.*, 118 USPQ 242, quoted by appellants * * *.

The appellants erred in believing that no true product claim could issued based upon this specification. Now they have convinced the Patent Office that product claim 10 is in allowable form. We do not think there are sufficient facts in the record to base a holding that the cancellation of claim 4 was in any sense an admission that claim 10 was not in fact patentable to appellants at the time claim 4 was canceled.

We have assessed the Solicitor's arguments and considered the numerous cases on reissue cited in support of the position of the Board, but we feel that the substitution, as here, of a claim proper in form for a claim believed to be formally defective under 35 U.S.C. 112 but not rejected by the Examiner for this reason is distinguishable from the fact situation of these prior cases.

[2] We hold specifically that the cancellation of claim 4 in the original application was, under the circumstances of this case, an "error" within the meaning of 35 U.S.C. 251.

The decision of the Board is reversed.

U.S. Court of Customs and Patent Appeals

IN RE THUNDERBIRD PRODUCTS CORPORATION

No. 8084, 8085. Decided March 6, 1969

[56 CCPA —; 406 F.2d 1389; 160 USPQ 730]

1. TRADEMARK—DESCRIPTIVENESS—"CATHEDRAL HULL" FOR BOATS.

   "Reviewing * * * uses of the term 'cathedral hull,' it appears to us that the term, by 1965 at least, was in general use to describe a specific type of hull rather than a boat produced by applicant, as found by the Board. Furthermore, we think that the use of the term appearing in a national newspaper and two boating publications has a significance greater than that of a few sporadic unauthorized uses, as appellant argues."

2. SAME—REGISTRABILITY—EVIDENCE—REGISTRABILITY DETERMINED AS OF TIME ISSUE IS CONSIDERED.

   "In *McCormick* this court said 'registrability of a mark must be determined on the basis of facts as they exist at the time when the issue of registrability is under consideration' and it appears to us consistent with *McCormick* and *De Walt* as well as sound in principle to decide in the present appeal that the time when the issue of registrability is under consideration extends at least to the time the application is acted on in the Patent Office."

3. SAME—DESCRIPTIVENESS—"CATHEDRAL HULL" FOR BOATS.

"* * * the Board properly considered the literature references published after the filing of the application and correctly decided that the term 'cathedral hull' designates a type of boat hull. It is therefore descriptive and not registrable as a trademark. The decision of the Board is therefore affirmed."

APPEAL from Patent Office. Serial Nos. 167,344 and 167,345.

AFFIRMED.

Eugene F. Buell, *Buell, Blenko & Ziesenheim* for appellant.

Joseph Schimmel (*Joseph F. Nakamura*, of counsel) for the Commissioner of Patents.

Before WORLEY, *Chief Judge*, and Judges RICH, ALMOND, BALDWIN, and KIRKPATRICK [1]

RICH, *J.*, delivered the opinion of the court.

These two appeals from decisions [2] of the Trademark Trial and Appeal Board are treated together in this opinion as the same parties are involved and the issues are almost identical.

The appeals are in appellant's applications [3] for registration on the Principal Register of the trademarks "Dual Cathedral Hull" (No. 8084) and "Cathedral Hull" (No. 8085) for "Boats, particularly of molded fiber-glass and the like."

Notices of publication that the respective applications were to be published on November 19 and 26, 1963 were issued. Although no adverse party opposed either application, the Examiner refused registration of the marks by identically worded letters dated April 27, 1965. (The record here does not show what occurred in the interval.) In them, he quoted extracts from various publications, hereinafter discussed, referring to "cathedral hull" boats and, in addition, reproduced textbook definitions of an aeronautical term, "cathedral angle." [4] It was apparently the Examiner's position that the term "cathedral hull," as applied to boats, is a reference to a type of hull design and therefore not capable of distinguishing appellant's boats.

The Board, in its opinion affirming the rejection of both applications, found there was substantial support for the Examiner's position that "cathedral hull" identifies a hull type, stating:

It seems clear that applicant has used the designation "cathedral hull" to indicate a type of hull rather than to indicate origin. The specific reference in the newspapers and magazines noted by the Examiner indicate an acceptance of said term to describe a specific type of hull rather than a boat produced by applicant.

It is clear that the underlying, but not specifically expressed, reason registration has been refused is because the Patent Office does not consider the marks sought to be registered to be marks by which appellant's goods "may be distinguished from the goods of others" as required by section 2 of the Trademark Act of 1946 (15 U.S.C. 1052) because the term "cathedral hull" applied to a boat is descriptive of a type of hull configuration. The descriptive nature of the marks is supposed to arise not so much from the usual architectural or aero-

[1] Senior District Judge, Eastern District of Pennsylvania, sitting by designation.
[2] 151 USPQ 754, abstract.
[3] Serial Nos. 167,344 and 167,345, both filed on April 22, 1963.
[4] The following portion is reproduced from the letter of the Examiner:

In Baughman's Aviation Dictionary and Reference Guide, third edition, 1951, Aero Publishers Inc., page 55 shows—"Cathedral Angle: The opposite of dihedral angle, i.e., a condition in which the wings slope downward from the plane of symmetry of the airplane."

In Jordanoff's Illustrated Aviation Dictionary, copyright 1942 by Harper & Brothers, the following is found: "cathedral angle—(FIG. 446), the acute angle between a line perpendicular to the plane of symmetry and the projection of the wing axis on a plane perpendicular to the longitudinal axis of the airplane. See also dihedral angle."

nautical connotations of the word [5] as from an alleged general recognition by the boating public.

We are thus presented with a situation in which an unopposed mark is refused registration because the mark is alleged to have entered general usage to designate a particular type within the class of goods for which registration is sought. It is therefore necessary for us to consider the literature references which the Examiner and the Board relied upon, to see whether they support the Examiner's position. As the record is deficient in not including the original publications cited, we must refer to the following extract from the letter of the Examiner:

The following is noted: In Rudder, April 1965, page 78, "When sailboat designers turned to fiberglass, they retained the same form, although their cousins, the outboard designers, have tried all kinds of shapes; witness the cathedral hulls." In The Washington Post, Feb. 21, 1965 (Potomac section), page 26: "Outboard runabouts are going more and more to fiberglass and to the deep V longitudinal-step hull and the cathedral form hull, two design ideas that have grown fast in popularity because of their seaworthy, smooth-ride characteristics." In Yachting, Boat Owners Buyers Guide, 1965; page 18, "Cathedral-hulled Maritime 1700 has a bigger sister cruising in our 1B: Metal listings (Maritime Prods. Corp.)"; page 36 ". . . IB/OB-powered 20' all-welded aluminum cathedral-hull cruiser; fully-enclosed head and forward bunks, Maritime Products Corp. . . ."; ". . . Arapaho 20' day cruiser, Cherokee 28' sportfisherman, Formula Jr. 17'3 ski runabout. Fiberglass; cathedral hulls except Formula which has longitudinal deep-V step design; Thunderbird Corp. . . ."

[1] Reviewing these uses of the term "cathedral hull," it appears to us that the term, by 1965 at least, was in general use to describe a specific type of hull rather than a boat produced by applicant, as found by the Board. Furthermore, we think that the use of the term appearing in a national newspaper and two boating publications has a significance greater than that of a few sporadic unauthorized uses, as appellant argues.

One question remains, however, and that is whether the fact that the mark had become descriptive by 1965 should defeat trademark application filed in 1963, at which time, as far as the record shows, the mark was suitable for registration. In *De Walt, Inc.* v. *Magna Power Tool Corp.*, 48 CCPA 909, 289 F.2d 656, 129 USPQ 275 (1961), involving an opposition to the proposed mark "Power Shop" which the opposer (not having a registration of the proposed mark) contended he had been using descriptively, we said:

The first step toward that decision is our conclusion that where opposer is not claiming trademark rights but merely freedom to continue a descriptive use, *the situation must be judged and the right to registration decided on the basis of the factual situation as of the time when registration is sought.* Registration in this case was not applied for until August 17, 1956, by which date Magna had been plugging its "Shopsmith" as a "complete power shop in one tool" for nearly seven years. Regardless of whether "power shop," prior to such use, was descriptive of woodworking power saws, that promotion certainly gave the term a descriptive significance in the very market where De Walt's radial-arm saw is being sold. [Emphasis added.]

That the court considered in *De Walt* that the time "when registration is sought" was the filing date of the application, is apparent from the following passage:

Trademark rights are not static. A word or group of words not descriptive today may, through usage, be descriptive tomorrow. And, conversely, as is recog-

[5] Although some arguments are advanced by the Solicitor that the structure of the hulls marked with the proposed mark bear a relation to a cathedral angle, we do not find it necessary to pass upon this contention in view of the adequacy of the other reasons for supporting the Board's decision, discussed hereinafter.

nized in section 2(f), the *possibility* always exists, with respect to words *capable* of distinguishing an applicant's goods in commerce, that descriptive words *may* become registrable trademarks. *It is for this reason that we are considering the situation as of 1956* and disregarding the dispute over priority. [Emphasis added.]

We note that in *De Walt* the mark was already descriptive by the time the trademark application was filed and the case does not therefore provide us with a solution in the present situation where the record does not show the generically designative connotations of the mark "cathedral hull" to have been acquired until some period after the filing date.

However, *De Walt* furnishes a starting point for a development of the law in this area which leads next to *McCormick & Co., Inc.* v. *Marion K. Summers*, 53 CCPA 851, 354 F.2d 668, 148 USPQ 272 (1966). McCormick, who since 1955 had been using the phrase House of Flavor in its advertising, opposed registration on the Principal Register of House of Flavors by Summers who had a registration of the mark on the Supplemental Register and alleged use of the mark since 1932. The Summers application for registration on the Principal Register was filed on November 23, 1959; however, the Trademark Trial and Appeal Board, determining the issue of registrability, considered 46 letters from customers of Marion-Kay Products dated September 27, 1961, almost two years subsequent to the filing date of the application. It would appear, therefore, that the Board was considering the issue of registrability against the factual situation prevailing in 1961 at the time the problem was before the Board rather than against the factual situation prevailing when the application was filed in 1959. **[2]** In *McCormick* this court said "registrability of a mark must be determined on the basis of facts as they exist at the time when the issue of registrability is under consideration" and it appears to us consistent with *McCormick* and *De Walt* as well as sound in principle to decide in the present appeal that the time when the issue of registrability is under consideration extends at least to the time the application is acted on in the Patent Office.

[3] To summarize, the Board properly considered the literature references published after the filing of the application and correctly decided that the term "cathedral hull" designates a type of boat hull. It is therefore descriptive and not registrable as a trademark. The decision of the Board is therefore affirmed.

AFFIRMED.

KIRKPATRICK, *J.*, took no part in the decision of this case.

PATENT SUITS

Notices under 35 U.S.C. 290; Patent Act of 1952

2,463,280, Kaehni and Kaehni, SPECTROSCOPE GRATING HAVING SPACED ZONES OF DIFFRACTION LINES, **filed** July 25, 1969, D.C., N.D. Ohio (Cleveland), Doc. C–69–570, *Frank J. Kaehni and Marie Kaehni* v. *The May Company*. **Same, filed** July 25, 1969, D.C., N.D. Ohio (Cleveland), Doc. C–69–571, *Frank J. Kaehni and Marie Kaehni* v. *W. T. Grant Company*. **Same, filed** July 25, 1969, D.C., N.D. Ohio (Cleveland), Doc. C–69–572, *Frank J. Kaehni and Marie Kaehni* v. *The Higbee Company*. **Same, filed** July 25, 1969, D.C., N.D. Ohio (Cleveland), Doc. C–69–573, *Frank J. Kaehni and Marie Kaehni* v. *S. S. Kresge Company*. **Same, filed** July 25, 1969, D.C., N.D. Ohio (Cleveland), Doc. C–69–574, *Frank J. Kaehni and Marie Kaehni* v. *F. W. Woolworth Co.*

2,570,637, M. M. Brown, METHODS OF AND APPARATUS FOR MENDING HOSIERY, **filed** Feb. 14, 1969, D.C., E.D.N.C. (Elizabeth City), Doc. 601–C, *Marvel Specialty Company, Inc.* v. *Elizabeth City Hosiery, Inc.* Dismissed in accordance with Rule 41(a)(1) of the Federal Rules of Civil Procedure, Mar. 21, 1969.

2,905,465, Armstrong and Wiener, CARD PROCESSING APPARATUS; **2,985,299**, Wiener and Wilson, same; **2,997,173**, Nelson, Stern and Wiener, same; **3,005,632**, A. Orner, same; **3,032,750**, Nelson and Wiener, same; **3,173,129**, Hayes and Stalder, same; **3,016,140**, Peck and Wilson, same; **3,039,681**, Nelson and Stern, same, **filed** May 31, 1968, D.C., N.D. Ill. (Chicago), Doc. 68c1001, *The Magnavox Company* v. *The National Cash Register Company and C. P. Clare & Company*. Amended complaint (the amended complaint deleted Patent No. 3,005,632).

2,985,299. (See 2,905,465.)

2,997,173. (See 2,905,465.)

3,005,632. (See 2,905,465.)

3,016,140. (See 2,905,465.)

3,032,750. (See 2,905,465.)

3,039,681. (See 2,905,465.)

3,061,984, R. A. Mahaffy, PACKAGING MACHINE AND METHOD, **filed** Mar. 21, 1969, D.C., M.D. Fla. (Tampa), Doc. 69–122–C–T, *Reid A. Mahaffy and Mahaffy & Harder Engineering Company* v. *Lykes Bros., Inc. et al.* Complaint dismissed without prejudice by plaintiffs, June 18, 1969.

3,110,293, N. M. Reiners, INTERNAL COMBUSTION ENGINE, **filed** July 16, 1969, U.S. Ct. of App., 4th Cir., Va. (Richmond), Doc. 13718, *Cummins Engine Company, Inc.* v. *General Motors Corp., McCall-Boykin Truck, Inc.*

3,114,349, S. Schuman, STERILIZATION INDICATORS, **filed** July 8, 1969, D.C., N.D. Ohio (Cleveland), Doc. C–69–525. *Propper Manufacturing Company, Inc.* v. *Ar-Kay Industries, Inc.*

3,135,269, E. E. Pauldine, CURLING IRON HAVING DETACHABLE CURLING TUBE, **filed** Jan. 13, 1969, D.C., N.D. Ill. (Chicago), Doc. 69c61, *Eugene E. Pauldine* v. *J. G. Meshes & Associates and J. G. Meshes*. Stipulation to dismiss without prejudice, Apr. 3, 1969.

3,146,598, M. F. Smith, APPARATUS FOR CONFINING FLOATING MATERIAL, **filed** June 6, 1968, D.C., E.D.N.Y. (Brooklyn), Doc. 68–C–562, *Millard F. Smith* v. *Marine Canvas Supply Corp.* Order on stipulation filed without prejudice, July 2, 1969.

3,173,129. (See 2,905,465.)

3,182,331, A. N. Marshall, METHOD OF SPEED INDICATION, **filed** July 14, 1969, D.C., N.D. Ind. (Fort Wayne), Doc. 69F60, *Federal Sign and Signal Corporation* v. *American Data Company et al.*

3,211,340, Zander and Zander, DISPENSING DEVICE; **3,220,611**, same, WALL MOUNTED BRACKET AND DISPENSER FOR COLLAPSIBLE TUBE, **filed** July 10, 1969, D.C., S.D. Fla. (Miami), Doc. 69–867–C–CF. *Tippett & Miller, Inc. et al.* v. *Greenland Studios, Inc. et al.*

3,220,611. (See 3,211,340.)

3,229,880, E. A. Arp, STAMP DISPENSING MACHINE, **filed** June 30, 1969, D.C., N.D. Ill. (Chicago), Doc. 69c1360, *Artag Plastics Corp.* v. *Patent Development Quorum*. Counterclaim added, July 28, 1969.

3,283,830, J. W. Hamby, ROD WEEDER WITH ENCLOSED, DUST-TIGHT CHAIN DRIVE, **filed** July 18, 1969, D.C., N.D. Tex. (Lubbock), Doc. CA–5–650, *The Hamby Company* v. *Bigham Brothers and H. V. Bigham & Sons Mfg. Co.*

3,307,363, F. R. KINNAN, CABLE LAYING MACHINE, **filed** July 3, 1969, D.C., W.D. Wash. (Tacoma), Doc. 3954, *Henkels & McCoy, Inc.* v. *Wayco Utility Contractors, Inc. and William A. Ylinen.*

3,388,752, Hanes and Huntsinger, COMBINATION PILE-DRIVER AND DRIVABLE THREADED PIPE SECTIONS, **filed** July 14, 1969, D.C., S.D. Tex. (Houston), Doc. 69–H–667, *Vetco Offshore Industries, Inc.* v. *Corey Supply Co., Inc.*

3,390,689, M. Newman, ARRANGEMENT FOR TREATING HAIR, **filed** July 14, 1969, D.C., C.D. Calif. (Los Angeles), Doc. 69–1352–HP, *Martin Newman et al.* v. *Uniroyal, Inc. et al.*

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3,425,772, H. Y. Minas, METHOD FOR TESTING THE SENSITIVITY OF EYES TO LIGHT, **filed** July 3, 1969, D.C., N.D. Calif. (San Francisco), Doc. 51679, *Alpa Corp.* v. *Bio-Engineering Inc. et al.*

3,428,356, A. Anderson, AUTOMATIC COUPLING FOR HOISTING HEAVY LOADS, **filed** July 10, 1969, D.C., E.D. Wash. (Yakima), Doc. 2532, *Adolph Anderson and Orville M. Anderson* v. *Morrison Knudsen Company, Inc. and Blaw Knox Company, Inc.*

D. 213,347, V. Schreckengost, BICYCLE FRAME, **filed** July 8, 1969, D.C., M.D. Tenn. (Nashville), Doc. 5449, *The Murray Ohio Manufacturing Company* v. *Spartans Industries*. **Same, filed** July 8, 1969, D.C., M.D. Tenn. (Nashville) Doc. 5450, *The Murray Ohio Manufacturing Company* v. *Zayre Corp.*

Plant Pat. 1,882, Simonian and Kazarian, PLUM TREE, **filed** July 15, 1969, D.C., E.D. Calif. (Fresno), Doc. F–324–C, *Neva Kazarian, administratrix of the estate of Luke Kazarian, deceased* v. *H. T. Kobashi.*

DEFENSIVE PUBLICATIONS

PUBLISHED SEPTEMBER 16, 1969

Published at the request of the applicant or owner in accordance with Notice of Apr. 11, 1968, 849 O.G. 1221. The abstracts are identified by serial number of the applications and arranged in chronological order. The heading of each abstract of application published herein indicates the number of pages of specification, including claims and sheets of drawing contained in the application as originally filed. The files of these applications are available to the public for inspection and reproduction may be purchased for 30 cents a sheet.

Applications published under the Defensive Publication Program have not been examined as to the merits of alleged invention. The Patent Office makes no assertion as to the novelty of the disclosed subject matter.

657,707
CRYSTALLINE POLYSTYRENE GRAFT COPOLYMERS AND THEIR PREPARATION

Donald J. Shields, P.O. Box 511, Kingsport, Tenn. 37662; James E. Guillet, 31 Lagebrush Lane, Don Mills, Ontario, Canada; and Harry W. Coover, Jr., P.O. Box 511, Kingsport, Tenn. 37662

Continuation of application Ser. No. 530,352, Feb. 28, 1966, which is a continuation-in-part of application Ser. No. 791,531, Feb. 6, 1959. This application Aug. 1, 1967. Published Sept. 16, 1969

Int. Cl. C08f *19/04, 1/42*

U.S. Cl. 260—878

No Drawing. 10 Pages Specification

Crystallizable, homogeneous graft copolymers of styrene are produced by contacting styrene with a catalytic mixture containing trialkyl aluminum wherein the alkyl groups are of 1 to 12 carbon atoms and vanadium trihalide, prior to any substantial reaction between said trialkyl aluminum and said vanadium trihalide, to form a reaction mixture containing a "living," solid polystyrene onto which α-monoolefinic hydrocarbons of up to 10 carbon atoms may be polymerized to form a graft copolymer. Polymerization of the styrene in the initial step can be conducted in the presence or absence of an inert diluent at a temperature of 0–250° C., preferably 60–250° C. and a pressure in a range of 0–1000 p.s.i.g. or greater, preferably 300–1000 p.s.i.g. The reaction time is ordinarily within the range of 0.5 to 5 hours. The preferred catalyst is a mixture of triethyl aluminum and vanadium trichloride. The graft copolymerization reaction can be carried out at temperatures similar to those employed for the pre-polymerization of the styrene. The preferred α-olefinic hydrocarbons graft-copolymerized onto the polystyrene are ethylene and propylene.

793,231
CONTAINER END HAVING EASY-OPENING MEANS

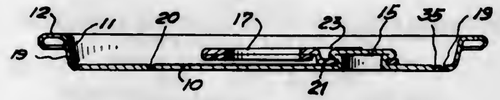
Lloyd G. Dunn, Lower Burrell, Pa., assignor to Aluminum Company of America, Pittsburgh, Pa., a corporation of Pennsylvania

Continuation of application Ser. No. 732,696, May 28, 1968, which is a division of application Ser. No. 584,431, Oct. 5, 1966. This application Jan. 13, 1969. Published Sept. 16, 1969

Int. Cl. B65d *17/20*

U.S. Cl. 220—54

3 Sheets Drawing. 12 Pages Specification



A metal container panel provided with a tear-out section defined by a first score line, and with an anti-fracture score line adjacent the first score line on one or both sides thereof through less metal thickness than the first score line to prevent fracturing of the metal in the container panel. The tear-out section may be of a variety of configurations such as spiral, teardrop or full panel pull-out, and the anti-fracture score line can be formed either along preselected lengths of the first score line may or may not be parallel to the first score line, and is particularly beneficial when formed along junctions and sharp corners in the first score line. A tear-out section in a container panel may be formed by supporting the panel on an anvil die, scoring the metal to a substantial depth by means of a scoring rib which causes the metal to be displaced and extruded, and while scoring is continued to the final desired depth, simultaneously scoring the metal adjacent and in close proximity to the first score line with an indentor to form an anti-fracture score and thereby trapping the extruded metal between the scoring rib and indentor.

788,681
METHOD FOR WEAVING FABRICS FROM SYNTHETIC YARN

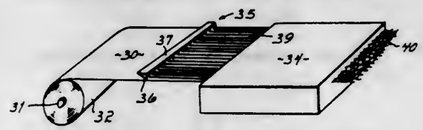
William L. Johnson and John F. Isenberg, both of P.O. Box 511, Kingsport, Tenn. 37662

Continuation of application Ser. No. 617,342, Feb. 20, 1967. This application Dec. 23, 1968. Published Sept. 16, 1969

Int. Cl. D03d *15/00*

U.S. Cl. 28—72

1 Sheet Drawing. 13 Pages Specification



A method for weaving fabrics from ribbon-like yarn strands having the steps of extruding a crystalline thermoplastic into a film sheet, drafting and/or heat treating the film sheet to orient it in a substantially unilateral manner, winding the film sheet onto a core to form a warp beam, slitting the sheet into numerous warp yarn strands while the beam is engaged with a loom, and weaving a fabric with the slit yarn strands constituting the warp yarn of the fabric.

743,678
COLLAPSIBLE STEERING COLUMN FOR A MOTOR VEHICLE

Ronald J. H. Woolgar, Danbury, England, assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware

Filed July 10, 1968. Published Sept. 16, 1969

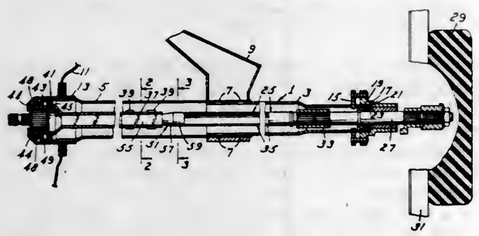
Int. Cl. B62d *1/18*

U.S. Cl. 74—492

1 Sheet Drawing. 6 Pages Specification

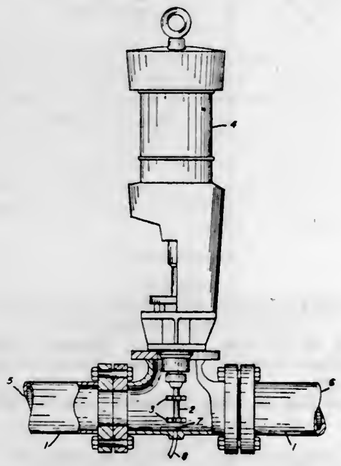
A collapsible steering column assembly includes two telescopically slidable tubes **3** and **5** joined together by readily shearable rivets **7** and connected to a support bracket **9**. In a crash, the bracket **9** is designed to yield

and the tubes to telescope. In tube **3**, a bearing **21** supports the upper part **27** of a three-part steering shaft **25**. The part **27** is connected to a steering wheel **31** at one end and to an intermediate shaft part **35**. Shaft part **35** is a hollow tube with a circular cross section and extends into a hollow lower shaft part **37** having a square cross section. Shaft parts **35** and **37** are connected by readily shearable rivets **39**. A solid piece **51** is welded to the lower end of shaft part **35**. Piece **51** has an end



portion **55** having a square cross section of the same size as that of the part **37**, an intermediate tapered portion **57** and an upper end portion **59** with a circular cross section. A severe impact upon the steering wheel forces the shaft part **35** to move axially whereby rivets **39** are sheared and tapered portion **57** enters part **37**. In entering part **37**, portions **57** and **59** deform the part **37** since the diameter of portion **59** is greater than the width of part **37**. In deforming the part **37** energy is absorbed.

752,701
USE OF IN-LINE MIXER TO UNIFORMLY DISPERSE BUBBLES THROUGHOUT MOLTEN POLYESTER PREPOLYMER
Richard E. Tardif, Pittsford, N.Y. (1669 Lake Ave., Rochester, N.Y. 14650); and John W. Fitzgerald, 343 State St.; and Roy A. Le Blanc, 1669 Lake Ave., both of Rochester, N.Y. 14650
Filed Aug. 14, 1968. Published Sept. 16, 1969
Int. Cl. C08g *53/02*
U.S. Cl. 260—2.5
2 Sheets Drawing. 6 Pages Specification



It has been found that by the use of an in-line mixer having the ability to intensely agitate fluid molten relatively low molecular weight polymers such as prepolymeric poly(ethylene terephthalate) shortly after or at about the point where an inert gas is introduced into the molten prepolymer, bubbles of the inert gas can be dispersed uniformly through the prepolymer. After the prepolymer containing the tiny bubbles is solidified, it is easier to grind.

FIGURE 1 denotes one way of carrying out the process. As illustrated, molten prepolymer is directed through conduit **1**, which is insulated to keep the prepolymer molten, into close proximity to a means for agitating the prepolymer (blades **3** affixed to shaft **2** which can be driven at high speeds by any conventional means such as motor **4**). While the molten prepolymer continues to flow and be agitated, inert gas is injected under pressure through line **8** and orifice **7** into close proximity to the whirling blades **3**, whereupon it is quickly dispersed uniformly through the molten prepolymer stream in the form of tiny bubbles. As a final step, the molten prepolymer is conducted quickly away from the agitator and subjected to conditions below its melting point, preferably within about 30 seconds.

754,989
PROCESS FOR IMPROVING TRACTION ON SURFACES
William M. Pearson, 57 Gillan Ave., Warwick, R.I. 02886
Filed Aug. 23, 1968. Published Sept. 16, 1969
Int. Cl. E01c *11/24*
U.S. Cl. 94—22
No Drawing. 6 Pages Specification

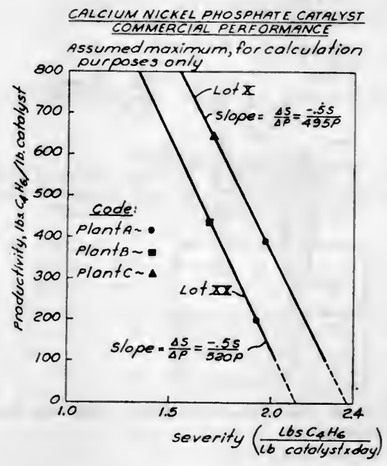
The present invention concerns applying abrasive materials wetted with a glycol composition to airport runways, highways, and other surfaces used by wheeled vehicles, when said surfaces are coated with ice or snow. The resulting ice-abrasive-glycol coated surface provides excellent traction for wheeled vehicles.

801,843
METHOD FOR PREPARING STABILIZED SUSPENSIONS OF AMMONIUM POLYPHOSPHATE FERTILIZER
Wendell D. Burch, 1705 N. 7th, and John T. Minor, 1910 Meadowbrook, both of Ponca City, Okla. 74601
Filed Feb. 24, 1969. Published Sept. 16, 1969
Int. Cl. C05b *7/00;* **C05g** *1/06*
U.S. Cl. 71—29
No Drawing. 4 Pages Specification

An ammonium phosphate fertilizer solution which has begun to hydrolyze toward formation of a gel is converted to a quite stable suspension fertilizer by incorporating therein a solid or liquid fertilizer nutrient such as urea, ammonium nitrate, ammonium sulfate, potassium choride or potassium nitrate. If the hydrolysis of the ammonium polyphosphate solution has proceeded to the solid gel state, the said gel can be converted to a suspension fertilizer by agitating the same with water to form a viscous liquid, and incorporating in the latter an aforesaid solid or liquid fertilizer nutrient.

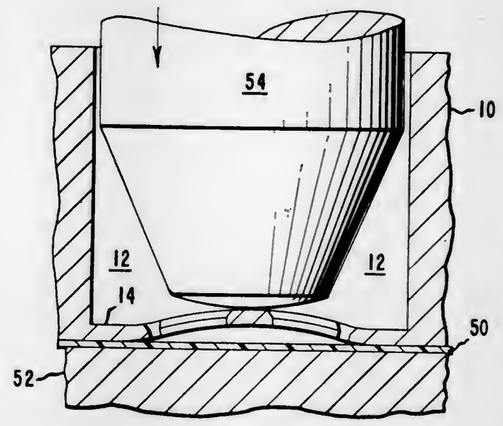
804,478
METHOD FOR THE PRODUCTION OF ALIPHATIC CONJUGATED DIOLEFINES
Charles R. Noddings, 3610 Boston, Midland, Mich. 48640
Filed Mar. 5, 1969. Published Sept. 16, 1969
Int. Cl. C07c *5/18*
U.S. Cl. 260—680
1 Sheet Drawing. 8 Pages Specification

The relationship between severity and total productivity is shown as constant in the production of a diolefin by passing mixtures of steam and an olefin and steam and oxygen through a bed of calcium nickel phosphate catalyst in alternate cycles. FIGURE 1 illustrates this relationship with catalyst lots having different total productivities by showing lines of virtually the same slopes. The severity at which the diolefin should be produced to



give a desired productivity may be determined by using to expiration only one batch of catalyst. The productivity which will result in the lowest cost of diolefin may then be selected.

811,338
FABRICATION METHOD
James Stanley Cobb, Jr., Martinsville, Va., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Mar. 28, 1969. Published Sept. 16, 1969
Int. Cl. B21k *5/20;* **D01d**
U.S. Cl. 76—107
1 Sheet Drawing. 8 Pages Specification



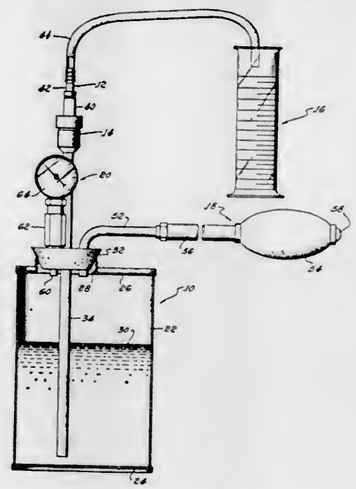
A method of fabricating minute capillaries which extend from counterbores in one side to complex, slotted orifices in the other side of a spinneret plate. Each orifice is segmented and each segment has peripheral and radial slots. After forming a countersink of the same configuration as an orifice in the bottom of a counterbore, the radial and peripheral slots are punched in two steps which leave the plate dished into the counterbore. Oversized punches are used but uniform slots of the desired size are achieved simply by pushing into the counterbore with a pin to flatten the area which had been dished in the punching steps.

825,420
SILVER HALIDE EMULSIONS CONTAINING METAL CHELATE FOG INHIBITORS
Dorothy J. Beavers, % Kodak Park Division, Rochester, N.Y. 14650
Filed May 16, 1969. Published Sept. 16, 1969
Int. Cl. G03c *1/34*
U.S. Cl. 96—110
No Drawing. 13 Pages Specification

Photographic silver halide emulsions and photographic elements comprising said emulsions are improved against the detrimental effects of chemical and environmental fog by incorporating in said emulsions known metal chelates in effective concentrations. Said chelating metals include transition metals, actinides, lanthanides, beryllium, magnesium and the like. Enols of dehydroacetic acid, pyrithione and 1,3 diketone are preferred. Said chelated metals prepared by reacting a suitable salt of said metals with the desired chelating agents.

Silver halide emulsions and elements described can be chemically sensitized, e.g., with noble metal sensitizers alone or in combination with sulfur or selenium sensitizers. They can contain spectral sensitizers, incorporated color-forming couplers, incorporated developing agents, other antifoggants, hardeners, plasticizers, coating aids, vinyl polymers, and other suitable photographic addenda such as described in U.S. Patent 3,297,446 of Dunn issued Jan. 10, 1967 (columns 4–9).

818,031
METHOD AND APPARATUS FOR DETERMINING GASOLINE PLUGGING INDEX
Edward D. Alpert, Arcadia, Clifford M. Shaw, Long Beach, and John H. Humphreys, Jr., Buena Park, Calif., assignors to Atlantic Richfield Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed Apr. 21, 1969. Published Sept. 16, 1969
Int. Cl. G01n *9/04, 11/02*
U.S. Cl. 73—61
1 Sheet Drawing. 10 Pages Specification



Particulate content of gasolines and the like are deter-

mined as the filter plugging index by forcing the gasoline through a standard filter disc for a predetermined time, measuring the amount of gasoline collected and comparing the amount collected with the amount of a standard clean hydrocarbon collected under like conditions. The test apparatus comprises a liquid container and collector with a conduit communicating therebetween, a standard filter disc, an orifice arrangement being provided in the conduit.

818,609

RECOVERY OF VOLATILE LIQUID FROM UNDERGROUND STORAGE

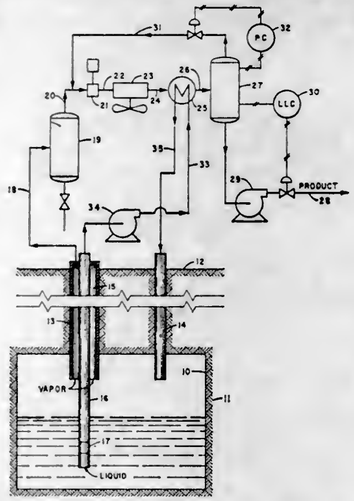
Ronald H. Evans, Rte. 3, and David F. Myers, 2912 E. Hartford, both of Ponca City, Okla. 74601

Filed Apr. 23, 1969. Published Sept. 16, 1969

Int. Cl. B65g *5/00*
U.S. Cl. 62—54

1 Sheet Drawing. 7 Pages Specification

Volatile liquids such as ammonia or liquefied petroleum gas are recovered from storage in an underground cavern by simultaneously withdrawing therefrom two streams, one liquid and one vapor. The vapor stream is compressed and condensed as product by passing in indirect heat exchange with the liquid stream, which is then returned to the cavern.



PLANT PATENTS

GRANTED SEPTEMBER 16, 1969

Illustrations for plant patents are usually in color and therefore it is not practicable to reproduce the drawing.

2,918

AZALEA PLANT

Howard Kerrigan, Oakland, Calif., assignor to Nurserymen's Exchange, Inc., a corporation of California

Filed Dec. 21, 1967, Ser. No. 692,610
Int. Cl. A01h *5/02*

U.S. Cl. Plt.—57 **1 Claim**

1. A new and distinct variety of azalea plant of the Belgian Indica type substantially as herein shown and described primarily characterized by: the resemblance to the pollen parent, "Miss Cottage Gardens" in color, but conspicuous by its vast difference from either parent by having a much larger leaf, much larger flower, and a much more rapid growth habit than either parent; its growth rate which resembles that of the variety "Redwing" (P.P. No. 1,159); its faster growth rate when compared to "Redwing" and its larger flower, longer flowering period and resistance to early flower drop.

2,919

ROSE PLANT

Samuel Darragh McGredy, % Samuel McGredy & Son Limited, Royal Nurseries, Portadown, Northern Ireland

Filed Mar. 17, 1967, Ser. No. 624,103
Int. Cl. A01h *5/02*

U.S. Cl. Plt.—19 **1 Claim**

1. A new and distinct variety of rose plant of the hybrid tea class substantially as herein shown and described primarily characterized by: a viorous, upright growing plant, very free blooming, with highly disease resistant, broad, dark green, abundant foliage, and large very full blooms, borne individually, which are a warm shade of rosy pink, slightly darker on the reverse of the petals than above, with a perfectly imbricated and whorled petal arrangement, the combination of which gives a particular sculptured effect and depth to the bloom.

PATENTS

GRANTED SEPTEMBER 16, 1969

GENERAL AND MECHANICAL

3,466,663

DECORATIVE FURPIECE

Thomas L. Mehl, Mine Brook Road, Far Hills, N.J. 07931

Filed June 26, 1968, Ser. No. 740,276

Int. Cl. A41d *5/00*

U.S. Cl. 2—65 11 Claims



A decorative furpiece comprising a tubular sleeve having a smooth inner and a furry outer surface; said sleeve having a single stitched seam running from one end thereof to the other end; said seam having its stitching on said inner smooth surface; said sleeve having a first fastener stitched to one end and a second fastener stitched to the other end cooperating with each other; said fasteners having interconnecting locking means thereon; and said fasteners being in width approximately the width of said sleeve and extending therebeyond.

3,466,664

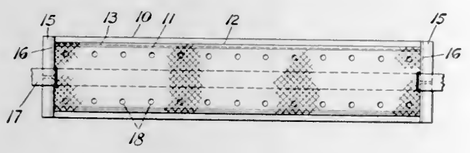
SWEATBAND

James V. Militello, Buffalo, N.Y., assignor to American Allsafe Company, Inc., Buffalo, N.Y.

Filed June 22, 1967, Ser. No. 648,021

Int. Cl. A42b *3/00*

U.S. Cl. 2—171 4 Claims



A sweatband having a strip of metal foil and a layer of sponge material in face to face contact with the sponge layer of greater width to provide substantial marginally extending sponge portions extending longitudinally at opposite edges of the strip of metal foil. The metal foil strip and the sponge layer are approximately coextensive lengthwise and a gauze layer is disposed at the exposed face of the metal foil and stitched to the sponge along the marginally extending portions thereof to retain and protect the metal foil, there being means for holding the sweatband against a wearer's forehead with the sponge layer outward.

3,466,665

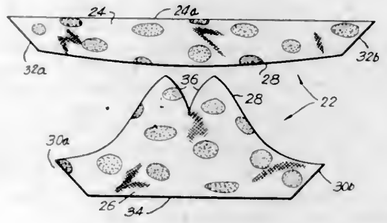
HEADWEAR

Ida May Mooney, Center Island, Oyster Bay, N.Y. 11771

Filed Jan. 5, 1966, Ser. No. 518,888

Int. Cl. A42b *5/00*

U.S. Cl. 2—207 4 Claims



A hood comprising two elongated pieces of material secured together along one edge and end to end to form an annular band having a 180° twist therein.

3,466,666

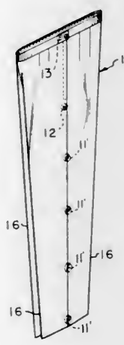
TROUSERS AND PROCESS FOR IMPROVING SHAPE RETENTION DURING CLEANING

Wolfgang K. F. Otto, Spartanburg, S.C., assignor to Deering Milliken Research Corporation, Spartanburg, S.C., a corporation of South Carolina

Filed Nov. 9, 1967, Ser. No. 681,787

Int. Cl. A41d *1/06, 13/02*

U.S. Cl. 2—227 8 Claims



A garment having a crease formed therein and having improved shape and crease-retention properties, the interior of said garment containing fastening means for maintaining the garment substantially in a crease favoring configuration during cleaning operations.

3,466,667

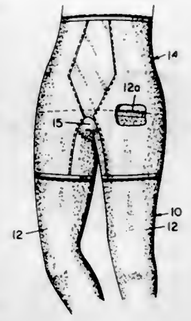
BIFURCATED HOSIERY WITH SUSPENSION MEANS

Leonard A. Rosner, Great Neck, N.Y. (% Glamorise Foundation, Inc., 135 Madison Ave., New York, N.Y. 10016)

Filed Mar. 1, 1968, Ser. No. 709,738

Int. Cl. A41b *11/00;* A41c *1/00;* A41f *9/00*

U.S. Cl. 2—240 5 Claims



Bifurcated hosiery consisting of a pair of long hose connected together by a crotch member, the hosiery being worn under a girdle-type garment which has a crotch piece underlying the crotch member of the hosiery to retain the same in position. Separable fastener means and/or a circumferential elastic friction band react between the upper edge portion of the hosiery and the inside of the girdle-type garment to resist relative displacement thereof.

3,466,668

BELT AND BUCKLE

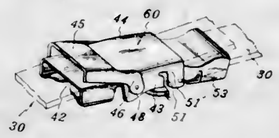
Yoriyasu Ochiai, 5–14 Ryogoku 3-chome, Sumida-ku, Tokyo, Japan

Filed Oct. 10, 1967, Ser. No. 674,281

Claims priority, application Japan, Oct. 13, 1966, 41/94,878

Int. Cl. A41f *9/00*

U.S. Cl. 2—322 1 Claim



A band in the form of a belt for fastening clothing on a person, the band being provided with a buckle which permits free and optional adjustment of the band by a simple adjusting operation, the band being completely free from accidental loosening. The end of the belt is adapted to be inserted into a portion of the buckle and clamped in position in the buckle by a movable member carrying pawls or clicks adapted to engage the belt and wedge the belt against the portion of the buckle receiving the end of the belt.

3,466,669

INTRAMEDULLARY FINGER JOINT PROSTHESIS

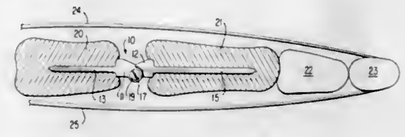
Adrian E. Flatt, Iowa City, Iowa, assignor to University of Iowa, Iowa City, Iowa, an educational institute of Iowa

Filed Sept. 20, 1966, Ser. No. 580,653

Int. Cl. A61f *1/04, 5/04*

U.S. Cl. 3—1 5 Claims

A hinged finger joint prosthesis has elongated members which are inserted into the bones. The longitudinal axes of the oppositely extending elongated members are located equidistally from their common transverse pivot axis.



3,466,670

HIP-JOINT PROSTHESIS

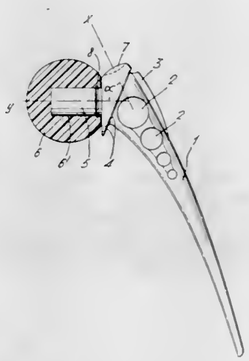
Tor Christiansen, Kongsberg Sykehus, Kongsberg, Norway

Filed May 24, 1966, Ser. No. 552,578

Claims priority, application Norway, May 26, 1965, 158,243

Int. Cl. A61f *1/02, 5/04*

U.S. Cl. 3—1 4 Claims



Hip-joint prosthesis comprising a plastic capitulum designed for fixed engagement in the socket of the pelvis, a bore in said capitulum, a spindle for insertion into the medullary cavity in the thigh-bone shaft and a trunnion on said spindle, rotatably insertable within the bore of said capitulum for removably mounting said capitulum on said spindle. The axis of the trunnion and the axis of the spindle form an angle of at least 45° whereby all movements between the leg and the hip are substantially taken up by the trunnion as it rotates within the bore of said capitulum.

3,466,671

HEART VALVE PROSTHESIS HAVING A CLOTH COVERED BODY

George Geza Siposs, Garden Grove, Calif., assignor to Edwards Laboratories, Inc., Santa Ana, Calif., a corporation of California

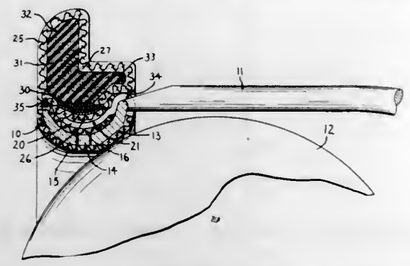
Filed Oct. 19, 1966, Ser. No. 587,806

Int. Cl. A61f *1/00;* F16k *15/00*

U.S. Cl. 3—1 14 Claims

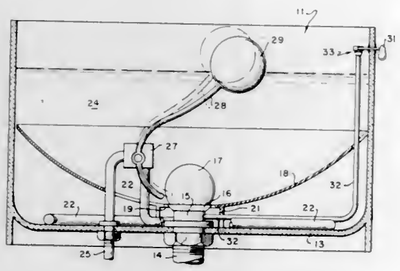
A cloth sleeve extends through the center of the orifice ring and has end portions folded into an annular channel on the outside of the ring. A suturable cuff surrounds the ring. A winding of thread secures portions of the sleeve and cuff in the channel. In a modification, the ball cage

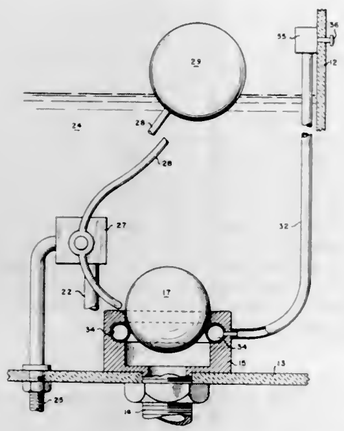
is made as a separate part and secured to the ring by said winding. The cage legs may be covered with cloth sleeves



whereby the orifice ring and cage are completely cloth covered.

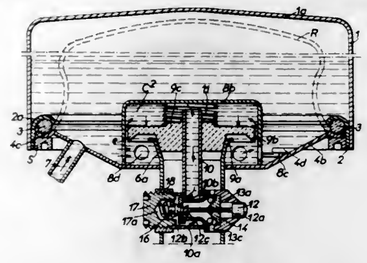
3,466,672
FLUID TANK WITH DUMP VALVE
Welbourne D. McGahee, Eau-Gallie, Fla., assignor of one-fourth to William R. Maddux, Miami, Fla., and one-fourth to Jim Rathmann, Melbourne, Fla.
Filed June 1, 1966, Ser. No. 554,498
Int. Cl. E03d *1/36, 1/34, 5/02*
U.S. Cl. 4—41 **12 Claims**





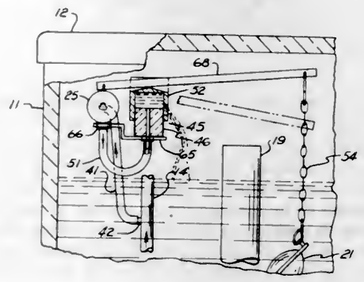
A fluid tank including an outlet valve and an independent, floatable ball for cooperating with a valve seat of said outlet valve to form a hermetic seal by reason of pressure differential existing above and below said floatable ball when positioned on said valve seat and valve means for momentarily equalizing the respective pressures creating said pressure differential and for breaking said hermetic seal and releasing said floatable ball from said valve seat to open said outlet valve.

3,466,673
HYDROPNEUMATIC FLUSHING CISTERNS
René Boccard, 100 Cours Fauriel, St.-Etienne, France
Filed Nov. 4, 1966, Ser. No. 592,057
Claims priority, application France, Nov. 9, 1965, 9,319; June 3, 1966, 9,478
Int. Cl. E03d *1/34*
U.S. Cl. 4—52 **20 Claims**



A hydropneumatic flushing cistern comprising a container, portions of which define a water inflow port to feed water into said container, a valve seat at the base of the container which bounds a water outflow port of through-flow area which is greater than that of the inflow port for leading flushing water from the container, a valve closure member in the container movable between a closed position in which it contacts the seat and closes the outflow port and an open position which is above the closed position, biasing means urging the closure member away from the open position towards the closed position, a cover for the valve closure member, portions of which together with the valve closure member define a chamber, a duct communicating with the chamber to lead water thereto and a flow-producing means to produce a flow of water from the chamber so as to cause the upward force on the closure member to exceed the downward force on same and open the closure.

3,466,674
TOILET FLUSH MECHANISM
Edward W. Schroder, 1701 Mayburn, Dearborn, Mich. 48128
Filed Apr. 3, 1967, Ser. No. 627,771
Int. Cl. E03d *1/34, 5/02, 5/10*
U.S. Cl. 4—57 **6 Claims**



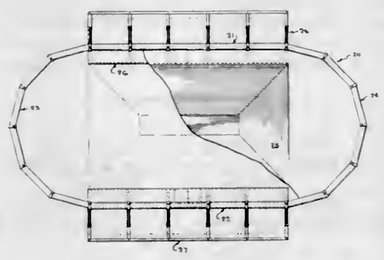
A flushing system for a toilet tank comprising a cylinder-piston means connected to a flushing outlet valve, and a valve means normally operable by an actuating mechanism. A conduit means connects the water inlet for the tank to the valve means and the valve means to the cylinder-piston means. Upon manual actuation of the actuating mechanism, water from the inlet is allowed to flow through the valve means to move the cylinder relative to the piston thereby lifting the flushing outlet valve off the outlet to flush the toilet.

3,466,675
THERAPEUTIC VAPOR BATH
Thomas Franklin Tignor, 621 Glenmoor Drive, Columbus, Ohio 43228
Filed Oct. 12, 1965, Ser. No. 495,187
Int. Cl. A61h *33/06*
U.S. Cl. 4—160 **5 Claims**

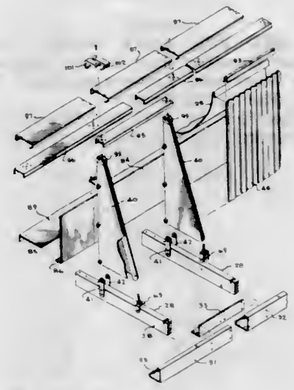


The present invention relates to a novel improved portable therapeutic vapor bath which is designed primarily for use in an ordinary bath tub and includes a housing forming a base provided with a seating area for the user. A length of conduit is disposed within the base and includes a plurality of relatively small outlets. The top surface of the base includes a plurality of openings surrounding a solid portion which forms the seating area. The conduit is positioned within the base such that hot water leaving the small outlets in the form of a fine spray cannot reach a person on the seating area. The conduit in turn is attached to a length of hose which is adapted to be connected to an ordinary hot water faucet. Preferably, the fine spray of hot water is directed against the solid portion of the top surface of the base and a substantial amount is then converted into steam which then escapes through the openings in the top surface. A drain is provided in the bottom surface of the base and a removable cover may be attached to the base and is adapted to enclose the person setting thereon if higher temperature baths are desired.

3,466,676
POOL STRUCTURE
Salvatore E. Barrera, Mountaintop, Pa., assignor to Muskin Manufacturing Company, Inc., Wilkes-Barre, Pa., a corporation of Pennsylvania
Filed Mar. 28, 1966, Ser. No. 537,825
Int. Cl. E04h *3/16*
U.S. Cl. 4—172 **35 Claims**

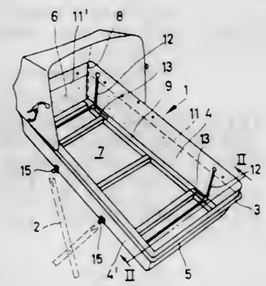


A pool structure including a peripheral wall having at least one substantially rectilinear wall section, base means for supporting the rectilinear wall section extending to both sides of the wall section, a liner for holding a body of water disposed within the wall, the liner having an upper peripheral edge secured on the wall and the base means having sufficient weight whereby the combined effect of the force of the entire weight thereof and the force of the



weight of the water in the pool acting on the portion of the base means disposed on the inner side of the wall section, is at least as great as the lateral force applied by the water in the pool against the wall section.

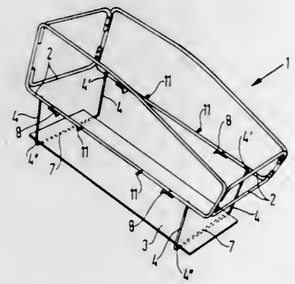
3,466,677
BED FOR BABY CARRIAGE
Dieter Gläser, Garching, near Munich, and Udo Beger, Munich, Germany, assignors to Peggy Munchener Kinderwagenfabrik G.m.b.H. & Co., KG, Munich, Germany
Filed Sept. 20, 1967, Ser. No. 669,105
Int. Cl. A47d *7/00, 13/02*
U.S. Cl. 5—93 **11 Claims**



A bed adapted to be supported on a baby carriage and having walls constructed from a double layer of flexible material such as cloth or fabric. A rigid base frame is mounted on the flexible base with a rigid outer frame being positioned adjacent the upper edges of the sidewalls and extending therearound. The double layer of flexible material is interconnected and the upper edges of the sidewalls are folded over to form channels into which are received reinforcement bars. Spreader bars are pivotally connected to the sidewalls adjacent the upper edge with the lower ends being adapted to engage the base frame for holding the sidewalls in an upright tensioned position. Removal of the lower ends of the spreader bars

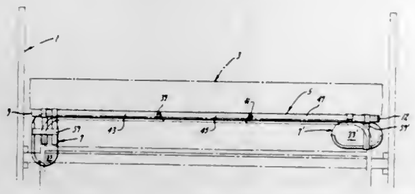
from the base frame permits the sidewalls to be folded into a position adjacent the base frame. Each layer of flexible material is preferably formed from a flat blank having the flexible sidewalls integrally connected to the respective edges of the base for facilitating manufacture of the bed.

3,466,678
BED FOR BABY CARRIAGE
Dieter Gläser, Garching, near Munich, Germany, assignor to Peggy Munchener Kinderwagenfabrik G.m.b.H., & Co., KG, Munich, Germany
Filed Sept. 20, 1967, Ser. No. 669,196
Claims priority, application Germany, Apr. 13, 1967, P 41,883
Int. Cl. A47d *7/00*
U.S. Cl. 5—93 **7 Claims**



A bed for a baby carriage having a substantially horizontal bed plate member movably mounted on a rigid base frame extending therearound. The bed plate member is connected to the base frame by means of a support linkage which permits the bed to be positioned at different elevations relative to the frame. The support linkage comprises a plurality of bars pivotally connected at one end thereof to the base frame, the other ends of the bars being received in slotted guide members connected to the bed plate to permit the plate to be raised or lowered relative to the frame. Alternatively, telescopic rods or toggle linkages can be used to interconnect the bed plate member to the base frame. Flexible sidewall members preferably interconnect the base frame to the bed plate member.

3,466,679
BED ATTACHMENT FOR SEVERABLE, CONTINUOUS DISPOSABLE SHEETS
Le Roy W. Hess, 25410 Bunker Hill Blvd., Hayward, Calif. 94542
Filed July 24, 1967, Ser. No. 655,608
Int. Cl. A47d *7/00;* **A47c** *21/00, 21/02*
U.S. Cl. 5—317 **7 Claims**



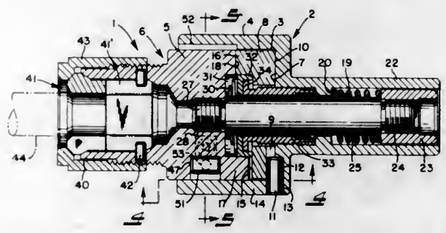
A device for providing disposable sheets for beds from continuous rolls mounted at an end of the bed beneath the frame supporting mattress consisting of a container completely enclosed except for a narrow slot for paying out the sheet up and over the mattress.

3,466,680
APPARATUS FOR LOADING AND UNLOADING OFFSHORE VESSELS
Joseph F. Schirtzinger, Pasadena, Calif., assignor to Air Logistics Corporation, Pasadena, Calif., a corporation of California
Filed July 14, 1967, Ser. No. 653,358
Int.Cl. B63b *21/52, 51/02*
U.S. Cl. 9—8 **12 Claims**



Offshore loading and unloading apparatus having a completely submerged buoy constrained to the floor underlying a body of water and a submerged pipe horizontally extending away from the buoy which can be connected to a vessel. Means for transporting material between the buoy and the shore are secured to the buoy whereby material can be transported between the vessel and the shore. The buoy is adapted to moor a vessel which loads or unloads at the buoy.

3,466,681
SELF-RELEASING TAP HOLDER
Milton L. Benjamin and David D. Walker, Chagrin Falls, Ohio, assignors to Erickson Tool Company, Solon, Ohio, a corporation of Ohio
Filed May 4, 1967, Ser. No. 636,039
Int. Cl. B23g *5/16;* **F16d** *11/04, 41/06*
U.S. Cl. 10—141 **14 Claims**

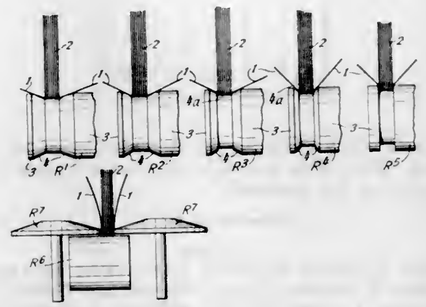


A self-releasing tap holder having a driver interposed between the housing and holder body for establishing a driving connection therebetween but which is fully disengaged from the holder body upon predetermined axial travel of the holder body away from the housing.

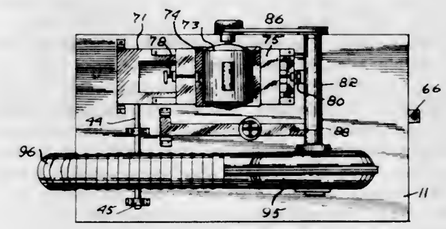
3,466,682
BOOKBINDING MACHINERY
Lionel J. B. R. French, 126 Brixton Hill, London, SW. 2, England
Filed Oct. 18, 1967, Ser. No. 676,255
Claims priority, application Great Britain, Nov. 2, 1966, 49,138/66
Int. Cl. B42c *19/00*
U.S. Cl. 11—1 **4 Claims**

A series of rollers are provided in a bookbinding machine and over which the book and cover thereof are passed, backwards, the rollers being arranged to successively and progressively shape the cover around the back

of the book and press the cover into adhesive contact with the back. In one embodiment two sets of rollers are provided, one set having each roller formed with annular rims having inclined faces, the angularity of which is progressively increased to gradually bend the cover around the corners of the back. In a further embodiment some of the said one set of rollers are formed with a channel to allow the cover to be gripped and producing a correspondingly shaped channel on the cover to trap the adhesive. In a further feature of the invention the distance separating the rollers is adjustable to accommodate books of different thicknesses and the rollers are adjustable to vary the pressure exerted by the rollers on the cover and back of the book.

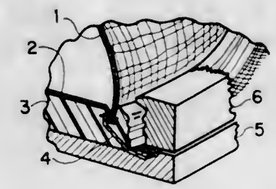


3,466,683
APPARATUS FOR TREATING THE MARGINS OF SOLE MEMBERS
George O. Comeau, Haverhill, Mass., Leonard J. Laurence, Plaistow, N.H., and Richard S. Ordway, Haverhill, Mass., assignors, by mesne assignments, to Circle Machine Co., Inc., Haverhill, Mass., a corporation of Massachusetts
Filed Jan. 30, 1968, Ser. No. 701,608
Int. Cl. A43d *25/00, 27/00, 29/00*
U.S. Cl. 12—17 **22 Claims**



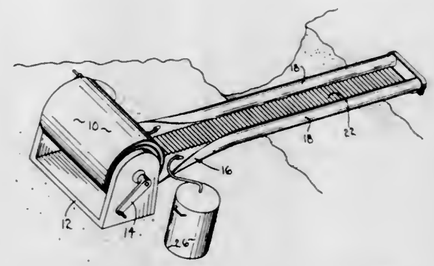
Apparatus for such surface and margin treating operations as wheeling and reducing-roughing sole members, the apparatus having a support for the sole member, surface to be treated uppermost, a margin-treating wheel, and means to turn the sole member on the support to advance its margin into contact with the margin-treating wheel, the turning means consisting of a pair of closely spaced driving members engageable with the edge of the sole member, one on each side of the margin-treating wheel and a pair of seating wheels, one on each side of the margin-treating wheel and engageable with the sole member closely adjacent the margin-treating wheel and the driving members.

3,466,684
METHOD OF MANUFACTURE OF FOOTWEAR WITH MOLDED SOLES AND FOOTWEAR SO MANUFACTURED
Ernest E. Rollman, Waynesville, N.C., assignor to Ro-Search, Incorporated, Waynesville, N.C.
Original application Oct. 3, 1962, Ser. No. 228,150, now Patent No. 3,345,763. Divided and this application Nov. 22, 1966, Ser. No. 596,283
Int. Cl. A43d *9/00, 11/00, 31/00*
U.S. Cl. 12—142 **7 Claims**



A process of manufacturing footwear with soles of elastomeric material molded and cured to the bottom margin of the upper wherein pressure exerted for the molding of the elastomeric material in a closed mold is also used for the stretching and tightening of the upper on the last, either by holding the bottom margin of the upper in the mold cavity while moving the mold last away from the cavity or by holding the last in fixed relation to the mold cavity and pulling the bottom margin into the mold cavity to obtain relative movement between the last and upper.

3,466,685
CONTINUOUSLY EXTENSIBLE AND ROLL-UP REINFORCED STRUCTURE
Eli I. Robinsky, 301 Jedburgh Road, Toronto, Ontario, Canada
Filed Aug. 28, 1967, Ser. No. 663,620
Int. Cl. E01d *75/12, 13/00*
U.S. Cl. 14—27 **11 Claims**

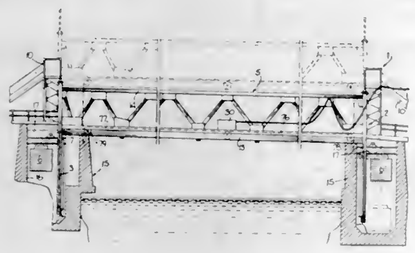


A tubular member filled with a foamed material which is foamed in situ during the forming of the tubular member; said tubular member being formed from a resilient flat strip of material, such as spring steel, prestressed to form into a tube, when such strip is unwound from a coil.

3,466,686
METHOD AND MEANS FOR MOVING STRUCTURES HYDRAULICALLY
Earle F. Allen, Norwell, Mass., assignor of one-half to Valentine E. Macy, Jr., New York, N.Y.
Filed May 17, 1967, Ser. No. 639,192
Int. Cl. E01d *15/02;* **F15b** *11/22*
U.S. Cl. 14—42 **16 Claims**

A hydraulically actuated and controlled means for moving a structure such as a lift bridge or gate or similar

structure where the motive power is hydraulically applied in such a manner that a directly applied hydraulic brake is combined with the hydraulic lifting means by a fail-safe control and additionally where the structure



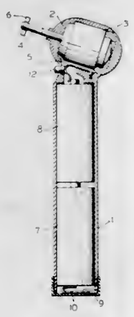
is kept continually level or at a predetermined attitude during its hydraulically powered movement by a leveling device positively controlling the movement of the structure by being directly coupled into the hydraulic power system.

3,466,687

POWER DRIVEN PENCIL AND INK ERASER

Raffaele Pasculli, 8 Via Lazzaroni, Milan, Italy

Filed Aug. 16, 1967, Ser. No. 661,029
Claims priority, application Italy, Aug. 18, 1966, 19,079/66
Int. Cl. B43l *19/00*
U.S. Cl. 15—3.53 **3 Claims**



A power driven pencil and ink eraser comprising a rotating eraser, a gas driven turbine, a body supporting said turbine and eraser, a hollow handle removably secured to said body and a pressurized gas bottle removably housed in said handle to provide a gas supply for driving said turbine and eraser.

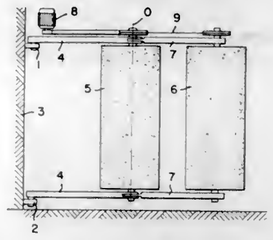
3,466,688

VEHICLE-WASHING INSTALLATION

Heinrich Führing, Augsburg, and Richard Fleschhut, Goggingen, Germany, assignors to Bowe, Bohler & Weber KG.

Filed Dec. 15, 1966, Ser. No. 602,064
Claims priority, application Germany, Dec. 31, 1965, B 85,223
Int. Cl. B60s *3/06*
U.S. Cl. 15—21 **7 Claims**

In a car-washing installation, two parallel rotary brushes are supported on a lever arm which is articulated to a longer supporting arm for relative swinging about a pivotal axis parallel to the brush axes, the two arms being normally biased into a position in which the pivotal



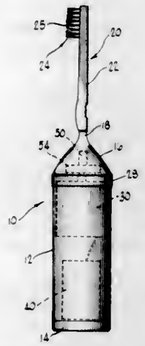
axis substantially coincides with the centerline of an oncoming vehicle while the two brushes lies in a plane perpendicular to this centerline.

3,466,689

SONIC ENERGY DENTAL CLEANING DEVICE

Salvatore P. Aurelio, Chicago Heights, and Thomas A. Gardner, Calumet City, Ill., assignors to Bennett Industries, Inc., Peotone, Ill., a corporation of Delaware

Filed Dec. 11, 1967, Ser. No. 689,675
Int. Cl. A46b *13/02;* **A61h** *9/00*
U.S. Cl. 15—22 **15 Claims**



A power-driven appliance adapted for oral use in cleaning the teeth comprises a source of vibratory energy in the sonic range disposed in vibration transmitting relation within a casing having a parabolic nose cone onto which a toothbrushing attachment is removably attached in vibration transmitting relation. A cleaning member, which preferably takes the form of a plurality of bristles, is disposed on the attachment at the end thereof away from the casing. The cleaning attachment includes a longitudinal handle configured so that vibratory energy in the sonic range transmitted to the attachment causes the bristle head to move elliptically, the major axis of movement being generally longitudinal of the bristles. The bristles thus serve as a driving force creating a sound field that produces acoustic streaming in the liquid medium surrounding the tooth surface to be cleaned.

3,466,690

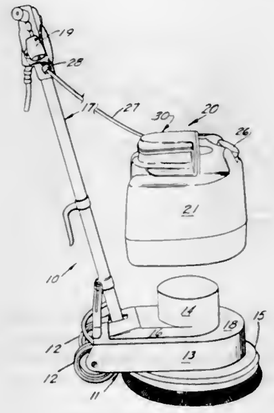
CONVERSION UNIT FOR FLOOR SCRUBBER

Frederick G. Cooper, North Muskegon, Mich., assignor to Clarke Floor Machine Division, Studebaker Corporation, Muskegon, Mich., a corporation of Michigan

Filed Oct. 11, 1967, Ser. No. 674,403
Int. Cl. A47l *11/162;* **B05b** *7/30;* **B01d** *47/16*
U.S. Cl. 15—50 **8 Claims**

A unit for converting a floor treating machine such as a buffing machine into a scrubber. The unit is adapted

particularly for a polisher-scrubber having an upstanding motor housing on the chassis thereof. The unit has an upstanding U-shaped tank section which is adapted to nest with and partially envelop the upstanding motor housing, depending for vertical support upon the abutment of the bottom of the tank and the polisher-scrubber chassis. The unit has a separate air blower incorporated



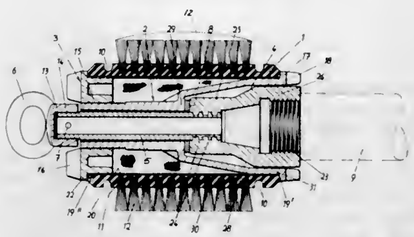
therein which charges the foam tank with air pressure and supplies air to the foam generator in relatively conventional fashion. The resulting foam is fed onto the surface being treated via a depending downspout. A position-sensitive valve is provided for opening and closing the air inlet to the foam generator in response to the placing of the conversion unit upon the chassis of the floor treating machine which is to be converted into a scrubber.

3,466,691

PIPE-CLEANING BRUSH

Hans Wessel, 5225 Wildbergerhutte, Bezirk Cologne. Germany

Filed Dec. 28, 1967, Ser. No. 694,223
Claims priority, application Germany, May 13, 1967, W 43,982
Int. Cl. B08b *9/02, 1/00*
U.S. Cl. 15—104.19 **10 Claims**



Pipe-cleaning brush with a cylindrically tubular body of rubber or the like, internally clad with a flexible fabric liner and externally provided with a pair of annular grooves adjacent its ends, the surface of the body between these grooves being formed with numerous pits to receive tufts of bristles; the body is seated, at least by its ends, on a rigid cylindrical support, which may be rotatably mounted on a central rod, and is under axial pressure from a pair of relatively displaceable end members whereby the array of bristles bulges outwardly with the tubular body assuming a barrel-shaped configuration.

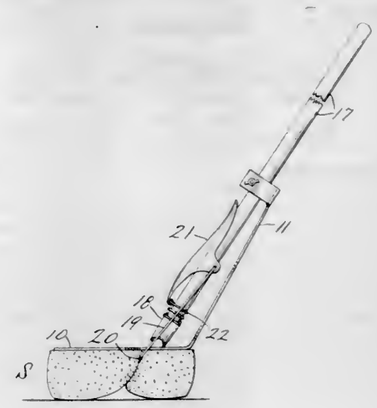
My present invention relates to a brush for the cleaning of pipes and other ducts such as, for example, the tubes of a boiler.

3,466,692

SPONGE MOP ADAPTER

Clifton D. Roberts, 628 Holmes Ave., Lima, Ohio 45840

Filed Feb. 28, 1968, Ser. No. 709,059
Int. Cl. A47l *13/24, 13/20*
U.S. Cl. 15—152 **3 Claims**



A sponge map adapter for use with conventional mop handles which are designed for holding a string mop. The adapter consists of a first rigid planar section generally the size of a resilient sponge which will be inserted between the end of a conventional mop handle and the movable looped mop bail extending below the end. The adapter includes a second section extending at an angle from one end of the first section and terminating in a clamp which is secured to the mop handle above its end so that the first section is positioned below and adjacent to the end of the mop. When a resilient sponge is placed below the first section and the bail is moved to its closed position adjacent the map end, the sponge is held against the first section which provides a rigid support therefor and the section of the bail extending below the first section is embedded within the sponge between its upper and lower faces.

3,466,693

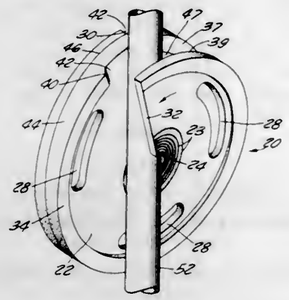
PIPE WIPER

John C. Grant, Huntington Park, Calif., assignor to Byron Jackson Inc., Long Beach, Calif., a corporation of Delaware

Filed Jan. 14, 1966, Ser. No. 520,752
Int. Cl. F16j *15/32, 15/56*
U.S. Cl. 15—210 **6 Claims**

A wiper for cleaning pipe as the latter is drawn through an axial opening in the wiper, the wiper being formed of a continuous convolute web of elastomeric ma-

terial around the axial opening, the outer peripheral edge of the web including an abutting spacer portion for spacing axially apart the adjacent convolutions of the convolute web.



3,466,694
WINDSHIELD WIPER DEVICE

Marvin A. Feldstein, 8224 Mentor Ave., Mentor, Ohio 44060

Filed June 23, 1967, Ser. No. 648,255
Int. Cl. B60s 1/32
U.S. Cl. 15—250.35 12 Claims



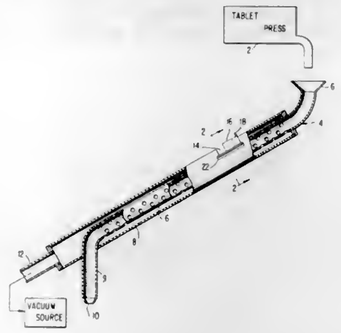
A windshield wiper device for use with a motor vehicle comprising a housing pivotally mounted on the vehicle adjacent the windshield thereof and an intermediate arm disposed for pivotal movement with respect to the housing for asymmetric oscillation of the arm with respect to the longitudinal central axis of the housing. A wiper blade and associated blade holder are mounted adjacent the end of the intermediate arm so that the wiper blade traces one selective wiping pattern upon oscillation in one direction and another selective wiping pattern upon oscillation in the opposite direction.

3,466,695
TABLET CLEANING APPARATUS

Joseph David McCallister, Iowa City, Allen M. McMath, West Branch, and Darwin Arthur Anderson, Coralville, Iowa, assignors to the State of Iowa for the use and benefit of the University of Iowa, Iowa City, Iowa, an educational institution of Iowa

Filed June 22, 1967, Ser. No. 648,013
Int. Cl. B08b 5/04; A47l 9/02
U.S. Cl. 15—306 7 Claims

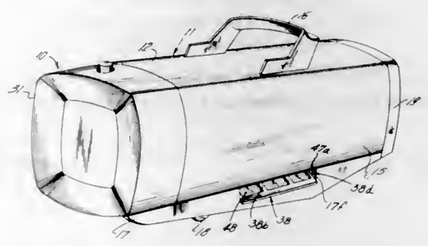
Apparatus for removing dust from medicinal tablets or other small articles includes an inclined tablet-carrying tube opened to the atmosphere at its opposite ends. The tube has a perforated section which is enclosed within an evacuated housing. Air enters the housing from the ends of the tube to create an air flow axially of the tube and radially through the perforated section. An adjustable opening in the wall of the housing permits regulation of the degree of vacuum therewithin.



3,466,696
VACUUM CLEANER

Karl Gustav Grellsson, Sollentuna, Sweden, assignor to Aktiebolaget Electrolux, Stockholm, Sweden, a corporation of Sweden

Filed July 19, 1967, Ser. No. 654,576
Claims priority, application Sweden, July 22, 1966, 10,081
Int. Cl. A47l 5/22, 9/00
U.S. Cl. 15—327 1 Claim

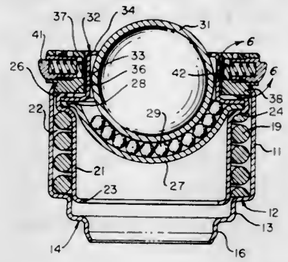


A tank-type vacuum cleaner having an elongated casing is normally positioned horizontally on a surface and provided with a motor-fan unit for moving air in a path of flow between an air inlet and an air outlet. A shell is fixed to the bottom of the casing and extends lengthwise of the cleaner which is supported for movement on the surface with sufficient clearance for the shell. Air flowing in the casing from the air inlet passes through a first opening in the bottom of the casing into a space formed by the shell and flows lengthwise of the cleaner through the space and is discharged laterally from the cleaner through a second opening which is formed in a vertical wall of the shell and defines the air outlet. A guide member is provided at the second opening to direct the discharged air upward at the side of the cleaner.

3,466,697
BALL TRANSFER OR CASTER UNIT

Earl S. Cain, Woodside, Calif., Jerome A. Carlson, Mercer Island, Wash., and George E. Goodrich, San Carlos, Calif., assignors to Bearings, Seals & Gears, Inc., Redwood City, Calif., a corporation of California

Filed May 10, 1968, Ser. No. 728,196
Int. Cl. B60b 33/08
U.S. Cl. 16—26 9 Claims

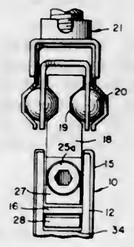


A spring-loaded ball transfer or caster unit including means for releasably securing the unit to structures with which it is associated and/or means serving to limit movement of the ball responsive to a load applied thereto.

3,466,698
HANGER ASSEMBLY FOR SLIDING VEHICLE DOOR

Wilford O. Nystrom, Palos Park, Ill., assignor to Morton Manufacturing Company, Chicago, Ill., a corporation of Illinois

Filed Apr. 5, 1967, Ser. No. 628,584
Int. Cl. E05d 13/02
U.S. Cl. 16—87 7 Claims

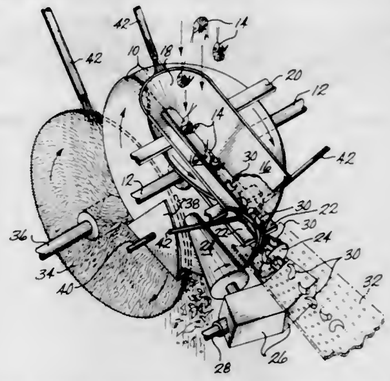


A hanger assembly for a sliding vehicle door. A U-shaped elongated channel is secured to the top of the door with the bottom of the channel being disposed downwardly. An elongated hanger bar is slidably mounted above the doorway of the vehicle and extends downwardly to be received in the channel. A bar retainer is received in the channel adjacent one end of the hanger bar and is restrained against vertical movement by an L-shaped foot portion which extends downwardly through a slot provided in the bottom of the channel and engages the lower surface of the channel bottom. A bolt is threaded through the bar retainer and extends into a recess provided in one end of the hanger bar. The other end of the hanger bar is provided with a transverse notch which engages a pin extending between the sides of the channel. The bolt is tightened to secure the hanger bar within the channel between the bolt and the channel pin.

3,466,699
PROCESS AND APPARATUS OF DESHELLING COOKED SHRIMP

John C. Willis and Odd B. Sundberg, Juneau, Alaska, assignors to Alaska Peelers, Inc., a corporation of Washington

Filed Mar. 29, 1967, Ser. No. 626,848
Int. Cl. A22c 29/00
U.S. Cl. 17—73 15 Claims

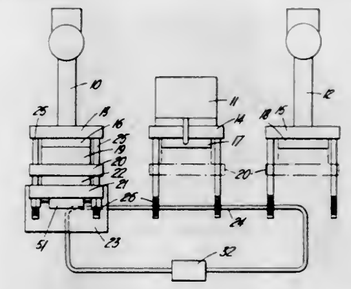


This invention relates to apparatus and method of deshelling boiled shrimp employing mounting, vertically disposed, deshelling belts, having substantially large planar areas, frictionally contacting the surfaces of the shrimp and wherein the belts are arcuate so that radially outward areas thereof travel at higher lineal speeds than do radially inward areas. Also, such belts converge into and are maintained to provide a shrimp deshelling throat which is inclined downwardly in a direction radially outward of the belts. At such shrimp deshelling throat, shrimp meat passes down said throat radially outwardly and shrimp shells pass through the throat.

3,466,700
APPARATUS FOR MOLDING MULTILAYER OR COMPOSITE ARTICLES

Peter Franklin Harrison, London, England, assignor to Peco Machinery Limited, London, England, a corporation of Great Britain

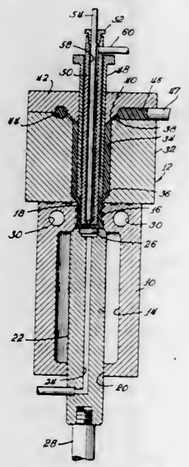
Continuation-in-part of application Ser. No. 419,723, Dec. 21, 1964. This application Feb. 3, 1967, Ser. No. 613,810
Claims priority, application Great Britain, Dec. 23, 1963, 50,763/63
Int. Cl. B29c 3/02, 9/00
U.S. Cl. 18—4 9 Claims



Apparatus for molding multilayer or composite articles has a first movable mold section which cooperates in succession with a number of fixed mold sections, the material injected at each stage being carried with the movable mold section to the next fixed mold section. The various fixed mold sections have tie bars with grooves

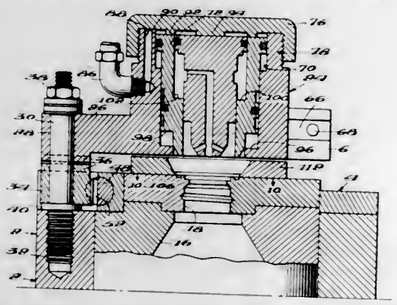
and the movable mold section is carried on a platen linearly movable with respect to a reaction member having locking means for engaging the grooves on the tie bars.

3,466,701
APPARATUS FOR BLOW MOLDING BOTTLES
Grant W. Cheney, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
Continuation of application Ser. No. 502,770, Oct. 19, 1965, which is a continuation-in-part of application Ser. No. 27,775, May 9, 1960. This application Apr. 3, 1968, Ser. No. 718,491
Int. Cl. B29c *17/07*
U.S. Cl. 18—5 **7 Claims**



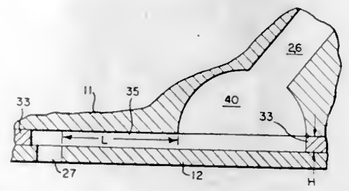
A machine for blow molding plastic bottles comprising: an extruding head for extruding a parison, blow molds parts with neck forming cavities, a plunger arranged for movement between the blow mold parts to engage the extruding head and means to blow mold the parison in the blow mold parts when they are closed.

3,466,702
APPARATUS FOR MAKING HOLLOW PLASTIC OBJECTS
Hans G. Stenger, Plainfield, N.J., assignor, by mesne assignments, to American Can Company, New York, N.Y., a corporation of New Jersey
Filed Aug. 25, 1966, Ser. No. 575,112
Int. Cl. B29c *3/02, 17/07*
U.S. Cl. 18—5 **9 Claims**



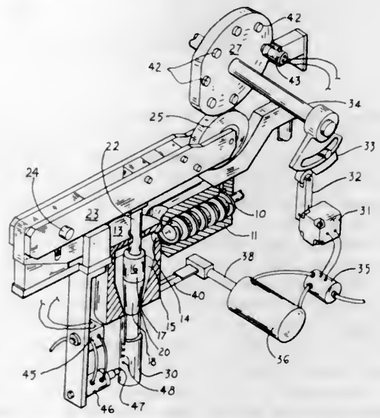
In blow molding plastic bottles, a turret is pivotal to a position overlying an opening at the top of a mold cavity formed by two mold sections. The turret carries a mandrel which is displaced into the mold opening, and gas under pressure is introduced through said mandrel, whereby a parison clamped between the mold sections is blown to fill the mold cavity. Displacement of the mandrel compresses the parison into the mold opening to form a neck on the bottle.

3,466,703
SPINNERET ASSEMBLY
Robert S. Heckrotte, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Aug. 11, 1967, Ser. No. 660,019
Int. Cl. D01d *1/08;* **B29f** *3/12*
U.S. Cl. 18—8 **4 Claims**



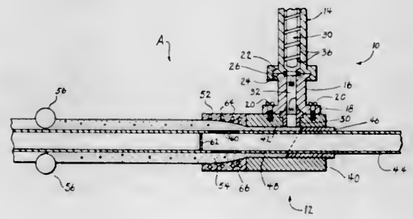
Spinneret assemblies are disclosed which include a thin metal metering plate sealed between the spinneret plate and a support member having polymer-supply channels. An equal flow of polymer is metered to each spinning orifice, in the spinneret plate, through passages having rectangular cross sections formed by non-circular apertures in the metering plate which have a width of 1 to 12 times the diameter of the spinneret orifice. The length of an aperture is determined by the distance from the polymer-supply channel to the spinneret orifice, which is offset sufficiently to provide a metering passage length, measured between the nearest edges of the channel and orifice, of 0.4 to 12 times the spinneret orifice diameter. The metering plate has a thickness, in the range of 0.004 to 0.050 inch, which provides metering passages having an impedance to polymer flow at least as great as the spinneret orifice. The improved assembly provides more uniform spun filaments and is easy to clean. The metering plates may be readily produced by relatively inexpensive operations.

3,466,704
APPARATUS FOR PROGRAMMING PARISONS
Clement V. Fogelberg, Boulder, and Lowell H. Erickson, Denver, Colo., assignors to Ball Brothers Company Incorporated, Muncie, Ind., a corporation of Indiana
Filed Dec. 29, 1966, Ser. No. 610,211
Int. Cl. B29d *23/04*
U.S. Cl. 18—14 **6 Claims**



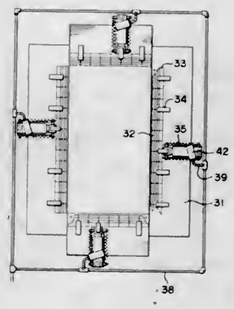
Apparatus for marking parisons having axially variable wall thicknesses relative to the means for varying the wall thickness in order to determine which portion of the varying means cycle is associated with a flow in a blown article. A marking member movable into the parison is so moved by a number of indexing points on the varying means such as a cam.

3,466,705
APPARATUS FOR EXTRUDING FOAMABLE PLASTIC MATERIALS IN TUBULAR FORM
Carlton A. Richie, Toledo, Ohio, assignor to Owens-Illinois, Inc., a corporation of Ohio
Filed Mar. 7, 1966, Ser. No. 532,409
Int. Cl. B29d *23/04*
U.S. Cl. 18—14 **2 Claims**



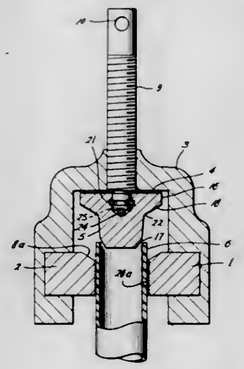
Apparatus for producing tubular articles from foamable resins including an extrusion chamber having an annular extrusion orifice with an annular cross section that increases in area gradually in the direction of travel of the extruded material, and including means for introducing a foam augmenting fluid radially inwardly into the foamable material.

3,466,706
CLAMPING DEVICE
Kazuo Asano, 9 Aza-Miyukiyama, Oaza-Yagota, Tempaku-chyo, Showa-ku, Nagoya, Japan
Filed Nov. 8, 1966, Ser. No. 592,924
Int. Cl. B29c *17/02;* **D06c** *3/00*
U.S. Cl. 18—19 **9 Claims**



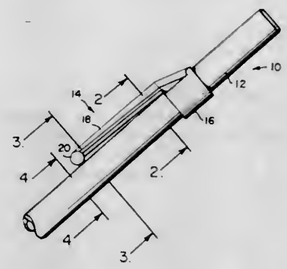
A clamping device for securing thermoplastic sheet material in an apparatus for forming articles from such material is formed of a picture frame shaped base member containing a clamping member along each of its sides. Each clamping member contains a plurality of separate resilient clamping elements arranged to be pivotally moved as a unit between a clamped position and a released position. Actuating means are secured to the base member for moving the clamping members between the clamped and released positions.

3,466,707
FLARING TOOL
Gaylon T. Click, Deer Park, and James M. Gray, Jr., Pasadena, Tex., assignors to Petro-Tex Chemical Corporation, Houston, Tex., a corporation of Delaware
Filed Nov. 7, 1966, Ser. No. 592,571
Int. Cl. B29c *17/02;* **B21d** *41/02*
U.S. Cl. 18—19 **6 Claims**



Apparatus for flaring plastic or plastic-like tubing characterized by compressor means having a plurality of frusto-conical sections which perform a locking function in conjunction with holding means and which compressor means flare the tubing by pressing the tubing against the holding means.

3,466,708
HOLDING CLIP FOR POCKET INSTRUMENT
Roy M. Jenkins, North Hollywood, Calif., assignor to Lindy Pen Company Incorporated, North Hollywood, Calif.
Filed Oct. 21, 1966, Ser. No. 588,374
Int. Cl. B43k *25/00*
U.S. Cl. 24—11 **12 Claims**

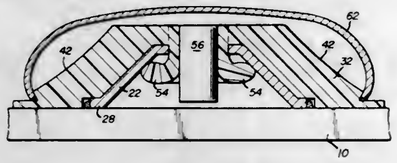


A holding clip is provided which, on its inner surface adjacent a pocket instrument, has a surface which converges, relative to the pocket instrument surface. Material to be held by the clip is therefore "pinched" between the clip arm and the instrument surface and no holding force is exerted at the free end of the clip.

3,466,709
MOLDING FASTENER
Martin M. Brown, Birmingham, Mich., assignor to Robin Products Company, Warren, Mich., a corporation of Michigan
Filed June 21, 1967, Ser. No. 647,749
Int. Cl. B60r *13/00*
U.S. Cl. 24—73 **8 Claims**

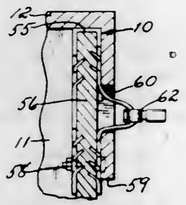
A method and apparatus for securing trim to an automobile body panel. The apparatus includes a fastener

assembly having a socket attached to an impervious portion of the body panel to provide an opening spaced from



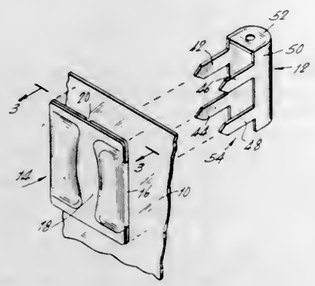
the surface of the panel and a clip or adapter telescoped over the socket and secured to the socket with means on the clip for receiving the trim.

3,466,710
CLIP FOR FIBROUS CONTAINERS
Julius B. Kupersmit, 299 W. 12th St., New York, N.Y. 10014
Filed Nov. 15, 1967, Ser. No. 683,279
Int. Cl. B65d *45/18*
U.S. Cl. 24—73 **3 Claims**



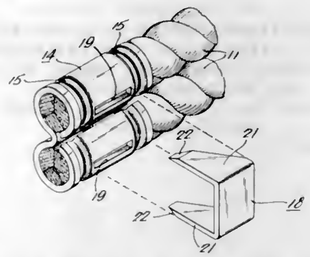
A multiwall folded clip formed as a metallic stamping to include oppositely disposed barbs capable of penetrating both planar surfaces of a fibrous sheet, one of said walls forming outwardly extending loop means engageable by retaining means, and adapted to penetrate an opening in a wall of a cover or lid, to retain the same in fixed relative position.

3,466,711
FASTENER FOR HANDBAG STRAP
Nathan A. Hirsch, Brooklyn, N.Y., assignor to Albest Metal Stamping Corporation, Brooklyn, N.Y.
Filed Oct. 5, 1967, Ser. No. 673,104
Int. Cl. A45c *13/12;* **A44b** *1/42*
U.S. Cl. 24—95 **1 Claim**



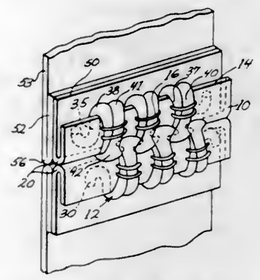
A fastener of the permanent type comprising a backwasher having a central bulge and a pair of recesses one each on either side of said bulge, said bulge having a concave-convex arcuate shape tapering into the recesses.

3,466,712
ROPE CLAMP
Robert J. Behney, 347 Hillside Road, New Cumberland, Pa. 17070
Filed Nov. 28, 1967, Ser. No. 686,221
Int. Cl. F16g *11/00*
U.S. Cl. 24—123 **1 Claim**



A clamp for forming a loop in the end of a rope in which the rope end is doubled back upon itself and the clamp is crimped about the doubled portion of the rope to hold the rope in loop form. The clamp separately encircles opposed segments of the rope at the end of the loop and is crimped about the opposed segments of the rope to securely grip the rope.

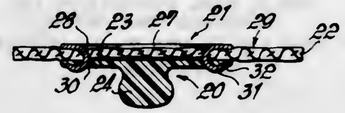
3,466,713
SLIDE FASTENER
Charles T. Lawrence, Saegertown, Pa., assignor, by mesne assignments, to Textron Inc., Providence, R.I., a corporation of Delaware
Filed July 24, 1967, Ser. No. 655,371
Int. Cl. A44b *19/10*
U.S. Cl. 24—205.1 **16 Claims**



A slide fastener, stringer and method of making the same for an invisible type slide fastener having a plurality of interlocking elements formed from a continuous filament of the meander or ladder type configuration. The interlocking elements on each filament configuration are located and formed on one of the two series of heel portions with the other series of heel portions providing a support for a carrying tape inserted between the legs of the meander type configuration and folded thereabout, such that the fold of the tapes of the slide fastener in the closed position will simulate a seam.

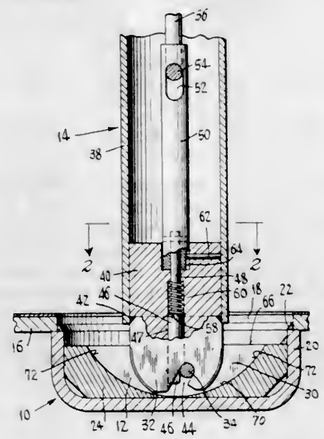
3,466,714
SNAP FASTENER ASSEMBLY
Bernhard Nysten, Aachen, Germany, assignor to William Prym-Werke KG., Stolberg, Rhineland, Germany
Filed Jan. 25, 1966, Ser. No. 522,974
Claims priority, application Germany, Feb. 17, 1965, P 36,092
Int. Cl. C44b *17/00*
U.S. Cl. 24—208 **7 Claims**

A snap fastener assembly comprises an annular first component which is provided with a plurality of relatively rigid projections extending from one side thereof. A second component is made at least partially from a material penetrable by the projections of the first component and the latter is located at one side of the second component. The one side of the second component is



provided with at least one annular projection having an outer diameter which corresponds to the diameter of the aperture in the annular first component, and at least a portion of each of the projections extends through the penetrable material of the second component and beyond the other side thereof.

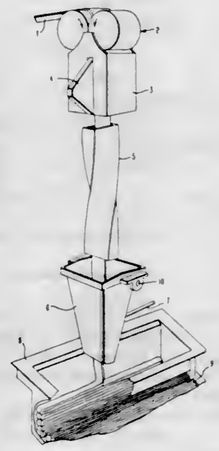
3,466,715
RELEASABLE PLUG-AND-SOCKET FASTENER
John J. McCarthy, Weston, Conn., assignor to Norco, Inc., Ridgefield, Conn., a corporation of Connecticut
Filed June 5, 1967, Ser. No. 643,605
Int. Cl. F16b *7/04*
U.S. Cl. 24—230 **1 Claim**



A plug-and-socket type fastener wherein the socket has in it a diametric cross bar. The plug has a notched forward end and opposite flat sides, the end notch being adapted to accept the diametric cross bar when the plug is inserted in the socket. The socket comprises an apertured face block which carries the cross bar, the aperture comprising an elongate opening or slot through which the flatted plug can be inserted only if it is first oriented or turned to either of two 180° related rotative positions. Such orientation of the plug automatically positions it so that the notched end thereof easily receives the diametric cross bar.

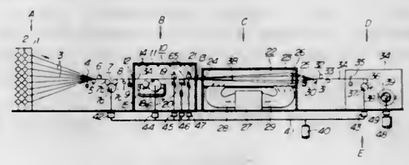
3,466,716
TWISTED CHUTE FOR IMPROVED TOW STACKING
Jack Arnet Hancock, Nashville, and William Fred Hayden, Old Hickory, Tenn., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed June 2, 1967, Ser. No. 643,233
Int. Cl. B65h *23/28;* **D02g** *3/00*
U.S. Cl. 28—1.6 **2 Claims**

The improvement in a tow delivery apparatus of an elongated chute vertically mounted above a tow discharge spout, the chute being twisted to form a smooth tow carrying surface to stabilize movement of the running tow



and rotate the tow width through an arc to align the tow with subsequent tow processing apparatus.

3,466,717
METHOD OF AND APPARATUS FOR SIZING WARPS
Susumu Kuroda, Nagoya, Japan, assignor to Kawamoto Industrial Co., Ltd., Nagoya, Japan, a corporation of Japan
Filed Nov. 15, 1967, Ser. No. 683,332
Claims priority, application Japan, Nov. 19, 1966, 41/76,291
Int. Cl. D06c *29/00*
U.S. Cl. 28—28 **8 Claims**

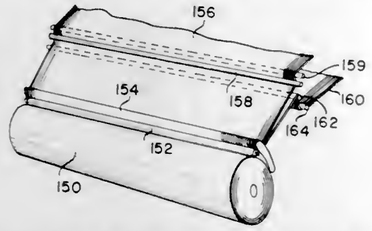


Method of and apparatus for sizing warps by the use of a quickly solidifying size in which wax predominates. The size is heated to be melted and is applied to the warps by means of a roller. A plurality of rollers are provided for rubbing the surfaces of the size-coated warps to level the coat of the size. The warps are then advanced into a size solidifying chamber in which cooling means are provided to generate and circulate cooled air currents and thus to facilitate the solidification of the size on the warps.

3,466,718
METHODS FOR PRODUCING TEXTURED FABRIC MATERIAL
Thomas E. Adamson, 1359 E. 17th St., Brooklyn, N.Y. 11230
Filed June 16, 1967, Ser. No. 646,666
Int. Cl. D05c *15/00*
U.S. Cl. 28—72.16 **11 Claims**

Multiple textured strands of fragile yarn material, such as acetate, are produced by knitting the plural strands

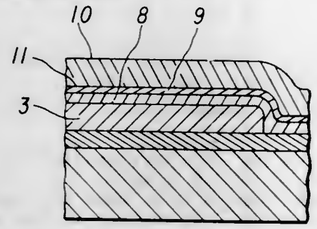
into an open loop fabric web, heat setting the fabric and raveling the plural strands of the web, and then feeding them directly to a textile machine using textured warp strands.



3,466,719
METHOD OF FABRICATING THIN FILM CAPACITORS

Louay E. Sharif and Robert C. Hooper, Dallas, Tex., assignors to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware

Filed Jan. 11, 1967, Ser. No. 608,691
Int. Cl. H01g *13/00*
U.S. Cl. 29—25.42 12 Claims

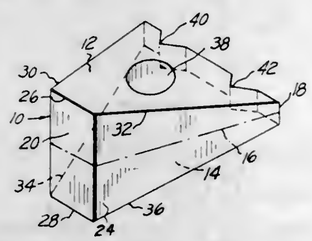


Disclosed is a method of forming a thin film capacitor or an insulated crossover in a thin film circuit. A layer of aluminum is deposited on a surface and patterned to form the bottom plate of a capacitor or one conductor in a crossover system and is partially oxidized by immersion in boiling water. Insulation is built up by successive layers of aluminum which are deposited and completely oxidized in turn by immersion in boiling water. A layer of another insulating material is deposited on the final layer of aluminum oxide to prevent absorption of moisture. A final layer of aluminum is deposited upon the multiple layers of insulation and patterned to form either the top capacitor plate or the top conductor of the crossover.

3,466,720
REVERSIBLE THROW-AWAY CUTTING INSERTS

Henry W. Stier, Dearborn Heights, Mich., assignor to Carmet Company, Pittsburgh, Pa., a corporation of New Jersey

Filed Nov. 8, 1967, Ser. No. 681,433
Int. Cl. B26d *1/00*
U.S. Cl. 29—95 8 Claims

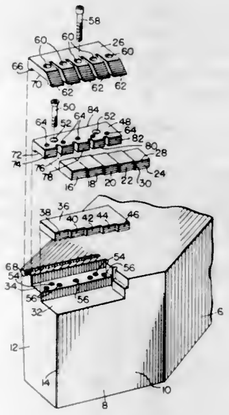


Reversible throw-away cutting inserts for mounting on appropriate tool holder, having symmetrically disposed equal upper and lower faces forwardly diverging from each other.

3,466,721
TOOL HOLDER

Jack N. Binns, 4886 Oaklawn Ave., Cincinnati, Ohio 45227

Filed Aug. 17, 1966, Ser. No. 572,971
Int. Cl. B26d *1/00*
U.S. Cl. 29—97 16 Claims

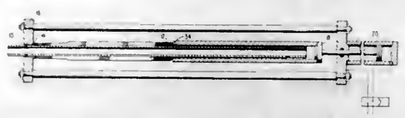


The lathe tool has a nose portion supporting a multiplicity of individual small cutters arranged in side-by-side relation, with their cutting edges progressively extended, to make possible the removal of metal from a workpiece at an exceptionally high rate during a single pass of the tool. The individual small cutters are inexpensive, easily reconditioned and replaced when necessary, and have a prolonged service life due to a reduction of thermal stress occurring in the cutting zone as the result of the cutter disposition and arrangement.

3,466,722
ROLLS FOR GLASS DRAWING MACHINERY

John Martin, Monterrey, Nuevo Leon, Mexico, assignor to Fabricacion de Maquinas, Monterrey, Neuvo Leon, Mexico, a corporation of Mexico

Original application May 13, 1965, Ser. No. 455,426, now Patent No. 3,364,546, dated Jan. 23, 1968. Divided and this application Sept. 18, 1967, Ser. No. 677,818
Int. Cl. B21b *31/08*
U.S. Cl. 29—123 3 Claims

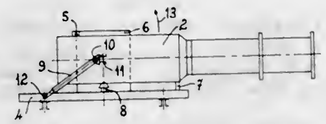


A roller having an tubular core is surrounded by a plurality of metallic and asbestos annuli. By tensioning said core, the annuli are compressed between end plates on said core. Rotation of said annuli is prevented by key and slot means between said metallic annuli and said core.

3,466,723
METHODS FOR ERECTING TOWER CRANES

Pierre Durand, Lyon, France, assignor to Richier, Paris, France, a company of France

Filed Oct. 24, 1966, Ser. No. 589,034
Claims priority, application France, Nov. 10, 1965, 46,567
Int. Cl. B23p *19/00;* B25j *3/00*
U.S. Cl. 29—155 7 Claims

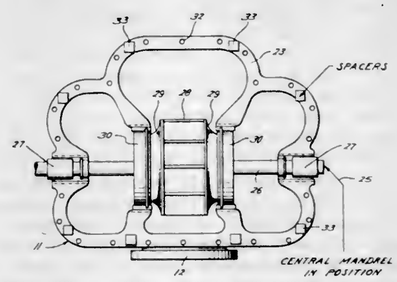


A tower crane is erected from a horizontal and collapsed position by interconnecting a double-acting hydraulic jack pivotally to the base of the crane and to a portion of the crane to be swung up, with the axis of the jack spaced from the axis of vertical swinging movement of the crane. The crane is swung to vertical position, and then one end of the hydraulic jack is disconnected and reconnected so that the hydraulic jack interconnects and extends the relatively extensible portions of the crane, with the jack acting along a line parallel to the axis of the crane.

3,466,724
METHOD OF MANUFACTURING CENTRIFUGAL PUMP CASINGS

Hosea D. Morris, Sr., Rte. 1, Freeport, Tex. 77541

Filed Mar. 9, 1967, Ser. No. 621,826
Int. Cl. B23p *15/00;* F04d *1/00*
U.S. Cl. 29—156.4 6 Claims

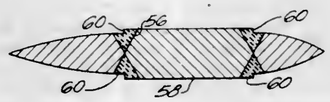


A method of manufacturing centrifugal pump casings having a layer of corrosive-resistant material covering the entire internal surface of the casing, including the ring recesses which receive the rotor assembly.

3,466,725
METHOD OF FORMING A HYDROFOIL

Helmut Kock, Woodlyn, Pa., assignor to Wilson Shipyard Inc., a corporation of Delaware

Filed Jan. 3, 1964, Ser. No. 335,574
Int. Cl. B21k *3/04;* B23p *15/02*
U.S. Cl. 29—156.8 9 Claims

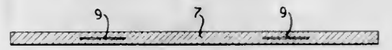


A method of forming a hydrofoil in which an extruded member having properly formed leading and lagging edges is split lengthwise. The two split sections are spaced apart and a plate inserted between them and the three elements then welded together. The width of the plate determines the final dimensions of the structure. The plate can be provided a taper so that the final structure is tapered.

3,466,726
MANUFACTURE OF INFLATED METAL PRODUCTS

Unto U. Savolainen, Attleboro, Mass., assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware

Filed Nov. 7, 1966, Ser. No. 592,592
Int. Cl. B23k *31/02;* B21d *53/02*
U.S. Cl. 29—157.3 4 Claims

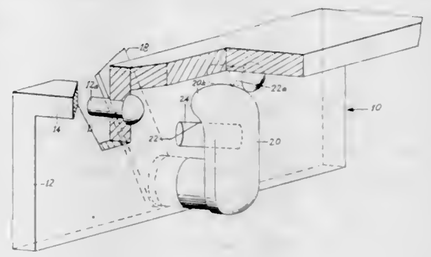


A pair of steel sheets with a stop-off pattern therebetween are interfacially bonded. The pattern is composed of finely divided aluminum in a dried rinsable carrier. Aluminum is inert with respect to hydrogen. The sheets in bonded condition with the stop-off pattern therebetween are immersed in an acid solution saturated with hydrogen sulphide. As a result, atomic hydrogen will form in the solution in equilibrium with molecular hydrogen. The atomic hydrogen at the faces of the sheets will penetrate them and enter the discontinuity formed by the stop-off material. Here it reforms molecular hydrogen with generation of pressure to inflate the composite substantially throughout the stop-off area. After providing suitable openings in the inflation the finely divided aluminum and its rinsable carrier are flushed out. The process may be accelerated by employing the composite as a cathode in the solution operating as an electrolyte in an electric circuit applied through it.

3,466,727
CRIMPING TOOL

Paul S. Buker, Donald M. Taylor, and Peter J. Weich, Middletown, Ohio, assignors to Armco Steel Corporation, Middletown, Ohio, a corporation of Ohio

Filed Dec. 7, 1966, Ser. No. 599,856
Int. Cl. B23p *11/00*
U.S. Cl. 29—200 14 Claims



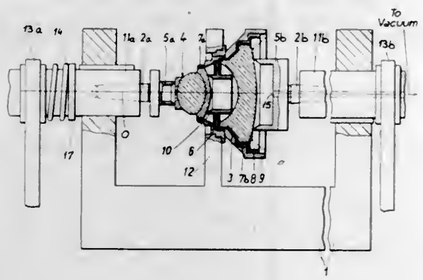
An apparatus for insuring proper engagement and then securely interlocking the overlapping ribs of adjacent steel panels. A rotatable cam member will force the mating ribs of adjacent panels into engagement with a frame member, and a crimping pin carried by the cam will deform at least one of the engaged ribs so as to securely hold the adjacent panels together.

3,466,728

APPARATUS OR MACHINE FOR MOUNTING AN OPTICAL COMPONENT ON A HOLDER THEREFOR

Franz Werner, Munster-Sarmsheim, Germany, assignor to Jos. Schneider & Co., a corporation of Germany

Filed Mar. 21, 1966, Ser. No. 536,126
Claims priority, application Germany, Apr. 15, 1965, Sch 36,893
Int. Cl. B23p *19/00;* **G02b** *7/02;* **G02c** *13/00*
U.S. Cl. 29—200 **5 Claims**



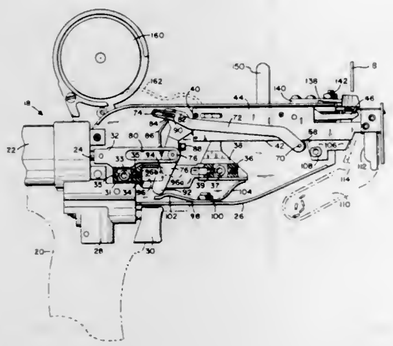
1. An apparatus for mounting at least one circular component of an optical objective on an annular holder therefor, comprising:
rotatable first support means for said component;
rotatable second support means for said holder coaxial with said first support means;
means for jointly rotating both said support means about their common axis;
and biasing means axially urging said first and second support means toward each other, said first and second support means being axially separable against the force of said biasing means.

3,466,729

APPARATUS FOR MAKING CLIP-TYPE ELECTRICAL CONNECTIONS

John Roy Vickery, Jr., Clearwater, Fla., assignor to AMP Incorporated, Harrisburg, Pa.

Filed Nov. 8, 1966, Ser. No. 592,773
Int. Cl. H01r *43/00*
U.S. Cl. 29—203 **7 Claims**



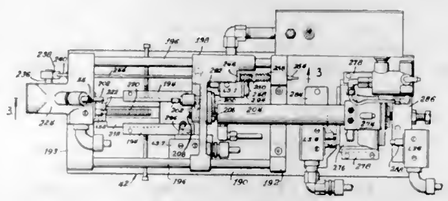
Apparatus for making a clip-type electrical connection between a wire and a terminal post, the apparatus being of the type comprising a mandrel and clip pusher for pushing the clip over the mandrel, against the wire, and onto the post. In accordance with the invention, wire grippers are provided which grip the wire and which hold the severed section of insulation. Grippers move from a first location adjacent to the mandrel to a second location remote from the mandrel and carry the scrap insulation to the second location at which it is disposed of.

3,466,730

FASTENER DRIVING MACHINE

Kenneth A. McHenry, Clinton, and Lester A. Amtsberg, Utica, N.Y., assignors to Chicago Pneumatic Tool Company, New York, N.Y., a corporation of New Jersey

Original application July 29, 1964, Ser. No. 386,037, now Patent No. 3,317,990, dated May 9, 1967. Divided and this application Jan. 26, 1967, Ser. No. 611,994
Int. Cl. B23p *19/00;* **B25b** *23/00*
U.S. Cl. 29—208 **5 Claims**



A machine in which set screw fasteners are received in sequential and intermittent manner into a positioning device and are set into workpieces by a motor powered rotary wrench. The wrench is mounted upon a carriage connected to a piston rod of a pneumatic cylinder. The carriage is caused to be reciprocated by the piston rod so as to carry the wrench toward and away from a workpiece. A fastener receiving and positioning means is operatively connected by linkage to the carriage so that it is caused with each cycle of the carriage to position a fastener for engagement by the wrench. An electrical circuit controlling operation of the motor and reciprocation of the carriage includes various control switches which are caused to be operated as the carriage is reciprocated. An advance limit switch is caused to be operated to effect return of the carriage after the carriage and wrench have advanced a predetermined distance. The piston cylinder is mounted upon a slide block which is adapted to move a limited distance and operate a control switch due to a reactionary force developing when the wrench engages a fastener with a workpiece.

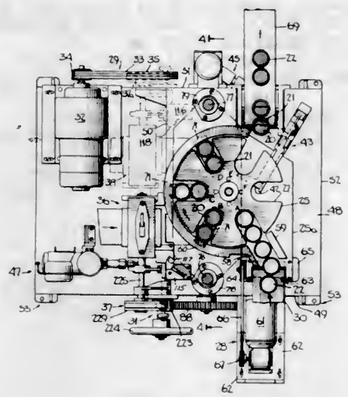
3,466,731

METHOD AND APPARATUS FOR FORMING AND INSERTING LINERS IN CLOSURES

Daniel D. Acton and Orin L. Pflieger, Lancaster, Ohio, assignors to Anchor Hocking Corporation, Lancaster, Ohio, a corporation of Delaware

Filed Sept. 20, 1966, Ser. No. 580,712
Int. Cl. B23p *19/04;* **B23q** *7/10*
U.S. Cl. 29—429 **23 Claims**

The apparatus comprises a star wheel with six closure holding slots intermittently moving closures through six stations while resting on a support plate. The closures are inserted in the star wheel and then rotated underneath a liner cutting and insertion mechanism for cutting liners from sheet liner material and placing the liners in the closures at two stations with an intermediate station therebetween. The star wheel is then rotated to the discharge station where the closures with the liners are automatically discharged to a conveyor. In the method of cutting and inserting liners the liner sheet material is intermittently fed to the two liner cutting and insertion stations and the liners are cut and dropped to a retention position above the closures from which the liners are pressed into the closures.

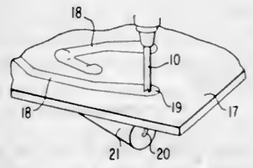


3,466,732

METHOD OF SERVICING PRINTED CIRCUIT BOARDS

George H. Taylor, Jr., P.O. Box 404, Hendersonville, N.C. 28739

Filed Nov. 18, 1966, Ser. No. 595,473
Int. Cl. B23p *19/04, 7/00*
U.S. Cl. 29—426 **1 Claim**



Electrical components are clearly separated from printed circuit boards by removing excess conducting material at terminals of components to expose lead wire ends. The lead wire ends are bent up perpendicular to the board and a tubular cutter placed over each lead wire end, cuts through the board to complete the separation.

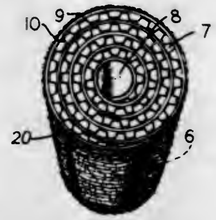
3,466,733

METHOD OF MAKING SHOCK ABSORBER CARTRIDGE

Theodore Peter Pajak, Belair, Edward Wesley Barsam, Aberdeen, and Bishop Joseph Moll, Havre de Grace, Md., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

Original application May 31, 1963, Ser. No. 284,526, now Patent No. 3,252,548, dated May 24, 1966. Divided and this application Mar. 31, 1966, Ser. No. 539,183
Int. Cl. B21d *39/02*
U.S. Cl. 29—455 **9 Claims**

The invention relates to a technique for forming a shock absorber cartridge by winding together a plane sheet and a corrugated sheet, both being of ductile metal. The sheets are wound on a mandrel to form a cylinder with



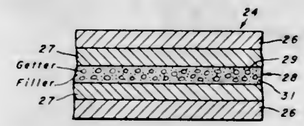
open cells. Desirably, the sheets are adhesively secured and flat end discs are adhesively bonded to the cylinder.

3,466,734

METAL ARTICLES AND METHOD

Milton B. Vordahl, Henderson, Nev., assignor to Crucible Steel Company of America, Pittsburgh, Pa., a corporation of New Jersey

Continuation-in-part of application Ser. No. 582,640, Sept. 28, 1966. This application Mar. 16, 1967, Ser. No. 638,164
Int. Cl. B23k *1/20, 31/02*
U.S. Cl. 29—470.9 **3 Claims**



This application pertains to new and improved metal composite assemblies for pack rolling into composite articles and new and improved powdered-metal compacted articles and to methods for producing articles of these types, and, more particularly, to new and improved methods for producing and maintaining clean metal surfaces and improving bonding during manufacture of the articles.

3,466,735

BONDING OF SILVER-CADMIUM OXIDE BODIES

Kenneth L. Emmert, Wethersfield, Conn., assignor to Contacts, Inc., a corporation of Connecticut

No Drawing. Filed Jan. 23, 1967, Ser. No. 616,998
Int. Cl. B23k *1/20*
U.S. Cl. 29—472.9 **6 Claims**

Silver-cadmium oxide bodies are well known as electrical contacts, but are notoriously difficult to bond to supporting members. It has now been discovered that preparation of the bonding surface with a dilute aqueous cyanide solution overcomes this problem. Preferably, the surface is additionally treated with a silver strike solution or silver plated and heat treated, prior to brazing by conventional techniques. Contacts bonded in this manner have greatly improved shear strength.

3,466,736

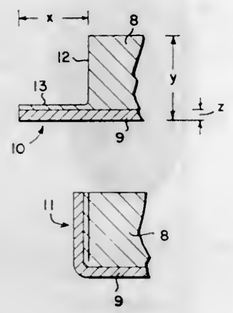
EDGE-CLADDING OF A CLAD METAL PLATE

Henry G. Frye, Seattle, Wash, assignor to Pacific Car and Foundry Company, Renton, Wash., a corporation of Washington

Filed Aug. 26, 1966, Ser. No. 575,319
Int. Cl. B23k *31/02*
U.S. Cl. 29—477.7 **7 Claims**

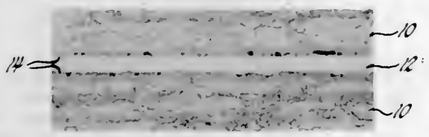
This invention relates to the edge-cladding of a metal plate to which cladding has been applied to one or both

of the sides, and has for its object to provide a method which is comparatively simple and inexpensive to perform



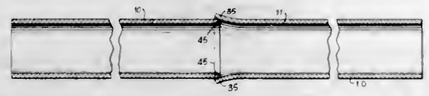
and which will provide for an edge or edges of the plate an overlay of the same composition as the side cladding.

3,466,737
BRAZING OF TITANIUM
Dean K. Hanink, Indianapolis, Ind., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed May 18, 1966, Ser. No. 550,994
Int. Cl. B23k *1/04, 31/02*
U.S. Cl. 29—492 **5 Claims**



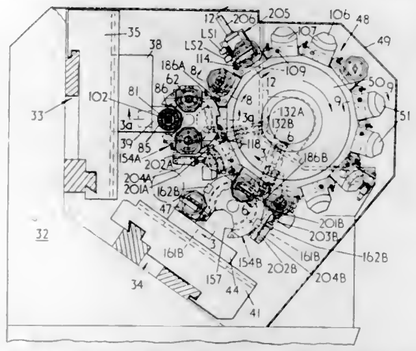
A method is disclosed for the silver brazing of titanium workpieces to avoid the formation of the brittle silver-titanium intermetallic compound. In a preferred embodiment a thin film of chromium is vapor deposited on titanium surfaces to be brazed. Silver brazing is then accomplished by conventional methods, the chromium layer permitting the interdiffusion of silver and titanium but preventing the formation of a brittle intermetallic compound.

3,466,738
METHOD OF JOINING TUBES BY DRIVEN FORCE FIT AND JOINT PRODUCED THEREBY
Wadsworth W. Mount, Mountain Ave., Warren Township, Somerset County, N.J. 07060
Filed June 7, 1965, Ser. No. 461,983
Int. Cl. B23p *19/02;* **F16l** *19/00*
U.S. Cl. 29—525 **3 Claims**



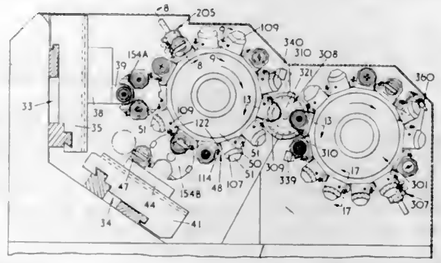
This disclosure is directed to a method and apparatus for producing a press-fitted pipe joint whereby the outer pipe is elastically expanded during the pressing of the pipes together.

3,466,739
MACHINE TOOLS WITH TOOL CHANGE FACILITIES
Julius Harman, Baginton, England, assignor to Alfred Herbert Limited, Coventry, England, a British company
Filed July 28, 1967, Ser. No. 656,845
Claims priority, application Great Britain, July 28, 1966, 33,929/66; Nov. 11, 1966, 50,646/66, 50,649/66, 50,651/66, 50,652/66, 50,653/66
Int. Cl. B23q *17/00*
U.S. Cl. 29—568 **32 Claims**



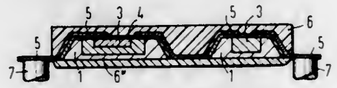
A tool change lathe has two tool slides, a single tool magazine and two separate tool changers for transferring tools from the magazine to the respective slides. The individual tools in the magazine are identified by coded keys in the magazine. The tool changers each take a key from the magazine when the associated tool is removed and store the key whilst that tool is operating. Each tool changer has a head including a non-rotary part which, in combination with the magazine and the slide, forms a substantially closer circular track around which tools being exchanged are driven without axial displacement. The tools are located on the slides by toothed coupling rings in a plane perpendicular to the headstock spindle. One slide has a drive shaft extending through the toothed coupling ring. In each case the tool is transferred by the tool changer on to a draft member which is hydraulically actuated to draw the toothed coupling rings together. A mechanical locking arrangement guards against failure of the hydraulic system.

3,466,740
MACHINE TOOLS PROVIDED WITH AUTOMATIC TOOL-CHANGE FACILITIES
Julius Harman, Baginton, England, assignor to Alfred Herbert Limited, Coventry, England, a British company
Filed Nov. 9, 1967, Ser. No. 681,641
Claims priority, application Great Britain, Nov. 11, 1966, 50,650
Int. Cl. B23q *17/00*
U.S. Cl. 29—568 **6 Claims**



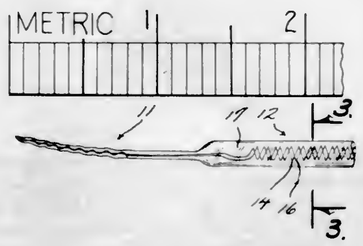
A machine tool with a magazine for tools and a power operated transfer device for transferring selected tools from the magazine to a tool mount, is also provided with a second magazine for additional tools and an additional tool transfer device for exchanging tools between the two magazines.

3,466,741
METHOD OF PRODUCING INTEGRATED CIRCUITS AND THE LIKE
Richard Wiesner, Munich, Germany, assignor to Siemens Aktiengesellschaft, Berlin-Siemensstadt, Germany, a corporation of Germany
Filed May 5, 1966, Ser. No. 547,990
Claims priority, application Germany, May 11, 1965, S 97,037
Int. Cl. B01j *17/00;* **H05k** *3/00*
U.S. Cl. 29—588 **8 Claims**



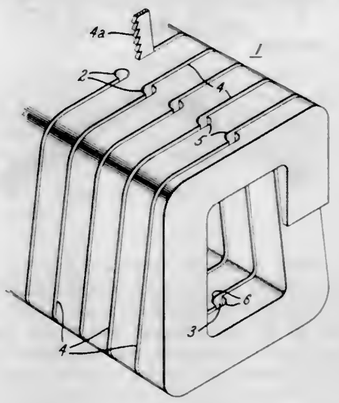
Described is a method for simultaneously producing a multiplicity of semiconductor circuit components, such as for microcircuits. The method comprises providing a semiconductor wafer on one face thereof with electrically functionary regions to ultimately function as respective semiconductor components. Grooves are then etched into said one wafer face thereby removing non-functionary material of the wafer. The wafer on the one face and on the surface of said grooves are provided with conductive electrical connections. Semiconductor material is then removed from the entire other face of said wafer until the resulting wafer pieces containing said functionary regions are mechanically interconnected only by the network formed of the totality of said electrical interconnections and terminal connections. The resulting interspaces are filled with solidifying insulating material.

3,466,742
PROCESS OF FORMING AN ELECTRICAL CABLE FOR CHRONIC IMPLANTATION WITHIN A LIVING BODY
John C. Sinclair, Roseville, Minn., assignor to Iowa State University Research Foundation, Inc., Ames, Iowa, a corporation of Iowa
Filed Jan. 30, 1967, Ser. No. 612,557
Int. Cl. H01s *4/00;* **H01b** *13/00*
U.S. Cl. 29—592 **6 Claims**



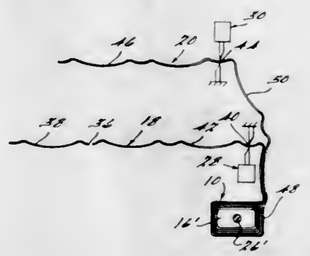
The disclosure relates to a process for forming a product particularly adapted for the chronic implantation thereof within a living body, human or animal, for the transmission thereby of electrical current in response to a temperature change of the body, the product being made innocuous to the body tissues while being flex-resistant in order to endure constant movement of the body organs.

3,466,743
SPIRAL COIL COMPRISING A TUBULAR BLANK WITH PARALLEL, RECTILINEAR CUTS THEREIN
Robert P. De Puy, Cherry Hill, N.J., assignor to General Electric Company, a corporation of New York
Filed July 2, 1965, Ser. No. 469,072
Int. Cl. H01f *7/06*
U.S. Cl. 29—602 **2 Claims**



A relatively inexpensive quasi-helical coil of high current, low voltage rating is formed by boring two sets of diametrically opposed, longitudinally aligned holes through the walls of a tubular aluminum blank and then making a series of parallel, rectilinear cuts in opposite sides of the blank, each cut being inclined with respect to the centerlines of the holes of the two sets with which it registers.

3,466,744
METHOD OF MANUFACTURING CORES
Arthur V. Hughes, Bloomfield Township, Oakland County, Mich., assignor to Kuhlman Electric Company, Troy, Mich., a corporation of Michigan
Original application June 2, 1958, Ser. No. 739,232, now Patent No. 3,252,118, dated May 17, 1966. Divided and this application Aug. 19, 1963, Ser. No. 302,845
Int. Cl. H01f *7/06*
U.S. Cl. 29—606 **5 Claims**

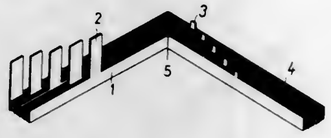


1. The method of manufacturing an electromagnetic induction apparatus which comprises the steps of concurrently winding a plurality of face-abutting strips of magnetic material into interleaved spirals, annealing the magnetic material of said spirals, unwinding said spirals, severing a different initial length of material from each of said strips during unwinding to form an initial strip portion from each of the strips, thereafter severing each of said strips into strip portions of equal turn lengths during unwinding, and successively reassembling said strip portions into and on a preformed electrical winding structure into their wound, interleaved spiral relationship.

3,466,745
METHOD OF MAKING LAMINATED BUS BAR ASSEMBLY

Alfred Stopp, Eberbach, Germany, assignor to Brown, Boveri & Cie Aktiengesellschaft, Mannheim-Kafertal, Germany

Continuation of application Ser. No. 550,861, May 17, 1966. This application Jan. 25, 1968, Ser. No. 700,649
Claims priority, application Germany, May 18, 1965, B 81,972; Jan. 21, 1966, B 85,490
Int. Cl. H01b *13/00*
U.S. Cl. 29—624 **2 Claims**



The method of making laminated bus bar assemblies by stacking, gluing and baking a number of flat and planar conductor blanks with lateral terminal lugs, is improved by giving all of the punched blanks the same length and shape as well as the same number of identical terminal lugs. All but chosen ones of the lugs are subsequently removed, the remaining lugs being so selected as to form a linear array of equidistant lugs in the stack. An angular bus bar is produced either by bending a stack of such blanks or by bending the blanks individually before stacking and then shortening them to staggered differences in length.

3,466,746
SECTIONAL CAP TYPE DOUBLE EDGE SAFETY RAZOR UNIT

Jan Dawidowicz, Fairfield, Frank A. Ferraro, Monroe, and Leopold K. Kuhnl, Stratford, Conn., assignors to Eversharp, Inc., Milford, Conn., a corporation of Delaware

Filed Aug. 21, 1967, Ser. No. 661,957
Int. Cl. B26b *21/18*
U.S. Cl. 30—60.5 **9 Claims**

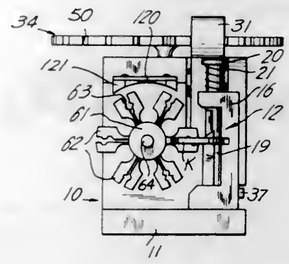


A safety razor of the double edge, sectional cap type having a molded one-piece handle, bladé seat and guards. A cross strap mounts sectional caps on cross bars with the cross strap being joined to a one-piece center bar and stem assembly of molded plastic. A plastic operating knob is received in an opening in the handle beneath the blade seat and functions to move the center bar and cross strap to cause opening and closing of the sectional caps. An enlarged knob-like formation on the stem is shaped to expand fingers in the operating knob during assembly, however, the fingers act as a stop to limit opening of the caps and preclude disassembly.

3,466,747
AUTOMATIC CODE KEY CUTTER

George P. Patriquin, Gardner, and Harry J. Haner, Clinton, Mass., assignors to Cole National Corporation, Cleveland, Ohio, a corporation of Ohio

Filed Apr. 13, 1967, Ser. No. 630,571
Int. Cl. B25f *3/00;* **B23d** *15/04, 15/08*
U.S. Cl. 30—131 **4 Claims**

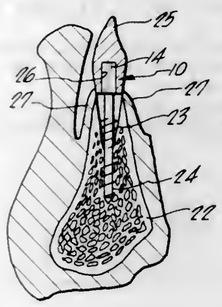


An improved key cutting device for cutting key blanks in accordance with a code signifying the depth of the key cuts, to arrive at a desired combination, the cutter including automatic indexing means for advancing the blank during the cutting operation properly to space the cuts lengthwisely with respect to the blank.

3,466,748
ANCHOR SCREW FOR DENTAL PROSTHESIS

Robert W. Christensen, 250 S. Oak Knoll, Apt. 105, Pasadena, Calif. 91106

Filed Dec. 15, 1967, Ser. No. 690,912
Int. Cl. A61c *13/30*
U.S. Cl. 32—10 **7 Claims**

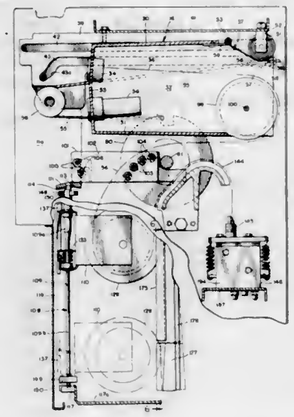


An anchor screw for mounting an artificial tooth crown or similar dental appliance, the screw having two separate sections of threads along its length. An apical or intrabone end of the screw has threads of constant major diameter which engage bone surrounding a pilot hole drilled through the end of a root socket from which a tooth has been extracted. A central part of the screw has tapered threads which fit into the exposed root socket. Regenerated bone grows between these tapered threads to secure the screw firmly in place. An occlusal end of the screw extends from the bone and has a square cross-section to provide a gripping surface during screw installation and a rotation-resistant mounting for the artificial crown or other appliance.

3,466,749
DENTAL CONSOLE

Milton R. Nielsen, Wheaton, Ill., assignor to American Hospital Supply Corporation, Evanston, Ill., a corporation of Illinois

Filed Nov. 1, 1965, Ser. No. 505,918
Int. Cl. A61c *19/02*
U.S. Cl. 32—23 **10 Claims**

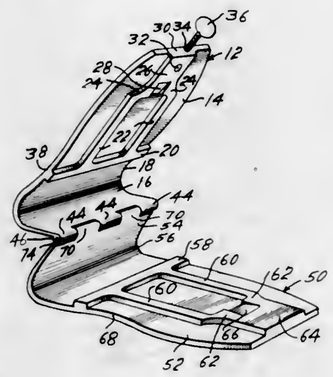


A dental console for supporting air-driven handpieces. The supply hoses for the handpieces are carried by trolley assemblies equipped with releasable latching means for preventing retraction into the unit of any selected length of hose until release is intentionally triggered. The trolley assemblies and guide rods upon which they slide are removably mounted in the console and a selector valve assembly having pilot valve levers engageable by the trolley assemblies controls the flow of fluid to the handpieces.

3,466,750
OCCLUDER

Dale L. Timberlake, 1331 W. Camelback Road, Phoenix, Ariz. 85013, and Wallace R. Kean, 134 Elm, Apt. 101, San Mateo, Calif. 94401

Filed Aug. 16, 1966, Ser. No. 572,843
Int. Cl. A61c *11/00*
U.S. Cl. 32—32 **6 Claims**

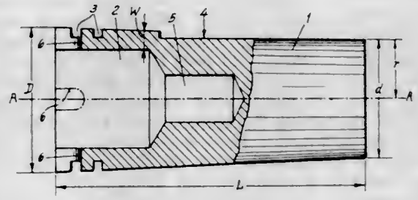


This invention is for an occluder to hold dental models so that the occlusal surfaces of the upper and lower teeth may be made to move through arcs by reproducing movements of the jaws of an individual. This occluder is made of plastic and therefore possesses a certain degree of flexibility. Also, the configuration of the occluder is such as to have inherent flexibility. With the flexibility of the plastic and the inherent flexibility of the configuration, the upper and lower jaws of the occluder can be manipulated by the dentist to simulate the movements of the person for whom the dental model is being prepared.

3,466,751
ROOT-PIN FOR MODEL-TEETH

Willy Kleiner, Dental Laboratorium Fischmarktplatz 9, 8640 Rapperswil, St. Gall, Switzerland

Filed Aug. 7, 1967, Ser. No. 658,789
Claims priority, application Switzerland, Aug. 9, 1966, 11,702/66
Int. Cl. A61c *3/00*
U.S. Cl. 32—40 **7 Claims**

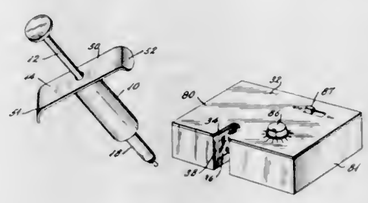


A root-pin defined by a frustum, a central hollow space and an annular external groove adjacent a large end of the frustum. A flat exterior surface is positioned adjacent the smaller end of the frustum and parallel to an axis thereof.

3,466,752
HEATER STAND AND CAVITY INJECTOR

Gilles G. Braun, 2 Clifton St., Barre, Vt. 05641

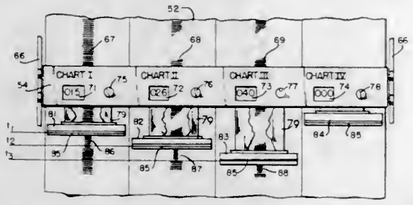
Filed Aug. 14, 1967, Ser. No. 660,404
Int. Cl. A61c *5/04*
U.S. Cl. 32—60 **15 Claims**



Dental cavity filling apparatus includes an electric heater stand and an injector for injecting heated thermoplastic into a tooth cavity. The heater stand holds the injector and warms the thermoplastic in the injector to a flowable condition and includes a thermistor heater control for maintaining the plastic at a suitable temperature.

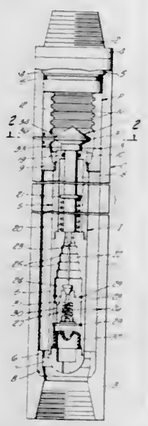
The injector includes an elongated chamber for holding the thermoplastic and a spring biased movable insulating sleeve surrounding the chamber and which is held in retracted position during heating by a slot on the heater stand. The sliding insulator jacket automatically slides down over the plastic chamber when the injector is removed from the stand.

3,466,753
APPARATUS FOR SEA LIFE LOCATOR
Michael J. Prebish, Adelphi, Md., and Harley E. Holt, Arlington, Va., assignors to Singer-General Precision, Inc., a corporation of Delaware
Filed Dec. 9, 1966, Ser. No. 600,634
Int. Cl. G01c 21/20; G01b 3/14, 5/24
U.S. Cl. 33—1 10 Claims



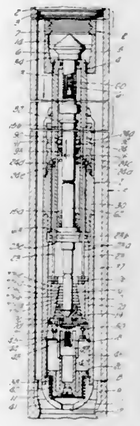
This disclosure describes a bridge for use with a multi-record recorder to generate electrical signals proportional to times that variations in the individual records occur. The recorder uses a single record receiver which moves with time and a plurality of pens to make a plurality of records. All of the records represent the same information supplied from separate, spaced transmitters. The bridge spans all of the records and comprises a manually movable hair line for each record. Drive means is provided to drive the bridge in synchronism with the record receiver. One station serves as a reference and its hair line is moved to an anomaly in the recording with the bridge moving in synchronism with the record receiver. The hair lines at the other stations are then moved to the same point on their respective records. Electrical signals from the individual transducers then represent the movements of their respective hair lines.

3,466,754
SIGNALLING DRIFT INDICATOR WITH FLUID BY-PASS
Robert L. Alder, Pasadena, Calif., assignor to Byron Jackson, Inc., Long Beach, Calif., a corporation of Delaware
Filed Mar. 22, 1967, Ser. No. 625,084
Int. Cl. E21b 47/02
U.S. Cl. 33—205 7 Claims



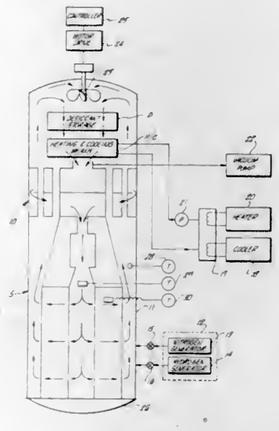
A signalling drift indicator of the type in which a knob moves through pulse rings to produce pressure signals in a stream of drilling fluid indicative of the disposition of the drill string and in which a by-pass for drilling fluid, open only while signals are being produced, is provided.

3,466,755
MAINSPRING FORCE TRANSFER MEANS FOR SIGNALLING DRIFT INDICATOR
Robert L. Alder, Pasadena, Calif., assignor to Byron Jackson, Inc., Long Beach, Calif., a corporation of Delaware
Filed Mar. 22, 1967, Ser. No. 625,100
Int. Cl. E21b 47/02
U.S. Cl. 33—205 10 Claims



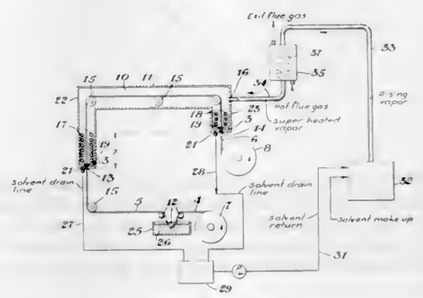
A signalling drift indicator in which the mainspring is compound and includes a heavy spring, the force of which is transferred to the housing during the initial portion of outward movement of the gravity controlled knob shaft and during the terminal portion of inward movement of said shaft, and a light spring applies force to the said shaft to cause the initial portion and resist the terminal portion of shaft movement, the heavy spring acting on the shaft during the remainder of the outward and inward shaft movement.

3,466,756
METHOD FOR DEHYDRATING MATERIALS
George Tooby, 1355 Circle Drive, San Marino, Calif. 91108
Filed Nov. 6, 1967, Ser. No. 680,741
Int. Cl. F26b 5/06, 21/14, 3/04
U.S. Cl. 34—5 13 Claims



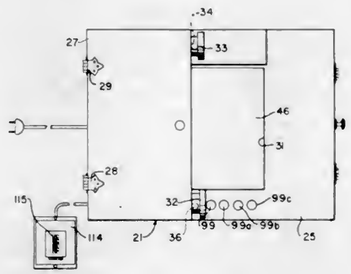
A method for dehydrating materials particularly adapted for freeze drying a heat sensitive product. The product to be dried is arranged in a preselected side-by-side relationship with a desiccant so that when a drying gas is passed over the product any moisture derived from the product is removed by the desiccant as the gas passes thereover.

3,466,757
DRYING AND RECOVERY PROCESS
James L. Dunn, Jr., Lake Jackson, Tex., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
Continuation-in-part of application Ser. No. 572,948, Aug. 17, 1966. This application Nov. 24, 1967, Ser. No. 685,716
Int. Cl. F26b 3/00; F16b 13/08
U.S. Cl. 34—22 1 Claim



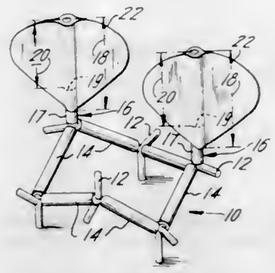
A method and apparatus for removing a volatile, liquid solvent which is a conditioning agent or which contains a conditioning, coating or treating agent from a base material to which the solvent composition has been applied by contacting the so-treated base material with superheated vapors of a volatilizable organic liquid, said vapors being at a temperature at least 10° C. higher than the boiling point of said volatile, liquid solvent.

3,466,758
TEACHING MACHINE
Paul F. Miller, Anderson Township, Hamilton County, Ohio (501 Carew Tower, Cincinnati, Ohio 45201)
Filed Dec. 12, 1966, Ser. No. 600,865
Int. Cl. G09b 3/02, 1/00
U.S. Cl. 35—8 2 Claims



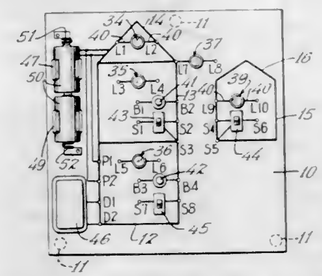
A teaching machine presents cards one at a time to the student, who registers his choice in response to a card-carried multiple choice problem. If correct, a new card is presented, and if incorrect, a counter is activated. The correct responses are notch-coded on the cards and sensed by novel leaf switching circuitry. A relay is provided for disabling the incorrect response counter during the advancement of a card.

3,466,759
MOLECULAR MODEL ASSEMBLY
George C. Brumlik, 154 Upper Mountain Ave., Montclair, N.J. 07042
Filed June 12, 1967, Ser. No. 645,244
Int. Cl. G09b 23/26, 23/04
U.S. Cl. 35—18 5 Claims



A molecular model assembly composed of a framework structure of elongated cylindrical sections projecting from central points representing centers of atoms and extending therefrom at angles representing symmetry axes of valence orbitals and bond angles of central atoms, and space filling structures mounted on selected sections to represent volume orbitals. The space filling structures are flat and have planar surfaces corresponding to cross-sections of the three dimensional space-filling geometry of designated orbitals, and are rotatably mounted on said cylindrical sections to determine overlap of the orbitals represented as well as to depict anti-bonding lobes of molecules in an excited state.

3,466,760
EDUCATIONAL ELECTRICAL CIRCUIT TOY
Robert D. Vanek, 1701 Juliet Ave., St. Paul, Minn. 55105
Filed Aug. 8, 1966, Ser. No. 571,023
Int. Cl. G09b 23/18, 23/06
U.S. Cl. 35—19 2 Claims

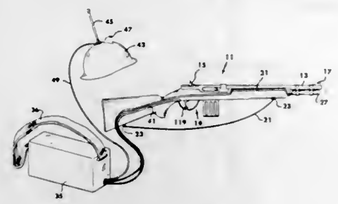


An educational toy comprising a panel with electrical elements including current supply, light bulbs, switches and terminals therefore capable of being connected by loose connectors to complete various circuits. Representations of rooms of a house are on the panel.

3,466,761
HIT INDICATOR ARRANGEMENT
Raymond G. Stinchcomb, Glen Burnie, Md., assignor to AAI Corporation, Cockeysville, Md., a corporation of Maryland
Filed Feb. 3, 1967, Ser. No. 613,804
Int. Cl. F41g 3/26; A63f 9/02; H04b 1/00
U.S. Cl. 35—25 11 Claims

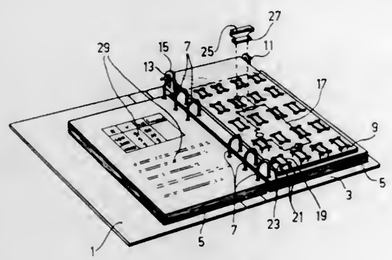
A hit indicator arrangement is disclosed for simulated hit-kill field practice which permits the use of a stand-

ard rifle with pulse initiating means attachable to the trigger assembly for initiating a target interrogation pulse when the trigger is squeezed. The arrangement



is an improvement particularly applicable to hit indicator arrangements as shown in U.S. Patent No. 3,104,478.

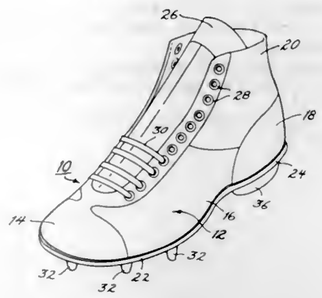
3,466,762
TECHNICAL EDUCATIONAL DEVICE
Joseph Kirk and Robert Franz Karl Forsthuber, Emmasingel, Eindhoven, Netherlands, assignors, by mesne assignments, to U.S. Philips Corporation, New York, N.Y., a corporation of Delaware
Filed Dec. 14, 1966, Ser. No. 601,605
Claims priority, application Netherlands, Jan. 22, 1966, 6600859
Int. Cl. G09b *23/06, 25/00, 29/00*
U.S. Cl. 35—19 **4 Claims**



The device disclosed is a book-like apparatus which assists the teaching of students in the assembly of electric circuitry, optical systems or mechanical devices from schematic diagrams. The apparatus comprises a book cover, a binder mechanism, printed sheets containing schematic diagrams and text material, and a movable transparent plate attached to the book cover for overlying the schematic diagrams. The transparent plate has attached to it a multiplicity of conductor elements or holders which are adapted to receive electrical, optical or mechanical elements in conformance with the pattern and instruction of the schematic diagram underneath the transparent plate.

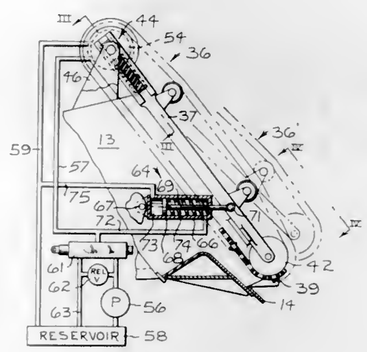
3,466,763
ATHLETIC FOOTWEAR
Victor Herbert Levin, 123 Main St., Collegeville, Pa. 19426
Filed Dec. 6, 1966, Ser. No. 599,477
Int. Cl. A43b *5/02*
U.S. Cl. 36—2.5 **4 Claims**

Disclosed herein is an article of athletic footwear for preventing injuries to the ankle and knee. The footwear includes an insert of relatively nonyielding material which comprises a heel portion that generally conforms to the shape of a human heel and lateral flanges that are integral with and extend toward the toe. The outer lateral flange extends forwardly to a position adjacent the cuboid bone and terminates along an upper edge that is just below the lateral malleolus or outer tubercle of the calcaneus. The inner or medial flange is lower in height than the lateral flange but extends only to a position



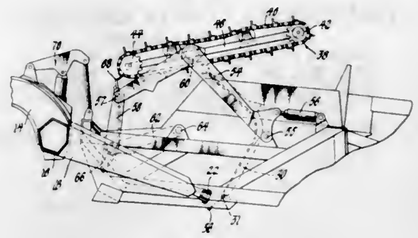
adjacent the navicular or scaphoid bone. The lateral flange is somewhat higher than the medial flange. The article of footwear also includes cleats for the heel which comprise a centrally disposed pivot cleat and laterally disposed elongated supports which are preferably curvilinear.

3,466,764
HOLDDOWN FORCE CONTROL FOR A SCRAPER ELEVATOR
Roger M. Smith, Joliet, Ill., assignor to Caterpillar Tractor Co., Peoria, Ill., a corporation of California
Filed Dec. 9, 1966, Ser. No. 600,514
Int. Cl. E02f *3/76*
U.S. Cl. 37—8 **5 Claims**



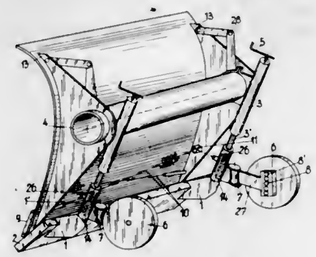
A fluid motor powered elevator of a self-loading scraper is pivoted to the bowl thereof whereby it may swing upward and forward from the cutting edge to adjust to varying depths of cut. Elevator holddown force, supplementary to gravity, is provided by a fluid operated cylinder and piston assembly connected between the elevator and the bowl and communicated with the driving fluid input to the elevator motor. The holddown force is thereby varied in accordance with the forces tending to lift the elevator inasmuch as an increase in elevator loading causes a pressure rise at the elevator motor fluid intake which in turn increases the downward force exerted on the elevator by the holddown cylinder.

3,466,765
SELF-LOADING SCRAPER
Ralph J. Bernotas, South Euclid, and James W. Fisher, Warrensville Heights, Ohio, and Robert H. Scott, Columbus, Ind., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Jan. 17, 1968, Ser. No. 698,464
Int. Cl. E02f *7/02, 9/00*
U.S. Cl. 37—8 **6 Claims**



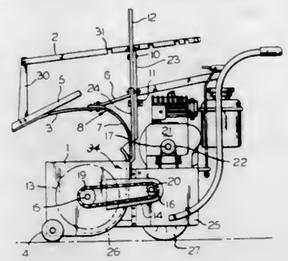
A self-loading scraper having a bowl supporting an elevator device and an ejector that is adapted to push material out of the front of the bowl. The bowl is characterized by having a floor divided into two sections with one section serving as a movable floor extension, the front end of which rigidly supports a transverse cutting blade adjacent to the lower end of the elevator device. Means are provided for supporting the elevator device and the floor extension section in the bowl and for moving the elevator device to a position above the bowl while moving the floor extension section forwardly so as to permit the ejector to discharge the load out of the front of the bowl.

3,466,766
SNOWPLOW ACCESSORY
Anton Kahlbacher, Aschbachstrasse 12, Kitzbuhel, Austria
Filed Aug. 15, 1967, Ser. No. 660,634
Claims priority, application Austria, May 26, 1967, A 4,884/67
Int. Cl. E01h *5/06;* **A47l** *13/02*
U.S. Cl. 37—41 **14 Claims**



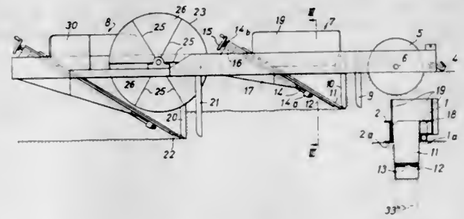
A snowplow accessory comprising a scraper resiliently suspended behind a snow removal blade for being selectively moved into a working position beneath the snow removal blade for the removal of slush and into an inoperative position above the snow removal blade, the slush removal scrape blade being elastically urged against the rear surface of the snow removal blade.

3,466,767
SNOW THROWER WITH FLEXIBLE ARC DEFLECTOR
George H. Rubin, 624 Marquette Ave., South Milwaukee, Wis. 53172
Filed Nov. 10, 1966, Ser. No. 593,420
Int. Cl. E01h *5/02, 5/00*
U.S. Cl. 37—43 **2 Claims**



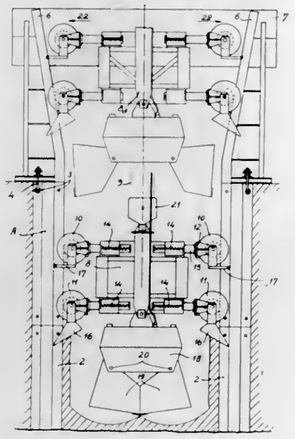
A device for removing snow deposited in depth on a surface, and for projecting it in a variety of directions controlled by the operator in such manner that a minimum likelihood of clogging of the snow removal mechanism results. Removal and projection are produced through use of a rotary impeller which forces the snow against an adjustable deflector system. Such deflector system employs elements of the impeller housing such that the removed snow contacts the internal elements of the housing only to the extent necessary to obtain the desired directional deflection. Particularly, the device provides for emission of snow across the entire length of the rotary impeller thus eliminating compaction of snow into an opening more restricted than the impeller length as it passes from the impeller through the housing immediately following contact with the impeller.

3,466,768
TRENCHING MACHINE HAVING EARTHWORKING MEMBERS EXTENDING TO PROGRESSIVELY GREATER DEPTHS
Henri Guinoiseau, Contigne, France, assignor to Societe Francaise de Construction de Bennes Automatiques Benoto, Paris, France
Filed Nov. 16, 1966, Ser. No. 594,778
Claims priority, application France, Nov. 16, 1965, 38,642; Oct. 14, 1966, 80,082
Int. Cl. E02f *5/02*
U.S. Cl. 37—101 **7 Claims**



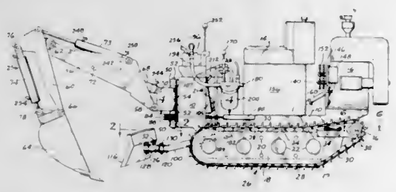
A trenching machine has a pair of spaced parallel lontudinally extending beams on which it slides on the ground. Earthworking members depend from the beams to progressively greater depths along the length of the beams. The first of these are tilling discs. Then come diggers that may have endless conveyors on their upper surfaces or a superposed rotary conveyor. A lateral diverter sends dirt from the digger to one side, and to opposite sides if there are two diverters for two diggers. A longitudinally extending screw conveyor keep dirt from spilling to the wrong side.

3,466,769
APPARATUS FOR EXCAVATING TRENCHES
Gabriel Novet, Caluire, France, assignor, by mesne assignments, to Stang Cofor Inc., Orange, Calif., a corporation of California
Filed Mar. 23, 1966, Ser. No. 536,672
Claims priority, application France, Mar. 24, 1965, 45,804
Int. Cl. E02f *5/02, 9/00*
U.S. Cl. 37—103 **1 Claim**



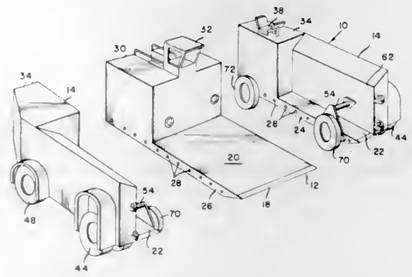
Apparatus for excavating trenches includes a pair of vertical piles each having a guide rib thereon, adapted to be driven in parallel relation into the soil; a vertically movable chassis provided with upper and lower grooved guide rollers yieldably engaging the guide ribs; a grab bucket suspended below said chassis; cable means for suspending said chassis; outwardly divergent rails forming an upward extension of the guide ribs above the soil; scrapers on the chassis disposed adjacent each lower roller engaging their respective guide ribs; and brushes on the chassis disposed adjacent each upper roller engaging their respective guide ribs; the chassis, grab bucket, scrapers and brushes being all of same width as the trench which is excavated by the apparatus.

3,466,770
SELF-PROPELLED EARTH EXCAVATING AND LEVELING APPARATUS
Frank W. Morrison, 784 NE. 14th St., Rte. 1, and Jerry E. Morrison, Rte. 1, both of The Dalles, Oreg. 97058
Filed Sept. 16, 1966, Ser. No. 579,869
Int. Cl. E02f *3/86;* **B66c** *23/54*
U.S. Cl. 37—117.5 **7 Claims**



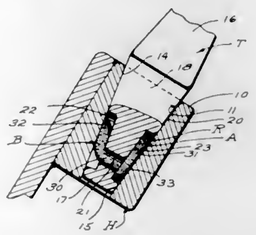
A pair of endless tracks is mounted one about each of a pair of laterally spaced elongated plates secured to a vehicle frame extension and driven by separate hydraulic motors coupled to drive sprockets at one end of each plate. The vehicle frame supports a backhoe unit pivotable about the axis of a vertical post by a cable reeved intermediate its ends about a pulley on the post and connected at its opposite ends to a pair of extensible hydraulic cylinders mounted horizontally on the frame. The frame also supports a dozer blade for vertical adjustment about a horizontal axis disposed transversely of the frame, for rotational adjustment about a horizontal axis disposed longitudinally of the frame and for rotational adjustment about a vertical axis.

3,466,771
EARTH MOVER VEHICLE SEPARABLE INTO PLURAL UNITS
Robert P. Wilson, Taylorsville, Calif. (P.O. Box 590, Cushing, Okla. 74023)
Filed Sept. 20, 1966, Ser. No. 580,644
Int. Cl. E02f *3/76, 3/96*
U.S. Cl. 37—126 **12 Claims**



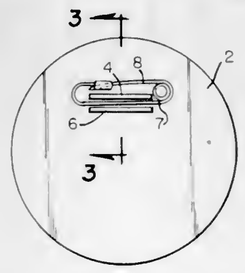
A load carrying earth moving vehicle for off-the-road operations divisible lengthwise into seperate units for transport between work locations with power means for driving the vehicle as a whole or for independently propelling its wheel carrying side units. The assembled vehicle provides a dirt box of large capacity, means for mounting earth working implements at the front end of the box, and means for raising and lowering the front end of the box to position the implements at earth working elevations to load the box.

3,466,772
RESILIENT RETAINING MEANS
Dwight M. Phillips, Placentia, Calif. (% Corona Forge Company, 14200 E. 6th St., Corona, Calif. 91720)
Continuation-in-part of application Ser. No. 375,439, June 16, 1964. This application May 25, 1967, Ser. No. 641,261
Int. Cl. E02f *9/28, 3/36;* **B25g** *3/10*
U.S. Cl. 37—142 **12 Claims**



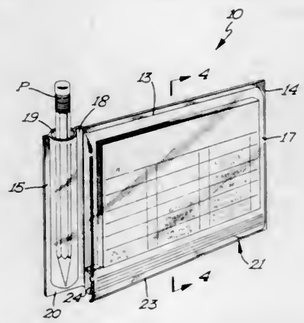
A resilient gripping means to yieldingly prevent relative movement between two relatively shiftable parts along a predetermined line of travel including an opening in one part substantially normal to said line of travel, an elongate rubber block engaged in said opening and having an ungular gripping portion projecting outwardly from said one part with its oblique end surface disposed outwardly and longitudinally in one direction along said line of travel, said gripping portion adapted to be engaged by the other part upon movement of said other part in the other direction along said line of travel relative to said first part whereby said end portion is bent over between said parts and said end surface establishes substantially flat pressure frictional engagement on said other part and yieldingly resists movement of said other part in said one direction relative to said one part.

3,466,773
PIN ATTACHMENT FOR A PLASTIC BADGE AND METHOD OF MAKING SAME
Milton Kessler, 6690 Harrington, Youngstown, Ohio 44512
Filed Dec. 15, 1966, Ser. No. 601,914
Int. Cl. A44c *3/00*
U.S. Cl. 40—1.5 **4 Claims**



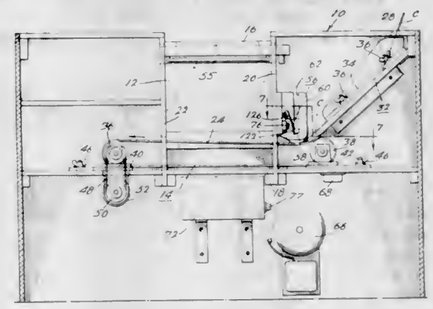
A plastic badge is molded with two integral upstanding parallel ridges on the back side thereof, between which is placed the shank or back portion of a safety pin, after which a hot iron, e.g., a soldering iron, is passed across the tops of the two ridges to melt them down so that they merge with each other and cover the top of the shank of the pin, thus fastening the pin to the badge so that the assembled unit can be worn by pinning it to the wearer's clothing.

3,466,774
HOLDER DEVICE FOR SERVICE RECORDS FOR A MACHINE
Sven C. Borresen, Tyler, Minn. 56178
Filed June 8, 1967, Ser. No. 644,611
Int. Cl. G09f *3/20, 1/10, 7/18*
U.S. Cl. 40—10 **3 Claims**



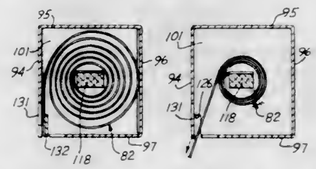
A holder device attachable to a machine and containing service records for the machine. The holder device comprised of a transparent front panel and a rear panel heat sealed together along three edge portions thereof and a closure fastener for closing the unsealed edges. A narrow pocket defined between the panels for containing a pencil and releasable mounting means on the rear panel for mounting the holder device on a machine, such as a tractor, to prominently display the service records to a user.

3,466,775
CARD-LIKE OBJECT WITH INVISIBLE INDICIA AND APPARATUS FOR DETECTING AND DISPLAYING SAME
Melville H. Smith, 237 Rogers Lane, Wallingford, Pa. 19086
Filed June 2, 1966, Ser. No. 554,713
Int. Cl. G09f *11/14*
U.S. Cl. 40—52 **2 Claims**



A secret-message detecting and display apparatus usable for commercial promotional activities in which cards are distributed to prospective customers, few of which are winning cards having both electrically-conductive indicia and normally-invisible ultraviolet-responsive indicia thereon. Conveyor means receive the cards and move them along a predetermined path where conductivity-detecting means sense those cards having electrically-conductive portions and produce electrical control signals for arresting the winning card in a position in which it can be viewed and where it is irradiated with ultraviolet light to reveal its secret message. Preferably, the control signals simultaneously operate an audible alarm for calling attention to the presence of the winning card.

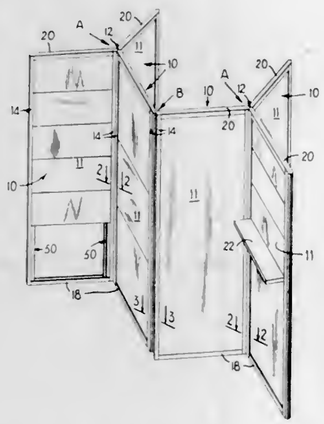
3,466,776
MOVING MESSAGE SIGN
Richard E. Paige, New York, N.Y., assignor to Aranar Marketing Services, Inc., Chicago, Ill., a corporation of Illinois
Filed Dec. 14, 1967, Ser. No. 690,662
Int. Cl. G09f *11/29;* **E06b** *9/08*
U.S. Cl. 40—85 **18 Claims**



A moving message sign which, according to a first embodiment, employs a message-bearing member which is wound on a spring-loaded roller and is normally concealed within an appropriately decorated box. The message-bearing member is pulled down to expose the message or other indicia printed or otherwise provided on it. Upon being released, the message-bearing member is automatically rewound on the spring-loaded roller so that it, once again, is concealed. In a second embodiment, the

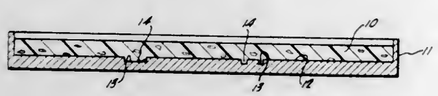
message-bearing member of the moving message sign functions both as a means for displaying a message and is the spring mechanism for rewinding it. In this case, the message-bearing member is formed from a springy material which normally is loosely rolled on a fixed support member and is tightened about the fixed support member when it is pulled down out of the box to expose the message or other indicia provided on it. Upon being released, the message-bearing member functions as the spring mechanism for rewinding it into the box.

3,466,777
DISPLAY APPARATUS
John C. Wistrand and Alfred O. Scholze, New Canaan, Conn., assignors to Columbia Broadcasting System, Inc., New York, N.Y., a corporation of New York
Filed Mar. 30, 1967, Ser. No. 627,037
Int. Cl. G09f *7/00, 7/18;* **E04b** *1/343*
U.S. Cl. 40—125 **6 Claims**



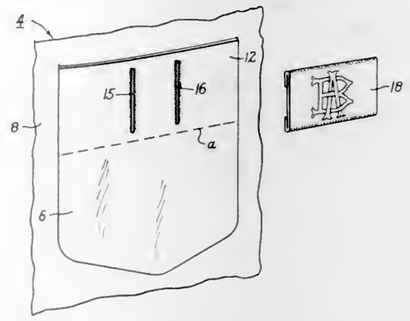
Display apparatus of the type used to present product information and to exhibit product samples at trade shows, at conventions, in company sales offices and the like composed of a plurality of interconnected panels supported and interlocked by means of mounting or frame members extending along and joined to the side margins of the panels and coupling members removably received by elements of the mounting members. The mounting members include formations arranged to encompass and hold the panel and one or more coupling flange arrangements formed in such a way as to receive a portion of the coupling member and to coact with it to provide interconnections between adjacent panels.

3,466,778
SIGNS
William R. Varnell and Mance R. Mitchell, San Antonio, Tex., assignors to Concrete Development Corporation, San Antonio, Tex., a corporation of Texas
Filed Feb. 1, 1965, Ser. No. 429,385
Int. Cl. G09f *7/16, 7/00*
U.S. Cl. 40—136 **2 Claims**



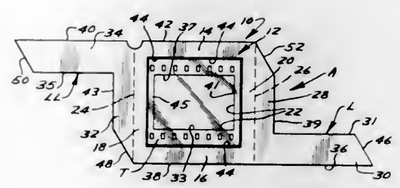
An integrally formed concrete sign and sign context is made from polyester concrete by mixing polyester resin with aggregate in the amount of about 40% to about 95% aggregate of the total mixture by weight. The mixture is placed in a mold to form a body having a major plane with a plurality of laterally spaced openings extending entirely through the body in a direction transverse to the major plane of the body, and the mixture is allowed to cure.

3,466,779
MEANS FOR MOUNTING A MONOGRAM ON A GARMENT
Robert D. Zucker, Roslyn, and George G. Cooper, Roslyn Heights, N.Y., assignors to Van Baalen Heilbrun & Co. Inc., New York, N.Y., a corporation of New York
Filed Aug. 30, 1967, Ser. No. 664,564
Int. Cl. G09f *3/08, 7/08*
U.S. Cl. 40—129 **2 Claims**



A means for mounting a monogrammed label or the like in the area of the breast pocket of a garment, such area providing two plies of material, the means, in particular, including the provision of a pair of narrow, vertical slits in the outer of the two plies. The lateral edges of the label is inserted through the slits and are frictionally held between the plies of material causing the monogram portion of the label to overlie the outer ply between the slits where it is easily visible.

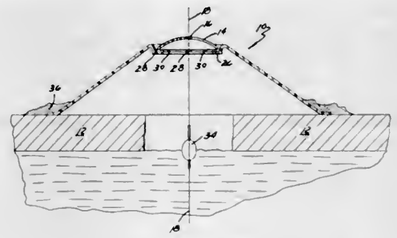
3,466,780
FRAME MOUNT FOR A FILM TRANSPARENCY
Norman C. Reid, Crystal, Minn., assignor to Pako Corporation, Minneapolis, Minn., a corporation of Minnesota
Filed Oct. 6, 1967, Ser. No. 673,382
Int. Cl. G09f *1/12*
U.S. Cl. 40—158 **6 Claims**



The disclosure relates to a frame mount for a film transparency and includes a primary frame portion having spaced opposed side members, said members defining a opening. A secondary frame portion is provided

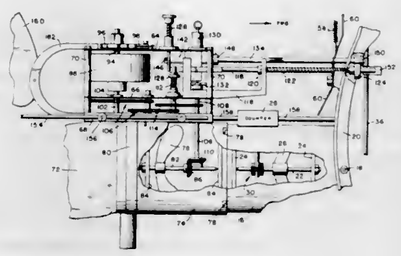
which is hingedly connected at opposed edges to opposed edges of the primary frame portion. The secondary frame portion is separated to thereby divide the same into two portions which when folded and secured upon the primary frame portion form the completed secondary frame portion and also the mount, the secondary frame portions bypassing a member holding a film transparency upon and centrally of the base portion. The film transparency is secured between the primary frame portion and the secondary frame portion.

3,466,781
ICE FISHING ACCESSORY
Merritt J. Nelson, 2142 Griggs SE., Grand Rapids, Mich. 49506, and Frank Korany, 3976 Cornell, Dearborn, Mich. 48125
Filed July 8, 1966, Ser. No. 578,909
Int. Cl. A01k *97/00*
U.S. Cl. 43—4 **7 Claims**



An apparatus for protectively covering an ice fishing hole while permitting fishing through the same, including an annular shroud and a dome detachably carried atop the shroud to substantially close its central opening, such dome having a relatively small opening therein for the fishing line, and a slot communicating with such opening and extending outwardly to the edge of the dome, for facilitating entry of the line through the opening, and with ventilation openings defined between the dome and the shroud for perventing fogging of the dome.

3,466,782
STATIONARY PLANKTON SAMPLER
Charles J. Stuart, Jr., Chula Vista, Calif., assignor to the United States of America as represented by the Secretary of the Navy
Filed Oct. 19, 1967, Ser. No. 677,006
Int. Cl. A01k *73/00;* **G01w** *1/00*
U.S. Cl. 43—4 **10 Claims**



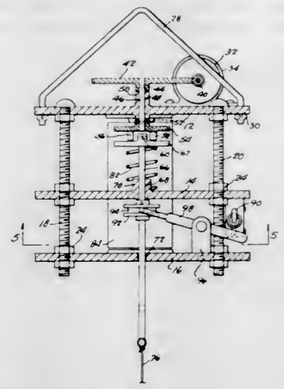
A plankton sampler operated in a stationary condition within the ocean. The sampler includes a means for propelling a selected amount of ocean water through a plankton bag. The propelling means is driven by a power unit and several mechanisms are provided for starting and stopping the power unit so that the plankton bag receives the selected amount of water. The start and stop mechanisms are individually operated by a respective messenger which is dropped on a cable from a surface ship.

3,466,783
FISHING ROD
Lawrence W. Priebe, Jr., Columbia, S.C., assignor to Columbia Products Company, Columbia, S.C., a corporation of South Carolina
Filed Sept. 11, 1967, Ser. No. 666,842
Int. Cl. A01k *87/06, 87/00*
U.S. Cl. 43—18 **7 Claims**



The fishing rod is made to include an integrated handle portion and tapered blade portion. The handle portion comprises a sheath made of the same glass fiber reinforced plastic material as the blade portion and within the sheath is disposed either a solid core or a hollowed core of foam material. The handle portion is shaped to be of larger diametric extent than the blade portion to receive a reel seat assembly.

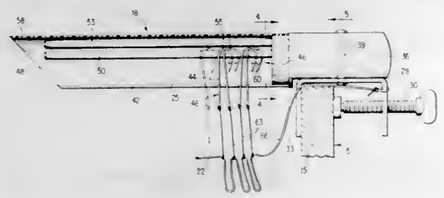
3,466,784
FISHING LINE TWIRLER
Oscar Bonner, 15090 Mark Twain, Detroit, Mich. 48227
Filed Nov. 17, 1967, Ser. No. 683,947
Int. Cl. A01k *85/06, 97/00*
U.S. Cl. 43—19.2 **10 Claims**



A line twirler for rotating and jiggling fishbait, to simulate the bait's natural movement. The twirling mechanism is held by a fishing rod, and includes a battery-operated motor, which, through a gear arrangement, rotates a shaft holding the fishing line. A clutch is provided on the shaft for disengaging the shaft from the drive motor, upon a downward pull on the shaft exerted by a hooked fish. As an additional safety feature, a cam is

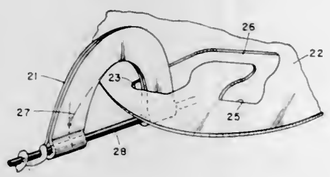
fixed to the shaft, which, when the shaft is moved downwardly, causes a cam follower to pivot and open a switch disconnecting the drive motor.

3,466,785
TROTLINE DISPENSER
Alvin L. Shook, 301 S. Pearl, Salem, Ill. 62881
Filed July 14, 1967, Ser. No. 653,516
Int. Cl. A01k *91/00*
U.S. Cl. 43—27.4 **3 Claims**



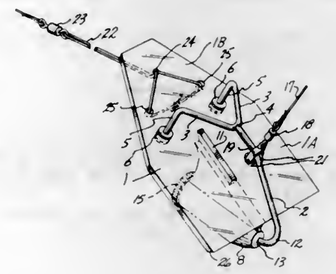
A trotline holder and dispenser composed of a body portion removably clamped to a support, such as the transom of a boat, for free movement about a vertical axis and having an end from which a pair of coextensive horizontal shafts project in vertical overlying relation with the lower shaft slidably supporting the bend portions of hooks on spaced stagings of the trotline and the upper shaft overlying the bend portions. A tubular cover coaxially encircles the shafts and extends from the body end wall and has a downwardly angled cut-off, open outer end providing a hood projecting axially beyond the outer ends of the shafts above the upper shaft and an unobstructed path below the shaft ends for the free falling off of the hooks from the outer end of the lower shaft.

3,466,786
SPINNING BAITS
Alun Kynric Lewis, Penrallt, Llysfaen, Glamorganshire, Wales
Filed July 12, 1967, Ser. No. 652,780
Claims priority, application Great Britain, July 14, 1966, 31,767/66
Int. Cl. A01k *91/00, 85/00, 83/00*
U.S. Cl. 43—42.17 **2 Claims**



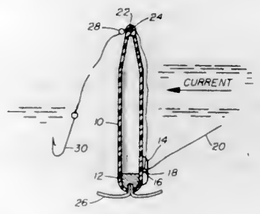
A spoon bait for fishing in which means are provided for causing it to selectively rotate clockwise or anti-clockwise. The bait includes a spoon member, having a forwardly facing, substantially crescent shaped hole at the forward end thereof, and a drag link. The hole is symmetrically positioned relative to the Equilibrium Line of the spoon member. The drag link passes through the hole and engages the forward part of the hole in either side of the Equilibrium Line. Means are included to hinder or prevent free movement of the drag link from side to side in the hole.

3,466,787
DYNAMIC DEPRESSOR FOR FISHING LINE
Oren J. Collins, 1313 27th St., Anacortes, Wash. 98221
Filed July 3, 1967, Ser. No. 650,752
Int. Cl. A01k *91/04, 95/00*
U.S. Cl. 43—43.13 **7 Claims**



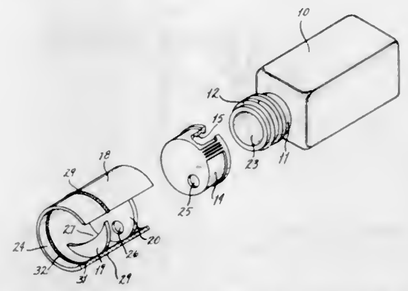
A fishing line can be slidably attached to the stem of a Y-shaped rod, the bifurcations of which have legs secured to the central portion, fore and aft, of a plate. The rear portion of the plate tapers rearwardly from its central portion and such rear portion is apertured to receive and anchor a fish hook leader. The stem of the Y-shaped rod curves downwardly around the leading edge of the plate and is attached to the forward portion of a container secured beneath the plate in a position with its axis inclined rearwardly and downwardly relative to the plate. Ballast in the container, such as lead shot, is shiftable forward when the plate is tilted downward and aft when the plate is tilted upward to vary the location of the center of gravity of the depressor.

3,466,788
FISHING SINKER
Mardell K. Potter, 325 S. Independence, Sapulpa, Okla. 74066
Filed Feb. 17, 1967, Ser. No. 616,940
Int. Cl. A01k *95/00, 97/00*
U.S. Cl. 43—44.96 **5 Claims**



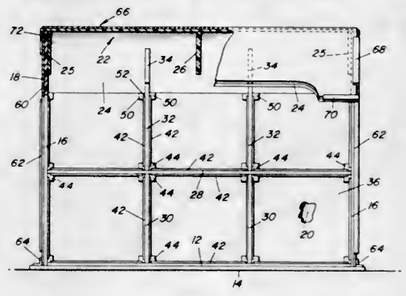
A fishing sinker having a weighted end and a buoyant end. A small housing is provided on the side of the elongated body near the weighted end with a transverse opening through the housing to receive the fishing line. A slot communicates with the opening in the housing so that the line may be inserted through the slot into the opening and removed therefrom. At the end of a buoyant portion is an eyelet through which the line passes after being received within the opening of the housing. Extending substantially transversely radially relative to the longitudinal axis of the body from an embedded position adjacent the weighted end are a plurality of flexible wire members which serve to contact obstructions so as to hold the sinker in moving water. After being cast, the line may be removed from the opening in the housing by a quick jerk.

3,466,789
RODENTICIDE DISPENSER
Morley R. Kare, Raleigh, N.C., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware
Filed July 25, 1967, Ser. No. 655,945
Int. Cl. A01m *25/00;* **B67d** *5/64;* **A01k** *7/02*
U.S. Cl. 43—131 **6 Claims**



A substantially tubular insecticide reservoir having an adjustable valve containing dispensing cap and a hood member enclosing an insecticide animal trough.

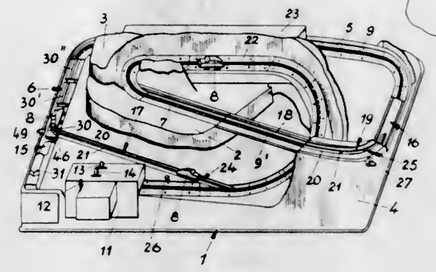
3,466,790
TOY PLAYHOUSE WITH CHANGEABLE INSERTS
Donald E. Rady, 1801 Beatrice Drive, Orlando, Fla. 32810
Filed Sept. 17, 1965, Ser. No. 488,106
Int. Cl. A63h *33/16*
U.S. Cl. 46—21 **3 Claims**



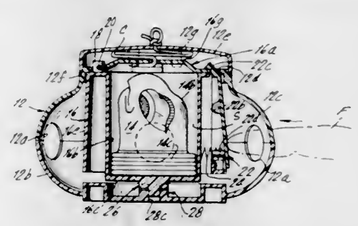
A prefabricated playhouse having a bottom wall, end walls, a back wall, an open front, and a detachable top wall providing a roof unit. A horizontal partition is supported between the end walls and provides upper and lower stories. Complemental vertical partitions convert the interior into rooms for selective decoration. The surfaces of all walls and partitions are normally bare. Upper and lower strips of molding are rabbeted to provide keyways. The upper members constitute ceiling moldings and the lower strips constitute baseboards. The accessible keyways receive removable inserts or panels representing wallpaper and floor coverings.

3,466,791
TOY VEHICLES COMBINED WITH PLURAL TRACKS AND LOADING AND UNLOADING MEANS
Alfred Einfalt, Nuremberg, Germany, assignor to Gebruder Einfalt Blechspielwarenfabrik, Nuremberg, Germany, a firm of Germany
Filed Aug. 3, 1967, Ser. No. 658,165
Claims priority, application Germany, Feb. 8, 1967, E 33,358
Int. Cl. A63h *33/30*
U.S. Cl. 46—40 **15 Claims**

A toy vehicle track set comprising two different tracks for toy vehicles having driving pins projecting from their undersides and engaging rotating coil springs set into the tracks. Carrier vehicles are carried by one track which extends between a loading and an unloading station. Transportable vehicles which can be loaded onto the carrier vehicles are carried by the other track which extends between an access ramp and an exit ramp associated respectively with the loading and unloading stations.



3,466,792
TOY WITH RANDOMLY RELEASED PART
Adolph Eddy Goldfarb, 7427 Varna Ave., North Hollywood, Calif. 91605
Filed May 8, 1967, Ser. No. 636,752
Int. Cl. A63h *13/16*
U.S. Cl. 46—146 **5 Claims**

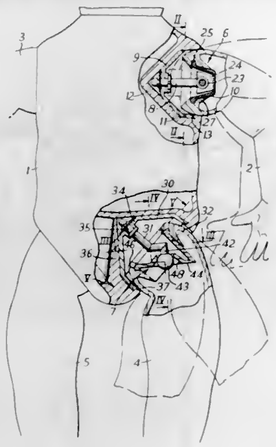


A toy having a housing and a hollow internal member rotatable within the housing containing a compressed springy part in a stored condition under a latched cover, and wherein the housing has operative openings therein through one of which openings the user of the toy can poke a finger and cause the release of the springy part. By merely rotating the internal member a different operative opening is selected, on a strictly random basis, as the effective opening for causing release of the stored part.

3,466,793
DOLL HAVING UNIVERSALLY MOVABLE LIMBS
William A. G. Pugh, Oadby, and Stuart F. Moore, Glenfield, England, assignors to General Mills Inc., a corporation of Delaware
Filed May 11, 1965, Ser. No. 454,806
Int. Cl. A63h *3/20*
U.S. Cl. 46—161 **5 Claims**

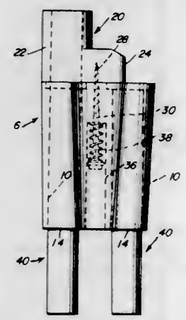
A doll with limbs which are movable in simulation of human arms and legs. They are each connected to a stalk which is rotatably fastened in a socket in the torso, their ends are a "floating" fit in these sockets, and the limbs are arranged to fall into a naturalistic condition of repose. Each arm is pivoted to the outer end of its stalk, while

each leg has a loose, universally rotatable connection to a stalk which is elbowed at its end. Abutment means are



provided to limit the extent of swing of the limbs both alongside the torso and outwards therefrom.

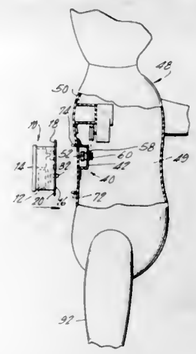
3,466,794
SELECTIVE FOWL CALLER
Vernon M. Pritchard, 201 Broadmoor Ave., Houma, La. 70360, and Marvin L. McBroom, Box 201, Des Allemands, La. 70030
Filed Aug. 22, 1967, Ser. No. 662,498
Int. Cl. A63h *5/00, 33/00*
U.S. Cl. 46—177 **9 Claims**



This caller comprises a body capable of being held in one hand. Two or more parallel passages serve to hold reed-equipped sound emitting callers. A rotary mouthpiece is selectively registrable with inward ends of the passages. The user can insert and use optional callers for birds, ducks, fowl generally speaking, and animals at will.

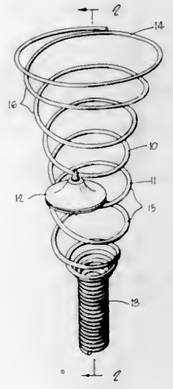
3,466,795
ACTIVATING MEANS COMBINATION FOR A DOLL
Abraham Friedman, 2205 E. 27th St., Brooklyn, N.Y. 11229
Filed Mar. 21, 1967, Ser. No. 624,883
Int. Cl. A63h *3/00, 33/26*
U.S. Cl. 46—239 **2 Claims**

This invention is concerned with a novel activating means combination for a doll. Briefly, the invention contemplates providing a first activating means outside of the doll and separate therefrom, which first activating means will actuate second activating means contained inside the



doll, thereby causing the doll to talk or move the legs, or arms, or the like.

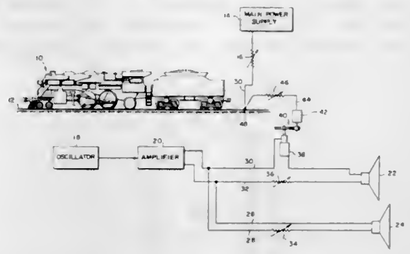
3,466,796
AMUSEMENT DEVICE
Abraham Jacob Greenblatt, Dallas, Tex., assignor to Dell Plastics Company, Inc., Brooklyn, N.Y., a corporation of New York
Filed June 26, 1967, Ser. No. 648,802
Int. Cl. A63h *33/26*
U.S. Cl. 46—241 **9 Claims**



This application discloses an amusement device or the like in the form of a spiral of wire and a spinner which travels along the spiral and reverses at each end due to the spacing of the courses of the spiral. The spinner adheres to the spiral due to a magnet therein. In a preferred embodiment, the spiral of wire may have a handle formed on one end.

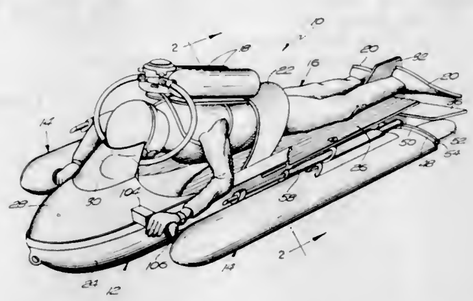
3,466,797
SOUND SYSTEM FOR MODEL RAILROAD
Borje Per Uno Hellsund, 54 Nob Hill Road, New London, Conn. 06320
Filed June 23, 1967, Ser. No. 648,413
Int. Cl. A63h *19/14;* **G10k** *9/12*
U.S. Cl. 46—232 **5 Claims**

The sound of a steam locomotive is produced for a model railroad set by means of an oscillator providing a fixed frequency signal, an amplifier, a rotary switch and a loudspeaker. The rotary switch is driven by a motor connected to the main power supply which operates the model



train and upon energization the amplified oscillator signal is interrupted at a rate synchronized with the train speed producing a realistic puffing sound.

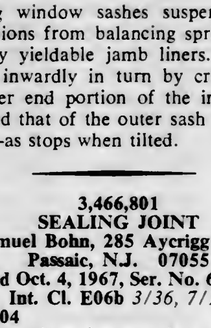
3,466,798
TOY VESSEL FOR USE IN WATER
Samuel F. Speers, North Attleboro, Mass., Norman L. Jacques, Pawtucket, and Anthony C. Guglielmi, Providence, R.I., and Leonard Gray, Sharon, Mass., assignors to Hasbro Industries, Inc., Pawtucket, R.I., a corporation of Rhode Island
Filed Oct. 10, 1966, Ser. No. 585,382
Int. Cl. B63c *11/46;* **A63b** *35/12*
U.S. Cl. 46—243 **10 Claims**



A toy vessel for use in water having an elongated, hollow hull in the rear portion of which a motor is sealed in waterproof relation, a propeller being interconnected to the motor for producing forward movement of the toy in the water, and hollow pontoons located adjacent to the hull for maintaining the hull on the surface of the water, a toy figure that is substantially hollow in construction being securable to the upper surface of the hull and cooperating with the hollow pontoons to maintain the hull in the normal position on the surface of the water and providing sufficient buoyancy for the hull to prevent sinking thereof when the hull is permitted to submerge in an inclined dive upon filling of the pontoons with water.

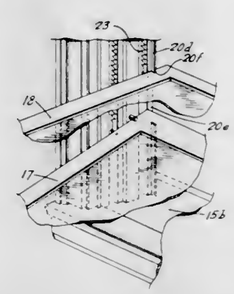
3,466,799
PROTECTIVE STRUCTURE FOR ROSE TREES AND THE LIKE
Vernard McComb Stilson, 199 W. Pearl St., Coldwater, Mich. 49036
Filed Dec. 22, 1966, Ser. No. 604,026
Int. Cl. A01g *13/02;* **F16b** *2/02, 2/20*
U.S. Cl. 47—21 **7 Claims**

A protective structure for plants, particularly suitable for use with long stemmed plants having primary foliage located upon the stem upper end. The covering consisting of a plurality of cylindrical segment portions adapted to encompass the stem upon being interconnected together, and bulbous foliage encompassing portions adapted to



be affixed to the stem encompassing segments for protection of the foliage. The components of the covering are formed of a thermal insulating material.

3,466,800
TILTABLE WINDOW CONSTRUCTION
Michael J. Nardulli, 7959 W. Grand Ave., Elmwood Park, Ill. 60635
Filed July 21, 1967, Ser. No. 655,199
Int. Cl. E05d *15/22*
U.S. Cl. 49—174 **3 Claims**

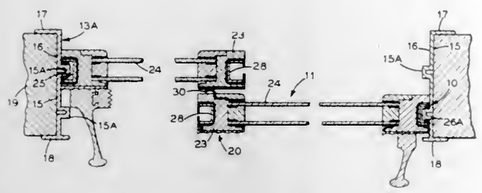


Double-hung window sashes suspended above their lower end portions from balancing springs, and engaged at the sides by yieldable jamb liners. Inner and outer sashes tiltable inwardly in turn by crowding the liners apart, the lower end portion of the inner sash meeting liner studs—and that of the outer sash the upper ends of liner cut-outs—as stops when tilted.

3,466,801
SEALING JOINT
Samuel Bohn, 285 Aycrigg Ave., Passaic, N.J. 07055
Filed Oct. 4, 1967, Ser. No. 672,779
Int. Cl. E06b *3/36, 7/16*
U.S. Cl. 49—404 **7 Claims**

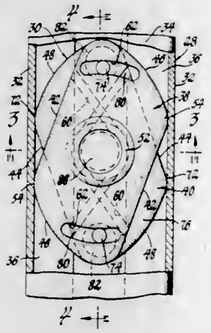
This invention relates in general to a sealing joint and more specifically to a sealing joint adapted for use on a sliding closure construction that is particularly adapted for use in cabinets, such as cold storage cabinet, refrigerators and the like, and also as a sealing joint for use in the construction of walls, ceiling, and roof panels of large refrigerators when adjacent panel portions thereof are assembled to each other by means of a tongue and groove connection. In a construction including a first member having a projecting tongue and a second member

having a complementary groove adapted to receive the tongue of the first member, the seal of the joint therebetween is attained by a resilient and flexible membrane



or flap extending normal to the sides of the groove and generally transversely of the groove opening which is free to flex inwardly of the groove when the tongue of the second member is received within the groove.

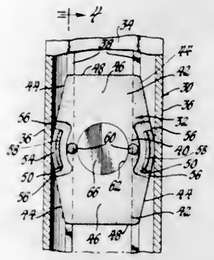
3,466,802
SLIDABLE GUIDE ASSEMBLY
Juozas Doveinis, Detroit, Edmond R. Gionet, Warren, and William J. Wittenberg, Troy, Mich., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed June 17, 1968, Ser. No. 737,696
Int. Cl. E05d *15/16*
U.S. Cl. 49—428 **5 Claims**



A vehicle body window is guided by spaced guide channels and pairs of slide assemblies movable within the channels. Each slide assembly, in one embodiment of the invention, includes elongated slide members having diagonal bearing surfaces on their side walls and outer base walls. A combined torsion and compression spring biases the slide members rotatably relative to each other to hold the bearing surfaces on the side walls of the members in engagement with the side walls of the channel and hold the bearing surfaces on the base walls of the members in engagement with the base wall of the channel. In another embodiment, the slide members are provided with integral flexible webs which rotatably bias each member relative to the other and bearing surfaces on the outer base walls of the members engage the base walls of the channel.

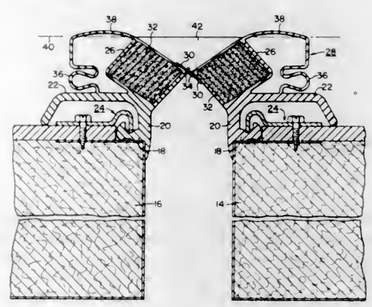
3,466,803
GUIDE ARRANGEMENT
Marvin A. Packett, Detroit, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed May 28, 1968, Ser. No. 732,575
Int. Cl. E05d *15/16*
U.S. Cl. 49—441 **6 Claims**

A guide channel includes a pair of arcuate side walls and a pair of flat base walls, one being longitudinally slotted. A slide member fits within the channel and includes a main body portion secured to the window and end portions, each including pairs of converging side and base walls which converge with respect to each other. Ribs on the main body portion have walls which form continuations of the side walls of the end portions, with the center portions of these ribs engaging the side walls of



the channel. Deflectable extensions of the ribs also engage the side walls and the main body portion includes abutments to limit rotation of the slide member about an axis longitudinally of the channel. The converging pairs of walls of the end portions limit rotation of the slide member about axes transverse of the pairs of walls of the channel.

3,466,804
DOOR GASKET FOR FRENCH DOOR REFRIGERATORS
Anthony J. Swaneck, Jr., Columbus, Ohio, assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Oct. 13, 1966, Ser. No. 586,554
Int. Cl. F25d *23/02*
U.S. Cl. 49—483 **5 Claims**

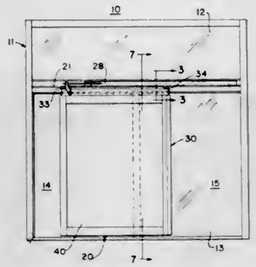


French door refrigerator gaskets for the meeting edges of the doors in which the balloon sections of the gaskets disposed to approach each other carry flaps at their extremities, each of the flaps including a substantially reduced thickness portion at the junction of the flap and extremity to serve as hinging axis for flexing of the flaps as a whole.

3,466,805
BREAKAWAY FOR A SLIDING CLOSURE
Dan C. Muessel, Stamford, Conn., assignor to American Metal Climax, Inc., New York, N.Y., a corporation of New York
Filed Aug. 25, 1967, Ser. No. 663,282
Int. Cl. E05c *15/02*
U.S. Cl. 49—141 **4 Claims**

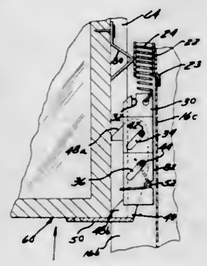
There is provided a panic breakaway for a sliding door, such as would be used for an automatic entranceway. The panic breakaway is defined by a door panel

pivoted on a door carriage so as to swing outwardly with respect thereof. The door carriage in turn is provided with suitable rollers slideable along the tracks to provide



for the sliding movement of the closure. Thus the door panel may be pivoted outward, such as would result during a panic situation, throughout the sliding travel of the door assembly.

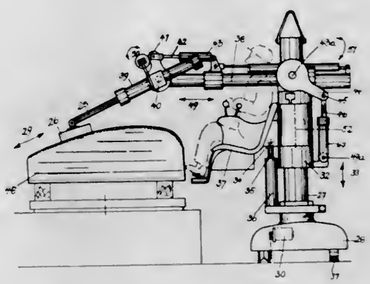
3,466,806
BALANCE STRUCTURE FOR WINDOWS AND THE LIKE
Claude Teggelaar and William T. De Bruyn, Grand Rapids, Mich., assignors, by mesne assignments, to Grand Rapids Hardware Manufacturing Co., Grand Rapids, Mich., a corporation of Michigan
Filed Nov. 21, 1966, Ser. No. 595,804
Int. Cl. E05d *13/10*
U.S. Cl. 49—445 **42 Claims**



The balance structure is for double-hung windows, and includes a pair of helical tension springs which suspend the window member within opposed tracks of a window casing, with interposition of a braking member to frictionally engage the tracks while the window member is at rest, said engagement being automatically nullified incident to manual raising and lowering of the window member.

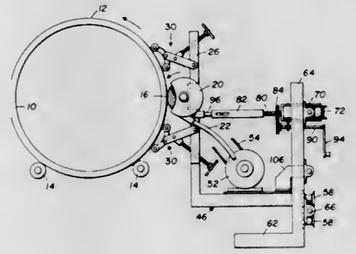
3,466,807
DEVICE FOR MACHINING IRREGULARLY CURVED SURFACES
Eberhard Haas, Heilbronn (Neckar), Germany, assignor to August Lapple GmbH. & Co., Heilbronn (Neckar), Germany, a company
Filed Sept. 1, 1966, Ser. No. 576,584
Claims priority, application Germany, Sept. 3, 1965, L 51,547
Int. Cl. B24b *19/00*
U.S. Cl. 51—60 **10 Claims**

A grinding tool is carried on the end of a piston rod the piston of which is pivoted on a horizontally movable sleeve to which is also pivoted another piston whose piston rod is pivoted to the first piston. Another piston has its rod connected to the first piston and is pivoted on a second sleeve mounted above the first sleeve, the second sleeve being also movable horizontally. Both sleeves are mounted on threaded spindles carried by a vertically movable frame, which in turn is mounted on threaded vertical spindles carried by a stationary frame, and all driven by a single motor.



In a modified form, the grinding tool is supported from a frame movable on wheels having a seat for an operator. In a further form, a grinding tool is carried by a frame mounted on wheels running on rails on a main frame, this main frame being shiftable on rails.

3,466,808
GRINDER FOR TRUING AND SMOOTHING THE TIRES OF THE MAMMOTH ROTARY KILNS USED IN THE MANUFACTURE OF CEMENT AND SIMILAR PURPOSES
Alfred W. Mess, Box 14, Le Claire, Iowa 52753
Continuation-in-part of application Ser. No. 347,409, Feb. 26, 1964. This application July 21, 1967, Ser. No. 655,238
Int. Cl. B24b *19/06*
U.S. Cl. 51—99 **16 Claims**



An improved supporting structure for an abrasive grinding wheel that enables the wheel to be used to grind the outer surface of a large circular or cylindrical object as the object rotates about an axis that is not a fixed central axis.

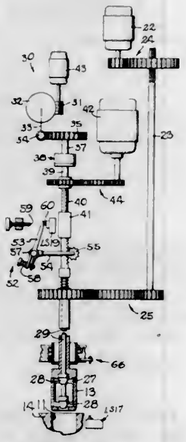
ERRATUM

For Class 51—165 see:
Patent No. 3,466,976

3,466,809
MACHINE TOOL TRAVERSE CONTROL
Mark R. Estabrook, Rockford, Ill., assignor to Barnes Drill Co., Rockford, Ill., a corporation of Illinois
Filed June 7, 1967, Ser. No. 644,303
Int. Cl. B24b *33/02, 49/16, 51/00*
U.S. Cl. 51—165 **14 Claims**

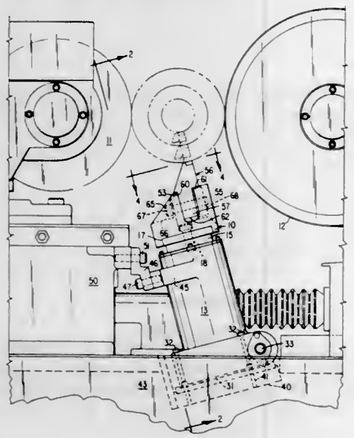
An automatic honing machine including a rotating and reciprocating tool carrying a plurality of honing stones that are fed progressively outwardly within a work bore

to expand the tool and hone the bore. With the tool collapsed, the stones are first fed outwardly at a relatively rapid rate by a weak electric motor having an armature connected in series with a lamp bulb with a tungsten filament having a high positive temperature coefficient such that the voltage drop across the resistor increases in relation to the current drawn by the armature. When the stones engage the bore wall, the motor stalls out and the



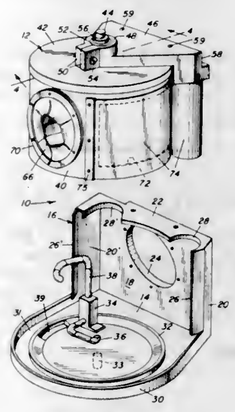
resulting current increase is used as a signal to reduce the feed speed and increase feed torque for the honing operation, the changeover being accomplished either by shifting to a separate feed motor or modifying the effective operating characteristics of the first motor. To reduce the initial feed rate prior to engagement of the stones with the wall, a preliminary load is introduced into the expansion mechanism as the stones approach the wall.

3,466,810
WORK REST STRUCTURE FOR CENTERLESS GRINDERS
Robert L. Schaller, Camillus, N.Y., assignor to Sundstrand Corporation, Belvidere, Ill., a corporation of Illinois
Filed Mar. 30, 1967, Ser. No. 631,568
Int. Cl. B24b *41/06, 5/18*
U.S. Cl. 51—238 **4 Claims**



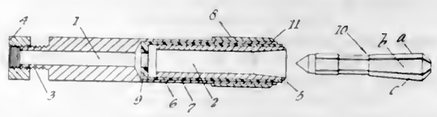
Work engaging blade carried by a support movable vertically on a linear path inclined toward the regulating wheel. The support is formed with a slot extending lengthwise of the workpiece. The blade is formed with shoulders engaging the top edges at the sides of the slot. The arrangement is such that one blade will accommodate workpieces varying in diameter over a large range.

3,466,811
TOP SUPPORTED COOLANT HOOD
Jack M. Suddarth, Muskogee, Okla., assignor to Coburn Manufacturing Company, Inc., Muskogee, Okla., a corporation of Oklahoma
Filed Oct. 28, 1966, Ser. No. 590,396
Int. Cl. B24b *55/02, 55/04*
U.S. Cl 51—266 **5 Claims**



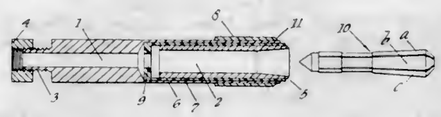
A housing for enclosing a grinding chamber including a generally horizontal oil pan having a peripheral flange and an inwardly spaced ridge defining an annular chamber, support means extending upwardly from the oil pan, a cover rotatably supported from above by the support means, and a skirt depending from the top cover having a lower end disposed in the annular chamber.

3,466,812
HOLDERS FOR GEM STONES
Alec Leibowitz, London, England, assignor to Spectrum Diamonds (Proprietary) Limited, Johannesburg, Transvaal, Republic of South Africa, an African company
Filed Jan. 23, 1967, Ser. No. 611,055
Claims priority, application Republic of South Africa, Feb. 2, 1966, 66/624
Int. Cl. B24b *9/16*
U.S. Cl. 51—229 **7 Claims**



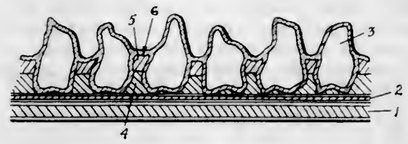
A holder for supporting a gem stone on a polishing wheel comprising an elongated metal body provided with a compartment at its front end for retaining a gem carrying press-pot, an outer polishing guide ring, and an insulating sleeve in the body for electrically insulating the outer ring from a press-pot held in the compartment.

3,466,813
HOLDERS FOR GEM STONES
Alec Leibowitz, Marylebone, London, England, assignor to Spectrum Diamonds (Proprietary) Limited, Johannesburg, Transvaal, Republic of South Africa, a company of South Africa
Filed Jan. 23, 1967, Ser. No. 611,093
Claims priority, application Republic of South Africa, Feb. 2, 1966, 66/624
Int. Cl. B23p *5/00;* **B24b** *9/16*
U.S. Cl. 51—229 **4 Claims**



A holder for supporting a gem stone on a polishing wheel comprising an elongate metal body provided with a compartment at its front end for retaining a gem carrying press-pot and an outer sliding ring which can be advanced along the body for use as a polishing stop.

3,466,814
PHENOLIC RESIN BONDED ABRASIVE SHEETS AND PROCESS OF MAKING THE SAME
Hermann Singer, Hamburg, Hermann Delius, Ahrensburg, Holstein, and Johann Kühr, Harksheide, near Hamburg, Germany, assignors to Reichhold Chemicals, Inc., White Plains, N.Y.
Filed July 2, 1965, Ser. No. 469,066
Claims priority, application Germany, July 28, 1964, R 28,861 and R 38,475
Int. Cl. B24d *11/00*
U.S. Cl. 51—297 **9 Claims**

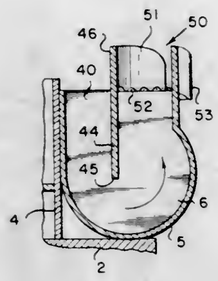


A phenolic resin bonded abrasive sheet consisting of a pre-sized backing material that received a finishing treatment and a layer of abrasive granules thereon, characterized in that it contains a synthetic resin intermediate layer between the backing fabric and the phenolic resin binder layer made up of a hardened mixture, consisting of:

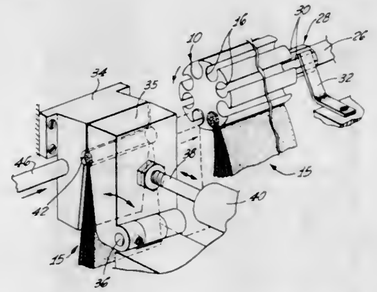
(a) epoxy resins having as a basis unmodified bisphenol A;
(b) at least one epoxy resin having as a basis bisphenol A, which has been internally modified by reaction with castor oil and
(c) curing agent for said intermediate layer, said phenolic resin consisting essentially of a phenol formaldehyde condensation product.

3,466,815
VIBRATORY METHOD OF TREATING ARTICLES
Gunther W. Balz, Kalamazoo, Mich., assignor to Roto-Finish Company, Kalamazoo, Mich., a corporation of Michigan
Filed May 29, 1967, Ser. No. 641,762
Int. Cl. B24b *1/00, 31/06*
U.S. Cl. 51—313 **8 Claims**

Novel method for treating articles, e.g., finishing metal parts, by introducing the articles into a treating zone, if desired together with treating material, moving the articles in an orbital path and, while continuing orbital movement, subjecting the articles to periods of increased and decreased velocity of linear processional motion in a direction substantially perpendicular to the plane of orbital motion, thereby facilitating control of dwell time within the treating zone and facilitating discharge of articles from the treating zone.



3,466,816
METHOD OF FABRICATING AN ABRASIVE WHEEL
Aleck Block, Los Angeles, Calif., assignor to Merit Products, Inc., Los Angeles, Calif., a corporation of California
Filed Mar. 7, 1967, Ser. No. 621,262
Int. Cl. B24b *9/02*
U.S. Cl. 51—336 **12 Claims**

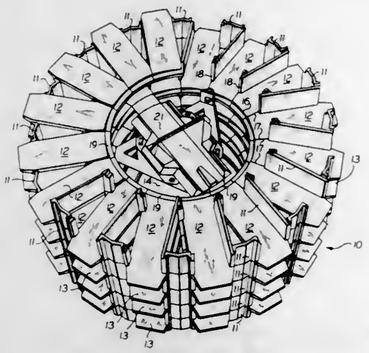


The finished abrasive wheel comprises a cylindrical hub body with circumferentially spaced dove-tailed grooves on its outer circumference and with dove-tailed end portions of packs of abrasive leaves mounted in the grooves by an adhesive that not only solidifies the end portions of the packs but also bonds the end portions of the packs to the hub body. The fabrication procedure includes the steps of applying adhesive to the end portions of the packs, preforming the end portions to dove-tailed configuration and then inserting the preformed end portions of the packs into the dove-tailed grooves of the hub body before the adhesive cures.

3,466,817
MULTILEVEL SPIRAL BUILDING STRUCTURE
Carl Heinrich Hagel, Eintrachtstrasse 22/24, Dortmund, Germany
Filed Nov. 16, 1966, Ser. No. 594,826
Int. Cl. E04h *1/04*
U.S. Cl. 52—30 **15 Claims**

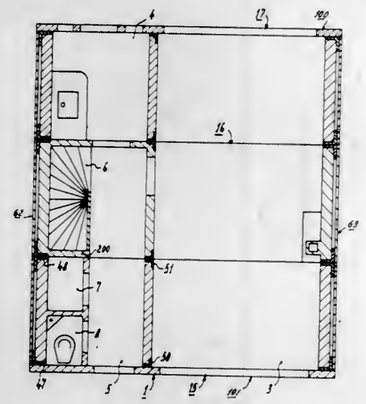
A spirally disposed multifloored building having a multiplicity of compartments disposed about said spiral

wherein said compartments are defined by a series of alternating horizontal members and wall members wherein the wall members are substantially L-shaped with a



first portion defining a portion of a chordal plane of said spiral and a second portion which is generally transverse to the first portion.

3,466,818
PREFABRICATED BUILDINGS
Cornelis van der Lely, Bruschenrain 7, Zug, Switzerland
Continuation-in-part of application Ser. No. 142,592, Oct. 3, 1961. This application June 16, 1966, Ser. No. 558,029
Int. Cl. E04h *1/02*; **E04d** *3/38*; **E04b** *1/74*
U.S. Cl. 52—79 **10 Claims**



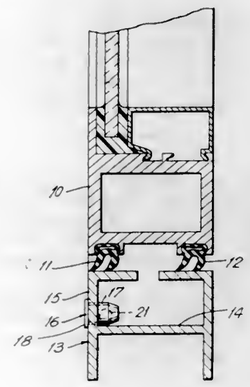
The disclosure is directed to the sealing of the roof between adjacent prefabricated elements by providing a channel between adjacent roof elements, lining the channel with a fibrous material, filling the lined channel and impregnating the fibrous material therein with an adhesive filling material, and applying a waterproof material over the filling material.

A concrete wall in a prefabricated element with a framework of metal beams, the wall adjoining the whole thickness of the adjacent beams, a layer of insulating material on the outside of the building extending over the wall and adjoining beams, and a covering layer over the insulating layer.

A fastening arrangement for adjacent prefabricated elements having a framework of metal beams comprising horizontal bolts connecting adjacent beams of the elements, a ceiling being disposed under and a floor above the bolts, there being a removable ceiling portion for access to the bolts.

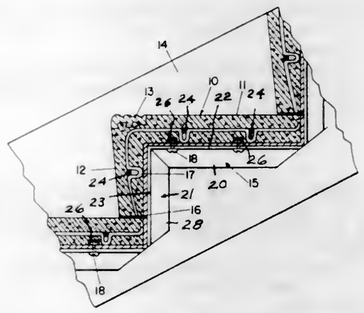
A building of adjacent elongated prefabricated elements, the longer sides of the elements being open with walls on the shorter ends, prefabricated panels placed on the longer sides of the element for the exterior of the building.

3,466,819
DRAIN CONSTRUCTION FOR WINDOW SASH AND THE LIKE
Richard N. Giger, Edina, Minn., assignor to Flour City Architectural Metals, Minneapolis, Minn., a corporation of Minnesota
Filed July 28, 1967, Ser. No. 656,859
Int. Cl. E06b *7/14*
U.S. Cl. 52—1 **1 Claim**



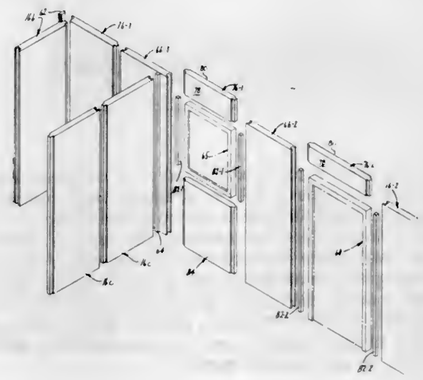
Drain and evaporation discharge for water collected in window sashes, mullions and exterior curtain wall components comprising a ball check valve having an inclined seat portion directed toward the exterior of the building, the seat including inclined wall portions arranged to maintain the ball cleared from the seat to permit draining and evaporation except when ambient pressure conditions are such that the pressures at the exterior surface of the frame exceed the pressures internally of said frame.

3,466,820
PREFABRICATED STAIRS
Wilfried Erwin Sender, 700 Cypress Ave., Johnstown, Pa. 15902
Filed Mar. 4, 1966, Ser. No. 531,892
Int. Cl. E04f *11/14, 11/16*
U.S. Cl. 52—188 **1 Claim**



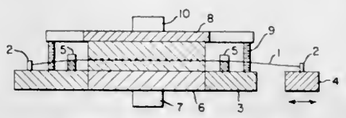
The present invention involves an improved prefabricated stair step arrangement wherein units are provided, each unit including a riser and a tread integrally attached together. The riser and tread each have reinforcing rods which extend from the bottom of the riser up through the riser to the tread and to the rear part of the tread. An L-shaped stair pan in the form of a plate supports the riser and the tread. The rear part of the riser and the bottom of the tread each rest against the pan and are coextensive with it. The edges of the stair pan rest on the supporting rails and bolts extend up through the supporting rails and through the pan into threaded members disposed in openings in the treads.

3,466,821
MODULAR WALL CONSTRUCTION
Lawrence P. O'Shaughnessy and Charles M. Cooper, Santa Rosa, Calif., assignors to Mondar, Inc., Santa Rosa, Calif., a corporation of California
Filed Apr. 17, 1968, Ser. No. 722,067
Int. Cl. E06b *1/08*; **E04b** *2/72, 2/08*
U.S. Cl. 52—204 **8 Claims**



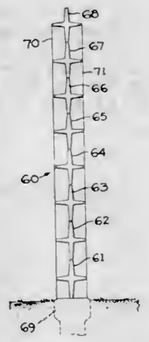
A prefabricated panel system for forming building walls using a plurality of basic, tongue-and-groove wall panels coupled with special panels to form door and window openings. The basic panel includes a core bonded to inner and outer layers and is made of standard lumber. Vertical raceways are formed in each basic panel and communicate with horizontal raceways running about the top of the wall to form continuous accommodation for wiring.

3,466,822
SELF-HEALING REINFORCED CONCRETE STRUCTURES AND PROCESS FOR THE PREPARATION THEREOF
Donald Robert Hull, Wilmington, Del., and John Augustus Piccard, Elkton, Md., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Apr. 28, 1967, Ser. No. 634,750
Int. Cl. E04c *3/26, 5/07*; **E04g** *21/12*
U.S. Cl. 52—223 **3 Claims**



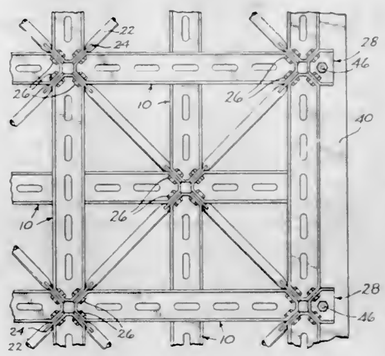
Structures of concrete or other hardenable cements are strengthened and rendered self-healing to a substantial extent by reinforcement with imbedded cross-laid groups of pretensioned synthetic yarns.

3,466,823
SPACE FORM SKELETON STRUCTURES MADE OF PREFABRICATED TRI-AXIAL INTERLOCKING BUILDING ELEMENTS HAVING NON-RIGID FORCE DISTRIBUTING CONNECTORS
Seamus Dowling, 2151 California St. NW., Apt. 504, Washington, D.C. 20008
Filed Nov. 27, 1967, Ser. No. 685,876
Int. Cl. E04c *5/08, 3/10*
U.S. Cl. 52—227 **8 Claims**



Prefabricated tri-axial building elements are stacked to form a plurality of horizontally spaced columns which are interlocked to provide a space form skeleton for a multi-layer structure which may be a building, a bridge, a tower, or the like. Each prefabricated building element has a plurality of mutually perpendicular arms, and selected arms have provided at their ends a non-rigid force distributing connector.

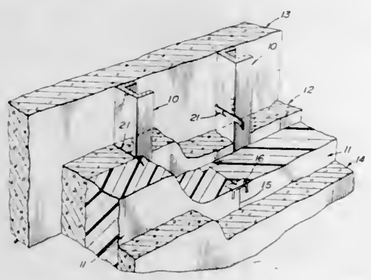
3,466,824
MODULAR SPACE DECK
Arthur L. Troutner, Skyline Drive, P.O. Box 7927, Boise, Idaho 83707
Filed Jan. 10, 1968, Ser. No. 696,877
Int. Cl. E04b *7/00*; **E04c** *2/38, 3/30*
U.S. Cl. 52—262 **10 Claims**



A modular space deck comprises a plurality of chords arranged in upper and lower planes interconnected by a plurality of diagonal links having flattened ends. The chords comprise elongated, channel-shaped structural

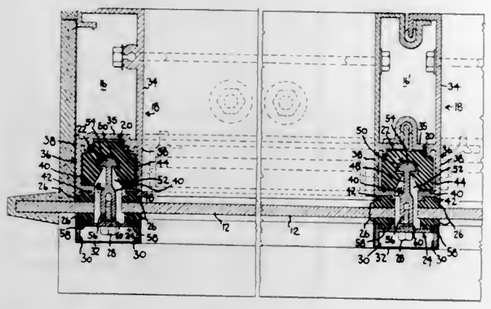
members having parallel side walls and opposite ends contoured in plan as truncated right triangles. This provides opposite abutment walls lying in an angle of substantially 45° to the side walls. The chords are arranged in clusters of four placed end to end at right angles to each other. In the resulting panel points, each pair of adjacent chord abutment walls receives the end of one of the links, the assembly then being bolted or otherwise secured together. Clips secure the perimeters of the deck to a bearing wall. A central hanger supports the central portion of the deck from a vertical post. Other clips secure convex, concrete-receiving pans to the chords when it is desired to support a concrete floor on the deck.

3,466,825
WALL STRUCTURE
Karl Guddal, Peger Road, Fairbanks, Alaska 99701
Original application Aug. 27, 1963, Ser. No. 304,809, now Patent No. 3,353,322, dated Nov. 21, 1967. Divided and this application July 13, 1967, Ser. No. 653,131
Int. Cl. E04b *2/10*
U.S. Cl. 52—344 **7 Claims**



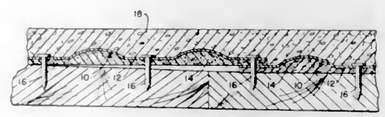
Wall construction for a building including a plurality of upright horizontally spaced coplanar studs, a backing member along one side of the studs and secured thereto, and a layer of concrete against the backing member and around the studs embedding same.

3,466,826
INSULATED CURTAIN WALL CONSTRUCTION
Raymond G. Gallagher, Pittsburgh, Renato J. Mazzoni, Tarentum, and Samuel Dauson, Gibsonia, Pa., assignors to PPG Industries, Inc., a corporation of Pennsylvania
Filed Sept. 28, 1967, Ser. No. 671,270
Int. Cl. E04b *2/88*
U.S. Cl. 52—395 **5 Claims**



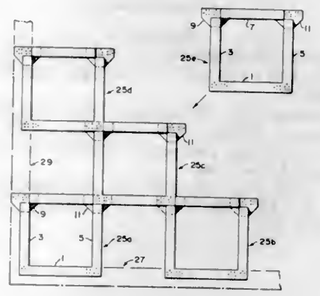
An insulated curtain wall construction comprising a panel, a metal panel-backing member adjustably joined by metallic connector means to a metal panel-retaining member, insulating material disposed between said connector means and said backing member so that said panel-backing member and panel-retaining member are insulated from each other and insulating material disposed between said panel and said backing and retaining members so that said panel member is insulated from said backing and retaining members when an edge of said panel member is disposed therebetween.

3,466,827
MOISTURE IMPERVIOUS DECK CONSTRUCTION
Arthur G. Clem, Des Plaines, Ill., assignor to American Colloid Company, Skokie, Ill., a corporation of Delaware
Filed Jan. 10, 1967, Ser. No. 608,372
Int. Cl. E04d *3/04*
U.S. Cl. 52—446 **2 Claims**



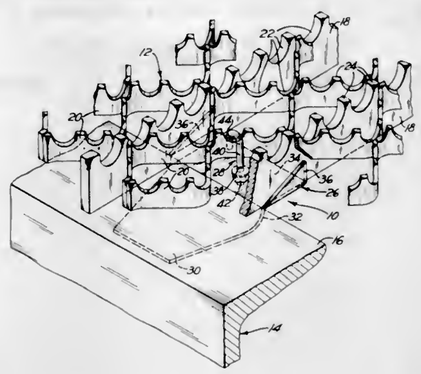
A roof panel is provided formed of an embossed facing sheet defining recesses in its face, and having a compacted mixture of finely divided water swellable bentonite clay and a compressible filler covering the face. A plurality of the roof panels are secured to a supporting structure in overlapping relationship and a hard wearing surface such as concrete can be provided thereover. The compressible filler absorbs volumetric changes that result from swelling of the bentonite and thus confines any swelled bentonite to the available space.

3,466,828
MODULAR WALL CONSTRUCTION
Gerald S. November, 6 Rock Cliff Road, Marblehead, Mass. 01945
Filed Nov. 13, 1967, Ser. No. 682,377
Int. Cl. E04b *2/02, 2/56;* **E04c** *2/42*
U.S. Cl. 52—475 **5 Claims**



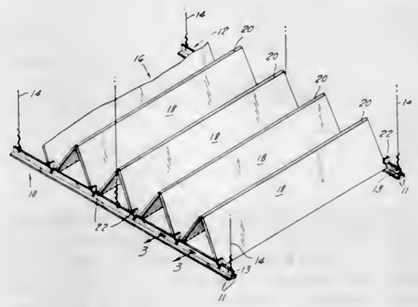
A wall construction in which load-bearing wall panels are secured together in a checkerboard array, and non-load-bearing wall panels are inserted between the load-bearing panels to form the wall. The full specification should be consulted for an understanding of the invention.

3,466,829
GRATING FASTENING CLIP
Warren J. Robicheaux, Port Arthur, Tex., assignor to Gulf Oil Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Nov. 28, 1967, Ser. No. 686,070
Int. Cl. E06b *3/58;* **E04b** *5/32*
U.S. Cl. 52—489 **5 Claims**



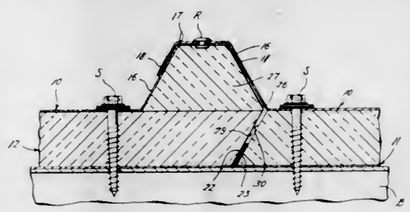
Two forms of grating fastening clips are provided. Each clip includes a plate member having a portion which contacts the underside of a horizontal structural supporting flange, and a J bolt which extends through the plate member and a space in the grating to hook over the top of the grating. A nut at the lower end of the J bolt at the under surface of the plate member secures the assembly together.

3,466,830
CEILING INSTALLATION
Ving Smith, 2 Agar Ave., New Rochelle, N.Y. 10801
Continuation-in-part of application Ser. No. 620,026, Mar. 2, 1967. This application Mar. 28, 1968, Ser. No. 722,521
Int. Cl. E04b *5/57, 1/343*
U.S. Cl. 52—495 **8 Claims**



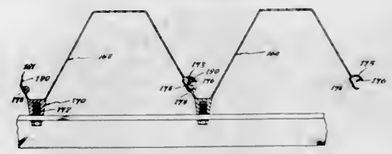
A plurality of side-by-side panels are hingedly joined along opposed edges to form a panel assembly. The panel assembly is supported at its ends by support means, such as T-shaped rails, carried by the building structure. Retaining means provided to maintain the panel members at selected angular positions. Retaining means may be clips engaging support rails, non-linear braces, rigid elements engaging the faces or ends of the panels but not the rails, rods extending between successive rails, or pins projecting past end edges of panels, the latter two means permitting the panel assembly to hang below the support rails.

3,466,831
SANDWICH-TYPE BUILDING PANEL
Walter F. Lenoir, Houston, Tex., assignor to Moncrief-Lenoir Manufacturing Company, Houston, Tex., a corporation of Texas
Filed May 6, 1968, Ser. No. 726,763
Int. Cl. E04d *1/06;* **E04b** *5/19*
U.S. Cl. 52—521 **6 Claims**



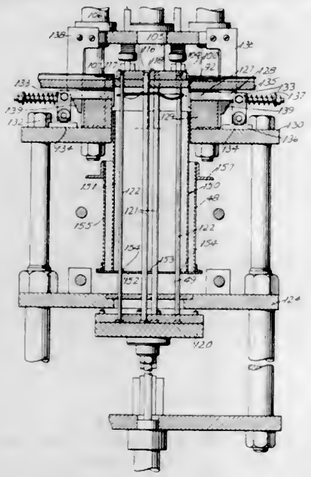
A sandwich-type building panel having longitudinal side edge configurations providing a tongue-and-groove association adapted for quick assembly and forming weather-tight joints.

3,466,832
STRUCTURAL ASSEMBLY FOR USE IN A BUILDING
Adrian Anthony Cecil March, Oaklea, Hartfield, Sussex, England
Filed July 6, 1966, Ser. No. 563,122
Claims priority, application Great Britain, July 7, 1965, 28,902/65
Int. Cl. E04d *1/06;* **E04c** *1/30, 1/10*
U.S. Cl. 52—536 **17 Claims**



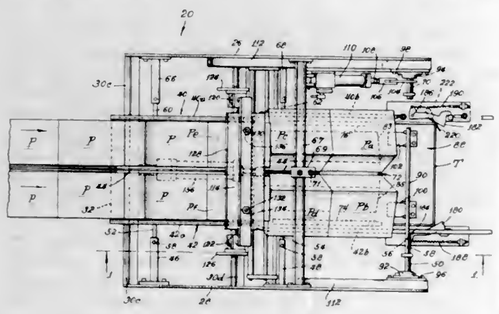
A structural member particularly for building a roof having a downwardly facing receiving component along at least one edge for engagement with a complementary upwardly extending entering component of an adjacent member, assembly being effected by a rotary movement to bring the components of the adjacent members into a locked condition in which transverse movement in any direction is prevented by contact between the said components, the joint formed thereby including a re-entrant extremity, an upwardly inclined surface on the receiving component, and a contact surface in said receiving component opposed to said re-entrant extremity. A second extremity may be provided which extends downwardly and provides an edge off which rainwater will drip. The structural member may have a receiving component at each edge or the other edge may have an entering component.

3,466,833
PACKAGE, PACKAGING MACHINE AND METHOD
Allen M. Penrod, Federalsburg, Md., and Anthony Naturale, Roselle, N.J., assignors to Maryland Plastics Incorporated, New York, N.Y., a corporation of Maryland
Filed Nov. 22, 1966, Ser. No. 596,208
Int. Cl. B65b *55/00, 63/00, 35/30*
U.S. Cl. 53—23 **29 Claims**



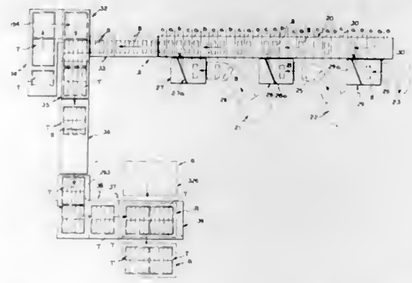
The present invention is directed to a machine and method for packaging articles. A cutter assembly is provided for severing said articles from a blank. Receptacle means are mounted below the cutter assembly and guide means, in the form of pins are provided for guiding said severed articles into said receptacle means. The guiding means include aligning pins for maintaining the relative positions of said articles to each other during the travel of the articles from the severing mechanism into the receptacle means. The filled receptacle is moved from under the cutter means and the articles are transferred to a carton without changing the relative position of the articles to each other.

3,466,834
METHOD AND APPARATUS FOR LOADING CASES
Wendell E. Standley, Lake Forest, and Richard B. Wittmann, Chicago, Ill., assignors to Johns-Nigrelli-Johns, Inc., Skokie, Ill., a corporation of Illinois
Filed Dec. 21, 1966, Ser. No. 603,561
Int. Cl. B65b *35/40, 35/54, 5/08*
U.S. Cl. 53—26 **18 Claims**



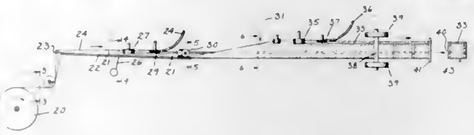
Method and apparatus for loading a plurality of packages into an open top case or tray by stopping a leading group of packages of a continuous package supply holding back the packages behind the leading group of packages, releasing the leading group of packages, and thereafter pushing the leading group of packages into the leading one of a continuous supply of trays or cases.

3,466,835
BAKERY PRODUCT HANDLING SYSTEM
Hiram E. Temple, Saginaw, Mich., assignor to Baker Perkins Inc., Saginaw, Mich., a corporation of New York
Filed Nov. 19, 1965, Ser. No. 508,684
Int. Cl. B65b *35/50, 35/54, 57/10*
U.S. Cl. 53—26 **12 Claims**



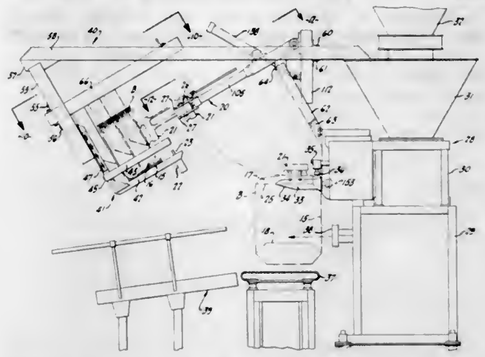
A farinaceous product handling system wherein a battery of transfer units for delivering the product from a group of processing machines such as bread packaging machines is provided adjacent a traveling conveyor, providing a plurality of receiving stations arranged in a line, and receiving products from the units at different ones of the receiving stations along the conveyor; a sweep incorporated with each transfer unit is operable in timed relation with the travel of the conveyor to deliver products to unoccupied stations only; a support surface receives the products and a sweep packs them in a predetermined arrangement in containers; and a stacking unit arranges the containers in vertically supported relation for transport.

3,466,836
METHOD OF PACKAGING FLAT ARTICLES
Robert H. Pratt, Milwaukee, Wis., assignor to Pratt Manufacturing Corp., Milwaukee, Wis., a corporation of Wisconsin
Filed May 3, 1966, Ser. No. 547,324
Int. Cl. B65b *9/08, 9/12, 51/30*
U.S. Cl. 53—28 **10 Claims**



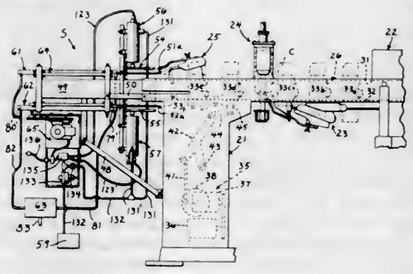
A method of packaging comprising continuously advancing web portions which are to form the opposite panels of a package, assembling adjacent parts of the advancing web portions to provide a relatively short upstanding inverted V between said panel portions, continuously sealing upper portions only of said inverted V to each other along a longitudinal path, thereafter continuously folding the advancing panel portions upwardly to provide a W formation, dropping merchandise in longitudinally spaced relationship onto said panel portions on each side of the inverted V, continuously sealing the upper longitudinal edges of the web portions, transversely connecting the web portions between items, and transversely cutting the packages.

3,466,837
BAG PLACER MECHANISM AND METHOD
Thomas B. Sturges, Menlo Park, Calif., assignor to Crown Zellerbach Corporation, San Francisco, Calif., a corporation of Nevada
Filed June 27, 1966, Ser. No. 560,725
Int. Cl. B65b *43/32*
U.S. Cl. 53—29 **9 Claims**



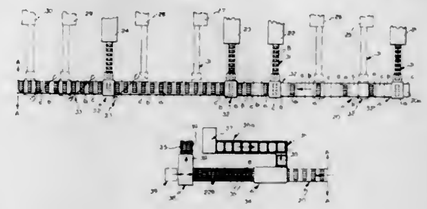
Method of and mechanism for placing a valve-equipped bag on the spout of a filler machine to fill the bag therethrough with a flowable particulate material such as flour, cement, grain, fertilizer, and the like. The method includes the steps of withdrawing the forwardmost bag from a stack thereof supported within a magazine, opening the valve of such bag while withdrawing the same from the magazine by arresting movement of an intermediate portion of the bag as the valve-equipped end thereof is continued in motion, and then inserting the spout of a filler machine through the open valve of the bag. The mechanism includes a magazine adapted to support a plurality of valve-equipped bags in stacked juxtaposition on a longitudinal edge thereof, gripper apparatus for engaging and withdrawing each successive forwardmost bag from the magazine, and an abutment located along the path of movement of each such bag and operative to arrest movement of an intermediate portion thereof and thereby open the valve of the bag. After the valve is open, the gripper apparatus moves the bag toward the spout of a filler machine and positions the bag thereon by inserting such spout through the open valve of the bag.

3,466,838
PACKAGING METHOD AND APPARATUS
Robert P. Sorensen and Leo Strombeck, Rockford, Ill., assignors to Anderson Bros. Mfg. Co., Rockford, Ill., a corporation of Illinois
Filed Dec. 30, 1966, Ser. No. 606,381
Int. Cl. B65b *43/30, 1/04*
U.S. Cl. 53—29 **11 Claims**



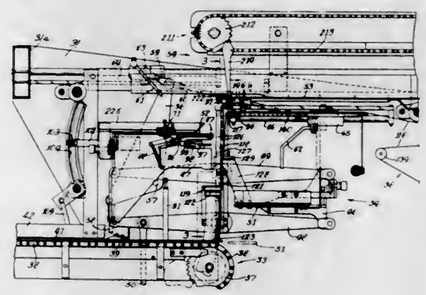
A method of packaging ice cream in cartons including: directing jets of hot air against the outside of folded end flaps of a filled carton at locations overlying areas of heat sealable adhesive on the underside of the flaps, and cooling the end flaps. An apparatus for sealing the folded end flaps of a carton including a distributor head spaced from the end flaps and for directing continuously flowing hot air against the outer surface of the end flaps to soften adhesive carried on the underside of the flaps, a heater head for heating the air, a conveyor for moving the cartons to the distributor head in step fashion, and a cooling head thereafter contacting the end flaps.

3,466,839
BAKERY PRODUCT HANDLING SYSTEM
Hiram E. Temple, Saginaw, Mich., assignor to Baker Perkins Inc., Saginaw, Mich., a corporation of New York
Continuation-in-part of application Ser. No. 508,684, Nov. 19, 1965. This application July 27, 1966, Ser. No. 568,269
Int. Cl. B65b *57/12, 35/54, 25/16*
U.S. Cl. 53—55 **28 Claims**



An automatic bakery product handling system in which packaged baking products from a battery of spaced-apart packaging machines are deposited on a single-line conveyor which delivers the products to a container loading machine. Each of the packaging machines has a reserved station on which to deposit products on the conveyor and any of the stations not filled, by an inoperative packaging machine, for instance, will be automatically filled by a stand-by packaging machine so that a full complement of properly spaced products is fed to the container loading machine. The loaded containers are delivered to a stacking station where they are stacked and loaded on delivery trucks or stored as desired.

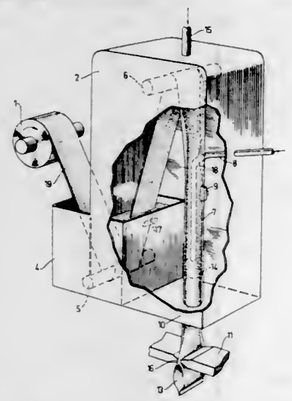
3,466,840
WRAPPING MACHINE
Omar Hansen, Jr., Carl Littlefield, and Allen R. Haddix, Bluffton, Ind., assignors to Franklin Electric Company, Inc., Bluffton, Ind., a corporation of Indiana
Original application Apr. 30, 1964, Ser. No. 363,954. Divided and this application June 30, 1967, Ser. No. 655,988
Int. Cl. B65b *11/16, 51/10, 57/12*
U.S. Cl. 53—74 **10 Claims**



This disclosure deals with a wrapping machine for wrapping a series of articles such as foodstuffs in a protective film. An operator of the machine positions each

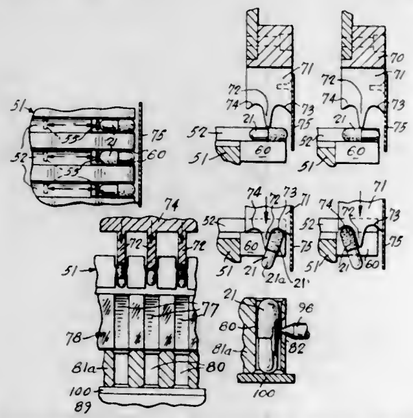
article to be wrapped in a shallow tray and then inserts the tray with the article therein into the machine which folds a section of film about the article and heat seals the package. The film is drawn as needed from a continuous length of film contained on a supply roll.

3,466,841
METHOD OF PACKAGING STERILE FILLING MATERIAL UNDER ASEPTIC CONDITIONS
Anders Ruben Rausing, Blentarp, Sweden, assignor to AB Tetra Pak, Lund, Sweden, a Swedish company
Filed Mar. 31, 1966, Ser. No. 539,040
Claims priority, application Sweden, Apr. 9, 1965, 4,615/65
Int. Cl. B65b *9/12*
U.S. Cl. 53—28 **1 Claim**



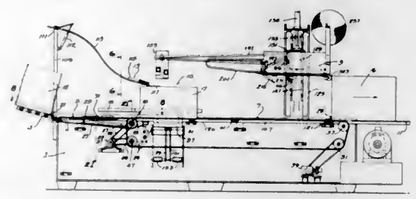
Method and apparatus to sterilize and maintain sterilization of a web material while such material is being formed into a package, filled and separated from the web as a sterilized completed package.

3,466,842
MACHINE FOR TREATING CAPSULES
Philip G. Bailey, Pierrefonds, Quebec, Canada, assignor to Smith Kline & French Laboratories, Philadelphia, Pa., a corporation of Pennsylvania
Continuation-in-part of application Ser. No. 580,306, Sept. 19, 1966. This application May 10, 1967, Ser. No. 651,336
Int. Cl. B65b *63/02, 13/20, 1/20*
U.S. Cl. 53—124 **4 Claims**



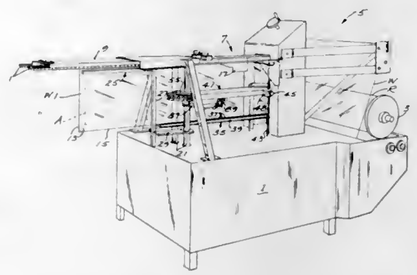
An apparatus for taking filled hard gelatin capsules from a random pile and automatically orienting them, compacting them to a common length, and heat sealing them, so as to make them suitable for subsequent conventional handling.

3,466,843
CARTON CLOSING AND TAPING MACHINE
George J. Mumper, 5211 W. Midland Drive, Milwaukee, Wis. 53220
Continuation of application Ser. No. 151,370, Nov. 9, 1961. This application Mar. 24, 1967, Ser. No. 625,878
Int. Cl. B65b *51/06, 7/20, 57/02*
U.S. Cl. 53—137 **9 Claims**



Cartons of differing sizes are taped in any order. The initially upstanding side flaps are closed to establish the ultimate height of the carton. Height reading means including electric eyes cause the automatic adjustment of a taping head which operates on the closed side flaps to apply longitudinally thereof tape pre-cut according to the length of the carton and pressed by the applicator rollers to the leading end of the carton and longitudinally of the side flaps and then, under tension, around the trailing corner and against the trailing end.

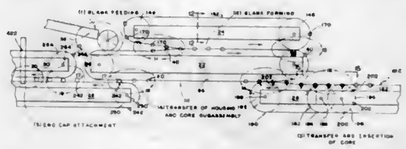
3,466,844
PACKAGING APPARATUS
Laurie M. Reid, James V. Ferguson, and Walter R. McDurmont, Birmingham, Ala., assignors to Anderson Electric Corporation, Leeds, Ala., a corporation of Alabama
Filed Sept. 29, 1967, Ser. No. 671,698
Int. Cl. B65b *9/12, 51/30*
U.S. Cl. 53—182 **15 Claims**



A packaging machine in which a center-folded web of flexible heat-sealable sheet plastic material is intermittently fed forward in package length intervals, with a dwell between successive feed cycles, the web having its center fold at the bottom, thereby being of trough formation. The web first traverse a loading station and then a sealing station. During each dwell, an article is dropped into the center-folded web, spaced one package length interval from the preceding article with a gap therebetween. Extending through the loading station is a horizontal conveyor for supporting the articles in the web and a pair of endless side conveyors for engaging the outside opposite sides of the web for feeding the web forward. The side

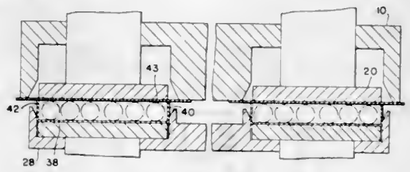
conveyors are mounted for lateral inward and outward movement on a parallelogram linkage assembly and are spring-biased toward engagement with the side walls of the web.

3,466,845
MULTISTATION PACKAGING APPARATUS AND SYSTEM FOR FORMING A MULTICOMPONENT PACKAGE
Hugh A. Beekes, Saratoga, Thomas R. Herrmann, Pacific Grove, Melbourne A. Lipp, Pebble Beach, Henning H. Olson, Carmel-by-the-Sea, and Allen K. Schleicher, Berkeley, Calif., assignors, by direct and mesne assignments, to Kaiser Aluminum & Chemical Corporation, Oakland, Calif., a corporation of Delaware
Filed Feb. 18, 1966, Ser. No. 528,476
Int. Cl. B65b *5/02, 43/08;* **B31c** *3/02*
U.S. Cl. 53—194 **39 Claims**



An improved multistation packaging apparatus and system for forming a multicomponent package, wherein the packaging apparatus and system includes an improved carrier means movable in an improved fashion between and past a series of work performing stations and wherein the carrier means has improved pocket and mandrel means and finger elements for receiving and selectively bending a foldable blank whereby the blank can be formed into a dispensing container, merchanise inserted into the container and, if desired end closures applied thereto.

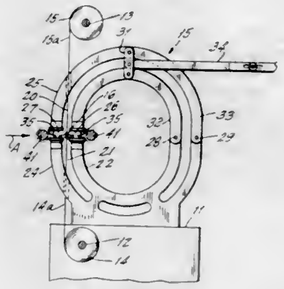
3,466,846
FLAT COIL PACKAGING MACHINE
Jerry Nelson Ledbetter, Decatur, Ala., assignor, by mesne assignments, to Calumet & Hecla Corporation, Allen Park, Mich., a corporation of Delaware
Filed June 5, 1967, Ser. No. 643,628
Int. Cl. B65b *5/02, 1/02, 3/02*
U.S. Cl. 53—194 **9 Claims**



Apparatus for forming a flat annular member into upwardly open U-shaped cross-section adapted to receive a flat coil, and thereafter to form a second flat annular member into inverted U-shaped cross-section while forming the inner and outer edges thereof into overlying relation to the inner and outer edges of the first member.

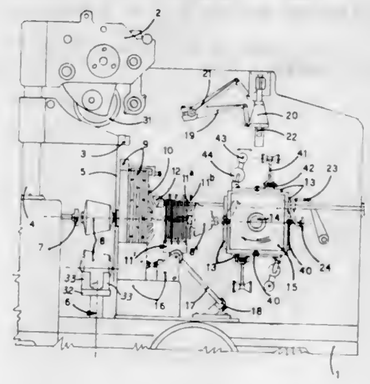
3,466,847
APPARATUS FOR FORMING AND APPLYING BANDS
Robert D. Farkas, 5601 1st Ave., Brooklyn, N.Y. 11220
Filed Jan. 26, 1967, Ser. No. 611,980
Int. Cl. B65b *13/02, 13/34, 27/10*
U.S. Cl. 53—198 **10 Claims**

Tapes of oriented heat shrinkable thermoplastic material are drawn in opposite directions from individual tape supplies and are joined at their ends to form a holding web positioned between two sets of separable jaws. Each set of jaws mounts means for cutting and heat sealing thermoplastic material and each set of jaws is positioned on a different side of the holding web. An article moved forward, first through one set of jaws and then through the other set draws the holding web through the other set of jaws as the holding web loops around the article. When the article moves past the other set of jaws



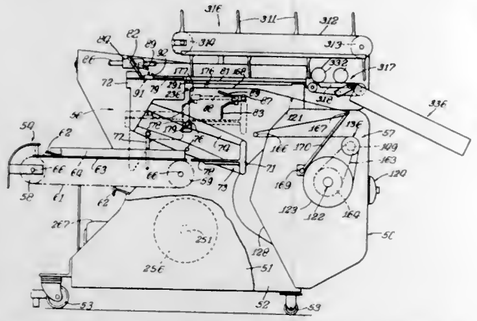
the latter is closed and the loop around the article is severed from the holding web with heat seals being applied to close the loop and also to join the remaining portions of the tapes to one another. By moving an article rearward, first through the other set of jaws and then through the said one set of jaws to a position rearward of the latter, the cutting and sealing means carried by the said one set of jaws is used to sever the loop from the holding web and to apply the heat seals as required.

3,466,848
AUTOMATIC WRAPPING MACHINE FOR REELS
Ubaldo Cuppini, Bologna, Italy, assignor to C. M. Di Cuppini Ubaldo & C. Soc. Acc. Sempl., Bologna, Italy, an Italian company
Filed June 29, 1966, Ser. No. 561,469
Claims priority, application Italy, July 1, 1965, 14,605/65; June 3, 1966, 12,320/66
Int. Cl. B65b *11/14, 49/00;* **B65h** *81/00*
U.S. Cl. 53—204 **4 Claims**



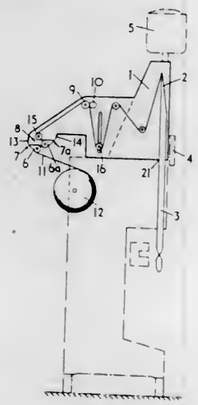
An automatic wrapping machine for reels in which a reel together with its wrapper is subjected to mechanism for folding the wrapper about the reel, after which the wrapper portions projecting beyond the other end of the reel are deformed sinuously into a single tail, and further mechanism inserts the tail into the central hole of the reel. The thus wrapped reel is then removed from the machine.

3,466,849
WRAPPING MACHINE
Edward J. Schaefer and Omar Hansen, Jr., Bluffton, and Robert F. McVicker, Anderson, Ind., assignors to Franklin Electric Co., Inc., Bluffton, Ind., a corporation of Indiana
Filed Nov. 16, 1965, Ser. No. 508,026
Int. Cl. B65b *11/00, 49/00, 7/04*
U.S. Cl. 53—210 27 Claims



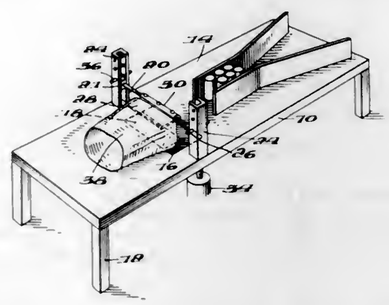
This disclosure deals with a wrapping machine for wrapping articles such as foodstuffs in a thin plastic film. The wrapping machine includes a film supply and transport mechanism, and a wrapping mechanism for wrapping an article in a section of the film and sealing the film around the article. The film supply and transport mechanism includes means for stripping the film from a supply roll and for automatically supplying film under tension. The wrapping mechanism includes means for preventing portions of the film from clinging to each other, and non-sticking means for heat sealing the film.

3,466,850
PACKAGING
Clifford Harold Hudson, Colchester, and Thomas Richard Ashton, Victor Claude Herbert Cottle, and David Jackson, London, England, assignors to Graham-Enock Manufacturing Co. Limited, and Express Dairy Company (London) Limited, London, England, both British companies
Filed Apr. 25, 1967, Ser. No. 633,624
Claims priority, application Great Britain, Apr. 29, 1966, 18,891/66
Int. Cl. B65b *9/06, 9/12*
U.S. Cl. 53—28 18 Claims



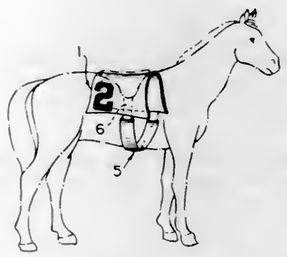
A method and apparatus for preparing sealable web material for use in packaging a sterilized product in which the material in sheet or tube form is passed through sterilizing means to sterilize at least its product contacting surface, the material immediately passing into a sterilized zone, from which outside air is excluded by passing pressurized sterile medium through the zone, for further treatment of the material such as tube forming, filling and/or sealing in the zone.

3,466,851
SLEEVE LOADING APPARATUS
Keith S. Carmichael, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Aug. 10, 1966, Ser. No. 571,577
Int. Cl. B65b *39/06, 5/00*
U.S. Cl. 53—390 8 Claims



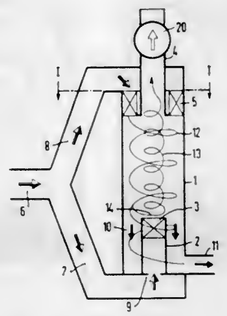
Apparatus for packaging articles in thermoplastic tubing comprising lower and upper cantilevered forming members the lower member being in flush configuration with a flat working area and vertically movable.

3,466,852
DISPOSABLE HORSE BLANKET AND GIRTH SHEATH
Norman H. Stoner, 5391 S. 9th St., Kalamazoo, Mich. 49001
Filed Jan. 6. 1967, Ser. No. 607,843
Int. Cl. B68c *1/12*
U.S. Cl. 54—65 3 Claims



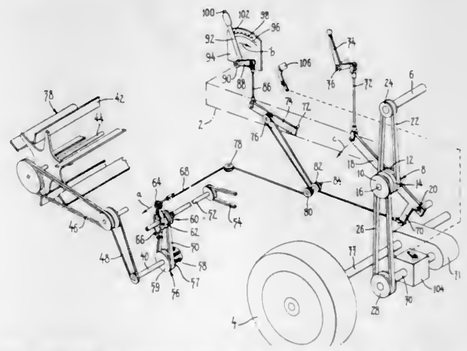
A disposable protective article is provided for domestic animals such as horses upon which harness devices such as saddles are mounted. The protective article may be a saddle blanket, a girth sheath, or a similar device, and has a structure comprising a plastic film having a crinkled parchment sheet affixed to at least one and preferably both surfaces thereof. The protective article absorbs sweat from the animal, prevents the transmission of the sweat to the saddle or strap, and is sufficiently inexpensive to be discarded after a single use, thereby preventing the spreading of disease and infections from one animal to another.

3,466,853
AIR CLEANER FOR INTERNAL COMBUSTION ENGINES
Kurt Buick and Heinrich Klein, Erlangen, and Eduard Weber, Nuremberg, Germany, assignors to Siemens Aktiengesellschaft, a corporation of Germany
Filed Dec. 6, 1967, Ser. No. 688,606
Claims priority, application Germany, Jan. 7, 1967, S 107,771
Int. Cl. B01d *45/12*
U.S. Cl. 55—1 6 Claims



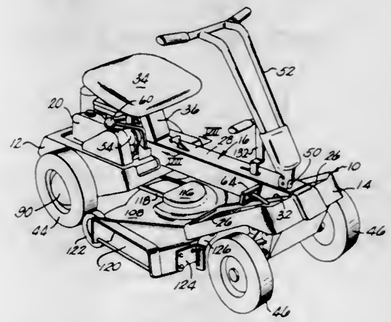
An air cleaner for internal combustion engines divides the incoming raw air into two portions. A first portion is throttled relative to the other and is given a twisting motion while being passed axially and centrally into one end of cylindrical tornado-flow vessel. The second partial air-flow is passed directly into the other end of the tornado-flow vessel at localities radially spaced from the vessel center axis and through a ring of vanes which guide the second flow in directions generally tangential and inclined toward the first partial flow. The second partial air flow thus excites in the vessel a circulating tornado flow with a vortex sink and a vortex source with the effect of eliminating particulate material from the air leaving the vessel.

3,466,854
GROUND SPEED RESPONSIVE VARIABLE DRIVE FOR CROP HANDLING APPARATUS
Robert Ashton, Islington, Ontario, Wilbert D. Weber, Nashville, Ontario, and Walter Hirsch, Don Mills, Ontario, Canada, assignors to Massey-Ferguson Industries Limited, Toronto, Ontario, Canada
Filed May 19, 1966, Ser. No. 551,417
Int. Cl. A01d *41/02*
U.S. Cl. 56—21 10 Claims



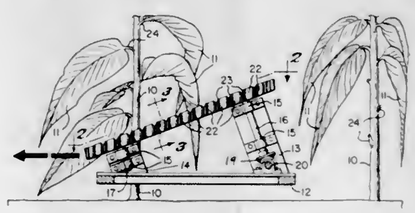
A combine harvester has a prime mover that is operably connected through a variable speed drive to a crop handling apparatus and through another variable speed drive to a transmission which drives the ground wheels. A hand lever is connected through a linkage to the ground speed variable drive for selective variation thereof and another control lever is provided for the crop handling apparatus. A cable and pulley arrangement interconnects the ground speed control lever through the crop handling control lever to the variable drive to variably drive the crop handling apparatus. Movement of the crop handling control lever will effect an independent change of crop handling speed, while movement of the ground speed lever to change ground speed will effect a proportional change in crop handling speed.

3,466,855
RIDING LAWN MOWER
Rudolph A. Hanson, Edward J. Ziegler, and John E. Fischer, Jackson, Mich., assignors to Yard-Man, Inc., Jackson, Mich., a corporation of Michigan
Filed May 23, 1966, Ser. No. 552,012
Int. Cl. A01d *35/26, 35/12, 35/00*
U.S. Cl. 56—25.4 5 Claims



A riding lawn mower consisting of front and rear wheel supported portions interconnected by a relatively narrow elongated torsion member rigidly affixed thereto wherein vertical tilting of the axes of the wheels mounted upon the front end rear portion may occur to accommodate uneven terrain due to flexing of the torsion member portion of the frame.

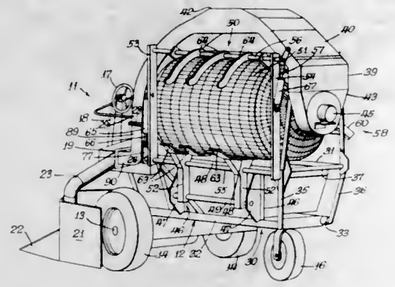
3,466,856
TOBACCO PRIMING APPARATUS
Robert H. Rakestraw, P.O. Box 13, Stoneville, N.C. 27048
Filed Aug. 2, 1967, Ser. No. 657,904
Int. Cl. A01d *45/16*
U.S. Cl. 56—27.5 6 Claims



A divided carrier for a multiplicity of coacting pairs of cutters is caused to traverse rows of tobacco plants by suitable transporting means. The cutters are carried on driven endless flexible elements which are arranged at an acute angle of inclination to the horizontal. The cutters have a horizontal increment of movement equal to the forward rate of movement of the carrier but in a reverse direction so that the net resultant movement

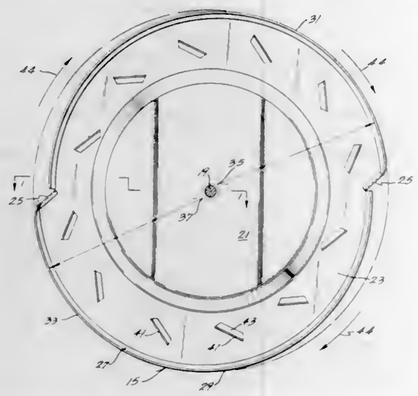
of the cutters relative to any given plant stalk is vertically upwardly. Each coacting pair of cutters substantially surrounds or embraces the main plant stalk so that its upward movement will sever the stems of the tobacco leaves.

3,466,857
COTTON PICKER CONSTRUCTION
Edward M. Gaul and Richard R. Steingas, Naperville, Ill., assignors to International Harvester Company, Chicago, Ill., a corporation of New Jersey
Filed Oct. 22, 1965, Ser. No. 501,065
Int. Cl. A01d 45/20
U.S. Cl. 56—30 16 Claims



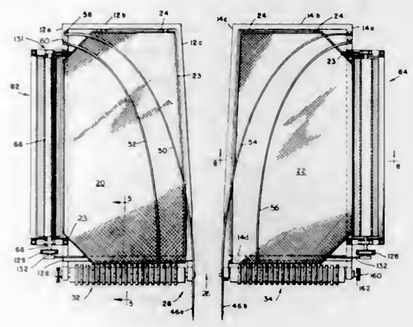
A cotton harvester with a cotton container removably mounted on the harvester frame and a gripper on the frame releasably embracing the container for removing a filled container and replacing an empty container.

3,466,858
LAWN MOWER
Pieter van Donkelaar, Aardenburg, Netherlands, assignor to Outboard Marine Corporation, Waukegan, Ill., a corporation of Delaware
Filed Oct. 15, 1965, Ser. No. 496,484
Claims priority, application Belgium, Mar. 26, 1965, 10,794; Norway, Sept. 29, 1965, 159,898
Int. Cl. A01d 55/18
U.S. Cl. 56—295 18 Claims



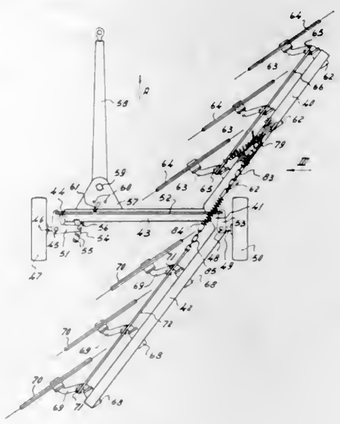
Disclosed herein is a rotary lawn mower having a cutter with a segment supporting a cutting edge and having an arcuate peripheral margin extending in the direction of intended rotary movement from adjacent to said cutting edge and increasing in radial distance to a point of maximum radial distance which is greater than the outermost radial end of said cutting edge. Said edge then decreases in radial distance in the direction of intended movement toward the cutting edge.

3,466,859
HARVESTER
Ervin G. Humphries, Raleigh, N.C., assignor to Research Corporation, New York, N.Y., a nonprofit corporation of New York
Filed Jan. 30, 1967, Ser. No. 612,418
Int. Cl. A01d 45/00
U.S. Cl. 56—327 8 Claims



A harvesting machine for vine growing fruit having a rod which is brought into contact with the fruit to knock the fruit from the vine with a minimum of damage to the vine and fruit.

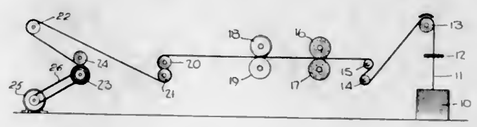
3,466,860
IMPLEMENTS FOR THE LATERAL DISPLACEMENT OF CROP LYING ON THE GROUND
Jan Winkel, Sassenheim, Netherlands, and Cornelis van der Lely, Zug, Switzerland, assignors to C. van der Lely N.V., Maasland, Netherlands, a Dutch limited-liability company
Filed May 24, 1965, Ser. No. 458,307
Claims priority, application Netherlands, June 29, 1964, 6407352; Nov. 17, 1964, 6413347; Dec. 1, 1964, 6413928
Int. Cl. A01d 77/06
U.S. Cl. 56—377 29 Claims



A rake wheel assembly is mounted on a frame beam supported by ground wheels. One group of rake wheels is located forward and another rearward of the frame beam and each group can be raised or lowered as a group

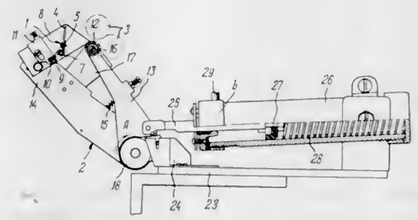
through cranks and turnable arms. The rake wheels are mounted parallel to one another on further beams that extend obliquely to the direction of travel. Hydraulic pistons can be connected to raise and lower the groups of wheels.

3,466,861
CONVERTING CRIMPED FILAMENTARY MATERIAL TO CONTINUOUS ELONGATED BODY
George A. Watson, James A. Williams, and Joseph R. Godwin, Charlotte, N.C., assignors to Celanese Corporation of America, New York, N.Y., a corporation of Delaware
Filed July 13, 1964, Ser. No. 382,262
Int. Cl. D01h 1/12
U.S. Cl. 57—2 17 Claims



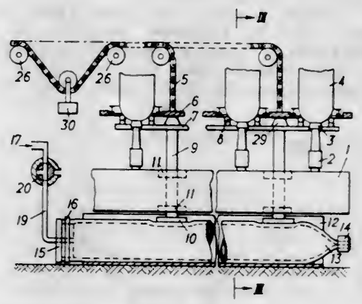
An apparatus and method for the conversion of continuous filaments into a continuous elongated body comprising staple, by opening a tow of continuous crimped filaments, reducing the opened tow to staple and forming the staple into a continuous elongated body.

3,466,862
MEANS FOR CATCHING A BROKEN YARN AND PIECING IT TO THE SLIVER, PARTICULARLY FOR USE WITH SPINNING FRAMES AND SPINNING AND TWISTING FRAMES
Nadezhda Ivanovna Artamonova, Sovetskaya ulitsa 9, kv. 14, Barnaul, U.S.S.R.; Leonid Mikhailovich Bushin, Ulitsa Gagarina 2, kv. 9, Novoaltaisk, U.S.S.R.; Alexandr Evseevich Bykov, Ulitsa Dmitrova 81, kv. 4; Nikolai Demyanovich Gritsenko, Ulitsa Lenina 63-a, kv. 20; Anna Timofeevna Zhurenko, Burlinsky proezd 6; Nikolai Mikhailovich Kuchin, Nikitinskaya ulitsa 83, kv. 12; Sergei Dmitrievich Kirkinsky, Komsomolsky prospekt 50, kv. 1; Svetlana Georgievna Sitnikova, Pushkinskaya ulitsa 54, kv. 27; Vitaly Filippovich Solyanik, Ulitsa Lenina 65, kv. 21, and Leonid Mikhailovich Urvantsev, Komsomilsky prospekt 50, kv. 3, all of Barnaul, U.S.S.R.; Alexandr Vasillevich Tikhomirov, 3 Bereznikovskaya ulitsa 10, Ivanovo, U.S.S.R.; Vyacheslav Savich Yarovoi, Pribytkovskaya ulitsa 18, korpus 8, kv. 169, Leningrad, U.S.S.R., and Boris Ivanovich Yasjukevich, Ulitsa Lenina 85, kv. 37, Barnaul, U.S.S.R.
Filed July 20, 1967, Ser. No. 654,894
Int. Cl. D01h 13/26
U.S. Cl. 57—34 2 Claims



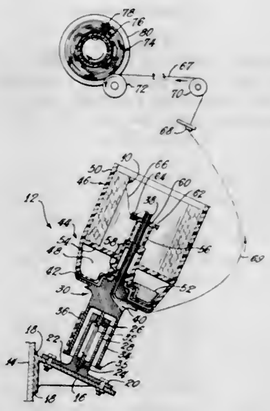
A device for use in spinning and twisting machines for catching a broken yarn end and piecing it to the sliver in which the catcher includes two interconnected plates defining a wedge-shaped slot and the piecing unit includes a rubber covered roller.

3,466,863
PNEUMATICALLY OPERABLE MECHANISM FOR DOFFING BOBBINS
Friedrich Karl Wachendorf, Eggestedt, Kreis Osterholz, Germany, assignor to Atlas-MaK Maschinenbau G.m.b.H., Kiel-Friedrichsort, Germany
Filed Sept. 20, 1968, Ser. No. 761,247
Claims priority, application Germany, Sept. 26, 1967, A 28,439
Int. Cl. D01h 9/00
U.S. Cl. 57—52 7 Claims



The invention provides a pneumatically operable mechanism for releasing the tightly seated fully wound cops from the cut out spindles of ring spinning and doubling frames, which comprises a ring rail, a fork rail for engaging the undersides of the cops and, by lifting, loosening the same, said fork rail being mounted on vertically movable sliders which stand on a flexible inflatable tube extending along the length of the machine frame, the cross section of said inflatable tube when fully inflated corresponding to the lift of said fork rail and the pressure medium for inflating and exhausting said inflatable tube being controlled by at least one electromagnetic three-way valve, whereas buffer elements mounted on said fork rail lift the ring rail of of the way.

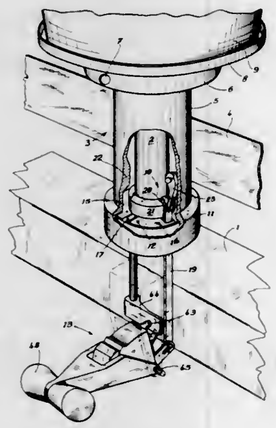
3,466,864
TWISTING FIBROUS STRANDS
Roy E. Smith, Toledo, Ohio, assignor to Owens-Corning Fiberglas Corporation, a corporation of Delaware
Continuation-in-part of application Ser. No. 427,051, Jan. 21, 1965. This application June 19, 1967, Ser. No. 652,388
Int. Cl. D01h 7/30, 7/86
U.S. Cl. 57—62 13 Claims



A method and apparatus producing a twisted textile material that gives two twists to the material for every revolution of the rotating portion of the apparatus. The

material is withdrawn from the inside of a stationarily held package and is first twisted along a given path and then reversed to a zone beyond the zone of withdrawal of the material. In the reverse path, the material is rotated about the zone of material withdrawal to impart the second twist.

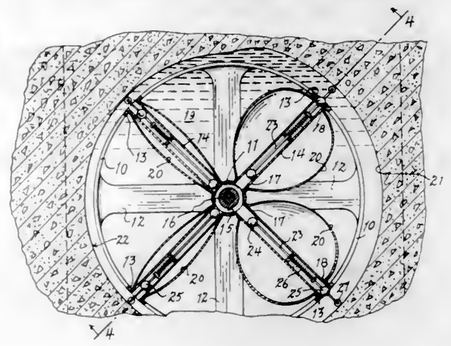
3,466,865
APPARATUS FOR STOPPING A BRAKE-EQUIPPED SPINDLE ROTOR IN A PREDETERMINED POSITION
Gustav Franzen, Neersen, and Ulrich Lossa and Willi Heimes, Krefeld, Germany, assignors to Palitex Project-Company G.m.b.H., Krefeld, Germany
Filed June 24, 1968, Ser. No. 739,244
Claims priority, application Germany, June 23, 1967, P 42,444
Int. Cl. D01h *13/18*
U.S. Cl. 57—88 **12 Claims**



Stop arrangement for rotor which is rotatable on a shaft in which a brake disposed between the shaft and rotor is actuatable to slow the rotor down to a low speed. A stop arrangement consisting of cooperating elements on the rotor and shaft is inoperative due to centrifugal force when the rotor is rotating at operating speeds but becomes effective when the rotor is slowed down and halts the rotor in a predetermined rotated position.

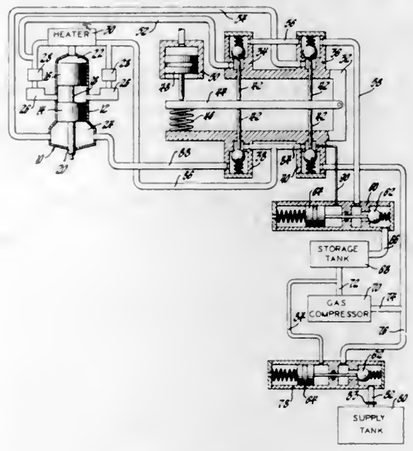
3,466,866
HYDROPNEUMATIC POWER WHEEL
Edwin Louis Eschenfeld, San Francisco, Calif. (6113 NE. 28th Ave., Portland, Oreg. 97211)
Filed Feb. 28, 1968, Ser. No. 709,113
Int. Cl. F03c *5/02*
U.S. Cl. 60—22 **4 Claims**

The invention involves a device in the form of a rotatable cage-like member having a central hub with a compressed air inlet that is adapted to operate in a submerged position below the level of a body of water and mounted within the cage-like member there is a plurality of radially extending open ended tubuluarspoke-like members having intermediate air admission and exhaust ports. The inner ends of these spoke-like members communicate with the compressed air inlet of the central hub and at the outer ends these tubular spoke-like members communicate with the body of water in which the device is submerged. Surrounding each of the tubular spokes there is an inflatable balloon-like means which encompasses the intermediate air admission and exhaust ports of said tubular spoke-like members and operating within each of these spoke-like members there is a valve means by which the intermediate air admission and exhaust ports of said spoke-lie members are alternately opened and closed when said valve means operates. Surrounding the cage-like member in the plane in which said spoke-like members move, there is a camming surface with which said valve means engages, said camming means being adapted and arranged



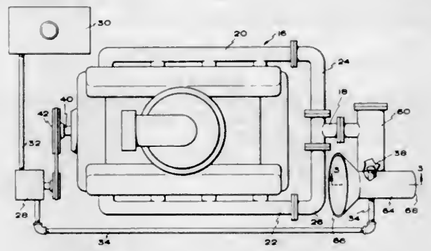
to alternately open and close the intermediate inlet ports and exhaust ports of said tubular spoke-like members to thus successively inflate and deflate said balloon-like members as the cage-like member turns about its axis with respect to said camming surface and establish a difference in the buoyancy of said balloon-like members at opposite sides of its axis of rotation.

3,466,867
HOT GAS ENGINE WITH GAS PRESSURE CONTROL MEANS
Roy H. Brandes, Utica, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Dec. 13, 1967, Ser. No. 690,144
Int. Cl. F02g *1/04, 3/02*
U.S. Cl. 60—24 **11 Claims**



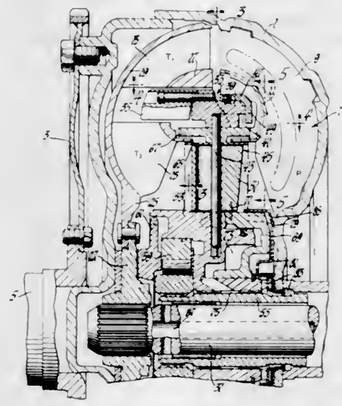
Means for controlling the gas pressure level in the working and buffer spaces of a hot gas engine in which the use of check valves to prevent undesired bypassing is eliminated by providing dual fill valves supplied by a storage tank at a pressure higher than the engine gas pressure. Means are also provided for transferring gas from a supply tank to the storage tank to maintain storage tank pressure above a predetermined minimum.

3,466,868
EXHAUST GAS CONDITIONER
Don S. Strader, Salt Lake City, Utah, assignor to Envirotech Corporation, Salt Lake City, Utah, a corporation of Delaware
Continuation-in-part of application Ser. No. 613,542, Feb. 2, 1967. This application Feb. 23, 1968, Ser. No. 707,868
Int. Cl. F01n *1/14*
U.S. Cl. 60—30 **3 Claims**



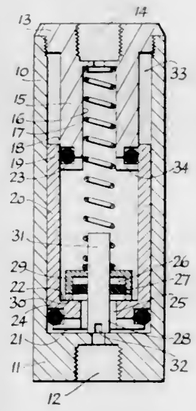
A gas conditioner for treating exhaust from internal combustion engines, the conditioner including a contact chamber for receiving engine exhaust gases, means for injecting fluid spray into gases in the chamber, an elongated open-ended dilution chamber, a gas discharge nozzle inside the dilution chamber directed axially thereof toward one open end, and conduit means for conducting gas from the contact chamber to the nozzle for injection axially of the dilution chamber to induce the flow of fresh air into and through the chamber to act as a diluent for the exhaust gases. The air flow may be augmented by flaring the dilution chamber inlet and/or by forcing air into the dilution chamber. The rate of supply of either or both the scrubbing liquid and diluent air may be controlled to vary in direct proportion to engine speed to accommodate variations in gas flow rate and temperature.

3,466,869
TORQUE CONVERTER WITH AXIALLY MOVABLE BLADED ELEMENT
Frank H. Walker and Carlisle R. Davis, Jr., Grand Blanc, Mich., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Sept. 7, 1967, Ser. No. 666,104
Int. Cl. F16d *33/14;* **F16h** *41/06*
U.S. Cl. 60—54 **5 Claims**



A two-stage, three-phase, five-element torque converter with a first stator element disposed between two turbine elements and mounted on a pilot ring carried by a second stator element. A helical slot and pin connection between the pilot ring and first stator element permits axial movement of the first stator element into and out of the converter working fluid flow path in response to changes in the flow path of the converter working fluid as determined by torque demanded from the converter. When a positive torque is developed on the first stator, it will rotate forwardly and automatically screw into the inner core of the converter with only the tips of the first stator blades still in the flow path; when a negative torque is developed on the first stator, it will rotate in a reverse direction and automatically screw back into a working position in the flow path. Both stators are mounted on a single one-way brake. In one embodiment, the second stator has variable pitch blades while in another embodiment these blades are fixed.

3,466,870
IN LINE BOOSTER
Norman H. Hackett, Bondi, New South Wales, Australia, assignor of fifty percent to Roy J. Cochran, Los Angeles, Calif.
Filed Oct. 17, 1967, Ser. No. 675,922
Claims priority, application Australia, Oct. 17, 1966, 12,648/66
Int. Cl. F15b *3/00, 7/06*
U.S. Cl. 60—54.5 **7 Claims**

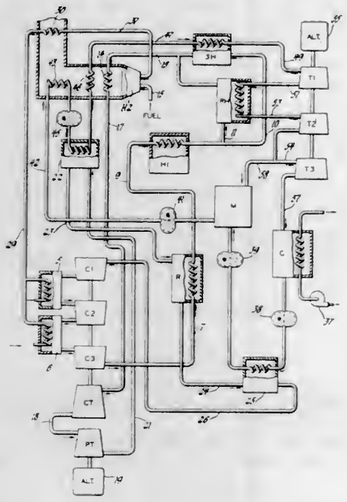


An in line booster of the type for use in the hydraulic brake systems of vehicles wherein the fluid pressure from the master cylinder is intensified and passed to the wheel cylinders, the booster having a piston with unequal working faces and arranged for reciprocating movement in a cylinder the piston having a passage from one face to the other with a valve member for sealing such passage, the valve passing fluid during the initial or bleeding stage, closing during the pressure intensification stage and releasing after a predetermined amount of piston travel or a predetermined maximum pressure.

3,466,871
TURBINE POWER PLANT
William F. Osborn, Jr., Brownsburg, and Karl G. Soder, Indianapolis, Ind., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Apr. 7, 1967, Ser. No. 629,272
Int. Cl. F01k *23/16;* **F01d** *13/02*
U.S. Cl. 60—67 **11 Claims**

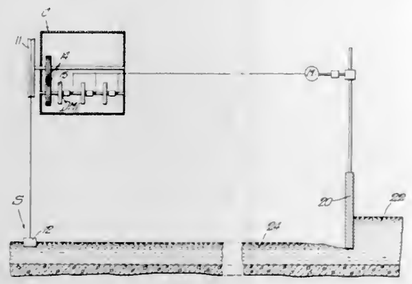
A power plant embodying a closed circuit gas turbine plant and a steam turbine plant, both delivering work.

A low-temperature heater preheats the helium which is further heated in a fueled heater; the fueled heater also



is an evaporator. Heat is rejected from helium to water and steam at several points in the two cycles.

3,466,872
AUTOMATIC WATERFLOW APPARATUS
Yoshio Shimizu, 106 Enoki-cho, Saitama-ken, Kumagaya-shi, Japan
Filed Mar. 20, 1967, Ser. No. 629,855
Int. Cl. E02b *7/20;* **G05d** *11/00*
U.S. Cl. 61—22 **15 Claims**

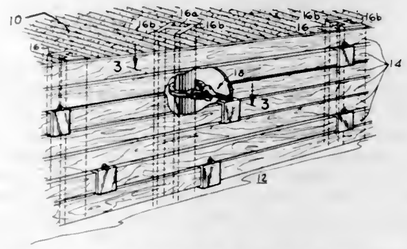


There is provided a gate in a waterway, and downstream and remote from the gate a control station at which a float rises and falls with the water level thereat. The gate is motor-operated, and operating and control circuitry of the motor includes the float so that the gate is normally operated in opening and closing directions when the water level at the control station is below and above predetermined lower and upper limits, respectively, with timing means being included in the circuitry to delay motor response to a call for gate opening or closing and periodically interrupt motor operation while the call persists so that the gate will respond in step-by-step motion. Provisions are also made automatically to close the gate under special conditions, i.e., when at any time the water level at the gate drops below the latter or when on a call for more water the gate reaches its fully open position, in either event of which the timing means are inoperative and the motor operates without delay and interruption. Further, a waterflow meter is operative except under the stated special conditions.

3,466,873
SANITARY LAND FILL METHOD
Mortimer T. Present, 555 W. 73rd St., Indianapolis, Ind. 46260
No Drawing. Filed Nov. 30, 1967, Ser. No. 686,848
Int. Cl. E02d *17/00;* **E02b** *3/00*
U.S. Cl. 61—35 **4 Claims**

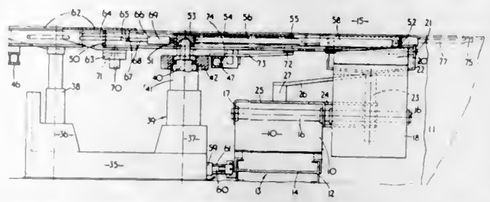
A sanitary land fill and method of making same comprising filling a land area with successive layers of refuse and covering each layer of refuse with a layer of foamed plastic resin which is applied as a liquid, is expanded in situ and solidifies to a rigid cell structure.

3,466,874
EARTH SHORING MEANS
Edward J. Holl, 320 Warwick Ave., South Orange, N.J. 07079
Filed Oct. 6, 1967, Ser. No. 673,475
Int. Cl. E02d *5/00;* **E04g** *3/00;* **B66d** *3/00*
U.S. Cl. 61—39 **2 Claims**



Opposing hooks have outer-end hook portions engaging rear surfaces of oppositely extending coplanar flanges of an upright stanchion, said hooks extending about the edges of said flanges and having their inner ends spaced apart between and spaced from front surfaces of said stanchions and a related, horizontal sheeting element; the hook's inner ends being interconnected by a distortable connection, and tension means being connected between an intermediate part of said distortable connection and tightenable to prevent dislodgement of said hook portions from their engagement with said rear, flange surfaces.

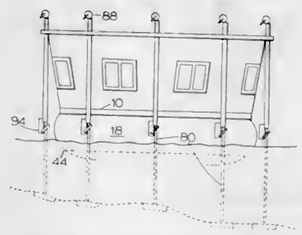
3,466,875
ROOF SUPPORTS FOR MINE WORKINGS
Karl Maria Groetschel, Stolzestrasse 44, Bochum, Germany
Original application Apr. 21, 1966, Ser. No. 544,145, now Patent No. 3,399,927, dated Sept. 3, 1968. Divided and this application Jan. 29, 1968, Ser. No. 701,138
Claims priority, application Germany, Apr. 21, 1965, 43,397
Int. Cl. E21d *11/00*
U.S. Cl. 61—45 **21 Claims**



This invention relates to a roof support for a mine working in which a superstructure carried on the upper end of props mounted on a base is formed in two parts of which the first comprises laterally spaced longitudinally extending roof bars connected by laterally extending cross members and defining a channel in which the second part of the superstructure, which is in the form of

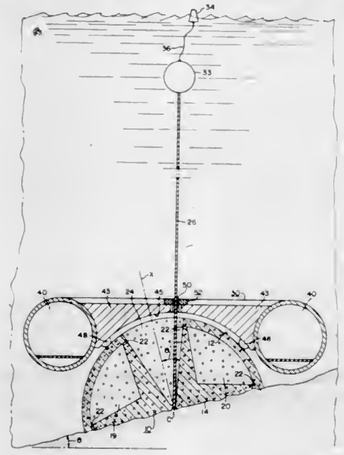
a beam, is disposed. The beam incorporates a downwardly presented bearing surface beneath which is disposed a prop equipped with a shoe to allow the beam to be moved slidably relatively to the prop by a hydraulic traction ram incorporated in the superstructure. The beam is also supported additionally to the prop by a cradle structure disposed beneath the beam forwardly of the prop and supported by strut elements inclining upwardly and forwardly from the base of the support.

3,466,876
MARINE PLATFORMS
Robert D. Hawkins, 115 Stony Hollow Road, Greenlawn, N.Y. 11740
Original application Dec. 29, 1965, Ser. No. 517,349, now Patent No. 3,370,562, dated Feb. 27, 1968. Divided and this application Jan. 2, 1968, Ser. No. 694,611
Int. Cl. E02b *17/00;* **B63b** *35/44*
U.S. Cl. 61—46.5 **11 Claims**



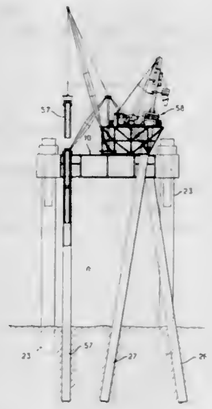
A mobile marine platform is described as having an air supported hull for flotation and vertically extendable legs for support on the marine floor. When the legs are implanted on the marine floor, the hull can be evacuated and removed to provide separation of the platform from the surface of the water without jacking up.

3,466,877
SELF-LEVELING LAND OR UNDERWATER STATION
Thomas P. Foley, Severna Park, and Stanley L. Quick, Annapolis, Md., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Mar. 17, 1967, Ser. No. 623,931
Int. Cl. E02d *29/00;* **B63c** *11/00*
U.S. Cl. 61—46 **11 Claims**



A hemispherical foundation member having hollow internal cavities is floated to a desired location in the sea and is caused to descend to the sea bottom with the admission of seawater to the cavities. The hemispherical foundation member includes an open cavity in the form of a cone having its apex in the vicinity of the center of curvature of the hemisphere. A cable connected to the foundation member at the apex of the cone extends vertically toward the surface when the foundation member comes to rest on either level or inclined bases. An underwater station structure having a concave undersurface is either lowered down the vertically extending cable or reels the cable into the station structure as it descends and comes to rest on top of the hemispherical foundation and assumes a horizontal orientation even through the foundation may rest on a sloping seabed.

3,466,878
RIG FOR WORK AT SEA, IN LAKES, LAGOONS
Nicolas Esquillan and Henri Houdin, Paris, France, assignors to Société des Entreprises Boussiron, Paris, France, a corporation of the French Republic
Filed Dec. 29, 1966, Ser. No. 606,109
Claims priority, application France, Jan. 17, 1966, 46,095
Int. Cl. E02d *21/00;* **E02b** *17/00;* **B63b** *35/44*
U.S. Cl. 61—46.5 **4 Claims**

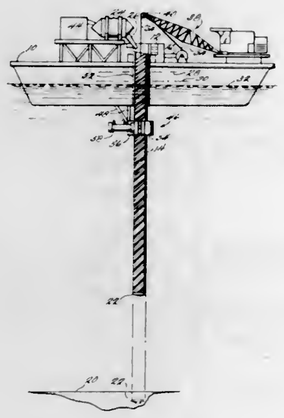


A rig for work at sea, in lakes, lagoons, comprising at least one structure supported above the water on permanent piles, each structure being made of concrete and arranged to be self-floating and being equipped with a set of provisional piles. After being launched, the structure is towed to its working site, then raised to its final height by means of the provisional piles, after which the permanent piles are erected to form the final supports, the provisional piles then being removed.

3,466,879
METHOD AND APPARATUS FOR MAKING PILING
Donald S. Justice, Washington, D.C. (1816 N. Queens Lane, Arlington, Va. 22201)
Filed Aug. 7, 1967, Ser. No. 658,694
Int. Cl. E02d *5/40;* **E04b** *1/16;* **B23p** *19/04*
U.S. Cl. 61—53.5 **10 Claims**

A spiral type conduit is continuously formed vertically and a settable material such as concrete is commensurately placed in the conduit as it is formed. This growing elongation constantly approaches its point of geo-fix as a piling. The place of using the method may range from the deep ocean to low bottom pits on land. A result is quick in-place production for the relief of otherwise

awkward delivery of heavy piling, sometimes longer than transport ships. Strength is added to the pile structure by a centrally extended twisted cable attached to the



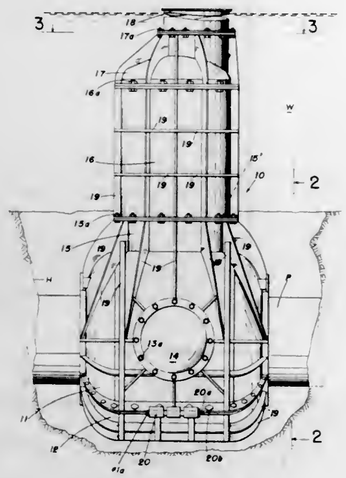
conduit bottom. The cable acts as a descending support during the forming and filling operation and may remain as a permanent reinforcement.

3,466,880

SUBMERSIBLE CHAMBER FOR SUBMERGED PIPELINES

Hartwell A. Elliott, Box 5512, Drew Station, Lake Charles, La. 70601

Filed Apr. 28, 1967, Ser. No. 634,751
Int. Cl. B63c *11/38, 11/40;* **F16l** *55/00*
U.S. Cl. 61—63 **4 Claims**



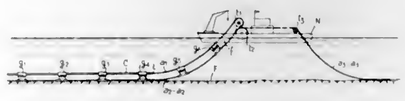
A sumersible chamber for repair of pipelines in water, formed by two mating hollow portions. One portion having a working structure projecting therefrom and an access structure preferably at a right angle to the working structure, and an access tube for connecting with the working structure or the access structure and extending above the surface of the water. Each of the mating portions have diametrically opposed semicircular openings for receiving a pipe line therethrough with the mating portions being pivotally connected by hinge means which include removable pins along one edge of the working structure and along one edge of the access structure whereby the second portion may freely swing away from the first portions.

3,466,881

METHOD OF LAYING UNDERWATER PIPES AND EQUIPMENT FOR SAID METHOD

Jacques Edouard Lamy, Fontenay-aux-Roses, France, assignor to Societe d'Etude du Transport et de la Valorisation des Gaz Naturels du Sahara "S.E.G.A.N.S.," Paris, France, a French body corporate

Filed Aug. 27, 1965, Ser. No. 483,112
Claims priority, application France, Sept. 1, 1964, 986,770; Aug. 11, 1965, 27,951
Int. Cl. B63b *35/04;* **F16l** *1/00*
U.S. Cl. 61—72.3 **13 Claims**



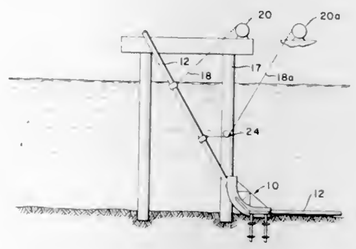
Method and equipment for laying a conduit on an underwater bed by attaching the conduit at intervals to a cable and laying the conduit by exerting a traction on the cable, the cable thereafter acting as a ballast for the conduit, the connection between the cable and the conduit being such that the conduit is spaced away from the bed whereas the cable lies on the bed.

3,466,882

OFFSHORE INSTALLATION AND METHOD OF INSTALLING A PIPE RISER

Douglas E. Broussard and Dean P. Hemphill, Houston, Tex., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware

Filed May 29, 1967, Ser. No. 641,961
Int. Cl. F16l *1/00;* **E02b** *17/00*
U.S. Cl. 61—72.3 **23 Claims**



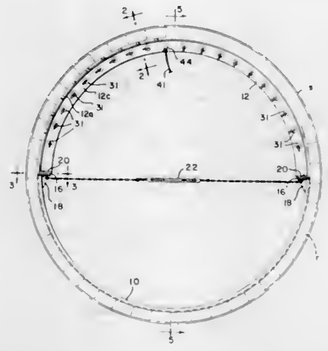
A method and apparatus for connecting an underwater pipeline lying along the floor of a body of water to an offshore platform in which the end of the pipeline is bent upwardly to form a pipeline "rise" and subsequently connected to the platform. The pipeline is bent to a desired curvature having a sufficient radius to prevent buckling the pipeline.

3,466,883

OVERHEAD BRICK LAYING APPARATUS

Maurice E. Drenkel, 12905 74th Place NE., Kirkland, Wash. 98033

Filed Dec. 21, 1967, Ser. No. 692,592
Int. Cl. E04g *15/00, 21/00;* **F27d** *1/00*
U.S. Cl. 61—84 **6 Claims**



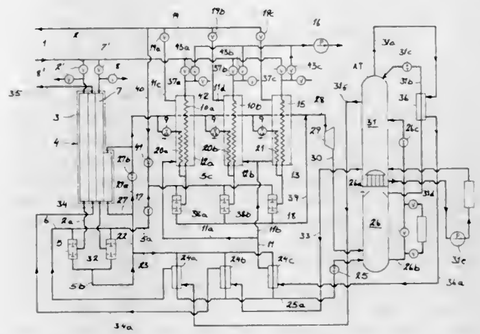
Brick are laid against the overhead curved surface of a rotary kiln drum in circumferential rows and clamped against the drum surface as they are positioned until the row of brick being laid is keyed and becomes self-supporting.

3,466,884

PROCESS AND INSTALLATION FOR THE REMOVAL OF EASILY CONDENSABLE COMPONENTS FROM GAS MIXTURES

Günther Rückborn, Munich-Grunwald, Germany, assignor to Linde Aktiengesellschaft, Wiesbaden, Germany, a corporation of Germany

Filed June 7, 1966, Ser. No. 555,762
Claims priority, application Germany, June 10, 1965, G 43,843
Int. Cl. F25j *5/00*
U.S. Cl. 62—13 **6 Claims**



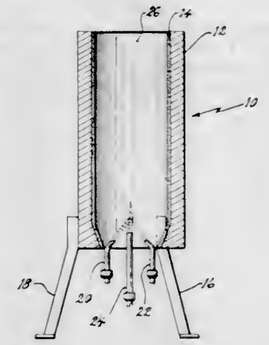
Condensable components CO_2 and H_2O are removed from air in indirect heat exchange with a returning product oxygen in a first section of the exchanger while the undesirable components precipitated in a previous cycle are flushed by a returning nitrogen product. Thereafter, the flow paths of the streams are alternated between the first and second sections, the functions of the respective fluids remaining unaltered. Another part of the air is subjected to indirect heat exchange in a third section which is thereafter reduced in pressure to 0.05 to 0.5 atmosphere to volatilize precipitated condensed components.

3,466,885

PROCESS FOR THE DISPOSAL OF CONTAMINATED LIQUID FLUORINE

James R. French, Jr., San Gabriel, Calif., assignor to the United States of America as represented by the Secretary of the Air Force

Filed Feb. 26, 1968, Ser. No. 708,057
Int. Cl. F23g *7/04*
U.S. Cl. 62—48 **5 Claims**



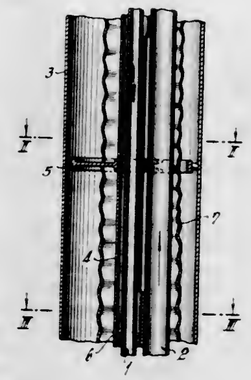
A method for the disposal of large quantities of a toxic, cryogenic substances such as liquid fluorine by effecting a reaction between the toxic substance and a common, inexpensive gaseous or liquid material, such as water, steam, natural gas or propane gas. The reaction provides heat energy to cause a controlled, low pressure combustion to effect the vaporization and dispersion of the liquid fluorine without generating excessively high temperatures.

3,466,886

FLUID-CONVEYING ARRANGEMENT

Conrad Doose, Hans Hemmerich, and Wolfgang Sassin, Julich, Germany, assignors to Kernforschungsanlage Julich des Landes Nordrhein-Westfalen-e.V., Julich, Germany

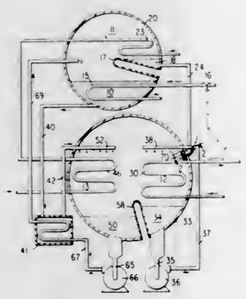
Filed Sept. 8, 1967, Ser. No. 667,056
Claims priority, application Germany, Sept. 8, 1966, K 60,206
Int. Cl. F17c *7/02, 13/10*
U.S. Cl. 62—55 **19 Claims**



A fluid-conveying arrangement includes a jacket which is surrounded by ambient atmosphere at a first temperature. A supply conduit is received with clearance in the jacket and is arranged to convey a fluid at a second temperature which greatly differs from the first temperature.

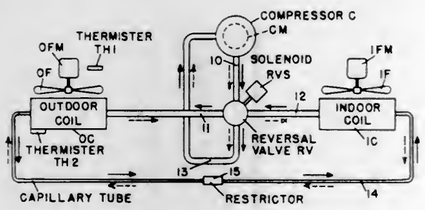
A thermal shield surrounds the supply conduit with spacing therefrom. A return conduit extends along the supply conduit in heat-exchanging connection with the thermal shield and is adapted to contain the aforementioned fluid at a third temperature which is close or identical to the second temperature.

3,466,887
ABSORPTION REFRIGERATION SYSTEM CONTROL
Keith V. Eisberg, Indianapolis, Ind., and Glenn B. Foster, Liverpool, N.Y., assignors to Carrier Corporation, Syracuse, N.Y., a corporation of Delaware
Filed Jan. 30, 1967, Ser. No. 612,543
Int. Cl. F25b *15/00, 49/00*
U.S. Cl. 62—141 **4 Claims**



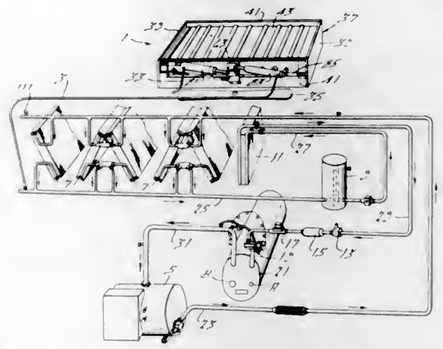
Low temperature control for absorption refrigeration systems where the control thermal sensitive part is placed in the path of both refrigerant condensate and recirculated refrigerant discharged in the evaporator; there being a baffle for dispersing the stream of entering condenser refrigerant.

3,466,888
DEFROST CONTROLS FOR HEAT PUMPS
William K. Kyle, Staunton, Va., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed May 15, 1968, Ser. No. 729,364
Int. Cl. F25b *13/00*
U.S. Cl. 62—156 **7 Claims**



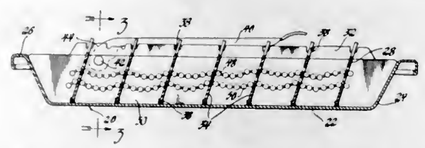
For controlling the defrosting of the outdoor coil of a head pump when the outdoor coil is operating as an evaporator coil, and the indoor coil of the heat pump is operating as a condenser coil for heating indoor air, a first thermistor is in heat exchange contact with the outdoor coil, and a second thermistor is exposed to the temperature of the outdoor air. The two thermistors are connected in series. When frost forms on the surface of the outdoor coil, the temperature of the refrigerant therein decreases, and the voltage at the junction of the thermistors changes, and operates a control circuit which stops the fan of the outdoor coil, and reverses the flow of refrigerant so that the outdoor coil operates as a condenser coil to melt the frost.

3,466,889
DAMPER CONTROL FOR REFRIGERATION SYSTEMS
John E. Fristoe, Xenia, and Dale T. Chambers, Englewood, Ohio, assignors to Chrysler Corporation, Highland Park, Mich., a corporation of Delaware
Filed Nov. 24, 1967, Ser. No. 685,539
Int. Cl. F25b *39/04, 41/00*
U.S. Cl. 62—184 **9 Claims**



Refrigerating apparatus having a damper control responsive to discharge pressure in either of two separate refrigeration circuits. Two pneumatic cylinders are connected to a plate assembly which, upon rotation, causes the damper blades to open or close. The plate assembly will rotate in response to the higher of the discharge pressures of the two refrigerant circuits.

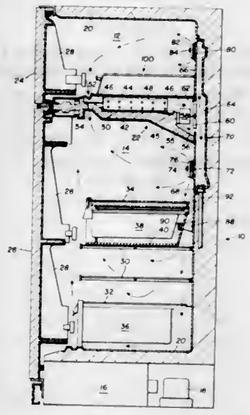
3,466,890
FREEZING TRAY WITH CHAIN ICE CHIPPER
Joe P. Pietrzak, Dayton, Ohio, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed May 19, 1967, Ser. No. 639,847
Int. Cl. F25c *1/24*
U.S. Cl. 62—320 **5 Claims**



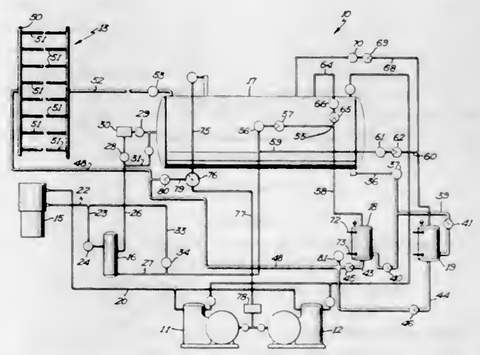
In the preferred form, a plurality of chains extend longitudinally through keyhole slots in the movable transverse walls of the grid in a substantially catenary suspension. The chains are limited in their movement through the holes by fitting into interlocking arrangement with the slot portions of the keyholes in the transverse walls. The movement of the transverse walls and the chain portion suspended between them relative to the frozen liquid in the compartments between the walls causes the frozen liquid to be cracked upon the ejecting operation of the transverse walls. Flexible wire rope may be substituted for the chains and extends through the transverse walls in a manner similar to the chains.

3,466,891
COMBINATION FREEZER AND REFRIGERATOR WITH FAST FREEZING MEANS
Richard D. Maxwell, Cedar Rapids, Iowa, assignor to Amana Refrigeration, Inc., a corporation of Delaware
Filed Sept. 6, 1967, Ser. No. 665,795
Int. Cl. F25d *17/06, 11/02, 11/04*
U.S. Cl. 62—419 **6 Claims**

A combination freezer and refrigerator which, in its preferred form, includes a pair of vertically stacked compartments separated by a horizontal partition containing the evaporator and air circulating unit. A large vertical plenum chamber is located on and behind the rear walls of the two compartments and receives the chilled air from the evaporator which in turn passes it directly to both compartments through separate outlets in the plenum chamber front wall. A third outlet in the freezer compartment, also directly through the plenum chamber front wall, feeds the rear of a separate freezing tunnel therein for the production of ice cubes and the like. The tunnel has a front door and its top wall includes a main air outlet from the tunnel to the freezer compartment and a number of smaller outlets spaced thereover which constitutes the top wall a freezing shelf for fast freeze of article placed thereon.

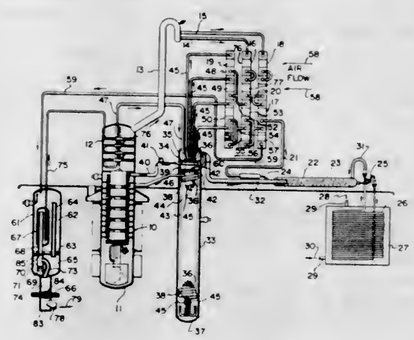


3,466,892
REFRIGERATION SYSTEM FOR ICE RINKS
Richard B. Holmsten, 2127 Dudley, St. Paul, Minn. 55108
Filed Oct. 9, 1967, Ser. No. 673,722
Int. Cl. F25b *39/04;* **A63c** *19/10*
U.S. Cl. 62—467 **7 Claims**



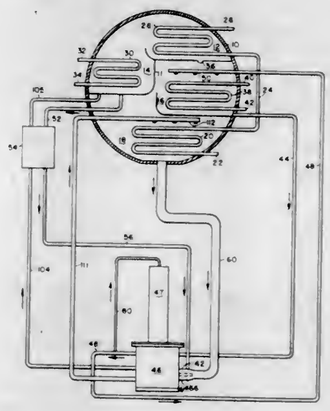
A system for providing a refrigerant to a zone or area retaining a medium to be chilled, the system including a compressor means for compressing a refrigerant, means for delivering the compressed refrigerant to a low pressure receiver vessel, and means for passing refrigerant condensate from said low pressure vessel to a pumper drum vessel. The system further includes means for utilizing liquid refrigerant, under pressure, for propelling fluid retained in the pumper drum from this drum to the zone or area retaining the medium from which heat is being abstracted.

3,466,893
ABSORBER-CONDENSER APPARATUS
Benjamin A. Phillips and John Roeder, Jr., Benton Harbor, Mich., assignors to Whirlpool Corporation, a corporation of Delaware
Filed Apr. 5. 1968, Ser. No. 719,161
Int. Cl. F25b *15/00*
U.S. Cl. 62—476 **8 Claims**



An absorption refrigeration system having a bank of a plurality of adjacent conduit coils over which cooling air is directed from one side of the bank to the other with at least two coils in the bank having portions operating as an absorber to absorb gaseous refrigerant into absorption liquid and other portions operating as a condenser for condensing gaseous refrigerant into liquid refrigerant. The conduit transfers the refrigerant and liquid from the absorber portion of one coil through the absorber portion of a second coil prior to leaving the bank and transfers refrigerant from the condenser portion of one coil through the condenser portion of a second coil prior to leaving the bank. In the preferred structure the second coil is located in the bank to be contacted first by the air stream before the air stream is warmed by contact with the other coils.

3,466,894
ABSORPTION REFRIGERATING SYSTEM
Larry G. Berglund and Robert P. Novak, La Crosse, Wis., assignors to The Trane Company, La Crosse, Wis., a corporation of Wisconsin
Filed Jan. 5, 1968, Ser. No. 696,012
Int. Cl. F25b *15/06, 41/00*
U.S. Cl. 62—476 **10 Claims**



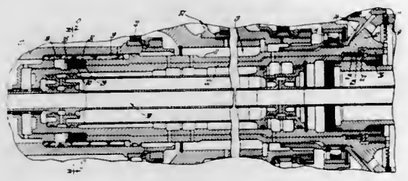
Absorption refrigerating system having a pump which comprises two impellers mounted on a single shaft with

one impeller circulating refrigerant and the other impeller circulating absorbent solutions of different concentrations and having a rotary seal between the two impellers.

3,466,895
PRESTRESSED SHAFT

John N. Cartwright, Indianapolis, Ind., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Mar. 4, 1968, Ser. No. 710,325
Int. Cl. F16c *3/00, 3/03*
U.S. Cl. 64—1 **5 Claims**

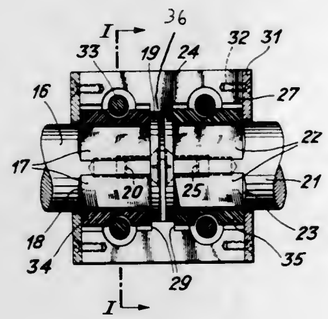


A composite shaft is made up of coaxial telescoped inner and outer sections coupled together at both ends so that they are oppositely torqued by each other. The load carrying capacity of the composite shaft is greater than that of a single shaft of the same dimensions and material.

3,466,896
SHAFT COUPLING

Erwin Pfarrwaller, Winterthur, Switzerland, assignor to Sulzer Brothers Limited, Winterthur, Switzerland, a Swiss company

Filed Sept. 29, 1967, Ser. No. 671,659
Claims priority, application Switzerland, Sept. 30, 1966, 14,185/66
Int. Cl. F16d *3/12, 3/14*
U.S. Cl. 64—27 **7 Claims**

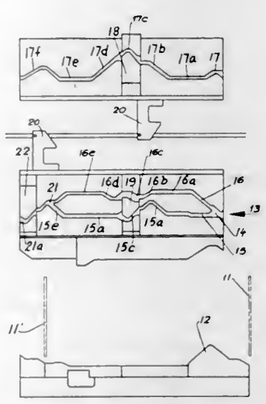


There is disclosed an elastic coupling for coupling together two aligned shafts, the coupling being capable of transmitting both torque and axial thrust without metal to metal contact between the shafts. The coupling comprises on each of the shafts to be coupled a male end of polygonal cross-section, an elastic sleeve forced over that end, and a disc or washer affixed to the end of that shaft to prevent the sleeve from being pulled off. It also comprises an outer sleeve split into two substantially semicylindrical rigid shells. These shells when fastened together constitute an outer sleeve or female member having at each end a cavity of similar polygonal cross-section. Each of these cavities fits about and squeezes one of the elastic sleeves and is bounded at each end by a radially inwardly extending shoulder surface. These two shoulder surfaces of each cavity embrace the ends of one of the elastic sleeves.

3,466,897
MULTIPLE SYSTEM DOUBLE-CYLINDER CIRCULAR KNITTING MACHINE

Horst Paepke, Rottenburg (Neckar), Germany, assignor to Mayer & Cie, Tailfingen, Germany, a firm

Filed Aug. 24, 1966, Ser. No. 574,735
Claims priority, application Germany, Aug. 26, 1965, M 66,453
Int. Cl. D04b *9/10*
U.S. Cl. 66—14 **3 Claims**



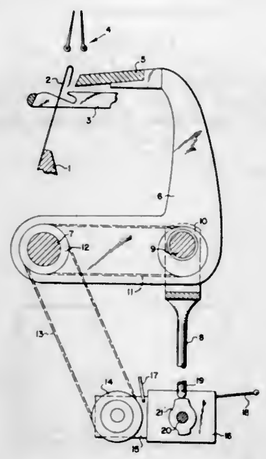
A needle transfer selecting means is situated only at each second one of a plurality of cam systems of the lower cylinder of a double cylinder machine, and the plurality of cam systems coact with the sliders which are selected and not selected by the selecting means to return the selected ones of the sliders to the non-selected sliders only after the selected ones of the sliders have moved through a cam system to transfer needles to the upper cylinder and another cam system to receive needles back from the upper cylinder, so that return of the selected sliders is brought about only at every other cam system of the plurality of lower cylinder cam systems.

3,466,898
PRESSER MECHANISM FOR A WARP KNITTING MACHINE

Karl Kohl, Offenbacher Landstr. 20, Hainstadt am Main, Germany

Continuation-in-part of application Ser. No. 548,470, May 9, 1966. This application Mar. 9, 1967, Ser. No. 634,011
Claims priority, application Germany, Mar. 10, 1966, M 68,710
Int. Cl. D04b *23/00, 27/00, 15/28*
U.S. Cl. 66—86 **7 Claims**

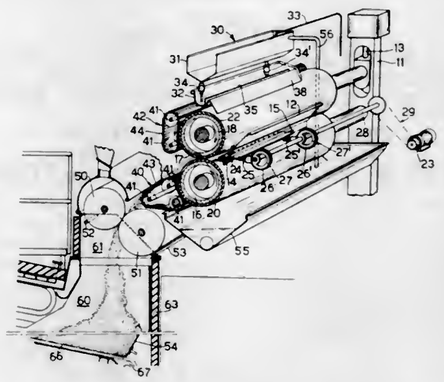
Presser mechanism for a bearded-needle warp-knitting machine in which a presser plate is mounted on a rocker, the rocker is pivoted by means of a reciprocating push-rod connected to the rocker by a pivot pin eccentrically journaled in a bearing sleeve on the rocker, and the angular position of the bearing sleeve is varied to change the effective length of the push-rod during the reciprocating movement of the same, whereby engagement between the presser plate and the needle beards may be prevented although the push-rod reciprocates continuously.



3,466,899
APPARATUS FOR PADDING AND OTHER SUBSEQUENT TREATMENT OF LOOSE STOCK TEXTILE FIBERS

Leo Drago, Schio, Italy, assignor to Ilma-Industria Lavorazioni Metalli Antiacidi S.a.S., Shio (Vicensa), Italy, an Italian company and J. R. Geigy A.G., Basel, Switzerland, a Swiss company

Filed June 7, 1966, Ser. No. 555,775
Claims priority, application Italy, June 10, 1965, 12,951/65
Int. Cl. D06f *71/34, 87/00*
U.S. Cl. 68—5 **13 Claims**

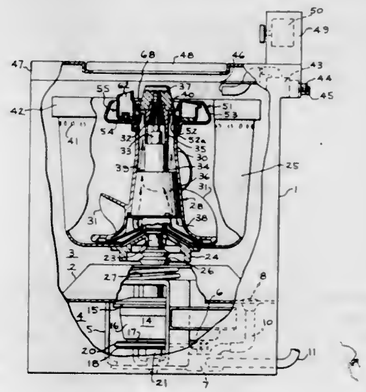


Apparatus for padding and steaming loose fiber stock comprising a padding station having a pair of rollers mounted above each other with their axes in parallel position in a substantially vertical plane and spaced from each other so as to constitute a pad mangle, means for preparing and shaping the loose stock to be treated so that it is given the appearance of an untufted mattress, conveying means for transporting the mattress to the vicinity of the said pad mangle, chute or sliding means ending at the level of the plane of contact of the two rollers of the pad mangle with each other and close to the entry side for that mangle, reciprocating pusher means for pushing successive zones of the stock mattress away from the end of said chute or sliding means between said pair of rollers of the pad mangle, means for applying pad liquor to the upper one of the two rollers constituting the pad mangle on the entry side of the mangle, and means for removing impregnated and squeezed stock emerging from the opposite side of the pad mangle and directing the mat or carpet of impregnated and squeezed stock material formed in the mangle toward the entrance of the steaming zone; and a steaming unit having means for introducing the matted stock into a steaming chamber while simultaneously substantially sealing the latter chamber against the escape of steam, a steam chamber equipped with means for the introduction of steam, conveying means for transporting the stock through the steam chamber to the exit thereof, and stock discharge means preferably serving to seal the exit against undue loss of steam.

3,466,900
AUTOMATIC ADDITIVE DISPENSER

Allen W. Elliott, Jr., Brookfield, Ill., assignor to General Electric Company, a corporation of New York

Filed Oct. 11, 1967, Ser. No. 674,573
Int. Cl. D06f *29/00, 35/00*
U.S. Cl. 68—17 **10 Claims**



An additive dispensing arrangement for a washing machine, including an additive container to mount around the agitator and form a well for recirculated liquid. The container has a inlet, exposed to the well, and an outlet, both above the normal level of additive in the container so that recirculated liquid flows through the container to admix with and dispense the additive. The container rotates with the agitator during extraction operations to remove residual liquid.

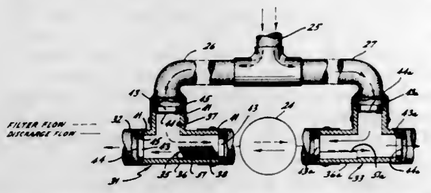
3,466,901
LAUNDRY APPARATUS

John B. Reid, Philadelphia, Pa., assignor to Philco-Ford Corporation, Philadelphia, Pa., a corporation of Delaware

Filed Sept. 25, 1967, Ser. No. 670,134
Int. Cl. D06f *29/00, 35/00*
U.S. Cl. 68—18 **7 Claims**

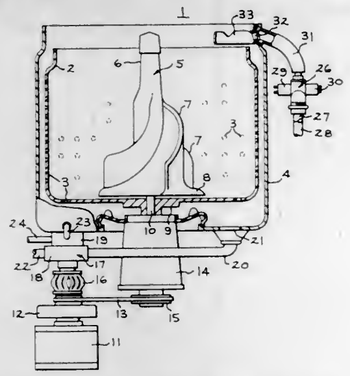
A self-cleaning lint filter having a conduit through which wash fluid is caused to flow, first in one direction, then in an opposite direction. A plurality of spaced, parallel fingers extend from the inside wall and toward the center of the conduit. The fingers are inclined and their free end portions are presented generally opposite to the direction of fluid flow in achievement of a filtering action,

and in the general direction of flow in the achievement of a self-cleaning action. Fluid-flow actuated valving



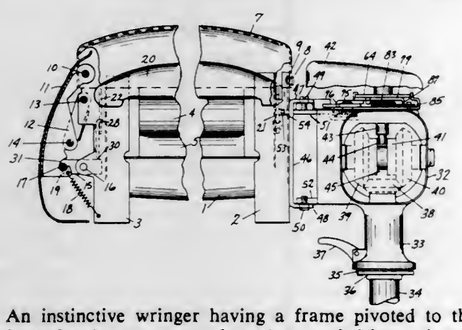
associated with the conduit affords directional control of fluid flow through the filter.

3,466,902
FLUID NOZZLE
Alvin Akers, Jeffersontown, Ky., assignor to General Electric Company, a corporation of New York
Filed Sept. 8, 1967, Ser. No. 666,279
Int. Cl. D06f *39/00;* **B05b** *1/02*
U.S. Cl. 68—207 **8 Claims**



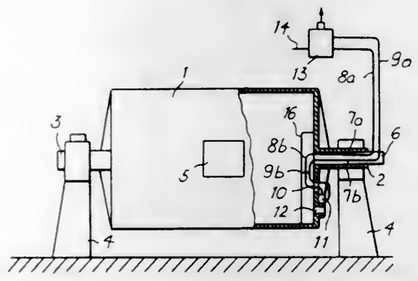
A nozzle for a stream of fluid has an expansion chamber and a limitted area passage for a central portion of the stream of fluid downstream of the expansion chamber. The sides of the nozzle direct peripheral portions of the stream into its central portion downstream of passage.

3,466,903
WRINGER WITH INSTINCTIVE RELEASE OF ROLL PRESSURE AND DRIVE
Paul M. Horrobin, Erie, Pa., assignor to Lovell Manufacturing Company, Erie, Pa., a corporation of Pennsylvania
Filed Apr. 21, 1967, Ser. No. 632,808
Int. Cl. D06f *45/06*
U.S. Cl. 68—253 **3 Claims**



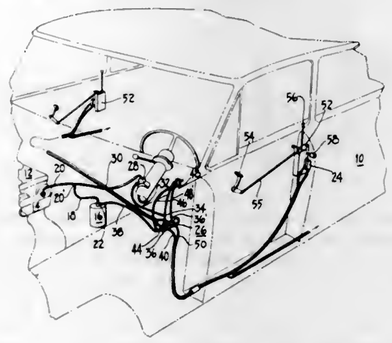
An instinctive wringer having a frame pivoted to the wringer head, a pressure release bar carried by a pivoted arm, and interengaging parts on the wringer head and on the arm for actuating the pressure release upon pivotal movement of the frame relative to the head.

3,466,904
TANNING PLANT
Hans Huni, Ebnetstrasse 38, Horgen, Switzerland
Filed July 10, 1967, Ser. No. 656,620
Claims priority, application Switzerland, July 11, 1966, 10,143/66
Int. Cl. C14c *3/00*
U.S. Cl. 69—30 **3 Claims**



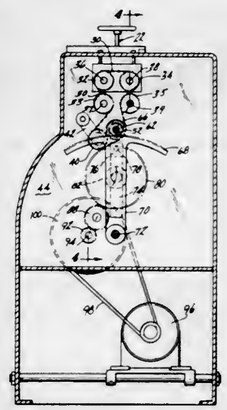
A tanning plant having a horizontal rotating tanning drum provided with a hollow axle journal containing a coupling member, located in the end face of the drum, and a shielded outlet device for the drum, a controllable pressure source connected by a pipe located in the hollow axle journal to permit a combined suction and pressure effect to flow the liquid in the drum through the outlet device, a slide or gate valve for the outlet device pneumatically operable by means of a plunger, wherein the coupling member is formed with a tapped hole for receiving the threaded hub of a first disc, rotatable relative to a second disc, both discs provided with concentric annular grooves whose cross-sections form connected channels.

3,466,905
DOOR LOCKING SYSTEM
Raymond A. Deibel, Cheektowaga, William C. Riester, Williamsville, and Hobart V. Roberts, Jr., Elma,, N.Y., assignors to Trico Products Corporation, Buffalo, N.Y.
Filed Sept. 23, 1966, Ser. No. 581,569
Int. Cl. E05b *65/36, 65/38, 65/42*
U.S. Cl. 70—264 **7 Claims**



A door locking system for a motor vehicle utilizing vacuum generated by the engine to operate servo units to automatically actuate the locking mechanism and to simultaneously disable the inner mannual unlatching mechanism utilized in conjunction with a manual remote control and a conventional door lock manual operator. Valving responsive to placing the vehicle in motion by movement of the gear shift lever or to a motion sensing valve activates the automatic locking system by porting vacuum through a central distributor valve to servo units at each door. The inner release lever assembly is formed of two levers pivotally connected. When pinned together for conjoint operation, the inner manual unlatching mechanism is operative. When the two levers are disengaged, the inner manual unlatching mechanism is disabled. In one embodiment the servo unit operates both the locking lever and the lever engaging pin through a two part lost motion connected operating rod. In another embodiment, a secondary servo unit actuated only during an automatic locking operation operates the lever engaging pin while the primary servo unit actuates the locking lever. A third embodiment similar to the first mentioned embodiment employs a solenoid actuated two part operating rod.

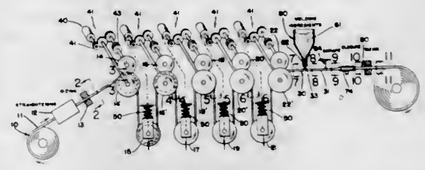
3,466,906
WIRE FEED CONTROL MECHANISM FOR SPRING COILING MACHINE
Charles R. Bergevin 28 West View Terrace, Torrington, Conn. 06790
Filed Sept. 25, 1967, Ser. No. 670,344
Int. Cl. B21b *31/34, 39/02;* **B65h** *51/00*
U.S. Cl. 72—36 **8 Claims**



A mechanism for adjusting the amount of wire feed during each spring forming cycle of a machine for coiling helical springs, which employs a segment gear for rotating the wire feed rolls. The segment gear is pivoted through a predetermined arc by a crank pin on a crank gear. The crank pin can be moved radially of the crank gear by means of a worm gear which is fixed to a rotatable rod extending from the crank gear to an external portion of the machine where it is readily accessible to the operator.

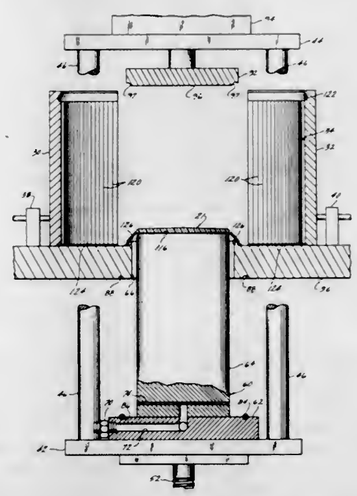
3,466,907
METAL RIBBON, WELDING ELECTRODES AND METHOD AND APPARATUS FOR FORMING SAME
George G. Landis, Pepper Pike, and Walter G. Mosgrove, Willoughby, Ohio, assignors to The Lincoln Electric Company, Cleveland, Ohio, a corporation of Ohio
Continuation-in-part of application Ser. No. 68,771, Nov. 14, 1960. This application Jan. 3, 1966, Ser. No. 537,577
Int. Cl. B23k *35/40;* **B21d** *39/02;* **B21b** *39/08*
U.S. Cl. 72—52 **25 Claims**

An elongated metal rod is passed through a series of pairs of forming rolls. One roll of each pair has a continuous circumferentially extending groove on its surface, and the other roll of each pair has a narrow portion which enters the groove. The width of each narrow nose portion on successive rolls progressively widens so that the rod is first partially split from one side and the split is then progressively widened until a U-shaped ribbon of uniform



thickness and width is produced. The groove of the ribbon is then filled with granular fluxing ingredients and the edges of the ribbon are brought into abutting engagement so as to form a closed tube. The tube is then drawn to a desired outer diameter which tightly compacts the granular ingredients on the inside.

3,466,908
APPARATUS FOR FORMING HOLLOW ARTICLES
Carlton L. Whiteford, Stamford, Conn., assignor to Plastic Can Corporation, Springdale, Conn., a corporation of Connecticut
Continuation-in-part of application Ser. No. 456,454, May 17, 1965, which is a continuation-in-part of application Ser. No. 313,071, Oct. 1, 1963. This application Feb. 13, 1967, Ser. No. 619,507
Int. Cl. B21d *22/20, 39/08*
U.S. Cl. 72—58 **16 Claims**

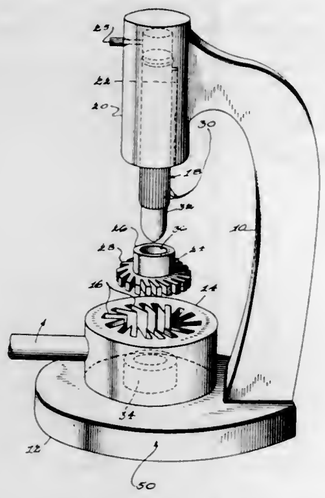


There is disclosed apparatus for fabricating hollow articles which achieves substantial multiaxial orientation of ductile metal or synthetic plastic by use of a combination including a pair of split mold members which are movable upon a frame into an operating position wherein they define a mold cavity of desired wall configuration with the frame and split mold members providing cooperating portions for clamping the periphery of a preform into operative position at one end of the mold cavity. A pair of plunger means move together within the cavity end relative to each other during movement inwardly of the mold cavity so as to draw the preform into an elongated side wall while at the same time expressing material from the clamped bottom of the preform for use in

forming the side wall. Internal pressure applying means extend within the mold cavity during the inward movement of the plunger means to press upon the internal surface of the preform and effect lateral expansion thereof into conformity with the wall of the mold cavity.

Various specific embodiments of the several components of the apparatus are disclosed. In addition, there is disclosed the structure of the preforms utilized in the apparatus which have flanges extending outwardly adjacent the upper end of an incipient side wall portion so as to facilitate clamping thereof by the apparatus. Hollow metal containers are also disclosed and fabricated from preforms of ductile metal.

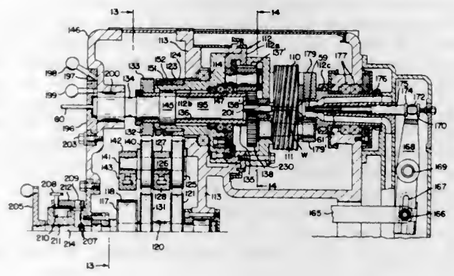
3,466,909
PROCESS FOR OBTAINING THE RELIEF OR CLEARANCE ANGLE IN CIRCULAR EDGE CUTTING
Ernesto J. Weber, Lluvia 470, Mexico City 20, Mexico
Continuation-in-part of application Ser. No. 504,258, Oct. 23, 1965. This application Aug. 16, 1967, Ser. No. 661,131
Int. Cl. B21b *15/00, 23/00;* **B21d** *22/00*
U.S. Cl. 72—68 **3 Claims**



An apparatus is disclosed for bending the teeth of a cutter to obtain the requisite relief angles. The apparatus has a support for a bender which has a plurality of teeth grooves formed in the bender adapted to have the cutter teeth positioned therein. The support has a piston with a guide nose positioned above the bender such that the nose may be brought into engagement with the cutter and force the cutter into the bending tool. Subsequent relative rotational movement between the bender and piston supporting the cutter effects bending of the cutter teeth.

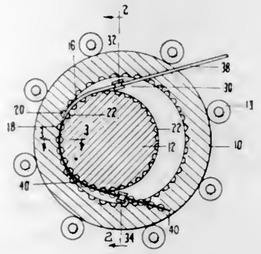
3,466,910
METHOD AND MACHINE FOR BLANKING BALL BEARINGS
Leonard O. Carlsen, deceased, late of Deerfield Beach, Fla., by Ruth Rogers Carlsen, administratrix, Deerfield Beach, Fla. 33441
Filed June 21, 1967, Ser. No. 647,882
Int. Cl. B21k *1/02*
U.S. Cl. 72—71 **20 Claims**

Ball bearings are blanked by feeding wire between two rollers, each having a helical groove of arcuate profile, shaped to roll out one-half of a ball. The rollers are disposed at opposite sides of the wire and rotate in engagement with and revolve about the wire. The lead of the thread of the rollers produces axial feed of the wire. Radial



feed is built into the rollers; they have thread convolutions of progressively varying height and top width. The threads may cut the finished balls from the wire; or a separate cut-off tool may be employed for this purpose.

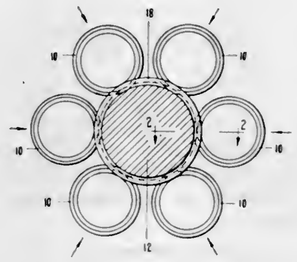
3,466,911
MASS PRODUCTION OF STANDARDISED COMPONENTS
Jacob Marcovitch, Johannesburg, Transvaal, Republic of South Africa, assignor to Rotary Profile Anstalt, Vaduz, Liechtenstein
Filed May 1, 1967, Ser. No. 634,944
Claims priority, application Republic of South Africa, May 5, 1966, 2,614/66
Int. Cl. B21b *5/00*
U.S. Cl. 72—91 **2 Claims**



A metal band is passed through the throat defined between the inner surface of a hollow roller and the circumference of a roller mounted eccentrically within the cavity of the hollow roller, the opposed roller surfaces defining between them a series of dies which profile the band to form a line of articles separated by rupturable webs. Direction-changing means are provided to lead the band to and from the throat.

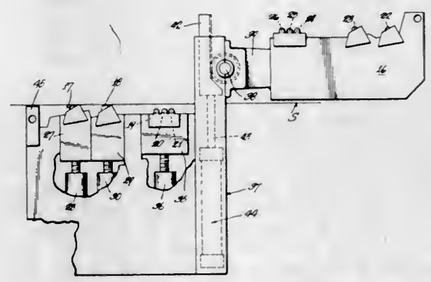
3,466,912
MANUFACTURE OF ANNULAR ARTICLES
Jacob Marcovitch, Johannesburg, Republic of South Africa, assignor to Rotary Profile Anstalt, Vaduz, Liechtenstein
Filed May 1, 1967, Ser. No. 634,941
Claims priority, application Republic of South Africa, May 5, 1966, 66/2,611; Apr. 19, 1967, 67/2,272
Int. Cl. B21d *15/00*
U.S. Cl. 72—110 **8 Claims**

Rings are profiled by contacting the surface of an annular blank by at least three rollers that are moved radially inwardly to diminish the diameter until the required outer diameter is reached. The blank may be squeezed between a mandrel and one or more of the series of rollers the inward movement of which is arrested when



they define a circle of diameter equal to the required ring diameter. Some of the series of rollers may be mounted on a holder and the rest on a base, the holder and base being moved together until they make contact, when the rollers are in their final position.

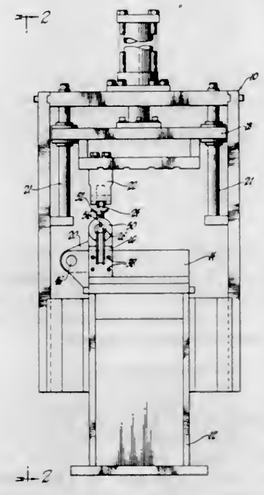
3,466,913
STRIP WORKING APPARATUS
Raymond T. Klempay, Brookfield, and Kenneth L. Bandy, Youngstown, Ohio, assignors to The McKay Machine Company, Youngstown, Ohio
Filed Aug. 29, 1967, Ser. No. 664,035
Int. Cl. B21d *1/02;* **F16c** *19/50*
U.S. Cl. 72—163 **9 Claims**



Strip working apparatus providing rolls engaged with opposite sides of longitudinally traveling strip in which the rolls on opposite sides of the strip are carried by respective frames and the latter are pivotally connected together to expose the rolls for cleaning or maintenance. The frame pivot axis extends in a direction from strip edge to strip edge and such axis is spaced from the rolls along the path of strip travel and is offset from the latter.

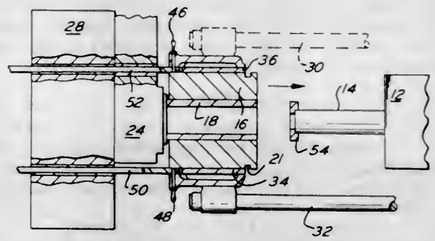
In order to control axial float of a small diameter working roll without impeding its free rotation or causing transverse flexure thereof, a thrust roller assembly is provided at each end of such roll. Each thrust assembly consists of a pair of thrust rollers engaged with a roll end in diametrically opposed relation and such rollers are tiltably mounted to equalize the radial loads thereon.

3,466,914
BENDING MACHINE
David J. Gilchrist, Saginaw, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Nov. 12, 1965, Ser. No. 507,272
Int. Cl. B21d *7/024*
U.S. Cl. 72—214 **8 Claims**



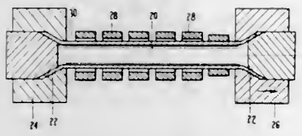
This bending machine, in several automated steps, brings a pivotal clamp down against the stock to hold the stock against an arcuate bending surface of a die, advances a stock locator up to the die to permit bends closely adjacent the locator, and moves a ram linearly past the die. The ram carries a roller which forms the stock over the die while avoiding the possibility of scratching the stock surface. The die overlaps a die plate in such a manner that the force exerted by the bending process cannot cause the die to slip forward.

3,466,915
EXTRUSION PRESS CONTAINER APPARATUS
Raymond F. Boshold, Springfield, Pa., assignor to Baldwin-Lima-Hamilton Corporation, Philadelphia, Pa., a corporation of Delaware
Filed Apr. 26, 1967, Ser. No. 633,959
Int. Cl. B21c *27/00, 23/21*
U.S. Cl. 72—272 **5 Claims**



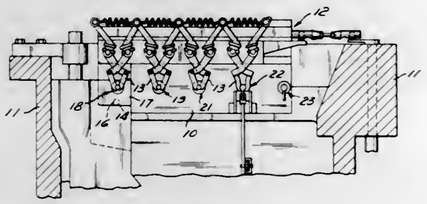
An extrusion container is supported within the holder by keys of which the container rests so that movement of the container holder away from the container will facilitate transferring the container to support bars from which the container may be raised vertically.

3,466,916
WORKING OF PLASTICALLY DEFORMABLE MATERIALS
Jacob Marcovitch, Johannesburg, Republic of South Africa, assignor to Rotary Profile Anstalt, Vaduz, Liechtenstein
Filed May 1, 1967, Ser. No. 634,942
Claims priority, application Republic of South Africa, May 5, 1966, 66/2,612
Int. Cl. B21d *11/14, 31/00*
U.S. Cl. 72—299 **17 Claims**



Lengths of plastically deformable material having fibrous inclusions of foreign matter are treated to destroy the "grain" of the material, by successively isolating zones along the length and wringing the zone to break up the fibres into randomly oriented fragments.

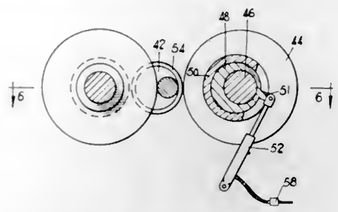
3,466,917
METHOD AND APPARATUS FOR FORGING BLANKS
Gerald R. Eakin, Tiffin, Ohio, and James R. Pontius, Birmingham, Mich., assignors to The National Machinery Company, Tiffin, Ohio, a corporation of Ohio
Filed Oct. 19, 1966, Ser. No. 587,882
Int. Cl. B21j *13/00;* **B21d** *43/04;* **B21k** *1/44*
U.S. Cl. 72—354 **25 Claims**



A forging machine is disclosed for forming eye-bolts and the like. The machine includes a plurality of die stations in which a blank is progressively upset by endwise pressure and a final die station in which the blank is laterally upset. A turning transfer is provided to turn the blank through 90° before it reaches the final die station so that a laterally applied force is applied in the same direction as the previous endwise upsetting forces.

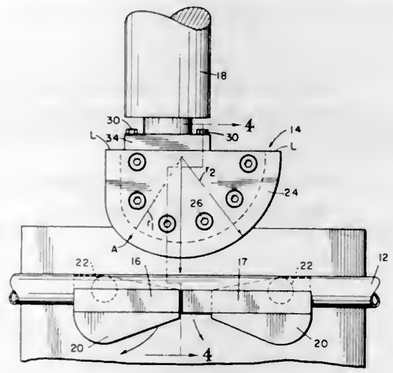
3,466,918
PROFILING OF WORKPIECES
Jacob Marcovitch, Johannesburg, Republic of South Africa, assignor to Rotary Profiles Anstalt, Vaduz, Liechtenstein
Filed Sept. 24, 1965, Ser. No. 489,903
Claims priority, application Republic of South Africa, Sept. 30, 1964, 64/4,662
Int. Cl. B21b *1/16, 19/12;* **B21d** *3/02*
U.S. Cl. 72—366 **9 Claims**

The disclosure relates to a method of rolling a workpiece that is a figure of revolution to reduce or profile it. The workpiece is nipped in a throat defined by two relatively moving bodies so that it is drawn through the throat, rotating about its axis as it does so; the bodies being forced towards each other to narrow the throat



after the workpiece has been nipped in it, so to increase the reduction imposed on the workpiece without increasing the throat length.

3,466,919
MULTIPLE RADIUS PUNCH FOR PIPE BENDING
Louis Bledstein, Indianapolis, Ind., assignor to Arvin Industries, Inc., Columbus, Ind., a corporation of Indiana
Filed Dec. 8, 1967, Ser. No. 689,076
Int. Cl. B21d *9/05*
U.S. Cl. 72—389 **10 Claims**

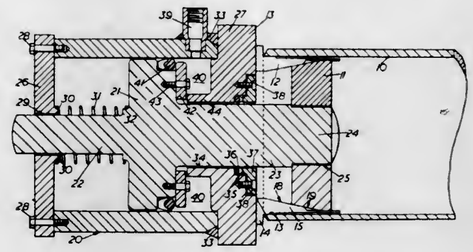


A machine for forming multiple radius bends in tubing, comprising a press having a ram mounted thereon for reciprocating movement, and having a multiple radius punch attached to the work end of the ram for cooperation with a pair of dies. The portion of the punch which contacts the tubing is curved convexly with at least two radii of curvature along its longitudinal axis, and it is curved concavely across its transverse axis to correspond to an amount less than half of the circumference of the tubing. The dies support the tubing horizontally prior to the punching operation, and each die is also curved concavely to correspond to the other half of the tubing circumference. The dies are pivotally mounted and spaced apart sufficiently to allow the punch to move therebetween and to bend the pipe without jamming it between the punch and the dies.

3,466,920
EXPANDING TOOL FOR USE WITH A TUBULAR WORKPIECE
George Parker, Glasgow, Scotland, assignor to Stewarts and Lloyds Limited, Glasgow, Scotland
Filed May 18, 1967, Ser. No. 639,548
Int. Cl. B21d *41/02;* **B21b** *25/00*
U.S. Cl. 72—393 **4 Claims**

An expanding tool for use with a tubular metal workpiece has a piston and cylinder for moving a uniformly-

tapered plug relative to uniformly expansible collet member formed in one piece, which collet member has pro-



truding abutment means on its periphery thereby aligning the collet with the axis of the tube.

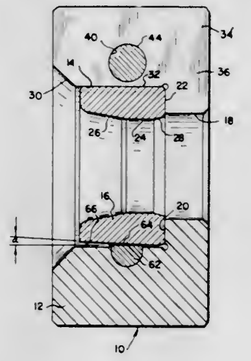
3,466,921
APPARATUS FOR REMOVING DENTS FROM TUBING AND SIMILAR ARTICLES
George W. Steiniger, Wallingford, Conn., assignor to Allegheny Ludlum Steel Corporation, Brackenridge, Pa., a corporation of Pennsylvania
Filed Mar. 1, 1968, Ser. No. 709,555
Int. Cl. B21d *41/02;* **B21j** *9/18*
U.S. Cl. 72—393 **8 Claims**



Apparatus adapted to be removably positioned within the bore of an elongated section of dented tubing or similar article, the apparatus comprising, in combination, an expansible head conforming to the internal configuration of said bore having a plurality of sections held in cooperative relationship by biasing means and expanding means adapted to engage and expand said head to correspond to the internal dimensions of said bore, said biasing means acting to return said head sections into cooperative relationship upon disengagement of said expanding means from said head.

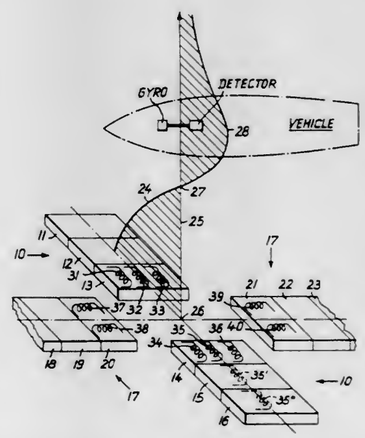
3,466,922
DIE ASSEMBLIES
William H. Phillips, Jr., North Bergen, N.J., assignor to Carmet Company, Pittsburgh, Pa., a corporation of New Jersey
Filed Nov. 30, 1967, Ser. No. 686,904
Int. Cl. B21c *3/00;* **B23b** *31/12, 5/22*
U.S. Cl. 72—467 **13 Claims**

A die assembly having a split holder or casing provided with a stepped longitudinal bore and a die insert disposed in the longitudinal bore in the holder or casing. The die insert is held solidly within the bore as a result of applying a compressive force upon the split casing for causing compressive engagement of the bore surface with the die insert peripheral surface and by engaging a chordal transverse wedge with a flat surface on the periphery of the die insert. The die insert is removed from the split



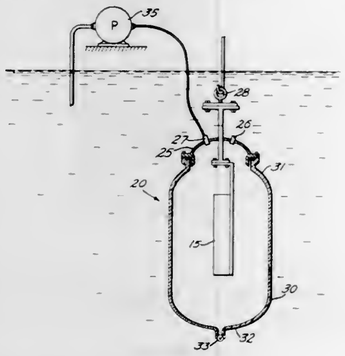
casing by relieving the compressing force and by backing the wedge member.

3,466,923
APPARATUS FOR CALIBRATING COMPASSES
Horst Corleis, Buxtehude, and Rainer Bernotat and Edgar Roessger, Berlin, Germany, assignors to Licentia Patent-Verwaltungs-G.m.b.H., Frankfurt am Main, Germany
Filed Apr. 5, 1966, Ser. No. 540,264
Claims priority, application Germany, Apr. 9, 1965, L 50,426
Int. Cl. G01c *17/38*
U.S. Cl. 73—1 **10 Claims**



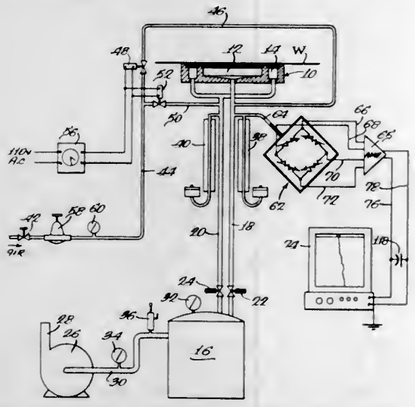
A device for use in determining the bearing error produced in a compass-guided directional gyro provided with a magnetic field detector, which bearing error is due to the extraneous magnetic field produced by the vehicle in which such detector is mounted. The device includes a coil arrangement disposed outside of the vehicle whose position is to be examined and positioned for producing a magnetic field which is external to itself and which extends through the region occupied by the detector, and a variable current producing circuit connected to the coil arrangement for supplying currents thereto whose amplitudes determine the intensity and direction of the external magnetic field.

3,466,924
PRESSURE VESSEL FOR CALIBRATING SONAR TRANSDUCERS
John R. Roshon, El Cajon, and Charles E. Green, San Diego, Calif., assignors to the United States of America as represented by the Secretary of the Navy
Filed Dec. 22, 1966, Ser. No. 605,521
Int. Cl. G01l *27/00*
U.S. Cl. 73—1 3 Claims



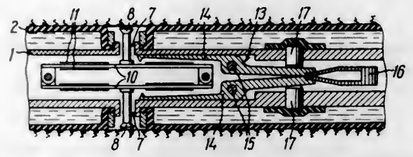
A pressure vessel, with walls transparent to acoustic compressional waves and of sufficient strength to withstand the deep submergence pressures, contains the transducer to be tested.

3,466,925
METHOD AND APPARATUS FOR MEASURING POROSITY
Paul D. Ziegenhagen, Harold R. Fretz, Arthur C. Langlois, and Wayne A. Damrau, Wisconsin Rapids, Wis., assignors to Consolidated Papers, Inc., Wisconsin Rapids, Wis., a corporation of Wisconsin
Filed Aug. 9, 1967, Ser. No. 659,395
Int. Cl. G01m *3/02*
U.S. Cl. 73—38 20 Claims



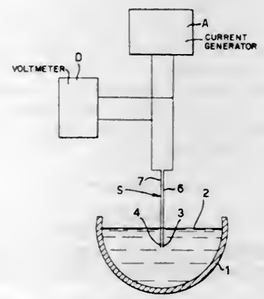
Method and apparatus for measuring the porosity of a moving web of material such as paper or the like by positioning a measuring head in contact with the moving web, applying a vacuum to the measuring head so as to draw air through the paper and into the measuring head in such a manner that the air flow through the head and the vacuum pressure within the head will vary in accordance with the porosity or air permeability of the web, and continuously measuring variations in the vacuum pressure within the head or in a conduit connected thereto as a continuous indication of the porosity or air permeability of the web passing across the head.

3,466,926
INSTRUMENT FOR MEASURING STRAIN PRODUCED BY PRESSURE OF SOLID ROCK
Konstantin Vladimirovich Ruppenelt, Tovarischesky per. 8, kv. 8; Evgeny Semenovich Progozhin ul. Galgoleva 24, korp. 2, kv. 14; and Jury Rodionovich Perkov, Lukhovitskaya ul. 6, kv. 2, all of Moscow, U.S.S.R.
Filed Feb. 28, 1967, Ser. No. 619,282
Int. Cl. E21b *47/021*; G01n *3/12*
U.S. Cl. 73—151 6 Claims



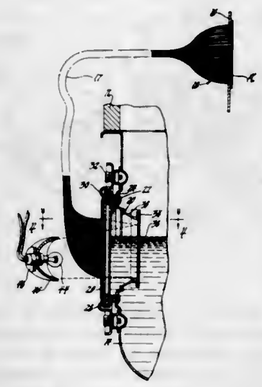
An instrument for measuring strain produced by the pressure of solid rock by means of telescopic feelers contacting with the walls of a bore hole drilled in the solid rock and a device for measuring the movement of the bore hole walls under the influence of liquid or gas forced under an electric capsule which shrouds the instrument casing being connected to the telescopic feelers. There is also provided means for disconnecting the measuring device from the casing during measurements.

3,466,927
APPARATUS FOR THE MEASUREMENT OF LOW VELOCITIES OF FLOW OF LIQUIDS WITH WEAK ELECTRICAL CONDUCTANCE
Ugo Magrini, 38 Via Dodecaneso, Genoa, Italy
Filed July 13, 1966, Ser. No. 565,006
Claims priority, application Italy, July 19, 1965, 16,920/65; Sept. 29, 1965, 22,160/65
Int. Cl. G01f *1/00*
U.S. Cl. 73—194 1 Claim



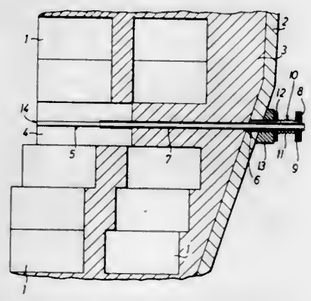
A flowmeter for measuring the velocity of a flowing liquid including a pair of electrodes spaced from each other in such liquid. A direct current generator is connected to the electrodes and a voltmeter is also attached to the electrodes for measuring the resistance of the liquid moving past the two electrodes which is indicative of the velocity.

3,466,928
FIBER OPTIC LIQUID LEVEL INDICATOR
Ronald W. Kind, Detroit, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Sept. 15, 1967, Ser. No. 667,945
Int. Cl. G01f *23/02*
U.S. Cl. 73—293 2 Claims



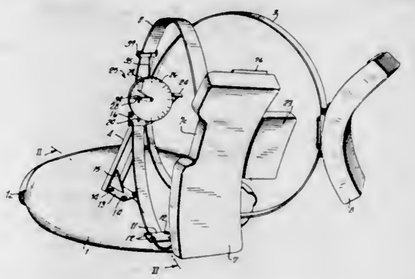
To detect at a remote viewing station the level of light absorbing liquid in a container, a window is provided on the container side and a plurality of oriented fiber optic light conductors outside the container have their ends vertically aligned at the window. A light shines in through the window onto a mirror within the container which focuses light onto those light conductors which are above the liquid level. The opposite ends of the light conductors so illuminated are displayed at the viewing station.

3,466,929
MEASUREMENT OF THE TEMPERATURE OF MELTS IN CONVERTER VESSELS
Wilhelm Anton Fischer, Ratingen, Germany, assignor to Gesellschaft zur Forderung der Eisenhuttentechnik m.b.H., Dusseldorf, Germany
Filed Aug. 19, 1966, Ser. No. 573,512
Claims priority, application Germany, Aug. 26, 1965, G 44,524
Int. Cl. G01k *7/02*
U.S. Cl. 73—343 3 Claims



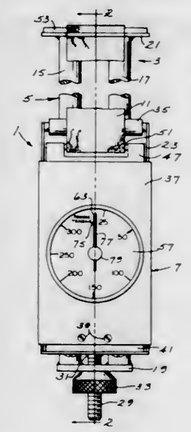
Steel converter vessel of the kind having a wall with a lining, a steel shell encasing the lining, a guide tube for leading a temperature measuring lance through the wall into the vessel, and means for mounting the guide tube through the lining and shell includes an improved guide tube mounting means comprising wall parts of the lining defining an aperture therethrough whereby the guide tube extends through the aperture with a clearance, and flexible sealing means sealing the guide tube to the steel shell.

3,466,930
FOOTBALL TRAINING APPARATUS
Bernard Lemonick, 405 Westview Road, Elkins Park, Pa. 19117
Filed Feb. 10, 1966, Ser. No. 526,454
Int. Cl. A63b *69/34*, *69/00*; A69b *67/00*
U.S. Cl. 73—380 15 Claims



A simplified and easily dismantled football training apparatus used for training linemen to correctly charge the opposing line. The apparatus includes one or two impact receiving structures, each supported by a vertical resilient hoop attached to a generally horizontal downwardly convex plate, which rests upon the ground or a floor. Attached to each hoop may be an impact measuring device.

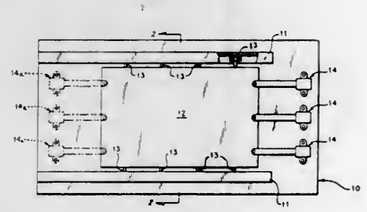
3,466,931
MUSCLE STRENGTH TESTING APPARATUS
Robert R. Spackman, Jr., and Marvin E. Johnson, Carbondale, Ill., assignors to Southern Illinois University Foundation, Carbondale, Ill., a corporation of Illinois
Filed Dec. 4, 1967, Ser. No. 687,876
Int. Cl. G01l *5/06*
U.S. Cl. 73—380 10 Claims



Muscle strength testing apparatus for use in an isometric physical therapy program for measuring or testing the strength of various muscle groups. The apparatus consists of a frame comprising an elongate base having plates at each end. A pair of inwardly bowed metal

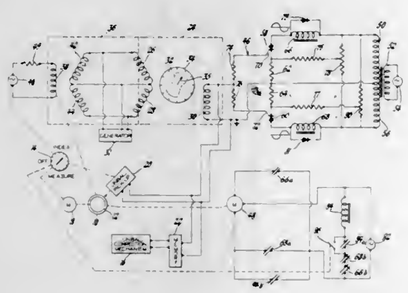
bands are secured to one of the plates and to a strap or webbing connected to the other plate. A dial and pointer of a gauge are mounted on one of the bands for actuation by a mechanism connected to the other band. When a force is applied against the webbing, as by pushing against the webbing with the arm or leg, the metal bands tend to straighten, thereby actuating the gauge in proportion to the magnitude of the applied force.

3,466,932
ACCELERATION CONTROL PLATFORM
Marvin Schulman, Broomall, Pa., assignor to the United States of America as represented by the Secretary of the Navy
Filed Sept. 15, 1967, Ser. No. 668,240
Int. Cl. G01n *33/00*
U.S. Cl. 73—432 **8 Claims**



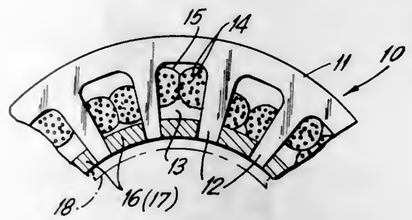
The subject invention concerns apparatus for achieving a constant acceleration for test specimens when the acceleration of the test-vehicle used varies in magnitude. A control platform, on which the specimen is mounted, is slidably carried by guide elements secured to the top of the test-vehicle used. Energy absorbers, which begin stroking when a predetermined acceleration is reached, are connected between the control platform and the test-vehicle to allow the control platform to move relative to the test-vehicle and thereby maintain a constant acceleration thereon.

3,466,933
BALANCING SYSTEM
Philip K. Trimble, Rochester, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Oct. 20, 1966, Ser. No. 588,097
Int. Cl. G01m *1/16*
U.S. Cl. 73—462 **13 Claims**



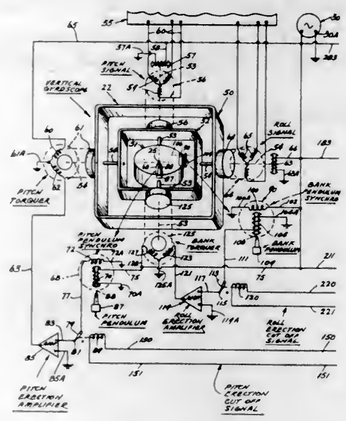
A balancing system in which controlled rectifiers are used to control the angular amount and the direction in which an indexing motor is rotated to null an error signal reflecting the relative positions of the unbalance in a workpiece and an unbalance correction mechanism.

3,466,934
GYROSCOPE AND ITS METHOD OF MANUFACTURE
Kenneth E. Pinard, Wolcott, Conn., assignor to The United States Time Corporation, Waterbury, Conn., a corporation of Connecticut
Filed Apr. 20, 1967, Ser. No. 632,271
Int. Cl. G01c *19/02*
U.S. Cl. 74—5 **10 Claims**



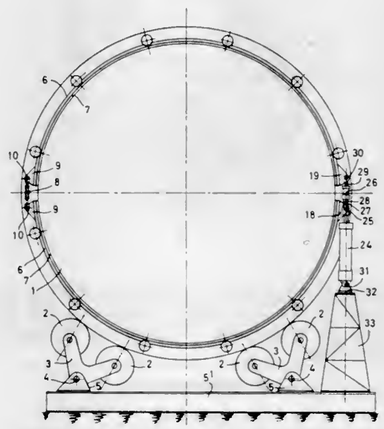
Means and method of manufacturing a rate gyroscope which eliminates signal errors due to temperature variations. This is accomplished by winding the wires of the pickoff coils on a stator ring having protrusion and then applying a plastic potting material to hold the wires in place. Then inserting a ring of smaller diameter into the stator ring to hold the stator teeth in a particular position thus preventing any motion of the teeth due to temperature changes.

3,466,935
VERTICAL GYRO ERECTION CONTROL SYSTEM AND METHOD FOR GYRO ERECTION LOOP CUTOFF
Michael J. Lanni, Ridgewood, N.J., assignor to The Bendix Corporation, a corporation of Delaware
Filed July 25, 1966, Ser. No. 567,422
Int. Cl. G01c *19/30, 19/46*
U.S. Cl. 74—5.41 **16 Claims**



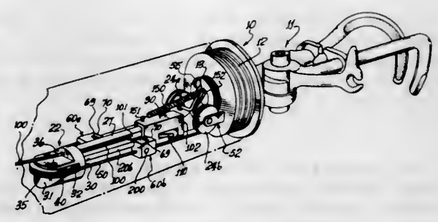
Means and method for effecting a cutoff of an erection system of a gyroscope to eliminate errors induced in the erection system due to acceleration of an aircraft in fore-aft and in turning maneuvers during flight of the aircraft. A pitch pendulum synchro means or a bank pendulum synchro means is disconnected from the erection system whenever excessive acceleration conditions occur.

3,466,936
CONTROLLING DEVICE OF THE ROTATION OF A SLOW-ROTATING DRUM LIKE ELEMENT
Arthur Jules Gaupin, Brussels, Belgium, assignor to Ateliers Belges Reunis Societe Anonyme, Hainaut, Belgium
Filed Feb. 15, 1967, Ser. No. 616,383
Claims priority, application Belgium, Feb. 16, 1966, B 24,110, Patent 676,567
Int. Cl. F16h *27/00;* **F27b** *7/26*
U.S. Cl. 74—88 **13 Claims**



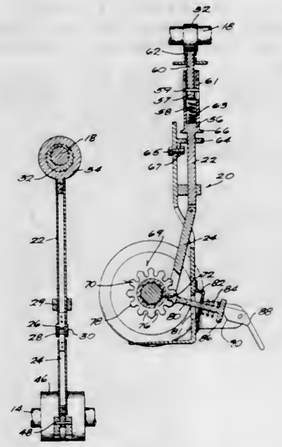
A device for slowly rotatably moving a horizontal drum-like container. A metal strip lined with friction material, a fluid power operated gripping cylinder for tightening the strip around the drum and a fluid power operated driving cylinder articulatedly connected with the metal strip for applying a tangential force to the metal strip, thus rotating slowly the drum-like element.

3,466,937
LINEAR TO ROTATIONAL MOVEMENT CONVERTER
Gilbert M. Motis, 19434 Roscoe Blvd., Northridge, Calif. 91324
Filed Jan. 9, 1967, Ser. No. 608,100
Int. Cl. F16h *29/02;* **A61f** *1/06*
U.S. Cl. 74—89.22 **4 Claims**



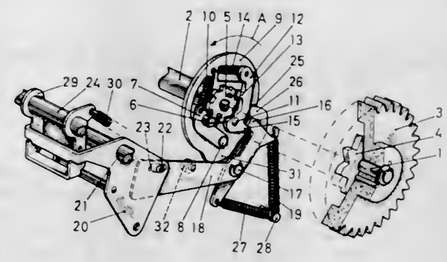
A conversion mechanism for converting linear motion to rotational motion is disclosed. The mechanism provides a conversion which has a reversible direction of rotation and in which the rotational position does not change when the linear actuating force is released.

3,466,938
IMPULSE DRIVE FOR SELF-PROPELLED ROTARY MOWER
William H. Wulff, Galesburg, Ill., assignor to Outboard Marine Corporation, Waukegan, Ill., a corporation of Delaware
Filed Oct. 27, 1967, Ser. No. 678,671
Int. Cl. F16h *29/08, 29/00*
U.S. Cl. 74—119 **16 Claims**



Disclosed herein is a rotary mower with an impulse drive connecting the output shaft of the engine to the axle to propel the mower along the ground. The drive includes, on the output shaft of the engine, an eccentric reciprocating a drive linkage which extends from the engine output shaft to the front or rear axle of the mower. The drive linkage is connected to the clutch block of a one-way clutch located on the axle. The forward speed of the mower is varied by changing the length of stroke of the drive linkage. Free wheeling of the mower is afforded by a detachable connection between the clutch block and drive linkage.

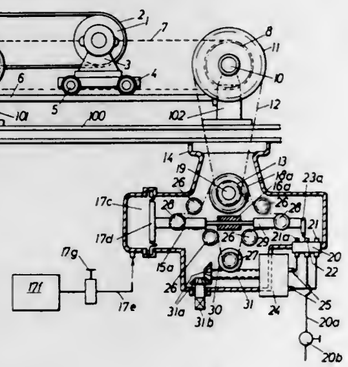
3,466,939
MECHANICAL COUPLINGS
Sven Almvide, Goteborg, Sweden, assignor to Aktiebolaget Original-Odhner, Goteborg, Sweden, a joint-stock company of Sweden
Filed Dec. 14, 1967, Ser. No. 690,681
Claims priority, application Sweden, Dec. 19, 1966, 17,347/66
Int. Cl. F16h *27/02, 31/00;* **F16d** *11/00*
U.S. Cl. 74—142 **9 Claims**



There is disclosed herein a mechanical coupling of the type used for transmitting the drive from a drive motor to a driven shaft in a calculating or accounting machine.

This disclosure sets forth a mechanism comprising smoothly interengaging, positive coupling means for effecting the engagement and disengagement of a driven shaft upon the actuation of control means, such as operating keys in a keyboard, wherein said coupling means are adapted to cease their operative engagement after one revolution of said driven shaft.

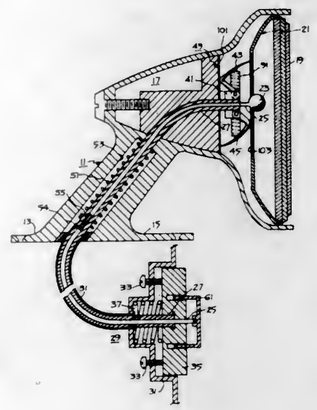
3,466,940
MECHANISM FOR TENSIONING ENDLESS BELT-LIKE MEMBERS
Walter Mittag, Heidenheim (Brenz), Germany, assignor to J. M. Voith, G.m.b.H., Heidenheim (Brenz), Germany
Filed Mar. 4, 1968, Ser. No. 710,217
Claims priority, application Germany, Mar. 18, 1967, V 33,286
Int. Cl. F16h *7/12*
U.S. Cl. 74—242.14 **13 Claims**



A mechanism for tensioning an endless belt-like member which is entrained over a roller, in which the roller is supported in bearings and the bearings are supported on carriage means moveable at right angles to the axis of the roller to adjust the tension on the belt-like member. A drive mechanism is provided connected with the bearings of the roller for moving them in the direction to adjust the tension on the belt-like member and this drive mechanism comprises a first short stroke motor and a second longer stroke motor, each operable independently of the other for driving the drive means connected with the bearings so that the short stroke motor can be energized for maintaining a predetermined bias on the bearings in tensioning direction while the longer stroke motor can be utilized for adjusting the point of connection of the short stroke motor with the drive means.

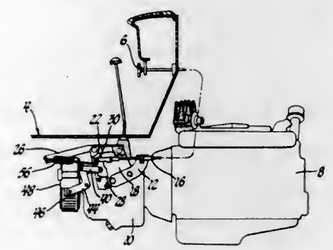
3,466,941
MECHANICALLY OPERATED REMOTE CONTROL OUTSIDE MIRROR DEVICE
Carl D. Russell, 1209 Walnut St., Muskogee, Okla. 74401
Filed Dec. 1, 1966, Ser. No. 598,331
Int. Cl. F16c *1/20;* **G02b** *17/00*
U.S. Cl. 74—501 **10 Claims**

This invention relates to apparatus for positioning and locking a mirror by holding its case in a static orientation relative to a vehicle against wind and other vibratory influences until an angular change is desired. It comprises a housing for pivotally supporting a mirror case with the housing including a wall spaced from the case. Pivotal means are disposed between the wall and case for changing the position of the case relative to the wall. Also included are means for normally urging the case against the pivotal means to hold the latter against the wall. At a remote location usually within the vehicle there is provided means for releasing the normally



urging means and additional means for pivoting the pivotal means during the release to provide for substantially universal orientation of the mirror for use by the vehicular driver.

3,466,942
MULTIPLE RATIO FORCE TRANSFER LEVER MECHANISM
Robert C. Keller, Troy, and William E. Brunsdon, Royal Oak, Mich., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Oct. 16, 1967, Ser. No. 675,455
Int. Cl. G05g *1/04;* **F16d** *49/10;* **B60t** *11/08*
U.S. Cl. 74—516 **2 Claims**

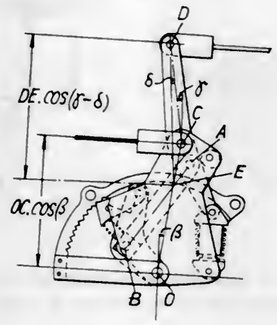


A lever mechanism, especially for vehicle parking brakes, having a fast take-up ratio followed by a high force multiplication ratio. The ratio changes are accomplished by shifting force reaction pivot points on a force transfer lever.

3,466,943
VARIABLE-RATIO LEVER MECHANISMS
George Rancliffe Jehan Eugene Leguen de Lacroix, Halesworth, England, assignor to General Motors Corporation, a corporation of Delaware
Filed Jan. 4, 1968, Ser. No. 695,739
Claims priority, application Great Britain, Jan. 19, 1967, 2,813/67
Int. Cl. G05g *1/04*
U.S. Cl. 74—516 **10 Claims**

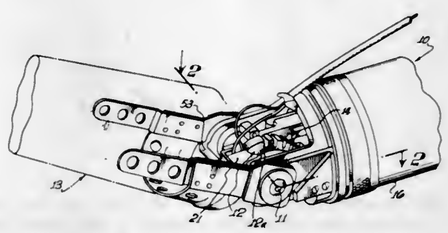
A variable-ratio lever mechanism, primarily intended for use as a remotely controlled brake actuator mecha-

nism to give an initial quick take-up of slack and subsequently—after yielding of a resilient link—a brake apply movement at a high mechanical advantage, includes a four-bar chain mechanism with crossed links. These links comprise an input lever, a link member, a pawl lever, and an output actuator lever; the output ac-



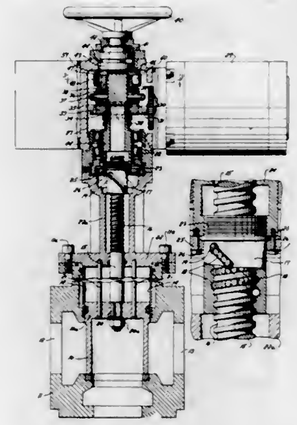
tuator lever has an output linkage connected intermediate its ends, one end of the output actuator lever is mounted on a fixed pivot, and the other end of the output actuator lever forms a pivotal mounting for the input lever, one arm of the input lever being connected to an input mechanical linkage.

3,466,944
SOLENOID ELBOW
Gilbert M. Motis, 19434 Roscoe Blvd., Northridge, Calif. 91324
Filed Aug. 22, 1966, Ser. No. 574,184
Int. Cl. G05g *5/06;* **A61f** *1/06*
U.S. Cl. 74—527 **12 Claims**



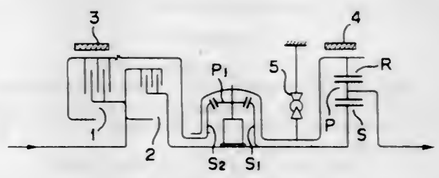
A lock mechanism for artificial limbs having a first locking bar to which is operatively connected a cam; a second lock member in the form of a ratchet having radially disposed grooves. The first locking bar is adapted to cooperatively engage the radial grooves of the ratchet. The cam is operatively connected to the locking bar and upon the urgings of a solenoid means, is adapted to translate the first locking bar into an engaged or an unengaged position with the grooves of the ratchet in the second lock member. The cam is put into an activated, cocked position by a spring member and can be restored to an uncocked position. The cam has a carrying groove therein in which upon the urgings of a bar activated by a solenoid moves the first locking bar into engagement or out of engagement with the grooves of the ratchet in the second locking member.

3,466,945
VALVE OPERATING EQUIPMENT PARTICULARLY FOR AUTOMATICALLY MODULATED VALVES
Daniel R. McNeal, Jr., Gwynedd, Pa., assignor to Andale Company, Lansdale, Pa., a corporation of Pennsylvania
Filed Aug. 24, 1967, Ser. No. 663,089
Int. Cl. F16h *1/18*
U.S. Cl. 74—625 **9 Claims**



Valve operating equipment including a ball screw device having the screw element connected with the valve and restrained as against rotation, but axially shiftable by rotation of the nut element of the ball screw device, and powered reversible mechanism for rotating the nut element in either direction, together with reversible manually operable mechanism for rotating the nut element in either direction.

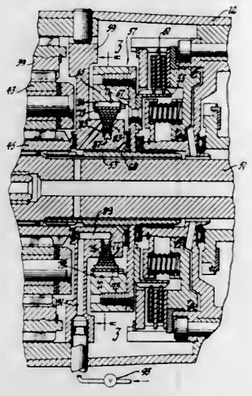
3,466,946
TRANSMISSION GEAR DEVICE USING DIFFERENTIAL MECHANISM
Masaaki Noguchi, Nagoya-shi, and Masaharu Sumiyoshi, Toyota-shi, Japan, assignors to Toyota Motor Company Limited, Toyota-shi, Aichi-ken, Japan, a corporation of Japan
Filed Nov. 15, 1966, Ser. No. 594,443
Int. Cl. F16h *57/10, 3/44*
U.S. Cl. 74—759 **9 Claims**



A speed changing transmission is disclosed as having plural differential mechanisms which may be of the bevel planetary gear train, single planetary gear train or plural planetary gear train types. Two from among the various types of gear trains are combined and operatively interconnected by providing a common member which rotates with each as a unit so as to provide the

transmission with speed change ratio capability not heretofore reasonably available. Also disclosed are novel differential planetary mechanisms which are useful inter alia in the disclosed transmission.

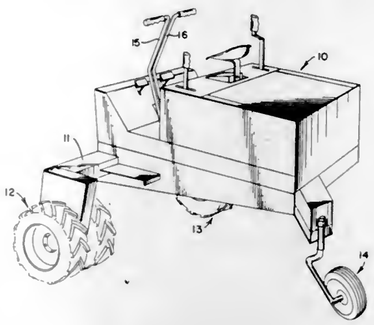
3,466,947
RELEASABLE ONE-WAY DEVICE AND TRANSMISSION
George R. Smith, Bloomfield Hills, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Nov. 8, 1967, Ser. No. 681,538
Int. Cl. F16d *65/24, 43/00, 21/02*
U.S. Cl. 74—759 **7 Claims**



A transmission having planetary gearing controlled by friction devices, which are engaged in a predetermined sequence to provide a plurality of forward drive ratios and a reverse drive ratio. One of the devices is a one-way brake having a plurality of nested and spiraled friction bands each having an anchor end connected to an outer race operatively secured to the gearing and having a free end disposed in a tapered groove formed in a grounded inner race. This brake automatically engages to hold a control gear from reverse rotation to condition the gearing for low and intermediate drive ratios and automatically disengages in direct drive and overdrive ratios. To enable the transmission to be conditioned for reverse drive, a hydraulically actuated motor mechanism, disposed beneath the friction bands is actuated to move the bands to an inactive position to allow the above mentioned control gear to rotate in a reverse direction. A return spring is disposed between the motor mechanism and the bands to move the motor mechanism back to an inactive position to permit the one-way brake to function as described in the forward drive ratios.

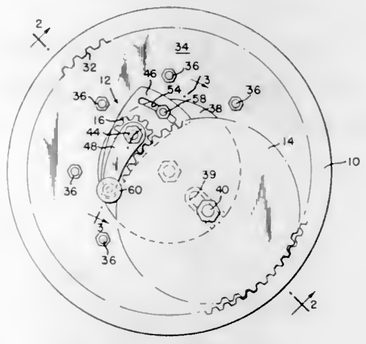
3,466,948
POWER TRANSMISSION CONTROL SYSTEM
Herbert W. Molzahn, Hamilton, Ontario, Canada, assignor to International Harvester Company, Chicago, Ill., a corporation of Delaware
Filed Nov. 28, 1967, Ser. No. 686,203
Int. Cl. F16h *57/10*
U.S. Cl. 74—792 **6 Claims**

A control system for the conventional planetary transmissions of a self-propelled windrower wherein the clutch and brake of each of a pair of transmissions are operable to incur forward-neutral-reverse drive of the transmission in response to movement of a control lever supported on the windrower. The clutch and brake of each transmission are operably connected to the control lever by respective clutch and brake linkage assemblies which each include a lost-motion mechanism enabling actuation of the clutch to effect neutral drive without actuating the brake and actuation of the brake to effect reverse drive



without further actuation of the clutch thereby preventing overloading the clutch and feedback of force to the control lever.

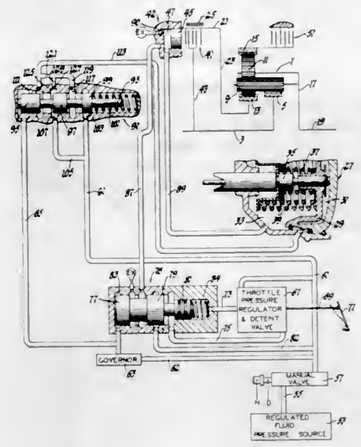
3,466,949
MACHINE TOOL INDEXING ASSEMBLY
Ingwald L. Ramberg, 500 S. Portland, Seattle, Wash. 98108
Filed Dec. 26, 1967, Ser. No. 693,324
Int. Cl. B23b *29/24;* **B23a** *17/00*
U.S. Cl. 74—813 **8 Claims**



Milling machines, thread mills, and like machine tools are provided with an indexing assembly interlocked into the transfer drive gear train to effect indexing adjustment, for example of a workpiece spindle relative to a tool-mounting lead screw. The indexing assembly provides a rotatable indexing gear mounted to effect adjustment of the work spindle and an actuating pinion and idler gear mechanism mounted to rotate the indexing gear.

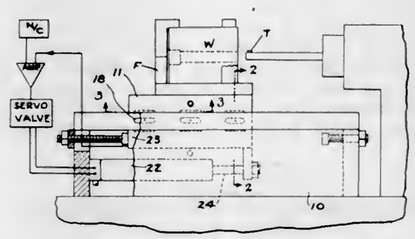
3,466,950
AUTOMATIC TRANSMISSIONS WITH SHIFT TIMING VALVE
Arnold D. Mummert, Farmington, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Jan. 31, 1968, Ser. No. 702,018
Int. Cl. B60k *19/14*
U.S. Cl. 74—868 **7 Claims**

A geared, change-speed, power transmission including controls for automatically changing the gear ratios, having a multistage downshift timing valve that controls the rate of fluid flow to the low servo apply chamber in accord-



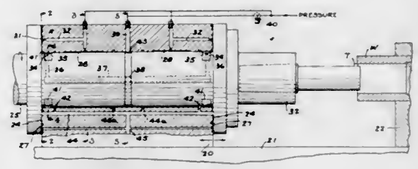
ance with vehicle speed to appropriately calibrate power-on high clutch to low brake downshifts at low, intermediate and high vehicle speed.

3,466,951
MACHINE TOOLS AND INSTRUMENTS
Myron L. Greenberg, Union Lake, Mich., assignor to The Babcock & Wilcox Company, New York, N.Y., a corporation of New Jersey
Filed Jan. 15, 1968, Ser. No. 698,032
Int. Cl. B23b *39/00;* **B23d** *7/08*
U.S. Cl. 77—1 **36 Claims**



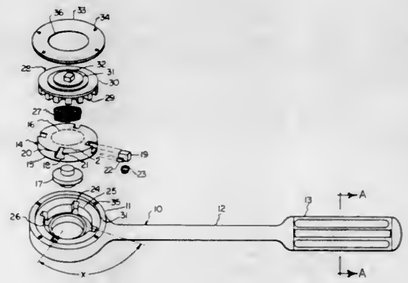
The machine tool and instrument shown herein comprises a first and second member which have complementary surfaces, some of which are provided with presure pads and restrictors to which fluid under pressure is supplied. The surfaces are oppositely disposed so that when fluid is supplied to the pressure pads, the second member is maintained in spaced stable relation to the first member so that it can be readily moved with respect to the first member. After the second member is located, means are provided for interrupting or varying the flow of fluid to some of said pressure pads so that the pressure due to the remainder of the pressure pads urges the second member into fixed clamped relation with respect to said first member. Pressurized surfaces in other directions, such as the journal or lateral guides remain energized so that accuracy in transverse directions is not lost. The invention is shown as applied to a rotary table, slide and spindle.

3,466,952
HYDROSTATIC BEARING SUPPORTED BORING BAR
Myron L. Greenberg, Union Lake, and Gordon H. Porath, Detroit, Mich., assignors to The Babcock & Wilcox Company, New York, N.Y., a corporation of New Jersey
Filed Dec. 6, 1967, Ser. No. 688,415
Int. Cl. B23b *29/02, 39/00*
U.S. Cl. 77—1 **25 Claims**



The apparatus disclosed herein comprises a tool support that is mounted in a housing by means of hydrostatic bearings in such a manner that the workpiece and tool support may be moved both axially and rotatably relative to one another to finish an existing rough or semifinished opening in a workpiece by boring. The tool support is movable or displaceable radially relative to the housing, to permit retraction without marring the surface of the opening that has been formed, by causing an unbalance in the fluid forces that are supporting the tool support. This is achieved by supplying additional fluid under pressure to pads on the support oriented with respect to the tool so that the apparent radial setting of the tool is changed during retraction.

3,466,953
RATCHET WRENCH WITH HYDRAULICALLY OPERATED LOCK
Michael J. Gegg, 591 Soniat Ave., Harahan, La. 70123
Filed Mar. 17, 1967, Ser. No. 623,951
Int. Cl. B25b *13/46*
U.S. Cl. 81—58.3 **3 Claims**

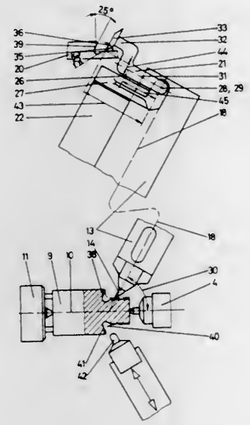


The present invention relates to a novel ratchet lever that finds diverse application in the tool and related arts. More particularly, the present ratchet lever is especially concerned with ratchet levers adapted for use as wrenches.

ERRATUM

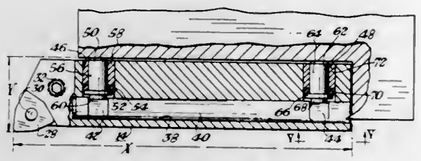
For Class 81—121 see:
Patent No. 3,466,956

3,466,954
FEELER LEVER FOR A HYDRAULIC COPYING CONTROL
Albert Schmid, Schaffhausen, Switzerland, assignor to Georg Fischer Aktiengesellschaft, Schaffhausen, Switzerland
Filed Apr. 12, 1967, Ser. No. 630,295
Claims priority, application Switzerland, May 31, 1966, 7,856/66
Int. Cl. B23b *3/28;* **B23q** *35/04*
U.S. Cl. 82—14 **5 Claims**



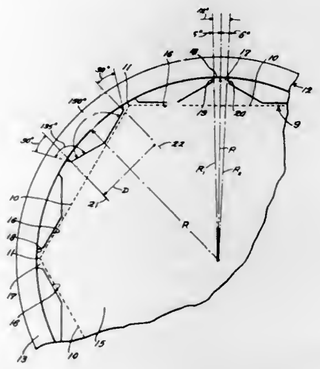
Copying machine with a motor actuated copying carriage under the control of a template feeler which is mounted on the end of a pivoted arm with the arm connected to a motor control element, in which the plane containing the pivot axis of the arm and the point of connection of the arm to the control element is perpendicular to the feed direction of copying carriage, and the feeler is spaced from the plane on the side opposite the tool end of the copying carriage, and the point of connection of the arm to the control element is closer to the pivot axis of the arm than is the feeler.

3,466,955
TOOL HOLDER
Henry W. Stier, Dearborn Heights, Mich., assignor to Carmet Company, Pittsburgh, Pa., a corporation of New Jersey
Filed May 17, 1967, Ser. No. 639,229
Int. Cl. B23b *29/22, 29/02*
U.S. Cl. 82—36 **9 Claims**



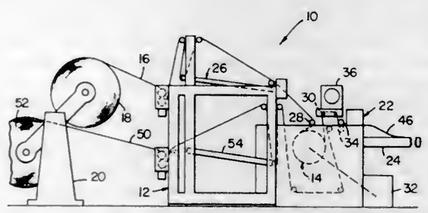
A precision preset tool holder adapted to compensate for deviation in cutting inserts, the tool holder being provided with an axial bore into which is inserted a pin having a pair of cam surfaces, each cooperating with a support pin extending transverse thereto and out of said tool holder for engaging a tool block. A second cam is positioned in a transversely extending bore to cooperate with a third support pin which extends out of the rearward portion of said tool holder for engaging the tool block. The cam means thus provide bi-directional adjustment with respect to the tool block to exactly position the cutting insert.

3,466,956
WRENCH SOCKET WITH MULTI-SIDED AND SPECIAL SHAPED DRIVING FACES
Charles W. Bowers, Sabina, Ohio, assignor to Mac Tools, Inc., Sabina, Ohio, a corporation of Ohio
Filed Dec. 4, 1967, Ser. No. 687,649
Int. Cl. B25b *13/06*
U.S. Cl. 81—121 **2 Claims**



The invention is to a wrench socket having a nut driving cavity with multi-sided and specially shaped driving members to impart torque turning loads. Clearance areas exist between the driving members and have an arcuate wall lying in and bisected by a maximum radius of the wrench body cavity, said wall subtending an angle of substantially 12 degrees with respect to two radii of the cavity which pass through the side edges of the wall. The driving faces are each divided in pairs and a face of each intersect in an inwardly projecting dihedral angle having an outside dimension of substantially 150 degrees.

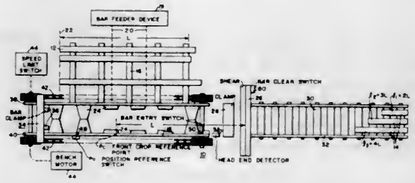
3,466,957
APPARATUS AND METHOD FOR FORMING A STACK OF SHEETS
Donald C. Anderson, Lafayette, and Matthew H. Devine, San Leandro, Calif., assignors to Hexcel Corporation, a corporation of California
Filed Oct. 19, 1966, Ser. No. 587,717
Int. Cl. B26d *7/06, 5/22, 5/20*
U.S. Cl. 83—23 **7 Claims**



An apparatus for cutting web to exact predetermined length in which the web is wound about the circumference

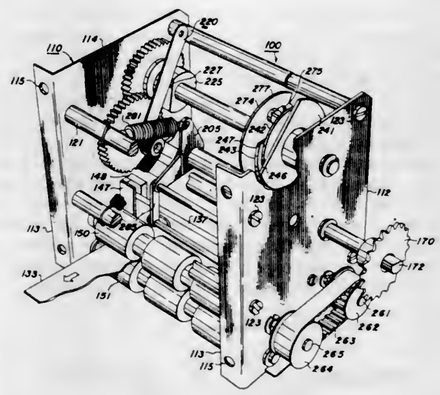
of a drum prior to being advanced to the cutting station in which the rotation of the drum determines the length of the web material to be cut and further, having means for changing the diameter of the drum to change the amount of web material advanced by predetermined arcuate drum movement.

3,466,958
MATERIAL CUTTING CONTROL SYSTEM PROVIDING REDUCED MATERIAL WASTAGE
William A. Munson, Williamsville, N.Y., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Feb. 16, 1967, Ser. No. 616,579
Int. Cl. B26d *5/30*
U.S. Cl. 83—71 **10 Claims**



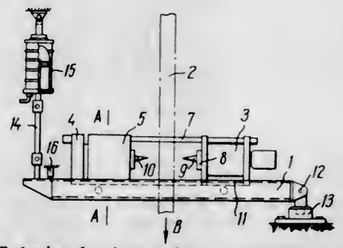
An elongated unit of material such as a steel bar is controllably positioned for cutting into shorter length product units. Positioning is made with respect to the unit tail end with any required cropping being made at the unit head end. The particular lengths cut are determined by a preprogrammed schedule or by means of real time computer optimization.

3,466,959
WEB MATERIAL HANDLING APPARATUS
Armistead Wharton, Henrietta, N.Y., assignor to Xerox Corporation, Rochester, N.Y., a corporation of New York
Filed Aug. 30, 1967, Ser. No. 664,474
Int. Cl. B26d *5/20*
U.S. Cl. 83—205 **4 Claims**



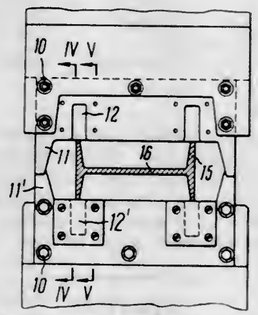
A web material feeding and cutting apparatus in which a closed-loop mechanical system responds to a mechanical pulse or signal to operate one cycle of metering and cutting by the interaction of clutching and camming mechanisms and to stop without further signals or external control. An adjustable mechanism is provided for controlling the length of web material cut.

3,466,960
DEVICE FOR CUTTING MOVING INGOTS, PREFERABLY THOSE OBTAINED BY THE CONTINUOUS CASTING METHOD
Jury Alexandrovich Boborykin, KHAI-3, kv. 43, and Vadim Grigorievich Kononenko, KHAI-1, kv. 12, both of Kharkov, U.S.S.R.; Georgy Fedetovich Dadykin, Tashkentskoi oblasti Martenovskaya ulitsa 30, Begovat, U.S.S.R.; Dmitry Dmitrievich Levkin, Ryazanskaya ulitsa 3, Kharkov, U.S.S.R.; Viktor Sergeevich Pravdin, 12 Parkovaya ulitsa 38/1, kv. 7, Moscow, U.S.S.R.; Viktor Alexeevich Stelmakh, Ulitsa Kirova 18, kv. 2, Kharkov, U.S.S.R.; Veniamin Veniaminovich Fulmakht, Kaloshin par. 4, kv. 22, Moscow, U.S.S.R.; and Serafim Vasilievich, Lesoparkovsky per. 3, kv. 59, and Rostislav Vyacheslavovich Pikhtovnikov, Dom Spetsialistov, kv. 227, both of Kharkov, U.S.S.R.
Filed Feb. 28, 1967, Ser. No. 619,286
Int. Cl. B23d *25/02. 25/06;* **B26d** *1/56*
U.S. Cl. 83—308 **3 Claims**



A cut off device for ingots from a continuous casting machine in which two blades are mounted on opposite sides of the path of the ingot, one blade being mounted on a movable block capable of travelling in guides on a frame toward and away from the path of the ingot, the other blade being mounted on a plunger rod extending from a power cylinder to be movable toward and away from the path of the ingot. The cylinder and the movable block being secured together. The frame being pivoted at one end to a foundation or the like and the other end of the frame being supported by an extensible and retractable device so that the cutting blades, when engaged with the ingot to cut it, can move with the ingot and be returned to its original position to make a subsequent cut.

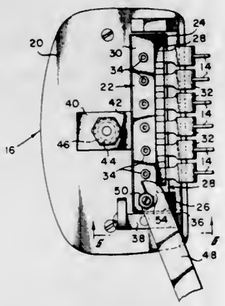
3,466,961
CUTTING ELEMENTS OF FLYING SHEARS
Vladimir Pavlovich Konovalov, Nickolai Ivanovich Krylov, Boris Vasilievich Popov, and May Mikhailovich Rudakov, Moscow, U.S.S.R., assignors to Vsesojuzny Nauchno-Issledovatelsky i Proektno-Konsturktorsky Institute metallurgicheskogo mashinostroenija, Moscow, U.S.S.R.
Filed June 1, 1965, Ser. No. 460,451
Int. Cl. B26d *1/56;* **B23d** *25/02*
U.S. Cl. 83—694 **3 Claims**



1. A cutting tool comprising first and second elements adapted for moving past one another in parallel planes,

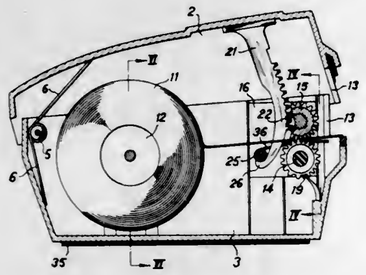
at least one of said elements including adjacent sections respectively constituted by a wedge-shaped knife blade and by a rectangular blade.

3,466,962
TREMOLO DEVICE
Harry G. Cole, 10515 Metropolitan Ave., Kensington, Md. 20795
Filed Mar. 28, 1967, Ser. No. 626,499
Int. Cl. G10d *3/14*
U.S. Cl. 84—312 **10 Claims**



The present invention relates to a tremolo device having handle or lever that is operated by the guitar player so that it can be raised or lowered in a vertical plane as well as rotated in a horizontal plane and to thereby cause a cradle member which carries a plurality of strings to be actuated so as to produce a lower pitch tone or raises pitch tone permitting playing in a different key, and further to maintain the cradle member in a fixed position so as to provide a flat or a sharp tone condition, without having to keep the guitar player's hand on the handle.

3,466,963
TAPE DISPENSER
Richard C. J. Palson, Medfield, and James E. Hawes, Milton, Mass., assignors to Milton Industries Incorporated, Milton, Mass., a corporation of Massachusetts
Filed Oct. 3, 1966, Ser. No. 583,675
Int. Cl. B26d *5/20, 7/06*
U.S. Cl. 83—226 **8 Claims**

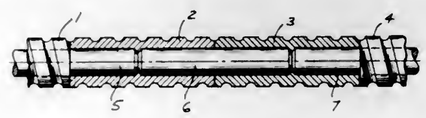


Adhesive tape is pulled from a roll by spaced discs formed of a high-release plastic material, preferably silicone rubber, the tape being held against and transversely deflected between the discs by a cooperating cylindrical member. Cutter means are provided to automatically sever the dispensed length of tape.

ERRATUM

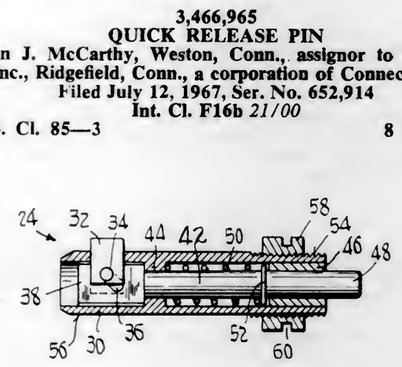
For Class 84—312 see:
Patent No. 3,466,962

3,466,964
SCREW
Sten Gunnar Wingquist, Trollhattan, Sweden, assignor to Nydqvist & Holm Aktiebolag, Trollhattan, Sweden, a corporation of Sweden
Filed Mar. 7, 1967, Ser. No. 621,314
Claims priority, application Sweden, Mar. 11, 1966, 3,218/66
Int. Cl. F16b *35/00, 33/02*
U.S. Cl. 85—1 **1 Claim**



The present invention relates to generally cylindrical screws of any desired length which are straight within reasonable tolerances, have a uniform pitch along their entire length and a selected surface hardness. Such screws comprise according to the invention several externally threaded sleeves secured in position on a core bar.

3,466,965
QUICK RELEASE PIN
John J. McCarthy, Weston, Conn., assignor to Norco, Inc., Ridgefield, Conn., a corporation of Connecticut
Filed July 12, 1967, Ser. No. 652,914
Int. Cl. F16b *21/00*
U.S. Cl. 85—3 **8 Claims**

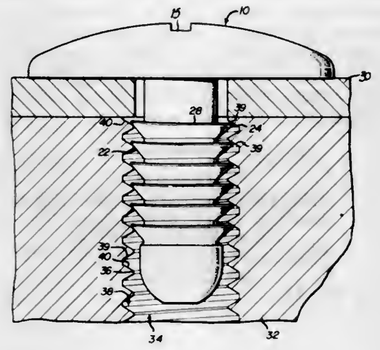


A quick-release draft bolt adapted to extend through aligned holes of structures which are to be fastened together. The bolt comprises a tubular body which is externally threaded and carries a nut at one end. An axially movable release button protrudes from the end carrying the nut, and is connected to actuate a laterally movable, protrudable and retractable head abutment or shoulder means movably mounted on the other end of the body. The nut has a special shoulder formation by which a special wrench that is applied to the nut can exert axial force on it and therefore on the tubular body. After the wrench has slightly loosened the nut, the release button is operated, whereupon the head abutment is retracted so that the bolt can be immediately withdrawn from its hole.

3,466,966
RESILIENT FASTENING DEVICE IN THREADED BORE
Martin M. Brown, Birmingham, Mich., assignor to Robin Products Company, Warren, Mich., a corporation of Michigan
Filed Nov. 13, 1967, Ser. No. 682,329
Int. Cl. F16b *19/00, 13/04, 33/04*
U.S. Cl. 85—5 **3 Claims**

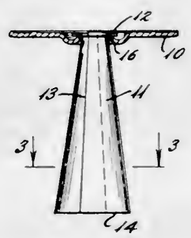
A resilient fastening member having a plurality of spaced, dished members angularly disposed relative to the shank of the fastener. The spacing between adjacent

ribs is proportioned relative to the pitch of a threaded aperture into which it is to be installed so that the fastener



may be placed in the threaded aperture by axial movement and be removed therefrom by rotational movement.

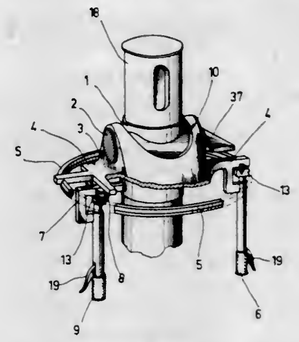
3,466,967
TAPERED SHEET METAL NAIL
Robert L. Hallock, 32 Vine Road, Larchmont, N.Y. 10538
Filed Mar. 12, 1968, Ser. No. 712,564
Int. Cl. F16b *15/04, 15/02*
U.S. Cl. 85—11 **5 Claims**



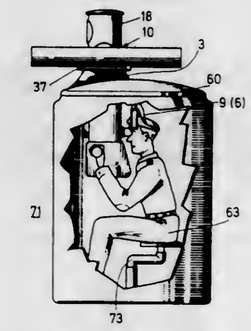
A tapered sheet metal nail having a head portion and hollow shank portion extended therefrom and terminating in an enlarged remote penetrating end, such shank portion being longitudinally split and the split edges overlapping whereby when the nail is driven into precast or poured lightweight aggregate compositions, such as gypsum, its penetrating end will expand and receive and retain therein a relatively large connection-forming plug which remains in the nail to keep it expanded, thus offering maximum resistance to the withdrawal of the nail.

3,466,968
AIMING AND TRACKING DEVICE FOR GUIDED JET-PROPELLED MISSILES
Arnold Stangl and Dieter Herberhold, Ottobrunn, and Franz Ffister, Hochstadt, Germany, assignors to Bolkow Gesellschaft mit beschrankter Haftung, near Munich, Germany
Filed May 13, 1968, Ser. No. 728,491
Claims priority, application Germany, May 24, 1967, B 92,690
Int. Cl. F41h *5/26, 7/08;* **F41g** *1/40*
U.S. Cl. 89—1.815 **12 Claims**

An aiming and tracking device for guided jet-propelled missiles includes a periscope, and both the aiming device and the periscope are mounted on a rotating ring and are operable from inside an armored enclosure. The aiming device carries the missiles, and the enclosure has a common opening through which both the aiming device and the periscope extend. The aiming device and the periscope are conjointly adjustable, in elevation and traverse, as a unit, and the periscope is also adjustable, in elevation and traverse, independently of the aiming device.

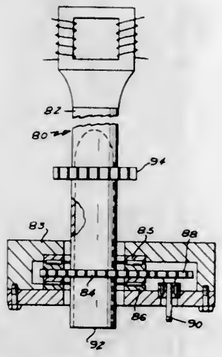


3,466,969
GUIDED MISSILE AIMING AND TRACKING DEVICE IN FORM OF SELF-CONTAINED UNIT
Arnold Stangl and Dieter Heberhold, Ottobrunn, and Franz Pfister, Hochstadt, Germany, assignors to Messerschmitt-Bolkow Gesellschaft mit beschrankter Haftung, Munich, Germany
Continuation-in-part of application Ser. No. 728,491, May 13, 1968. This application Oct. 29, 1968, Ser. No. 771,566
Claims priority, application Germany, Nov. 29, 1967, B 95,613
Int. Cl. F41f *3/04, 23/06;* **F41h** *5/20*
U.S. Cl. 89—1.815 **4 Claims**



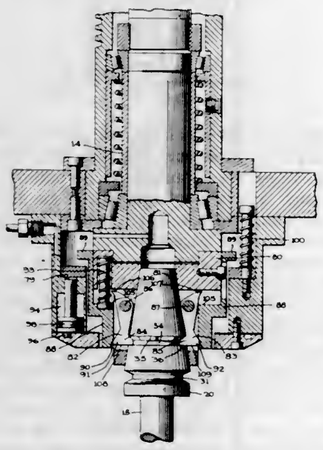
An aiming and tracking device, for guided jet-propelled missiles, includes a periscope, and both the aiming device and the periscope are mounted on a rotating ring and extend through a common opening in an armor plate cover or top wall. The cover or top wall is circular, and the opening is located eccentrically of the cover or top wall. The device includes a pair of handles, one for adjusting the device in elevation and the other for adjusting the device in traverse. The two handles are arranged diametrically opposite each other with respect to the rotating ring, and their positions are interchangeable. The device may form part of a one man shelter including a cylindrical enclosure for the gunner, or may be mounted through the armored covering of an armored vehicle. When used as part of a one man shelter, the two handles have a first relative position and, when the device is used as part of an armored vehicle, the two handles are interchanged.

3,466,970
TRANSDUCER COUPLING SYSTEM
James Byron Jones, West Chester, Pa., assignor to Aeroprojects Incorporated, West Chester, Pa., a corporation of Pennsylvania
Continuation-in-part of application Ser. No. 178,800, Mar. 12, 1962. This application July 6, 1965, Ser. No. 469,572
Int. Cl. B23c *7/00;* **B23b** *47/02*
U.S. Cl. 90—11 **16 Claims**



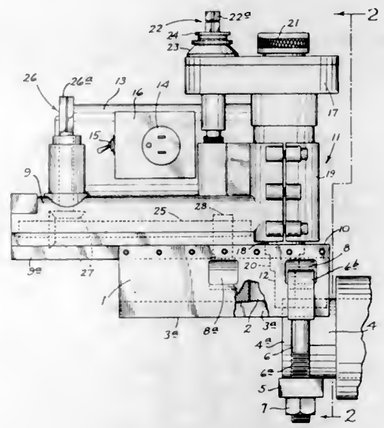
A transducer coupling system is disclosed having one end connected to a vibratory energy generating means. A work performing tip is secured to the system and spaced from the other end of the system by an even whole number of one-quarter wavelengths. The entire system and vibratory energy generating means are supported at a location between the work performing tip and said other end of the system at a node spaced from the other end of the system by an integral odd number of one-quarter wavelengths.

3,466,971
TOOL HOLDER
Henry F. Meyer, Liverpool, N.Y., assignors to The Monarch Machine Tool Company, a corporation of Ohio
Original application Sept. 18, 1963, Ser. No. 309,700, now Patent No. 3,316,629, dated May 2, 1962. Divided and this application Feb. 7, 1967, Ser. No. 614,483
Int. Cl. B23c *1/00, 3/00, 7/00*
U.S. Cl. 90—11 **15 Claims**



The tool holder may be used with a machine tool and holds any of a number of identical tool adapters, each adapter holding a tool which may be different. The tool holder has particular use with automatic tool changers to axially and rotatively lock the tool adapter in the tool holder by quick and positive action. The tool holder may be an operative rotating spindle in a machine tool. The tool holder includes a chuck receptacle having pivoted latch levers to engage a tool adapter groove with a recess formed by flats on the surface of the groove. The latch levers grip these recess flats to rotatively and axially lock the tool adapter in the chuck receptacle.

3,466,972
PORTABLE MILLING MACHINE
Paul M. Strait, Rte. 1, Box 345, Tillamook, Oreg. 97141
Filed Jan. 9, 1967, Ser. No. 607,978
Int. Cl. B23c *1/20*
U.S. Cl. 90—12 **3 Claims**

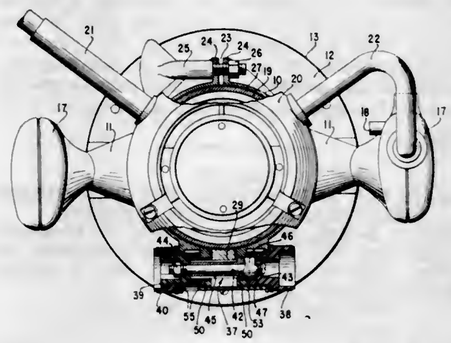


A portable milling machine adapted to grip a work piece by one end thereof and to cut a keyway through the clamping area; that is, through the area being gripped. This is done without releasing the grip of the milling machine upon the work piece. This latter is accomplished by forming an elongated slot in the bed plate for said machine with lands formed upon the underside thereof, lying at opposite sides of the elongated slot. A clamp plate is arranged in stacked alinement with said lands and a work piece is gripped between said clamp plate and the lands on the bed plate. This structure permits a milling cutter to pass through said elongated slot to cut a keyway upon the work piece while said work piece is being gripped by one end, the cutting action being performed through the clamping area.

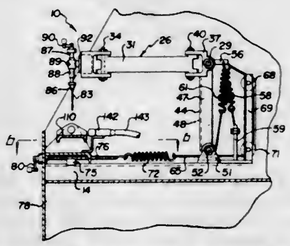
3,466,973
RACK AND PINION DEPTH-OF-CUT ADJUSTING MECHANISM FOR PORTABLE ROUTERS
Spencer C. Rees, Pickens, S.C., assignor to The Singer Company, New York, N.Y., a corporation of New Jersey
Filed Jan. 8, 1968, Ser. No. 696,451
Int. Cl. B23c *1/20;* **B27c** *5/10*
U.S. Cl. 90—12 **3 Claims**

An adjusting mechanism for portable routers combines two knobs equally accessible and positioned in spaced relation on opposite sides of a rack and operatively associated with a hollow shaft carrying a pinion for moving the rack. One knob is locked for rotation with the shaft and the other knob is frictionally coupled to the shaft. A

single metal part is required which is simple in form and the more complex parts are formed by molding to provide a low-cost easy assembly secured by a single fastening element.



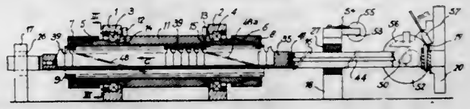
3,466,974
PANTOGRAPHIC MILLING MACHINE
Whitfield M. P. Stuart and Derek M. Stuart, both of 5910 Charles St., Burnaby, British Columbia, Canada
Filed Nov. 14, 1966, Ser. No. 593,828
Int. Cl. B23c *1/16*
U.S. Cl. 90—13.1 **15 Claims**



A pantographic milling machine incorporating a vertical support hingedly mounted at a lower end thereof, a pantographic frame mounted on the upper end of the support for both horizontal and vertical swinging movement, resilient means normally retaining the support and the frame in predetermined positions, tracer and cutter styluses mounted on the frame in parallelism and extending downwardly therefrom, a work table mounted beneath the styluses, and clamping means on the table for holding a pattern and a blank in line with the tracer stylus and the cutter stylus respectively.

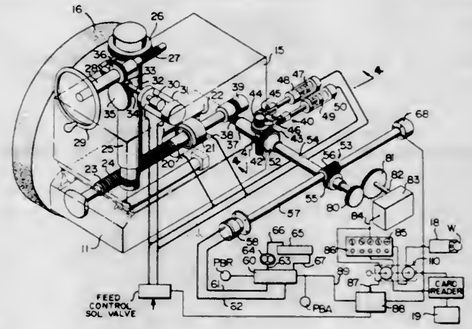
3,466,975
APPARATUS FOR SEMI-AUTOMATICALLY MACHINING HELICAL FINS IN TUBULAR MEMBERS
Claude Feutrel, Antony, Hauts-de-Seine, Michel Loubet, Montgeron, Essone, and Gerard Luce, Crosne, Essone, France, assignors to Commissariat a l'Energie Atomique, Paris, France
Filed June 14, 1966, Ser. No. 557,588
Claims priority, application France, June 30, 1965, 22,925
Int. Cl. B23d *5/02, 41/08*
U.S. Cl. 90—28.1 **5 Claims**

An apparatus for machining grooves defining internal helical fins in tubular members comprising two clamping mandrels mounted to rotate in bearings integral with a frame of the apparatus in which are fixed the ends of the tubular member to be machined. The mandrels are connected together by a jacket whose ends are secured to the mandrels. The jacket surrounds the member to be machined and is rotated by a spiral slot and key connection which it has with an external reciprocating shaft parallel to and rigid with a tool-supporting spindle arranged inside the tubular member. A cutting tool carrier mounted in a slot in the spindle is moved in increments



radially outwardly at the end of each operating cycle by an inclined key on an axially movable blade, engaged in a cooperating inclined groove in the tool carrier. The blade is moved an increment each time the spindle comes to the end of a reciprocating cycle by a rod acted upon by a cam driven step-by-step by a ratchet driven gear.

3,466,976
FEED MECHANISM FOR GRINDING MACHINE
Ralph E. Price, Waynesboro, Pa., assignor, by mesne assignments, to Land Tool Company, Waynesboro, Pa., a corporation of Delaware
Filed Sept. 16, 1966, Ser. No. 580,000
Int. Cl. B24b *49/00, 51/00*
U.S. Cl. 51—165 **15 Claims**

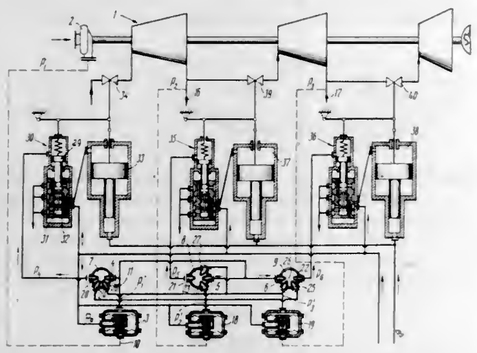


This disclosure relates to a mechanism for feeding a grinding wheel of a grinding machine toward and away from a workpiece. The mechanism includes a rotatably mounted feed screw through which motion is imparted for moving the grinding wheel relative to the workpiece. The mechanism further includes a positioning device for rotating the feed screw before a machining operation to position the grinding wheel for machining the workpiece to a predetermined dimension. A fine incremental feed actuating device is also provided for actuating the feed screw to modify the set-up effected by the positioning device as may be required to complete the grinding operation. Both the positioning device and the actuating device are independently interconnected with the feed screw through a differential transmission.

3,466,977
AUTOMATIC HYDRAULIC GOVERNING SYSTEM FOR STEAM TURBINES HAVING SEVERAL ADJUSTABLE PARAMETERS
Vladimir Nikolaevich Veller, Avlozodskaya ulitsa 9/1, kv. 137, and Gertruda Alexandrovna Kirakosiants, Universitetsky prospekt 23, korpus 4, kv. 40, both of Moscow, U.S.S.R.
Filed Mar. 10, 1967, Ser. No. 622,226
Int. Cl. F15b *11/08, 13/04*
U.S. Cl. 91—458 **1 Claim**

An automatic hydraulic governing system having several adjustable parameters and particularly for steam tur-

bines in which stream-type summation devices are interposed between the transducers of the pressure signals and

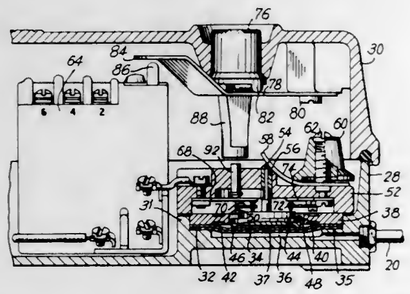


the amplifying units, and in which summation devices the summing of the incoming signals is effected on the principle of interaction between several streams of fluid.

3,466,978
PRESSURE RELAY

Sven Borje Fredrik Carlstedt, Stockholm, Sweden, assignor to Stenberg-Flygt AB, Solna, Sweden, a corporation of Sweden

Filed Sept. 12, 1966, Ser. No. 578,868
Int. Cl. F15b *15/10;* **H01h** *35/34*
U.S. Cl. 92—95 **12 Claims**

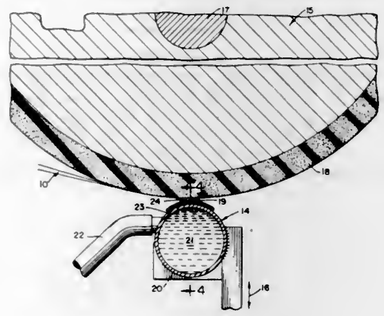


A pressure relay device is provided for operation over a large range of pressures from a preset high pressure to a preset low pressure of substantially the prevailing atmospheric pressure and operable so as to maintain the preset high pressure position once attained until such time as the preset low pressure is sensed by said device when the low pressure position is taken instantaneously. The device includes a substantially nonflexible diaphragm one side of which is connected to the source of the pressure being sensed and movable between a high pressure and a low pressure position in planes substantially parallel to it and to each other and cooperating with an annular flange adjacent said high pressure position which reduces the effective cross-section of said diaphragm upon movement from said low pressure position to said high pressure position for maintaining said high pressure position throughout the entire range of pressures being sensed from the said preset high pressure being sensed to the said preset low pressure being sensed. In addition, an adjustable spring-biased backing member is positioned adjacent said diaphragm and movable therewith, with said spring bias being arranged to provide the strongest bias at said low pressure position for maintaining said diaphragm in said low pressure position throughout the entire range of preset pressures being sensed until said preset high pressure is reached for instantaneous movement of said diaphragm and said backing member to said high pressure position, said spring bias gradually being reduced during said movement.

3,466,979
APPARATUS AND METHOD FOR TRANSVERSE HEAT-SEALING PLASTIC WEBBING

Charles J. Sanders, De Pere, and John R. Merkatoris, Green Bay, Wis., assignors to Paper Converting Machine Company, Inc., Green Bay, Wis., a corporation of Wisconsin

Filed May 8, 1967, Ser. No. 636,832
Int. Cl. B31b *1/00, 49/04;* **B32b** *31/00*
U.S. Cl. 93—8 **7 Claims**

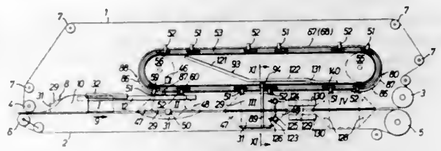


Apparatus and method for transverse heat-sealing of plastic webbing wherein a continuously electrically energized ribbon is employed to unite the web portions without rupturing the same, the ribbon having a coolant adjacent to it for selective increased contact pressure with the ribbon incident to sealing so as to limit the heat transfer into the webbing.

3,466,980
PROCESS AND APPARATUS FOR MANUFACTURING CROSSED-BOTTOM SACKS FROM PLASTICS MATERIAL SHEETING

Fritz Achelpohl, Lengerich, Westphalia, Germany, assignor to Windmoller & Holscher

Filed Aug. 26, 1966, Ser. No. 575,408
Claims priority, application Germany, Feb. 9, 1966, W 40,903
Int. Cl. B31b *1/26, 1/76*
U.S. Cl. 93—8 **22 Claims**

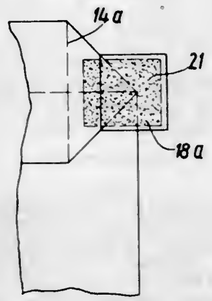


This invention relates to a process of manufacturing crossed-bottom sacks from plastics material sheeting and the construction of a station for unfolding a crossed bottom in a bottom-making machine for carrying out the process according to the invention.

3,466,981
METHOD FOR THE MANUFACTURE OF PREFERABLY MULTILAYER CROSS-BOTTOM BAGS OF PAPER, PLASTIC OR THE LIKE

Karl-Heinz Honsel, Am Waldwinkel 16, Bielefeld, Germany

Filed Aug. 9, 1966, Ser. No. 571,215
Claims priority, application Germany, Aug. 9, 1965, H 56,809
Int. Cl. B31b *49/04, 1/14*
U.S. Cl. 93—35 **2 Claims**

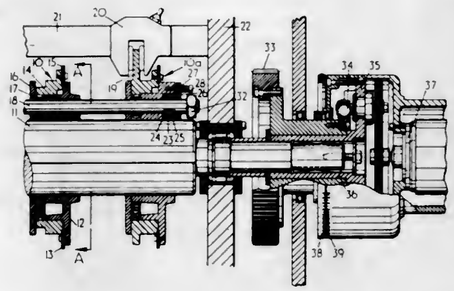


Method for manufacturing cross-bottom bags where each triangular bottom pocket has an outer bottom pocket triangle whose hypotenuse is defined by the connecting line between adjacent points of the folding lines of the bottom flaps and where a further member which has corner flaps that are formed by incisions proximate the sides of the blank extends from this hypotenuse, so that the member having the corner flaps can be turned about the hypotenuse, and after the bottom flaps are glued against one another the member is turned back about the hypotenuse and glued against the bottom flaps.

3,466,982
SLOTTING MECHANISMS

John Anthony Sullivan, Woods Moor, Stockport, Cheshire, England, assignor to Henry Simon Limited, Stockport, England, a British company

Filed Nov. 15, 1966, Ser. No. 594,466
Claims priority, application Great Britain, Nov. 24, 1965, 49,834/65
Int. Cl. B31b *1/14;* **B23d** *25/02;* **B26d** *1/56*
U.S. Cl. 93—58.2 **2 Claims**

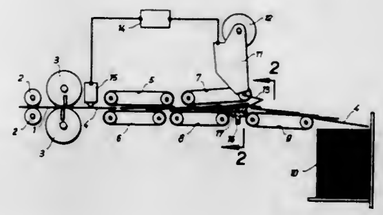


An arrangement for the simultaneous adjustment of the relative positions of aligned slot-cutting knives of a plurality of slotting knife units mounted for rotation on a common supporting shaft, and wherein each unit consists of a hub carrying one of two aligned slotting knives, an internally toothed annular flange rotatable on the hub and carrying the other said knife, and a pinion in toothed engagement with the annular flange and rotationally fixed on an adjusting shaft passing through the hubs of all said units and common to their pinions. The arrangement provides that during adjustment a braking disc extension of one of the said annular flanges is engaged by a relatively fixed brake shoe thus preventing the annular flanges of all units from rotating with their hubs when the hubs are rotated by their supporting shaft.

3,466,983
METHOD OF AND APPARATUS FOR INSERTING MARKING STRIPS INTO STACKS OF SHEETS

Günther Meyer-Jagenberg, Dusseldorf-Grafenberg, Germany, assignor to Jagenberg-Werke AG, Dusseldorf, Germany

Filed Sept. 8, 1965, Ser. No. 485,875
Claims priority, application Germany, Oct. 23, 1964, J 26,748
Int. Cl. B65h *33/00, 5/08, 29/24*
U.S. Cl. 93—93 **8 Claims**



The invention relates to a method and apparatus for inserting marking strips into sheets or packets of sheets coming from paper or sheet cutting machines and includes the conveying of the cut sheets in overlapped condition along a path of movement, during such conveying momentarily deflecting and lifting the leading edge of a selected sheet out of its path of movement, while so deflected inserting from above a V-shaped marking strip with its free edges facing the line of movement so that the lifted leading edge enters the gap between such free edges, engages the marking strip and carries the same along in continued movement of the strip and after insertion restoring the conveyed cut sheets to their original path of movement. The deflection and upward lifting of the leading edge of a selected sheet is effected at the central region of such sheet while the balance of the sheet is constrained to follow the original line of movement and may be effected by use of a tapered guide, a jet of compressed air directed toward the oncoming sheets, the combination of both of these measures or by using two laterally spaced suction rolls which lift up the central portion of a leading edge to provide a gap to receive a marking strip.

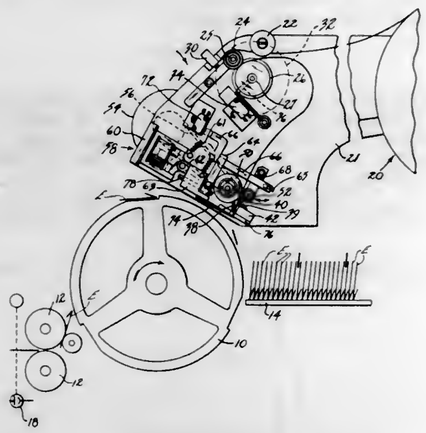
3,466,984
AUTOMATIC TAB INSERTING DEVICE FOR ENVELOPE FORMING MACHINE

Bror E. Hanson, Worcester, Mass., assignor to United States Envelope Company, Springfield, Mass., a corporation of Maine

Filed June 28, 1967, Ser. No. 649,728
Int. Cl. B65h *33/10, 33/00*
U.S. Cl. 93—93 **9 Claims**

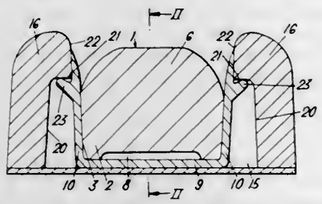
A supply of tab material in continuous strip form is fed between an intermittently driven roll and a friction wheel to form a loop of tab material. The lower end of the loop is passed through a fixed guide adjacent a continuously driven feed roll. A friction wheel is mounted adjacent the continuously driven feed roll on a reciprocable carriage, and movement of the carriage in one

direction causes the tab material to be fed between said roll and said wheel while movement of the carriage in the opposite direction causes a movable blade on the carriage to sever the tab material to allow short segments thereof



to drop, successively, between groups of newly formed envelopes discharged from the envelope machine. An envelope counter on the machine can be preset to activate the device for predetermined numbers of envelopes.

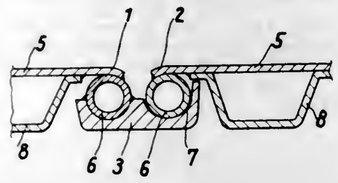
3,466,985
REFLECTING ROAD BEACONS
Donald Arthur Richardson, Rainford, St. Helens, and John Robert Waters, Ormskirk, England, assignors to Pilkington Brothers Limited, Liverpool, England, a company of Great Britain
Filed Nov. 6, 1967, Ser. No. 680,763
Claims priority, application Great Britain, Nov. 4, 1966, 49,636/66
Int. Cl. E01f *9/06*
U.S. Cl. 94—1.5 **2 Claims**



A reflecting road stud is mounted in a resilient mounting which is held in a casing for mounting the stud in a hole in a road surface.

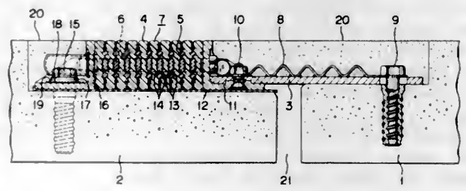
3,466,986
TRACK FOR WHEEL AND TRACK LAYING VEHICLES
Theodor Biller, Dusseldorf, Germany, assignor to Thyssen Rohrenwerke Aktiengesellschaft, Dusseldorf, Germany
Filed Jan. 6, 1967, Ser. No. 607,751
Claims priority, application Germany, Jan. 11, 1966, P 38,514
Int. Cl. E01c *5/16*
U.S. Cl. 94—13 **9 Claims**

A composite roadway for wheel equipped and for track laying vehicles which includes a plurality of plate means each having an even number of sides, while the said plate means are so arranged with regard to each other that each two adjacent plate means has two sides facing each other while one of the two sides has a holding element extending below the other one of the two sides and engaging



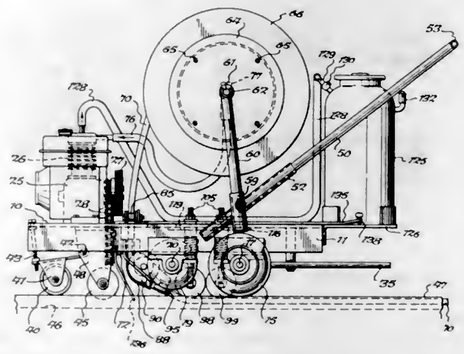
a portion thereof from below, while simultaneously supporting the same and permitting pivotal movement of said two sides relative to each other.

3,466,987
EXPANSIBLE AND CONTRACTIBLE CONNECTING DEVICE FOR THE ROAD
Soichiro Shimizu, 7–5 Higashi-Shinbashi, 2-chome, Minato-ku, Tokyo, Japan
Filed Dec. 15, 1966, Ser. No. 602,043
Claims priority, application Japan, Dec. 30, 1965, 40/81,478
Int. Cl. E01c *11/10;* **E01d** *19/06*
U.S. Cl. 94—18 **2 Claims**



An expansion joint construction to bridge the gap between adjacent road blocks having elastic packing and stiffening frames.

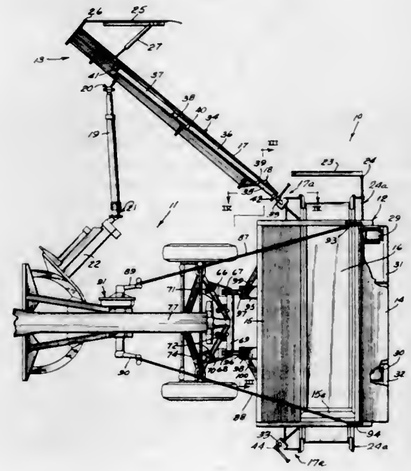
3,466,988
APPARATUS FOR INSERTING SEALS IN PAVEMENT GROOVES
James F. Sharpe, Buffalo, N.Y., assignor to Acme Highway Products Corporation, Buffalo, N.Y.
Filed Mar. 13, 1967, Ser. No. 622,677
Int. Cl. E01c *19/52*
U.S. Cl. 94—39 **8 Claims**



This disclosure relates to apparatus for accurately inserting elastomeric sealing material in strip form into

pavement grooves for the purpose of forming tight seals between adjacent slabs of pavement to exclude foreign material from the grooves and including a pair of insertion disks arranged one in advance of the other in angular relation to each other and to the pavement and extending into a groove and pressing the sealing material into said groove.

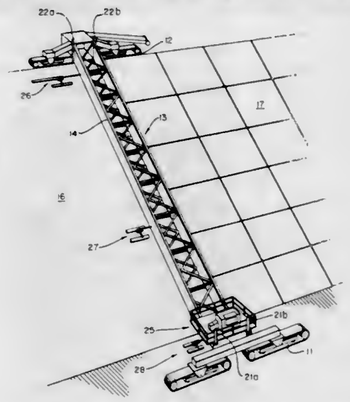
3,466,989
EARTH MATERIALS HANDLING APPARATUS
John J. Ulrich, El Paso, Raymond M. Ulrich, Roanoke, and Solomon D. Ulrich, Metamora, Ill., assignors, by mesne assignments, to Ulrich Manufacturing Co., Roanoke, Ill., a corporation of Delaware
Filed Apr. 21, 1965, Ser. No. 449,831
Int. Cl. E01c *19/12, 19/48, 23/06*
U.S. Cl. 94—44 **18 Claims**



A shoulder spreader attachment detachably connectable to the front of a motor grader, tractor or the like and comprising a frame, a road material hopper in the frame, a conveyor in the hopper for laterally discharging the material and a strike-off blade projecting transversely outward from the frame for receiving the material and spreading it over a road shoulder is hereby provided with improved coupling means between the frame and the propelling vehicle and improved blade mounting means for effectively maintaining the blade in position and insuring its proper operation; said mounting means facilitating attachment of the blade to either side of the frame for outward projection to either side of the vehicle and including means for quickly adjusting its elevation and vertical and horizontal altitudes.

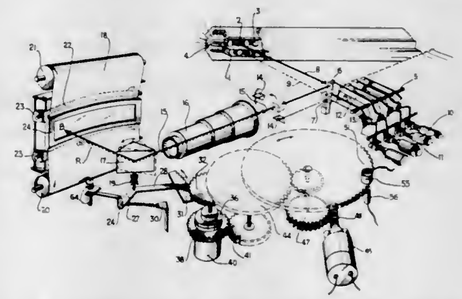
3,466,990
PAVING MACHINE
Frank R. Toles, Highland, Calif., assignor to Gordon H. Ball, Inc., Danville, Calif., a corporation of Nevada
Filed Oct. 6, 1967, Ser. No. 673,398
Int. Cl. E01c *19/48*
U.S. Cl. 94—46 **7 Claims**

A machine having paving apparatus adjustably supported from wheels or tracks. Ground engaging sensors are supported by the apparatus and actuate an electrical circuit to generate control signals. The adjustable supports are responsive to the control signals to maintain the



correct elevation of the paving apparatus and, therefore, thickness of the pavement.

3,466,991
PHOTOCOMPOSING MACHINES
Meinhard Hoffmann, Dornigheim, Erich Adler, Russelsheim, and Karl-Jürgen Debus, Bad Homburg, Germany, assignors to Linotype G.m.b.H., Frankfurt am Main, Germany, a limited liability corporation of Germany
Filed Oct. 28, 1966, Ser. No. 590,384
Int. Cl. B41b *13/18*
U.S. Cl. 95—4.5 **4 Claims**

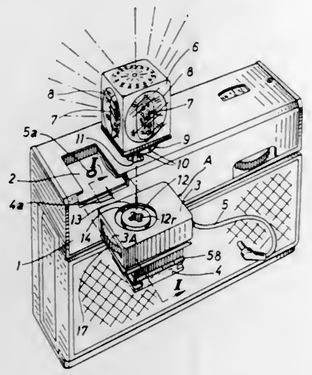


In a phototypograph in which selected character images are distributed to form a line of text along a section of film held in a fixed position, by a reflector rotated continuously during line composition, there is provided means for measuring the extent of rotation of the reflector, and means for intermittently flashing the light source to project a selected character when the reflector is moved a distance corresponding to the set width of the character previously printed.

3,466,992
FLASH UNIT FOR PHOTOGRAPHIC CAMERAS
Richard Wick, Grunwald, near Munich, Karl Wagner, Ottobrunn-Munich, Joachim von Albedyll, Munich, Otfried Renner, Unterhaching, near Munich, and Fridolin Hennig, Munich, Germany, assignors to Agfa-Gevaert Aktiengesellschaft, Leverkusen, Germany
Filed May 17, 1966, Ser. No. 550,805
Claims priority, application Germany, July 26, 1965, A 49,847
Int. Cl. G03b *9/70, 15/035*
U.S. Cl. 95—11.5 **22 Claims**

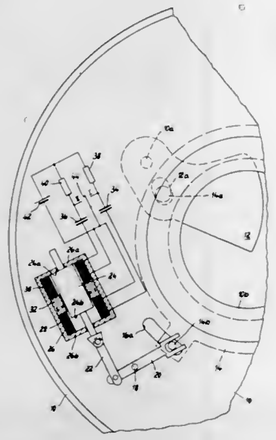
A flash unit whose housing accommodates an indexible socket for multiple flash light containers and has a foot

for insertion into the accessory shoe of a camera body. The socket is indexible by a spring motor which can be wound in response to rotation of the container. Closing



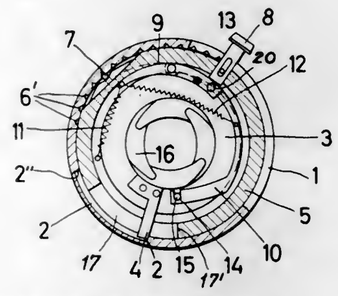
of the synchronizing switch in the camera energizes an electromagnet which effects angular displacement of the socket to place a fresh flash light into an optimum position for firing.

3,466,993
OPERATING MECHANISM FOR PHOTOGRAPHIC SHUTTER
Paul Fahlenberg, Baierbrunn, and Klement Kleeberger, Munich, Germany, assignors to Compur-Werk Gesellschaft mit beschrankter Haftung & Co., Munich, Germany, a firm of Germany
Filed Nov. 14, 1966, Ser. No. 594,167
Claims priority, application Germany, Nov. 24, 1965, C 37,477
Int. Cl. G03b *9/14*
U.S. Cl. 95—63 **6 Claims**



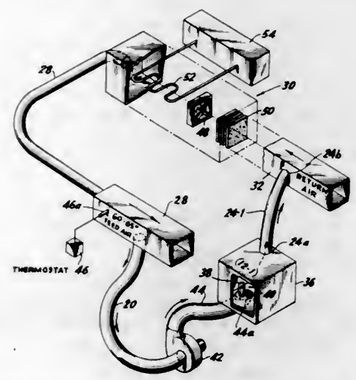
A shutter system which driven by a driving member between the open and the closed position. The driving member consists of a closed magnetic system, with a permanent magnet at one end and an electromagnet at the other. The armature moves back and forth, hence the shutters open and close, depending on when the electromagnet is energized.

3,466,994
OPTICAL OBJECTIVE WITH OPTIONAL DIAPHRAGM PRESELECTOR
Karl-Heinz Holderbaum, Bad Kreuznach, Germany, assignor to Jos. Schneider & Co., a corporation of Germany
Filed May 24, 1967, Ser. No. 640,984
Claims priority, application Germany, June 23, 1966, Sch 39,159
Int. Cl. G03b *9/02*
U.S. Cl. 95—64 **7 Claims**



Optical objective with a housing having a cutout through which a lug of a diaphragm-control ring projects outwardly into engagement with an external setting ring. The lug is urged by a spring force toward one end of the cutout from which it can be removed by an abutment on the setting ring upon rotation of the latter into any of several indexed "manual" stop positions. Another abutment on the setting ring, whose spacing from the first abutment equals or exceeds the maximum angle of rotation of the control ring, is engageable by the lug upon rotation of the setting ring into any of several indexed "automatic" stop positions—on a common circle with the "manual" stop positions—to limit rotation of the control ring in response to actuation of an operating element (e.g. a release button also serving to trip an associated camera shutter) which tends to displace the lug against its spring force.

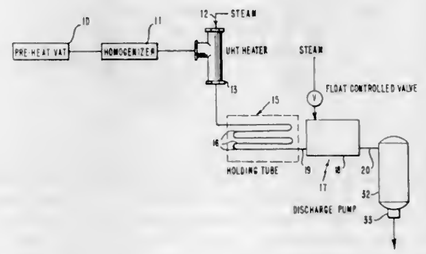
3,466,995
CLEANING AND COOLING SYSTEM FOR PHOTOGRAPHIC PRINTING APPARATUS
Saul P. Jeffee, Scarsdale, N.Y., and Gus Limnios, Washington Township, N.J., assignors to Movielab, Inc., New York, N.Y., a corporation of New York
Filed Nov. 14, 1967, Ser. No. 682,943
Int. Cl. F24f *13/00, 3/14, 3/16*
U.S. Cl. 98—33 **6 Claims**



A closed-loop cleaning and cooling system for lamp houses for photographic printers located in an air conditioned room. Air for cooling lamps in the lamp houses of

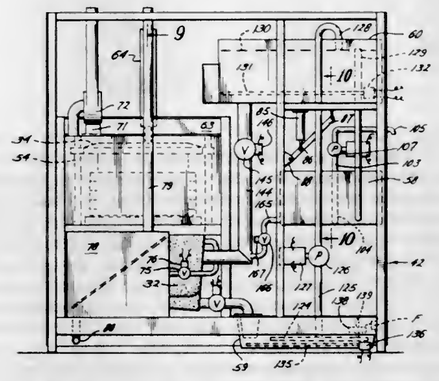
the printer is distributed from a separate air conditioner from the room air conditioner. Dust and dirt are prevented from entering the room by eliminating negative pressure and developing a slight positive pressure relative to the ambient to cause air to flow outwardly from the room. Lamp life in the system is extended many times the usual lamp life.

3,466,996
APPARATUS FOR PREVENTING PREMATURE FLASHING IN A PROCESSING SYSTEM
William Albert Sommer, Elgin, Ill., assignor to Borden, Inc., New York, N.Y., a corporation of New Jersey
Filed Sept. 19, 1967, Ser. No. 668,861
Int. Cl. B65b *55/06*
U.S. Cl. 99—251 **1 Claim**



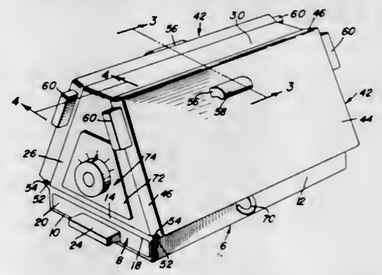
This invention relates to an apparatus for preventing premature flashing of a liquid mixture during the processing of an edible fluid, which comprises a compartment, means for delivering the edible fluid to said compartment in a liquid mixture state, means within the compartment responsive to the liquid mixture accumulated therein to effect passage of said liquid therefrom upon the accumulating of a specified volume, and regulating means associated with said compartment so as to maintain the edible fluid accumulated therein in the liquid mixture state.

3,466,997
CHICKEN FRYING EQUIPMENT
Levy S. Hartzog, Memphis, Tenn., assignor to Kentucky Fried Chicken Corporation, Nashville, Tenn., a corporation of Kentucky
Filed Mar. 8, 1967, Ser. No. 621,675
Int. Cl. A47j *27/08, 29/02, 37/12*
U.S. Cl. 99—330 **22 Claims**



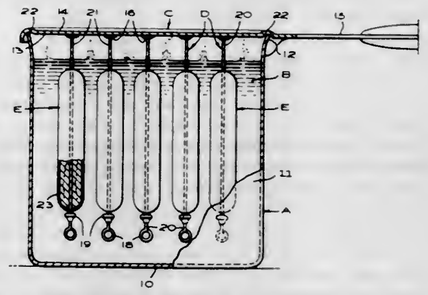
A deep-fat chicken frying pressure cooker pot is provided with a sealable lid having rack supports depending therefrom for immersing chicken or other material to be cooked in the hot fat when the lid is sealed on the pot. The cooking proceeds through a timed period and under carefully controlled temperature and pressure conditions, after which the pot pressure is automatically released and the lid and chicken-carrying racks lifted for storage in a warming cabinet for later consumption. Convenient means are provided for filtering the cooking fat after ever cooking operation and for recharging the pressure cooker pot with the exact desired amount of cooking liquid. The cooking rack supports and warming oven accommodate standard bakery-type bun racks.

3,466,998
BACON CRISPER
Donald A. Musgrove, Rte. 2, Box 85, Winlock, Wash. 98596
Filed Aug. 24, 1967, Ser. No. 663,012
Int. Cl. A47j *37/06;* **H05b** *3/68*
U.S. Cl. 99—349 **5 Claims**



A device for home and restaurant use. It functions to flatten and broil sliced meat, for example, strips of bacon. It embodies a portable self-standing housing having a well-like receiver at its bottom containing a removable grease pan. Each of two lengthwise sides is provided with flattening grid plates with heating coils. The opposed faces of the inner and outer plates have meat piercing and retaining prongs or spikes. The outer grid plate is built into an insulated hinged cover. The plates are inclined and the gravitating grease runs and is shunted over a deflecting flange into the grease pan.

3,466,999
KITCHEN UTENSIL
Julio G. Yanez-Pastor and Jenny Yanez-Pastor, Pacifica, Calif. (Both of 369 Skyline Drive, Daly City, Calif. 94015)
Filed Sept. 14, 1967, Ser. No. 667,748
Int. Cl. A47j *37/12, 36/16*
U.S. Cl. 99—413 **4 Claims**



A kitchen utensil provided with a container for holding a cooking medium, and a lid dimensioned for resting on the marginal rim of the container, the lid having a plu-

rality of skewer pins projecting from one face thereof, each pin being made to have an article of food impaled thereon, the pins and food articles projecting downwardly into the cooking medium when one face of the lid rests on the container rim, and the lid being reversible so that the impaled articles of food will extend upwardly for cooling when the opposite face of the lid is rested on the container rim. The pins are made to hold the articles of food out of contact with one another and out of contact with the container walls.

3,467,000

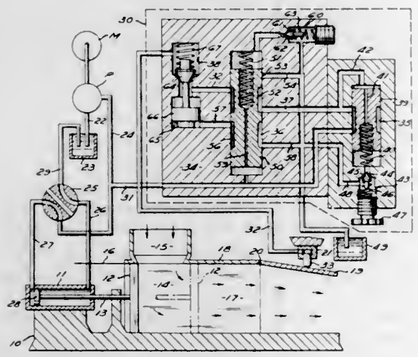
RELIEF VALVE

Robert E. Seltzer, Bellevue, Ohio, assignor to The American Baler Company, Bellevue, Ohio, a corporation of Ohio

Filed July 21, 1966, Ser. No. 566,876

Int. Cl. B30b *15/26, 1/32;* **F15b** *13/043*

U.S. Cl. 100—43 **9 Claims**



1. A hydraulic control apparatus for supplying fluid pressure to and releasing fluid pressure from a hydraulic load in accordance with the level of supply pressure and comprising

a hydraulic load having an inlet connection,

a pilot-operated check valve having a pair of fluid pressure ports and a through flow path extending between and connecting them and having a pilot pressure port, the port at one end of said flow path being connected to said inlet connection of said hydraulic load to provide free and unchecked conduction through said check valve toward said load and pilot pressure-controlled conduction through said check valve in a direction away from said load,

a pressure supply conduit,

control means connected to the port at the other end of said flow path and to said pilot pressure port of said check valve on the one hand and to said pressure supply conduit and to atmosphere on the other, said control means having valve means movable from a first position connecting said pressure supply conduit and atmosphere to the port at the other end of said check valve and its pilot pressure port respectively and a second position reversing said first position connections, said valve means having a control pressure port connected to said pressure upply conduit and being movable from said first position to said second position in response to pressure in said pressure supply conduit in excess of a predetermined level.

3,467,001

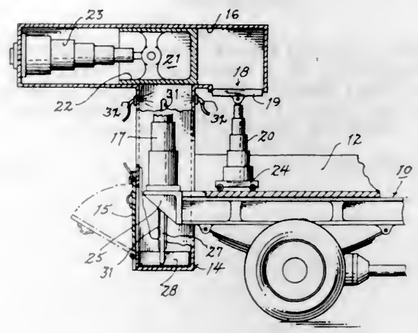
PAPER SCRAP PICKUP AND BALING MACHINE

Valentino L. Balbi, 52 W. Market St., Daly City, Calif.

Filed Oct. 16, 1967, Ser. No. 675,410

Int. Cl. B30b *15/30, 15/20;* **B60p** *1/00*

U.S. Cl. 100—74 **5 Claims**



The invention contemplates the provision of an automotive truck having a refuse accommodating body portion of a size to accommodate a number of bales of scrap paper, cardboard boxes and corrugated paper cartons together with overhanging scrap baling means that is adapted and arranged to form such scrap into bales at the curb side where the scrap is picked up.

3,467,002

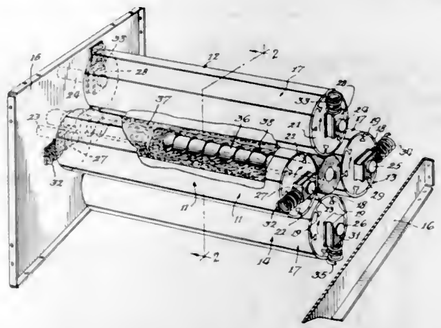
SEGMENTAL ROLLERS FOR CORE-FORMING MACHINE

Richard W. Bushmeyer, Rockford, Ill., assignor to J. I. Case Company, a corporation of Wisconsin

Filed June 20, 1967, Ser. No. 647,354

Int. Cl. B30b *3/04*

U.S. Cl. 100—89 **15 Claims**



Feed crop material, such as hay, for example, is fed into a wrapping chamber defined by a plurality of continuously rotating cylindrical rollers mounted in parallel relationship, and is formed into an elongated core that is moved longitudinally toward the discharge end of the machine. Each of the rollers has its outer surface made up of longitudinally extending segments that are mounted for longitudinal movement relative to the rollers. As each segment is moved into engagement with the elongated core, it moves longitudinally with the core. The simultaneous longitudinal movement of the core and the segments in engagement therewith prevents relative sliding movement between the core and the wrapping rollers. Apparatus is also provided to adjust the longitudinal speed of the segments in response to a variation in feeding rate into the wrapping chamber.

3,467,003

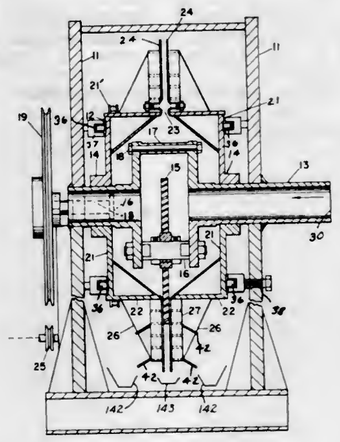
MACHINE FOR DELIQUEFYING SOLID MATERIAL

John H. Schmid, Erie, Pa., assignor to Zurn Industries, Inc., Erie, Pa., a corporation of Pennsylvania

Filed Jan. 30, 1967, Ser. No. 612,473

Int. Cl. B30b *9/20, 9/02*

U.S. Cl. 100—116 **19 Claims**



The broadest aspect of the invention is the use of a compression wheel to compress and dewater the solids of a slurry between two spaced perforated toroidal plates rotated at the same rate of speed about a common axis. The compression wheel is approximately the same as the thickness of the space between the plates with only enough clearance between the sides of the wheel and the plate to allow them to move freely relative to each other. The compression wheel can be located outside or inside the toroid, in either case, its axis is parallel to the axis of the toroid.

3,467,004

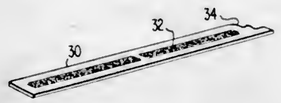
AUTOMATIC SILK SCREENING MACHINE

Howard S. Best, Horseheads, N.Y., and Paul F. Gibbs and Graham Hartwell Mosely, Raleigh, N.C., assignors to Corning Glass Works, Corning, N.Y., a corporation of New York

Filed May 2, 1967, Ser. No. 635,530

Int. Cl. B41f *17/00;* **B41l** *27/00*

U.S. Cl. 101—35 **16 Claims**



An automatic silk screening machine sequentially and automatically picks up, loads, silk screens, dries, and unloads fragile substrates having nonuniform dimensions. The substrates are picked up by a vacuum bar from a rechargeable magazine and then deposited on a reciprocable carriage and aligned by one edge surface. The carriage is reciprocated to a position underneath a silk screen and coating material is forced through the screen by an automatic wiper. On reverse reciprocation of the carriage, the silk screened substrate is scraped off the carriage into a chute and directed to a conveyor which then conveys substrate past a heater for drying and then to a vacuum pick-up unloading station. The picked up substrate is then deposited in a magazine. All operations are automatic and sequentially controlled.

3,467,005

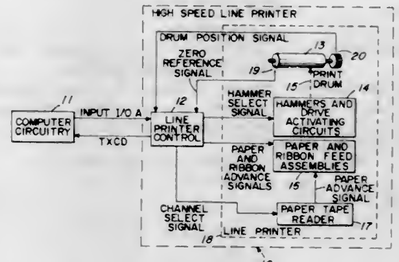
PRINTER HAMMER DRIVE CIRCUIT

Francis A. Bernard, Richardson, Tex., assignor to Collins Radio Company, Cedar Rapids, Iowa, a corporation of Iowa,

Filed Apr. 29, 1968, Ser. No. 724,881

Int. Cl. B41j *9/38*

U.S. Cl. 101—93 **10 Claims**



A hammer driver control system used for each of a plurality of hammers and hammer addresses used in, for example, a 1,000 line per minute high-speed drum-type line printer. A flip-flop circuit is used in each hammer driver control circuit that can be held "off" during a power "on" sequence, and with hammer drive pulse width a function of drum speed, and synchronous with drum speed, through logic control using a magnetic pulse pick-up signal input.

3,467,006

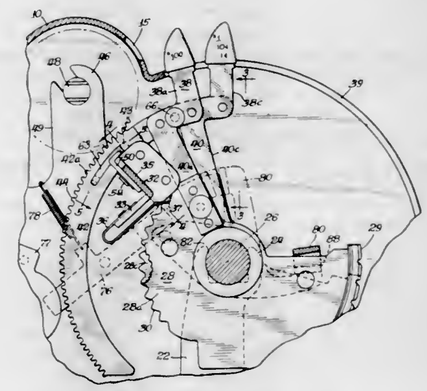
LIMITED AMOUNT CHECK WRITER

Clarence W. Johnson, Tower Lakes, Ill., assignor to The Hedman Company, Chicago, Ill., a corporation of Delaware

Filed July 19, 1967, Ser. No. 654,477

Int. Cl. B41j

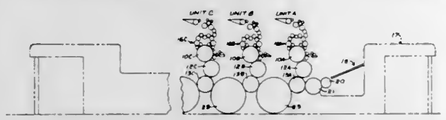
U.S. Cl. 101—95 **5 Claims**



A limited amount check writer in which a simplified slidable element having slots therein and cooperating with a slotted comb bar is moved in one direction or in the opposite direction to prevent writing a check over a determined limited amount when any of the dollar and cents segments of the check writer are moved to a printing position other than zero, and wherein movement of the highest dollar segment to its printing position prevents movement of the remaining segments to any other than their zero position, together with mechanisms for moving the second dollar segment from a non-print posi-

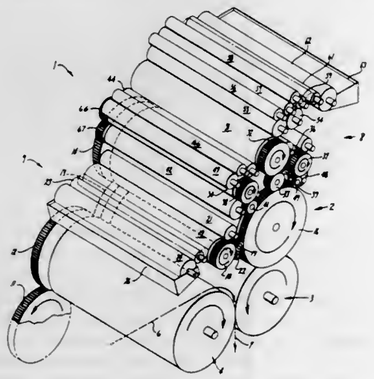
tion to the zero position when the first dollar segment is moved to the position to print or write the pre-determined limited amount on the check; all of the foregoing being in combination with well-known check writer mechanisms for printing the amount on the check and returning the segments to their initial positions upon movement of an operating lever to the printing position and return to the normal position.

3,467,007
ELECTRICAL CONTROLS FOR A MULTIPLE COUPLE PRINTING PRESS
Roger H. Stotzer, Parma, William H. Lee, Lakewood, and Jack E. Vandeman, Berea, Ohio, assignors to Harris-Intertype Corporation, Cleveland, Ohio, a corporation of Delaware
Filed Mar. 22, 1966, Ser. No. 536,433
Int. Cl. B41f *5/16, 13/24*
U.S. Cl. 101—137 **28 Claims**



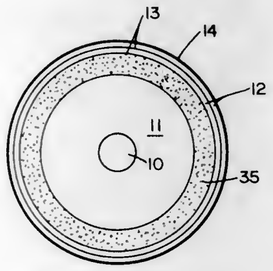
In a multiunit printing press in which counting circuits, one for counting press revolutions and one for counting phase signals, are utilized to throw the printing units between printing and nonprinting conditions as a sheet moves through the printing press. Pulse responsive control means is also provided for overriding the controls operated to throw the units on and off in sequence so that individual units can be switched or actuated between printing and nonprinting conditions while the other units are in their printing condition. A loss of sheet detector operates to force counting means for controlling the operation of the printing units between their printing and nonprinting conditions to a predetermined count to throw off in response to a loss of sheet detection starting with the unit immediately following the location loss of sheet detection.

3,467,008
MEANS AND METHOD FOR REMOVING FOREIGN PARTICLES FROM LITHOGRAPHIC PRESS
Julius A. Domotor, 1520 Sanchez St., San Francisco, Calif. 94131
Filed Jan. 31, 1967, Ser. No. 613,009
Int. Cl. B41f *9/16, 13/24*
U.S. Cl. 101—142 **17 Claims**



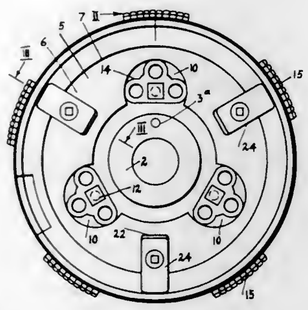
Mechanism and procedure for positively driving a roller which is normally in contact with the plate cylinder of an offset lithographic press at a surface speed different from the surface speed of the plate cylinder, to effect wiping of the cylinder thereby and removal of small particles of foreign matter therefrom to preclude the formation of printing blemishes in the printed matter passing from the press.

3,467,009
COMPRESSIBLE PRINTING ROLL
William C. Ross, Winchester, Mass., assignor to W. R. Grace & Co., Cambridge, Mass., a corporation of Connecticut
Filed July 6, 1965, Ser. No. 469,420
Int. Cl. B41f *5/02, 1/46, 31/14*
U.S. Cl. 101—216 **17 Claims**



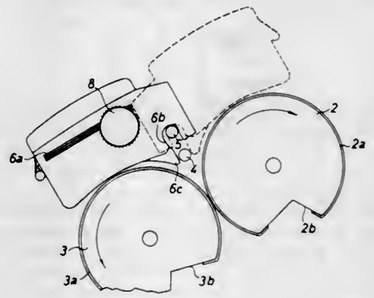
The novel roll having particular utility in printing has, in sequence, a nonresilient core, a layer of sponge rubber, and at least one layer of a resilient, volume-compressible, impregnated fibrous sheet material of specified characteristics adjacent the sponge rubber layer. The impregnated fibrous sheet material can have a thin continuous surface layer (e.g. cured butadiene-acrylonitrile rubber).

3,467,010
PRINTING WHEEL WITH YIELDABLE SURFACE
William R. King, Wilkinsburg, Pa., assignor to Jas. H. Matthews & Co., Pittsburgh, Pa., a corporation of Pennsylvania
Filed Mar. 23, 1966, Ser. No. 536,704
Int. Cl. B41f *13/10, 27/06*
U.S. Cl. 101—376 **8 Claims**



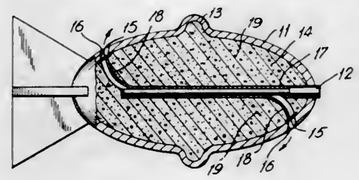
There is disclosed a printing wheel having separate hub and rim members with type-holding means on the periphery of the rim. The rim has a plurality of circularly-curved cavities thereabout in each of which is a cushioning element of rubber that makes line contact with the cavity walls at three separate points to be equally yieldable in radial and angular directions. Torque is transmitted from the hub to the rim through these cushioning elements.

3,467,011
WIPING ARRANGEMENT
Konrad Phleps, Gruenwald, Franz Fruth, Unterpfaffenhofen, and Hanns Bloechl, Unterhaching, Germany, assignors to Agfa-Gevaert Aktiengesellschaft, Leverkusen, Germany
Filed Aug. 16, 1966, Ser. No. 572,731
Claims priority, application Germany, Aug. 20, 1965, A 50,065
Int. Cl. B41f *35/06;* **B41l** *41/06*
U.S. Cl. 101—425 **14 Claims**



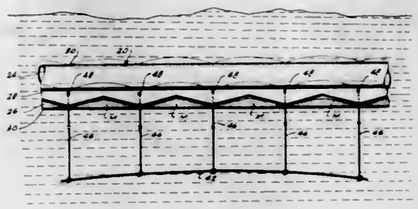
A reproducing machine comprises a rotary cylinder and means for wiping the periphery of the cylinder. The wiping means includes guide means which extends in axial parallelism with the cylinder and a carrier unit having a housing which is movable along but detachable from the slide means and which has a width substantially less than the axial length of the cylinder. A supply of wiping tape is accommodated in the housing and has a portion exposed exteriorly thereof so that it can be moved into engagement with selected portions of the periphery of the cylinder. The wiping tape also has a width substantially less than the axial length of the cylinder.

3,467,012
ARMAMENT
Ray Lapof, 37 W. 12th St., New York, N.Y. 10011
Filed Dec. 4, 1967, Ser. No. 687,836
Int. Cl. F42b *13/44*
U.S. Cl. 102—90 **2 Claims**



An armament deliverable by mortar, air and like means and calculated to render an area impassable for a predetermined time period, comprising a container filled with fuel means ignited on impact, the fuel means being expressed through nozzles in opposed position on the container, the ignited fuel means developing opposed jet streams of burning gases, thereby to rotate the container about an axis normal to the surface on which said container is supported, the centrifugal force generated by said rotating container increasing the effective dispersion distance of said jet streams.

3,467,013
SUBMARINE FLUID TRANSMISSION SYSTEM AND CONDUIT THEREFOR
Jack S. Conner, 10024 Genesta Ave., Northridge, Calif. 91324
Continuation-in-part of application Ser. No. 176,004, Feb. 27, 1962. This application May 14, 1965, Ser. No. 475,906
Int. Cl. F04b *23/04;* **B63b** *35/02*
U.S. Cl. 103—5 **7 Claims**



7. A submarine transmission system for transporting through a body of water a liquid having a density less than the density of said water, comprising:

a plurality of spaced pumping units submerged to a generally uniform depth in said water and each including a rigid, pump housing having an upper inlet and a lower outlet, and pumping means within said housing for pumping said liquid through said housing from said inlet to said outlet,

a conduit extending submerged through said body of water from said outlet of each pumping unit to said inlet of the next pumping unit,

substantially the entire wall portion of each said conduit comprising a relatively thin, flexible membrane capable of reacting freely to the internal liquid pressure within said conduit and the external water pressure on said conduit,

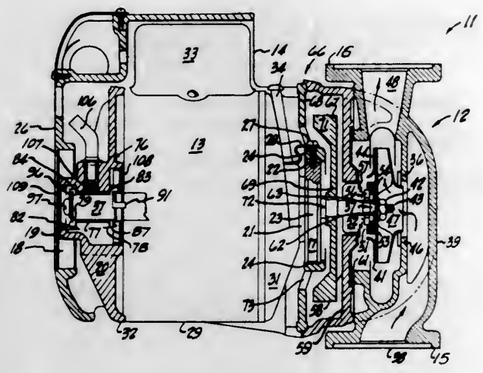
said outlet of each said pumping unit being submerged to a given depth in said water such that the total internal head at said outlet of each pumping unit is at least substantially equal to the external water pressure at the respective outlet, and

means anchoring each said pumping unit and conduit to the floor of said body of water in such manner that each conduit slopes upwardly from the outlet to said inlet of its respective adjacent pumping units at a generally uniform angle to the horizontal throughout substantially the entire length of the respective conduit at a gradient such that the sum of the static and velocity heads of said liquid at each elevation along the respective conduit beyond the lower end thereof exceeds the external water pressure at the corresponding elevation by an amount at least substantially equal to the total friction loss in the respective conduit between said lower end thereof and the respective elevation.

3,467,014
CLOSE-COUPLED BOOSTER PUMP
Jack Keyes, Glencoe, Robert R. Greene, Chicago, and Thomas E. Boesen, Morton Grove, Ill., assignors to International Telephone and Telegraph Corporation, a corporation of Delaware
Filed May 11, 1967, Ser. No. 637,795
Int. Cl. F04d *13/04;* **F04b** *21/00*
U.S. Cl. 103—87 **5 Claims**

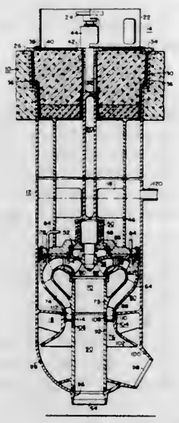
A close-coupled booster pump for Hydronic heating and cooling systems. The pump is equipped with an eye

seal that prevents leakage that could occur as a result of resilient mounts used to isolate the motor. The shaft is equipped to withstand the wide variations in thrust



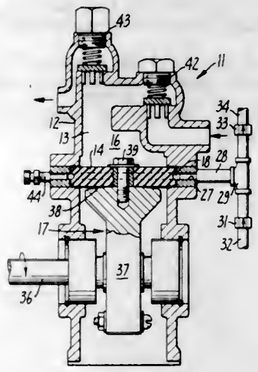
forces acting thereupon and an unique heat sink fan combination is used to protect the motor bearing from the heat of the fluid being pumped.

3,467,015
HYDRAULIC PUMP-MOTOR COMBINATION
Harvey G. Allen, Murrysville, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Mar. 28, 1968, Ser. No. 716,805
Int. Cl. F04d *13/04, 1/00*
U.S. Cl. 103—87 **12 Claims**



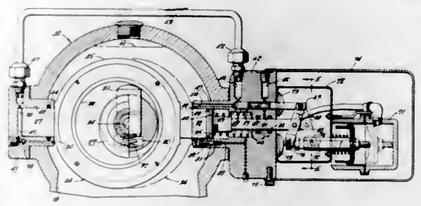
A pump-motor combination is assembled to a vertical cylindrical tank suspended from a plant deck and the like. The motor is mounted on a flange at the upper end of the tank at floor level and the hydraulic pump component is hung vertically from the motor support within the tank. The tank carries a pool of liquid metal which submerges the hydraulic elements of the pump. The suction and discharge pipe connections are at the lower end of the tank. Inert gas fills the space between the liquid level and the deck shielding. The pump component is removable from the tank as a unit.

3,467,016
MULTIPLE FLUID PUMP
Clarence L. Pritchard, Castro Valley, and Carlyle O. Telford, Hayward, Calif., assignors to Malsbary Manufacturing Company, Oakland, Calif., a corporation of California
Filed Sept. 15, 1967, Ser. No. 667,926
Int. Cl. F04b *13/02, 19/06, 43/02*
U.S. Cl. 103—9 **22 Claims**



A multiple fluid pump having a resiliently elastic diaphragm for pumping fluids in a first pumping chamber, closed off by the diaphragm, and in a second pumping chamber provided at the periphery of the diaphragm. The central portion of diaphragm is reciprocated to pump a first fluid through the first pumping chamber. When the material of the diaphragm is intermittently squeezed between the arm and the resistance of the fluid in the first chamber, a portion of the diaphragm material intermittently bulges into the second pumping chamber to pump a second fluid. Both pumping chambers communicate with inlet and outlet check valves. Alternate forms are described in which the second chamber is formed entirely within the diaphragm, entirely within the pump housing, and in both. Further forms are shown having additional pumping chambers transversely spaced across the periphery of the diaphragm and peripherally spaced around the diaphragm.

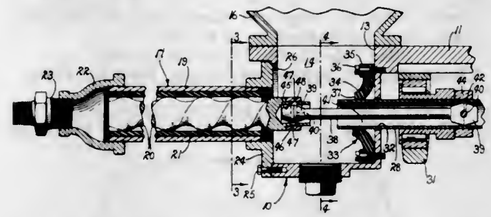
3,467,017
HYDRAULIC ACTUATOR
Heinz K. Hetz, Doylestown, and Warren H. Brand, Blue Bell, Pa., and George B. Dabinett, Willingboro, N.J., assignors to Yarway Corporation, Blue Bell, Pa., a corporation of Pennsylvania
Filed Feb. 19, 1968, Ser. No. 706,516
Int. Cl. F04b *49/08, 9/10;* **F04c** *15/04*
U.S. Cl. 103—38 **13 Claims**



A pump assembly, in which a pumping diaphragm is mounted within a cavity and is flexed by a pulsating fluid produced by an orbiting-piston, is provided with a hydraulically adjustable guide which engages the piston to regulate the fluid pulses and the pumping cavity displacement. Hydraulic cylinders receive pistons mounted diametrically on the guide, and a valve is provided to control the fluid pressure therein in response to a control

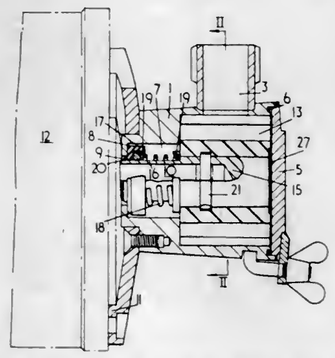
signal, the hydraulic energy being produced by reaction forces between the orbiting-piston and the guide.

3,467,018
SLURRY PUMP
Donald R. Presson, 4856 E. Harvard Ave., Fresno, Calif. 93703
Filed Aug. 21, 1967, Ser. No. 661,857
Int. Cl. F04d *3/02, 29/10, 29/52*
U.S. Cl. 103—117 **7 Claims**



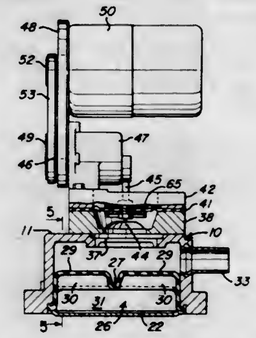
This invention relates to an improved pump for pumping a slurry of wall texturing material. The pump is of the type utilizing an auger which is located inside of a resiliently lined housing. The auger is driven rotatably by a motor to a bearing mounted shaft. The shaft passes into a supply chamber which is connected to a supply hopper and supplies the auger, and a rotary seal is provided between the supply chamber walls and the drive shaft. Important improvements in this pump are the provision of a hard rubber disc with a center hole smaller than the outside diameter of the drive shaft, which, when forced onto the drive shaft and secured to the supply chamber housing, provides a more effective rotary seal; a pinned toggle connecting shaft between the drive shaft and the auger which avoids excessive wear of the drive shaft baring and the rotary seal due to eccentric movement of the auger during rotation, and an access plate on the supply chamber which permits easy access to the rotary seal for adjustment and replacement.

3,467,019
ROTARY POSITIVE DISPLACEMENT PUMPING APPARATUS
John Oliver Simpkins, London, and Michael Lovatt, Chandlers Ford, England, assignors to Diamond Power Specialty Limited, Southampton, England, a British company
Filed Aug. 31, 1967, Ser. No. 664,702
Claims priority, application Great Britain, Sept. 2, 1966, 39,288/66
Int. Cl. F04c *27/00, 5/00*
U.S. Cl. 103—117 **13 Claims**



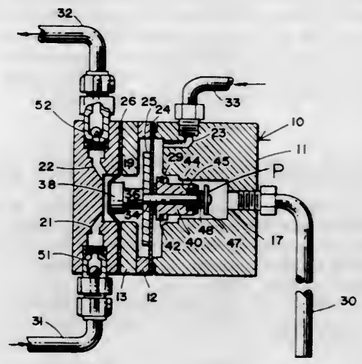
A rotary flexible vaned impeller pump, the impeller of which is attached to a hub that slides into the pump chamber on an impeller shaft from an open end of the chamber, the hub also carrying a seal for the other end of the impeller chamber.

3,467,020
PUMP
Linus E. Russell, Springfield, Ohio, assignor to Peters and Russell, Inc., Springfield, Ohio, a corporation of Ohio
Filed June 27, 1967, Ser. No. 649,271
Int. Cl. F04b *43/04, 11/00*
U.S. Cl. 103—150 **10 Claims**



A compact pump comprising an inlet chamber, an outlet chamber, a flow-passage therebetween and means to induce a flow through said chambers by way of said flow passage, said chambers being each characterized by contoured cushioning flow surfaces which influence a dynamic balance of the pump.

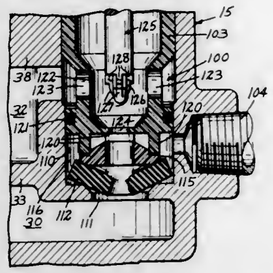
3,467,021
FLUID PRESSURE OPERATED PUMP
Robert F. Green, Jr., Miami, Fla., assignor to Mec-O-Matic, Inc., Miami, Fla., a corporation of Florida
Filed Feb. 12, 1968, Ser. No. 704,737
Int. Cl. F04b *19/20, 43/06*
U.S. Cl. 103—152 **7 Claims**



A fluid pressure actuated pump includes a pair of flexible diaphragms with a plunger extending through the pressure actuated diaphragm and secured at one end to the pumping diaphragm. A further chamber communicates with the fluid pressure chamber and an outlet extending from the further chamber to a position below the pump. A spool is slidably mounted on the other end of the plunger and has a valve thereon for controlling the flow of fluid under pressure from the pressure chamber to the outlet and bearing against a coil spring extending between the spool and the other end of the plunger so that as fluid under pressure flows past the

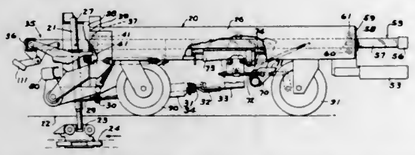
valve to fill the outlet, suction pressure is created thereby to cause the spool to slide in the direction to seat the valve and permit the fluid pressure to flex the diaphragms in one direction against the coil spring pressure and which now forces the spool to slide in the opposite direction to open the valve and release the fluid in the outlet and in the pressure chamber to cause the diaphragms to flex in the opposite direction.

3,467,022
ASPIRATOR CONTROL APPARATUS
Thomas W. Techler and Richard G. Thompson, St. Paul, Minn., assignors to L. & A. Products, Inc., St. Paul, Minn.
Continuation of application Ser. No. 485,826, Sept. 8, 1965. This application Mar. 1, 1968, Ser. No. 709,837
Int. Cl. B01d *29/38, 29/00*
U.S. Cl. 103—272 **4 Claims**



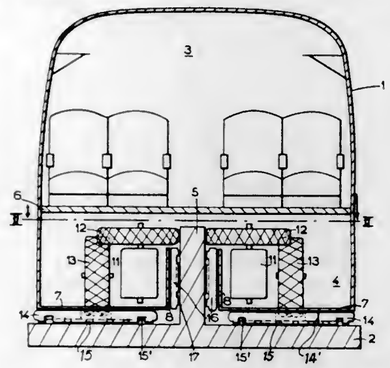
Apparatus for controlling the flow of water through a softening system including an aspirator with a passageway therethrough having an area with a reduced cross-section and a longitudinally movable plunger positioned in the area so that the water flowing therethrough is restricted to a high velocity, low volume stream having a generally annual cross-section when the plunger is in a first position, and a substantially solid cylinder of water is allowed to pass through the area when the plunger is in a second position. A brine supply is in communication with the passageway below the restricted area, and the high velocity stream of water produces an aspirating effect which draws in the brine solution and mixes it with the water to provide a regenerative solution for the softening tank. The solid or increased volume of water is utilized to clean the aspirator as well as to flush the regenerating solution from the softening tank.

3,467,023
ACCUMULATING AND PUSHER TOW TRUCK CONVEYOR SYSTEM
Gerald C. Dodds, Royal Oak, Karl R. M. Karlstrom, Roseville, and Werner W. Kort, Grosse Pointe Woods, Mich., assignors, by mesne assignments, to American Chain & Cable Company, Inc., New York, N.Y., a corporation of New York
Filed Nov. 10, 1966, Ser. No. 593,412
Int. Cl. B61b *9/00;* **B61j** *3/04*
U.S. Cl. 104—172 **44 Claims**



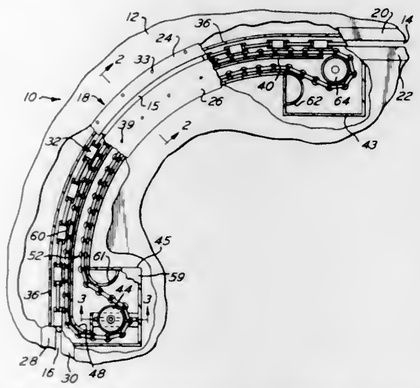
A tow truck conveyor system comprising a plurality of tow trucks, each of which has a tow pin extending downwardly for engagement of a conveyor through a slot in the floor. Each tow truck comprises a body and a movable front accumulation bumper, a movable rear accumulation bumper and lost motion means between the front accumulation bumper and the rear accumulation bumper. When the front accumulation bumper engages an obstacle, it moves the tow pin out of engagement with the conveyor.

3,467,024
AIR-CUSHION SUPPORTED, HIGH-SPEED VEHICLE FOR OPERATION ON A SUPPORT AND GUIDE TRACK
Bodhan Broniewski, Vaucresson, and Bernard Warszawski, Paris, France, assignors to Societe Generale de Constructions Electriques et Mecaniques (ALSTHOM), Paris, France, a corporation of France
Filed Feb. 21, 1967, Ser. No. 617,657
Claims priority, application France, Feb. 28, 1966, 2,673
Int. Cl. B60v *3/04;* **B61d** *15/00;* **B61b** *13/08*
U.S. Cl. 104—134 **12 Claims**



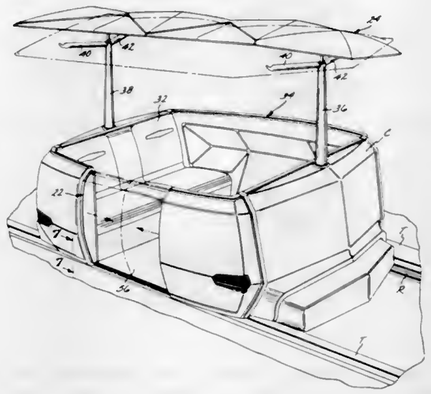
The underside of a high-speed air-cushion supported vehicle is provided with an undersurface having grooves formed therein converging in V-direction towards the rear of the vehicle, to scoop air from the outside into the grooves, and for escape beneath the vehicle, to thus support the vehicle as it moves over the support and guide track.

3,467,025
TOW TRUCK DISPATCH SYSTEM
Lynn J. Bradt, Easton, Pa., assignor to SI Handling Systems, Inc., Easton, Pa., a corporation of Pennsylvania
Filed Apr. 20, 1967, Ser. No. 632,350
Int. Cl. B61b *13/00;* **B61c** *11/02*
U.S. Cl. 104—172 **11 Claims**



In a tow truck conveyor system, characterized by having a track in the floor, a closed loop roller chain has been provided at curves in the track for the purpose of supporting and reducing the friction of a drive chain as it negotiates the curve.

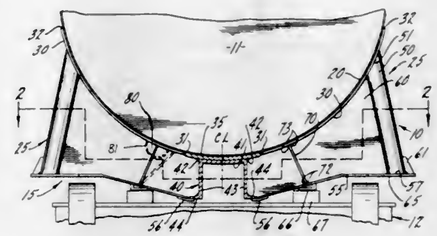
3,467,026
PASSENGER-CARRYING APPARATUS
Roger E. Broggie, Burbank, and Robert H. Gurr, Newport Beach, Calif., assignors to Wed Enterprises, Inc., Glendale, Calif., a corporation of California
Filed June 26, 1967, Ser. No. 648,587
Int. Cl. B61d *19/00*
U.S. Cl. 105—341 **10 Claims**



A passenger car movable along a track and having ingress-egress doors movable between open and closed positions. The car is also provided with a roof movable between a raised and a level position. The car moves along a track having a portion traversing a loading-unloading station. A longitudinally contoured cam rail extends generally parallel to the track in the vicinity of the loading-unloading station. Linkage means on the car interconnect the cam track and the door and roof for automatically opening the door as the car approaches the station and closing the door as the car leaves the station, while concurrently raising the roof as the car approaches the station and lowering the roof to its level position as the car leaves the station. Spring means are interposed in the linkage to return the doors to their closed position and the roof to its level position after the car leaves the station. Second softer spring means are interposed in the linkage biasing the doors to closed position and the roof to its level position to avoid passenger injury from inadvertent contact with the door or roof as they move towards their closed and level positions, respectively. A lock is provided to retain the doors and roof in their closed and level positions, respectively. An emergency release may be provided for the lock to permit the doors to be manually opened.

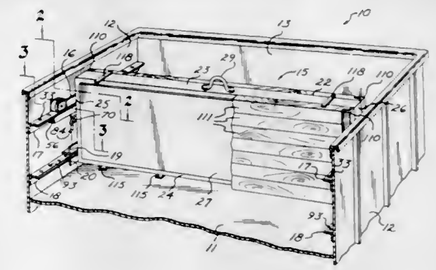
3,467,027
TANK CAR
Fred Brown, Chicago, Ill., assignor to Union Tank Car Company, a corporation of Delaware
Filed May 4, 1966, Ser. No. 547,592
Int. Cl. B61d *5/00*
U.S. Cl. 105—362 **9 Claims**

A bolster construction for supporting a railway tank body from its wheel trucks. Inwardly inclined tubular compression members extend between base plates supported from the truck and arcuate saddle plates underlying the tank body. Generally flat web plate means extend between and are welded to the tubular compression members, the saddle plates, and the base plates. The tubu-



lar compression members serve as primary load transition means and the web plate means serve to spread the load between the base plate and the saddle plate.

3,467,028
ADJUSTABLE LOAD DIVIDER
Robert E. James, Parma Heights, Ohio, assignor to The Shunk Manufacturing Company, Inc., Bucyrus, Ohio, a corporation of Ohio
Filed Aug. 11, 1967, Ser. No. 660,029
Int. Cl. B61d *45/00;* **B60p** *7/14;* **E05d** *13/02*
U.S. Cl. 105—376 **11 Claims**

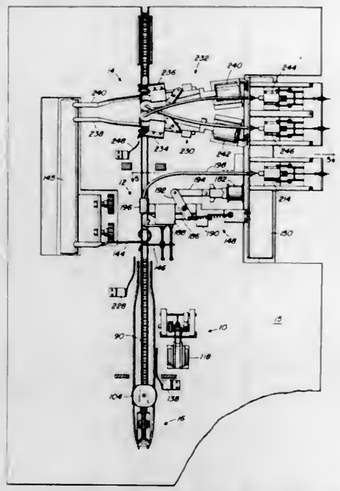


A load dividing transverse bulkhead is mounted for movement longitudinally of a transport vehicle on rails carried by opposite side walls of the vehicle. The rails are provided with a plurality of spaced openings, and pins are carried by the bulkhead for engaging the openings to lock the bulkhead in an adjusted position. Means bias the pins toward the openings and means are provided for retaining the pins in a retracted position whereby whenever the bulkhead is jolted, the pins are released to engage the openings.

3,467,029
METHOD AND APPARATUS FOR THE MANUFACTURE OF A FOOD PRODUCT
Eugene Hayes, Kansas City, Kans., assignor of fifty percent to Neil J. Hayes, Kansas City, Mo.
Filed Sept. 1, 1965, Ser. No. 484,384
Int. Cl. A21c *9/06;* **A23l** *1/34*
U.S. Cl. 107—1 **15 Claims**

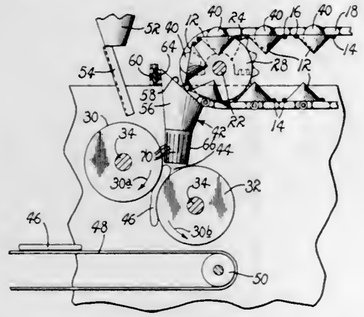
Method and apparatus for the manufacture of a food product such as tacos, fried pies etc. which are produced by filling a thin shell with a prepared filling, folding the

shell around the filling, crimping the edges of the folded shell and finally pinning the crimped edges of the folded



shell by means of a wire or pin insertion into the crimped edges.

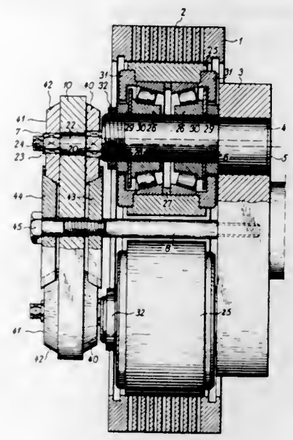
3,467,030
DOUGH DIRECTING FUNNEL
Oscar F. Ruiz, P.O. Box 1253, Tulare, Calif. 93274
Filed Oct. 21, 1966, Ser. No. 588,348
Int. Cl. A21c *3/04, 3/00*
U.S. Cl. 107—9 **3 Claims**



In an apparatus for forming a thin cake from a ball of dough, a funnel for receiving balls of dough and directing them to the nip area of a pair of coacting rollers, the funnel having a plurality of flexible fingers terminating in the nip area and defining a tubular discharge conduit having a substantially uniform cross section throughout its length, the fingers being displaceable for varying the cross section of the conduit but urged into conduit defining relationship for the discharge of balls of dough sequentially therefrom.

3,467,031
FEED CUBE PRESS WITH ECCENTRICITY ADJUSTING AND CLAMPING MEANS
Albert Hafliger, Gossau, Switzerland, assignor to Gebruder Buhler AG, Uzwil, Switzerland
Filed Mar. 21, 1967, Ser. No. 624,912
Claims priority, application Switzerland, Mar. 23, 1966, 4,206/66
Int. Cl. A21c *11/16*
U.S. Cl. 107—14 **11 Claims**

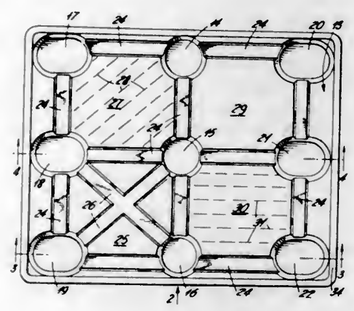
A feed cube press, of the type arranged to compress and extrude rectangular cross section strips of cattle feed and the like, includes an annular mold and pressing rollers revolvable in the mold and supported on eccentric pins. These eccentric pins have extensions supported in a roller web, and plates are non-rotatably mounted on these extensions for angular adjustment conjointly with the extensions to adjust the relative eccentricity of the roller supporting bearing spindles of the pins.



Common clamping elements are engageable with the plates and are operable to maintain the latter in their adjusted angular positions. The peripheral surfaces of the plates preferably are frustoconical.

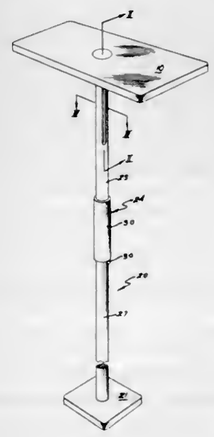
The plates are clampable against the roller web, and either a single plate may be provided for each pin or a pair of plates may be provided for each pin, with one being disposed on each side of the roller web.

3,467,032
PALLETS FORMED FROM PLASTICS MATERIAL
Derek Rowlands and Roy Charterton, both of 7a Staple Inn, Holborn, London, WC. 1, England
Filed Aug. 17, 1967, Ser. No. 661,392
Claims priority, application Great Britain, Aug. 23, 1966, 37,851/66; Sept. 22, 1966, 42,383/66
Int. Cl. B65d *19/18*
U.S. Cl. 108—51 **6 Claims**



A hollow pallet is formed from plastics material by a blow-moulding process carried out in a hollow mould the internal surface of which is provided with projections forming corresponding inwardly extending projections in the walls of the pallet, the projections from the upper wall of the pallet engaging the projections from the lower wall to form supporting pillars extending between the two walls. Each projection may be formed by urging a reinforcing element, such as a hollow plastics body of frusto-conical shape, against the wall of the pallet, from the outside, while the plastics material is in a plastic state during the blow-moulding process, so that the element becomes surrounded by and retained in the material of the wall of the pallet. The pallet has holes cut in its peripheral walls for the insertion between the projections of the fork arms of a fork-lift vehicle.

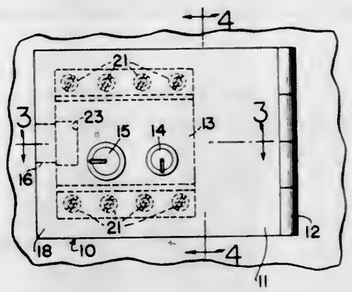
3,467,033
FOLDING STOOL
Marvin M. Sienkiewicz, 434 Nordberg Ave. NW. 49504, and Russell V. Remer, 101 Majestic St. SE. 49508, both of Grand Rapids, Mich.
Filed Aug. 3, 1967, Ser. No. 658,090
Int. Cl. A47c *9/10*
U.S. Cl. 108—150 **8 Claims**



A folding seat having a hinged post member adapted to be restrained from pivoting by means of a slidable sleeve. The seat has a socket member affixed in its underside and the post is slidably and pivotably received therein by means of a pair of ears depending downwardly from the socket member. Each of the ears has an inwardly extending nipple and the upper section of the post has a pair of slots which receive the nipples and slide with respect thereto when the post is slid into or withdrawn from the socket. Stops are provided for limiting this sliding movement such that the post may be withdrawn from the socket a sufficient distance to allow it to pivot between the ears into abutment with the seat and slid with respect thereto and, yet, remain connected to the socket assembly.

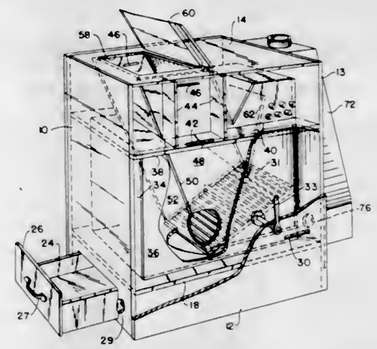
3,467,034
SAFETY DEPOSIT BOX PROTECTOR
Max S. Kotler, 17001 NE. 13th Ave., North Miami Beach, Fla. 33162
Filed Aug. 2, 1967, Ser. No. 657,853
Int. Cl. E05g *1/04;* **E05b** *9/06*
U.S. Cl. 109—59 **3 Claims**

The principal feature of the present invention comprises the provision of a protective armour of steel plate, positioned in the rear of the deposit box lock, which is most commonly made of cast metal. The steel reinforcing backing member is concealed and invisible from the front. The added length of time required to get past the steel backing plate located behind each cast metal box lock will tend to discourage burglaries of this type. The armour steel back plate of this invention may also include a



small cut-out portion adjacent the bolt-end permitting a locksmith to drill and tap a specific lock, utilizing a special tool, to open that particular individual lock, in the event that the user has lost his key.

3,467,035
ELECTRIC INCINERATOR
Clarence A. Anderson, Dearborn, and Mitchell D. Charneski, Southfield, Mich., assignors to The Detroit Edison Company, Detroit, Mich., a corporation of New York
Filed Sept. 18, 1967, Ser. No. 668,385
Int. Cl. F23g *3/04;* **H05b** *3/64*
U.S. Cl. 110—8 **8 Claims**

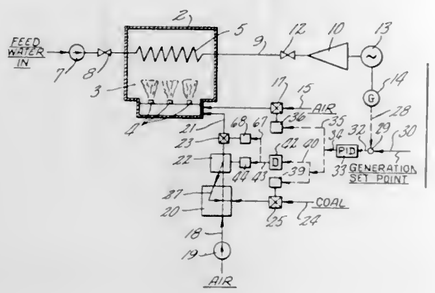


An electric incinerator having radiant resistance heating elements disposed above the grate in the path of the products of combustion, and further having spaced walls surrounding at least a substantial portion of the interior chamber with combustion air traversing the space between said walls to cool the outer wall of the incinerator while heating the air before it reaches the combustion chamber.

3,467,036
STEAM GENERATOR AND COAL PULVERIZING APPARATUS
Carlos J. Garrett, Jr., Granby, Conn., assignor to Combustion Engineering, Inc., Windsor, Conn., a corporation of Delaware
Filed Dec. 5, 1967, Ser. No. 688,046
Int. Cl. F23k *3/02;* **F22b** *37/42;* **B02c** *4/00*
U.S. Cl. 110—106 **12 Claims**

An air swept coal pulverizer and classifier adapted for rapid response to the demands of a steam generator. The

classifier receives air within entrained coal particles from the pulverizer, separates the coarse from the fine coal particles entrained in the air, allows the fine particles to pass to the steam generator and returns the coarse particles to the pulverizer. Coal feeders to the pulverizer are responsive to a control signal indicating the coal feed requirements of the steam generator. The classifier is



temporarily adjusted to decrease the quantity rejection of coarse particles in response to the rate of change of an increasing control signal. Air flow through the pulverizer may also be increased in response to the rate of change to this increasing control signal.

3,467,037

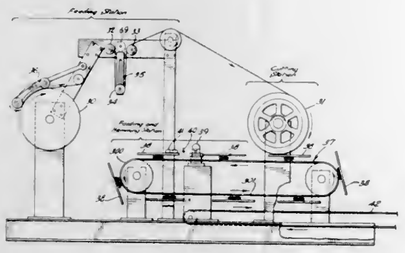
METHOD AND APPARATUS FOR AUTOMATICALLY HEMMING CUT PORTIONS OF TEXTILE FABRICS

John T. Frydryk, Springfield, Mass., assignor to Johnson & Johnson, a corporation of New Jersey

Filed May 3, 1968, Ser. No. 726,372

Int. Cl. D05b *37/04*

U.S. Cl. 112—121.15 **17 Claims**



A method for continually manufacturing cut and hemmed pieces of textile fabric. A continuous length of fabric is fed to an intermittently rotating surface and successive pieces are cut from the fabric while it is on the rotating surface. The pieces are deposited on a series of moving surfaces which move in a path parallel to a tangent of the rotating surface. After each piece is deposited on a moving surface the rotating surface is stopped while continuing the movement of the moving surface and turning the moving surface 90°. The rotating surface is then started to deposit another piece of cut fabric on a subsequent moving surface while the first cut piece has its automatically cut edges folded and hemmed.

3,467,038

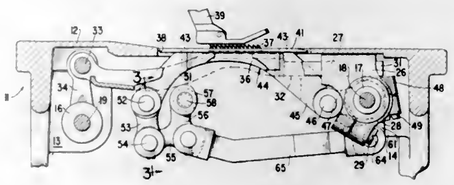
VIBRATING THROAT PLATEWORK FEEDING MECHANISMS

William C. Van Ness, Parsippany, N.J., assignor to The Singer Company, New York, N.Y., a corporation of New Jersey

Filed Nov. 20, 1967, Ser. No. 684,281

Int. Cl. D05b *27/02*

U.S. Cl. 112—203 **4 Claims**



A work feeding mechanism for a sewing machine is disclosed in which a work feeding element is sustained at substantially constant elevation relatively to the sewing machine work supporting bed and moved in the line of feed. The sewing machine throat plate while being maintained substantially parallel to the sewing machine work supporting bed is alternatively raised above the level of the work feeding element and lowered beneath the level of the work feeding element.

3,467,039

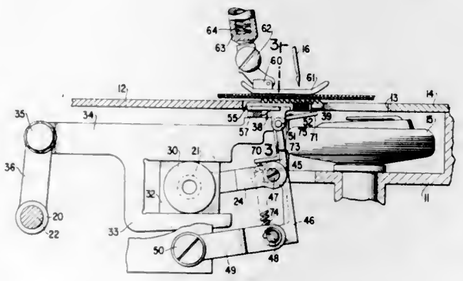
WORK FEEDING MECHANISMS FOR SEWING MACHINES

William S. Greenwood, Jr., Nutley, and Andrew Visaggio, Wayne, N.J., assignors to The Singer Company, New York, N.Y., a corporation of New Jersey

Filed Nov. 20, 1967, Ser. No. 684,184

Int. Cl. D05b *27/02, 49/00*

U.S. Cl. 112—203 **5 Claims**



A work feeding mechanism for a sewing machine is disclosed in which a work feeding element is maintained at a constant elevation and is imparted movements only in the line of feed, while a small work supporting platform disposed substantially completely within the vertical projected outline of the presser foot is alternately raised vertically above the level of the feeding element and lowered beneath the level of the feeding element during the feed movements thereof.

3,467,040

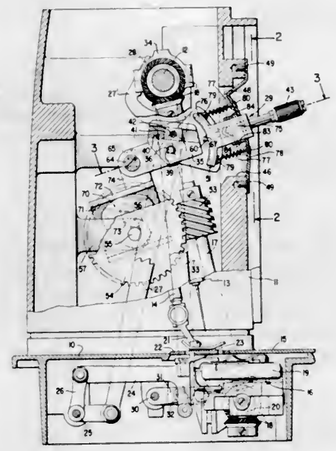
BACKUP STITCH MECHANISMS

Hans W. Hacklander, Huntsville, Ark., assignor to The Singer Company, New York, N.Y., a corporation of New Jersey

Filed Oct. 12, 1967, Ser. No. 674,900

Int. Cl. D05b *27/12*

U.S. Cl. 112—210 **5 Claims**



A mechanism for a sewing machine comprising a cam controlled feed regulating mechanism driven from the machine actuating mechanism and including operator influenced control means for selectively coupling or uncoupling the standard feed regulating linkage to a lever which is oscillated by the control cam to produce at a predetermined rate feeding alternately in forward and reverse directions.

3,467,041

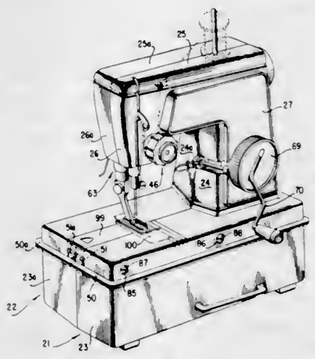
FEED MECHANISMS FOR SEWING MACHINES

Robert G. Greulich, Belleville, N.J., assignor to The Singer Company, New York, N.Y., a corporation of New Jersey

Filed Apr. 17, 1967, Ser. No. 631,339

Int. Cl. D05b *27/00*

U.S. Cl. 112—215 **5 Claims**



A feed dog wholly mounted on a throat plate. Feed lift and feed advance motions are imparted to the feed dog by cams on a reciprocating shuttle carrier for a long shuttle.

3,467,042

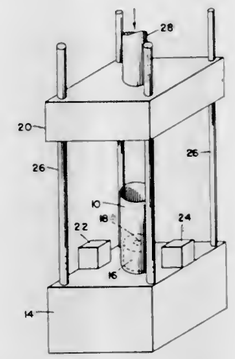
METHOD OF MAKING FLEXIBLE CONDUIT

Anthony P. Coppa, Merion, Pa., assignor to General Electric Company, a corporation of New York

Filed Jan. 4, 1965, Ser. No. 422,949

Int. Cl. B21d *51/00, 3/00*

U.S. Cl. 113—116 **4 Claims**



Strong flexible conduit is made by axially compressing a tubular shell, while maintaining sufficient internal pressure in the shell to cause relatively uniform buckling, and then stretching the uniformly buckled shell.

3,467,043

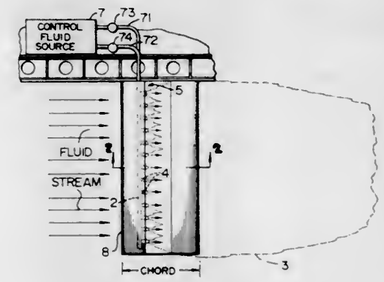
PURE FLUID FORCE GENERATOR

Romald E. Bowles, Silver Spring, Md., assignor to Bowles Engineering Corporation, Silver Spring, Md., a corporation of Maryland

Filed Nov. 18, 1966, Ser. No. 595,530

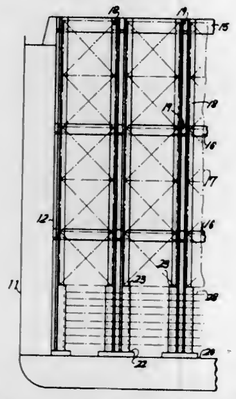
Int. Cl. B63b *1/26;* **B63h** *5/14*

U.S. Cl. 114—66.5 **27 Claims**



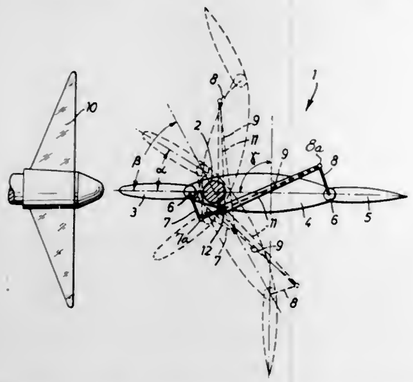
A pure fluid force generator comprises foil structure having a depression formed in at least one of its surfaces to which pressurized control fluid is provided at an adjustable flow rate. The depression is formed along a portion of the foil chord length corresponding to a foil surface region of low pressure when the foil is immersed in a fluid stream. The flow rate of the control fluid into the depression can be adjusted to provide a greater pressure in the depression than the pressure produced by the fluid stream, whereby a resultant force is applied to the foil in the depression.

3,467,044
CONTAINER STORING APPARATUS FOR CONTAINER SHIP
Masanao Oshima, Mitaka, Tokyo, Japan, assignor to Mitsui Shipbuilding & Engineering Co. Ltd., Tokyo, Japan, a corporation of Japan
Filed Aug. 31, 1967, Ser. No. 664,791
Claims priority, application Japan, Sept. 3, 1966, 41/58,337
Int. Cl. B63b *25/22*
U.S. Cl. 114—72 **3 Claims**



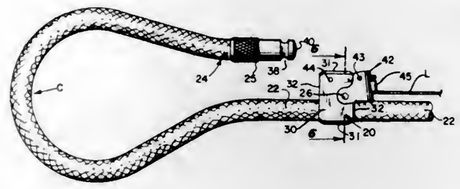
In a container ship having upright container guides comprising angle iron adapted to slidably receive the four corners of the containers, means to maintain the containers at a fixed location above the bottom of the container guides so as to permit storage of non-containerized freight in the space under the containers. The holding means comprises pillars of the desired height releasably mounted in each of the container guides so as to support the four corners of the containers above the bottoms of the guides.

3,467,045
SHIP'S RUDDER
Walter Bröhl, 71 Auf dem Wingert, Mondorf, near Troisdorf, Germany
Filed Dec. 27, 1967, Ser. No. 693,862
Claims priority, application Germany, Dec. 29, 1966, B 69,183; June 1, 1967, B 92,814
Int. Cl. B63h *25/06*
U.S. Cl. 114—167 **14 Claims**



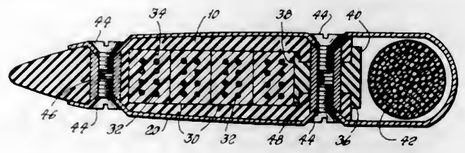
This ship's rudder includes fins which are mounted at the ends of a main rudder which is rotatably mounted between the ends thereof.

3,467,046
RELEASABLE MOORING CABLE
Charles L. Welton, Saratoga, Wyo., assignor of one-third each to Al Litzenberger, Saratoga, Wyo., and Carl R. Litzenberger, Endicott, Wash.
Filed Oct. 26, 1967, Ser. No. 678,248
Int. Cl. B63b *21/04;* **F16g** *11/10*
U.S. Cl. 114—230 **4 Claims**



A boat mooring assembly including a releasable cable loop engageable with a post and anchorable to a boat. The loop is formed by a cable portion passing through a channel in a block and having the cable end provided with a grooved ferrule releasably latched by a pivoted grooved shaft and a gate actuated by a tag line.

3,467,047
MINIMUM-WIDTH CONTINUOUSLY FAIRED TOWLINE
Clarence K. Chatten, Jackson Heights, and Samuel H. Behr, Uniondale, N.Y., assignors to the United States of America as represented by the Secretary of the Navy
Filed Dec. 21, 1967, Ser. No. 693,695
Int. Cl. B63b *21/56*
U.S. Cl. 114—235 **3 Claims**

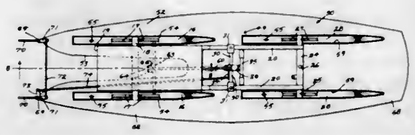


A towline comprising a continuous fairing, a tension line, one or more communication modules comprising stretchable electrical wires enclosed in resilient insulation, a continuous fairing spacer, a plurality of nose pieces, yokes and restraining rings. The fairing is formed with a longitudinal internal cavity in which the communication modules are inserted. The cavity is connected to the head of the fairing by a passageway in which the fairing spacer is inserted. The tension line is placed against the outer surface of the spacer and the nose pieces are fitted over this assembly enclosing the tension line and are bolted to the fairing before and behind the communication modules. Yoke pieces and their associated restraining rings are substituted for nose pieces at intervals along the towline.

3,467,048
COMBINATION SLED AND BOAT
Edward N. Burch, 6261 Swartout Road, Algonac, Mich. 48001
Filed May 26, 1967, Ser. No. 641,632
Int. Cl. B63b *35/34;* **B62b** *15/00*
U.S. Cl. 115—21 **3 Claims**

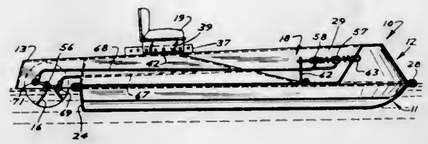
A vehicle propelled and steered by the occupant, capable of use on ice, snow or water, and having a handle for

oscillating movement and connected to a propulsion member which is reciprocated thereby and which, when urged rearwardly, by contact with the element on which the



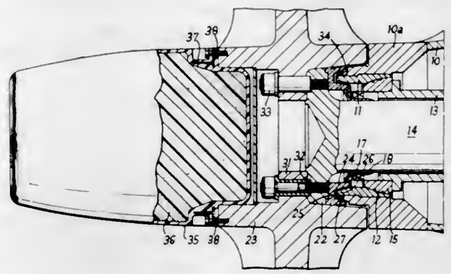
vehicle is traveling, propels the vehicle in a forward direction, said handle additionally forming a part of a steering mechanism of the vehicle.

3,467,049
PADDLE WHEEL BOAT
George J. Turcotte, Dayton Trailer Park, 403 York, Osseo, Minn. 55369
Filed Jan. 26, 1968, Ser. No. 700,939
Int. Cl. B63h *16/12, 5/02*
U.S. Cl. 115—23 **10 Claims**



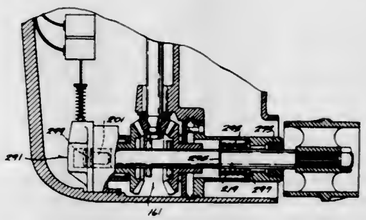
A one-man paddle wheel boat having a tri-hull secured to a deck to form a flotation chamber. Projected rearwardly from opposite sides of the deck are downwardly opened housings carrying upright rotatable paddle wheels. Independent crank members are secured to each paddle wheel. The crank members are separately rotated with linearly movable rods biased in one direction and moved by foot power in the opposite direction. Adjustably mounted on the deck is a seat for the operator of the boat.

3,467,050
STERN GEAR FOR SHIPS
Colin Wray Herbert, Marske-by-the-Sea, England, assignor to The Glacier Metal Company Limited, Wembley, Middlesex, England
Filed Feb. 21, 1967, Ser. No. 617,689
Claims priority, application Great Britain, Feb. 22, 1966, 7,827/66
Int. Cl. B63h *23/32;* **F16c** *33/72;* **F16j** *15/40*
U.S. Cl. 115—34 **12 Claims**



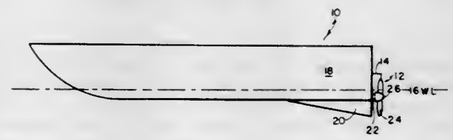
Stern gear for ships wherein a propeller shaft rotates within a stern bearing which is mounted in a stern frame tube wherein the stern bearing is secured axially at its inboard end only and removable inwardly enabling inspection, dismantling, or replacement of the bearing and access to the interior of the frame tube and including support means for the propeller shaft to support the shaft from the stern frame tube when the stern bearing is removed.

3,467,051
EXHAUST SYSTEM FOR MARINE PROPULSION DEVICE
William J. Shimanckas, Waukegan, Ill., assignor to Outboard Marine Corporation, Waukegan, Ill., a corporation of Delaware
Filed Mar. 30, 1967, Ser. No. 627,116
Int. Cl. B63h *21/14, 1/20*
U.S. Cl. 115—34 **16 Claims**



Disclosed herein is a marine propulsion lower unit which is arranged to afford exhaust gas discharge during forward drive through a discharge outlet at the rear of a propeller hub, and when operating under conditions other than in forward drive, to provide underwater exhaust gas discharge upstream from the exhaust gas discharge outlet at the rear of the propeller.

3,467,052
SEMISUBMERGED SELF-CLEARING PROPELLER
Jacques B. Hadler, Montgomery County, Md., assignor to the United States of America as represented by the Secretary of the Navy
Filed Dec. 26, 1967, Ser. No. 693,395
Int. Cl. B63h *5/06*
U.S. Cl. 115—40 **1 Claim**

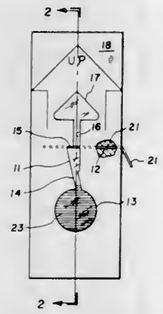


A self-clearing weed cutting semisubmerged propeller and cutter blade arrangement combined with a boat having shallow draft and for use in vegetation infested waters.

3,467,053
INVERSION OR TILT INDICATOR
George M. Davis, Rochester, and William M. Lander, Horseheads, N.Y., assignors to Index Packages, Inc., Pittsford, N.Y., a corporation of New York
Filed Apr. 25, 1968, Ser. No. 724,190
Int. Cl. G01d *21/00*
U.S. Cl. 116—114 **3 Claims**

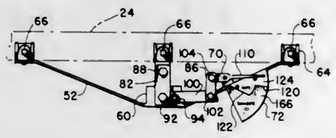
A device to indicate package inversion is formed as a card having an aperture enclosed by a lamina over each face of the chamber. The inward face of each lamina is coated with pressure-sensitive adhesive, and at least the

front lamina is translucent. A band lodged in a slot extending across the aperture blocks particles from an indicator passageway, and the band extends beyond the edge of the card for manual removal from the slot to activate the indicator. An outlet passageway from the storage chamber is shaped so that particles bouncing upward are deflected back into the storage chamber and cannot produce a false indication of inversion. A pressure-sensitive



adhesive coating covered by a peel-off strip on the back lamina of the card allows convenient adhering of the device upright on a package for shipment. Any inversion of the package lets the particles trickle through the outlet passageway into the indicator passageway where they stick to the pressure-sensitive adhesive of the covering laminae for a permanent indication that the package has been inverted.

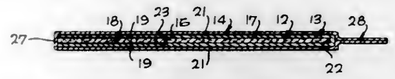
3,467,054
CONCRETE WALL FORM INSTALLATION AND TIE ROD LOAD INDICATOR THEREFOR
George F. Bowden, Northbrook, and Richard T. Dagiel, Elk Grove Village, Ill., assignors to Symons Mfg. Company, Des Plaines, Ill., a corporation of Delaware
Filed Mar. 31, 1966, Ser. No. 539,112
Int. Cl. G01d *21/00*
U.S. Cl. 116—114 **3 Claims**



A concrete wall form installation embodying a means for ascertaining the pouring of a safe load of wet concrete between the erected panels at the opposite sides of the form structure. A device which indicates the deflection of a certain portion of the studding associated with one of the wall form panels is applied to the studding in the vicinity of a tie rod and the indicated deflection is representative of the tension to which the tie rod is subjected. When this tension approaches the danger point, a visible indication is rendered so that concrete pouring operations may be terminated.

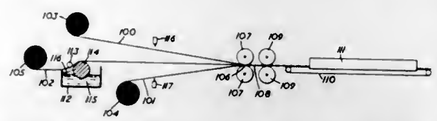
3,467,055
IDENTIFICATION DEVICE
Jack Yonchar, 722 S. Muirfield Road, Los Angeles, Calif. 90005
Filed Aug. 7, 1967, Ser. No. 658,865
Int. Cl. B41k *1/00*
U.S. Cl. 118—31.5 **4 Claims**

A device for preserving fingerprints of a person on a document, and including an inner backing strip, an intermediate transparent adhesive-coated strip around the backing strip, and an outer strip around the intermediate strip. The outer strip is preferably provided with a powdery substance on its outer surface. The device also has means



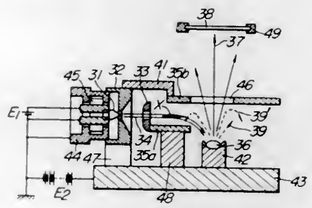
to enable the separation of various parts of the device to enable the attachment of a portion of the adhesive-coated intermediate strip with fingerprints thereon to a document.

3,467,056
APPARATUS FOR MAKING STEEL WOOL PADS
George Mills, Davyhulme, England, assignor to Colgate-Palmolive Company, New York, N.Y., a corporation of Delaware
Continuation of application Ser. No. 521,758, Sept. 27, 1965, which is a division of application Ser. No. 270,131, Mar. 15, 1963, now Patent No. 3,256,583, dated June 21, 1966. This application June 8, 1967, Ser. No. 644,737
Int. Cl. B05c *11/12;* **B23b** *31/14*
U.S. Cl. 118—40 **9 Claims**



Apparatus for automatically making steel wool pads from a band containing two or more associated continuous webs at least one of which is steel wool comprises roller means through the nip of which the band is passed to compress the steel wool all along the band side edges and along transversely spaced areas corresponding to the individual pads. The roller means comprises a pair of parallel axis rollers whose peripheries are formed with pockets bounded by continuous flanges at the roller ends and transverse ribs between the flanges. Each rib carries a cutting edge, with one edge adapted to completely sever the band at the transverse compressed areas, so that partially severed strips containing the individual pads are produced. The band is precompressed along the side edges by passing through a pair of flanged rollers prior to entering the nip between the pocketed rollers. Usually the webs are impregnated with soap or detergent before being incorporated into the band.

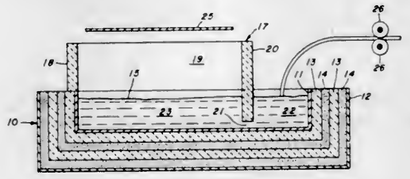
3,467,057
ELECTRON BEAM EVAPORATOR
Hifumi Tamura, Hachioji-shi, and Hirokazu Kimura, Koganei-shi, Japan, assignors to Hitachi, Ltd., Tokyo, Japan, a Japanese corporation
Filed July 25, 1967, Ser. No. 655,939
Claims priority, application Japan, July 27, 1966, 41/48,799
Int. Cl. C23c *13/12;* **H01j** *37/20*
U.S. Cl. 118—49.1 **12 Claims**



An electron beam evaporator having means for establishing a static deflecting field between an electron gun

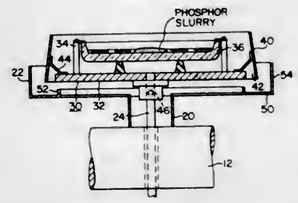
and a piece of vaporizing material by a voltage proportional to the electron beam accelerating voltage so that the static field deflects downwardly the path of the laterally emitted electron beam, and material particles vaporized by the electron bombardment can be deposited on a substrate disposed above the piece of vaporizing material. Back-scattered electrons dispersed from the piece of vaporizing material can be effectively eliminated by a scattered-electron blocking field established in the space between the substrate and the piece of vaporizing material.

3,467,058
APPARATUS FOR VAPORIZING METAL
William A. Box, Fullerton, Calif., and Waldo Rall, Fox Chapel, Pa., assignors to United States Steel Corporation, a corporation of Delaware
Filed Dec. 3, 1965, Ser. No. 511,515
Int. Cl. C23c *13/12*
U.S. Cl. 118—49.5 **1 Claim**



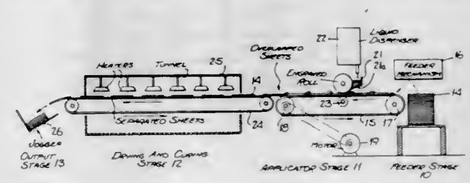
A refractory crucible for the evaporation of metal in a vacuum condensation-coating apparatus, has a fusion chamber for make-up metal supplied thereto in wire form, separate from but communicating with the main chamber from which vapor evolution occurs. An elongated crucible is provided with a cross wall, terminating short of the bottom, which forms the fusion chamber at one end of the crucible. As a result, gases occluded in the make-up metal, when released on fusion, do not disturb the surface of the metal bath from which vapor evolution occurs, thus avoiding spattering and splashing.

3,467,059
METHOD AND APPARATUS FOR APPLYING A FLUID COATING
Renzo L. Korner, Horseheads, and Himanshu M. Patel, Cayuta, N.Y., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed July 11, 1966, Ser. No. 564,203
Int. Cl. B05c *11/14*
U.S. Cl. 118—53 **4 Claims**



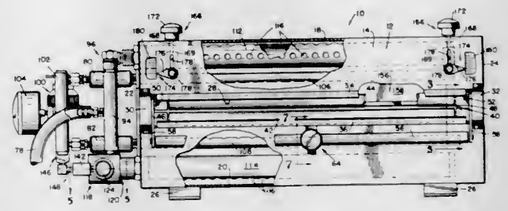
This invention relates to a method and apparatus for rotating and tilting a panel of a color television tube to apply a liquid coating thereto and removing the excess coating material therefrom by spinning off of the panel and collecting the excess on a rotating collector member. A second stationary collector member is associated with the rotating collector and the excess liquid drains into the stationary collector from the rotating collector.

3,467,060
APPARATUS FOR COATING AND CURING EPOXY RESIN ON SHEETS
Norman K. Klebanow, Yonkers, and Dan Sager, Hartsdale, N.Y., assignors, by mesne assignments, to The Longacre Press, Inc., New Rochelle, N.Y., a corporation of New York
Filed Oct. 19, 1967, Ser. No. 676,504
Int. Cl. B05c *11/00, 11/06, 1/00*
U.S. Cl. 118—58 **5 Claims**



A technique for epoxy coating paper and cloth surfaces such as dust jackets, book covers, and the like, wherein the printed sheets are fed onto a continuous conveyor and advanced thereby under an engraved roll having an epoxy solution applied thereto, the roll laying down a raised pattern of the solution on the printed face of the sheets, which pattern levels off and merges to form an evenly distributed wet coating, the wet coated sheets thereafter being dried and cured.

3,467,061
SPRAY COATING APPARATUS
John P. McHugh, Indianapolis, Ind., assignor to The Humostan Corporation, Indianapolis, Ind., a corporation of Indiana
Filed July 31, 1967, Ser. No. 657,182
Int. Cl. B05c *5/02, 11/04*
U.S. Cl. 118—123 **6 Claims**

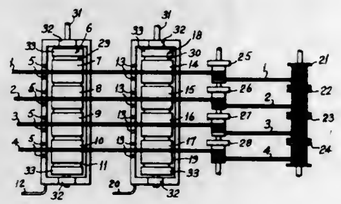


A coating apparatus comprising a spray nozzle arranged to receive and mix gas and liquid from a pressurized gas source and a liquid source to provide a spray of vapor, and a perforated exhaust receptacle arranged to receive excess fluid not applied to work. The exhaust receptacle is evacuated by a vacuum pump comprising a casing in communication with the receptacle, a nozzle opening into the casing and means for connecting the nozzle to the pressurized gas source. When gas flows through this second mentioned nozzle, the exhaust receptacle is evacuated.

3,467,062
APPLICATION OF LIQUID TO FILAMENTS
Trevor Frederick Bridges, 106 Carsington Crescent, Derby, England, and Ian E. Climie, 196 Baginton Road, Allestree, Coventry, England
Filed Nov. 28, 1967, Ser. No. 686,273
Claims priority, application Great Britain, Nov. 24, 1966, 52,633/66
Int. Cl. B05c *1/00, 1/02*
U.S. Cl. 118—216 **13 Claims**

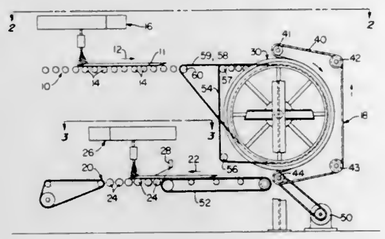
In apparatus for the continuous application of liquid to a plurality of moving bundles of continuous filaments,

of the kind comprising a treatment roll, a reservoir for the liquid to be applied into which the treatment roll dips, and guide means for guiding the filament bundles into contact with the peripheral surface of the roll, said treat-



ment roll has its peripheral surface divided into a plurality of cylindrical sections of substantially equal axial length, and said guide means is arranged to guide each bundle of filaments to a different one of said cylindrical sections.

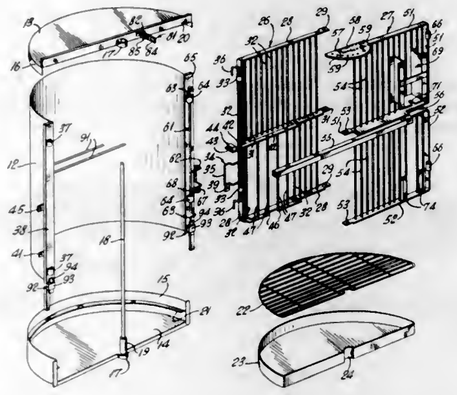
3,467,063
APPLYING ADHESIVE TO SKIVED TIRE TREAD
Max D. Brinkley, North Canton, and Robert I. Griffiths, Akron, Ohio, assignors to The Goodyear Tire & Rubber Company, Akron, Ohio, a corporation of Ohio
Filed June 27, 1966, Ser. No. 560,457
Int. Cl. B05c *7/06;* **B05b** *9/00*
U.S. Cl. 118—314 **11 Claims**



A system for mechanically handling skived tire treads, for applying cement or adhesive to the skived ends and for safely inverting tire treads without adverse effect on the adhesive coated ends, which system includes travelling cement spray devices for applying adhesive to the ends of each tread, a pair of tread conveying means one above the other for carrying a tread to and from tread inverting means, the inverting means including a rotatable cylinder having an annular peripheral recess and an overlying belt each of which provides a tread engageable surface, the two surfaces being spaced apart so as to receive a tire tread freely therebetween.

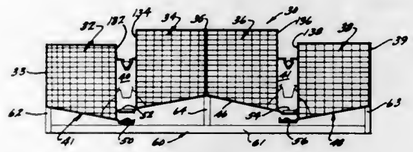
3,467,064
PRIMATE CAGE
Abraham Glass, North Plainfield, and Gerard F. Sweeton, Allentown, N.J., assignors to Porter Mathews Scientific Company, Princeton, N.J., a corporation of New Jersey
Filed June 9, 1967, Ser. No. 644,991
Int. Cl. A01k *31/06;* **A61d** *3/00*
U.S. Cl. 119—17 **12 Claims**

An animal cage for a laboratory animal where care and treatment of the animal may be accomplished by a single person without removing the animal from the cage. A portion of the front of the cage swings in door-like fashion in order to confine the animal for treatment with



a bar lever controlling the operation of the swinging door which is held in various positions by a latch.

3,467,065
POULTRY CAGE EGG COLLECTION SYSTEM
Robert L. Van Huis, Zeeland, Mich., assignor to U.S. Industries, Inc., New York, N.Y., a corporation of Delaware
Filed July 12, 1968, Ser. No. 744,388
Int. Cl. A01k *31/14*
U.S. Cl. 119—48 **10 Claims**

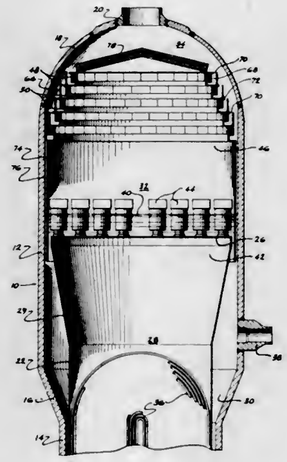


A poultry cage and egg collection apparatus wherein the poultry cages are long, generally parallel, cage rows which are spaced apart at least somewhat, with each cage row having a floor which inclines downwardly toward the front wall thereof and with the front wall of each cage row facing that of the other across the aforesaid space existing therebetween. The floor of one such cage row is higher than that of the other and the floor of each cage row communicates through the front wall of its cage row with a separate egg collection conveyor serving that cage row only, and not the other, with the two such egg collection conveyors being stacked in vertical alignment with each other between the spaced front walls of the cages.

3,467,066
STACK DRIER FOR SHELL AND TUBE VAPOR GENERATOR
Robert C. Patterson, Suffield, and Rudolph J. Micheller, East Granby, Conn., assignors to Combustion Engineering, Inc., Windsor, Conn., a corporation of Delaware
Filed Dec. 29, 1966, Ser. No. 605,736
Int. Cl. F22b *1/02;* **B01d** *53/26*
U.S. Cl. 122—34 **9 Claims**

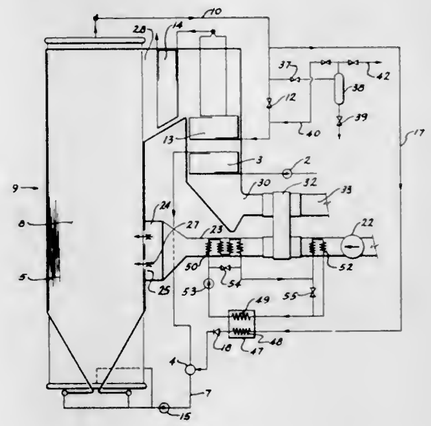
A drier assembly for a shell and tube type vapor generator wherein the drier units, consisting of rectangular casings containing closely spaced corrugated plates, are

disposed in annular tiers stacked upon one another to provide a sufficient amount of drier surface within a limited amount of vessel space. Drain channels are interposed between each tier of driers to receive liquid discharged therefrom. The channels are vertically connected



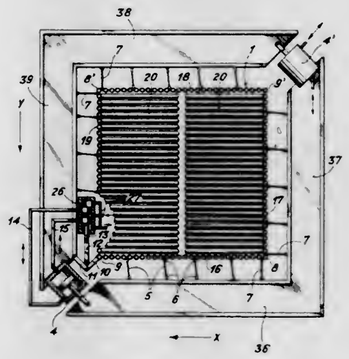
in series by means of vertical spaces provided between adjacent drier units such that liquid discharged from each drier tier can be segregated from separated vapor while being returned to the evaporation section of the generator.

3,467,067
RECIRCULATING TYPE ONCE-THROUGH STEAM GENERATOR
William H. Clayton, Jr., Windsor, Conn., assignor to Combustion Engineering, Inc., Windsor, Conn., a corporation of Delaware
Filed Dec. 27, 1967, Ser. No. 693,835
Int. Cl. F22b *1/02;* **F22d** *7/00*
U.S. Cl. 122—33 **2 Claims**



A once-through steam generator for operation at supercritical pressure and having recirculation through the furnace wall tubes. A heat exchanger located in the recirculating line is operative to transfer heat to incoming combustion supporting air. The heat exchanger may alternately be located in the mixed flow portion of the through-flow path at a location upstream of the furnace wall tubes. A recirculating pump is located downstream of the heat exchanger but upstream of the furnace wall tubes. Heat exchange fluid is circulated in a closed loop between a heat exchanger removing heat from the mixed flow, or recirculating line, and heat exchangers located in the combustion air supply. This heat exchanger for the air supply may be divided into two portions having one upstream of an air heater with the other downstream of the air heater. The relative effectiveness of each portion of this heat exchanger is regulated by bypassing either portion to effect air heater corrosion protection, maximum cooling of steam generator recirculated fluid, maximum air heating for combustion or maximum efficiency of a steam generator consistent with desired recirculated flow cooling.

3,467,068
COMBUSTION CHAMBERS OF ANGULAR CROSS-SECTION FOR STEAM-RAISING PLANTS
Alfred Brunner, Winterthur, Switzerland, assignor to Sulzer Brothers, Ltd., Winterthur, Switzerland, a corporation of Switzerland
Filed May 7, 1968, Ser. No. 727,312
Claims priority, application Switzerland, May 11, 1967, 6,691/67
Int. Cl. F22b *37/24*
U.S. Cl. 122—510 **10 Claims**

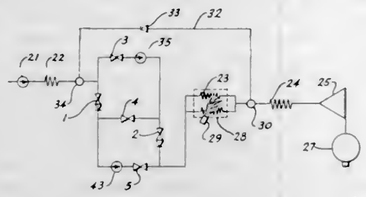


The girders bounding the tubes of the combustion chamber are allowed to move under the influence of thermal expansion of the tubes while being maintained at a fixed spacing relative to the tubes. The tensile stress imparted to the girders is thus held at a minimum. Various connections are disclosed for connecting the surrounding girders to each other.

3,467,069
RECIRCULATING TYPE STEAM GENERATOR AND PUMP ARRANGEMENT
Carlos J. Garrett, Jr., Granby, Conn., assignor to Combustion Engineering, Inc., Windsor, Conn., a corporation of Delaware
Filed Dec. 26, 1967, Ser. No. 693,423
Int. Cl. F22d *7/08, 7/12*
U.S. Cl. 122—406 **11 Claims**

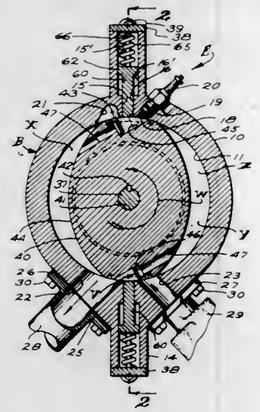
A supercritical pressure through-flow steam generator with recirculation through the furnace wall tubes. Two centrifugal pumps to effect recirculation are located either in the recirculating line or in the portion of the through-flow path through which recirculation is to be effected. Either of these pumps is satisfactory to meet

the normal needs of the steam generator while the other is a spare. The pumps are arranged so that they may be



operated in series flow relations during certain critical periods of operation.

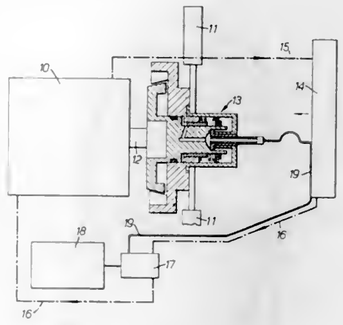
3,467,070
ROTARY INTERNAL COMBUSTION ENGINE
Martin S. Green, Beverly Hills, Calif.
(628 N. Vermont Ave., Los Angeles, Calif. 90004)
Filed Sept. 12, 1967, Ser. No. 667,098
Int. Cl. F02b *53/06;* **F01c** *1/00, 3/02*
U.S. Cl. 123—14 **10 Claims**



A rotary-type internal combustion engine wherein a rotor cooperates with a bore to define circumferentially spaced gas transport spaces has gas compression cavities in the rotor occurring between the spaces, flow passages communicating between the cavities and the spaces in advance thereof and valve means to permit the flow of gases into the cavities through said passages when the spaces related thereto are taking in air and fuel and to prevent the flow of gases back through the passages when the air and fuel in the cavities and spaces is ignited and burning.

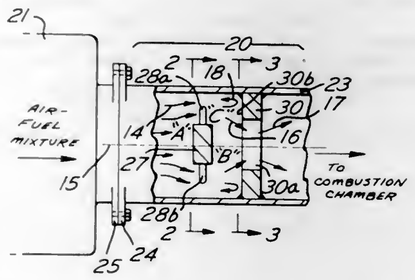
3,467,071
THERMALLY-RESPONSIVE CONTROL MECHANISMS
Arthur Ernest Henry Elmer, Painswick, England, assignor to Dynair Limited, Stroud, Gloucestershire, England, a British company
Filed July 11, 1966, Ser. No. 654,135
Claims priority, application Great Britain, July 15, 1965, 30,069/65; Nov. 18, 1965, 49,124/65
Int. Cl. F01p *7/08*
U.S. Cl. 123—41.12 **11 Claims**

A thermally controlled pneumatically operated rotary cooling fan in which the fan blades are mounted on a hub which constitutes the cylinder of a pneumatic ram and also carries a friction clutch member, the hub being supported by bearings on an inner boss rigidly fixed to a drive member and constituting a ram piston, the boss also carrying the other element of the friction clutch. Compressed air to operate the ram so as to engage the



clutch is admitted through a rotary coupling passing through the end wall of the ram cylinder at the side of the fan remote from the drive member such that when the clutch is engaged all parts except the fluid coupling rotate bodily with the drive member.

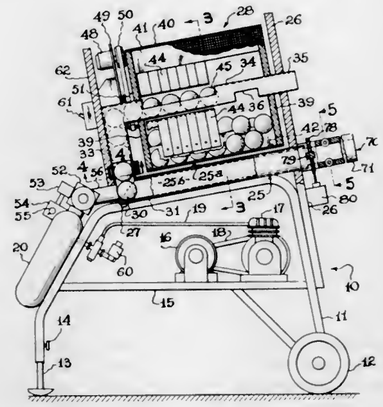
3,467,072
COMBUSTION OPTIMIZING DEVICES AND METHODS
Rene A. M. Toesca, Boyertown, Pa., assignor to Energy Transformation Corporation, a corporation of Delaware
Filed Aug. 31, 1966, Ser. No. 576,428
Int. Cl. F02m *29/00;* **B01f** *3/02*
U.S. Cl. 123—141 **3 Claims**



Apparatus is shown which may include a baffle positioned in an air flow for separating heavier fuel particles in a fuel-air mixture from lighter (smaller) ones as a function of the inertia of the particles. The lighter particles are easily entrained by the air flow to the engine for substantially complete combustion therein. The heavier particles are turned back and subjected to other air currents which break them up into smaller particles until they are light enough to be borne to the engine where they also are substantially completely consumed by combustion.

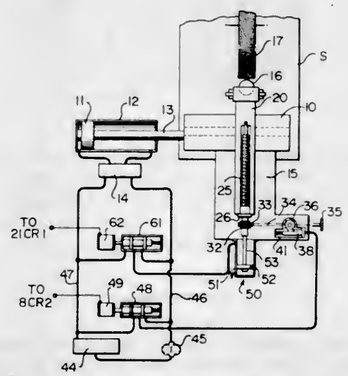
3,467,073
AUTOMATIC BALL THROWING MACHINE
Barry V. Rhodes, 22358 Baltar St., Canoga Park, Calif. 91304
Filed Mar. 28, 1966, Ser. No. 537,909
Int. Cl. A63b *69/30, 65/12*
U.S. Cl. 124—11 **9 Claims**

A pneumatically-driven automatically-recycling ball throwing machine having means for feeding a single ball into the breech of the barrel immediately following a launching cycle and including means for delaying a repeat launching cycle until a selected air pressure has been reestablished. The ball seating means maintains a predetermined leading group of balls captive in a tubular column free of the weight of a variable number of balls in a



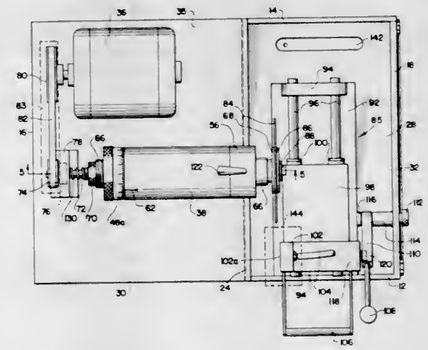
trailing group of balls, the latter being replenished periodically from an agitated reserve supply of balls. The barrel includes a liner for use in launching smaller diameter balls as well as readily variable means at the muzzle end for imparting different selected degrees and types of spin to the ball during launching.

3,467,074
FEED STABILIZING DEVICE
Robert E. Bricker and Ralph E. Price, Waynesboro, Pa., assignors, by mesne assignments, to Landis Tool Company, Waynesboro, Pa., a corporation of Delaware
Filed Mar. 9, 1967, Ser. No. 621,819
Int. Cl. B24b *57/00*
U.S. Cl. 125—11 **11 Claims**



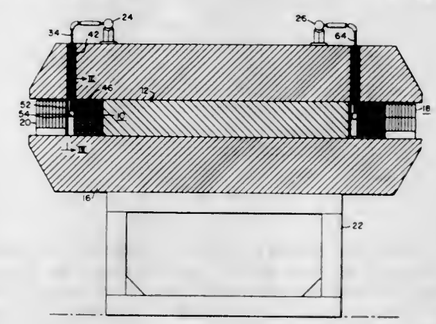
The apparatus of this disclosure is a blacklash device or more specifically, a device for stabilizing the relation between the coacting elements of a feed mechanism. It consists of a piston and cylinder attached to a tool support with pressure applied in said cylinder in a direction to maintain a fixed operative relation between the elements of the feed mechanism and between a cutting tool and a workpiece. Each time the feed mechanism is advanced, the pressure on the cylinder is released so that the force imposed on said coacting elements of the feed mechanism does not interfere with the accurate functioning of the feed mechanism.

3,467,075
HAND OPERATED SECTIONING MACHINE
Paul O. Cary, 423 E. Mayfield Drive, Grand Junction, Colo. 81501
Continuation-in-part of application Ser. No. 380,172, July 3, 1964. This application Dec. 5, 1966, Ser. No. 599,260.
Int. Cl. B28d *1/04;* **B27b** *5/34*
U.S. Cl. 125—13 **10 Claims**



This disclosure relates generally to machines utilized to process solid material into cross sections for analysis, quality control and the production of products. The present apparatus is particularly adaptable for the processing of ore into thin section analysis specimens used by mineralogists and geologists to determine the mineral content and grain structure of any given sample. This apparatus is designed to cut or saw very thin slabs from a piece of rock or the like to be subsequently examined for mineral content.

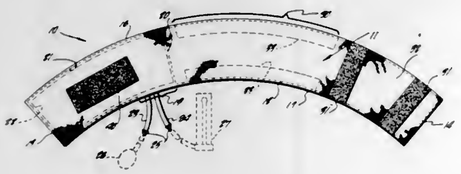
3,467,076
HIGH MAGNETIC FLUX EXPERIMENTAL APPARATUS
Erling Frisch, Pittsburgh, and William C. Brenner, Fox Chapel, Pittsburgh, Pa., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed June 1, 1965, Ser. No. 460,266
Int. Cl. A61b *17/52*
U.S. Cl. 128—1.3 **8 Claims**



The present disclosure relates to experimental apparatus for the investigation of the effects of high magnetic

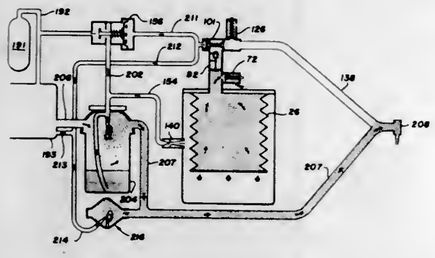
fields on biological systems. The apparatus includes a magnetic circuit which comprises a central member and a pair of pole pieces disposed thereover. The pole pieces extend beyond the periphery of the center member to form an air gap therebetween. A magnetic winding, which may comprise a plurality of pancake coils electrically connected and being formed of hollow conductives, are disposed about the center member within the air gap so as to provide a high magnetic flux within the gap. A plurality of experimental cages are disposed within the air gap exterior of the magnetic winding to be in the presence of the high magnetic field. A cooling fluid may be applied to the hollow conductors of the magnetic winding to control the temperature of the environment.

3,467,077
SPHYGMOMANOMETRIC CUFF
Leah Cohen, Northridge, Calif., assignor to Dupaco, Incorporated, Arcadia, Calif., a corporation of California
Filed June 30, 1966, Ser. No. 561,934
Int. Cl. A61b *5/02, 17/12*
U.S. Cl. 128—2.05 **8 Claims**



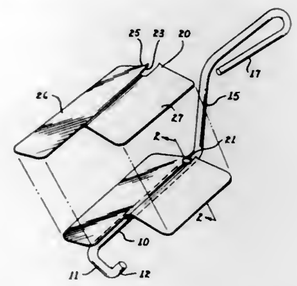
A sphygmomanometric cuff in which an elongate flexible cuff body is curved transversely of its length to be useful in obtaining accurate blood pressure measurements when the cuff body is wrapped around a tapering thigh or forearm of an obese person, for example.

3,467,078
SPIROMETER
Forrest M. Bird, Airport Box 970, Palm Springs, Calif. 92262, and Henry L. Pohndorf, 1227 Brewster Drive, El Cerrito, Calif. 94530
Filed May 10, 1965, Ser. No. 454,345
Int. Cl. A61b *5/08*
U.S. Cl. 128—2.08 **14 Claims**



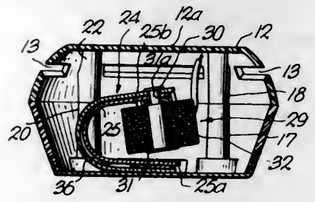
A spirometer having a bellows disposed in a container. A plurality of valve means permit exhaled air from a patient to enter the expansible bellows. A booster valve and venturi means are provided to pressurize the container during patient inhalation to reset the bellows to its zero point and exhaust the exhaled air in the bellows to atmosphere through a one-way check valve.

3,467,079
GALL BLADDER AND COMMON DUCT RETRACTOR
David Charles James, 926 E. McDowell Road, Phoenix, Ariz. 85006
Filed Apr. 14, 1967, Ser. No. 630,908
Int. Cl. A61b *1/00*
U.S. Cl. 128—20 **6 Claims**



A retractor including a shaft and a retractor blade removably secured thereto. The shaft terminates in a hook and the retractor blade is divided into two wings when connected to the retractor shaft. The hook is shaped to extend into the Foramen of Winslow to permit the pivoting of the retractor and the placement of pressure by the retractor blade to assist the placing of the gall bladder and common duct in an appropriate operative field.

3,467,080
COMBINED HEATING AND MASSAGING DEVICE
Samuel L. McNair, Overland Park, Kans., assignor to The Songrand Corporation, Kansas City, Mo., a corporation of Missouri
Filed Aug. 1, 1966, Ser. No. 569,419
Int. Cl. A61b *21/00*
U.S. Cl. 128—24.2 **6 Claims**

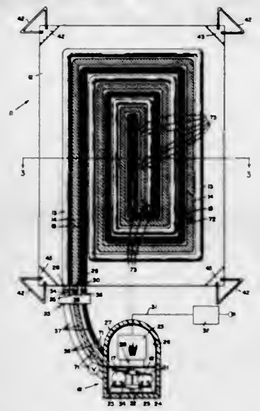


A heat generating electromagnet is supported for vibration on the free end of a leaf spring and means are provided for conducting heat from the electromagnet to a heat conductive applicator surface which is also subject to the vibrations of the electromagnet so as to provide vibration combined with heat.

3,467,081
INFLATABLE MASSAGING MATTRESS
John P. Glass, Ardmore, Pa. (% Cava Industries, 79 La Grange Ave., Essington, Pa. 19029)
Continuation-in-part of application Ser. No. 508,701, Nov. 19, 1965. This application May 4, 1966, Ser. No. 554,256
Int. Cl. A61h *1/00*
U.S. Cl. 128—33 **9 Claims**

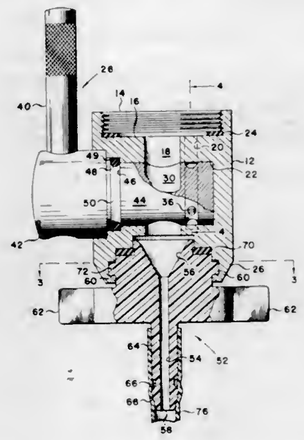
1. A mattress comprising a sheet of material having a system of hollow channels, said channels being filled with a gas, and means connected to the channels for varying

the pressure of the gas therein to expand and contract the channels in alternate fashion, said means comprising a pump including a gas-filled bladder, a wobble plate con-



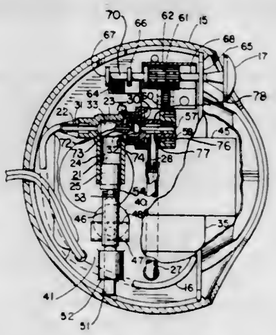
tacting the bladder, and motor means for wobbling the wobble plate to expand and contract the bladder in alternate fashion.

3,467,082
DENTAL SYRINGE FOR ORAL HYGIENE
Samuel Gilbert, Encino, Calif., assignor to Hydro Manufacturing Inc., Encino, Calif., a corporation of California
Filed Aug. 24, 1966, Ser. No. 574,627
Int. Cl. A61c *17/02;* **F16l** *37/24;* **A61m** *3/00*
U.S. Cl. 128—66 **8 Claims**



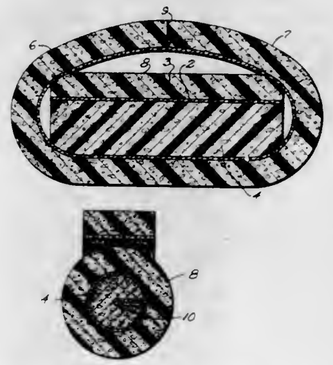
A dental syringe for use in cleaning the teeth and massaging gums having a housing formed with a fluid passageway extending therethrough. One end of the housing is adapted for mounting to a water faucet while its opposite end receives a fitting movably carried thereon which has a passageway in communication with the housing passageway. A syringe is coupled to the fitting by means of a flexible conduit, and valve means are rotatably carried on the housing which extend through the housing passageway for regulating the flow of fluid therethrough. Stop means are provided on the housing for limiting the movement of the valve which comprise a stationary pin carried on the housing and disposed to extend through a portion of an annular groove provided about a valve shank. A pin element carried on the shank has its opposite ends projecting into the annular groove whereby rotational movement of the valve is limited by the engagement of the opposite ends with the stationary pin disposed within a portion of the annular groove.

3,467,083
ORAL HYGIENE APPARATUS OF THE WATER JET TYPE
John W. Mattingly, Fort Collins, Colo., assignor, by mesne assignments, to Aqua Tec Corporation, Denver, Colo., a corporation of California
Filed Sept. 8, 1966, Ser. No. 578,053
Int. Cl. A61h *9/00*
U.S. Cl. 128—66 **13 Claims**



An oral hygiene appliance of the type producing a pulsed liquid stream or jet comprises a reciprocating liquid pump and a control for adjusting the intensity of the discharge stream; a single operating member adjusts the control and also operates the switch of an electric motor driving the pump. The pump drive includes a reciprocated driving member and a floating joint connection between the driving member and the pump piston to minimize the effects of lateral relative movement or misalignment thereof.

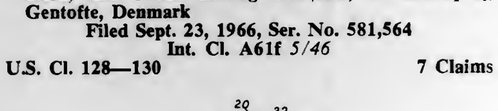
3,467,084
BOLSTER PAD AND METHOD OF MAKING THE SAME
Milton R. Levitt, New Brunswick, N.J., assignor to The Scholl Mfg. Co., Inc., Chicago, Ill., a corporation of New York
Filed Apr. 15, 1966, Ser. No. 542,948
Int. Cl. A61f *5/00, 5/30*
U.S. Cl. 128—81 **5 Claims**



A bolster pad for disposition in the sulciform region of the toes and attached directly to the foot of the user to provide relief for afflicted toes and also exercise for

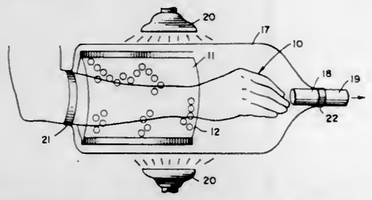
the foot for both the alleviation and prevention of adverse conditions in the region in the metatarsal arch and toes of the foot, although other uses may be apparent to those skilled in the art.

3,467,085
FIRST AID STRAP
Paul Joseph Cormier, 1 Josselyn Place, Newton Highlands, Mass. 02161
Filed Aug. 22, 1966, Ser. No. 574,048
Int. Cl. A61f 5/00
U.S. Cl. 128—83 7 Claims



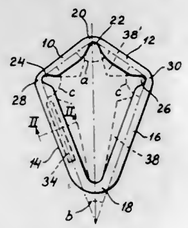
The first aid strap includes a central strip encased in a sleeve of plastic or the like and strengthened by a flexible, coextensive metal band. A buckle is attached at one end of the strip. A plurality of eyelets secure the strip, sleeve, and band to one another. Preferably the strip is held rolled in a first aid pack with other first aid items.

3,467,086
METHOD OF FORMING A THERMOPLASTIC CAST BY VACUUM
Benjamin A. Addison, 4115 Riverside Drive, and Erwin R. Jennings, 4029 Riverside Drive, both of Brunswick, Ga. 31520, and Theodore H. Gewecke, 1787 Cedarwood, Milledgeville, Ga. 31061
Filed Nov. 14, 1966, Ser. No. 593,803
Int. Cl. A61f 13/10; B29c 17/04
U.S. Cl. 128—90 1 Claim



A method of preparing a cast for a human limb employing a thermoplastic envelope about the limb, and heat-softening and vacuum-forming the thermoplastic envelope.

3,467,087
INTRAUTERINE DEVICE
Paul Erik Lebech, 79 Ndr. Fasanvej, Copenhagen V, Denmark, and Svend Ludvig Schrøder, 52 Ibstrupvej, Gentofte, Denmark
Filed Sept. 23, 1966, Ser. No. 581,564
Int. Cl. A61f 5/46
U.S. Cl. 128—130 7 Claims



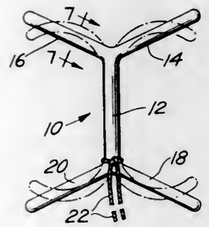
An intrauterine device is composed of a plastic rod in the shape of a closed polygonal figure, the corner joints of which form resilient hinges.

3,467,088
INTRAUTERINE DEVICE INSERTER
Ralph R. Robinson, 2026 Cumberland Ave., Middlesboro, Ky. 40965
Filed Dec. 22, 1966, Ser. No. 603,882
Int. Cl. A61f 5/46
U.S. Cl. 128—130 5 Claims



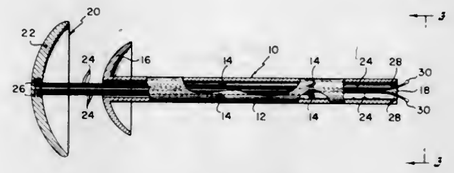
An inserter for collapsible intrauterine devices having an outer tube and an inner disposable tube exending outwardly from the operational end of the inserter. A snap-fit lock is provided for releasably attaching the tubes together, the part of the lock on the inner tube being slidable along the length of the latter to change the effective length of the same.

3,467,089
INTRAUTERINE CONTRACEPTIVE DEVICE (IUD)
Hasan M. Hasson, Chicago, Ill., assignor to Hollister Incorporated, a corporation of Illinois
Filed Feb. 14, 1967, Ser. No. 616,023
Int. Cl. A61f 5/46
U.S. Cl. 128—130 7 Claims



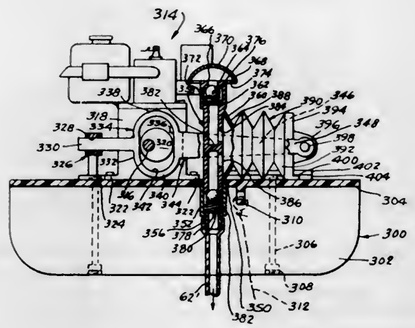
A wing-type contraceptive intrauterine device (IUD) is provided with the improvement of a second pair of oppositely extending wings to prevent expulsion. The improved IUD is compatible with body tissues, is non-reactive and non-toxic by reason of an exterior surface of silicone rubber. A siliconized Dacron thread is attached for detection and removal of the device. A core of resilient, magnetic material provides improved means for assisting in locating and removing the IUD. The core provides both resilience, to maintain the wings extended, and deformability to permit pre-setting the contour of the wings, as desired.

3,467,090
SELF-RETAINING OCCLUSIVE STEM PESSARY
Phillip B. Zollett, 28 S. Clinton St., Middletown, Ohio 45042
Filed May 3, 1967, Ser. No. 635,876
Int. Cl. A61f 5/46
U.S. Cl. 128—131 12 Claims



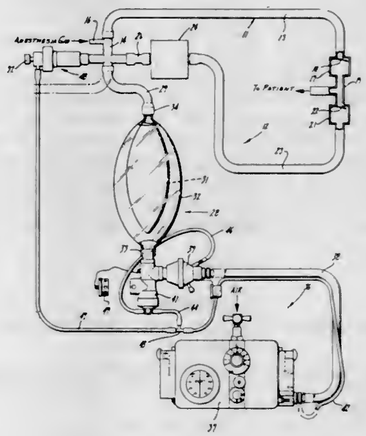
A pessary comprising a slender elongated sleeve having a series of openings in the wall thereof and an insert slidably mounted in one end of the sleeve which insert has an operating and non-operating position and which insert includes a circular base member radially extending beyond the end of the sleeve which base member occludes the end when in the operating position and which insert further has a plurality of flexible feelers extending from the base into the end of the tube which project outwardly through the openings in the sleeve a substantial distance only when the insert is in the operating position.

3,467,091
UNDERWATER BREATHING DEVICES WITH VALVED AIR SUPPLY MEANS
Robert J. Aragona, Box 102, Westcott Road, Rotterdam, N.Y. 12303
Filed Jan. 4, 1968, Ser. No. 695,734
Int. Cl. A62b 7/00
U.S. Cl. 128—145 1 Claim



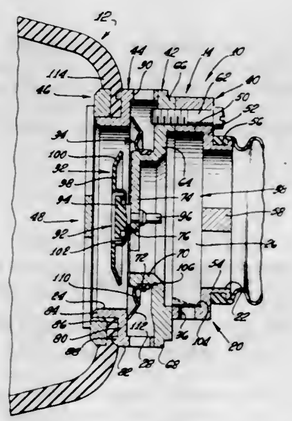
A snorkel type of underwater breating apparatus including a float supported source of air under pressure connected with a valved air passage, and an air hose; the float and air hose being attached to a harness worn on the swimmer's body whereby the float may be towed by the swimmer; and the mouthpiece has a pair of conduits which are supported on the harness, one being attached to the air hose and the other opening into the water. In an alternate construction, the air passage comprises an elongated length of a hollow tubular member having an end thereof normally exposed to the ambient atmosphere and the other end connected to the harness to be towed by the swimmer as before.

3,467,092
ANESTHESIA APPARATUS AND RESUSCITATOR
Forrest M. Bird, 212 NW. Cerritos, Palm Springs, Calif. 92262, and Henry L. Pohndorf, 1227 Brewster Drive, El Cerrito, Calif. 94530
Filed Dec. 14, 1966, Ser. No. 601,769
Int. Cl. A61m 17/00; A62b 7/00
U.S. Cl. 128—145.6 15 Claims



Anesthesia apparatus and resuscitator having a pneumatic bag assembly which includes an inner bag and an outer bag with the inner bag being in communication with a patient adapter and the outer bag being in communication with means for applying a pressure differential between the inner and outer bags to compress the inner bag.

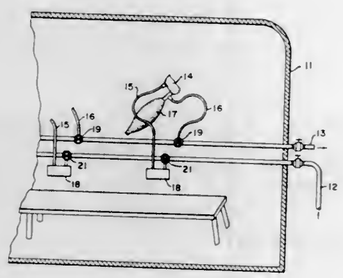
3,467,093
OXYGEN MASK AND VALVE STRUCTURE
Leo F. Hotz, Burbank, and Orland W. Wilcox, Sierra Madre, Calif., assignors to Sierra Engineering Co., Sierra Madre, Calif., a corporation of California
Filed Dec. 9, 1966, Ser. No. 600,509
Int. Cl. A62b 7/00
U.S. Cl. 128—146.5 3 Claims



In a breathing mask including a resilient cup having the general shape of a truncated cone with open ends and

an inhalation and exhalation valve assembly mounted in the opening in the small end of the cup, the valve assembly comprising: a body having an inlet opening for receiving breathable gas from an external source, a breathing opening through which the mask user inhales and exhales, and an inhalation passage communicating said openings, an inhalation check valve means provided within the passage between the openings for permitting breathable gas to flow through the passage from the inlet opening to the breathing opening and blocking reverse flow through the passage, the body having an exhalation passage communicating at one end with the breathing opening in surrounding relation to the inhalation passage and opening at its other end to the atmosphere, an exhalation valve means in the exhalation passage for permitting the flow of exhaled air through the exhalation passage from the breathing opening to the atmosphere and blocking reverse flow through the exhalation passage, and the exhalation valve means being isolated from the breathable gas pressure in the inhalation passage upstream of the inhalation valve means, so that opening of the exhalation valve means is not resisted by the breathable gas pressure.

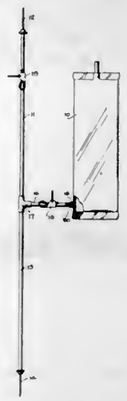
3,467,094
OXYGEN-ISOLATION AND OVERBOARD-DUMPING SYSTEM
Maxwell W. Goodman, District Heights, Md., assignor to the United States of America as represented by the Secretary of the Navy
Filed Feb. 1, 1966, Ser. No. 526,321
Int. Cl. A61m *16/00;* **A62b** *7/02*
U.S. Cl. 128—204 **5 Claims**



An enclosed decompression chamber for diving personnel wherein a mask system normally isolates the user's breathing fluids from the chamber atmosphere but when the pressure in the mask system suddenly drops, a valve permits chamber atmosphere to enter the mask system to prevent injury to the wearer.

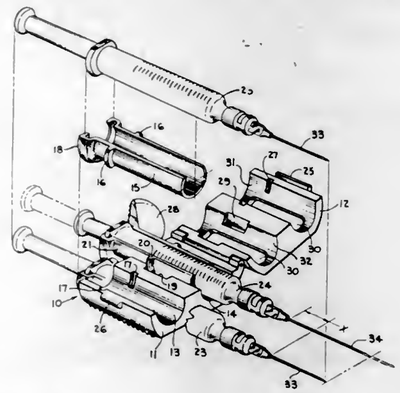
3,467,095
BLOOD COLLECTION SET
Eugene D. Ross, Elkins Park, Pa., assignor to Eugene Ross Laboratories, Inc., Southampton, Pa., a corporation of Pennsylvania
Filed Apr. 24, 1967, Ser. No. 633,008
Int. Cl. A61m *5/14;* **A61n** *5/18*
U.S. Cl. 128—214.2 **16 Claims**

A blood collecting set having one or more vessels each containing a quantity of anti-coagulant in association with a flexible needle-equipped tubing system which is adapted for the collection of blood from a donor into one or more empty blood collecting vessels following introduction of the anti-coagulant into the empty vessel, as well as for plasmapheretic procedures, all of



which may be effected by a single entry of a needle into the blood collecting vessel.

3,467,096
MULTIPLE HYPODERMIC SYRINGE ARRANGEMENT
Ferrell S. Horn, Winter Park, Fla.
(308 Brookside Drive, Auburn, Ala. 36830)
Filed Apr. 12, 1966, Ser. No. 541,995
Int. Cl. A61m *5/00*
U.S. Cl. 128—218 **4 Claims**

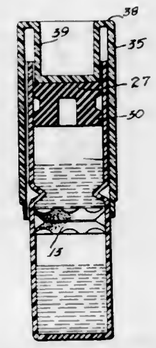


A hand held hypodermic syringe arrangement utilizing at least two needles disposed close together and pointing in a common direction so that two or more separate but simultaneous injections can be administered to a patient without involving more than a single sensation of pain. Means are provided whereby, immediately following the initial penetration, one of the needles may be caused to be injected more deeply in the flesh than the other if such be desired.

3,467,097
DUAL MEDICINAL VIAL
Robert W. Ogle, Phoenix, Ariz., assignor to V.O.M. Corporation, Wilmington, Del., a corporation of Delaware
Filed July 6, 1965, Ser. No. 469,812
Int. Cl. A61j *1/00;* **B65d** *1/04, 81/32*
U.S. Cl. 128—272 **5 Claims**

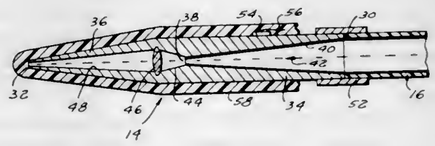
This patent describes a novel medicament vial comprising a container having an open end and a closed end;

the walls of the container being restricted intermediate the ends thereof by a restriction having a substantially V-shaped cross section terminating in a substantially sharp small V point; a resilient stopper in said container having an outer extreme width greater than the width of said container, the stopper having portions of lesser width than the width of said container, and having its outward perimeter provided with a sharp small V pointed in cross section indentation adapted when positioned over the restriction to seal upon both walls and the point of the restriction. A second stopper is inserted in the open end



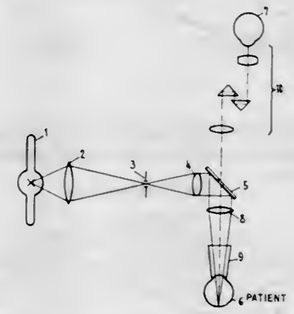
of the vial. This patent further describes a generally cylindrical first casing adapted to fit over a portion of the vial and a second generally cylindrical casing adapted to fit over the other end of the vial, the casing forming a closed housing for the vial and the second casing having at its closed end a reentrant portion with a closed end wall. The second casing is adapted after removal of both of the casings from the vial to be replaced over the vial in place of the first casing with the closed end of the reentrant portion engaging the top of a stopper positioned at the top open end of the vial.

3,467,098
FLEXIBLE CONDUIT FOR LASER SURGERY
Waldemar A. Ayres, Rutherford, N.J., assignor to Becton, Dickinson and Company, Rutherford, N.J., a corporation of New Jersey
Filed Mar. 24, 1967, Ser. No. 625,772
Int. Cl. A61b *17/36, 17/32;* **A61n** *3/00*
U.S. Cl. 128—303.1 **10 Claims**



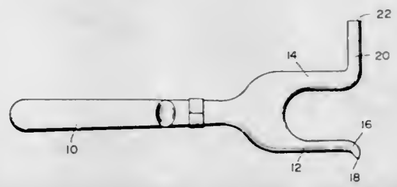
A closed system for conducting laser light energy from a source to a hand manipulable instrument for focusing the light at a point remote from the instrument distal end for use in surgery. A flexible elongated cylindrical member allowing the hand manipulable instrument to be readily moved to any point in space within three mutually perpendicular planes having an inner reflective surface coating to reflectively conduct the light energy toward the point of focus.

3,467,099
METHOD AND APPARATUS FOR THE COAGULATION OF SMALL AREAS OF THE RETINA OF THE EYE
Walter Lotmar, Spiegel, near Bern, Switzerland, assignor to Research Corporation, New York, N.Y., a non-profit corporation of New York
Filed Mar. 30, 1967, Ser. No. 627,177
Claims priority, application Switzerland, Apr. 2, 1966, 4,852/66
Int. Cl. A61b *17/36;* **A61n** *3/00*
U.S. Cl. 128—303.1 **12 Claims**



Surgical method and apparatus, for coagulation of small areas of the retina of the eye, having a source of light adapted to be directed onto the retina through a light bundle and a contact glass having a plano front surface which is placed upon the eye to be treated.

3,467,100
NASAL OSTEOTOME
Frank F. Rubin, 795 Southern Artery, Quincy, Mass. 02169
Filed Aug. 15, 1967, Ser. No. 660,767
Int. Cl. A61b *17/16, 17/24, 17/32*
U.S. Cl. 128—305 **6 Claims**

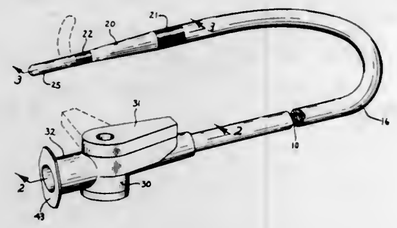


A forked osteotome has a handle and a rigid U-shaped operating portion. One leg of the U is provided with a sharp cutting edge or a sharp point or series of points and is adapted to be thrust into a nostril, the other leg of the U being outside to be tapped by a hammer. For this purpose said other leg is provided with an extension in the plane of the U, projecting at right angles to said other leg and away from the first leg.

3,467,101
BALLOON CATHETER
Thomas J. Fogarty, Bethesda, Md., and Donald A. Raible, Corona, and William A. Stark, Costa Mesa, Calif.; said Donald A. Raible and William A. Stark, assignors to Edwards Laboratories, Inc., a corporation of California
Continuation-in-part of application Ser. No. 370,430, May 27, 1964. This application Sept. 30, 1965, Ser. No. 491,712
Int. Cl. A61m *25/00, 29/00*
U.S. Cl. 128—348 **11 Claims**

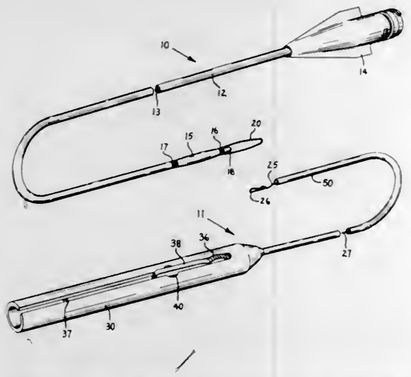
The catheter has a metal lumen comprising a wire coil to prevent damage from the repeated insertion of a wire

stylet. A tube of fabric braid provides a tension member to prevent stretching of the coil under tension and to prevent separation of the turns of the coil by the end of the



stylet. The catheter may be made with different types of tips for venous thrombectomy, arterial embolectomy and other purposes.

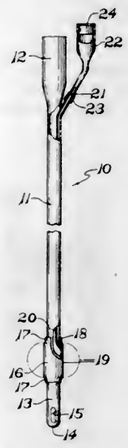
3,467,102
LEADER TYPE CATHETER
Thomas J. Fogarty, Bethesda, Md., and William A. Stark, Costa Mesa, Calif.; said William A. Stark, assignor to Edwards Laboratories, Inc., Santa Ana, Calif., a corporation of California
Filed Apr. 18, 1967, Ser. No. 631,683
Int. Cl. A61m *25/00*
U.S. Cl. 128—348 **13 Claims**



A catheter and leader combination for embolectomy or thrombectomy purposes and also for removal of intraductal obstructing elements. The leader is inserted through an incision in a blood vessel or other conduit on one side of an obstruction to be removed and caused to emerge from another incision on the opposite side of the obstruction. Then, by coupling the catheter to the leader, the catheter may be pulled through the obstruction with its embolectomy device in collapsed condition. The obstruction is removed by expanding the embolectomy device and pulling the catheter back out of the second incision.

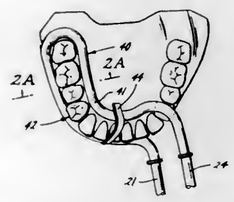
3,467,103
INFLATABLE BAG CATHETER
John R. McKinstry, Beverly, Myron C. Monck, Pennsauken, and Robert L. Hayes, Mount Holly, N.J., assignors to The B. F. Goodrich Company, New York, N.Y., a corporation of New York
Filed Apr. 13, 1966, Ser. No. 542,269
Int. Cl. A61m *25/00*
U.S. Cl. 128—349 **4 Claims**

An inflatable bag catheter is provided for use by physicians to drain fluids from the internal organs of patients. The catheter comprises a thin-walled drainage tube formed of flexible vinyl chloride polymer and an inflatable retention bag formed of elastic rubber and may have a flexible inflation arm formed of elastic rubber. The inner surfaces



of the elastic rubber bag and the inner surfaces of the elastic rubber inflation arm are halogenated to provide an acceptable bonding of the rubber to the vinyl chloride polymer.

3,467,104
METHOD AND APPARATUS FOR DENTAL ANESTHETIZATION
William P. Burbridge, Houston, and John R. Morgan and Thomas S. Schmitt, Victoria, Tex., assignors to Surgical Eng. and Research Corp., Victoria, Tex., a corporation of Texas
Filed Oct. 31, 1966, Ser. No. 590,978
Int. Cl. A61f *7/12*
U.S. Cl. 128—400 **23 Claims**



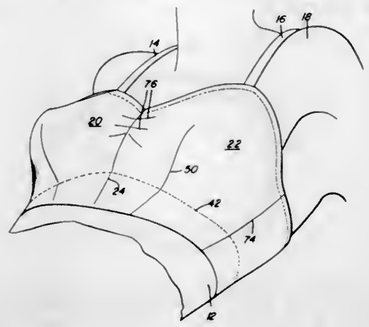
Dental anesthetization is effected by cooling nerves associated with teeth at a relatively rapid rate in order to minimize ischemia around the nerves before cooling thereof.

An applicator is provided for effecting the anesthetization comprising a duct shaped to fit inside the mouth against the gingival surface of a row of teeth.

3,467,105
BRASSIERE CONSTRUCTION
Eve D. White, 2710 S. Ocean Drive, Apt. 105, Hollywood, Fla. 33020
Filed Jan. 16, 1967, Ser. No. 609,540
Int. Cl. A41c *3/00*
U.S. Cl. 128—425 **3 Claims**

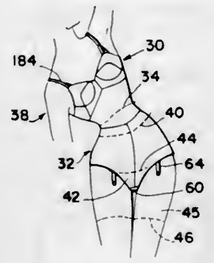
A brassiere constructed of fabric material without the use of any rigid stays or reinforcement and without elastic

components and which may be worn as a halter or brassiere and being relatively inexpensive to manufacture. The brassiere is especially constructed for persons having



relatively large or pendant breasts and imparts firm youthful lines thereto, adjusts automatically to various breast shapes and encompasses the entire breast wtihout any overflow.

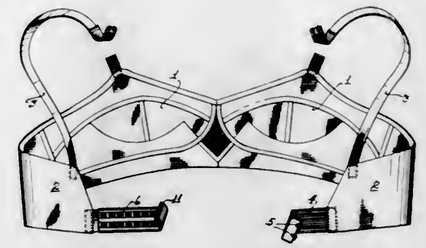
3,467,106
BODY CONTROL OR FOUNDATION GARMENTS
Marian Halstead, 26 Gramercy Park S., New York, N.Y. 10003
Filed Oct. 11, 1965, Ser. No. 494,429
Int. Cl. A41c *1/06*
U.S. Cl. 128—431 **11 Claims**



Body control or foundation garment fabricated of a plurality of panels of material contoured, oriented and interconnected to enable the grains thereof to define converging control tensions disposed along control lines extending between a mesial line at the center of front to a mesial line at the center of back when positioned on a wearer's body.

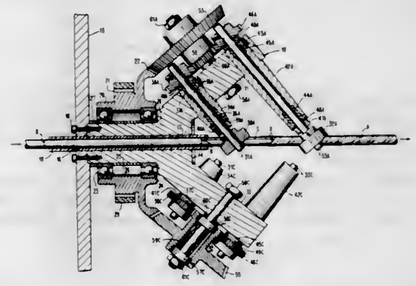
3,467,107
BAND CONNECTION FOR GARMENTS
Louis Heyman, Bayonne, Bernard Netkin, Elizabeth, and David Butvinik, Bayonne, N.J., assignors to Maidenform, Inc., New York, N.Y., a corporation of New York
Filed Mar. 20, 1967, Ser. No. 624,686
Int. Cl. A41c *3/00*
U.S. Cl. 128—501 **4 Claims**

A band connection for garments comprising an integral woven fabric member having at least two parallel strip-like mutually spaced woven areas from which threads of said areas extend transversely across the space between them and are exposed from end to end thereby providing



an elongated ladder-like thread formation adapted to be engaged by the hook of a second band member.

3,467,108
HELICAL MOVEMENT OF CYLINDRICAL OBJECTS
Bert H. Wallace, Uniondale, N.Y., assignor to General Cigar Co., Inc., New York, N.Y., a corporation of New York
Filed May 16, 1966, Ser. No. 550,402
Int. Cl. A24c *1/22, 1/30*
U.S. Cl. 131—20 **16 Claims**

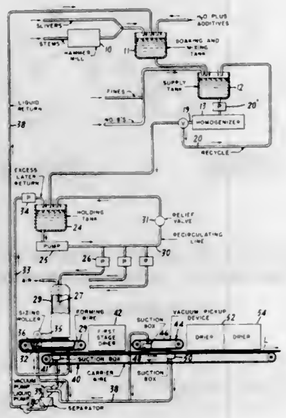


In a machine, cylindrical objects are helically moved by passing them longitudinally through an elongated guide which extends through a base having three equidistantly spaced arms each of which supports two shafts with rollers mounted on their free ends. The shafts are uniformly rotated and converge closely toward the axis of the objects discharging from the guide so that the rollers contact the cylindrical surface of the objects to impart both rotational and translational movement to the objects. The machine is particularly useful in manufacturing cigars.

3,467,109
METHOD AND APPARATUS FOR MAKING RECONSTITUTED TOBACCO
M Sabel Block, Bloomfield, N.J., Melvin D. Sidbury, Green boro, N.C., and Melvin F. Reich, New Albany, Ind., assignors to P. Lorillard Company, Inc., New York, N.Y., a corporation of New Jersey
Filed June 12, 1967, Ser. No. 645,380
Int. Cl. A24b *9/00;* **D21h** *5/06*
U.S. Cl. 131—140 **23 Claims**

Apparatus for and method of making tobacco sheets from waste tobacco stem material and fines without any

binder in which stem pieces suspended in a liquid which includes substantially all black water taken from the sheets during the process are defibered, preferably in a refiner of special construction, without substantially re-



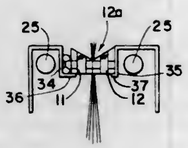
ducing their length, and formed with tobacco fines into a layer on a carrier surface. The layer is lifted from the carrier surface while only partially dried to break any bond between it and the surface and is then replaced on the carrier for further drying.

3,467,110

METHOD AND APPARATUS FOR PREPARING HAIR PIECES SUCH AS CHIGNONS, FALLS AND THE LIKE AND ARTICLES PRODUCED THEREBY

Daniel Frishman, Andover, and Michael G. Caruso, North Andover, Mass., assignors to Reid-Meredith, Inc., Lawrence, Mass., a corporation of Delaware

Filed Feb. 9, 1967, Ser. No. 614,856
Int. Cl. A41g *3/00*
U.S. Cl. 132—5 **4 Claims**



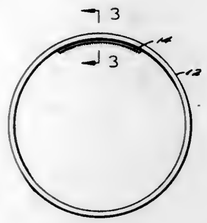
The present invention is directed to a method and apparatus for preparing hair pieces such as chignons, falls and the like and articles produced thereby in accordance with which fibers or bundles of fibers or monofilaments in tow form are cut into chignon lengths, opened and combed and while in an opened horizontal condition, they are clamped between two bevelled clamp members and shifted from a horizontal to a vertical position so that the bevelled edges of the clamps form a channel into which the bonding medium is introduced so that the filaments will be bonded together and to a tape on each side of the filaments and between the clamp members. The bonding medium may be an adhesive, glue or a solvent or swelling agent which is compatible with the particular specie of filament or fiber with which it is used.

3,467,111

POSITION-HOLDING HEADWEAR ASSEMBLY

Ann L. Benson, Townhouse, 70th and Dodge Sts., Omaha, Nebr. 68132

Filed Sept. 27, 1965, Ser. No. 490,350
Int. Cl. A45d *8/18, 8/20, 8/36*
U.S. Cl. 132—46 **1 Claim**



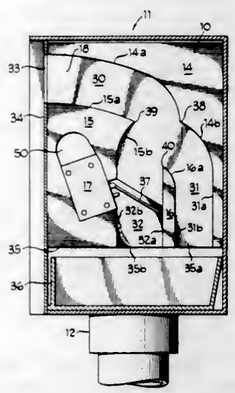
This invention pertains generally to headwear, and particularly to a means for causing the head band to be retained in place on the head. The means includes a piece of material in combination with a headwear, the material having a plurality of resilient hooks projecting outwardly therefrom which are adapted to intertwine with the strands of hair of the wearer when the hooks are pressed into a wearer's hair.

3,467,112

COIN TRACK ASSEMBLY FOR A COIN MECHANISM

Terrence J. Mulligan, 2044B Best Place, and John K. Morrison, 618 S. 4th St., both of Aurora, Ill. 60506

Filed Sept. 1, 1967, Ser. No. 664,993
Int. Cl. G07d *3/00;* **G07f** *1/04, 3/00*
U.S. Cl. 133—3 **3 Claims**



A coin mechanism is disclosed herein having interconnecting coin chute passages which, by virtue of the configuration and position thereof, provide discrimination of certain coins passing therethrough without moving parts.

3,467,113

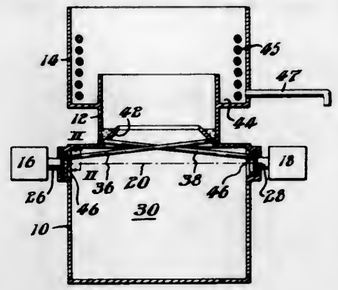
SIGHT GLASS CLEANING

John B. Jacobsen and William R. Carpenter, Bowling Green, Ky., assignors to Detrex Chemical Industries, Inc., Detroit, Mich., a corporation of Michigan

Original application Jan. 21, 1964, Ser. No. 339,255, now Patent No. 3,398,023, dated Aug. 20, 1968. Divided and this application Mar. 19, 1968, Ser. No. 735,943
Int. Cl. B08b *3/04, 9/06*
U.S. Cl. 134—113 **2 Claims**

A vessel having transparent sight glasses in opposed

locations. A pair of conduits for drawing a compatible cleaning fluid from a supply reservoir within said vessel



and respectively applying said fluid to the inside surface of each of said sight glasses.

3,467,114

TRANSFORMABLE STRUCTURES

Thomas W. McSherry, North Babylon, N.Y., assignor of twelve and one-half percent each to Jakob S. Pedersen, and Peder M. Pedersen, both of North Babylon, N.Y., and twenty-five percent to Joseph D. Lazar, North Babylon, N.Y.

Filed Apr. 6, 1966, Ser. No. 545,232
Int. Cl. A45f *1/16;* **E04b** *1/347;* **B65d** *5/66*
U.S. Cl. 135—2 **8 Claims**



A transformable structure of a flexible member connected to a rigid member. A linking member such as a collar slides over the flexible member and is attached to the rigid member. Relative movement of the collar to the flexible member effects a side-by-side generally parallel form to an expanded form wherein the flexible and rigid members are diverted.

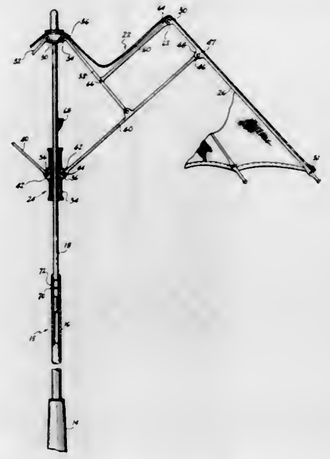
3,467,115

UMBRELLA

Robert Brooks, % L. P. Henryson & Co. Inc., 312 5th Ave., New York, N.Y. 10001; Kinjiro Wakabayashi, % Wakabayashi & Co., Ltd., 9 4-chome Bakurocho, Chuo-ku, Tokyo, Japan; and Nobutoshi Kida, 27 1-chome, Minami Nonin-machi, Higashi-ku, Osaka-shi, Japan

Filed Feb. 9, 1968, Ser. No. 704,336
Int. Cl. A45b *19/08*
U.S. Cl. 135—25 **1 Claim**

An umbrella construction having a shaft with a cover fixed at the top thereof and with a handle at the bottom thereof. Main ribs and links are provided for extending and collapsing the cover, and a slidable runner is mounted



on the shaft for actuating the ribs and links through interposed auxiliary links.

3,467,116

PICK-UP WALKING STICK

Walter P. Ringewaldt, 26 Beatty Ave., Taperoo, South Australia 5017, Australia

Filed Feb. 12, 1968, Ser. No. 704,687
Int. Cl. A45b *3/00;* **E21b** *31/00;* **E21c** *19/02*
U.S. Cl. 135—47 **4 Claims**



A walking stick which is hollow and is provided with the pick-up mechanism consisting of fingers which separate apart when projecting from the lower end of the stick but close together when retracted into the stick so as to be effective when picking up articles from the ground.

3,467,117

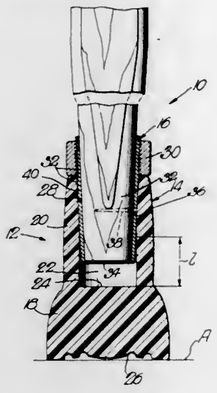
CRUTCH TIP

Louis V. Lucibello, 1821 Ridge Road, North Haven, Conn. 06473

Filed Aug. 23, 1967, Ser. No. 662,722
Int. Cl. A45b *9/04*
U.S. Cl. 135—54 **1 Claim**

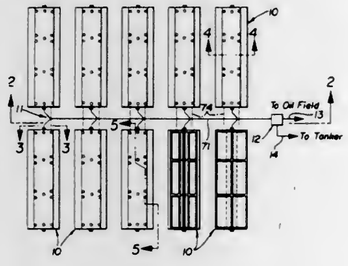
The disclosure deals with a crutch tip having the usual molded rubber part, and in addition a preferred sleeve and nut of which the sleeve is received in the central recess in the rubber part and, in turn, receives the end of

a crutch with a firm fit, and the nut is threaded on the sleeve and rests on top of the rubber part in adjusted posi-



tion to keep the sleeve and crutch end therein spaced from the bottom of the recess in the rubber part.

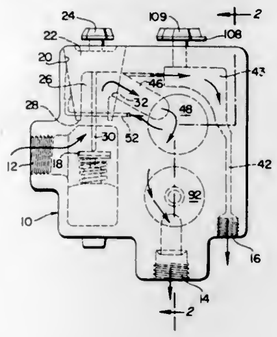
3,467,118
SUBMERGED OIL STORAGE FACILITY AND METHOD
Ben C. Gerwick, Jr., Oakland, and Carl Y. Farrell, Ross, Calif., assignors, by mesne assignments, to J. H. Pomeroy & Co., Inc., San Francisco, Calif., a corporation of Washington
Filed Jan. 26, 1967, Ser. No. 612,020
Int. Cl. E03b *1/00, 11/00;* **E04h** *7/18*
U.S. Cl. 137—1 **10 Claims**



A concrete submergible unit consisting of a pair of side by side identical cylindrical shells having a common structural wall joining them and enclosed at their ends to form tanks, together with upper and lower planar external walls cooperating with the cylindrical shells to form upper and lower distribution chambers communicating with the tanks through passages in the shells. Reinforcing and prestressing plans are given as well as piping interconnections.

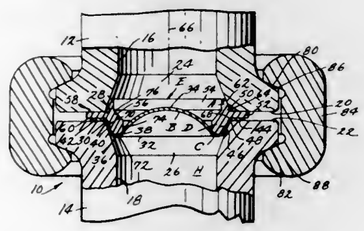
3,467,119
THERMOSTATIC CONTROL DEVICE
Theodore J. Dykzeul, Rolling Hills, and Richard W. McKinney, Lakewood, Calif., assignors to Robertshaw Controls Company, Richmond, Va., a corporation of Delaware
Filed Feb. 17, 1967, Ser. No. 616,841
Int. Cl. F23d *13/46, 13/02*
U.S. Cl. 137—66 **13 Claims**

A fluid flow control device including a casing having an inlet, a main flow outlet and a pilot flow outlet and a manually operable plug valve and pressure regulating valve disposed in the casing for controlling a flow of gas to burner apparatus which conventionally includes a main burner and a pilot burner igniting proximity thereto; the manual plug valve is provided with special porting to



deliver a nonregulated pilot flow of gas during the lighting of the pilot burner and provides pressure regulation of both the main and the pilot gas flows during normal operation of the main burner.

3,467,120
BURST DISK ARRANGEMENT
Erwin F. Hill and Raymond E. Latham, Houston, Tex., assignors to Gray Tool Company, Houston, Tex., a corporation of Texas
Filed Apr. 13, 1967, Ser. No. 630,645
Int. Cl. F16k *13/04;* **B65d** *25/08*
U.S. Cl. 137—68 **5 Claims**

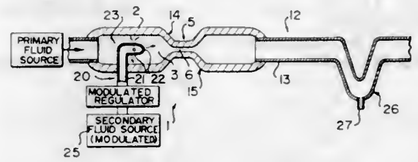


For use in a pressure system having two conduits that meet one another at standard ends having internal frustoconical annular sealing surfaces, a burst disk having an annular peripheral portion seated against the end of one conduit and bellied toward the bore of the other conduit; and an annular sealing ring having one flexible sealing lip stressed into resilient sealing engagement with the sealing surface of the other conduit and an annular bulbous portion sealingly urging the burst disk, near the periphery thereof, against the one conduit annular sealing surface.

3,467,121
DUAL FLUID SYSTEMS
Romald E. Bowles, Silver Spring, Md., assignor to Bowles Engineering Corporation, Silver Spring, Md., a corporation of Maryland
Filed Oct. 21, 1965, Ser. No. 499,781
Int. Cl. F15c *1/10, 1/15*
U.S. Cl. 137—81.5 **35 Claims**

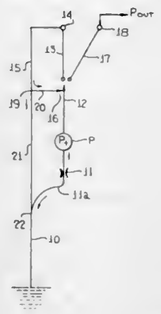
Mass flow in fluid devices is controlled by causing a first fluid to flow through a nozzle at the sonic velocity of the

first fluid and introducing upstream of the nozzle variable quantities of a second fluid having a different sonic velocity characteristic. Additional applications are disclosed



wherein the differences in sonic velocities of different fluids are employed to control mass flow and transit times of fluid flows.

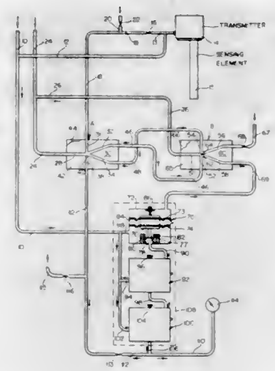
3,467,122
LIQUID LEVEL SENSOR
Donnie Roland Jones, Silver Spring, Md., assignor to Bowles Engineering Corporation, Silver Spring, Md., a corporation of Maryland
Filed Sept. 27, 1965, Ser. No. 490,246
Int. Cl. F15c *1/10*
U.S. Cl. 137—81.5 **15 Claims**



A fluidic liquid level sensor comprising a sensor tube adapted to continuously discharge gas unless blocked by the liquid level being sensed and a bistable pure fluid amplifier having a control nozzle and a power nozzle for issuing a gaseous power stream to either of two output passages. A feedback path connects one of said output passages to said sensor tube and to said control nozzle so that when the sensor tube is not blocked by the sensed level of liquid, gas in said feedback path flows through the sensor tube and aspirates gas from the control nozzle to lock the amplifier in one of its two states. When the sensor tube is blocked by the sensed liquid level, gas in the feedback path flows through the control nozzle to deflect the power stream thereby switching the amplifier to the other of its states. Back pressure in the blocked sensor tube acts via the control nozzle to maintain the amplifier in said other state.

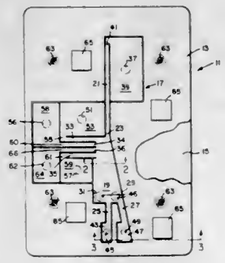
3,467,123
FLUID CONTROL SYSTEM
Charles H. Perkins, Richmond, Va., assignor to Robertshaw Controls Company, Richmond, Va., a corporation of Delaware
Filed Sept. 23, 1966, Ser. No. 581,624
Int. Cl. F15c *1/08*
U.S. Cl. 137—81.5 **11 Claims**

A fluid control system combining a pair of operatively interconnected proportional fluid amplifiers with a feedback network characterized by the utilization of pressure responsive diaphragms therein. Power stream of fluid amplifiers is deflected by input signals from pair of opposed control signals, said stream and said jets operating at extremely low pressure levels, e.g., .433 p.s.i. Low pressure output signal in feedback network connected to out-



put channel of fluid amplifiers is increased in pressure by said booster relays to cause adjustment in setting of controller. One control signal is produced by fluid transmitter, whereas second control signal is produced by feedback network after suitable pressure reduction.

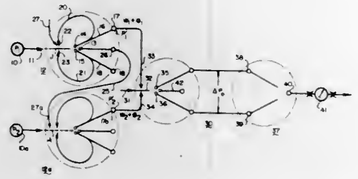
3,467,124
FLUIDIC DEVICE
Anton K. Simson, Glenolden, Pa., assignor to John P. Glass, trading as Cava Industries, Essington, Pa.
Filed May 4, 1966, Ser. No. 547,554
Int. Cl. F15c *5/00*
U.S. Cl. 137—81.5 **14 Claims**



A fluidic plate assembly comprising a pair of parallel plates, and sealing ridges extending from one plate and abutting and sealingly connected to the other plate, said ridges defining the elements of a fluidic device. A method of making the fluidic plate assembly comprising forming a base plate with ridges extending therefrom defining the elements of a fluidic device, placing a cover plate against the top of the ridges, and attaching the cover plate to the top of the ridges. A fluidic amplifier comprising an interaction chamber, an output passageway extending from the interaction chamber, a power nozzle for directing a laminar power stream of fluid through the interaction chamber and into the output passageway, an output dump extending from the interaction chamber, a sidewall of the interaction chamber leading to the output dump, and a control passageway for directing a control stream of fluid into the

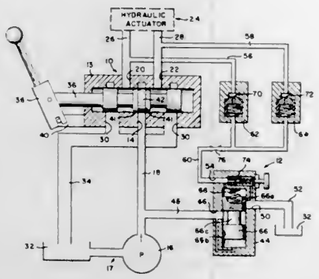
interaction chamber to contact the power stream and cause it to become turbulent and to change its direction of travel and lock on to said sidewall leading to the output dump so that the power stream is cut off from the output passageway and enters the output dump.

3,467,125
SYSTEM FOR MEASURING FLUID PRESSURE
Edwin M. Dexter, Silver Spring, Md., assignor to Bowles Engineering Corporation, Silver Spring, Md., a corporation of Maryland
Filed Jan. 11, 1967, Ser. No. 608,622
Int. Cl. F15c *1/12, 1/14*
U.S. Cl. 137—81.5 **14 Claims**



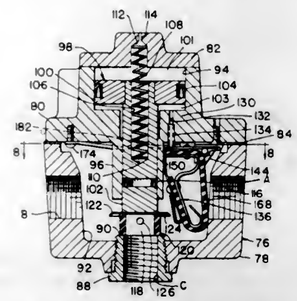
Differential pressure is measured by applying diverse pressures to separate fluidic pressure controlled oscillators, respectively, and loosely coupling the oscillators so that they are frequency synchronized but not phase locked. The phase difference of the oscillations is then a function of differential pressure, and is measured by applying the oscillations to an analog amplifier acting as a phase detector. The oscillations can be adjusted to have 90° phase difference, or some other predetermined phase difference, when the pressures are equal, which provides a reference output. Phase deviation with respect to the reference may then be measured as an indication of pressure differential.

3,467,126
HYDRAULIC LOAD COMPENSATING DIRECTIONAL CONTROL VALVE
Doyle R. Ballard, Bellevue, and Guy R. Coe, Jr., Mercer Island, Wash., assignors to Hydranamic Systems Corporation, Seattle, Wash., a corporation of Washington
Filed Mar. 21, 1966, Ser. No. 536,120
Int. Cl. G05d *11/02;* **F16k** *11/00*
U.S. Cl. 137—115 **4 Claims**



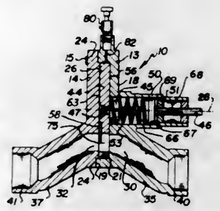
A hydraulic control valve system is provided to control the operation of a hydraulic actuator in a load compensating manner such that any given control setting will operate the hydraulic actuator at the same velocity regardless of the load conditions on the hydraulic actuator. The load compensating valve also provides overload relief protection for the hydraulic fluid supply pump.

3,467,127
FAST ACTING FLUID RESPONSIVE VALVE
Ervin J. Schneider, 13970 Forrer Ave., Detroit, Mich. 48227
Continuation-in-part of application Ser. No. 542,072, Apr. 12, 1966. This application Oct. 3, 1967, Ser. No. 672,564
Int. Cl. G05d *11/03;* **F15b** *11/00*
U.S. Cl. 137—117 **16 Claims**



The valve includes a body provided with first and second chambers, with the first chamber having inlet, outlet and exhaust ports. In use, the inlet port is connected to a work cylinder, the outlet port is connected to a storage tank, and the exhaust port is connected to atmosphere. An actuator in the second chamber includes an extension extending into the first chamber to which is connected a normally closed valve element for the exhaust port. Actuator control means, such as an orifice and an associated diaphragm, is located between the chambers and is responsive to the initial flow of fluid in an explosive condition from the cylinder for rendering the actuator inoperative to permit the transfer of fluid energy between the cylinder and storage tank. Such transfer takes place almost instantaneously in a relatively unrestricted manner in a relatively short period of time measured in milli-seconds. When the initial fluid flow from cylinder to tank terminates, the control means opens to permit flow across the orifice between the chambers. The fluid in the second chamber exerts an actuating force on the actuator so as to move the valve element away from the exhaust port and thereby permits the cylinder fluid to exit via the exhaust port. Cam means is carried by the extension in the first chamber and is engageable with the actuator control means after the exhaust port is opened to prevent the diaphragm from closing the orifice. When the pressure in the first chamber decreases, the actuator moves the valve element against the exhaust port to close same. The valve is then ready for another cycle.

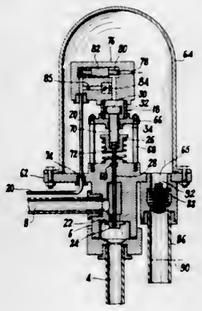
3,467,128
REVOLVING LIQUID VALVE
Alexander W. Johnston, 5550 Blenheim St., Vancouver, British Columbia, Canada
Filed June 13, 1966, Ser. No. 557,304
Int. Cl. F16k *3/26, 31/04, 31/46*
U.S. Cl. 137—171 **11 Claims**



A revolving liquid valve including a valve plate rotatably mounted in a chamber, said plate having a control port

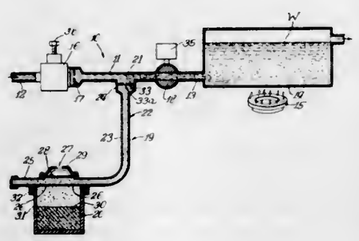
therethrough positioned to move into and out of registry with aligned entry and exit ports formed in opposite walls of the chamber when the plate is rotated.

3,467,129
HYDRAULICALLY-OPERATED VALVE
Jean Louis Gratzmuller, 66 Boulevard Maurice Barres, Neuilly, Hauts-de-Seine, France
Filed Mar. 29, 1966, Ser. No. 538,359
Claims priority, application France, Mar. 31, 1965, 11,325
Int. Cl. F16k *31/143*
U.S. Cl. 137—236 **3 Claims**



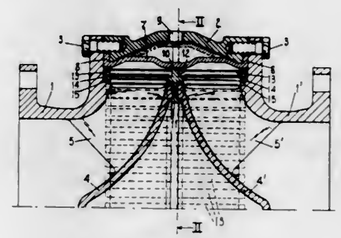
An underwater well-head control system in which a well-head is attached to the end of each drilling and a hydraulically controlled valve is interposed between the well-head and a petroleum outlet pipe leading to the storage tanks. The valve includes a valve closing device, resilient means tending to maintain the device in the closed position and a hydraulic jack tending to open such device with the jack being adapted for connection to a hydraulic fluid source. A central control point located above sea level and having the source of pressurized fluid and a low pressure tank is connected to the jack via a control pipe and selective means permits the selective linking of a control pipe with the source and the low pressure tank.

3,467,130
FLUID TREATMENT APPARATUS
Harvey R. Karlen, Chicago, Herbert E. Wagner, Tinley Park, and David C. Eisendrath, Chicago, Ill., assignors to Cory Corporation, a corporation of Delaware
Filed June 2, 1967, Ser. No. 643,178
Int. Cl. E03c *1/046*
U.S. Cl. 137—268 **15 Claims**



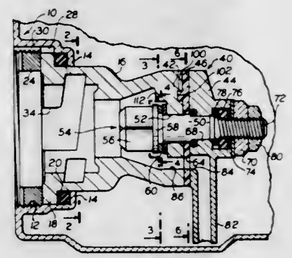
A fluid treatment apparatus wherein means are provided responsive to a variation in pressure in a fluid supply line for withdrawing a small quantity of fluid-treating material from an associated storing means and delivering it into fluid flowed through the fluid supply line. The material supply means includes an orifice which has a cross section area preferably in the range of approximately .0005 square inch to .002 square inch.

3,467,131
VALVE WITH DIAPHRAGM VALVING ELEMENT
Johannes B. Ratelband, Jan de Jagerlaan 1, Laag Keppel, Netherlands
Filed Mar. 17, 1967, Ser. No. 623,859
Claims priority, application Netherlands, Mar. 30, 1966, 6604164
Int. Cl. F16k *31/165*
U.S. Cl. 137—269 **3 Claims**



The housing of the valuve is provided with an insert forming a partition between the inflow side and the outflow side of the housing and at its circumference merges in an annular wall. Said wall at least at one side of the partition is constituted by bars extending in axial direction and projecting with one of their ends into a ring of elastic material provided at the circumference of the partition. Said bars at their other end being supported in the adjacent end wall of the housing and flow passages being formed between said bars. The annular wall of the partition is surrounded by a sleeve-like diaphragm which at both ends is secured in the housing. At the outer side of the diaphagm a chamber is formed in which pressure fluid may be admitted for urging the diaphragm on the annular wall.

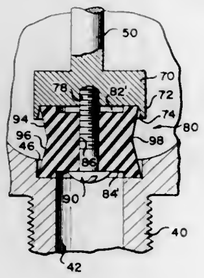
3,467,132
BEER KEG FITTING WITH LIMIT STOPS
Michael J. Parisi, Paramus, N.J., assignor to Vending Components, Inc., Hackensack, N.J., a corporation of New Jersey
Filed Dec. 1, 1966, Ser. No. 598,470
Int. Cl. F16k *51/00*
U.S. Cl. 137—323 **10 Claims**



A beer keg valve having a body portion which inserts into an opening in the keg and a valve at the inner end

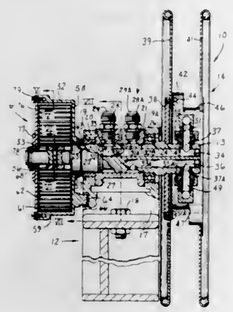
of the body limited to 90° rotation by abutments on the valve stem which strike against complementary abutments integral with the inside surface of the valve body.

3,467,133
DOUBLE TAPERED FAUCET WASHER
Charles E. Justis, Sr., 825 Greenwood Ave., Jenkintown, Pa. 19046
Continuation of application Ser. No. 460,246, June 1, 1965. This application Jan. 23, 1968, Ser. No. 699,975
Int. Cl. F16k *43/00, 51/00*
U.S. Cl. 137—329.04 **1 Claim**



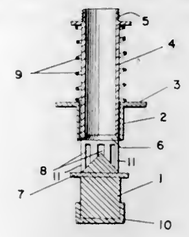
The invention relates to a resilient reversible faucet washer made up of two like portions whose combined thickness is approximately double that of an ordinary washer. The portions are frusto-conical with their small ends in abutting relation and their opposite ends presenting like flat annular sealing surfaces. An axial opening extends through the portions for receiving the fastening elements.

3,467,134
DUAL HYDRAULIC REEL
Roger T. Becker, Kalamazoo, and William K. Becker, Ross Township, Kalamazoo County, Mich., assignors to Aero-Motive Manufacturing Company, Kalamazoo, Mich., a corporation of Michigan
Filed Jan. 3, 1967, Ser. No. 607,062
Int. Cl. B65h *75/46, 75/48*
U.S. Cl. 137—355.17 **6 Claims**



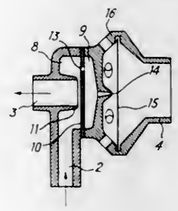
The hose reel assembly comprises reel drum means connected to spring motor means for opposing rotation of said drum means in an unwinding direction. A pair of hoses are wound upon the drum means and connected through a pivotable seal on the reel assembly to a pair of pressure fluid sources.

3,467,135
MAGNETIC FLOAT VALVE
Ulrich Gunther Muskalla, 1384 Chatelaine Ave., Ottawa 3, Ontario, Canada
Filed July 23, 1965, Ser. No. 474,380
Int. Cl. F16k *1/38, 31/08, 31/22*
U.S. Cl. 137—410 **8 Claims**



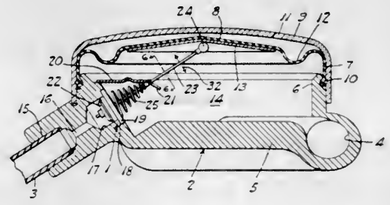
A combined filling tube and magnetically-assisted float-actuated shut-off valve with manual release, used for filling a container and automatically shutting off flow at a predetermined liquid level when the device is inserted therein with a flanged magnet member resting on the container mouth, the tube having a valve seat formed in its lower end and supporting a concentric float housing tube in which a captive float is guided for axial movement, a magnetic bar passing through the float transversely, and the flange member being an axially slidable ring magnet having depending magnetic studs projecting along guide slots in the housing so that as the float rises with liquid level, magnetic attraction increases between the bar and the studs to the point the float is lifted and positively closes on and is held against the seat, shutting off flow, until the ring member is slid upward to break the magnetic hold.

3,467,136
REGULATORS OF A GAS REQUIRED FOR BREATHING OF THE PNEUMATIC VALVE TYPE
Yves le Masson, Etampes, France, assignor to Societe Industrielle des Etablissements Piel (S.I.D.E.P.), Etampes, France, a company of France
Filed Feb. 10, 1967, Ser. No. 615,166
Int. Cl. F16k *31/385*
U.S. Cl. 137—489 **13 Claims**



Regulator for controlling the operation of a valve on the path of a respiratory gas between a source of this gas and a breathing zone to which it is to be supplied, of the type wherein said operation depends on the value of a control pressure varying with the position of a diaphragm sensitive to variation in breathing, characterized by the fact that it comprises a piloting chamber provided with at least a gas inlet for continuously supplying the piloting chamber with a gas in order to obtain therein a pressure of gas constituting said control pressure, said piloting chamber being provided with at least a gas outlet for obtaining a leakage jet of gas continuously leaking from the piloting chamber, and said sensitive diaphragm being provided on the outside of said piloting chamber, opposite and at a distance from said outlet on the path of said jet, whereby a displacement of said diaphragm modifies said pressure of gas in the piloting chamber through action on said leakage jet.

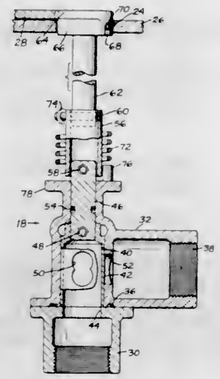
3,467,137
DEMAND VALVE
William H. Brown, Lancaster, N.Y., assignor, by mesne assignments, to "Automatic" Sprinkler Corporation of America, Cleveland, Ohio, a corporation of Ohio
Filed Sept. 2, 1965, Ser. No. 484,632
Int. Cl. F16k *1/18, 15/14;* **A61h** *31/00*
U.S. Cl. 137—494 **12 Claims**



1. A breathing apparatus comprising: a hollow casing having an opening in one wall thereof; a flexible diaphragm positioned in said opening and secured to said casing so that said diaphragm and said casing form a chamber, said casing having a fluid inlet adapted to be connected to a source of breathing fluid under pressure and a fluid outlet in communication with said chamber; means forming an orifice between said fluid inlet and said chamber; valve means operably associated with said orifice for controlling the flow of breathing fluid therethrough, said valve means including a valve body and a valve seat having an orifice defining seating surface, the lengthwise dimension of said surface being relatively greater than the widthwise dimension thereof, said diaphragm being responsive to differential variations in pressure within and without said chamber; means responsive to movement of said diaphragm for tilting said valve body to effect opening of said orifice; and guide means adapted to constrain tilting motion of said valve body to a plane normal to said lengthwise dimension of said valve seat surface.

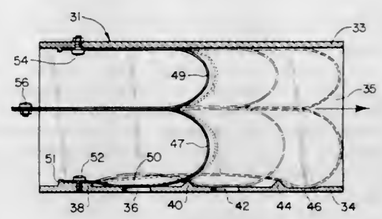
3,467,138
CONTROL VALVE
Robert J. Haddix and Ion V. K. Hott, Dayton, Ohio, assignors to The Joyce-Cridland Company, Dayton, Ohio
Filed Dec. 30, 1966, Ser. No. 606,438
Int. Cl. F16k *5/04, 31/44*
U.S. Cl. 137—625.24 **11 Claims**

An operating mechanism of a valve used for controlling at least one hydraulic ram connected to load support structure to be raised and lowered. A cylindrical valve member has a valve stem connected to one end with pivot means angularly related to each other holding an axially displaceable sleeve interposed in the stem adapted to be offset during valve operation without binding of the same. Complementary abutment and stop means adjacent to the stem limit extreme rotated positions of the valve member biased by a torsion spring toward one of the extreme positions. The cylindrical valve member has an axial passage of a size for wall thinness



to be somewhat flexible to assure sealing against leakage under fluid pressure.

3,467,139
ACTUATOR MECHANISM
George B. Richards, P.O. Box 278, Highland Park, Ill. 60035
Filed Sept. 6, 1967, Ser. No. 665,924
Int. Cl. F16k *31/56;* **G05g** *1/04*
U.S. Cl. 137—625.48 **16 Claims**

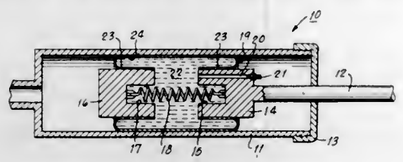


An actuator mechanism includes an elongated resilient reed member flexibly confined to a generally U-shaped contour by a support wall engaging one end portion of the reed and a moveable locating member associated with the remaining reed end portion. A fulcrum section of the support wall is effective to cause the one end portion of the reed to be pivotally deflected thereabout between a pair of spaced control function positions in response to longitudinal movement of the remaining reed end portion between spaced actuating positions. Arrangements are disclosed for effecting a crisp, toggle action in pivotally displacing the one reed end portion and for establishing, for instance, sequential and timed opening and closing of multiple control port apertures in the support wall. Other features are disclosed.

3,467,140
HERMETICAL SEALING MECHANISM
Alfred H. Hanson, Putnam County, N.Y., assignor to Ralph P. Piffath, East Norwich, N.Y.
Filed July 16, 1965, Ser. No. 472,590
Int. Cl. F16l *55/04*
U.S. Cl. 138—31 **6 Claims**

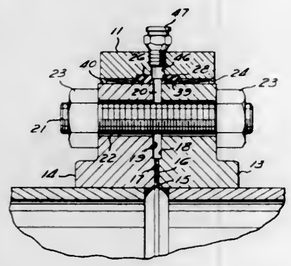
The hermetical seal utilizes a resilient spring to urge a pair of reservoir defining members towards each other so as to create a pressure on the fluid contained in the

reservoir in excess of the working pressure acting exteriorly on the members. The members cooperate with



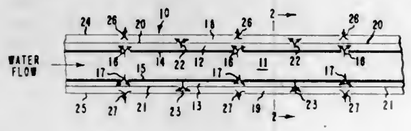
the components of the device in which they are incorporated to define a closed reservoir.

3,467,141
FLANGE COUPLING REPAIR RING
Joseph B. Smith, 5350 W. 130th St., Cleveland, Ohio 44130
Filed Jan. 9, 1967, Ser. No. 608,090
Int. Cl. F16l *55/18, 17/04*
U.S. Cl. 138—97 **6 Claims**



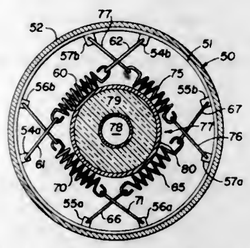
A method and apparatus for the on-site sealing of leaking, flanged pipe joints. Semicylindrical body members are placed around the leaking flanged coupling and are joined at their ends to form a cylindrical coupling member about the joint. Gasket means are provided within the cylindrical coupling member to form a seal between the cylindrical coupling member and the periphery of the pipe joint. A sealant is introduced under pressure into the zone defined by the cylindrical coupling member, the flanged joint and the gasket means.

3,467,142
FLOW DEVICE AND METHOD OF MANUFACTURE THEREOF
Donn George Boyle, Lockport, and Robert Otto Osborn, Snyder, N.Y., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Aug. 8, 1967, Ser. No. 659,136
Int. Cl. F16l *9/18, 9/00*
U.S. Cl. 138—111 **5 Claims**



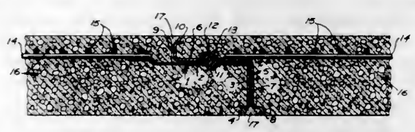
An improved irrigation device for distributing water to agricultural soils constructed by sealing elongated strips of thin plastic films in a selected pattern to provide a relatively large main supply channel and attached lateral distribution channels, the lateral channels having a perimeter and length such that a large pressure drop of distributed water is provided between the main supply channel and the lateral channel exits.

3,467,143
PIPE SUPPORT
John C. Croft, Barberton, Ohio, assignor to New England Realty Co.
Filed Jan. 26, 1967, Ser. No. 611,955
Int. Cl. F16l *9/18, 9/14*
U.S. Cl. 138—113 **5 Claims**



Pipe supports for spacing an inner pipe from an outer casing using one or more coil springs. A coil spring or springs engage the inner pipe or a protective sleeve around the pipe, and may be supported within an outer ring or may directly contact the outer casing. Insulated inner pipes are resiliently maintained spaced from the casing and there is little heat transfer between the pipe and casing through the supports.

3,467,144
SELF-STRESSED CONCRETE PIPE AND METHOD OF MANUFACTURE
Edward K. Rice, Los Angeles, Calif., and William E. Cureton, Waco, Tex., assignors, by mesne assignments, to Stressed Pipe Research Ltd., a limited partnership of Texas
Filed May 6, 1965, Ser. No. 453,705
Int. Cl. F16l *9/08;* **B28b** *21/60*
U.S. Cl. 138—176 **4 Claims**

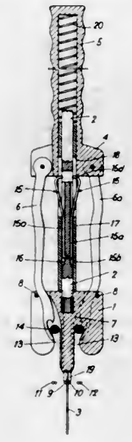


A self-stressed reinforced concrete pipe in which the pipe body is made of expansive concrete which cooperates with reinforcing members to place the body into compression. Axially extending reinforcing in the body is secured to flanged end caps which overlie the ends of the pipe. Circular reinforcing is bonded to the concrete.

3,467,145
APPARATUS FOR THE MANUFACTURE OF LONG-PILE RUGS BY KNOTTING PILE TUFTS IN A FABRIC
Hubert E. Jeandupeux, Les Periades, Villars-sur-Ollon, Vaud, Switzerland
Filed Mar. 27, 1968, Ser. No. 716,488
Claims priority, application Switzerland, Mar. 31, 1967, 4,558/67
Int. Cl. D03d *29/00, 39/00*
U.S. Cl. 139—1 **2 Claims**

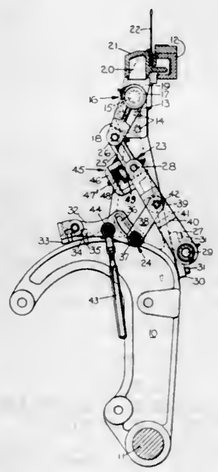
An apparatus for the manufacture of long-pile rugs by knotting pile tufts consisting of strands of an extra yarn in a fabric constituting a ground web of the rug, which makes a Ghiordes or Turkish knot firstly by inserting its pulling buckle into the ground web on one side of a thread portion thereof, secondly by moving its needles relative to the buckle thus pushing both ends of the strand of extra yarn through the ground web while passing them on the other side of said thread portion until they come into the pulling buckle, and thirdly by pulling the apparatus out from the ground web.

Bent wires operating as releasable latching pawls normally prevent the needles from moving forwards relative to the pulling buckle when the latter is urged through the ground web. However, when this buckle reaches its end position, a tongue of a releasing tube engages the



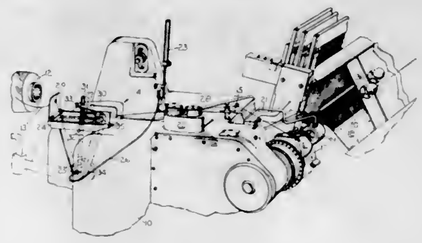
ground web, so that the releasing tube removes the latching pawls from their locking position thus automatically permitting the needles to carry out their stroke relative to the pulling buckle. All the operations of the apparatus can accordingly be controlled by merely moving the handle of the apparatus to and fro.

3,467,146
LOOM REED MOTION
Stanley C. Tiernan, Bellingham, Mass., assignor to North American Rockwell Corporation, Pittsburgh, Pa., a corporation of Delaware
Filed Dec. 7, 1967, Ser. No. 688,730
Int. Cl. D03d *39/22*
U.S. Cl. 139—26 **5 Claims**



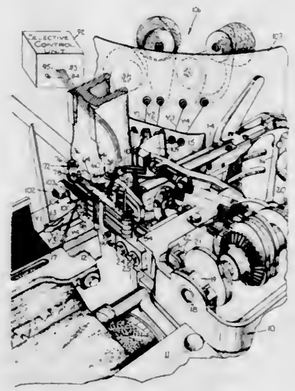
A reed motion for looms operable through cooperating toggle linkages to move and fixedly position the loom reed in both the partial and complete beat-up positions.

3,467,147
FILLING CONTROLLING APPARATUS FOR JET LOOMS
John H. Nydam, Whitinsville, Mass., assignor, by mesne assignments, to John Donald Marshall and Horace L. Bomer as trustees of The Carolina Patent Development Trust
Filed Feb. 5, 1968, Ser. No. 702,880
Int. Cl. D03d *49/00*
U.S. Cl. 139—116 **11 Claims**



A method for inserting filling in a loom whereby a jet of water is released so as to strike and extend a length of prewetted filling through an opened warp shed. The apparatus including a full reservoir in the path of the running filling having an adjustable eyelet to vary the depth to which the filling may travel under water with inlet and outlet ports for providing a constantly clean water supply. A yarn tensioning device adjacent the reservoir further controls the filling and will press out excess water prior to the pick being inserted to the warp shed.

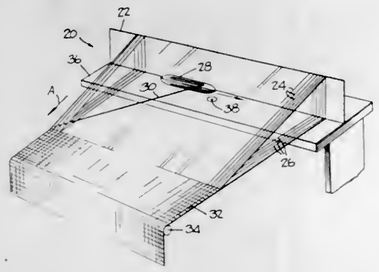
3,467,148
FILLING CONTROL FOR SHUTTLELESS LOOMS AND FABRIC
Ralph H. Brown, Jr., Hopedale, Mass., assignor, by mesne assignments, to John Donald Marshall and Horace L. Bomer as trustees of The Carolina Patent Development Trust
Filed Apr. 24, 1967, Ser. No. 633,183
Int. Cl. D03d *47/00*
U.S. Cl. 139—122 **6 Claims**



A filling control for shuttleless looms of the type adapted to insert filling in the form of pairs of interconnected picks having means for inserting separate picks

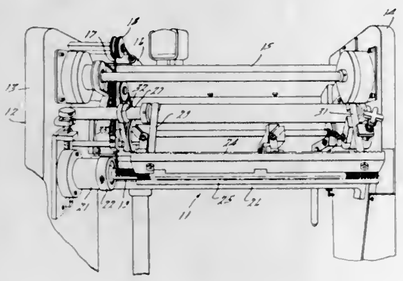
into the warp sheds which are individually guided and drawn from at least two different sources of filling yarn supply and fabric produced thereby.

3,467,149
ELECTRONIC DEVICE FOR SURVEYING THE PRESENCE OF WEFT THREAD IN WEAVING LOOMS
Peter Dosch, Jona, and Emil Benz and Paul Bruhin, Wattwil, Switzerland, assignors to Heberlein & Co. A.G., Wattwil, St. Gall, Switzerland, a corporation of Switzerland
Filed May 26, 1967, Ser. No. 641,559
Int. Cl. D03d *51/34*
U.S. Cl. 139—371 **15 Claims**



Detection device for indicating passage of thread out of a moving shuttle in which the moving thread rubs against a wire-like element causing it to vibrate and shift the electrical parameters of a circuit in the shuttle, in such manner that the circuit interacts variably with a fixed circuit.

3,467,150
SPIRAL BINDER APPLYING MACHINE
Claus Ostermeier, Waterford, Mich., assignor to Hans Sickinger Co., Pontiac, Mich., a corporation of Michigan
Filed June 21, 1968, Ser. No. 739,103
Int. Cl. B21f *21/00*
U.S. Cl. 140—92.94 **4 Claims**

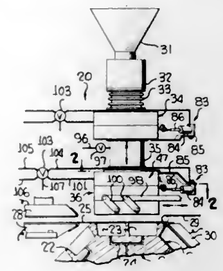


A spiral binder applying machine having a wire coiling tool which feeds spiral wire to a pack of sheets held between a pair of identically formed pack supporting and spiral guiding elements. One of these elements is stationary and the other swingable between retracted and pack gripping positions. Each element has serrations, operable when the element is fixed, and a chamfer, operable when used as the swingable element, to guide the spiral.

ERRATUM

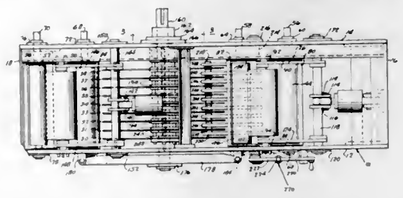
For Class 141—59 see:
Patent No. 3,467,230

3,467,151
PACKAGING APPARATUS AND FLOW CONTROL VALVE THEREFOR
Clarence W. Vogt, Box 232, Westport, Conn. 06880
Filed June 16, 1964, Ser. No. 375,441
Int. Cl. B65h *1/04, 1/30*
U.S. Cl. 141—67 **15 Claims**



2. An apparatus for packaging a flowable material into a plurality of separable containers with the separable containers being arranged in units containing like weights of the material when filled, said apparatus comprising means for isolating a predetermined weight of the material, means for providing a plurality of containers to be filled, valve means for providing a controlled differential pressure gaseous flow of the weighed material from said isolating means to the containers, and means for dividing the flow of material through said valve means as the material passes through said valve means into substantially equal portions for delivery to individual ones of the containers.

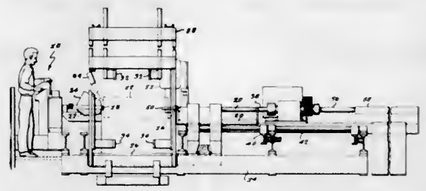
3,467,152
CIRCULAR GANG SAW
William E. Bradford, 1503 National, Helena, Mont. 59601
Filed Oct. 25, 1967, Ser. No. 678,083
Int. Cl. B27b *5/34*
U.S. Cl. 143—37 **10 Claims**



A circular gang saw of the type which has a plurality of circular saw blades mounted and driven for rotation for splitting a log or the like into a plurality of pieces wherein the saws are mounted for rotation and for free reciprocable movement on a shaft and may be driven by a plurality of rods extending through apertures in the saws, said saws being held in predetermined relation by means of guides positioned between the saws and held in place by pivotally mounted arms is disclosed.

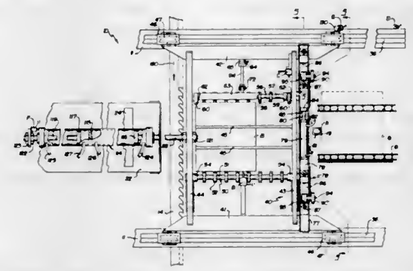
3,467,153
INDEXING METHOD AND MEANS FOR TUBULAR SAWING
Richard Ferguson, Charlotte, N.C., assignor to Terleco, Inc., Charlotte, N.C., a corporation of North Carolina
Filed Aug. 28, 1967, Ser. No. 663,823
Int. Cl. B27b *33/18*
U.S. Cl. 143—85 **5 Claims**

A method and means for selecting the successive positions at which a workpiece should be indexed incident to tubular sawing of cylindrical billets therefrom; the selection being made in relation to a visible indication superimposed at an end face of the workpiece to delineate the true location and width of kerf to be formed during a



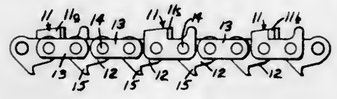
following tubular sawing stroke, so that indexing of the workpiece may be remotely controlled in visual reference to the superimposed indication without parallax difficulty.

3,467,154
SHINGLE CUTTING MACHINE
Ernest J. Girard, West Vancouver, British Columbia, Canada, assignor to North Shore Shingle Co. Ltd., Vancouver, British Columbia, Canada
Filed June 27, 1967, Ser. No. 649,281
Int. Cl. B27b *29/08*
U.S. Cl. 143—115 **15 Claims**



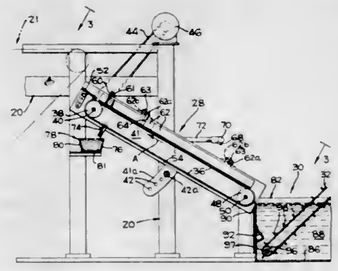
A machine having a block supporting carriage mounted for reciprocation past a saw blade. Setworks on the carriage function automatically to feed the block to the saw. Controls on the machine operate automatically to regulate the cutting stroke of the carriage according to the width of each block.

3,467,155
CHAIN SAW TOOTH
John W. Pfeffer, Spokane, and Dorsey L. McKinney, Everett, Wash., assignors to Washington Chain of Spokane, Inc., Spokane, Wash., a corporation of Washington
Filed Sept. 11, 1967, Ser. No. 666,615
Int. Cl. B27b *33/14*
U.S. Cl. 143—135 **6 Claims**



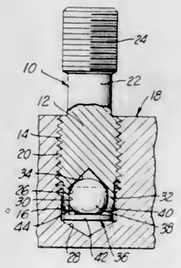
The device illustrated is a modified cutting link for a conventional chain saw assembly. The cutting link, which replaces more conventional links, includes a cutting tooth insert of hard metal alloy secured across the front of the tooth support portion in the cutter link and projecting to one side thereof. Immediately rearward of the cutting tooth insert is a supporting block of impact-resistant metal alloy having abutting surfaces secured to both the cutter link and to the cutting tooth to form a continuation of the tooth for support of the tooth insert portion that projects laterally beyond the cutting link.

3,467,156
FRUIT PEELING METHOD
Katsuji Hirahara, San Jose, Calif., assignor to FMC Corporation, San Jose, Calif., a corporation of Delaware
Original application Apr. 16, 1965, Ser. No. 448,785, now Patent No. 3,352,338, dated Nov. 14, 1967. Divided and this application Nov. 1, 1967, Ser. No. 703,490
The portion of the term of the patent subsequent to Aug. 13, 1985, has been disclaimed
Int. Cl. B02c *17/16, 11/08, 23/06*
U.S. Cl. 146—226 **2 Claims**



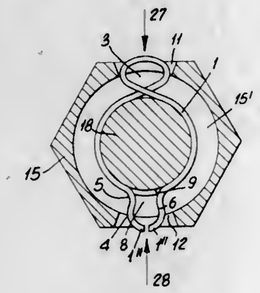
Caustically treated tomatoes are peeled by rolling them down an upwardly moving, endless roughened surface while successively imparting forces having lateral components to the tomatoes.

3,467,157
FASTENER HAVING INTERFERENCE THREAD FORMING MEANS ASSOCIATED THEREWITH
Jack La Torre, Naples, Calif., assignor of thirty-three and one-third percent to Thomas P. Mahoney, Malibu, Calif.
Filed Mar. 23, 1967, Ser. No. 625,532
Int. Cl. F16b *39/30, 39/16, 39/34*
U.S. Cl. 151—14 **4 Claims**



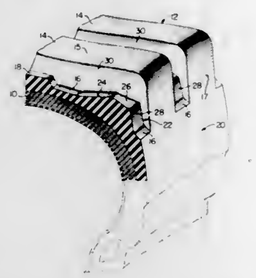
A fastener having a threaded shank engaged in the threaded bore of a member, said fastener shank having a zone of radially expanded threads in interference with and securing the fastener in the member threaded bore. The fastener interference threads are formed by a spherical expander received in an entering end recess of the fastener shank, said expander being automatically operable during threaded engagement between the fastener shank and member, or being operable and removed from the fastener prior to the fastener shank being threadably engaged with the member.

3,467,158
SAFETY DEVICE FOR SCREW BOLT WITH SCREW NUT
Max Herbert Pasbrig, Casa Luce, Via all'Eco 6644, Orselina, Switzerland
Filed Mar. 25, 1966, Ser. No. 537,516
Claims priority, application Switzerland, Mar. 1, 1966, 2,946/66
Int. Cl. F16b *39/00*
U.S. Cl. 151—30 2 Claims



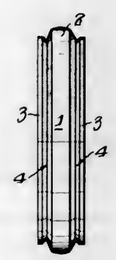
A safety device for preventing a nut from loosening itself on a screw bolt. A spring wire bent around the screw bolt, each one of its two branches engaging elastically the groove of approximately half a thread of the screw bolt. The free ends of the branches forming a radially outwardly extending grommet, and a portion of the wire diametrically opposing the free ends being twisted to form a protruding loop, whereby radial pressure on the grommet and on the loop releases the wire from the thread.

3,467,159
PNEUMATIC TIRE
Emmet V. Semonin, Akron, Ohio, assignor to The Goodyear Tire & Rubber Company, Akron, Ohio, a corporation of Ohio
Continuation-in-part of application Ser. No. 482,339, Aug. 25, 1965. This application Feb. 13, 1967, Ser. No. 625,276
Int. Cl. B60c *11/00*
U.S. Cl. 152—209 13 Claims



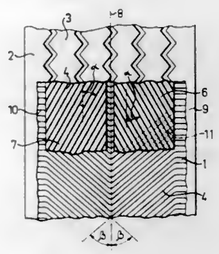
A pneumatic tire particularly for off-the-road vehicles which has a wide and flat or generally cylindrical tread made up of traction ribs and intervening grooves extending from side to side to give improved lateral stability. An undertread between the carcass and the outer tread provides lugs or wedges between each pair of ribs at the center line and at the shoulder region which increase the undertread thickness and form submerged circumferential ribs exposed in the lateral grooves but covered by the laterally extending ribs of the outer tread.

3,467,160
TIRE HAVING SUB-TIRES INTEGRAL WITH ITS SIDEWALLS
Shiro Oguri, 2 Koyama-cho, Shiba Mita, Minato-ku, Tokyo, Japan
Filed July 14, 1966, Ser. No. 565,187
Claims priority, application Japan, May 4, 1966, 41/27,920
Int. Cl. B60c *9/02, 13/00, 11/00*
U.S. Cl. 152—352 1 Claim



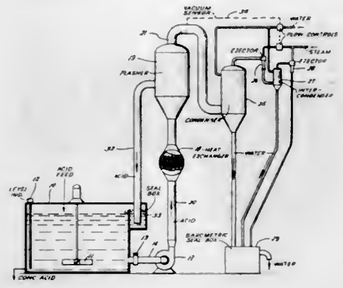
The present tire comprises a pair of sub-tires, each of which is integral with one of the sidewalls and has a continuous periphery the diameter of which is greater than the internal diameter of the tread portion of the tire. The lateral width of each sub-tire is not greater than the thickness of the sidewall, and the tread portion of the tire has a ground-contacting surface that extends across the full width of the tread portion between the sidewalls. The peripheral diameter of each sub-tire is less than that of the ground-contacting surface of the tire tread, but is great enough so that during normal running of the tire at full inflation, deformation of the tire which occurs particularly in stopping, starting and negotiating curves brings the sub-tires into load-bearing contact with the ground.

3,467,161
PNEUMATIC TIRE
Hans Menell, Ahlem uber Hannover, and Gunter Johannes, Hannover-Herrenhausen, Germany, assignors to Continental Gummi-Werke Aktiengesellschaft, Hannover, Germany
Filed Jan. 19, 1967, Ser. No. 610,336
Claims priority, application Germany, Jan. 19, 1966, C 37,948
Int. Cl. B60c *5/08, 9/06, 13/00*
U.S. Cl. 152—354 10 Claims



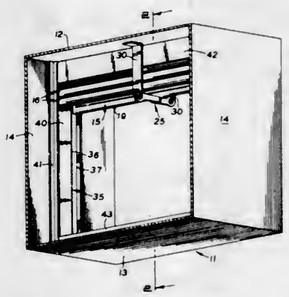
The invention concerns a belted tire in which the belt is formed by superimposed layers of strength carriers, said strength carriers crossing each other while respectively forming different angles with the circumferential direction of the tire. One layer of said layers of strength carriers pertain to the carcass and is anchored at the tire beads.

3,467,162
PROCESS OF MAKING CONCENTRATED PHOSPHORIC ACID OF IMPROVED CLARITY CHARACTERISTICS
Charles W. Putnam, 2405 N. Crystal Lake Drive, Lakeland, Fla. 33801
Filed July 11, 1966, Ser. No. 564,343
Int. Cl. B01d *1/02;* B01j *17/02*
U.S. Cl. 159—47 5 Claims



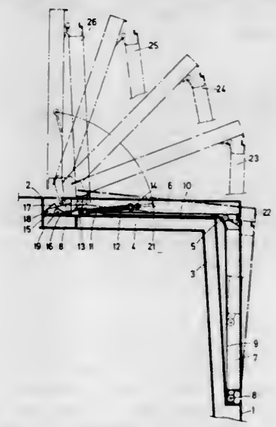
The disclosure is of methods for concentration of wet-process phosphoric acid, especially with regard to clarifying the wet-process phosphoric acid subjected to concentration by evaporation. The clarity of phosphoric acid is adversely affected by salt precipitations on standing and aging, and the disclosure presents methods for eliminating post-precipitation and for avoiding super-saturation of salts by careful attention to the causes thereof.

3,467,163
FIRE DAMPER
Ricardo A. Vassaux, Columbus, Ohio, assignor to United Sheet Metal Co., Inc., Columbus, Ohio, a corporation of Ohio
Filed July 19, 1966, Ser. No. 566,361
Int. Cl. E05f *15/20;* E04f *10/08;* E06b *7/08*
U.S. Cl. 160—1 3 Claims



A folding metal fire wall including a frame with guide tracks in which are mounted a plurality of interhinged metal slats or strips foldable into a compact zig-zag mass adjacent one end of the frame and extendible by unfolding of the hinged slats to fully close the frame opening. The strips are hinged by slidingly interconnecting roll portions along their elongate edges. The cross-section shape of the hinge roll edges of the strips include a major terminating portion constructed on a mathematical spiral joined to the central body of the strips by a portion constructed on a circular basis. A special fusible link retaining assembly holds the folded strips in compact position at one end of the frame until release is dictated by high temperature condition. The cooperating portions of the fusible link assembly provide a secure and operable release arrangement with minimum heat transfer between metal components.

3,467,164
COVER FOR A PART VERTICAL, PART HORIZONTAL OPENING
Johan Bertil Olsson, Goteborg, Sweden, assignor to Associated Cargo Gear AB, Goteborg, Sweden, a corporation of Sweden
Filed May 24, 1968, Ser. No. 731,835
Claims priority, application Sweden, June 26, 1967, 9,077/67
Int. Cl. E05f *1/00;* E06b *3/48*
U.S. Cl. 160—188 2 Claims



A satisfactory weathertight closure for an opening arranged at the joint between a horizontal and a vertical wall surface is difficult to arrange. Elastic packings are utilized between the covers and the walls and these packings will be damaged if the cover slides along the corresponding wall surface during the initial part of the opening movement and the latter part of the closing movement. As the two cover sections will have to move in different directions it is difficult to lift both sections from their respective counterparts simultaneously. According to the present invention each hinge connecting the horizontal cover section to the wall surface contains a link pivotably joined to each of the hinge parts connected to the cover and to the wall, respectively. The covers are operated by at least one pressure fluid ram, which is arranged in such a manner, that the longitudinal axis thereof is essentially horizontal when the cover is in closed position. During the initial opening movement the link in the hinge is swung upwards, thereby raising the horizontal section from its counterpart. Simultaneously the vertical section is pushed outwards from its counterpart. Thereafter the folding together of the sections may take place without the packings being damaged. During the latter part of the closing movement the parts will be displaced in a reversed order.

3,467,165
METHOD OF MAKING FOUNDRY MOLDS
Georgi S. Angeloff, Jordan Kiskinov-Str. 29, Sofia, Bulgaria
No Drawing. Filed Oct. 22, 1965, Ser. No. 502,609
Int. Cl. B22c *1/02, 1/22*
U.S. Cl. 164—6 8 Claims

The method of manufacturing foundry molds or cores wherein a predetermined quantity of sand is mixed with

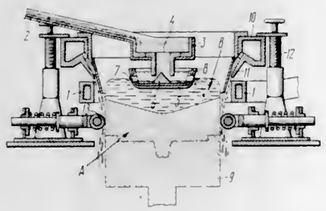
a predetermined quantity of polystyrene foam particles. The latter particles are burned or gasified when molten metal is inserted in the mold thereby producing in said mold a desired degree of permeability.

3,467,166

METHOD OF CONTINUOUS AND SEMICONTINUOUS CASTING OF METALS AND A PLANT FOR SAME

Zinovy Naumovich Getselev, prospekt Metallurgov 92, kv. 11; Gennady Alexeevich Balakhontsev, prospekt Metallurgov 73, kv. 62; Gennady Vasilievich Cherepok, prospekt Metallurgov 73, kv. 16; Vladimir Konstantinovich Zinoviev, Ulitsa Puteiskaya 35, kv. 10; Antonida Alexeevna Ershova, Ulitsa Puteiskaya 28, kv. 69; and Mikhail Moiseevich Nonin, prospekt Metallurgov 82, kv. 18, all of Kuibyshev, U.S.S.R.

Filed Mar. 1, 1967, Ser. No. 619,723
Int. Cl. B22d *11/10, 27/02*
U.S. Cl. 164—49 **3 Claims**



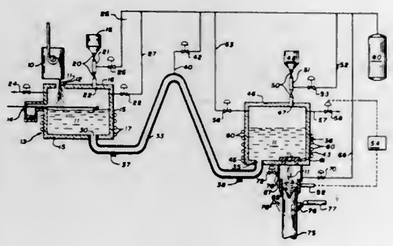
A method of, and an apparatus for, continuous or semi-continuous casting of molten metal into ingots by inducing an alternating electromagnetic field about the metal being cast so that the electromagnetic forces hold the molten metal in place as a cooling medium progressively cools the metal so its solidifies to form a skin for the ingot being cast.

3,467,167

PROCESS FOR CONTINUOUSLY CASTING OXIDIZABLE METALS

William E. Mahin, Oakland, Calif., assignor to Kaiser Industries Corporation, Oakland, Calif., a corporation of Nevada

Continuation-in-part of application Ser. No. 368,822, May 20, 1964. This application Sept. 19, 1966, Ser. No. 580,248
Int. Cl. B22d *27/18, 21/02, 11/10*
U.S. Cl. 164—56 **19 Claims**



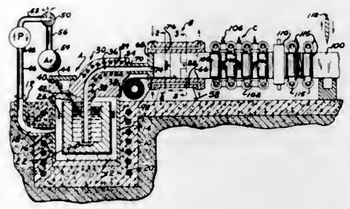
This disclosure relates to a continuous process for producing improved bodies of cast oxidizable metal substantially free of oxide inclusions. This is accomplished by producing molten metal with a low contamination level and thereafter continuously controlling the environment of that metal until it emerges as a solid cast body which is no longer influenced by exposure to gaseous contaminants.

3,467,168

CONTINUOUS CASTING APPARATUS AND METHOD INCLUDING MOLD LUBRICATION, HEAT TRANSFER, AND VIBRATION

Walter M. Charman, Jr., Shaker Heights, Ohio, assignor to Oglebay Norton Company, Cleveland, Ohio, a corporation of Delaware

Filed Apr. 25, 1966, Ser. No. 545,048
Int. Cl. B22d *11/10, 11/06, 11/12*
U.S. Cl. 164—64 **34 Claims**



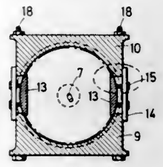
An improved casting apparatus includes a container from which molten metal is conducted upwardly to a horizontally extending mold. In one embodiment, the mold has a plurality of relatively movable metallic wall sections having graphite inserts for engaging the molten metal to retard adherence of the molten metal to the wall sections. The wall sections are urged inwardly into engagement with the sides of the casting as it cools and shrinks to thereby promote a transfer of heat between the casting and the wall sections. A lubricating tape is moved through the mold between the bottom wall of the mold and the molten metal to retard sticking of the molten metal to the bottom wall. In another embodiment, a vibrating means is provided for vibrating the bottom wall to retard sticking of the molten metal to the bottom wall.

3,467,169

METHOD AND MEANS FOR CASTING OF BEARING METAL TO BEARINGS

Nils Gustav Johnsson, Kullavik, Sweden, assignor to Aktiebolaget Gotaverken, Goteborg, Sweden, a corporation of Sweden

Filed Aug. 21, 1967, Ser. No. 662,079
Claims priority, application Sweden, Oct. 17, 1966, 14,040/66
Int. Cl. B22d *19/08, 13/04, 13/10*
U.S. Cl. 164—98 **4 Claims**



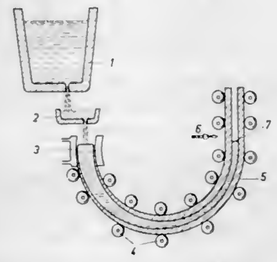
The application by means of centrifugal casting of bearing metal to bearing bodies, the shape of which deviates from that of a simple half-cylinder ring by having certain portions of its axial edges recessed below a plane through the centrum axis of the cylinder ring, is facilitated by the use of a sealing block, the size of which is bigger than the opening composed of two juxtaposed recesses, which is formed when two similar bearing bodies are placed in mirror image position and secured together. The block is fitted from inside the unit and is retained in the opening by suitable means.

3,467,170

APPARATUS FOR THE CONTINUOUS CASTING OF TUBULAR PRODUCTS

Bruno Tarmann, Kapfenberg, Austria, assignor to Gebr. Bohler & Co. Aktiengesellschaft, Vienna, Austria

Original application Jan. 8, 1965, Ser. No. 424,297, now Patent No. 3,346,036, dated Oct. 10, 1967. Divided and this application Oct. 9, 1967, Ser. No. 683,055
Claims priority, application Austria, Jan. 16, 1964, A 282/64
Int. Cl. B22d *11/02, 11/12*
U.S. Cl. 164—282 **3 Claims**



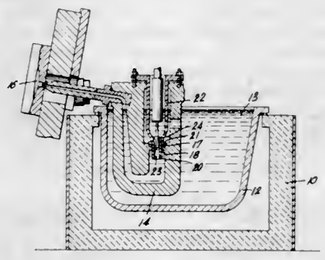
Apparatus for continuously casting hollow high melting point metal tubes comprising a generally vertical mold having an open top and bottom. Means for feeding the molten metal into the top of the mold are provided above the mold, and driven as well as non-driven rollers are positioned below the mold to receive and guide the casting. As the casting emerges from the mold it has a solidified skin and a liquid core. The rollers guide the casting along a curved path having a descending initial portion and an ascending succeeding portion. Means (cutting means or plugging means) are provided along the ascending portion of the path to insure a barometric equilibrium between the pressure on the molten metal in the mold and the liquid core in the casting so as to maintain the height of the liquid-gas interface at the top of the liquid core.

3,467,171

DIE CASTING APPARATUS

Crescenzo F. Fulgenzi, Parma, Ohio, James B. Law, New Canaan, Conn., and Peter A. Lerch, Parma, Ohio, assignors to Union Carbide Corporation, a corporation of New York

Filed Oct. 3, 1966, Ser. No. 583,781
Int. Cl. B22d *17/04;* **F16k** *15/18*
U.S. Cl. 164—316 **4 Claims**



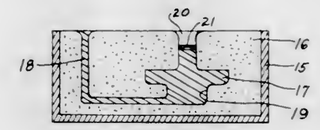
A hot chamber die casting piston type injection device having a resilient, refractory sealing member positioned between the shot cylinder and gooseneck.

3,467,172

EXOTHERMIC METALLURGICAL CHARGES

Arthur G. Clem, Des Plaines, Ill., assignor to American Colloid Company, Skokie, Ill., a corporation of Delaware

Continuation-in-part of application Ser. No. 337,628, Jan. 14, 1964. This application Aug. 1, 1966, Ser. No. 569,477
Int. Cl. B22d *27/04, 7/06*
U.S. Cl. 164—338 **1 Claim**



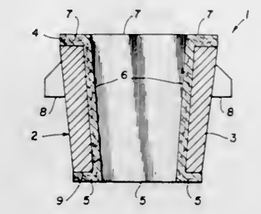
This disclosure relates to shaped exothermic charges for insertion in a metal casting mold for retarding the solidification of cast metal.

3,467,173

HOT TOP LINER

Norman F. Tisdale, Jr., Valencia, Pa., assignor to Susquehanna Corporation, Chicago, Ill.

Filed Dec. 14, 1966, Ser. No. 607,350
Int. Cl. B22d *7/10, 23/02*
U.S. Cl. 164—339 **4 Claims**



A hot top for ingot molds. The hot top is provided with a liner comprising mitered slabs of exothermic material having top and bottom flanges extending outwardly less than 90° so as to form a snap fit with the interior top and bottom edges of the hot top.

3,467,174

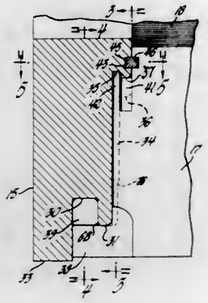
MATRIX SEAL RETAINER

Wallace A. Christianson, Naperville, and Jack P. Hart, Hinsdale, Ill., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Oct. 9, 1967, Ser. No. 673,865
Int. Cl. F28d *19/04, 17/04;* **F23l** *5/02*
U.S. Cl. 165—9 **7 Claims**

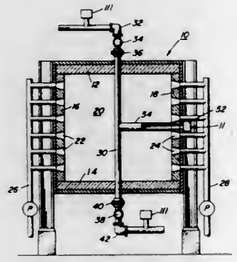
A radial-flow rotary regenerator matrix includes two coaxial steel rims. Twenty-five rigid steel stiffeners are joined rigidly to the rim by tongue-and-groove type connections and keyed against disconnection. Labyrinth seal elements mounted in spacer plates are alternated with sheet metal shim pack heat transfer material in segments between the stiffeners, received in grooves in the inner face of the rims. Circumferential keepers fitted in slots in the shim pack and spacers hold these parts aligned. The seal elements are held in tension by support bars which fit over shoulders on the outside of the rims, the bars being re-

tained by latches. The spacers next to the stiffeners are keyed to the stiffeners to prevent relative radial shifting



of the spacers. The keys are held operative by a deformable wire lock.

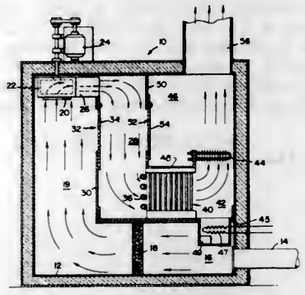
3,467,175
INFRARED DETECTING DEVICE
Ward F. O'Connor, Denville, N.J., assignor to The Lummus Company, New York, N.Y., a corporation of Delaware
Filed Mar. 24, 1967, Ser. No. 625,739
Int. Cl. F28f *27/00;* **G05d** *23/00;* **F23n** *1/00*
U.S. Cl. 165—11 **7 Claims**



This disclosure concerns an apparatus for measuring the temperature of an object, fluid or a fluid within a container, by measuring the radiation emission from the object, fluid, or fluid holding container. A high degree of accuracy is achieved and the problems ordinarily found because of high temperature and/or physically hostile environments are avoided by encasing the line of sight of the pyrometer in a suitable tube. The apparatus is suitable for use in heat exchange devices as well as in ordinary piping systems. Further, the output of the apparatus is suitable as an input for an automatic control system or the like.

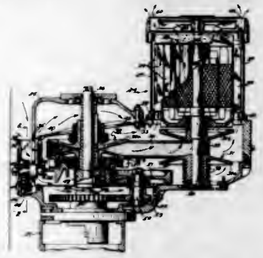
3,467,176
GAS CONDITIONING APPARATUS FOR CONTROLLED ENVIRONMENT
Andrew Truhan, R.D. 3, Box 392T, Somerset, N.J. 08873
Filed Jan. 24, 1968, Ser. No. 700,289
Int. Cl. F25b *29/00;* **F28f** *27/02*
U.S. Cl. 165—17 **5 Claims**

A gas conditioning apparatus for a controlled (isolated) environment. The apparatus includes—(a) cooling, (b) heating—means in the flow path from ambient air to the isolated environment. A pair of flapper vanes is displace-



able to effect defrosting of the cooling coils, by reversing the gas flow direction over a portion of the flow path.

3,467,177
AIR COOLING SYSTEM FOR HEAT GENERATING POWER TRANSMISSION AND MOTOR UNIT
William M. Hoddinott, Milford, Conn., assignor to Textron Inc., Providence, R.I., a corporation of Delaware
Filed Oct. 5, 1967, Ser. No. 673,182
Int. Cl. F24h *3/00;* **F28f** *13/12, 7/00*
U.S. Cl. 165—47 **9 Claims**

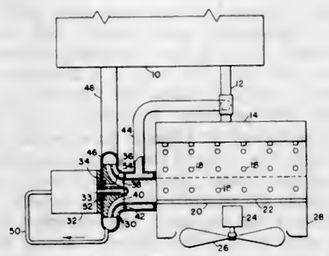


A portable self-powered, self-cooled, tool driving appliance detachably and adjustably mounted on a milling machine standard to function as a machine tool, and comprising the unitary combination of a shell encompassed, heat generating electric power motor and a housing enclosed, heat generating, set of pulleys, gears, or the like, that transmit power from said motor to said tool at steplessly variable speeds. The interiors of said housing and shell communicate in a way to form a continuous channel for the flow of cooling air serially through said housing and then the shell from an air inlet port, located at a point in said housing remote from the motor, to a discharge vent in said shell located at a point remote from said housing, there being in one or both said housing and shell air impelling means operative to force and maintain said flow of air, whereby relatively cool ambient air is first drawn into said housing, picks up relatively low heat generated by the transmission mechanism, carries the low heat onward into and through the more intensely heated interior of said shell and lastly discharges the doubly heated air flow through said vent.

3,467,178
TRANSFORMER COOLING APPARATUS
Chester D. Ware, La Crosse, Wis., assignor to The Trane Company, La Crosse, Wis., a corporation of Wisconsin
Filed Dec. 27, 1966, Ser. No. 604,989
Int. Cl. H01f *27/10;* **F28d** *15/00*
U.S. Cl. 165—107 **4 Claims**

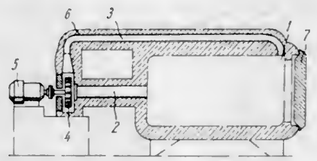
Transformer cooling apparatus including means for pumping transformer fluid from the transformer and

back to the transformer through a circuit containing parallel paths one of which contains a heat exchanger



in which heat is transferred to a heat sink such as air by forced convection of air through the heat exchanger.

3,467,179
RECIRCULATING HEATING DEVICE
Petr Isaakovich Tevis, 1 Krasnoarmeisky pereulok 12, kv. 44; Vladimir Nikolaevich Kostochkin, Kurbatovsky pereulok 7, kv. 11; Vladimir Alexandrovich Ananev, Novo-Khoroshovskoe chaussee, kvartal 82, korpus 45–b, kv. 78; Viktor Mikhailovich Krjukov, 1 Krasnoarmeisky pereulok 12, kv. 97; and Dmitry Mikhailovich Mitin, Koptevskaya ulitsa 30, kv. 19, all of Moscow, U.S.S.R.
Filed Nov. 26, 1965, Ser. No. 509,894
Int. Cl. F24h *3/06;* **F04d** *29/26*
U.S. Cl. 165—122 **4 Claims**



A recirculating heating device, in which a gaseous medium undergoes circulation within a closed system communicating with a working chamber, but with no communication with the ambient atmosphere.

The rotor of a centrifugal fan serves as the heating means and the means for circulating the medium, the fan being provided with blades having an inlet angle of 145–155° and an outlet angle of 20–25°. The working chamber is capable of serving as an oven, a heating element, or the like.

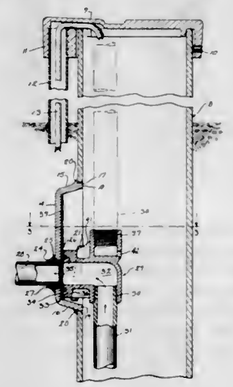
3,467,180
METHOD OF MAKING A COMPOSITE HEAT-EXCHANGER TUBE
Franco Pensotti, Legnano, Milano, Italy
Filed Mar. 30, 1966, Ser. No. 538,837
Claims priority, application, Italy, Apr. 14, 1965, 8,256/65
Int. Cl. F28f *21/00;* **B21d** *39/00;* **B23p** *15/26*
U.S. Cl. 165—180 **6 Claims**

A method of making a composite heat-exchanger tube wherein an exteriorly finned outer tube, forming by extrusion or casting unitarily with its fins, is provided with an inner corrugated surface whose projections and recesses are formed during the extrusion or casting step. An inner tube is pressed outwardly until the material of its outer surface fills the recesses between the projections of the outer tube to lock the tubes together. A pair of outer members are provided in axial contiguity, while a



packing ring is disposed in an annular chamber defined between the abutting ends of the outer members.

3,467,181
PITLESS WELL ADAPTERS
Herbert W. Maass, 10940 W. Congress St., Milwaukee, Wis. 53225
Filed Nov. 15, 1967, Ser. No. 683,338
Int. Cl. E21b *33/03*
U.S. Cl. 166—85 **3 Claims**

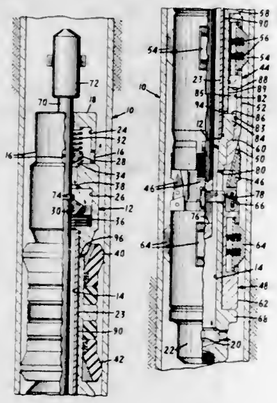


In the present pitless well adapter a unitary combination T-coupling and slip joint wedge block, from which a flow pipe depends into the lower portion of the well casing, is normally vertically, slidably removably held by wedges within an offset housing, with the complementary slip joint face being in tight engagement with the slip joint face of the pipe connector. By pulling upwardly on the combination T-coupling and slip joint wedge casting, through a temporary drop pipe applied to said casting, the latter may be shifted upwardly and then inwardly to separate the slip joint components so that the casting with the depended flow pipe and pump appurtenances may be lifted out of the open upper end of the well casing for inspection and repairs.

3,467,182
RETRIEVABLE WELL PACKER
James W. Kisling III, Houston, Tex., assignor to Schlumberger Technology Corporation, Houston, Tex., a corporation of Texas
Filed Feb. 8, 1968, Ser. No. 703,947
Int. Cl. E21b *33/129, 23/06*
U.S. Cl. 166—121 **24 Claims**

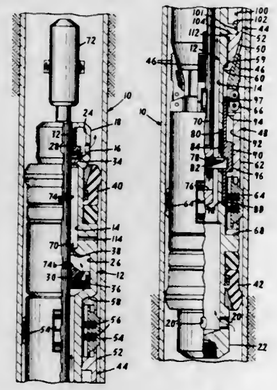
A well tool, according to the exemplary embodiments, is of a type adapted to be anchored in a well conduit against both upward and downward movement and comprises a body, packing elements for packing off the annulus and an anchoring structure in the form of a single expander and a set of coacting slips mounted for movement toward and away from each other and longitudinally of the body between limit positions. The expander and slips are both equipped with friction drag blocks which engage the conduit wall and impede their movement through the well. Upon a fluid pressure condition which

tends to move the well tool body in a direction to move the expander relative to the slips and expand the slips, the friction drag associated with the slips precludes movement of the slips and affords relative movement between the expander and slips to engage the slips in anchoring engagement with the well bore wall. Under pressure conditions tending to move the tool in the opposite direction, namely, to move the slips, the expander is forced toward the slips by differential pressure acting on a fluid chamber of variable volume, one wall formation of which is an



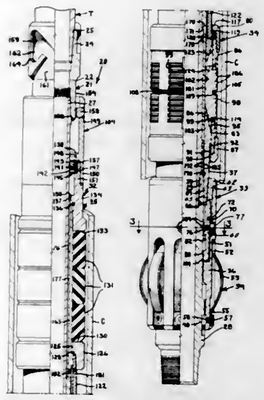
element on the expander and constitutes a moving wall of the chamber. Accordingly, differential pressure between the inside and outside of the chamber causes the expander to be moved toward and under the slips to wedge the slips into gripping engagement with the well bore wall. The tool further includes a control mechanism for maintaing the slips and expander in inactivated condition when the tool is run into or retrieved from the well and for releasing the expander from engagement with the slips to release the tool for movement in the well.

3,467,183
RETRIEVABLE WELL PACKER
David E. Young, Bellaire, Tex., assignor to Schlumberger Technology Corporation, Houston, Tex., a corporation of Texas
Filed Feb. 8, 1968, Ser. No. 703,946
Int. Cl. E21b *33/126, 33/129*
U.S. Cl. 166—121 **17 Claims**



A well tool, according to the exemplary embodiments, is of a type adapted to be anchored in a well conduit against both upward and downward movement and comprises a body, packing elements for packing off the annulus and an anchoring structure in the form of a single expander and a set of coacting slips mounted for movement longitudinally of the body toward and away from each other between limit positions. The expander and slips are both equipped with friction drag blocks which engage the conduit wall and impede their movement through the well. Upon a fluid pressure condition which tends to move the well tool body in a direction to move the expander towards the slips, the friction drag associated with the slips precludes movement of the slips and affords relative movement between the expander and slips so as to engage the slips in anchoring engagement with the well conduit. Under pressure conditions tending to move the tool in the opposite direction, namely, to move the slips toward the expander, the expander is forced toward the slips by a higher pressure acting in a fluid chamber of variable volume, one wall formation of which is an element on the expander and constitutes a moving wall of the chamber. Accordingly, the higher pressure within the chamber than the pressure outside causes the expander to be moved toward and under the slips to wedge the slips into anchoring engagement with the well bore wall. The tool further includes a control mechanism for maintaining the slips and expander in inactivated condition when the tool is run into or retrieved from the well and for releasing the expander from engagement with the slips to release the tool for movement in the well, a fluid passage for bypassing fluids through the tool when it is moved in the well, and valving in the passage for bridging the conduit.

3,467,184
WELL PACKER WITH RESETTABLE ANCHOR AND PACKER MEANS
Carter R. Young, Dallas, Tex., assignor to Otis Engineering Corporation, Dallas, Tex., a corporation of Delaware
Filed May 22, 1967, Ser. No. 640,117
Int. Cl. E21b *23/06, 33/12*
U.S. Cl. 166—129 **14 Claims**



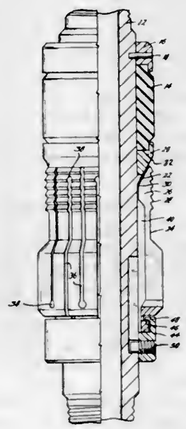
A packer connectable in a well flow tubing string and operable by manipulation of said flow string for closing the annulus between the flow string and the wall of the casing in the well in which the string of tubing is positioned, said packer having resettable anchor and packing means provided thereon, and latch means for expanding and releasably holding the packing means in expanded packing position against movement to non-sealing position by pressure in either direction, said packer having means for releasing said latch means to permit said packing to move to non-sealing position and said anchor means to released position, and the packer to be reset at a different location, if desired.

3,467,185
PRESSURE AND MECHANICALLY OPERATED VALVE
Sanford R. Dowden, Morgan City, La., assignor to Otis Engineering Corporation, Dallas, Tex., a corporation of Delaware
Filed May 22, 1967, Ser. No. 640,249
Int. Cl. E21b *33/12;* **F16k** *31/12*
U.S. Cl. 166—147 **23 Claims**



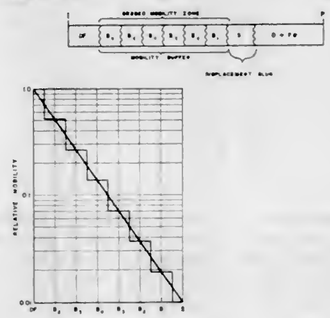
An apparatus for circulating fluid through a well bore preparatory to the setting of a well packer within the well bore including a sliding sleeve valve for controlling flow through a lateral port in a flow conductor between a pair of packers. The sleeve valve is opened by fluid pressure within the flow conductor after plugging the conductor below the valve and is closed by mechanical force applied by a second flow conductor adapted to move relative to the first conductor.

3,467,186
WELL TOOL WITH EXPANSIBLE ANCHOR AND FRICTION DRAG
James H. Current, Houston, Tex., assignor, by mesne assignments, to Schlumberger Technology Corporation, Houston, Tex., a corporation of Texas
Original application Oct. 22, 1965, Ser. No. 500,946. Divided and this application Aug. 15, 1967, Ser. No. 671,519
Int. Cl. E21b *33/129, 23/06*
U.S. Cl. 166—216 **4 Claims**



A unitary slip and drag block structure including a tubular member having longitudinally spaced slip and drag portions, said member having slots extending longitudinally for less than the full length of said member to divide said slip and drag portions into a plurality of interconnected segments which are expansible and contractible jointly as well as independently on each other.

3,467,187
STABILITY OF A SECONDARY-TYPE CRUDE PETROLEUM RECOVERY SYSTEM
William B. Gogarty, Littleton, Colo., and Robert G. Jones, Findlay, Ohio, assignors to Marathon Oil Company, Findlay, Ohio, a corporation of Ohio
Filed Sept. 13, 1967, Ser. No. 667,528
Int. Cl. E21b *43/22*
U.S. Cl. 166—273 **21 Claims**



A process for improving the stability of a crude petroleum recovery process wherein crude petroleum is displaced from a subterranean formation by a displacement slug, a mobility buffer, and finally a drive fluid, the improvement being that the mobilities within at least a portion of the mobility buffer and optionally a portion of the displacement slug from the crude petroleum to the drive fluid are defined with distance by a semi-logarithmic straight-line function.

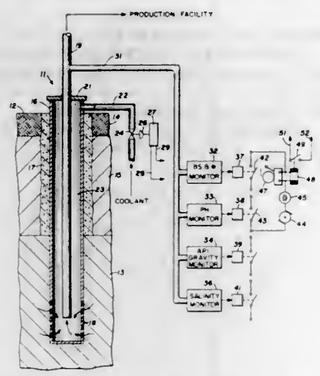
3,467,188
OIL RECOVERY PROCESS UTILIZING MINIATURE SLUG OF OIL-EXTERNAL MICELLAR DISPERSION
William B. Gogarty, Littleton, Colo., assignor to Marathon Oil Company, Findlay, Ohio, a corporation of Ohio
No Drawing. Filed Mar. 12, 1968, Ser. No. 712,345
Int. Cl. E21b *43/22*
U.S. Cl. 166—274 **10 Claims**

Minislugs of oil-external micellar dispersions are injected into injection wells to increase the injectivity index of the well. It is postulated, inter alia, that the dispersion removes hydrocarbon from the sand pores immediately adjacent the well bore and also overcomes the adversities of "skin damage."

3,467,189
METHOD FOR DETERMINING THE APPROACH OF A COMBUSTION FRONT ADJACENT A PRODUCTION WELL
Alan J. Dingley, Calgary, Alberta, Canada, assignor to Mobil Oil Corporation, a corporation of New York
Filed Mar. 4, 1968, Ser. No. 710,080
Int. Cl. E21b *47/00, 43/24*
U.S. Cl. 166—251 **7 Claims**

A method to determine the approach of a combustion front through a formation to a point adjacent a production well. The combustion front is advanced by passing an oxygen-containing gas into the formation from an injection well. Water and oil containing formation fluids enter the production well from the formation. At least two physical properties of the fluids which enter the production well are monitored. These properties relate to

the water-to-oil ratio, the hydrogen ion concentration and the salinity of the water, and the specific gravity of oil, in the formation fluids. A signal indicating the close proximity of the combustion front to the production well is provided when static or limiting values are reached at



the same time in any two of the named physical properties of the formation fluids. If desired, upon occurrence of the signal, coolant may be introduced into the production well to prevent its thermal destruction by elevated temperatures from the combustion front.

3,467,190

ADJUSTING SALINITY TO ACHIEVE LOW INTERFACIAL TENSION BETWEEN AQUEOUS AND HYDROCARBON PHASES

Peggy M. Dunlap and Carl F. Brandner, Dallas, Tex., and Harold L. Townsend, Webster Groves, Mo., assignors to Mobil Oil Corporation, a corporation of New York

No Drawing. Filed Oct. 9, 1967, Ser. No. 673,954
Int. Cl. E21b *47/00, 43/20*
U.S. Cl. 166—252 **5 Claims**

This specification discloses a method of empirically determining the concentration of salt in an aqueous surfactant solution which effects the lowest interfacial tension between the surfactant solution and a hydrocarbon phase, then employing the optimum concentration of salt when the surfactant solution is employed adjacent the hydrocarbon phase. Of primary interest is the use of a surfactant solution in waterflooding to recover oil from a subterranean formation. The optimum concentration of salt, sodium chloride for all practical purposes, is determined to effect the lowest interfacial tension between the surfactant solution and the oil. The optimum concentration of sodium chloride is employed in an aqueous surfactant solution used to displace oil within the subterranean formation. The optimum concentration of sodium chloride may also be employed in washing oil films from solid surfaces such as washing crude oil from bulkheads pipelines, or storage vessels.

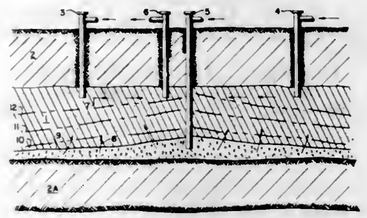
3,467,191

OIL PRODUCTION BY DUAL FLUID INJECTION

Francois Van Daalen, Hans R. Van Domselaar, and Henricus Hooykaas, Rijswijk, Netherlands, assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware

Filed Nov. 17, 1966, Ser. No. 595,143
Claims priority, application Great Britain, Apr. 7, 1966, 15,597/66
Int. Cl. E21b *43/16, 43/22*
U.S. Cl. 166—269 **5 Claims**

A process for recovering oil from an underground formation comprising injecting into the formation a viscosity reducing agent lighter than oil (e.g., solvent, steam, combustion air) into the upper part of a formation so as to drive the oil to a production well which communicates with the upper formation part only. Water is



supplied to the lower formation part for lifting the oil into the upper formation part.

3,467,192

INHIBITION OF ADHERENT SCALE ACCUMULATIONS

Thomas J. Nolan III, and Charles F. Smith, Tulsa, Okla., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Jan. 26, 1968, Ser. No. 700,699
Int. Cl. E21b *43/00;* **C09k** *3/00;* **C02b** *5/00*
U.S. Cl. 166—279 **7 Claims**

A method of inhibiting the deposition of scale in or on equipment used in the production of fluids from geologic formations via a wellbore and also in the pores and passageways of the formation in the immediate vicinity of the wellbore, said method comprising emplacing a composition comprising an organophosphorus compound, for sequestering ions which impart hardeners to water, and an adsorption agent, for better adherence of the organophosphorus compound to the formation, into the peripheral regions of the fluid-producing zone of the formation where they will be contacted by formation waters containing scale-forming ions as they move toward the wellbore.

3,467,193

METHOD FOR ACHIEVING TURBULENCE IN CEMENTING WELLS

Joseph U. Messenger, Dallas, Tex., assignor to Mobil Oil Corporation, a corporation of New York

No Drawing. Filed Apr. 4, 1966, Ser. No. 539,752
Int. Cl. E21b *33/138*
U.S. Cl. 166—292 **9 Claims**

This disclosure relates to cement compositions and cementing operations carried out in wells penetrating subterranean formations. More particularly, it relates to cement slurries and methods for cementing casing in a well penetrating substerranean formations. The cement compositions used herein include minor amounts, respectively, of a turbulence inducer and silica or diatomaceous earth particles having a size range between about 0.1 and 44 microns in effective diameter. The properties of the disclosed composition allow the cement slurry to be flowed in turbulence at relatively low flow rates during emplacement thereof.

3,467,194

STIMULATION OF PRODUCING WELLS WITH WATER-EXTERNAL MICELLAR DISPERSIONS

Wilson L. Kinney, Robinson, Ill., and Stanley C. Jones, Littleton, Colo., assignors to Marathon Oil Company, Findlay, Ohio, a corporation of Ohio

No Drawing. Filed Mar. 12, 1968, Ser. No. 712,343
Int. Cl. E21b *43/16*
U.S. Cl. 166—305 **16 Claims**

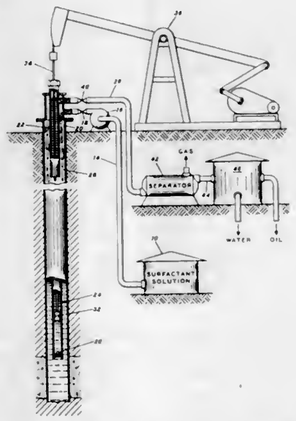
Crude oil production from a producing means in fluid communication with an oil-bearing subterranean formation is improved by injecting into the producing means from about 0.5 to about 10 barrels of a water-external micellar dispersion per vertical foot of oil-bearing sand and then injecting sufficient crude oil into the sand to displace the micellar dispersion out into the reservoir, and thereafter returning the producing means to production. Such a process, inter alia, improves the relative permeability to crude oil in the area immediately adjacent to the well bore.

3,467,195

PUMPING VISCOUS CRUDE

Clayton D. McAuliffe, Fullerton, Ralph Simon, Whittier, and Carl E. Johnson, Jr., Laguna Beach, Calif., assignors to Chevron Research Company, San Francisco, Calif., a corporation of Delaware

Continuation-in-part of application Ser. No. 642,284, May 18, 1967. This application Apr. 25, 1968, Ser. No. 724,194
Int. Cl. E21b *43/00;* **C09k** *3/00*
U.S. Cl. 166—314 **6 Claims**



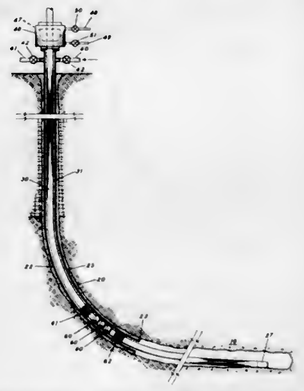
The invention is directed to improving the pumpability of crude oil from a well by injecting predeterminable amounts of nonionic surfactant into the well to contact oil and water to form a low viscosity oil-in-water emulsion near the pump in the well.

3,467,196

METHOD FOR RUNNING TUBING USING FLUID PRESSURE

Lester V. Kinsman, Fullerton, Calif., assignor to Chevron Research Company, a corporation of Delaware

Filed July 18, 1966, Ser. No. 566,040
Int. Cl. E21b *43/00, 41/00*
U.S. Cl. 166—315 **4 Claims**



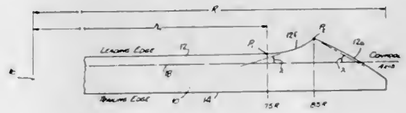
The invention provides for running a second tubing string in concentric relationship with a first tubing string by sealing off the annulus between the tubing strings and injecting fluid into the annulus to assist in moving the second tubing string along the first tubing string.

3,467,197

ROTOR BLADE

Richard F. Spivey, Fort Worth, Tex., and Jan M. Drees, Dallas, Tex., assignors to Bell Aerospace Corporation, Wheatfield, N.Y., a corporation of Delaware

Filed May 7, 1968, Ser. No. 727,278
Int. Cl. B64c *27/46*
U.S. Cl. 170—159 **14 Claims**



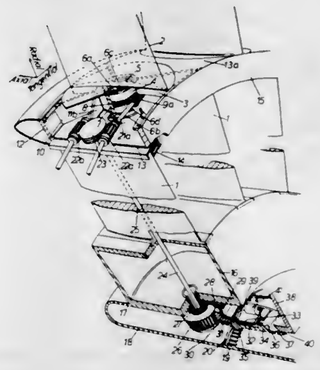
There is disclosed a rotor blade outboard portion whose leading edge has a first section with a forward sweep and a second section with a rearward sweep, the rearward sweep being outboard of the forward sweep. The relationship between the various blade design parameters to provide optimum blade leading edge sweep angles is set forth. A further tip sweep optimization provides decreased tip vortex effect.

3,467,198

GEAR TRANSMISSION

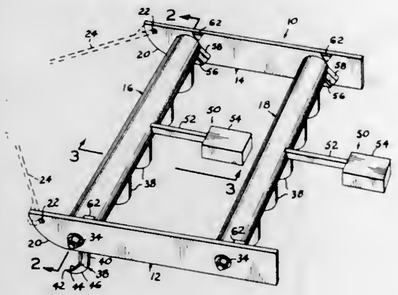
John Henry Ellinger, Mickleover, Derby, England, assignor to Rolls-Royce Limited, Derby, England, a British company

Filed Nov. 29, 1967, Ser. No. 686,433
Claims priority, application Great Britain, Dec. 5, 1966, 54,417/66; Oct. 27, 1967, 48,909/67
Int. Cl. B63h *3/00, 7/00*
U.S. Cl. 170—160.48 **25 Claims**



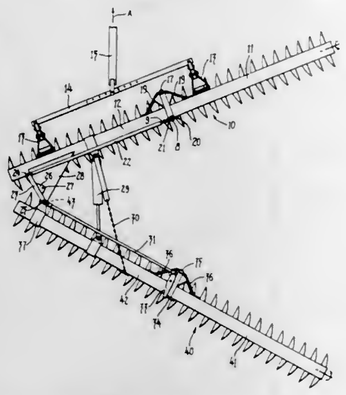
A gear transmission for driving variable pitch aerofoil blades to vary their pitch comprises an inner set of blades through which extend radial shafts, the radial shafts being drivingly engaged with peripheral shafts which drive the variable pitch blades through a worm and wheel mechanism whereby the unloaded transmission is freed from torsional blade oscillations transmitted from the blade roots.

3,467,199
COMBINATION LEVELER, ROOT CUTTER AND HARROW
Charley Lowery, Box 13, Briartown, Okla. 74424
Filed July 14, 1966, Ser. No. 565,231
Int. Cl. A01b *61/00, 23/00, 35/20*
U.S. Cl. 172—261 **4 Claims**



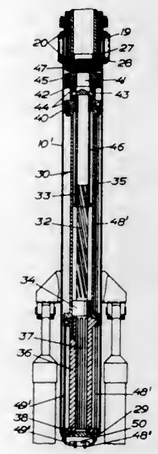
A pair of plate-like sled runner-like supports are interconnected in parallel spaced relation by parallel arbors, each having a surrounding sleeve rotatable around the arbor between stops. Root cutting blades depend from the sleeves in parallel relation. A counterweight, attached to each sleeve, maintains the blades vertical.

3,467,200
LEVELING LINKAGE FOR HARROWS
Richard W. Kramer, Fowler, Calif., assignor to Massey-Ferguson Inc., Detroit, Mich.
Filed Jan. 11, 1966, Ser. No. 519,903
Int. Cl. A01b *21/08*
US. Cl. 172—584 **8 Claims**



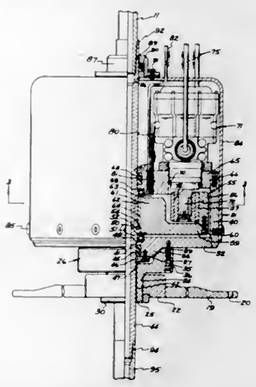
An offset disc harrow has dual section hinged front and rear gangs with the inner sections of the gangs pivotally connected and force transmitting leveling linkage extending from the outer front section to the outer rear section through a lever pivoted on one of the inner sections, a separate angle setting and limiting linkage connects the front and rear gang, adjustments are provided for leveling. The leveling linkage balances the tendency of the front outer section to dig into the soil and the opposite tendency of the rear outer section to rise above the ground. The forces acting on the inner sections are balanced through the hinge.

3,467,201
DRILL BOOM WITH ROTARY ADJUSTING HEAD
Erich Voldemar Kimber, Vendelso, Sweden, assignor to Atlas Copco Aktiebolag, Nacka, Sweden, a corporation of Sweden
Filed May 16, 1968, Ser. No. 729,779
Claims priority, application Sweden, May 19, 1967, 7,081/67
Int. Cl. E21c *11/00, 9/00*
U.S. Cl. 173—36 **7 Claims**



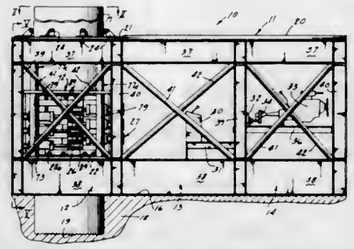
A drill boom carrying a rotary adjusting head which includes power means for positioning a drilling apparatus carried thereby has a pressure fluid actuated turning means mounted within the boom with a driving member at one end thereof non-rotatably connected to the adjusting head for rotating the latter and the other end thereof non-rotatably connected to the rear end of the drill boom while the intermediate portions of the turning means are free from force transmitting engagement with the boom.

3,467,202
HYDRAULICALLY DRIVEN POWER HEAD
Cicero C. Brown, % Brown Oil Tools Inc., P.O. Box 19236, Houston, Tex. 77024
Filed June 11, 1968, Ser. No. 736,179
Int. Cl. E21c *5/00*
U.S. Cl. 173—57 **10 Claims**



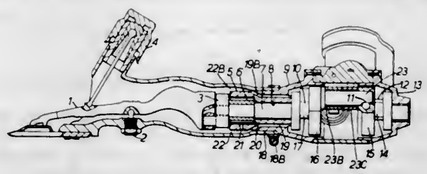
A power drilling head formed of a housing containing a plurality of vertically extending, reversible, hydraulic motors. Each motor has a gear in contact with a ring gear operatively attached to a vertical spindle which may be used to rotate drill pipe. The gear section of the housing is sealed off and supplied with seepage of hydraulic fluid from the hydraulic motors. Any excess is returned to the hydraulic system. The head may be suspended from a derrick by a traveling block which vertically positions it. Means are provided to maintain the head non-rotative.

3,467,203
APPARATUS FOR SINKING CASINGS IN THE CONSTRUCTION OF CAISSONS
Alf R. Johnson, 7660 Marmora Ave., Skokie, Ill. 60076
Filed June 29, 1967, Ser. No. 649,992
Int. Cl. E21c *5/10, 1/06;* **E02d** *5/34*
U.S. Cl. 173—159 **28 Claims**



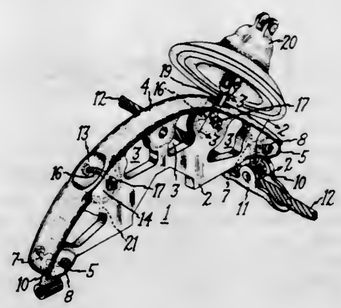
A rig for boring and sinking casings in the construction of caissons including an expansible-contractible collar for frictionally gripping a casing for joint movement therewith and guided on a rig frame for vertical and rotational movement only. Horizontally extending hydraulic rams are mounted on the collar for expanding and contracting the same and other horizontal rams arranged to move vertically with the collar on the frame for rotationally oscillating the collar relative to the frame. The collar is interposed between a pair of spaced interconnected horizontal collar plates guided for vertical movement only on spaced vertical slide guides mounted on the frame. Bearings are interposed between the collar and the collar plates for relative rotation therebetween and vertical hydraulic rams interconnect the frame and the collar plates for moving the collar plates and the collar vertically.

3,467,204
SHEEP SHEARING HANDPIECE WITH RECIPROCATING PNEUMATIC MOTOR
Mervyn Basil Leigh Jenkinson, Carlisle N., Archer St., Carlisle, Western Australia, Australia
Filed Sept. 21, 1967, Ser. No. 669,559
Claims priority, application Australia, Sept. 21, 1966, 11,456/66
Int. Cl. B23b *45/04;* **B27c** *3/08*
U.S. Cl. 173—169 **4 Claims**



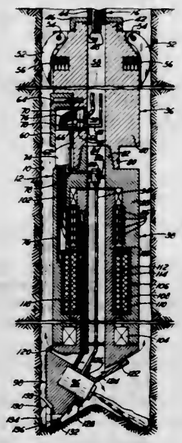
A shearing handpiece is disclosed which is for shearing wool, hair or fur from any animal. A composite unit is comprised by the handpiece itself and a reciprocating pneumatic motor having at least one double acting piston having two main diameters one providing a piston secuon acting in a main cylinder and the other providing a piston section extending through a close fitting bore into the crankcase.

3,467,205
Y-TYPE CLEVIS YOKE FOR ELECTRIC POWER TRANSMISSION LINES
Evelyn H. Wargo, Baltimore, Md., assignor to General Electric Company, a corporation of New York
Filed Sept. 29, 1967, Ser. No. 671,756
Int. Cl. H01b *17/44, 17/46*
U.S. Cl. 174—144 **5 Claims**



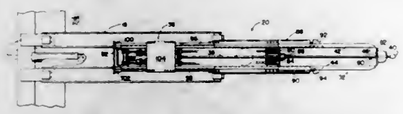
A yoke for separatingly supporting a plurality of bundled conductor clamps from suspension insulators has integral clevises formed therein for receiving and corona shielding bent bolts and eyebolt fittings for connecting the yoke to the conductor clamps or the the insulators or both.

3,467,206
PLASMA DRILLING
Willard P. Acheson, Pittsburgh, and Michael A. Torcaso, Arnold, Pa., assignors to Gulf Research & Development Company, Pittsburgh, Pa., a corporation of Delaware
Filed July 7, 1967, Ser. No. 651,830
Int. Cl. E21b *7/18*
U.S. Cl. 175—13 **10 Claims**



Method and apparatus for drilling wells in the earth utilizing a stream of disassociated gas (plasma) a reelable tubing to achieve wire line-like operation, and adding fluxing agents to melt at the bottom of the hole to automatically case the well as it is drilled. The plasma generator is mounted on the drill so that the stream of plasma crosses the axis to cover the entire bottom of the hole as the drill rotates.

3,467,207
UNIVERSAL DRILLING MACHINE
Harley G. Pyles, 109 Gaston Ave., and Charles D. Albright, 506 West End Drive, both of Fairmont, W. Va. 26554, and Robert E. Haun, 4827 Millbrooke Road, Albany, Ga. 31701
Filed Oct. 10, 1966, Ser. No. 585,373
Int. Cl. E21c *3/02, 19/00;* **E21b** *7/00*
U.S. Cl. 175—55 **10 Claims**



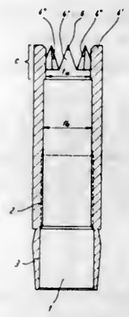
This disclosure relates to a drilling machine that includes thrust means for imparting thrust forces to the drilling implement and rotary drive means to impart high speed rotary motion to the same drilling implement. A power operated means is provided for advancing the drilling implement longitudinally on a support member during the drilling operation. A shock absorbing means is connected to the drilling implement advancing member to absorb the thrust forces exerted in a direction opposite to the direction of advance of the drilling implement. There are also provided means to vary the frequency of the thrust forces imparted by the thrust means.

3,467,208
LOST CIRCULATION CONTROL
John Kelly, Jr., Arlington, Tex., assignor to Mobil Oil Corporation, a corporation of New York
No Drawing. Filed Mar. 29, 1968, Ser. No. 717,380
Int. Cl. E21b *21/04, 33/13, 43/00*
U.S. Cl. 175—72 **8 Claims**

This specification discloses a method of controlling lost circulation in drilling operations. In carrying out the invention an aqueous suspension of a water dispersible oleophilic colloid which is both water and oil dispersible is introduced into the drill string. The aqueous suspension is circulated through the drill string and into the well bore where it is contacted with an oleaginous liquid. The colloid is dispersed in the oleaginous liquid and forms a gel which tends to plug the formation into which lost circulation occurs. The oleophilic colloid may be a normally water-swellable clay such as bentonite which has been treated to render it oleophilic. The oleaginous liquid may comprise an oil-base drilling fluid utilized in drilling of the well.

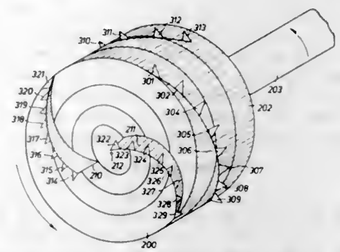
3,467,209
SELF-DRILLING ANCHOR WITH ENLARGED BORE ZONE
Franz Chromy, Gisingen-Feldkirch, Austria, assignor to Dibotec AG., Zurich, Switzerland
Filed July 12, 1966, Ser. No. 564,656
Claims priority, application Germany, July 19, 1965, A 49,780
Int. Cl. E21c *13/08;* **E04b** *1/48;* **E21b** *9/16*
U.S. Cl. 175—395 **5 Claims**

A self-drilling anchor includes a tubular body having a central bore divided into a mounting zone, at one end, an axially relatively short core bit zone at the opposite end and a relatively elongated zone intermediate the mounting and core bit zones. The body has cutting surfaces at the outer end of the core bit zone which terminate radially at the external periphery of the body. The bore inner diameter in the core bit zone is less than that of the zone immediately adjacent thereto whereby to provide for easy flow of drilling debris from the core bit zone and through the tubular body. The mounting zone is preferably internally threaded for mounting of the self-drilling anchor on a percussion-type tool. Preferably, the exterior surface of the tubular body is formed with spiral grooves opening into an annular groove just inwardly of the cutting surfaces, providing for easy flow



of drilling debris along the exterior surface of the tubular body. Alternatively, the exterior surface of the tubular body, inwardly of the cutting surfaces, may be formed with a series of axially spaced annular grooves.

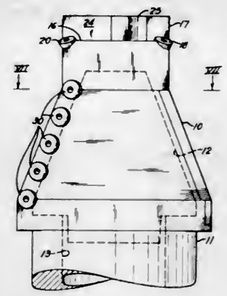
3,467,210
BORING HOLES IN ROCK
Hermann Lantsch, 190 Feldhauser Str., 439 Gladbeck, Germany; Hans-Ludwig Jacob, 8 Achtenbecksweg, 4352 Herten, Germany; and Peter Hermanns and Klaus Hermanns, both of 21 Stubbenberg, 435 Recklinghausen, Germany
Filed July 14, 1967, Ser. No. 653,448
Claims priority, application Germany, July 15, 1966, H 59,958
Int. Cl. E21b *9/22;* **E21c** *23/00, 13/04*
U.S. Cl. 175—386 **3 Claims**



The specification describes various forms of boring heads having cutting tools arranged to cut along a helical or helical-spiral path and thus produce a forward thrust. When such tools are placed on the periphery of the head they produce a correcting thrust when the head strays from a softer stratum into a harder one.

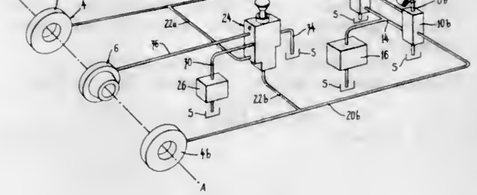
3,467,211
DRILL BIT FOR HYDRAULIC JET DRILLING OF WELLS
Robert J. Goodwin, Oakmont, Ernest A. Mori, Hampton Township, Allegheny County, and Joseph L. Pekarek and Paul W. Schaub, Penn Hills Township, Allegheny County, Pa., and Robert E. Zinkham, Richmond, Va., assignors to Gulf Research & Development Company, Pittsburgh, Pa., a corporation of Delaware
Original application Sept. 24, 1963, Ser. No. 311,034, now Patent No. 3,324,957, dated June 13, 1967. Divided and this application Apr. 19, 1967, Ser. No. 632,114
Int. Cl. E21b *7/18, 43/114*
U.S. Cl. 175—422 **7 Claims**

A drill bit for drilling wells through hard formations by discharging high-velocity streams of abrasive-laden liquid against the formation to be drilled. The drill bit has downwardly directed nozzles extending downwardly through the body of the bit to drill a central pilot hole. Nozzles



extend laterally through the body of the drill bit in a non-radial direction to discharge high-velocity streams obliquely against the pilot hole to enlarge the pilot hole to the desired well diameter.

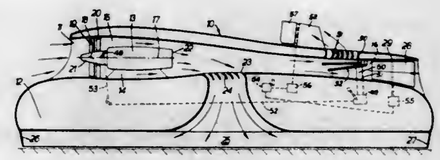
3,467,212
BRAKE ACTUATED CONTROL SYSTEM FOR LOCKING DIFFERENTIAL
Robert M. Doll, Detroit, Mich., assignor to Massey-Ferguson Inc., Detroit, Mich.
Filed Mar. 1, 1967, Ser. No. 619,643
Int. Cl. B62d *11/06;* **F16h** *1/44*
U.S. Cl. 180—6.2 **4 Claims**



A control for a locking differential in a tractor or the like, with a hydraulic valve system which is hydraulically actuated by either brake of a dual brake system so as to automatically unlock the differential upon application of either or both of the brakes.

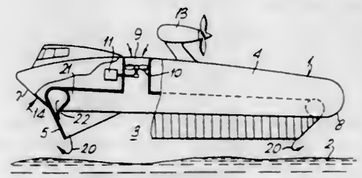
3,467,213
GAS TURBINE POWERED AIR-CUSHION VEHICLE WITH PROPULSIVE JET MEANS
Allen C. Walker, near Stroud, England, assignor to Dowty Rotol Limited, Gloucester, England, a British company
Filed July 31, 1967, Ser. No. 657,140
Claims priority, application Great Britain, Aug. 17, 1966, 36,891/66
Int. Cl. B60v *1/02, 1/14;* **F04d** *27/00*
U.S. Cl. 180—120 **10 Claims**

An air-cushion vehicle includes at least one ducted-fan assembly having adjustable blading and powered by a prime mover, such as a gas turbine engine. The flow of air discharged by the ducted-fan assembly is directable both into the air cushion zone of the vehicle for support of the vehicle above the surface over which it is operating,



and also through a discharge duct to provide a propulsive jet into air for either forward or rearward movement of the vehicle across that surface.

3,467,214
GAS-CUSHION VEHICLES WITH TAPERED SKIRTS
James Herbert William Wheatley, Southampton, England, assignor to Hovercraft Development Limited, London, England, a British company
Filed July 11, 1967, Ser. No. 652,485
Claims priority, application Great Britain, July 26, 1966, 33,635/66
Int. Cl. B60v *1/04, 1/16*
U.S. Cl. 180—127 **9 Claims**



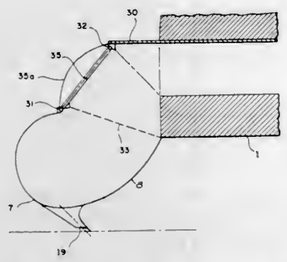
In a gas-cushion vehicle of the kind wherein the sides of the vehicle-supporting cushion are bounded, at least in part, by flexible or rigid wall structure depending from the vehicle body, the vertical depth of the wall structure at the bow end of the vehicle differs from that at the stern end thereof so that, in operation, the vehicle assumes either a nose-up trim or nose-down trim.

A nose-up trim provides vehicles operating at speeds up to about 120 knots with an improved "ride" and for those operating at greater speeds with a counter to overturning moments resulting from the application of aerodynamic lift forces.

3,467,215
CUSHION SUPPORTED VEHICLES WITH EXTENSIBLE BASE AREA
Derek James Hardy, Cowes, and Lavis Albert Henry Riddle, East Cowes, England, assignors, by mesne assignments, to British Hovercraft Corporation Limited, Yeovil, Somerset, England
Original application July 12, 1965, Ser. No. 471,336, now Patent No. 3,373,839, dated Mar. 19, 1968. Divided and this application Mar. 11, 1968, Ser. No. 712,077
Claims priority, application Great Britain, July 28, 1964, 30,039/64
Int. Cl. B60v *1/16*
U.S. Cl. 180—128 **11 Claims**

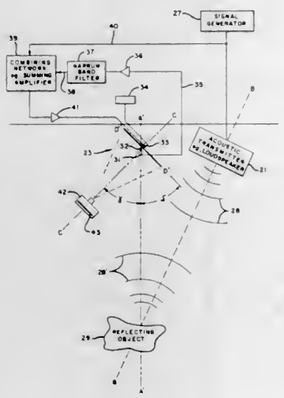
An air cushion vehicle includes an inflatable flexible skirt for selectively forming a supporting air cushion for the main body of the vehicle, at least some of the boundaries of the cushion being outboard of the main body of the vehicle. The inflatable flexible skirt is so connected to the vehicle and is of such configuration that, when in-

flated, it extends outwardly from the main body of the vehicle, and is supported and maintained in this extended condition by flexible tie members and/or support



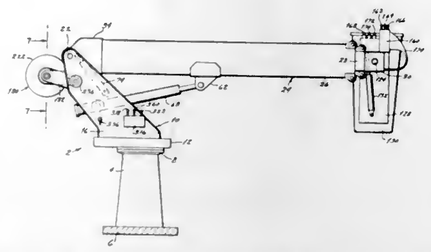
members which are pivotally connected to the body of the vehicle so as to pivot outwardly upon inflation of the skirt.

3,467,216
APPARATUS AND METHOD FOR PRODUCING HOLOGRAMS WITH ACOUSTIC WAVES
Gail A. Massey, Half Moon Bay, Calif., assignor to Sylvania Electric Products Inc., a corporation of Delaware
Filed June 30, 1967, Ser. No. 654,672
Int. Cl. G01v *1/02*
U.S. Cl. 181—.5 **8 Claims**



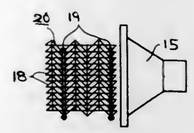
A loudspeaker and a microphone are spaced from a reflecting object and from each other. The microphone transcribes a raster-type scan in a plane that is inclined with respect to a line through the centers of the reflecting object and the scanned area. The output of a signal generator causes the loudspeaker to illuminate the object with acoustic waves. These waves are reflected by the object and are detected by the scanning microphone which produces an output that is combined with the output of the signal generator in a summing network. The combined output signals intensity modulate a lamp which moves with the microphone. The field pattern defined by variations of the light intensity of the lamp is recorded on the photographic plate of a camera. The plate is parallel to the plane area scanned by the microphone. This recording is a hologram of the reflecting object. A visual image of the object is produced by illuminating the developed photographic plate (the hologram transparency) with coherent light from a laser.

3,467,217
AERIAL PLATFORM UNIT
Daniel H. Zwight, St. Louis County, Mo., assignor to McCabe-Powers Body Company, St. Louis, Mo., a corporation of Missouri
Filed Apr. 26, 1967, Ser. No. 633,790
Int. Cl. A62b *1/02, 5/00;* **E04g** *1/22*
U.S. Cl. 182—2 **17 Claims**



An aerial platform unit includes a mast, a beam assembly including upper, intermediate, and lower beams telescopically mounted with respect to one another and supporting a basket at their upper ends; extension means interconnecting the lower and intermediate beams and having an extensible member adapted to move from a retracted position to an extended position; and connecting means interconnecting the upper and lower beams. The connecting means is responsive to the movement of the extensible member to cause the upper beam to move with respect to the lower beam a distance greater than tht extensible movement of the extensible member. A take-up reel assembly is located near the end of the lower beam and has a fluid conduit coiled around it. Leveling cylinders are connected to the mast, beams and basket for maintaining the basket level irrespective of the angular disposition of the beam assembly.

3,467,218
DEVICE FOR DIFFUSING SOUNDS
Masahiro Fujimoto and Toshiaki Yamamoto, Tokyo, Japan, assignors to Victor Company of Japan, Limited, Yokohama, Japan
Filed Dec. 6, 1967, Ser. No. 688,568
Claims priority, application Japan, Dec. 9, 1966, 66/80,381
Int. Cl. H04r *7/16*
U.S. Cl. 181—31 **5 Claims**

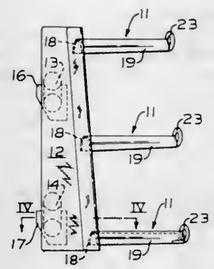


A device for diffusing sounds comprising a plurality of diffusion plates arranged parallel to and spaced apart from one another in layers horizontally in the direction of incidence of sounds from a speaker. Each of the diffusion plates is formed in such a manner that the surface of the plate is linear in section in its center portion but curved in wave form in section in its opposite end portions, the height of the wave becoming increasingly larger in going toward the ends. The device has the effect of diffusing sounds from the speaker without the power level of the sounds being reduced especially in the center of the speaker.

ERRATUM

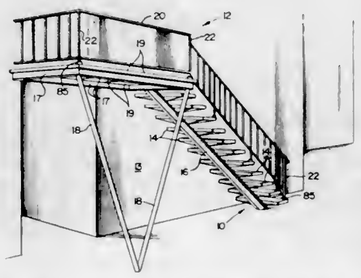
For Class 182—2 see:
Patent No. 3,467,217

3,467,219
LADDER ASSEMBLY
Richard E. Frauenhoff, Montgomery, Ill., assignor to Caterpillar Tractor Co., Peoria, Ill., a corporation of California
Filed Nov. 22, 1968, Ser. No. 778,151
Int. Cl. E06c *9/02, 7/08;* **A62b** *1/20*
U.S. Cl. 182—93 **3 Claims**



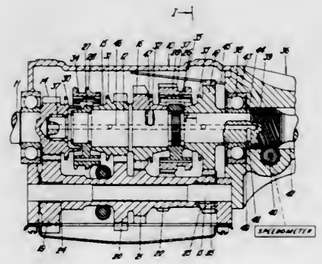
A ladder assembly for arrangement on the side of a structure to provide access onto the structure has a support member and means for securing it to the structure. A plurality of steps arranged at intervals along the support member each include a pair of angularly related, elongated plates presenting a pair of upwardly facing, spaced apart angular edges as a stepping surface.

3,467,220
STAIRWAY CONSTRUCTION
Frank Burchard Smith, 1737 Solano Ave., and Stephen Brian Harley, 1993 El Dorado St., both of Berkeley, Calif. 94707
Filed Mar. 20, 1967, Ser. No. 624,597
Int. Cl. E04f *11/12*
U.S. Cl. 182—115 **25 Claims**



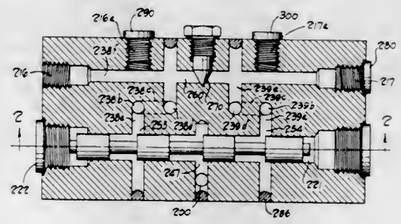
An improved open-riser stairway comprises an integrated system of standard stairway components made of lightweight anodized aluminum stampings and extrusions. The stairway includes a single hollow flanged stringer and hollow, wedge-shaped steps. The steps are readily secured at their centers to the stringer flanges by means of rivets. An open network of these stringers form the framing for the stairway landing, and the deck thereof consists of matched interlocking panels riveted to the stringers. The tread surfaces of the stairs and landing are treated to resist accumulation of ice and snow thereon. Also, for this reason electric heating elements are included inside the steps and panels and connected by conductors in the stringers to a current source. The stairway also has a railing which may be anchored to the panels and to reinforcing inserts in the steps by means of rivets.

3,467,221
LUBRICATING ARRANGEMENTS FOR MOTOR VEHICLE CHANGE-SPEED GEARING
Fritz Janke, Russelsheim (Main), Germany, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Sept. 11, 1967, Ser. No. 666,754
Claims priority, application Germany, Sept. 28, 1966, 11,984
Int. Cl. F16n *29/02*
U.S. Cl. 184—6 **11 Claims**



A lubricating arrangement for motor vehicle change-speed gearing utilises the helically toothed speedometer drive pinion as a rotary pump for forwarding lubricant from a lubricant supply passage in the gearing casing simultaneously to a plurality of rotary bearing surfaces of the change-speed gearing.

3,467,222
PROGRESSIVE LUBRICANT FEEDER WITH CROSS PORTING
Thomas J. Gruber, Chagrin Falls, Ohio, assignor to Eaton Yale & Towne Inc., Cleveland, Ohio, a corporation of Ohio
Continuation-in-part of application Ser. No. 424,498, Jan. 11, 1965. This application Feb. 14. 1967, Ser. No. 625,277
Int. Cl. F16n *25/02*
U.S. Cl. 184—7 **5 Claims**

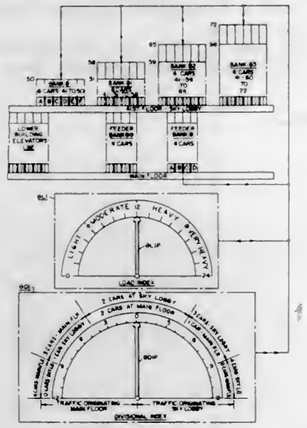


A cross porting structure for lubricant feeders. The structure includes a continuous outlet passageway having a pair of outlet openings therefrom and a pair of supply passageways which alternately supply lubricant into the outlet passageway and a plug-type valve which in a first position serves to connect a supply passageway with one outlet opening, and in a second position serves to connect each of the supply passageways with both of the outlet openings.

3,467,223
CONVEYOR SYSTEM FOR ELONGATED STRUCTURES

John Suozzo and Henry C. Savino, Hackensack, N.J., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Feb. 11, 1966, Ser. No. 526,813
Int. Cl. B66b *1/36*
U.S. Cl. 187—29 **15 Claims**

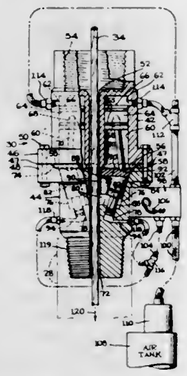


A tall building has a lower first feeder or shuttle bank of elevators operating between a bottom terminal or main floor and a transfer floor. The building has a local second bank of elevators operating between the transfer floor and higher floors to provide local service. A computer maintains a proper number of feeder elevators in service, distributes feeder elevator cars between the bottom terminal and transfer floors, and coordinates arrival of local and feeder elevator cars at the transfer floor. If plural feeder banks are employed the computer coordinates the service provided by such feeder banks.

3,467,224
CABLE SAFETY CLAMPING DEVICE FOR OIL WELLS AND THE LIKE

William L. Curtis, Van, Tex., and Billy Dean Curtis, Alexandria, Va., assignors of fifty-one percent to Mary Lou Curtis, North Plainfield, N.J., and forty-nine percent to Contractors Services, Inc., Alexandria, Va.

Filed Mar. 5, 1968, Ser. No. 710,602
Int. Cl. B65h *59/16;* **A62b** *1/20;* **F16g** *11/00*
U.S. Cl. 188—65.1 **15 Claims**

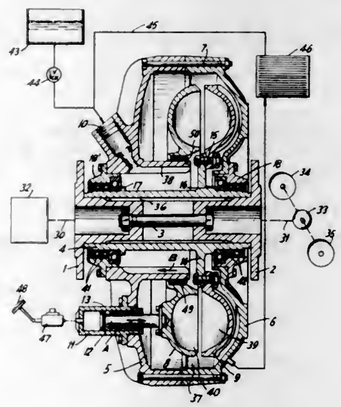


A cable or line safety clamping mechanism for use in snubbing and retaining particularly broken cables which often result from use in oil well operations. The safety clamp mechanism herein comprises a clamp housing embodying therewithin a pair of gripping wedges or slips at least one of which may be of the servo actuated type, disposed oppositely about a cable, said slips being fluid pressure operated responsive to usually an overhead break in a cable which is threaded over one or more sheaves supported in the well's superstructure, and said slips being instantly activated to snub and grip the cable to preclude it being lost down inside of the well. One preferred form embodies electrical switch means to automatically activate the safety clamping slips by fluid pressure means responsive to the whipping action of a slack cable after it breaks, while another embodiment provides for manual energization of the switch means by one of the attendant workers, responsive to observing a broken cable.

3,467,225
HYDRODYNAMIC BRAKE WITH AXIALLY SHIFTABLE STATOR

Hermann Steffen, Neu-Isenburg, Rodney Jones, Frankfurt am Main, and Horst Nellen, Niederroden, Germany, assignors to Alfred Teves G.m.b.H., Frankfurt am Main, Germany, a corporation of Germany

Filed Jan. 12, 1968, Ser. No. 697,397
Claims priority, application Germany, Jan. 18, 1967, T 33,009
Int. Cl. F16d *57/00*
U.S. Cl. 188—90 **12 Claims**



A hydrodynamic brake having an axially shiftable annular stator movable by a hydraulic cylinder toward and away from the rotor to increase or decrease the pumping efficiency and provided with inner and outer seals engaging corresponding portions of the surrounding housing to prevent passage of the hydrodynamic brake fluid therepast.

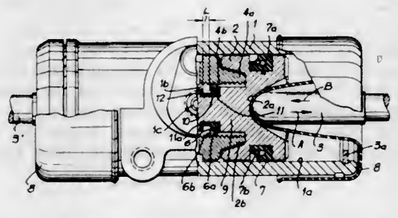
3,467,226
WHEEL-BRAKE CYLINDER ADJUSTER

Juan Belart, Walldorf, Germany, assignor to Alfred Teves Maschinen- und Armaturenfabrik K.G., Frankfurt am Main, Germany, a corporation of Germany

Filed July 21, 1967, Ser. No. 655,046
Claims priority, application Germany, July 28, 1966, T 31,706
Int. Cl. F16d *65/46, 51/24*
U.S. Cl. 188—196 **10 Claims**

A wheel-brake cylinder for a vehicle brake system having a cylinder housing provided with a cylinder bore, a piston axially shiftable in the bore for displacing a brake-shoe and a self-adjusting mechanism re-establishing a rest position of the piston upon displacement thereof beyond

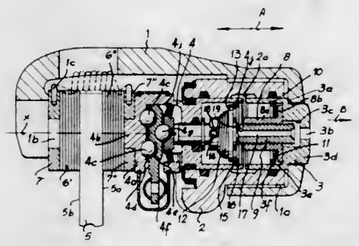
a predetermined stroke, the self-adjusting mechanism comprises an adjustment member received in said bore coaxially with said piston member, and a split resilient adjusting ring in form-fitting and wedging interengagement between the members upon movement of the piston member in one direction relative to the adjustment member and to the housing and released by said members upon movement of the piston in the opposite axial direction.



3,467,227
BRAKE SYSTEM WITH WEAR-COMPENSATED MEANS

Juan Belart, Walldorf, Germany, assignor to Alfred Teves Maschinen- und Armaturenfabrik K.G., Frankfurt am Main, Germany, a corporation of Germany

Filed July 21, 1967, Ser. No. 655,150
Claims priority, application Germany, Aug. 23, 1966, T 31,887
Int. Cl. F16d *65/40;* **B60t** *17/00*
U.S. Cl. 188—196 **10 Claims**



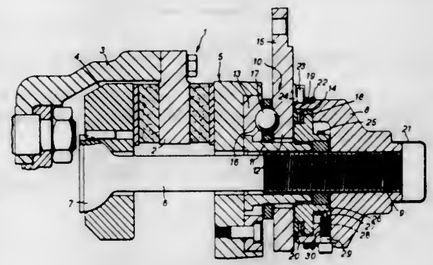
A brake system for hydraulic vehicle brakes in which a piston is axially shiftable in a cylinder and is provided with automatically operable self-adjusting mechanism for re-establishing the rest position of the piston to compensate for increased brake play with wear of the brake lining wherein an elastically deformable member, e.g., a dished-disk spring, is provided between the mechanism and one of the brake members for compressive accommodation of the brake force for limiting the self-adjustment of the mechanism at braking force exceeding a predetermined level.

3,467,228
AUTOMATIC ADJUSTING DEVICE FOR USE IN BRAKES

Richard Northam Knights, Gloucester, England, assignor to The Dunlop Company Limited, Fort Dunlop, Erdington, Birmingham, England, a corporation of Great Britain

Filed Aug. 4, 1967, Ser. No. 658,571
Claims priority, application Great Britain, Aug. 13, 1966, 36,329/66
Int. Cl. F16d *65/46, 55/06*
U.S. Cl. 188—196 **9 Claims**

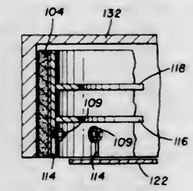
Disk brake including an automatic adjustment device to effect rotation of an adjustment member relative to a tie rod with which the adjustment member is in screw-threaded engagement upon release of the brake after more than a predetermined amount of friction pad wear has occurred, a coiled clutch spring associated with the adjustment member and with a nonrotatable member being provided to prevent rotation of the adjustment member relative to the tie rod upon application of the brake.



3,467,229
BRAKE SHOES WITH REMOVABLE AND DISPOSABLE LININGS

William T. Deibel, 957 Yorkshire Drive, Marion, Ohio 43302

Filed Feb. 6, 1968, Ser. No. 703,326
Int. Cl. F16d *65/08, 65/22*
U.S. Cl. 188—245 **3 Claims**

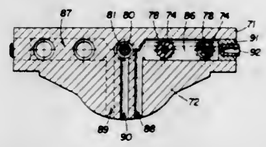


A brake shoe and lining assembly therefor, said brake lining being adapted to be removably secured to the brake shoe. The means of attachment for securing the removable linings to the brake shoes being such as to allow removal of the brake lining from the brake shoe without necessitating the removal of the brake drum of the vehicle.

3,467,230
DISPENSING SYSTEM

James Rankin Brown, Burlington, Ontario, Canada, assignor, by mesne assignments, to Hemisphere Food Products Corporation, Las Vegas, Nev., a Nevada corporation

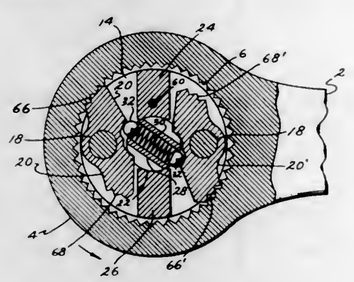
Continuation-in-part of application Ser. No. 195,757, May 18, 1962. This application Nov. 19, 1964, Ser. No. 412,566
Int. Cl. B65b *31/00*
U.S. Cl. 141—59 **8 Claims**



A dispensing device having a rounded head adapted to be sealingly covered by a receptacle. A plurality of parallel valved passageways terminate in the head, at least two of which are adapted to selectively supply a beverage to the receptacle and one of which supplies

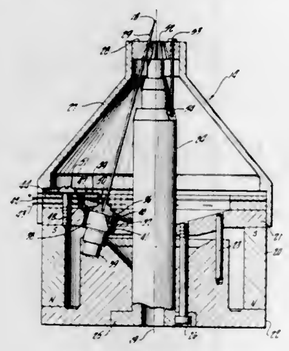
a vacuum to the receptacle. Separate restricted vents are provided to communicate with the beverage passageways so as to prevent excessive vacuum in the beverage receiving receptacle.

3,467,231
PAWL REVERSING MECHANISM FOR RATCHET WRENCHES
Henry J. Haznar, Ware, Mass., assignor to Moore Drop Forging Company, Springfield, Mass., a corporation of Massachusetts
Filed Feb. 12, 1968, Ser. No. 704,688
Int. Cl. F16d *11/06, 13/04;* B25b *13/46*
U.S. Cl. 192—43.1 3 Claims



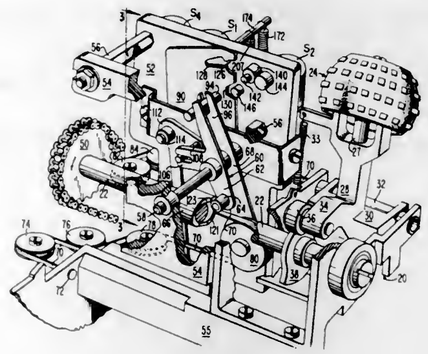
In a ratchet wrench of the type having diametrically opposed double ended toothed pawls for fine-tooth ratchet action, a rotatable bolt having yieldable pawl engaging members at each end and movable to reverse wrench operation, and pawls having centrally projecting lobes and recessed faces at each side thereof engaged by said yieldable members when the bolt is turned, the arcuate movement of said members in contacting and passing over said lobes causing reversal of pawl position.

3,467,232
DOT PRINTING APPARATUS
Walter Griffin Paige, Pasadena, Calif., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan
Filed Aug. 31, 1967, Ser. No. 664,876
Int. Cl. B41j *9/00;* B41f *19/00*
U.S. Cl. 197—1 12 Claims



A dot printing head having a plurality of printing elements or styli each with an impact surface on one end. The ends of the styli with the impact surfaces are selectively extendible. The styli are arranged to lie in an approximately conical, geometric surface such that the ends of the styli with the impact surfaces form a line when extended. This stylus arrangement is particularly well adapted to electromagnetic actuation of the styli. In such case, an annular permanent magnet with an axially polarized field is placed around the opposite ends of the styli from the impact surfaces and the styli are selectively actuated by electric coils attached to the individual styli. The printing apparatus is arranged so the paths of travel of a roll of paper on which the characters are printed and an inked ribbon lie in the same plane. As the paper and inked ribbon pass between the printing head and the platen, the paper is situated between the printing head and the inked ribbon. The inked ribon is wrapped around the platen, which serves to reverse the direction of ribbon travel.

3,467,233
MECHANISM FOR POSITIONING A SPHEROIDAL TYPE HEAD TO PRESENT A SELECTED TYPE TO A PRINT POSITION
Richard J. Jablonski, Farmington, Mich., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan
Filed Oct. 19, 1967, Ser. No. 676,493
Int. Cl. B41j *23/02, 23/04, 1/32*
U.S. Cl. 197—16 5 Claims

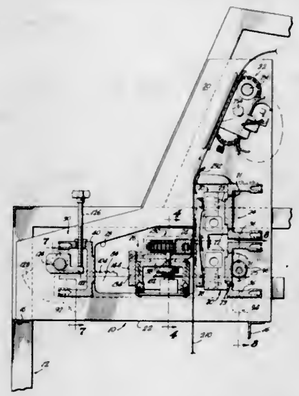


The disclosure embodies a single spheroidal type carrier or head for striking a platen and includes mechanism for positioning the head to present a selected one of different printing types to a print line. Selection of a printing type is made by activating one or more of a plurality of positionable stop members, such as solenoid cores, representative permutatively of different printing type for printing alphanumeric characters and other required symbols. A single carrier or code plate for a plurality of relatively offset abutments is movable to engage and abut the selected stop members and is operatively connected to the type head to position the latter accordingly. A cyclically operable control member or cam controls movement of the code plate into engagement with the selected stop member or members, the print head being thereafter operated to effect a printing operation.

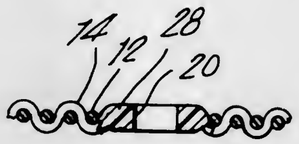
3,467,234
DRIVE MEANS FOR RECORD RECEIVING WEB AND CONTROL WEB IN PRINTING MACHINES
John T. Potter, Plainview, Thomas P. Foley, Huntington, and Carmine J. Antonucci, Uniondale, N.Y., assignors to Potter Instrument Company, Inc., Plainview, N.Y., a corporation of New York
Original application Nov. 24, 1965, Ser. No. 509,501. Divided and this application Nov. 24, 1967, Ser. No. 703,498
Int. Cl. B41j *15/04;* B65h *17/22, 25/06*
U.S. Cl. 197—133 6 Claims

This disclosure contains drawings and a description of a high speed chain printer in which the print chain is

established by a plurality of integrally cast printing slugs clipped about the edges of a reinforced elastomeric timing belt. The print chain is supported relative to a plurality of print hammers by a frame featuring a modular or subassembly construction in which the basic components are formed from a length of precision stock of the same cross-section. Also, the printer includes a substantially inertialess control for web or paper feed by employing a paper feed clock in format control loop formed of paper and driven directly by the same tractors which feed the paper web.

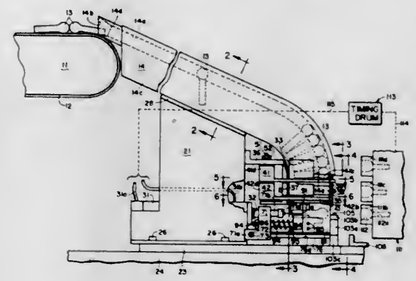


3,467,235
NYLON INKING RIBBON HAVING SPROCKET HOLES
Robert Glenn, 70—20 108th St., Forest Hills, N.Y. 11375, and Victor Barouh, 935 Plum Tree Road, Westbury, N.Y. 11590
Filed Mar. 22, 1967, Ser. No. 625,049
Int. Cl. B41j *31/04*
U.S. Cl. 197—172 1 Claim



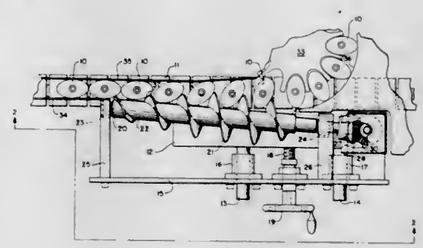
A relatively wide endless ribbon of stretchable light gauze mesh nylon for use with computer machines. The woven fabric material has aligned rows of spaced perforations adjacent and inwardly spaced from the edges of the ribbon, which perforations are formed by hot stamping the ribbon so as to form fused peripheral edges of perforations forming solid rings integral with the woven fabric material. The ribbon is fully inked with a coating of pressure transferable pigmented material, such as an ink preferably containing carbon or other lubricant which will not only serve for providing for printing, but will also lubricate the sprockets and minimize the friction of the relative motion of the ribbon with respect to the sprockets to insure against skewing of the ribbon and to enable the ribbon to be stretched and travel squarely in alignment as it passes through the printing mechanism of a computer machine.

3,467,236
WORKPIECE HANDLING APPARATUS
Rajat Dhanda, Corning, N.Y., assignor to Corning Glass Works, Corning, N.Y., a corporation of New York
Filed July 14, 1967, Ser. No. 653,533
Int. Cl. B65g *47/24, 59/06*
U.S. Cl. 198—33 4 Claims



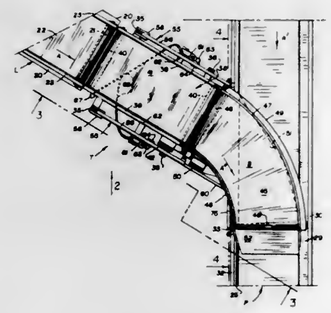
Apparatus for handling workpieces such as tubings, pipes or rods having a bulbar portion and a tubular or cylindrical stem portion, such apparatus receiving a collinear succession of workpieces having a random end-to-end orientation relative to each other, identically orienting such workpieces, and simultaneously and horizontally supplying such workpieces in pairs to horizontally disposed workpiece supports presented to a loading station in pairs by a machine which is to perform work on the workpieces.

3,467,237
APPARATUS FOR TURNING ARTICLES OF OBLONG CROSS SECTION ON THEIR VERTICAL AXIS
Robert D. Hanekamp, North College Hill, and Keith D. Jayne, Hamilton, Ohio, assignors to The Procter & Gamble Company, Cincinnati, Ohio, a corporation of Ohio
Filed Sept. 20, 1967, Ser. No. 669,031
Int. Cl. B65g *47/24, 15/00, 17/00*
U.S. Cl. 198—33 7 Claims



An apparatus for turning articles of oblong cross section as they are being moved forward in order to obtain a preferred orientation. An elongated, horizontally extending worm having a suitable helix is mounted alongside and above the conveyor. A suitable guide is provided opposite the worm. The worm and guide coact such that successive articles initially received with their long dimension aligned in the direction of travel are forwarded and simultaneously turned on their vertical axis through an arc of approximately 90 degrees.

3,467,238
TRANSFER TERMINAL FOR CONVEYOR BELT
Charles L. Fry and Edwin L. Fry, Canon City, Colo., assignors, by mesne assignments, to Portec, Inc., a corporation of Delaware
Filed Aug. 1, 1967, Ser. No. 657,586
Int. Cl. B65g *37/00*
U.S. Cl. 198—88 **8 Claims**



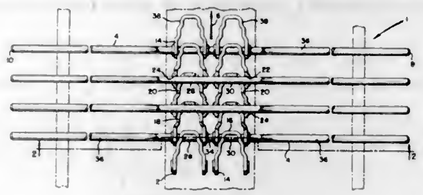
A transfer terminal for a belt conveyor which is a lateral, tributary feed to a primary belt conveyor. The terminal includes two short belt sections which are extended in tandem from the end of the tributary conveyor. The leading section is a short, straight reach having its leading end adjacent to the trailing end of the tributary conveyor. This leading section is within the support frame of the transfer terminal. The second, trailing section, is a conveyor belt turn cantilevered outwardly from the support frame to extend over the belt of the primary conveyor. This turn is mounted on parallelogram arms which are actuated to lift the turn and, at the same time, to maintain it in a substantially horizontal position. At the lower operative position, the belt of the turn is aligned with the belt of the leading section and lies upon the surface of the primary belt conveyor. At its uppermost position, the turn is lifted from the primary conveyor a distance sufficient to permit clear operation of the primary conveyor.

In belt conveyors used for baggage and similar items, protective sidewalls are required. To avoid interference by these walls during operation of the transfer terminal, a portion of the sidewall on the primary conveyor, which lies immediately underneath the transfer terminal turn, is formed as a vertically shiftable gate which can drop out of the way whenever the conveyor belt turn is lowered upon the primary conveyor to its operative position.

Suitable electrical safety switches and programming controls can be used to alternatively operate a number of transfer terminals which discharge onto the same primary belt in a manner such as to prevent interference of the movement of materials from the tributary belts and onto the primary belt.

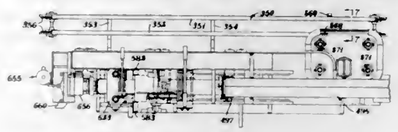
3,467,239
CENTRAL LINK COLLAPSIBLE CONVEYOR BELT
Gerald C. Rolnestad, Winchester, Va., assignor to Ashworth Bros. Inc., Winchester, Va., a corporation of Massachusetts
Filed Sept. 5, 1967, Ser. No. 665,602
Int. Cl. B65g *15/48*
U.S. Cl. 198—195 **12 Claims**

A collapsible conveyor belt having at least one row of connecting links positioned centrally of said belt and extending longitudinally of the path of movement of said belt with rod members defining a conveying surface extending outwardly in opposed directions from said row transversely of said path and operatively connected to the individual links. The links are collapsible in a direc-



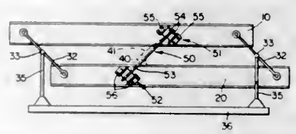
tion longitudinal of said path, individually pivotable both in a direction normal to the conveying surface and laterally in the plane of the conveying surface.

3,467,240
PRODUCT LOADING CONVEYOR FOR CONTINUOUS PACKAGE FORMING MACHINE
Hans A. Jensen and Augustus H. Eberman, Madison, Wis., assignors to Oscar Mayer & Co., Inc., Chicago, Ill., a corporation of Illinois
Original application Nov. 4, 1964, Ser. No. 408,842, now Patent No. 3,349,540, dated Oct. 31, 1967. Divided and this application Mar. 27, 1967, Ser. No. 651,071
Int. Cl. B65g *15/00, 17/00, 19/00*
U.S. Cl. 198—179 **5 Claims**



The product loading conveyor for depositing stacks of sliced meat products on the lower die plates of a continuous packaging machine includes a plurality of loading assemblies mounted for movement in a horizontal endless path. Each loading assembly has four claws engageable with a stack adjacent respective sides thereof. The claws are mounted for movement between inner and outer positions for gripping the stacks of sliced products and for releasing the stacks onto the lower die plates in timed relation with movement therewith. After the stacks of sliced products are picked up from a delivery conveyor and before they are deposited onto the lower die plates of the package forming machine, the claws are reciprocated several times between their inner and outer positions thereby to shuffle the slices within each stack to aid in aligning the slices with each other.

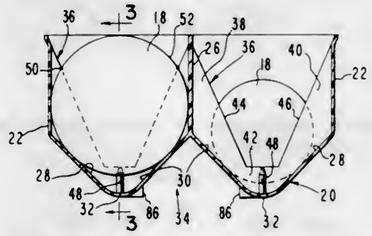
3,467,241
OSCILLATORY WORKING MACHINE
Jörg Oser, Gleisdorf, Austria, assignor to Binder and Company, Gleisdorf, Austria, a corporation of Austria
Filed Nov. 3, 1967, Ser. No. 680,373
Int. Cl. B65g *27/26, 27/30*
U.S. Cl. 198—220 **4 Claims**



In a vibratory working machine, such as a trough conveyor, or a sifting trough, or the like, kinetic vibration energy is stored in torsional spring devices which consist

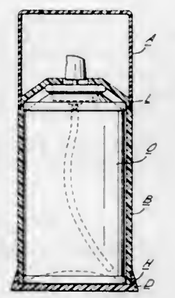
of concentrically arranged hollow cylindrical rubber elements, from which metal rings project for alternate connection with the oscillatory troughs and with the guide links which connect the upper and lower decks.

3,467,242
STORAGE UNIT FOR WAFER-LIKE ARTICLES
Dale E. De Rousse, 199 1st St., Los Altos, Calif. 94022
Filed Mar. 4, 1968, Ser. No. 710,331
Int. Cl. B65d *57/00, 85/58*
U.S. Cl. 206—1 **15 Claims**



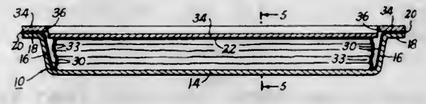
A storage unit for wafer-like articles, such as disks of semiconductor material adapted for use in making integrated circuit chips. The storage unit is comprised of a tray having a bottom and wall means cooperating with the bottom to define a plurality of compartments for receiving wafer-like articles. The wall means is constructed to engage such an article only at specific points on its outer periphery when the article is supported on edge on the tray bottom. A lid is used to cover the compartment and has flange means movable into sealing engagement with a lip on the upper margin of the tray. Means is provided to apply a predetermined downward force to an article in a compartment of the tray when the lid covers the compartment and stacking means on the tray and lid is provided to position a plurality of covered trays in a vertical stack.

3,467,243
CONTAINERS FOR AEROSOL CANS
Roger Anthony Butcher, Cowplain, England, assignor to Aerosol Inventions & Development S.A. (A.I.D.), Fribourg, Switzerland, a Swiss company
Filed Apr. 3, 1968, Ser. No. 718,473
Int. Cl. B65d *83/14*
U.S. Cl. 206—1 **2 Claims**



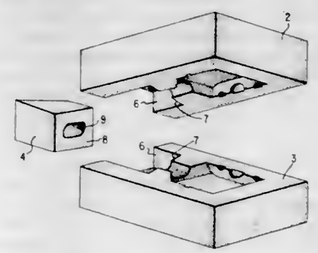
A decorative outer container for enclosing an aerosol can, the container being designated to accept refill cans of different axial lengths by being provided with a rigid spacer element which can be inserted between the bottom end of the can and the removable base of the container. The spacer element may be formed by an overcap provided on the aerosol can.

3,467,244
EVACUATED PACKAGE WITH SEMIRIGID SHELL AND FLEXIBLE CLOSURE
Reid A. Mahaffy, Montclair, and Joel A. Hamilton, Garfield, N.J., assignors to Mahaffy & Harder Engineering Company, Totowa, N.J.
Filed Mar. 10, 1967, Ser. No. 622,362
Int. Cl. B65d *73/00, 75/00*
U.S. Cl. 206—45.34 **20 Claims**



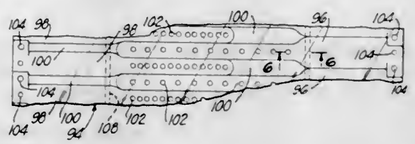
A composite evacuated package comprising a cup-like shell made of thick semirigid plastic and a closure member of thin flexible plastic film sealed to the shell around the opening thereof, the film being stretched down into the shell between the packaged article and the side walls of the shell a distance sufficient to engage both the central portion of the shell and the side edges of the packaged articles, as to produce a package which automatically adjusts to the size of the packaged articles along at least three transverse surfaces thereof.

3,467,245
SHOCK ABSORBING PACKAGE AND DISPLAY MEMBER
Akiko Kawawada, Tokyo, Japan, assignor to Fuji Shashin Film Kabushiki Kaisha, Kanagawa, Japan
Filed May 28, 1968, Ser. No. 732,712
Claims priority, application Japan, May 30, 1967, 42/45,723
Int. Cl. B65d *85/38, 5/52*
U.S. Cl. 206—46 **2 Claims**



A shock absorbing member of foamed polystyrene which also serves as a display support for displaying an article in standing position subsequent to opening the shock absorbing package.

3,467,246
MULTIPLE IDENTIFICATION BAND ASSEMBLY AND METHOD OF MAKING THE SAME
Donald A. Long and Walter W. Mosher, Jr., Burbank, Calif., assignors to Precision Dynamics Corporation, Burbank, Calif., a corporation of California
Filed Apr. 7, 1967, Ser. No. 629,145
Int. Cl. B65d *83/00;* **G09f** *3/14*
U.S. Cl. 206—56 **14 Claims**



A plurality of bands are formed in a nested, unitary assembly with each band having identification pocket and

strap portions defining peripheral edges which are connected through tear lines to adjacent of said bands in the assembly for tearable separation of the individual bands at the time of use. All of the bands of the unitary assembly are formed with interrelated identifying markings during the assembly formation, and all assembly bands consist of multiple plies of relatively easily stretchable, plastic material with a relatively non-stretchable membrane ply coextensive with the entire assembly. The entire assembly, including the tear lines, may be formed by heat sealing.

3,467,247
SHOCK-ABSORBING ONE-PIECE TRAY FOR SUPPORTING ELONGATED ARTICLES
Hugh R. Weiss, Montclair, N.J., assignor to The Pantasate Company of New York, Inc., New York, N.Y., a corporation of New York
Filed Oct. 26, 1967, Ser. No. 678,354
Int. Cl. B65d *1/34*
U.S. Cl. 206—72 **7 Claims**



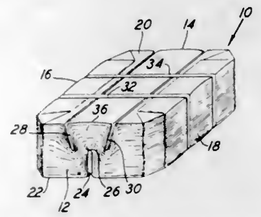
Trays formed from a single sheet of thermoplastic resin and capable of securely holding and protecting elongated objects such as pens, delicate electronic components and the like, preferably have a shock-absorbing relatively stiff but resilient peripheral flanged portion which surrounds and is spaced from a plurality of elongated article-receiving compartments of generally U-shaped cross section with ribs separating the separate compartments. The lower portions of the walls of the compartments are relatively thin and easily deformable and the vertical walls gradually increase in thickness and terminate in ribs which are of inverted U-shaped section and are thickest in the vicinity of the crest thereof. The downwardly extending legs of the ribs, which are also the upwardly extending or vertical side walls of the said U-shaped compartments are relatively easily deformed or expanded at the lower portions thereof so that objects larger than the openings in the compartments spring apart the side walls at the lower portion of the compartments and are held in the cavities by the stiffness of the ribs and the upper portions of the side walls.

3,467,248
BLISTER PACKAGE
James M. Makowicki, Newtown, Conn., assignor to S. Curtis & Son, Incorporated, Sandy Hook, Newtown, Conn., a corporation of Connecticut
Filed Jan. 8, 1968, Ser. No. 696,360
Int. Cl. B65d *73/00*
U.S. Cl. 206—78 **10 Claims**



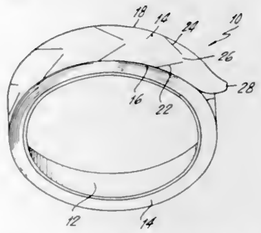
An improved blister package including a two-ply display card and a selectively removable and reinsertable plastic "bubble" having a peripheral flange. The card has an opening in one ply, a generally U-shaped track bounding a major portion of the opening to receive portions of the flange and a two-ply locking tab selectively movable to overlie a remaining flange portion to capture the "bubble" on the card.

3,467,249
BUNDLE OF STACKED BAGS
William L. Calvert, Westfield, N.J., assignor to Union Carbide Corporation, a corporation of New York
Filed Aug. 29, 1966, Ser. No. 575,872
Int. Cl. B65h *55/00, 75/02;* **B65d** *85/04*
U.S. Cl. 206—57 **4 Claims**



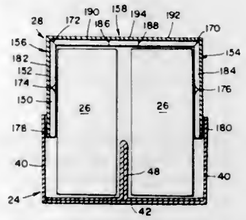
A bundle configuration for stacking bags having a general W cross-sectional shape.

3,467,250
EASY TEAR TAPE WITH LIFT TAB
Anthony N. D'Elia, 3555 Netherland Ave., Riverdale, N.Y. 10471, and Edward M. Stolarz, R.F.D. 2, Horton Drive, Yorktown Heights, N.Y. 10598
Filed Jan. 25, 1968, Ser. No. 700,594
Int. Cl. B65h *55/00, 75/02;* **B65d** *85/04, 85/66*
U.S. Cl. 206—59 **3 Claims**



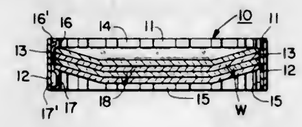
An easy tear roll of tape comprising an elongated strip of flexible material with an adhesive coating thereon. Spaced pairs of inwardly and forwardly extending cuts are provided in said strip. The cuts are of a size so that the combined length of each pair of cuts is greater than the width of the strip. Each pair of cuts terminates in a position to define a lift tab having a width of no more than 25% of the width of the strip.

3,467,251
COMBINATION SHIPPING AND STORING CONTAINER FOR SLIDES
John E. Janss, Northbrook, and Richard H. Guernsey, Western Springs, Ill., assignors to American Hospital Supply Corporation, Evanston, Ill., a corporation of Illinois
Filed Mar. 3, 1967, Ser. No. 620,534
Int. Cl. B65d *85/46, 85/48*
U.S. Cl. 206—62 **5 Claims**



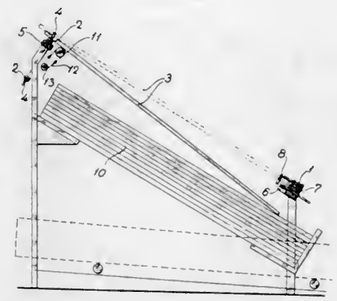
A shipping carton for glass microscope slides, the carton equipped with drawers each of which contains a corrugated cover to protect the slides during shipment. The corrugated cover is formed and scored for folding by a user for re-insertion into an emptied drawer to provide a multiplicity of channels for supporting, storing and filing within the carton of slides upon which specimens have been mounted.

3,467,252
PACKAGING AND DISPLAY ASSEMBLY
David J. Freiman, Corning, N.Y., assignor to Corning Glass Works, Corning, N.Y., a corporation of New York
Filed Dec. 26, 1967, Ser. No. 693,290
Int. Cl. B65d *85/62*
U.S. Cl. 206—65 **2 Claims**



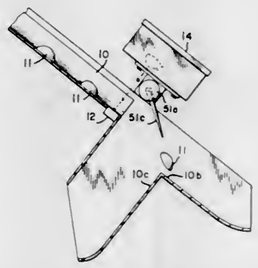
A complete packaging and display system for dishes and the like, wherein a continuous energy absorbing plastic retaining rim member bounds peripheral edge portions of a plurality of nested dishes or the like, and a graphic band of folding board or paper is adhesively secured to and encircles an unfinished outer surface portion of the plastic rim.

3,467,253
METHOD AND AN APPARATUS FOR THE SORTING BY LENGTH OF SAWN AND PLANED TIMBER AND FOR THE PILING OF THE SAME
Onni Ilmari Rossi, Kaskinen, Finland, assignor to Oy Tahka Ab, Kaskinen, Finland, a corporation of Kaskinen
Filed May 24, 1967, Ser. No. 641,043
Claims priority, application Finland, May 25, 1966, 1,371/66; June 30, 1966, 1,752/66
Int. Cl. B07c *1/14, 5/04, 1/10*
U.S. Cl. 209—73 **6 Claims**



This invention relates to a method and an apparatus for dropping of sawn or planed timber in regular piles and especially in connection of sorting of sawn or planed timber by length without manual handling. The timber is transported by two conveyors which are preferably situated close to each end of the timber and at a desired place one end of the timber is dropped flat from its conveyor onto a pile or its support and this end having moved in its longitudinal direction relative to the other conveyor along the pile or its support the other end of the timber drops flat from its support on the pile. For the purpose of sorting the timber by length the distance between the two conveyors increases either linearly or by steps in the conveying direction and the places on which the timber is to be dropped are placed along the conveyors in such a way that the length difference of the timber between two following dropping places is, for example, 1 foot.

3,467,254
PIT DETECTOR CIRCUIT
Patrick M. L. Simmons, San Jose, Calif., assignor of one-half to Genevieve I Hanscom and one-half to Genevieve I. Hanscom, Robert Magnuson, and Lois J. Duggan, trustees of the estate of Roy M. Magnuson
Filed July 25, 1966, Ser. No. 567,602
Int. Cl. B07c *5/34*
U.S. Cl. 209—111.6 **4 Claims**

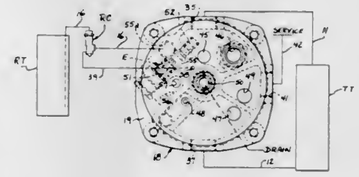


Apparatus for detecting pits or remnants thereof in split peaches providing for positioning the split peach between a light source and a light detector. The detector produces an eletcric pulse when a pit is detected in a split peach. This pulse controls a monostable multivibrator and a time delay circuit, the output of which controls a solenoid valve which provides an air jet for deflecting the split peach having the pit.

ERRATUM

For Class 209—426 see:
Patent No. 3,467,594

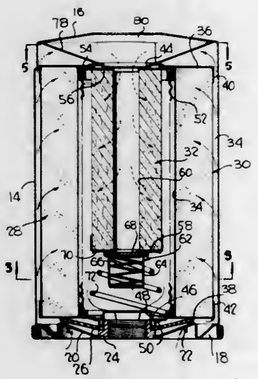
3,467,255
REGENERANT CONTROL APPARATUS
Robert A. Whitlock, Rockford, Ill., assignor to Aqua-Matic Inc., Rockford, Ill., a corporation of Illinois
Filed Nov. 21, 1967, Ser. No. 684,658
Int. Cl. B01d *33/38, 25/30, 23/20*
U.S. Cl. 210—105 **17 Claims**



A fluid treatment system which includes a treatment tank, regenerant tank, and ejector. A main valve apparatus controls various flows through the system, and a timer provides timed control of the positions of the main valve apparatus. A regenerant control apparatus is interposed in the regenerant line to control flow in both directions

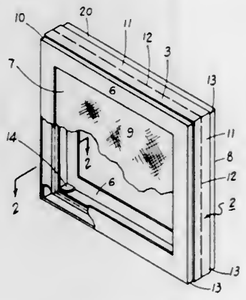
therethrough and is operative to prevent the drawing of air by the ejector, to regulate the rate of flow during refill, and to limit the refill so that the amount of refill is generally constant irrespective of fluid pressures.

3,467,256
MULTI-DENSITY SCREW-ON THROW AWAY TYPE FILTER
Kingsley E. Humbert, Jr., Lewis M. Hough, Jr., and Paul L. Francois, Gastonia, N.C., assignors to Wix Corporation, Gastonia, N.C., a corporation of North Carolina
Continuation of application Ser. No. 483,012, Aug. 18, 1965, which is a continuation of application Ser. No. 346,745, Feb. 24, 1964. This application July 18, 1967, Ser. No. 654,278.
Int. Cl. B01d *27/10*
U.S. Cl. 210—132 **11 Claims**



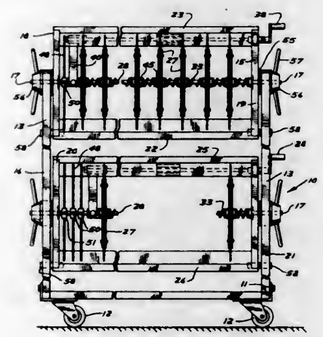
Screw-on, throw away filter cartridges having dual concentric filter elements therein.

3,467,257
EXPANSIBLE-COMPRESSIBLE UNIT FILTER ASSEMBLY
Allan R. Getzin, Jeffersontown, Ky., assignor to American Air Filter Company, Inc., Louisville, Ky., a corporation of Delaware
Filed Aug. 9, 1966, Ser. No. 571,344
Int. Cl. B01d *35/00, 29/04*
U.S. Cl. 210—484 **6 Claims**



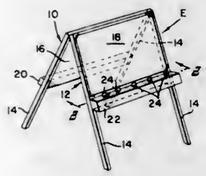
A unit filter assembly including a flow-through border frame member formed from stiff sheet-like material and having fold means to permit expansion and compression of such border frame member, the border frame member receiving the edges of filter medium of an expansible-compressible nature therein.

3,467,258
LIBRARY BOOK CART
Andrew C. Larsen, Minneapolis, Minn., assignor of one-half to Gene Ann Johnson, Wayzata, Minn.
Filed June 19, 1967, Ser. No. 646,806
Int. Cl. A47b *65/00, 63/00;* **A47f** *5/12*
U.S. Cl. 211—43 **10 Claims**



A portable book cart includes a shelf which has a plurality of book dividers slidably mounted thereon. The spacing of these book dividers is affected by independent springs each operating between two adjacent dividers. The outermost dividers are compressed or released, and this causes all of the dividers to be forced closer together or spaced farther apart to the end that the space between the dividers will be automatically adjusted uniformly throughout the shelf. Thus the shelf can be adjusted to accommodate a set of uniform thickness, relatively thin books; and can be readjusted to accommodate another set of books of approximately uniform relatively greater thickness.

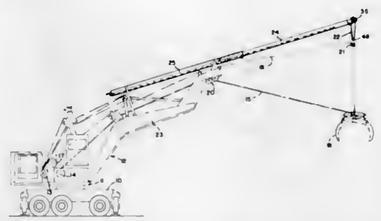
3,467,259
PAINT EASEL, TRAY, AND LINER THEREFOR
Sandra B. Silver, 2491 N. 50th St., Apt. 144, Philadelphia, Pa. 19131
Filed Mar. 15, 1967, Ser. No. 623,393
Int. Cl. A47b *73/00, 97/04;* **F17c** *11/00*
U.S. Cl. 211—74 **9 Claims**



A paint jar holder for easels, the liner therefor and the combination of the holder, liner and easel in which there is provided a tray which may be secured to an easel having at least one paint jar holder well therein and including a removable disposable impermeable liner for the well corresponding in shape and inserted therein which liner includes a drip catching flange extending from the mouth of the well a substantial distance. In some in-

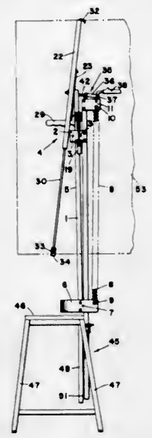
stances an integral splash board is provided secured to the flange and extending in an upright fashion.

3,467,260
SNORKEL-EQUIPPED LOADING BOOM WITH SAFEGUARD AGAINST DESTRUCTIVE BENDING OF SNORKEL
James R. Thompson, Seattle, Wash., assignor to Washington Iron Works, Seattle, Wash., a corporation of Washington
Filed July 31, 1967, Ser. No. 657,369
Int. Cl. B66c *1/32, 23/06, 23/66*
U.S. Cl. 212—7 **7 Claims**



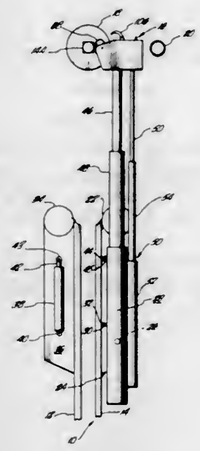
Mechanism for use with a loading boom of the character in which a snorkel appendage is provided so that the boom's tong grapple can be carried outwardly well beyond the outer end of the boom, the mechanism providing a release structure which acts to automatically free the snorkel of the weight of a grappled load in the event that the snorkel is subjected to such weight before being retracted, thus protecting the snorkel against liability of damage.

3,467,261
SHEET HANDLING APPARATUS
Rowan C. Jewell, Clio, Mich., assignor to Gramar Corporation, Clio, Mich., a corporation of Michigan
Filed Sept. 25, 1967, Ser. No. 670,368
Int. Cl. B25j *3/00*
U.S. Cl. 214—1 **9 Claims**



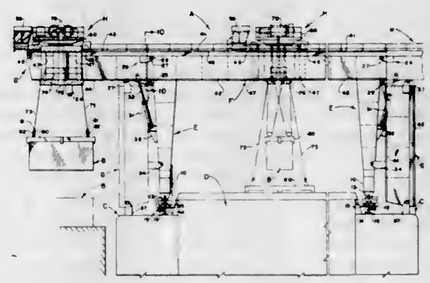
Apparatus for lifting and supporting wallboard or other sheet material and having an upright support on which is mounted a vertically reciprocable sheet-lifting member which constantly is biased to an elevated position, the apparatus including releasable latch means for latching the sheet-lifting member in a lowered position against the bias of the spring, thereby facilitating the loading of sheet material on the sheet-lifting member and enabling effortless lifting of the sheet material to a desired elevation.

3,467,262
PIPE STABBER
Charles R. Reed, Larose, La., assignor to Global Marine Inc., Los Angeles, Calif., a corporation of Delaware
Filed Mar. 21, 1967, Ser. No. 624,800
Int. Cl. E21b *19/02;* **B66c** *1/66*
U.S. Cl. 214—2.5 **7 Claims**



Apparatus to be used in the well drilling industry to grasp suspended, substantially vertical joints of drill pipe and move them into a variety of locations. A stabbing head is provided with pivotal jaws capable of holding and releasing joints of drill pipe. The stabbing head is connected to a linearly extensible main ram which may be pivoted in a horizontal plane through a desired angle to enable the stabbing head to reach the points where the drill pipe is needed. A secondary power ram is connected to the main ram for pivoting the main ram about a vertical axis, thereby to vary the angular position of the main ram on its foundation.

3,467,263
SHIPBOARD GANTRY CRANE AND HOIST MECHANISM THEREFOR
Raimunds Auzins, Canton, and Stephen P. Yendrich, Jr., Beloit, Ohio, assignors to Morgan Engineering Company, Alliance, Ohio, a corporation of Ohio
Filed Dec. 7, 1967, Ser. No. 688,815
Int. Cl. B63b *27/00*
U.S. Cl. 214—15 **5 Claims**



This disclosure presents a single girder, low-profile shipboard gantry crane for transferring cargo between a dock and a ship. The crane travels on spaced parallel

rails located on opposite sides of the ship parallel to the ship's longitudinal centerline, and has a cargo handling span or reach formed by a single transverse main girder and at least one hinged outboard cantilever or jib which can be swung upward to a horizontal position over a dock, in end-to-end alignment with the main girder and which, when folded down along side the gantry leg, can be used to help secure the crane to the ship's deck structure while the ship is underway. A side running trolley car with a turntable is supported in cantilever fashion at the side of either the single main girder or outboard jib.

3,467,264

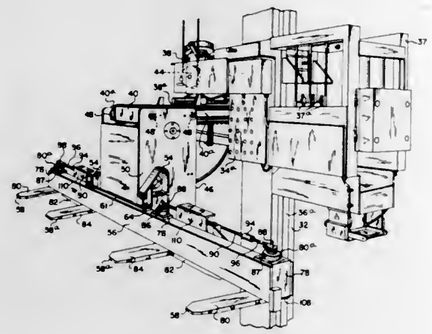
LOAD TRANSFER AND STORAGE MECHANISM

George E. Armington, Austinburg, and Charles B. Boytz, Garretsville, Ohio, assignors to The Euclid Crane and Hoist Company, Cleveland, Ohio, a corporation of Ohio

Filed July 19, 1966, Ser. No. 566,290

Int. Cl. E04h *6/00;* **B66f** *9/14*

U.S. Cl. 214—16.4 **9 Claims**



A load transfer and storage mechanism comprising, a storage frame for receiving loads therein and a powered load carrier having an extractor portion for handling the loads. The load carrier is movable along a travel zone disposed adjacent the storage frame for depositing loads into and removing loads from the storage frame. The extractor comprises a support having a plurality of tine members spaced in lateral relation along the support, with the the tine members being adapted to support a load thereon. At least some of the tine members are movably mounted on the support for pivotal movement in a generally horizontal plane about vertical axes. In one embodiment, certain of the horizontally swingable tine members are of generally L-shaped configuration in plan view, comprising a pair of arms projecting generally perpendicularly with respect to one another. When an arm of the L-shaped tine member is in operative position, it is adapted to project generally perpendicularly outwardly from the support while the other arm of the respective pair is disposed adjacent the support. One of the arms is longer than the other arm so that the amount that the operative arm is projecting outwardly from the support can be varied by the pivoting by the tine member. A novel arrangement is provided for suspending the support on a carriage portion of the extractor, and by means of spaced hangers coacting with seats mounted on bracket means attached to the carriage portion, with the seats and hangers having coacting hemispherical bearing surfaces for providing surface bearing therebetween irrespective of an angled position of the support with respect to the carriage.

3,467,265

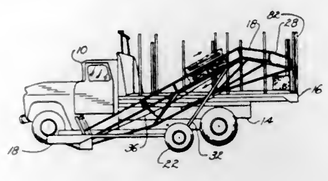
BALE-HANDLING SYSTEM

Richard B. Miskin, Ucon, Idaho 83454, and Merlin R. Miskin, Rte. 2, Box 194, Idaho Falls, Idaho 83401

Original application June 30, 1964, Ser. No. 379,128. Divided and this application Jan. 23, 1967, Ser. No. 610,977

Int. Cl. B65g *67/00, 65/00*

U.S. Cl. 214—42 **3 Claims**



A loader conveyor for lifting bales comprising a frame with a horizontal portion and a vertically inclined portion with the vertically inclined portion having conveyor means and being pivotally connected to the horizontal portion and with inclined members pivotally connected to the horizontal portion and having a slidable supporting section which supports the vertical portion with means for vertically adjusting the vertical portion by swinging the inclined members in an arc with means for locking the vertically inclined portion at a predetermined height, and with means for securing the horizontal portion to a vehicle.

3,467,266

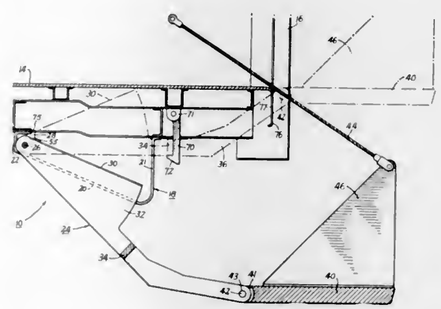
PNEUMATIC TAILGATE LIFT

John A. Vanderjagt, Memphis, Tenn., assignor to Scienco, Inc., Memphis, Tenn.

Filed Jan. 31, 1968, Ser. No. 702,070

Int. Cl. B60p *1/44;* **B66f** *3/34;* **F01b** *19/04*

U.S. Cl. 214—77 **9 Claims**



The disclosed tailgate lift includes a base attached to a truck beneath its loadbed. A pneumatic element in the form of a folded, close-ended, tubular member is disposed between the base and a pivotally mounted lifting member. The lifting member carries a lift platform which, upon actuation of the pneumatic element, moves between a position adjacent the ground to an elevated position level with the loadbed for convenient cargo loading and unloading. The platform swings to a vertical orientation while in the raised position to serve as the truck tailgate.

3,467,267

METHOD AND DEVICE TO EMPTY CLOSED SACKS FILLED WITH PARTICULATE MATERIAL

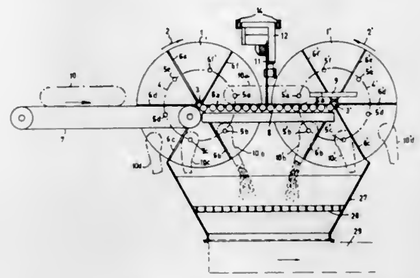
Gerrit J. van Elten, Voorthuizen, Netherlands, assignor to Welvo N.V., Voorthuizen, Netherlands, a limited liability corporation of the Netherlands

Filed June 27, 1967, Ser. No. 649,349

Claims priority, application Netherlands, July 1, 1966, 6609265

Int. Cl. B65b *69/00*

U.S. Cl. 214—305 **14 Claims**



A method and apparatus for emptying sacks containing particulate material in which the filled sack is fed by conveyors and impaled, at its opposite ends, on lances. The sack, with its opposite ends impaled, is cut open, transverse the sack and intermediate its opposite ends, and the cut open ends of the sack are then tipped downwardly and the sack is emptied. In emptying the sack, air is blown, either continuously or intermittently, through the lances and into the sack in a direction away from the cut, opened end. When emptied, the sack ends are removed from the lances.

3,467,268

APPARATUS FOR HANDLING AND TRANSPORT OF HEAVY BULKY CONTAINERS

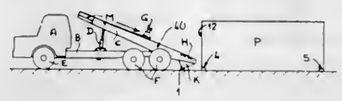
Antoine Corompt, Saint-Etienne, Loire, France, assignor to Etablissements Bennes Marrel, Saint-Etienne, Loire, France, a joint stock company

Filed Mar. 20, 1968, Ser. No. 718,306

Claims priority application France, Dec. 29, 1967, 49,487

Int. Cl. B60p *1/04*

U.S. Cl. 214—505 **11 Claims**



Apparatus for loading a container on to a road vehicle and unloading it, from the ground, in which the vehicle has a false tilting chassis on which a girder runs, the girder having clamps to engage the container. When a container is to be lifted on to the vehicle, it is driven backwards to the container and the false chassis tilted till its rear end rests on the ground in front of the container. The girder is run down the chassis by a winch cable, and the clamps on it applied to the container. The winch now lifts the container end, and rollers on the end of the false chassis enable the vehicle to roll under the container as it is winched on to the false chassis. On arrival at its correct position the false chassis is levelled, and further clamps are applied to secure the rear of the container.

3,467,269

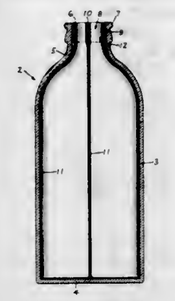
COMPARTMENTED GLASS BOTTLES

Harry A. Newton, 231 W. Tabor Road, Philadelphia, Pa. 19120

Filed Sept. 26, 1967, Ser. No. 670,572

Int. Cl. B65d *1/04*

U.S. Cl. 215—6 **9 Claims**



A glass bottle is provided with separate compartments formed by a plurality of transparent or translucent plastic liner bags mounted on a neck insert for the bottle which is sealed by a conventional crown cap. In a preferred embodiment, the plastic liner bags are adhered to the neck insert for the bottle and to the interior surface of the bottle. In a modified form, the usual single neck glass bottle is replaced by a fused double necked bottle, each neck being adapted to have mounted thereon a modified crown cap, which may be removed separately. In such instance, the bags are modified to permit pressure expansion of one bag when the cap sealing the other bag is removed.

3,467,270

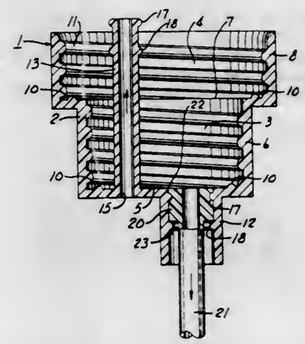
CAP

Edsell M. Eady, Butler Township, Butler County, Pa., assignor to Robert M. Hall, Santa Barbara, Calif.

Filed Aug. 3, 1967, Ser. No. 658,081

Int. Cl. B65d *53/00*

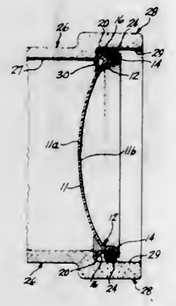
U.S. Cl. 215—40 **5 Claims**



A cap structure provided for connection to at least two different sizes of conventional bottle openings of solution-containing containers having fitments the first of which permits the entrance of gas into the connected container through a flutter check valve to replace the solution permitted to flow from a second fitment. The fit-

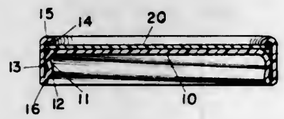
ments are provided with aligned annular ribs to provide impervious sealed engagement with tubular members connected therewith.

3,467,271
PIPE CLOSURE PLUG ASSEMBLY
Arthur E. Kaiser, Seattle, and Jefferson M. Fluke, Kirkland, Wash., assignors to Kaiser Seal Company, Inc., Bothell, Wash., a corporation of Washington
Filed Feb. 26, 1968, Ser. No. 708,287
Int. Cl. B65d *39/12;* **F16l** *55/12*
U.S. Cl. 220—24.5 **10 Claims**



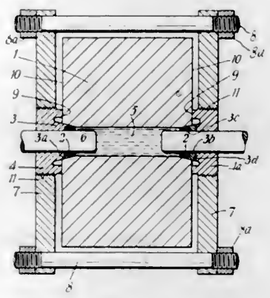
An all-plastic plug body having a central portion in the form of a concavo-convex disk and a peripheral circular sealing seat having a circumferential end flange and an outwardly facing sealing ring supporting surface inclined radially outwardly from the concave to the convex side of the disk for supporting an O-ring seal. The edge of the disk intersects the seat at about the midpoint of the sealing ring supporting surface. The seat also is provided with an abutment edge **20** that engages the radial inner wall of the bell-shaped end of the pipe when the plug is installed. The disk is flexible so that upon application of pressure it expands radially urging said sealing ring supporting surface radially outwardly to further compress the O-ring against the inner wall of the pipe. The circumferential end flange is relatively thin to permit deformation and easy removal from a mold.

3,467,272
SCREW THREADED CLOSURE FOR A CONTAINER
Richard F. Hendrickson, Erie, and Roderick V. King, Girard, Pa., assignors to Sterling Seal Company, Erie, Pa., a corporation of Pennsylvania
Filed Apr. 18, 1968, Ser. No. 722,328
Int. Cl. B65d *41/04*
U.S. Cl. 220—39 **13 Claims**



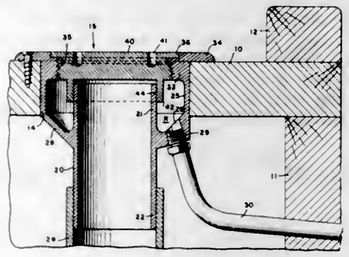
The cap disclosed is especially suited to be injection molded or thermoformed or blown. The base shell has an inner skirt which is threaded having a top portion connected to an inner top. The lower part of the inside skirt is attached to the lower part of the outside skirt. After the cap is formed, the outside skirt is trimmed off at its upper end. The upper or top portion of the inside skirt has a recess at the end of the threaded part. This recess will hold a liner of a shape commonly used for sealing purposes.

3,467,273
SEALING OF HIGH PRESSURE VESSELS
William Henry Campbell, Newcastle-upon-Tyne, and John Antony Pennell, Cumberland, England, assignors to Vickers Limited, London, England, a British company
Filed July 26, 1968, Ser. No. 748,053
Claims priority, application Great Britain, July 26, 1967, 34,476
Int. Cl. B65d *53/00*
U.S. Cl. 220—46 **9 Claims**



An attachment for mounting across an end face of a high pressure vessel to retain sealing ring means in a bore opening through said vessel end face, the attachment including a back-up ring for applying axial end pressure to the sealing ring means, and flexible mounting means which carries the back-up ring and is attachable across the vessel end face in a pre-stressed condition.

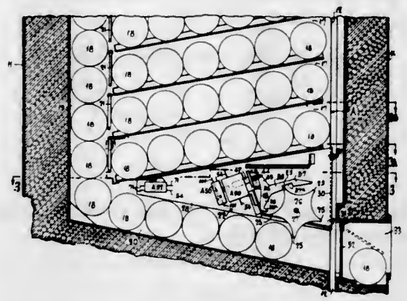
3,467,274
GASOLINE INTAKE DEVICE
Gervase G. Schmitt, 1631 Clearview Ave., Lancaster, Pa. 17601
Filed May 22, 1967, Ser. No. 640,252
Int. Cl. B65b *3/00;* **B67c** *3/00*
U.S. Cl. 220—86 **1 Claim**



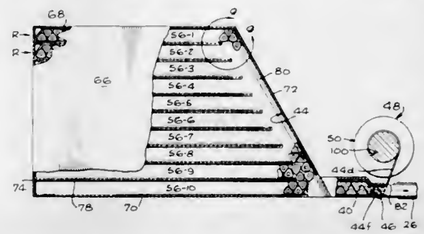
This invention relates to a safety fuel-fill and specifically to an improved gasoline inlet device. The device is particularly useful on boats; but it may also be employed in other environments. Water seeping into the device to trapped and discharged. Spilled gasoline is caught and kept off of the boat deck.

3,467,275
CONTAINER DISPENSER HAVING AN ESCAPEMENT ASSEMBLY
George W. Vaughan, Walter S. Barton, and Mott E. Simpson, Charlotte, N.C., assignors to Vaughan Industries, Inc., Charlotte, N.C., a corporation of North Carolina
Filed Dec. 26, 1967, Ser. No. 693,543
Int. Cl. B65h *1/00;* **G07f** *11/00*
U.S. Cl. 221—197 **4 Claims**

An apparatus for selectively dispensing different classes of containerized merchandise wherein a gravity actuated and electromagnetically controlled star wheel unit dispenses containers from each class in response to a customer's selection. The apparatus is specifically characterized by: front loading and front dispensing container chutes; a removably mounted dispensing unit for receiving containers from the front end of each dispensing chute; mechanism for obstructing simultaneous selection of two or more classes of merchandise for delivery; and mechanism automatically operable at the end of a vending cycle for preventing unauthorized delivery of a container through reverse rotation of the star wheel.



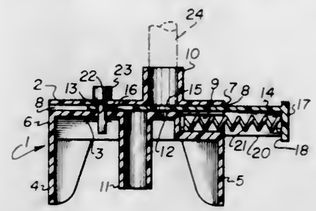
3,467,276
ARTICLE DISPENSING MEANS AND AUTOMATIC GUN SYSTEM EMBODYING SAME
David Dardick, Palos Verdes Peninsula, Calif., assignor to TRW Inc., Redondo Beach, Calif., a corporation of Ohio
Filed Sept. 1, 1967, Ser. No. 665,132
Int. Cl. B65g *59/06;* **F41d** *9/00;* **B65h** *5/02*
U.S. Cl. 221—260 **16 Claims**



An article dispensing means for feeding unattached or discrete articles in succession to an article receiver, the dispensing means having a compartmented storage magazine for containing a number of the articles arranged in rows, and a flexible conveyor band with external ends and an intervening portion which is trained about the interior of the magazine in such manner that endwise feeding of one end of the band from the magazine is effective to transport the article rows endwise in succession from the magazine to the receiver. An automatic gun system embodying the article dispensing means for feeding beltless ammunition rounds to an automatic gun.

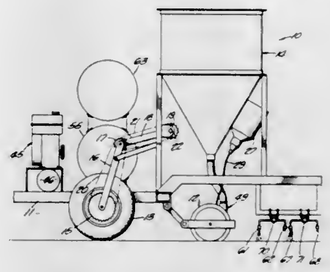
3,467,277
PELLET DISPENSER FOR FLAT CIRCULAR PELLETS
Albert C. Tolliver, Summit, N.J., assignor to Engelhard Minerals & Chemicals Corporation, Newark, N.J., a corporation of Delaware
Filed Jan. 17, 1968, Ser. No. 698,532
Int. Cl. B65g *59/00*
U.S. Cl. 221—264 **1 Claim**

The present invention deals with a pellet dispenser for dispensing flat circular pellets. The dispenser comprises an elongated table having upper and lower surfaces with a horizontal slot formed therein intermediate the upper and lower surfaces. An upper tubular nipple extends upwardly from the upper surface and a lower tubular nipple depends from the lower surface, both nipples communicating with the slot. An elongated key member is



slidably mounted in the horizontal slot. The key member is provided with both a circuliar aperture and an elongated aperture spaced from the circular aperture longitudinally of the key. A vertical bore is formed through the table and a retaining pin is mounted in the bore and passes through the elongated key aperture.

3,467,278
PLANTING METHOD AND APPARATUS
David M. Williams, 165 Riker Terrace, Salinas, Calif. 93901
Filed June 22, 1966, Ser. No. 559,562
Int. Cl. B67d *5/54, 5/52, 5/64*
U.S. Cl. 222—1 **11 Claims**

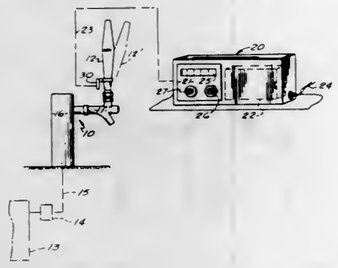


Seeds to be planted are gravity fed from a hopper to a substantially horizontal portion of an outlet tubing. At the appropriate time a blast of pressurized air ejects a measured amount of seeds into a furrow. Simultaneously, a store of vermiculite is gravity fed into a horizontal compartment in which it is also pneumatically ejected with the seeds to form a common mass in the furrow. Subsequently, the vermiculite-seed mass is sprayed with liquid fertilizer and then sprayed with an asphalt stabilizer. A further aspect is the provision of a plurality of such apparatus disposed transversely of the furrows with timed commutators provided planting locations of adjacent furrows in a staggered arrangement.

3,467,279
FLUID DISPENSING MONITOR
Douglas J. Upton and Michael D. Cronan, Los Angeles, Calif., assignors, by mesne assignments, to Douglas J. Upton, Northridge, Calif.
Filed Feb. 27, 1967, Ser. No. 618,958
Int. Cl. B67d *5/22, 5/08*
U.S. Cl. 222—31 **15 Claims**

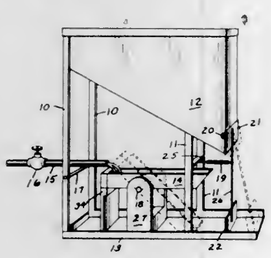
A fluid dispensing monitor is described for providing an indication of the equivalent monetary value of a dispensed volume of fluid, such as beer. The monitor uses a con-

stant speed motor to advance a counter calibrated in monetary units. The motor is activated by an actuator switch which is closed when a spigot is opened to dispense fluid. Inhibit timer means, also activated by the actuator switch, deenergizes the motor if the spigot remains open



for longer than a preselected elapsed time. The motor remains deenergized for a duration corresponding to the difference between the time required to dispense a pitcher of beer and the time required to dispense by the glass a correspondingly priced volume of beer.

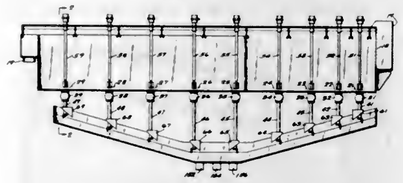
3,467,280
FEEDING DISPENSER
Henry Cyphert, R.D. 1, Shippenville, Pa. 16254
Filed Oct. 30, 1967, Ser. No. 678,924
Int. Cl. B67d *5/08*
U.S. Cl. 222—57 **5 Claims**



The feeder disclosed herein is intended to feed chemicals such as lime, into water or other liquid to be treated. The feeder operates on the principle that the end of the pan remote from the discharge end is weighted heaviest. Thus, when the pan is empty, it will be held by gravity in horizontal position. There is more pan volume capacity on the side of the rocker shaft adjacent the discharge end. Thus, when the pan fills with water, it will overbalance the weighted end and dump the water from the pan. The water from the pan will rush into engagement with the paddle which will open the feed valve momentarily and feed a small amount of chemical into the water. When the pan is empty, the counterweight will swing it back to horizontal position.

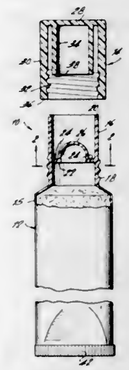
3,467,281
SAND CLASSIFIER WITH BLENDING SYSTEM
Fred Curtis Archer, Whitefish Bay, Wis., assignor to Barber-Greene Company, Aurora, Ill., a corporation of Delaware
Filed Aug. 7, 1967, Ser. No. 658,798
Int. Cl. B03b *3/02*
U.S. Cl. 222—70 **7 Claims**

This invention relates to hydraulic sand classifiers, and relates more particularly to an improved system for reconstituting or blending classified sands into one or more sand products having a desired formulation and for con-



trolling the formulation of the sand products at a plurality of classifying stations.

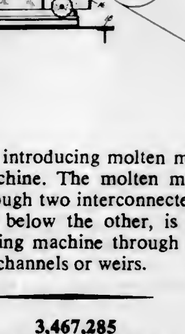
3,467,282
MIXING TUBE
Gilbert Schwartzman, 20 Wilmot Circle, Scarsdale, NY. 10583
Filed May 10, 1968, Ser. No. 728,222
Int. Cl. B65d *35/22;* **B67d** *5/60*
U.S. Cl. 222—94 **8 Claims**



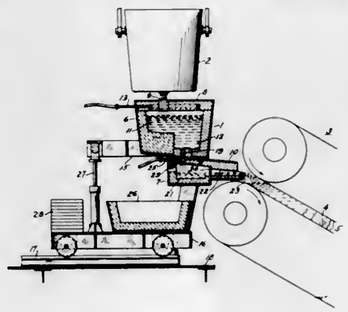
A mixing tube for use with two materials which have an extended shelf life when not mixed, but which must be used relatively soon after mixture to prevent deterioration. The mixing tube includes a squeezable tube and a cap with the tube having a plug engageable with a cylindrical projection depending from the cap to initially prevent mixture of the materials, but which allows for mixture of the materials upon loosening of the cap.

3,467,283
DISPENSING CONTAINER WITH COLLAPSIBLE COMPARTMENT
James W. Kinnavy, Westmont, Ill., assignor to Continental Can Company, Inc., New York, N.Y., a corporation of New York
Filed Jan. 18, 1968, Ser. No. 698,836
Int. Cl. B65d *35/28*
U.S. Cl. 222—95 **5 Claims**

A product dispensing container of the type including a collapsible product containing compartment which is disposed within a rigid container and defines therein a chamber containing a propellant which applies a pressure force on the bag. A valve dispensing means communicates with the bag for discharging the product from the bag under the force of the propellant. The product containing compartment is formed from an integral piece of material and includes axially spaced fold means for regulating the collapse of the compartment caused by pressure forces acting radially and axially thereon as the product is dispensed.



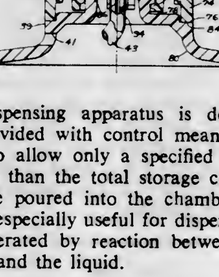
3,467,284
DISTRIBUTOR FOR CONTINUOUS CASTING MACHINE
David M. Koncsics, Allentown, and Bruce C. Whitmore, Bethlehem, Pa., assignors to Bethlehem Steel Corporation, a corporation of Delaware
Filed May 24, 1967, Ser. No. 640,899
Int. Cl. B67d *5/64*
U.S. Cl. 222—166 **2 Claims**



A distributor for introducing molten metal into a continuous casting machine. The molten metal after being allowed to flow through two interconnected metal holding compartments, one below the other, is introduced into the continuous casting machine through a series of substantially V-shaped channels or weirs.

3,467,285
SEED PLANTER
Raymond B. Nockleby, Rte. 1, Kalispell, Mont. 59901
Filed Dec. 13, 1967, Ser. No. 690,183
Int. Cl. A01c *15/06, 7/18;* **G01f** *11/42*
U.S. Cl. 222—171 **5 Claims**

A seed planter is described for planting seeds at uniform intervals in furrows. The seeder has a disc with a cylindrical flange extending to one side. A circumferential groove is formed in the outer surface of the flange with annular spaced dispensing apertures formed in the flange communicating with the groove. A bell-shaped seed container is threadably mounted in the open end of the flange to control the size of the opening to the dispensing apertures. A handle with a C-shaped band is attached to the flange with the band slidably positioned in the



groove to permit the disc and flange to rotate as the handle is pushed. The band covers all the apertures except those that are positioned between the ends of the band.

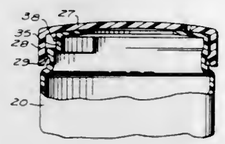
3,467,286
DISPENSING APPARATUS
Efrem M. Ostrowsky, Highland Park, Ill., assignor to Miles Laboratories, Inc., Elkhart, Ind., a corporation of Indiana
Filed Aug. 31, 1967, Ser. No. 664,671
Int. Cl. B65d *83/00, 83/06*
U.S. Cl. 222—394 **7 Claims**

Liquid dispensing apparatus is described having a chamber provided with control means to prevent overfilling and to allow only a specified amount of liquid, which is less than the total storage capacity of the dispenser, to be poured into the chamber. This improved apparatus is especially useful for dispensing liquids under pressure generated by reaction between an effervescent composition and the liquid.

3,467,287
ROTATABLE CLOSURE ASSEMBLY WITH RIM
Paul A. Marchant, Kansas City, and Kenneth Ray McHardy, Independence, Mo., assignors to Rexall Drug and Chemical Company, Los Angeles, Calif., a corporation of Delaware
Filed May 23, 1967, Ser. No. 640,704
Int. Cl. B65d *47/00*
U.S. Cl. 222—480 **1 Claim**

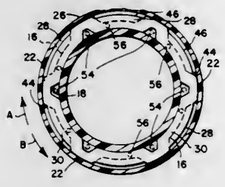
A container closure assembly wherein the closure is rotatably mounted on the dispensing neck of the container

and may be rotated to two different dispensing positions and a third closed position. The dispensing opening in the container neck has a continuous peripheral rib around its periphery to provide an effective seal between the



closure and the container neck. Locking lugs are provided on the container neck to lock the rotatable closure in either of the dispensing positions or in the closed position.

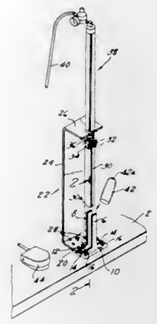
3,467,288
ONE-PIECE SHAKER CLOSURE
Jack V. Croyle, Woonsocket, R.I., assignor, by mesne assignments, to Imco Container Company, Kansas City, Mo., a corporation of Delaware
Filed Dec. 13, 1967, Ser. No. 690,128
Int. Cl. B65d *47/14*
U.S. Cl. 222—480 **7 Claims**



A container and dispenser having a hollow body provided with a hollow cylindrical neck on which a perforated dispenser cap is rotatably mounted to move alternately into open or closed positions by rotation of the cap on the neck, and perforations or openings in the cap align with grooves recessed in the bore of the neck. The grooves are contained in outwardly and radially disposed projections on the outside wall of the container neck. The flanges between the projections provide extended shutoff valve surfaces adjacent to which the perforations in the cap are contiguously held by a snap on annular ledge in the skirt of the cap which snaps over ends of the projections which are closed at the outer portions of the container neck wall. The cap also has an annular row of projecting fingers extending into the bore of the neck, such that the spaces between the fingers provide access for powder or other materials to travel from the interior of the container and into the grooves in the bore of the neck and outwardly through the openings in the cap when turned to open position.

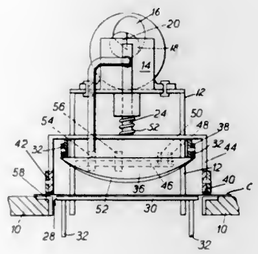
3,467,289
TURNING APPARATUS
Harold Preston, Irvington, N.J., assignor to Seymour Silverman, New York, N.Y.
Filed July 31, 1967, Ser. No. 657,192
Int. Cl. A41h *43/00*
U.S. Cl. 223—40 **8 Claims**

Apparatus for turning tubular tabs or the like inside out, in which the tabs are initially mounted on a pair of resilient spaced upwardly extending elements between which a turning element or mandrel is adapted to be moved downwardly, the ability of those spaced elements to bend toward one another enabling a given set of such elements to handle tabs of widely different sizes; the turning element may be flat with an appropriate edge configuration and is adapted to carry the tab turned thereby



to an at least partially exposed position below the support therefor, where that turning element may serve as a means for shaping the tab while it remains in position thereon.

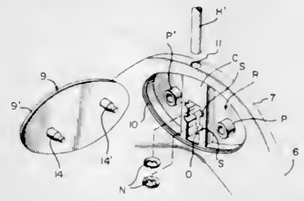
3,467,290
CLOTH-SHAPING APPARATUS
Frank Peacock, 5 Stretton Drive, Southport, England
Filed Oct. 1, 1964, Ser. No. 400,749
Claims priority, application Great Britain, Oct. 8, 1963, 39,528/63
Int. Cl. D06c *15/00*
U.S. Cl. 223—52 **5 Claims**



1. A device for shaping an area of cloth which comprises a first member having a flat surface, a second member mounted in moveable relationship with said first member and moveable between a first position in which said first and second members are spaced from one another and a second position in which said first and second members are in clamping relationship, a first hole formed in said first member, a second hole formed in said second member such that when said first and second members are in clamping relationship said first and second holes are superimposed one above the other, a shaped member having a shaped working surface mounted in moveable relationship on said first member, said shaped member being moveable between a first position in which its shaped working surface is disposed above the flat surface of said first member and a second position in which its shaped working surface is disposed below said flat surface of said first member, the line of travel between said first

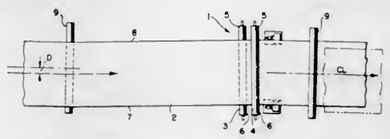
and second positions passing through the holes formed in said first and second members, cam means cooperating with said second member whereby to move said second member from said first to said second position, means for biasing said second member towards said first position, cam means cooperating with said shaped member whereby to move said shaped member from its first to its second position, means for biasing said shaped member towards said first position, and means for actuating said cam means.

3,467,291
GARMENT HANGER
Robert Phillips, Roslyn, and Bernard B. Levine, New York, N.Y., assignors to Bernard Plastics Molding Corporation, New York, N.Y., a corporation of New York
Filed Sept. 5, 1967, Ser. No. 665,331
Int. Cl. A41d *27/22*
U.S. Cl. 223—85 **5 Claims**



This invention relates to a clothes hanger, and more particularly, a hanger for men's suits and which hanger is frequently referred to as a coat hanger.

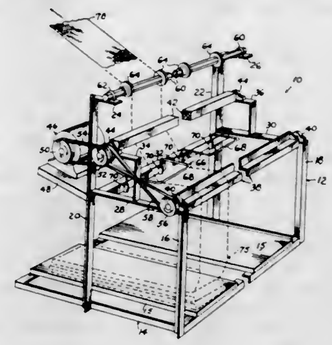
3,467,292
COMBINATION WEB STEERING AND GUIDING APPARATUS
Alexander V. Alexeff, Cleveland, and Harvey Snyder, Bay Village, Ohio, assignors to Alexeff-Snyder Enterprises, Inc., Cleveland, Ohio, a corporation of Ohio
Filed Sept. 5, 1967, Ser. No. 665,562
Int. Cl. B65h *25/26*
U.S. Cl. 226—19 **11 Claims**



A web steering and guiding apparatus having a pair of guide rolls which may be tilted with respect to the normal line of travel of web material guided thereby to correspondingly tilt the web material in such a manner as to reduce substantially the looseness and tightness in opposite edges of the strip ordinarily occurring during lateral displacement of the material.

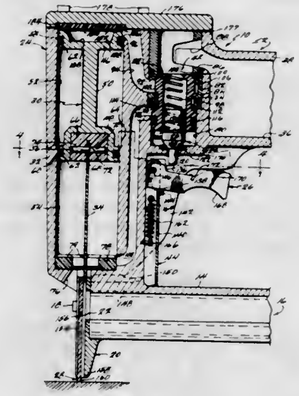
3,467,293
FOLDED WET TOWER GUIDE
Buell L. Davis and Richard D. Pulliam, Oklahoma City, Okla., assignors to Rollett Mfg. Inc., Oklahoma City, Okla., a corporation of Oklahoma
Filed June 30, 1967, Ser. No. 650,478
Int. Cl. B65h *17/22, 23/08*
U.S. Cl. 226—189 **5 Claims**

An upright open type elongated framework is provided with a base portion for supporting an elongated strip of wet tenuous material when folded back and forth upon itself. Spaced-apart rollers, driven by motor connected belt and pulley means, mounted on the frame form a



tortuous path through the frame in combination with a pair of spaced-apart fixed guides over which the material is longitudinally entrained.

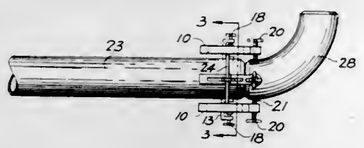
3,467,294
PNEUMATIC FASTENER DRIVING APPARATUS
Edward I. Fisher, Westerly, R.I., assignor to Bostitch, Incorporated, East Greenwich, R.I., a corporation of Rhode Island
Filed June 28, 1966, Ser. No. 561,095
Int. Cl. B21j *15/28;* **B27f** *7/06;* **B25c** *5/02*
U.S. Cl. 227—8 **6 Claims**



A pneumatically actuated fastener driving apparatus embodying a housing having a differential cylinder receiving a differential driving piston, the driving piston having a fastener driving element connected therewith for driving staples and the like fed to a drive track from a magazine assembly. The apparatus includes a trigger actuated control valve for communicating a source of air under pressure with the drive piston to move the latter through a drive stroke. The drive piston is provided with a relatively sharp upwardly extending rim which engages a resilient pad when the drive piston is in its uppermost position, the engagement of the rim with the pad serving to delay the initiation of the drive stroke until the air under pressure communicated with the drive piston increases to a value substantially equal to the pressure of the source. The differential cylinder is provided with an opening in the wall which serves to communicate the air under

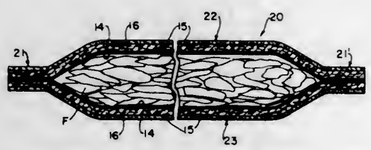
pressure which moves the piston through the drive stroke to the differential chamber when the piston reaches a position adjacent the end of its drive stroke so as to charge the differential chamber with air under pressure operable to effect the return stroke of the piston. During the return stroke, the air above the drive piston is discharged to atmosphere under the control of the trigger actuated valve through the bottom of the differential cylinder so as to prevent a suction action therein. A contact trip element is mounted on the apparatus adjacent the nosepiece for movement from an inoperative position into an operative position in response to the movement of the device against a workpiece. The trigger is pivotally carried by a structure movable with the contact trip element and is arranged so as to actuate the control valve only in response to simultaneous movement of the contact trip assembly into its operative position with a manual actuation of the trigger or when both movements are sequentially performed in either order. The housing is provided with abutments including ribs on opposite sides of the trigger to prevent manual movement of the trigger into a position to actuate the control valve when the contact trip is in its inoperative position.

3,467,295
CLAMPING MEANS FOR PIPES AND FITTINGS
Robert L. Watson, Box 295, R.D. 2, Lowellville, Ohio 44436
Filed June 23, 1967, Ser. No. 648,318
Int. Cl. B23k *37/04, 1/14*
U.S. Cl. 228—49 **4 Claims**



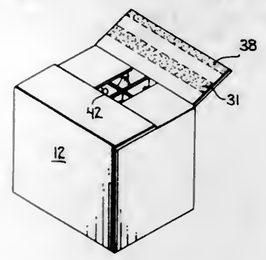
A clamp for securing a curved section of pipe or the like, in proper position relative to the end of another section of pipe, to facilitate welding of the two sections to one another, and wherein the clamping means is adjustable for moving the sections relative to one another for desired alignment of the same.

3,467,296
PACKAGING MATERIAL AND METHOD OF MANUFACTURING THE SAME
William E. Anderson, Bloomsbury, N.J., assignor to Riegel Paper Corporation, New York, N.Y., a corporation of Delaware
Filed Apr. 11, 1966, Ser. No. 541,811
Int. Cl. B65d *5/06, 5/62*
U.S. Cl. 229—3.1 **1 Claim**



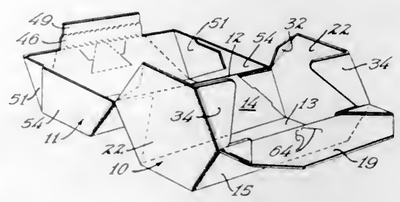
The present disclosure is directed to improved packaging materials in which a specific class of thermoplastic coatings (resin, vinyl acetate-ethylene copolymer, wax) is unbalancedly applied, weightwise, to a flexible sheet material after being differentially formulated. The differential coating formulations include common resin to vinyl acetate-ethylene copolymer ratios while varying in wax content.

3,467,297
SHIPPING CONTAINER
Donald E. Ellison and Willie E. Guffy, Indianapolis, Ind., assignors to Inland Container Corporation, Indianapolis, Ind., a corporation of Indiana
Filed Sept. 11, 1967, Ser. No. 666,740
Int. Cl. B65d *5/02*
U.S. Cl. 229—37 **4 Claims**



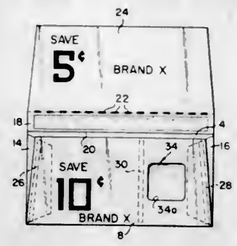
A container erected from a blank of corrugated paper board or the like for shipping bottles of liquor. A protective coating, such as an adhesive repellent and nonabrasive material, on inner faces of the cover flaps, and arranged to prevent adhesion and abrasion of Government tax stamps affixed over the bottle caps, the coating material being applied in strips parallel to the flap fold lines enabling uniform and continuous application of the coating as the blank is fed horizontally through normal box making equipment.

3,467,298
HEXAGONAL ONE-PIECE CARTON
Lawrence S. Wysocki, Chicago, Ill., assignor to Hoerner-Waldorf Corporation, St. Paul, Minn., a corporation of Delaware
Filed Sept. 27, 1967, Ser. No. 670,923
Int. Cl. B65d *5/36, 5/54, 5/70*
U.S. Cl. 229—41 **10 Claims**



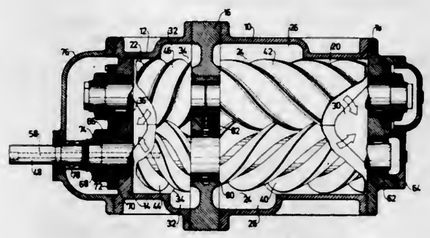
This invention comprises a hexagonal one-piece carton designed to enclose a cylindrical or hexagonal product such as an ice cream cake roll or the like. The carton includes two semihexagonal tray sections foldably connected. The arrangement is such that as the ends of the two sections are folded outwardly into parallel relation, the sections automatically fold into semihexagonal shape for filling. The sections are then folded together, and a glue flap on one section is adhered to a panel of the other section. A tear strip permits separation of the glue flap for opening the carton. Locking means are provided for reclosing.

3,467,299
PROOF-OF-PURCHASE COMPARTMENT ENVELOPE
Robert W. Meyer, Northport, N.Y., assignor to Boise Cascade Corporation, Boise, Idaho, a corporation of Delaware
Filed Apr. 1, 1968, Ser. No. 717,693
Int. Cl. B65d *27/04*
U.S. Cl. 229—70 **1 Claim**



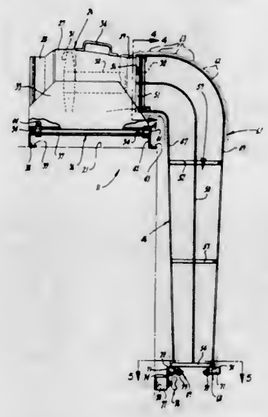
A proof-of-purchase compartmented envelope, characterized by the provision of a blank containing a first separable store redeemable premium coupon portion, and a second proof-of-purchase portion foldable into an envelope having a pair of open-topped compartments. One of the compartments is adapted to receive a portion (for example, a box top) of the goods purchased with the aid of the store redeemable coupon, and contains a window through which the box top or the like is visible.

3,467,300
TWO-STAGE COMPRESSOR
Lauritz Benedictus Schibbye, Saltsjo-Duvnas, Sweden, assignor to Svenska Rotor Maskiner Aktiebolag, Nacka, Sweden, a corporation of Sweden
Filed Jan 29, 1968, Ser. No. 701,323
Claims priority, application Great Britain, Feb. 6, 1967, 5,592/67
Int. Cl. F04c *17/12, 23/00*
U.S. Cl. 230—143 **2 Claims**



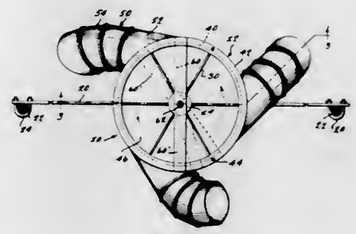
Two-stage screw compressor having a housing providing two separate working spaces, each composed of two intersecting bores, the axis of each bore of one working space being coaxial with the axis of a bore of the other working space, pairs of intermeshing male and female rotor elements in each working space, a pair of coaxial rotor elements being axially and torsionally fixed to each other and provided with a thrust bearing in the end plate of the second stage, and the high pressure port of each stage being located at the end plate of the housing limiting the working space.

3,467,301
VEHICLE MOUNTED BLOWER ASSEMBLY WITH HOSE AND SUPPORT BRACKET
Robert L. Doyle and Montgomery C. Swezy, Palo Alto, Calif., assignors to Western Progress, Inc., Mountain View, Calif.
Filed Apr. 1, 1968, Ser. No. 717,495
Int. Cl. F04b *39/00;* **B60p** *3/30*
U.S. Cl. 230—235 **7 Claims**



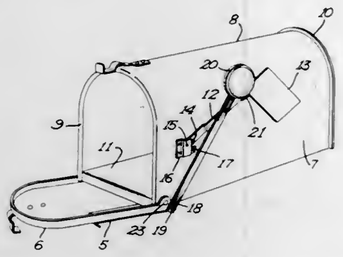
Vehicle mounted blower assembly for manholes having a hose adapted to be inserted into the manhole and a bracket for supporting the hose in use and in storage positions.

3,467,302
AIR BLOWER
Merlin C. Wilson, % Textile Air Company, 6524 Wilkinson Blvd., Charlotte, N.C. 28214
Filed May 23, 1967, Ser. No. 640,722
Int. Cl. F04d *25/08;* **D01h** *11/00;* **B05b** *3/06*
U.S. Cl. 230—270 **7 Claims**



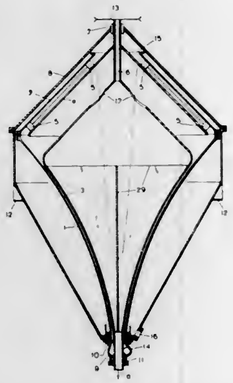
A blower for discharging air in a constantly revolving flow path that sweeps cleaning air across machinery, such as knitting machines, to remove lint or other foreign matter therefrom. This constantly revolving flow path is produced by providing a blower housing structure that is mounted for free rotation with respect to the enclosed blower impeller such that the discharging air imparts a rotation producing reactive torque to the housing structure, with the structure being arranged, if desired, for selective adjustment to vary the direction of the flow path of the discharging air and regulate the rotation producing reactive torque imparted to the housing structure.

3,467,303
MAILBOX ATTACHMENT
Helen D. Saatzer, 1347 8th Ave. N., St. Cloud, Minn. 56301
Filed May 8, 1967, Ser. No. 636,896
Int. Cl. B65d *91/00*
U.S. Cl. 232—35 **9 Claims**



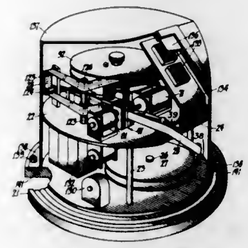
A clamping attachment for a mailbox including a rigid elongated link pivotally connected to the door of the mailbox at a point below the axis of pivot of the door and extending upwardly and secured to the flagstaff so as to automatically lift the flag out of its retaining socket when the mailbox door is opened and cause the same to be moved from an upright to a lowered horizontal position.

3,467,304
CENTRIFUGAL MACHINE
Sybout Jager, Maarssen, Netherlands, assignor to Werkspoor N.V., Amsterdam, Netherlands, a company of the Netherlands
Filed Oct. 4, 1965, Ser. No. 492,550
Claims priority, application Netherlands, Oct. 6, 1964, 6411594
Int. Cl. B04b *1/00*
U.S. Cl. 233—28 **7 Claims**



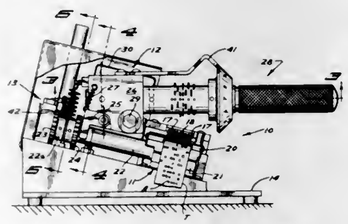
Dispersion and distribution of solid substance within a mixture of two liquid phases to such an extent that the solid substance cannot be separated well from either liquid phase is prevented in a centrifuge by constraining the mixture containing the solid substance to flow initially under laminar flow conditions while the two liquid phases are separating. In this manner, the solid substance is confined almost wholly within and is contained by the heavier liquid phase. After separation of the two liquid phases, the flow in the mixture of the solid substance and heavier liquid phase is made turbulent so that the solid substance cannot be separated easily from such heavier liquid phase.

3,467,305
EVENT RECORDER
Harold Redvers Mortley, 29 7th Ave., Windsor, Brisbane, Queensland, Australia; Thomas Grandin Chapman, 37 Getting Crescent, Campbell, Australian Capital Territory, Australia; Morley James Goodspeed, 81 Theodore St., Curtin, Australian Capital Territory, Australia; and John Vivian Savage, 14 Garling St., Lyneham, Australian Capital Territory, Australia
Filed Aug. 22, 1966, Ser. No. 574,133
Claims priority, application Australia, Aug. 23, 1965, 63,082/65
Int. Cl. G06k *1/02;* **B26f** *1/04*
U.S. Cl. 234—1 **14 Claims**



An event recorder includes tape feeding means, a first punch operable to punch sprocket holes in the tape and interconnected with the tape feeding means to advance the tape a predetermined distance responsive to each operation of the first punch, and at least one second punch operable to punch information holes in the tape. The first and second punches are aligned transversely of the tape so that sprocket holes and information holes are aligned transversely of the tape. A timing mechanism operates the first punch at predetermined time intervals to punch a sprocket hole in the tape, and the first punch is also operated simultaneously with the second punch or punches to punch a sprocket hole transversely aligned with the information holes.

3,467,306
TAPE PUNCHING MACHINE
Deryck A. Gerard, Minneapolls, Minn., assignor to Production Engineering Corporation, Minneapolis, Minn., a corporation of Minnesota
Filed Mar. 17, 1967, Ser. No. 623,887
Int. Cl. G06k *1/00, 1/10*
U.S. Cl. 234—32 **6 Claims**



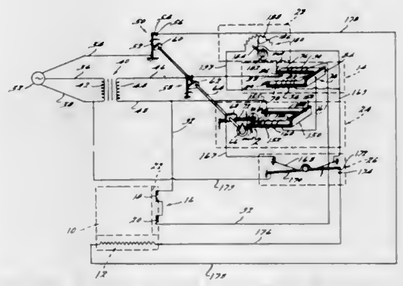
There is disclosed a hand operated machine for punching signal holes in electronic control tape which includes apparatus to prevent actuation of the operating handle unless the punching electors are aligned for properly punching registration and including apparatus for backspacing the tape for correction of errors or repunching.

3,467,307
SCALING AND CALCULATING INSTRUMENT
Harold O. Levitt, % Daniel Patch, Esq., 1320 Rolling Meadow Road, Pittsburgh, Pa. 15241
Filed Aug. 19, 1968, Ser. No. 753,491
Int. Cl. G06c *3/00*
U.S. Cl. 235—89 **8 Claims**



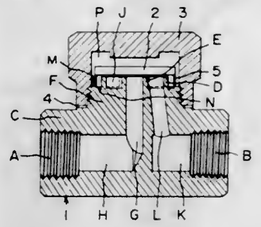
The disclosure of this invention relates to a combination scaling and calculating instrument. The instrument comprises an open-ended, rectangularly shaped case which is adapted to receive a thin rectangularly shaped slide member. The case includes four transparent measuring windows located at the four longitudinal edges. With respect to each measuring window there is provided a set of three scale windows which are formed in the case. Thus, there are twelve scale windows; ten representing the often-used architect's scales and the remaining two representing a civil engineer's scale and a metric scale. In addition to the above-named windows, there are provided ratio and base dimension columns. The construction and arrangement of the windows with reference to the slide and the various printed scales and other data enables the instrument to be used to quickly and accurately perform a number of scaling and calculating operations, for example: obtain a dimensional value from a scaled drawing; mark off and rule a dimension onto a drawing; the addition, subtraction, multiplication and division of dimensional values in terms of the various scales; the conversion of such values to their metric and decimal equivalents; the conversion of values on the engineer's scale in terms of other engineer's scales; the determination of the scale of a drawing when it is not known; and the selection of a suitable scale for a view or section to suit a given area on a drawing.

3,467,308
ELECTRIC HEATING OVEN WITH BROWNING CONTROL
Tore B. Hanssen, Ann Arbor, Mich., assignor to King-Seeley Thermos Co., Ann Arbor, Mich., a corporation of Michigan
Filed Nov. 7, 1962, Ser. No. 235,933
Int. Cl. A21b *1/40;* **G05d** *23/24*
U.S. Cl. 236—15 **10 Claims**



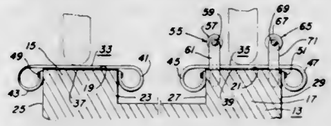
An oven temperature controller with plural heat integrating sensers and with means for changing the periodic peak temperatures in the oven with any selected average temperature for browning control.

3,467,309
DISK-TYPE STEAM TRAP HAVING MOVABLE BIMETALLIC ELEMENT
Katsuji Fujiwara, 191, Nishitani, Hiraoka-cho, Kakogawa-shi, Hyogo-ken, Japan
Filed Apr. 18, 1967, Ser. No. 631,687
Claims priority, application Japan, Apr. 22, 1966, 41/25,756
Int. Cl. F16t *1/08*
U.S. Cl. 236—59 **11 Claims**



A steam trap construction includes a valve body having an inlet opening at one end and a discharge opening at the opposite end and with a raised central portion defining a valve seat defined by two raised annular seat portions, one of which communicates with the discharge opening and the other of which communicates with the inlet opening. The raised portion is closed by a cap member and a disk valve is disposed to overlie each of the annular portions and enclose both the inlet and outlet. The disk may move upwardly away from the seat during operation. A bimetallic member is disposed between the disk valve and the valve body adjacent the valve seat and is movable upon changes of temperature between a position blocking the seating of the valve disk on the valve seat to a position freeing the disk for seating on the valve seat.

3,467,310
TRACK MEANS FOR WHEELED VEHICLES
R. Lee Fraser, 3723 Northwood Drive, Memphis, Tenn. 38111
Filed Oct. 24, 1967, Ser. No. 677,686
Int. Cl. E01b *25/28, 26/00*
U.S. Cl. 238—4 **6 Claims**

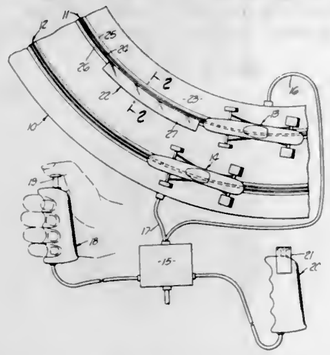


Track means for guidingly constraining wheeled vehicles including a pair of treadways for runningly supporting the vehicle in travel. The main embodiment of the invention including two longitudinally extending parallel strings of rollers extending along the top side of one of the treadways; the track structure being operably adapted to conduct a driverless automobile or the like from one location to another location and in so doing the wheels on one side only of the automobile or the like being guided.

3,467,311
RACING GAME APPARATUS
Donald E. Ernst, Manhattan Beach, Calif., assignor to Revell, Incorporated, Venice, Calif., a corporation of California
Filed Oct. 23, 1967, Ser. No. 677,285
Int. Cl. E01b *23/00;* **A63h** *17/14*
U.S. Cl. 238—10 **5 Claims**

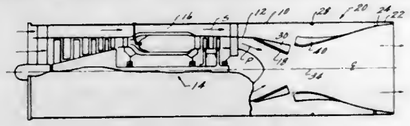
A portion of the conductive rail for one track of a slot car racing track is covered with a thin insulative layer

at the entrance portion to a curve. A car, against which other cars are to be raced, is disposed on this track and has its controller set for a high rate of speed. As the car moves into the curve at the high rate of speed, its



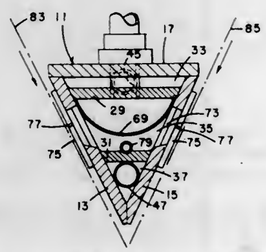
motor is temporarily disconnected by the insulative layer which reduces the car's speed sufficiently to prevent it overturning on the curve. Cars on the other tracks race against the preset-speed car under the control of conventional hand controllers.

3,467,312
EJECTOR NOZZLE
Hans P. Mehr, Mason, Ohio, assignor to General Electric Company, a corporation of New York
Filed Feb. 10, 1966, Ser. No. 526,560
Int. Cl. B64d *33/04;* **B05b** *15/00;* **B63h** *11/10*
U.S. Cl. 239—127.3 **8 Claims**



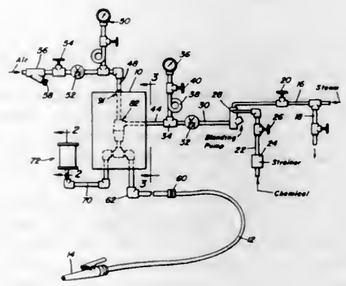
A supersonic ejector nozzle includes a primary nozzle having a star-shaped exit area and a secondary nozzle having a star-shaped entrance area and a substantilly circular exit area, the convoluted exit of the primary nozzle and the convoluted entrance of the secondary nozzle cooperating to form an annulus for the flow therethrough of secondary ejector cooling air.

3,467,313
HEATED HUMIDIFYING APPARATUS
Carl R. Pepmeier, Fredericksburg, Va., assignor to FMC Corporation, Philadelphia, Pa., a corporation of Delaware
Filed May 10, 1967, Ser. No. 637,519
Int. Cl. B05b *1/04, 1/24;* **C09j** *5/02*
U.S. Cl. 239—134 **2 Claims**



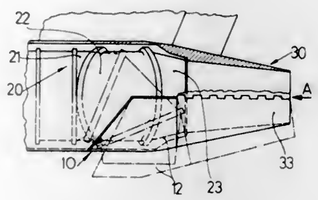
A heated steam chest for concomitantly heating and impinging moist steam against a traveling sheet material for humidifying the same, such chest being maintained at a desired elevated temperature by a heated fluid, separate from such steam, circulated therethrough.

3,467,314
APPARATUS FOR CLEANING OBJECTS
Norman J. Grubb, % Cannon Ball Air Jet Cleaner Co., P.O. Box 659, Lakeland, Fla. 33802
Filed Dec. 29, 1966, Ser. No. 605,849
Int. Cl. B05b *1/24, 7/30;* **B67d** *5/54*
U.S. Cl. 239—138 **3 Claims**



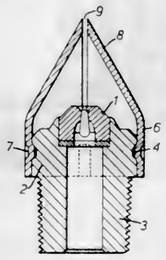
A method and apparatus of blending homogenizing air, steam and chemical cleaning compound into a cleaning medium. In the first phase of the operation, the chemical cleaning compound is blended with steam. Then, such mixture is homogenized by a continuous jet of compressed air which has been rendered extremely and highly turbulent by the use of a restrictor in the air line prior to its admixture with the steam chemical solution. Such admixture takes place at a point remote from the discharge or emission of the cleaning medium from a nozzle.

3,467,315
AIRFRAME-INTEGRATED NOZZLE FOR AIRCRAFT
Gunter Broll and Gerhard Kopp, Munich, Germany, assignors to Entwicklungsring Sud GmbH, a corporation of Germany
Filed June 20, 1967, Ser. No. 647,461
Claims priority, application Germany, July 15, 1966, E 32,074
Int. Cl. B64c *15/08;* **F02k** *1/20*
U.S. Cl. 239—265.35 **4 Claims**



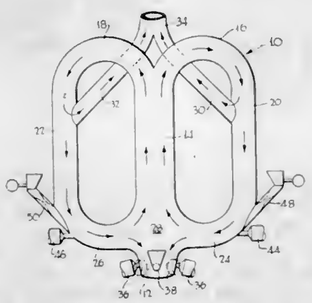
This invention provides a hinged bottom portion for a wall or shroud disposed about a deflecting nozzle whereby when said nozzle is deflected downwardly the hinged bottom is movable away from the jet stream. The structure further includes similar structure so that an end nozzle has a hinged portion for the same reason.

3,467,316
GAS-BURNER JET ASSEMBLIES
John Hancock, Leeds, England, assignor to Geo. Bray & Company Limited, Leeds, England, a British company
Filed Oct. 3, 1966, Ser. No. 583,897
Claims priority, application Great Britain, Oct. 7, 1965, 42,609/65
Int. Cl. B05b *1/04*
U.S. Cl. 239—594 **3 Claims**



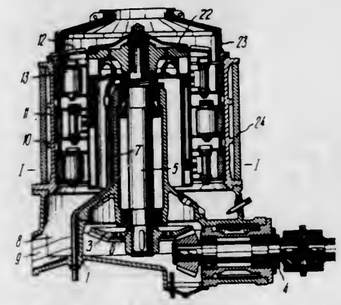
A small, compact gas-burner jet assembly of the same physical dimensions as a post-aerated coal gas jet, and which produces a flat, fan-shaped flame. The assembly can be used with manufactured gases, which are essentially fast burning and natural gas, which is slow burning. When the assembly is used with slow burning gases, the flame extends only partially over a slot formed in the burner head and air is entrained through the exposed portions of the slot.

3,467,317
FLUID ENERGY GRINDING METHOD AND MEANS
Nicholas N. Stephanoff, Haverford, Pa., assignor to Fluid Energy Processing & Equipment Company, Lansdale, Pa., a corporation of Pennsylvania
Filed Sept. 26, 1966, Ser. No. 582,110
Int. Cl. B02c *19/06, 11/08;* **B02b** *5/02*
U.S. Cl. 241—5 **11 Claims**



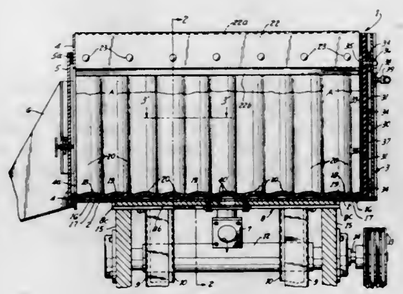
A fluid energy grinding mill comprising an impact chamber having gaseous fluid propelling nozzles directed generally toward each other from opposite directions so that the gaseous fluid streams inpinge against each other, and feed means for feeding solid particles into the impact chamber where they are impacted against each other by the oppositely directed fluid streams. Annular stacks are provided through which the particles and gaseous fluid from the impact chamber are centrifugally whirled and where the lighter particles are centrifugally separated from the heavier particles. Accelerating means are also provided to accelerate at least a portion of the heavier particles and entertaining gaseous fluid for a further pass through the annular stacks but without passing through the impact chamber.

3,467,318
CENTRIFUGAL MILL
Boris Nickolaevich Dubrovin, Boris Nickolaevich Fedorov, and Ilja Izrailevich Blekhman, Leningrad, and Anatoly Aramaisovich Petrosjants, Moscow, U.S.S.R., assignors to Vsesojuzny Nauchno-Issledovatelsky i proektny Institute Mekhanicheskoi Obrabotki Paleznykh Iskopaemykh, Leningrad, U.S.S.R.
Filed June 2, 1965, Ser. No. 460,699
Int. Cl. B02c *19/00;* **B07b** *7/08*
U.S. Cl. 241—42 **6 Claims**



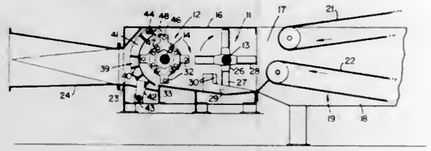
A centrifugal mill for wet grinding having rotatable grinding rollers pivotably mounted by suspension supports from axles secured to a rotor in a housing, the bearings of the grinding rollers being supplied with a lubricant from a reservoir in the casing, the lubricant passing from the bearings externally of the rollers for utilization in the mill for wet grinding.

3,467,319
LIQUID-COOLED PROCESSING VESSEL
John F. Rampe, 3417 Fairfax Road, Cleveland Heights, Ohio 44118
Filed Aug. 25, 1966, Ser. No. 575,085
Int. Cl. B02b *1/08, 5/02;* **B02c** *11/08*
U.S. Cl. 241—67 **15 Claims**



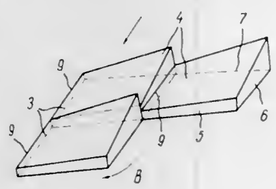
A liquid-cooled processing vessel comprising a shell having body and end portions; transversely extending end pieces at the end portions of the shell; a sleeve of abrasion-resistant material loosely suspended within the body portion of the shell between the end pieces; a panel of abrasion-resistant material loosely lining one of the end pieces; means for introducing a cooling liquid into the shell; and means facilitating orderly flow of the cooling liquid behind the abrasion-resistant material.

3,467,320
SHREDDING MACHINE
John F. Westfall, San Jose, and Leo E. Saukko, Castro Valley, Calif., assignors to Safeway Stores, Incorporated, Oakland, Calif., a corporation of Maryland
Filed Dec. 5, 1966, Ser. No. 599,017
Int. Cl. B02c *17/02, 9/04, 19/00*
U.S. Cl. 241—89 **5 Claims**



A machine for shredding fiberboard cartons. Two shredding rotors are disposed side by side. The cartons to be shredded are fed to one side of the first stage rotor, and this rotor feeds the second stage rotor. Grid bars cooperate with the second rotor to break down the corrugations of the fiberboard.

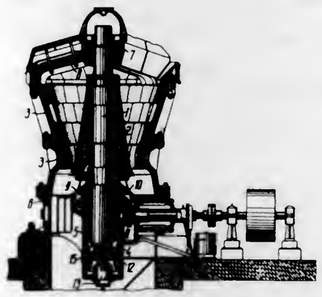
3,467,321
SORTING ARMORED LININGS FOR TUBE MILLS
Vladimir Vasilievich Tkachev, Ulitsa Novostroek 28, kv. 38, Vladimir Nikitovich Oganesov, Ulitsa Smolyachkova 14, kv. 25, and Anatoly Vasilievich Slanevsky, Ulitsa Zhukovskogo 29, kv. 14, all of Leningrad, U.S.S.R.
Filed June 20, 1966, Ser. No. 558,763
Int. Cl. B02c *17/14, 17/22*
U.S. Cl. 241—183 **5 Claims**



A sorting armored lining for a tube mill comprising a plurality of hexahedron plates mounted on the inner surface of the mill body in edgewise abutment to define a stepped surface in the longitudinal direction of the mill as well as in the direction of rotation. Each plate has an inwardly facing surface which in inclined relative to the inner surface of the body in the direction of the discharge zone of the mill body and in its direction of rotation.

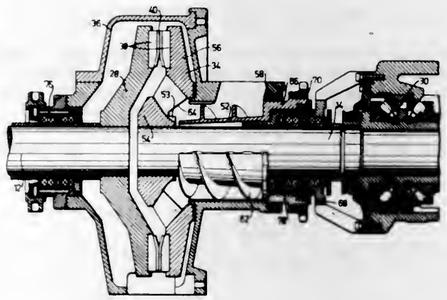
3,467,322
BASE STRUCTURE OF GYRATORY CONE CRUSHER
Anatoly Alexandrovich Levishko, Ulitsa Pobedy 45, kv. 18, Gennady Alexandrovich Kaljunov, Ulitsa Festivalnaya 23, kv. 4, and Evgeny Leontievich Gorin, Ulitsa Kultury 20, kv. 12, all of Sverdlovsk, U.S.S.R.
Filed Mar. 15, 1966, Ser. No. 534,335
Int. Cl. B02c *2/00*
U.S. Cl. 241—213 **4 Claims**

A bearing structure mounted in the bore of a frame hub for supporting the shaft of a crushing cone of a gyratory crusher. The bearing structure includes a jack, secured in the hub at the bottom of the bore, supporting the lower end of the shaft via an intermediate member



slidably mounted in the bore and a thrust bearing on the intermediate member.

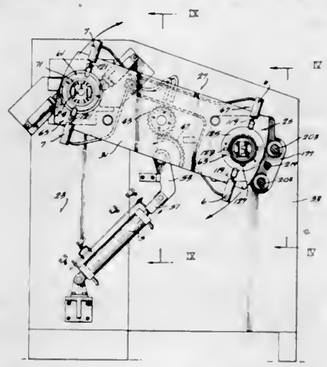
3,467,323
GRINDING APPARATUS
Arne Johan Arthur Asplund, Lidingo, and Johan Gunnar Inge Johansson, Nasbypark, Sweden, assignors to Defibrator Aktiebolag, Stockholm, Sweden, a corporation of Sweden
Filed Sept. 22, 1965, Ser. No. 489,233
Claims priority, application Sweden, Sept. 25, 1964, 11,571/64
Int. Cl. B02c *23/02*
U.S. Cl. 241—247 **6 Claims**



A grinding apparatus for vegetable material particularly adapted for the grinding of relatively large pieces of the material, the apparatus including a pair of grinding discs between which the material is fed. The discs are carried on shafts and at least one of the discs is rotated. A conveyor is arranged concentrically around one of the shafts for feeding the material between the discs and the conveyor is rotated at a lower speed than the speed of rotation of the rotated disc.

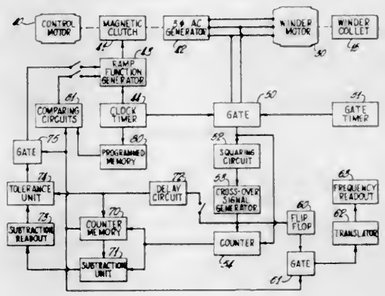
3,467,324
STATOR WINDING MACHINE
Robert W. Peters, Menomonee Falls, Wis., assignor to Henry J. Gorski, Milwaukee, Wis.
Filed Oct. 23, 1965, Ser. No. 502,851
Int. Cl. B65h *81/06*
U.S. Cl. 242—1.1 **7 Claims**

A stator winding machine is provided with a rocker arm having stator core holders at its opposite ends and an actuator to oscillate the rocker arm to successively locate the respective core holders between a loading station where a wound stator core is replaced by an unwound core and a winding station where another stator core is aligned with and wound by a winding shuttle. At the loading station, a pair of tooling rings engage the ends of



the stator core to locate and support winding guide and horns which assist in directing the wire into the proper slots of the stator core during winding.

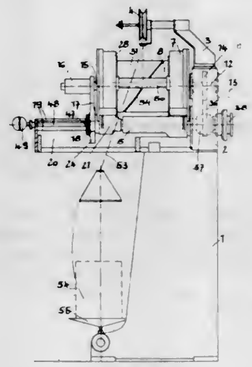
3,467,325
FREQUENCY MEASURING APPARATUS
William C. Trethewey, Newark, Ohio, assignor to Owens-Corning Fiberglas Corporation, a corporation of Delaware
Filed Nov. 3, 1966, Ser. No. 591,906
Int. Cl. B65h *59/00, 54/28*
U.S. Cl. 242—18 **6 Claims**



Frequency measuring apparatus having means for sampling the frequency of a frequency generating means during a preselected period and comparing the measured frequency with a desired standard frequency. The results of the comparison is utilized to correct preselected programmed signals provided for control of the frequency generating means. The frequency generating means may be used to control the temperature of a glass melting unit or to control the speed of a fiber windup collet motor.

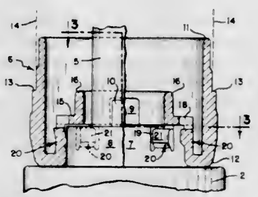
3,467,326
WINDING MACHINE FOR CROSS WOUND BOBBIN
Josef Ruf, Memmingerberg, Germany, assignor to Maschinenfabrik Memmingen Ing. Theodor Otto, Memmingen, Germany
Filed Mar. 6, 1967, Ser. No. 621,030
Claims priority, application Germany, Mar. 30,1966, M 68,975
Int. Cl. B65h *53/08, 53/00*
U.S. Cl. 242—43 **4 Claims**

A winding machine for a cross wound bobbin including a bobbin-bearing and driving shaft and a yarn-guiding means reciprocating the yarn on the outside of the bobbin substantially parallel to the axis thereof and delivering the yarn to the bobbin. The yarn-guiding means is defined by a rotatable cylindrical two-part casing disposed parallel to the axis of the bobbin and the casing



parts have facing edges arranged to provide a ring slot for guiding yarn from a supply source onto the bobbin and the axial extent thereof corresponds to the bobbin width.

3,467,327
SPINDLE SNUGGING PIRN
Charles C. L'Allemand, Murray Hill, N.J., assignor to The Dyson-Kissner Corporation, New York, N.Y., a corporation of Delaware
Filed July 7, 1967, Ser. No. 651,806
Int. Cl. B65h *75/30, 79/00;* **D01h** *3/16*
U.S. Cl. 242—46.21 **7 Claims**

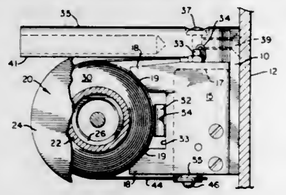


A spindle snugging pirn is provided for minimizing vibration when used with dog drive spindles in which the pirn-centering section of the spindle is below the driving connection, resilient gripping fingers being formed in the centering section of the pirn for engagement with the pirn centering section.

3,467,328
SELF-EXTENDING ANTENNA
Thomas G. Berry, Silver Spring, and Thomas F. Kline, Hagerstown, Md., assignors to Fairchild Hiller Corporation, Hagerstown, Md., a corporation of Maryland
Filed Aug. 16, 1966, Ser. No. 572,743
Int. Cl. B65h *74/34;* **E04h** *12/18*
U.S. Cl. 242—54 **8 Claims**

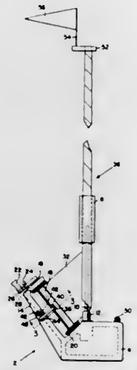
A self-extending structure comprising a storage reel on which is wound in a flattened condition an elongated strip of material having stored energy enabling it to form into a tubular structure when unwound from the reel. The free outer end of the strip is fastened to a stationary member and the reel is held by a restraining means. Upon

release of the restraining means the strip unwinds from the storage reel carrying the reel with it. A kicker spring



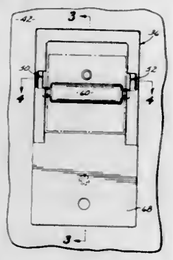
is also provided to give the reel an initial push when released.

3,467,329
SELF-ERECTING SPIRAL TUBE DEVICE
Charles M. Giltner, North Wales, Pa., assignor to Ametek, Inc., New York, N.Y., a corporation of Delaware
Filed Oct. 21, 1965, Ser. No. 499,580
Int. Cl. B65h *75/24*
U.S. Cl. 242—54 **6 Claims**



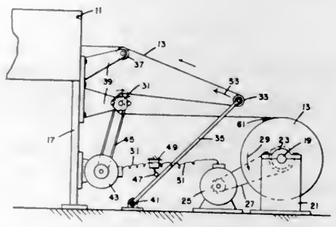
A self-erecting tube device is formed from a helical ribbon spring having adjacent turns set to tightly coil in overlapping and telescoping engagement, means to releasably retain at least a substantial portion of the spring wound into a cylindrical coil is provided. In a preferred form there is provided means to wind up the spring on a drum to retract the tube and ready it for self-erection.

3,467,330
EASY-LOADING TOILET PAPER HOLDER
Morris Yavitch, 1008 Benedick Canyon Drive, Beverly Hills, Calif. 90210
Filed June 13, 1967, Ser. No. 645,676
Int. Cl. B65h *19/08*
U.S. Cl. 242—55.53 **5 Claims**



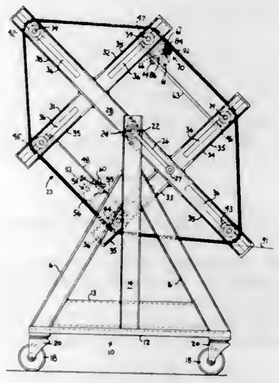
A toilet paper holder which is capable of being loaded with a fresh roll of toilet paper quickly and easily even by handicapped persons. This toilet paper holder includes a body having side walls and a top wall. The side walls are formed with a pair of horizontally-aligned facing grooves. Each of these grooves has a rearwardly extending and inwardly converging entrance portion that merges into a downwardly extending toilet paper roll support portion. The vertical distance between the upper edge of the entrance portion and the top wall of the body is slightly less than the radius of a full toilet paper roll. This arrangement permits the toilet paper roll mounting post to be easily guided into the front of the entrance portion of the grooves, the person effecting such loading using the top wall of the holder body as means for guiding the ends of the roll into the front end of the entrance portion of the grooves.

3,467,331
FILM UNWINDING METHOD AND APPARATUS
Carl R. Pepmeier, Fredericksburg, Va., assignor to FMC Corporation, Philadelphia, Pa., a corporation of Delaware
Filed Nov. 8, 1967, Ser. No. 681,378
Int. Cl. B65h *75/02, 17/20*
U.S. Cl. 242—55 **7 Claims**



Method and apparatus for unwinding a continuous film from a supply roll in which a portion of the unwound film is vibrated to break the cohesive bond between overlying layers of film on the supply roll.

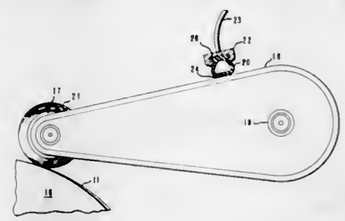
3,467,332
CUTTING PLASTIC SHEETS TO TRAPEZOIDAL SHAPES
Joseph A. Bachman, Greensburg, Pa., assignor to PPG Industries, Inc., a corporation of Pennsylvania
Original application June 30, 1965, Ser. No. 468,541. Divided and this application Jan. 5, 1967, Ser. No. 607,443
Int. Cl. B65h *19/20, 75/24;* **B26d** *5/08*
U.S. Cl. 242—56 **6 Claims**



Reel for winding and cutting sheet material at any desired angle including peripherally spaced tubes disposed at each corner of a polygon and substantially diagonally

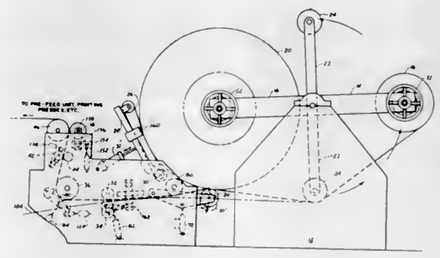
spaced cutting means pivotally adjustable to any desired angle extending completely across the sheet to cut the sheet into desired shapes.

3,467,333
WEB SLITTER
Nathan W. Wilson, Circleville, Ohio, assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Sept. 22, 1967, Ser. No. 669,818
Int. Cl. B65h *35/02, 17/08*
U.S. Cl. 242—56.2 **3 Claims**



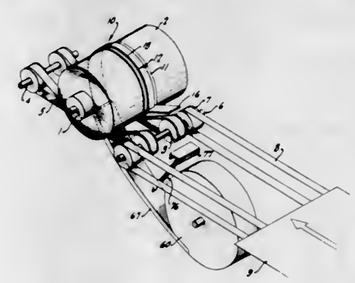
Web slitting apparatus having a pivoted arm to position wind-up cores, and including a gas filled resilient container bearing on the pivoted arm, for high speed operation and efficient start-up.

3,467,334
BUTT SPLICER FOR RUNNING WEB
William R. Chesnut, West Caldwell, and I. Robert Smuts, North Bergen, N.J., assignors to Bobst Champlain, Inc., Roseland, N.J., a corporation of New York
Filed Feb. 15, 1968, Ser. No. 705,800
Int. Cl. B65h *19/18*
U.S. Cl. 242—58.3 **19 Claims**



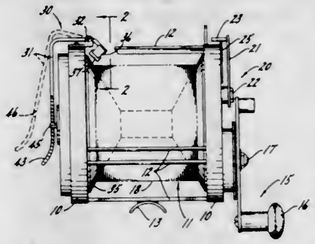
The present apparatus employs a turnover stand for board reels, and a speed-up belt or roller to bring the new roll up to speed. The leading edge of the new roll is prepared with adhesive tape, and the apparatus includes a contact roll which presses the expiring web against the adhesive tape of the new web to secure one to the other. In preparing the new web a relatively thick build-up strip is disposed to come between the two webs when they are adhered. A knife is placed in the path of the build-up strip to sever the expiring web and guide the tail away from the new web. The prepared edge is on a bias, so that the knife has a shearing action. For additional strength at the splice a second adhesive tape is applied across the butting edges at the side of the web opposite that having the first tape. For this purpose an accurately adjustable sensor responds to the passage of a projecting end of the build-up strip for proper timing of the second tape.

3,467,335
METHOD AND APPARATUS FOR REELING FLEXIBLE SHEET MATERIAL
Frederick H. Milligan, Port Coquitlam, British Columbia, Canada, assignor to Crown Zellerbach Canada Limited, Vancouver, British Columbia, Canada, a corporation of British Columbia
Filed Sept. 6, 1967, Ser. No. 667,322
Int. Cl. B65h *17/02*
U.S. Cl. 242—67.1 **12 Claims**



A spring-loaded guide coil extending between web transporting belts and in contact with a major portion of the circumference of a roll being formed whereby sheets of material are guided from the transporting belts onto the roll. A tension band is provided parallel to the guide coil having one end secured to the outer free end of the guide coil. The opposite end of the guide coil is fixed to a storage wheel and the corresponding end of the tension band is movably connected to the storage wheel such that the end of the tension band may be moved relative to the end of the guide coil by means of a hydraulic cylinder mounted in the storage wheel. When the end of the tension band is so moved, the tension band is placed in a state of tension, forcing the guide coil to assume a greater radius of curvature thereby causing it to move out of surface contact with the roll being formed. The guide coil is then in position to be wound upon the surface of the storage wheel by rotating the storage wheel about its axis thus facilitating the removal of the completed roll of material and replacing it with an empty spool upon which the next roll is to be formed. The process is reversed to place the guide coil in contact with the empty spool before starting the new roll.

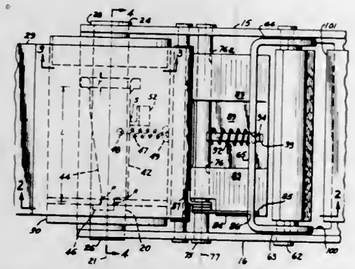
3,467,336
BRAKE FOR FISHING REELS
Arthur I. Appleton, 1701 Wellington Ave., Northbrook, Ill. 60657
Filed Feb. 13, 1967, Ser. No. 615,769
Int. Cl. A01k *89/02;* **B65h** *17/44*
U.S. Cl. 242—84.53 **3 Claims**



A manually-operable brake mechanism for fishing reels is described in which a brake shoe of frictional material is brought to bear against an exposed rotating surface of the fishing reel spool by manual actuation of an operating

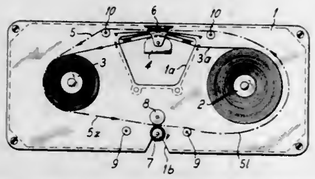
lever. When not in use, the operating lever is detentably retained out of the way against the reel frame. The described reel brake operates either independently or in conjunction with a conventional internal drag brake for conveniently varying the amount of braking force on the spool while the operator is engaged in landing a fish.

3,467,337
RESTRAINT DEVICE
James A. Putman, 10953 Nestle Ave., Northridge, Calif. 91324
Continuation-in-part of application Ser. No. 360,307, Apr. 16, 1964. This application Apr. 3, 1967, Ser. No. 633,658
Int. Cl. B65h *75/48*
U.S. Cl. 242—107.4 **20 Claims**



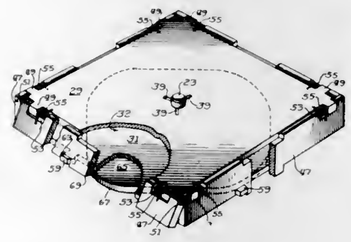
A restraint device employs an inertia member to engage a reel assembly with a shaft and to actuate a reel lock to prevent payout of a seat belt section. In one embodiment, the inertia member has a cantilever arm which engages the reel assembly and is mounted through a washer to a nonrotatable shaft. Upon sufficient angular acceleration of the reel, the washer engages the shaft, because of the inertial lag of the cantilever arm, to restrain rotation of the reel. Another embodiment employs a pawl pivotally mounted to the reel and engaged by an inertia member. At a predetermined angular acceleration of the reel, the inertia member pivots the pawl inwardly to engage a lock ring on the shaft and restrain rotation of the reel. Locking is effected by either a clamp which is sensitive to belt tension to engage the belt and force it tightly against a pressure surface or by lateral shifting of the reel into a position where sprockets of the reel engage a bar. In the embodiments employing sprockets, a braking member may be used to permit some rotation of the reel after a predetermined acceleration thereof is experienced to allow the reel to rotate slightly into proper engagement with the bar.

3,467,338
INTELLIGENCE STORING TAPE DEVICE
Klaus Breuer, Frankfurt am Main, Germany, assignor to Hai Hacmun, Frankfurt am Main, Germany
Filed Nov. 6, 1967, Ser. No. 680,793
Int. Cl. C11b *15/44*
U.S. Cl. 242—192 **1 Claim**



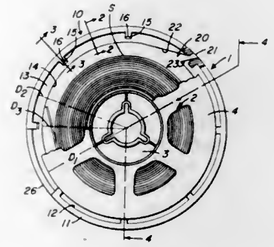
An intelligence storing tape device which includes an intelligence-carrying tape having a portion wound around a supply reel and another portion wound around a take-up reel and wherein the transfer of said intelligence-carrying tape from said supply reel to said take-up reel is effected by an additional drive tape forming an endless loop, the portion of the drive tape surrounding the supply reel being out of engagement with the tape thereon.

3,467,339
TAPE REEL WITH RELEASABLE CLOSURE MEANS
Gordon E. Bradt, Wilmette, Ill., assignor to Bell & Howell Company, Chicago, Ill., a corporation of Illinois
Filed Oct. 27, 1966, Ser. No. 590,072
Int. Cl. G11b *15/32;* **B65h** *75/18;* **B65d** *85/04*
U.S. Cl. 242—197 **9 Claims**



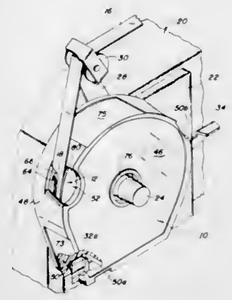
A rotatable reel structure usable on a web handling machine and having flanges on which flaps are movable between an open operative position and a closed storage position in both of which positions they are releasably retained. An opener device on the machine cooperates with and moves the flaps to the open position when the web on the reel structure is to be handled by the machine.

3,467,340
APPARATUS FOR AND METHOD OF FEEDING STRIP MATERIAL
Norman J. Rosenburgh, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed Nov. 1, 1966, Ser. No. 591,235
Int. Cl. G11b *23/04, 15/32*
U.S. Cl. 242—197 **15 Claims**



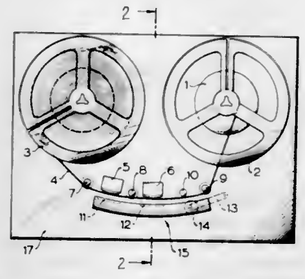
The disclosed strip feed apparatus provides a drive for rotating a roll of strip material and utilizes structure to compress transversely the outer convolution of the roll to effect feed of the leading strip end along a guide path for use. A method feature is described whereby feed of a leading end of a roll of strip material is effected by rotating the roll and applying a transverse squeezing force to successive portions of the outer convolution of the roll.

3,467,341
RIM TRAP FOR PHOTOGRAPHIC FILM PROJECTION CARTRIDGE
Robert J. Roman, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed Nov. 1, 1966, Ser. No. 591,248
Int. Cl. C11b *15/32*
U.S. Cl. 242—197 **11 Claims**



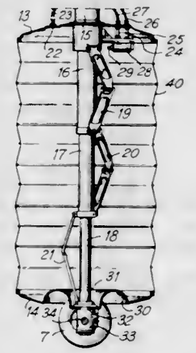
A cartridge adapted to contain a roll of strip material and adapted to be latched to a motion picture projector or the like includes a rim-trap for supporting and retaining a leading portion of said strip material in such a manner that it can be readily grasped and pulled from said cartridge.

3,467,342
GUIDE DEVICE FOR TAPE-LIKE RECORDING CARRIER
Richard Siegemund, St. Georgen, Germany, assignor to Dual Gebruder Steidinger, St. Georgen, Black Forest, Germany, a corporation of Germany
Filed Dec. 13, 1967, Ser. No. 690,209
Claims priority, application Germany, Dec. 19, 1966, D 51,816
Int. Cl. G11b *15/28, 15/60*
U.S. Cl. 242—209 **2 Claims**



A magnetic tape device comprising a recording-and reproducing-means, and a base plate. Two reel plates are supported by the base plate and spaced apart from each other. At least one of the reel plates is adapted to be rotated. The recording-and reproducing means includes a tape. Two reels are mounted on corresponding of the reel plates. The tape is wound on one of the reels and rewound on the other of the reels. A plurality of elements comprises means for guiding the tape from one to the other of the reels. Magnet heads are disposed adjacent the tape during the guidance of the tape, and a driven roller engages the tape. The elements are disposed on the inside of the tape, the latter forming in the direction of the tape movement a bow shape relative to the reels and secured to the base plate. A capstan idler is disposed on the opposite side of the path of the tape. A cap means defines a guide face rising from the base plate up to the height of the capstan idler and is adapted for automatic lifting of the tape over the capstan idler, upon laying the tape in a loose bow from one of the reels to the other of the reels in front of the capstan idler and tensioned due to rotation of the winding reel, and the driven roller is of an axial length upwardly greater than the width of the tape.

3,467,343
LANDING AND FLOAT GEAR FOR HELICOPTERS, ESPECIALLY LIGHT HELICOPTERS
Andre Violleau, Vitrolles, France, assignor to Sud-Aviation Societe Nationale de Construction Aeronautiques, Paris, France
Filed May 8, 1967, Ser. No. 636,887
Claims priority, application France, May 12, 1966, 61,328
Int. Cl. B64c *27/04, 25/56, 25/66*
U.S. Cl. 244—17.17 **8 Claims**

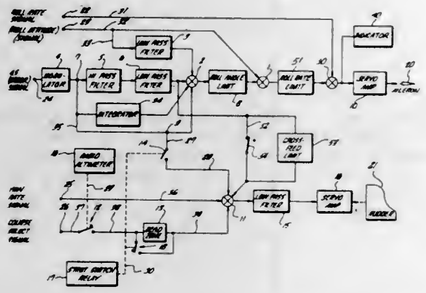


A landing and float gear for helicopters comprises a plurality of vertical retractable floats each of which is formed of a substantially cylindrical envelope preferably made of flexible material, containing an axially disposed double-acting jack connected to a power-fluid source and communicating with a source of inflating air, the envelope being formed with rigid streamlined ends, the upper one of which is connected to the helicopter structure and the lower one equipped with unconcealed landing members such as wheels.

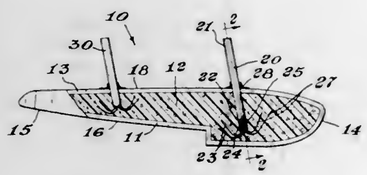
3,467,344
AUTOMATIC LANDING CONTROL SYSTEM HAVING IMPROVED WIND SHEAR CAPABILITY
Kenneth C. Kramer, Thousand Oaks, and Don M. Archibald, Malibu, Calif., assignors to Lear Siegler, Inc., Santa Monica, Calif., a corporation of Delaware
Filed Aug. 25, 1967, Ser. No. 663,278
Int. Cl. B64d *45/04;* **G01s** *1/16;* **G05b** *5/01*
U.S. Cl. 244—77 **18 Claims**

The invention disclosed by one representative embodiment herein includes an automatic roll and yaw control system for an aircraft wherein a command signal for controlling movement of the aircraft about its roll axis includes an electrical command signal which is the algebraic summation of a filtered roll attitude signal, a beam displacement signal, an integral of beam displacement, and a beam rate signal. This roll axis command signal is limited first by a roll angle limit circuit. The limited roll

axis command term is opposed by the direct application of a roll attitude signal which is proportional to the aircraft's response to a roll axis command. The resultant signal between the roll attitude response signal and the limited roll axis command term is limited next by a roll rate limit circuit. This limited roll rate command is opposed by the direct application of a roll rate signal proportional to the rate of response by the aircraft about its roll axis. Further described in the one representative embodiment herein, is the continual application of a beam rate term to the yaw control axis of the automatic landing system wherein it is summed with a yaw rate signal for controlling the aircraft's rudder.



3,467,345
FOAM PLASTIC FLOAT AND METHOD FOR THE PREPARATION THEREOF
Leo J. Windecker, Midland, Tex., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
Filed Sept. 29, 1967, Ser. No. 671,793
Int. Cl. B64c *25/54;* **B63b** *1/18, 5/24*
U.S. Cl. 244—105 **5 Claims**



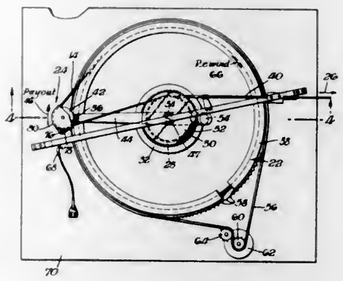
A foam plastic float is provided with struts attached by means of high strength filaments dispersed through the foam plastic of the float and adhered thereto.

3,467,346
AIR-GROUND RESCUE DEVICE INCLUDING PROTECTIVE SHIELD ASSEMBLY THEREFOR
George W. Carson, Jr., Bloomfield, Conn., assignor to Kaman Corporation, Bloomfield, Conn., a corporation of Connecticut
Filed Nov. 16, 1967, Ser. No. 683,686
Int. Cl. B64d *9/00, 25/02;* **A47c** *7/62*
U.S. Cl. 244—137 **11 Claims**

An air ground rescue device, having seats hingedly mounted thereon, is secured to the lower end of a helicopter hoist cable. A protective shield assembly is also mounted on the cable and has clam-shell type panels which can be secured together in their stowed positions to provide a low profile combination well adapted to be lowered through overhanging tree branches. A person to be rescued lowers a seat and raises a panel and positions himself on such seat, at which time the panel can be lowered to overlie his back to permit the device, with the person aboard, to be raised upwardly through the branches to complete the rescue.

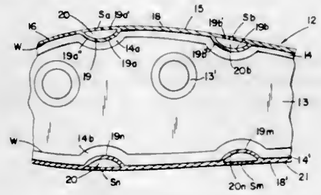


3,467,347
DEVICE FOR PAYING OUT, RETARDING AND RETRIEVING LINE
Robert B. Cotton, Media, Pa., assignor to All American Engineering Company, Wilmington, Del., a corporation of Delaware
Filed Apr. 20, 1967, Ser. No. 632,289
Int. Cl. B64c *25/68;* **B64f** *1/02*
U.S. Cl. 244—110 **30 Claims**



Line such as rope or cable is stored upon a looped track from which it is unwound by a traveling guide in response to a pulling load. The force necessary to retard the load is applied between the guide and the load for minimizing the force applied to the guide. One embodiment utilizes a brake to retard movement of the guide. Another primarily uses an energy absorbing capstan between the guide and the load. The number of windings on the capstan is varied as loops are unwound from or wound upon the track to prevent twisting of the cable. The looped track may be a relatively large diameter reel concentrically mounted relative to the capstan. The traveling guide may be a sheave mounted upon a rotatable arm. Two pairs of cables, reels and guides acting on opposite ends of the capstan can maintain a constant number of windings positively confined upon it because one cable adds windings as the other removes them.

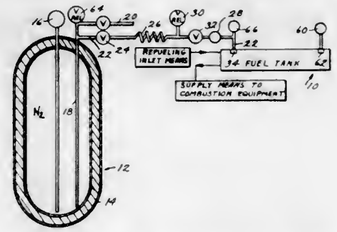
3,467,348
AIRCRAFT STRUCTURES AND SYSTEMS
Jerome H. Lemelson, 85 Rector St., Metuchen, N.J. 08840
Continuation-in-part of application Ser. No. 432,924, Jan. 8, 1965. This application Oct. 10, 1967, Ser. No. 674,312
Int. Cl. B64c *1/38, 3/38;* **B23p** *15/26*
U.S. Cl. 244—130 **10 Claims**



Structures in aircraft components particularly lifting surfaces such as wings, are provided together with either or both of two systems both of which employ slotted openings in the flight surfaces. In a first system, the control of flow of boundary layer air flowing over the flight surface is effected by drawing the air of the boundary layer into the wing through slots provided therein and ejecting said air rearwardly to provide thrust or utilizing same to improve combustion in the aircraft's jet engine. In a second system, the same or auxiliary slotted openings in the wing or other flight surface are utilized to expel a heat transfer fluid onto the surface of the wing for the transpirational cooling thereof during high speed flight to protect the material thereof from heat damage and destruction during supersonic or hypersonic flight through the atmosphere.

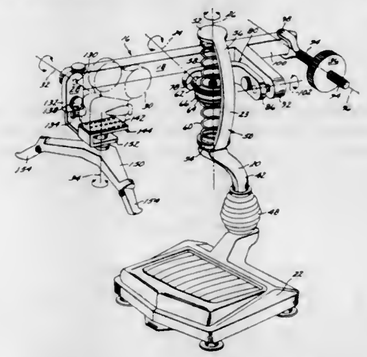
The structures employ sheets of metal as the skin of the aircraft or substrate therefore, which sheets contain conduit or duct formations provided integral with the sheets thereby greatly simplifying the structure and labor required to assemble the wing.

3,467,349
SYSTEM AND METHOD FOR FREEING AIRCRAFT FUELS OF MOISTURE, MICRO-ORGANISMS AND OTHER CONTAMINANTS
Robert A. Gautier, 2 Winfield, Houma, La. 70360
Filed Nov. 9, 1967, Ser. No. 681,653
Int. Cl. B64d *37/32, 37/34*
U.S. Cl. 244—135 **10 Claims**



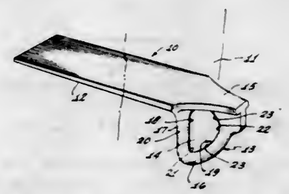
An improved system is described for purging aircraft fuel tanks with an inert gas so as to prevent condensation or other admission of moisture into the tanks, thereby preventing the growth of micro-organisms. The improved system can be operated so as to eliminate any requirement for pressurizing fuel tanks, but can be operated in connection with a pressurized system, if desired. In the system, an inert gas, such as nitrogen gas, is automatically introduced into a fuel tank in accordance with a very slight pressure differential between the interior and exterior of the tank in unpressurized systems, and between the tank and a pressure on the regulator in pressurized systems. The system utilizes a demand regulator to control automatic intromission of nitrogen gas from a storage container to the fuel tank which is being treated. The system also provides for a regulation of the amount of inert gas within the fuel tank in accordance with changing pressures, temperatures, and quantities of fuel within the tank. The controls provided by the system permit a purging of fuel storage and supply equipment for aircraft, such as supersonic transport craft, which normally operated within a broad range of temperatures and ambient pressures.

3,467,350
VIBRATION DAMPING MOUNT
Nelson Tyler, Van Nuys, Calif., assignor to NTT Enterprises, Inc., Hollywood, Calif., a corporation of California
Filed May 9, 1967, Ser. No. 637,215
Int. Cl. F16m *11/12*
U.S. Cl. 248—179 **10 Claims**



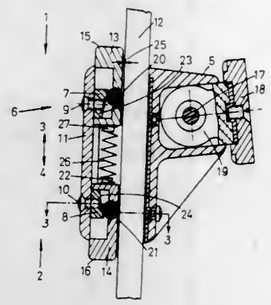
A vibration damping mount for an instrument such as a camera, and including a vibration damping assembly having a first portion adapted for connection by a vertical post to a supporting platform, and a second portion supported by springs acting against the first portion, the second portion being coupled to the instrument through other elements so that vibrational movements of the instrument relative to the supporting platform are damped, the coupling arrangement between the instrument and such second portion being such as to facilitate seating of an operator between the instrument and the vibration damping assembly.

3,467,351
ANCHORING DEVICE
William A. Feuerer, 2009½ Oak St., Santa Monica, Calif. 90405
Filed May 3, 1967, Ser. No. 635,718
Int. Cl. A44b *13/00*
U.S. Cl. 248—216 **8 Claims**



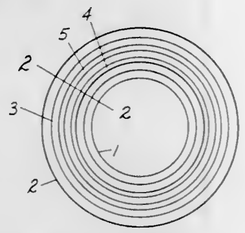
An anchoring device having a shank or driven section for insertion into a supporting formation, and a head section attached to the driven section, the head section having an aperture with a generally D-shaped configuration, and capable of freely receiving a connecting member.

3,467,352
ADJUSTABLE CLAMP
Wilhelm Valentin Bohler, 12–14 Feigentalstrasse, 7770 Uberlingen (Bodensee), Germany
Filed Oct. 21, 1966, Ser. No. 588,460
Claims priority, application Germany, Nov. 12, 1965, B 84,476
Int. Cl. F16m *13/02;* **A47g** *29/00*
U.S. Cl. 248—221 **7 Claims**



An adjustable clamp has a main housing with two inclined surfaces. Rollers are positioned in respective housings between the inclined surfaces and an object. The main housing is clamped to the object by wedging the rollers between the inclined surfaces and the object.

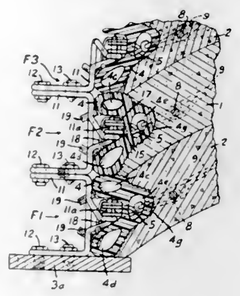
3,467,353
TUBE FORM MOUNTING
Robert R. Peterson, Warren E. Schmidt, and Philip R. Woodford, Erie, Pa., assignors to Lord Corporation, Erie, Pa., a corporation of Pennsylvania
Filed Aug. 2, 1966, Ser. No. 569,697
Int. Cl. F16f *15/04;* **B29c** *25/00;* **B23p** *11/02*
U.S. Cl. 248—358 **4 Claims**



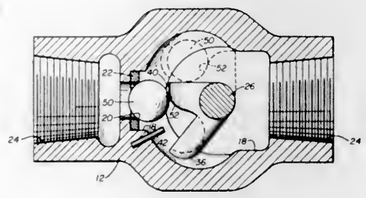
A tube form mounting having a body of elastomer vulcanized under heat and pressure between and bonded to inner and outer tubular members in which the coefficient of thermal expansion of the outer tubular member is greater than the coefficient of thermal expansion of the inner member whereby upon cooling the differential thermal expansion counteracts the shrinkage of the elastomer and relieves the tension.

3,467,354
FLEXIBLE FORMS FOR BUILDING CONSTRUCTION
Phillip Graham, 2825 Glenmore Ave., Pittsburgh, Pa. 15216
Continuation-in-part of application Ser. No. 457,020, May 19, 1965, which is a continuation-in-part of application Ser. No. 418,494, Dec. 15, 1964. This application Apr. 5, 1966, Ser. No. 540,314
Int. Cl. E04g *11/04*
U.S. Cl. 249—13 **10 Claims**

This disclosure pertains to a low cost, foolproof forming means for economically forming two-way curved or dished, reinforced thin shell concrete panels for small arched spanned buildings having corrugated shells. The forming means includes a durable elastic flexible edge form portion that coacts with metallic form parts to selectively define the length, width and thickness of a panel to be cast. The metallic parts position reinforcing and fasteners that allow like panels to be joined easily at erection. The form means includes means to inflate the elastic edge form to allow it to tightly confine the concrete and to allow it to be stripped easily. The form means also includes means to make lower cost multiple curved rigid form portions for molding the major surfaces of the curved building panels. The rigid form portions are made of reinforced concrete having an elastic edge form, perimetrical strand means with spaced fasteners and common wire fabric having its wires positioned diagonally with respect to the sides of the panel, the fabric being easily stretched and fastened to the perimetrical strand means, so it conforms to the multiple curvature required for the building panel to be cast. The rigid form portions may be used as building panels after they have outlived their usefulness as form portions, thus greatly reducing the form costs, thereby eliminating the worst obstacle to the use of thin shell construction for small buildings. In general the present invention describes numerous improvements to lower the cost of thin shell construction for small buildings, over the means described in my Patent No. 3,245,647 and my earlier related patents.

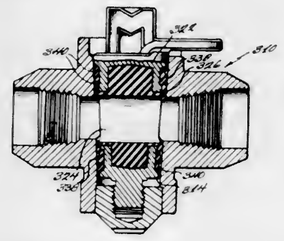


3,467,355
BALL VALVE WITH IMPROVED RESILIENT CLOSING MEANS
Donald J. Burke, Tulsa, Okla., assignor to Continental Industries, Inc., Tulsa, Okla., a corporation of Oklahoma
Filed Aug. 16, 1967, Ser. No. 660,953
Int. Cl. F16k *1/14*
U.S. Cl. 251—163 **6 Claims**



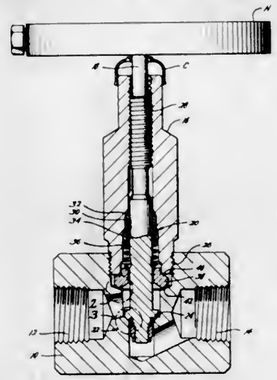
This invention relates to a ball type shut-off valve. The valve includes a body having a flow passageway therethrough defining a seat. A ball is loosely held within the flow passageway and pivoted by means of fingers extending from a pivot arm in cooperation with a pivot pin. The pivot arm is rotatively received in an opening in the valve body perpendicular to the axis of the flow passageway. The basic improvement of the invention includes means of resiliently retaining the ball in closed position in engagement with the valve seat. The resilient means is obtained through the usage of a spring member resiliently contacting the pivot arm shaft to apply resilient pressure of the pivot arm against the ball when the valve is in closed position.

3,467,356
ROTARY PLUG VALVE
Frank H. Mueller, Decatur, Ill., assignor to Mueller Co., Decatur, Ill., a corporation of Illinois
Original application Dec. 6, 1963, Ser. No. 328,731, now Patent No. 3,333,812, dated Aug. 1, 1967. Divided and this application Apr. 3, 1967, Ser. No. 627,832
Int. Cl. F16k *5/02, 5/16*
U.S. Cl. 251—164 **10 Claims**



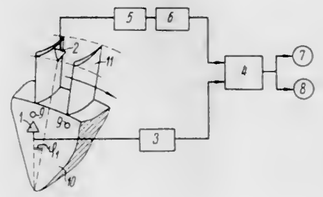
A tapered rotary plug valve having a resilient rubber-like cover secured to the periphery of an axial section of the valve plug and surrounding the plug port so as to contact the opposed surface of the valve seat. The resilient cover includes integral circumferential projections which provide end seals between the valve plug and seat.

3,467,357
HIGH PRESSURE VALVE
Marion L. Schomer, Houston, and Irvin B. Weise, Bellaire, Tex., assignors to Anderson, Greenwood & Co., Bellaire, Tex., a corporation of Texas
Filed Oct. 22, 1965, Ser. No. 501,489
Int. Cl. F16k *31/50, 41/02, 25/00*
U.S. Cl. 251—214 **12 Claims**



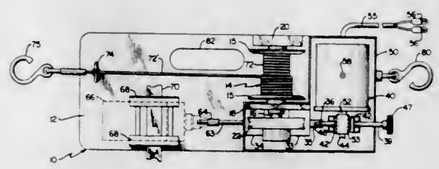
A valve suitable for controlling high pressure fluid flow and having a body with an inlet, an outlet and a valve seat, a bonnet secured to the body, a valve member having a seat insert with a frustoconical seating surface and corner angles extending from the seating surface of at least 90°, a ring providing line contact seal between the bonnet and the body, a valve stem connected to the valve member and threaded through the bonnet, and a spring-energized seal between the bonnet and stem between the threads on the stem and the valve member. This abstract is neither intended to define the invention of the application which, of course, is measured by the claims, nor is it intended to be limiting as to the scope of the invention in any way.

3,467,358
VIBRATOR INDICATOR FOR TURBOENGINE ROTOR BLADING
Igor Evgenievich Zablotsky, Ukhtomskaya ulitsa 8/14, kv. 37; Jury Alexandrovich Korostelev, Ulitsa Serafimovicha 2, kv. 242; Anatoly Vasilievich Lebedev, Ulitsa Gorkogo 12, kv. 276; Lev Borisovich Sviblov, 9 Parkovaya ulitsa 61, korpus 6, kv. 21, and Efim Moiseevich Tolchinsky, Pushkinskaya ulitsa 9, kv. 55, all of Moscow, U.S.S.R.
Filed Jan. 8, 1968, Ser. No. 696,420
Int. Cl. F01d *21/00;* **G01p** *15/00*
U.S. Cl. 253—77 **4 Claims**



A vibration indicator for turboengine rotor blading including two non-contact electric pulse transmitters mounted on stationary parts of the turboengine near its rotor blades and displaced rotation-wise relative to each other by an amplitude of vibration which indicates either a preset or an excessive value which is to be detected. Two pulse-shaping devices are connected to the pulse transmitter and a pulse-stretcher is connected to one of the pulse-shaping devices. A gate circuit is provided which is connected to the second of the pulse-shaping devices and to the pulse-stretching device. A signaling unit is connected to the gate circuit.

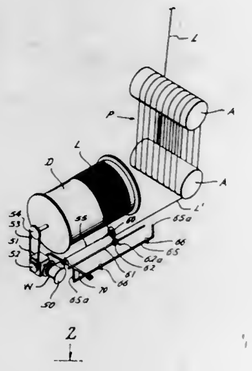
3,467,359
PORTABLE WINCH
Roy L. Durand, Denver, Colo., assignor to Donald L. Lozow, Denver, Colo.
Filed June 23, 1967, Ser. No. 648,466
Int. Cl. B66d *1/00;* **H02p** *1/54, 5/46*
U.S. Cl. 254—168 **9 Claims**



A lifting device has a portable mount for a winch drum and line, a reduction gear being mounted at one end of the winch with opposite shaft-engaging end portions for selective driving either by a reversible DC motor coupled to one end of the gear drive or by an AC

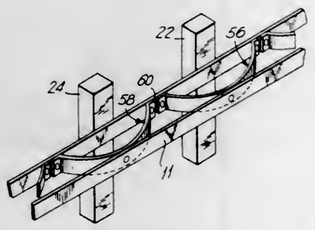
motor coupled to the opposite end of the drive. Suitable means of attachment at one end of the mount opposite the winch line permits attachment of the lift device to a stationary support when the winch line is attached to a load, or vice versa.

3,467,360
DRAWWORKS
Leonard Mizell, Box 1191, Liberty, Tex. 77575
Filed Feb. 1, 1968, Ser. No. 702,413
Int. Cl. B66d *1/76*
U.S. Cl. 254—175.7 **5 Claims**



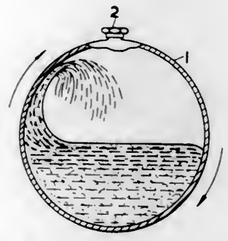
A drawworks or line handling apparatus wherein power means are provided for pulling a line having a load on one end thereof while feeding the other end of the line to a storage drum for winding the line thereon. The apparatus also provides for paying out or feeding off the line from the storage drum and power means at a controlled rate. The invention may be used as a drawworks for a drilling rig, for towing boats, pulling pipelines across rivers, bogs, and bays, and for other uses, particularly where heavy and long cables or other lines are required in conjunction with heavy loads.

3,467,361
GUARD-RAILS FOR ROADS
Gennaro Moschettini, Via Comerio 3, Milan, Italy
Filed Mar. 23, 1966, Ser. No. 536,742
Claims priority, application Italy, Mar. 25, 1965, 2,757/65; Sept. 30, 1965, 9,613/65
Int. Cl. E01b *15/00*
U.S. Cl. 256—13.1 **1 Claim**



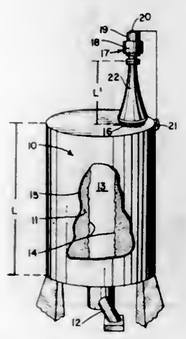
A guard rail including a horizontal guard beam, vertical support posts, and a spacing member having two ends and a vertex, wherein the two ends of the spacing member are attached either to separate vertical support posts or to a horizontal support member on different sides of one of the vertical support posts, and the vertex is attached to the horizontal guard beam.

3,467,362
MIXING PROCESSES
Colin Bailey, Waltham Abbey, and Michael Ernest Newcombe Evans, Cheshunt, England, assignors to National Research Development Corporation, London, England
Filed Oct. 4, 1967, Ser. No. 672,912
Claims priority, application Great Britain, Oct. 4, 1966, 44,320/66
Int. Cl. B01f *9/04;* **C09c** *1/42*
U.S. Cl. 259—14 **6 Claims**



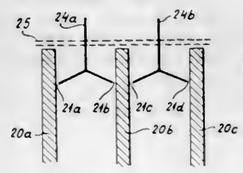
A free non-interfering dispersion of fibrous material, particularly fragile material such as ceramic whiskers which are damaged by conventional equipment, in viscous liquids is formed by introducing the fibres and a relatively much larger quantity of viscous liquid into a cylindrical drum free of internal projections so as to occupy at most about half the volume of the drum, and rotating the drum about its longitudinal axis with said axis horizontal so that fibres and liquid rotate with a side of the drum for part of each revolution only and then drop back whereby the shear forces created in the liquid disperse the fibres.

3,467,363
NOISE GENERATOR FOR SHAKING LOOSE PACKED MATERIAL
Richard Alan Reichel, 324 Palm Ave., Santa Barbara, Calif. 93101
Filed Aug. 31, 1967, Ser. No. 664,842
Int. Cl. B01f *11/00;* **G10k** *9/04*
U.S. Cl. 259—36 **7 Claims**



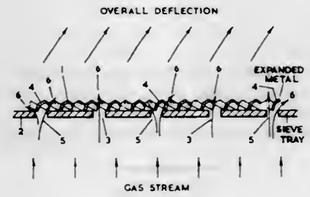
This disclosure relates to a noise generator adapted to be secured to a silo or similar enclosure to shake loose material therein which tends to become packed against the side walls of the enclosure. The generator comprises a valve body defining an air chamber coupled to an acoustic impedance matching horn. This horn in turn has its outlet coupled to the silo or other enclosure and a suitable valve structure within the valve body is actuated to release air held under pressure within the valve body through the horn thereby generating a shock wave which will shake loose the impacted material and thereby permit more efficient emptying of the silo or enclosure. Preferably a sound transducer is coupled to the silo and generator to trigger the generator and provide a series of shock waves at a repetition rate corresponding to a resonant frequency of the silo or enclosure.

3,467,364
WATER-FILM COOLING-TOWER WITH TRANSVERSE AIRFLOW
Árpád Zathureczky and András Egyedi, Budapest, Hungary, assignors to "Licencia" Talalmanyokat Ertekesito Vallalat, Budapest, Hungary, a Hungarian enterprise
Filed Apr. 12, 1966, Ser. No. 542,042
Claims priority, application Hungary, Apr. 26, 1965, IA-462
Int. Cl. F28c *1/00*
U.S. Cl. 261—24 **1 Claim**



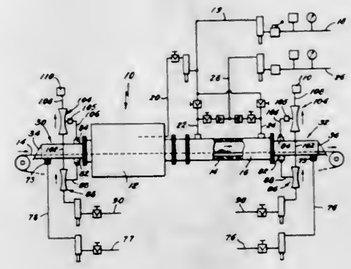
A cooling tower having upright, flat contact plates disposed in confronting relation with each other and liquid distributing elements of inverted Y-shape closely spaced to said plates to distribute liquid thereon in the form of flat films.

3,467,365
LIQUID VAPOUR CONTACT TRAY
Thomas J. Webster, Ashford, England, assignor to The British Oxygen Company Limited, a British company
Filed Mar. 11, 1966, Ser. No. 533,493
Claims priority, application Great Britain, Mar. 15, 1965, 10,862/65
Int. Cl. B01d *3/22*
U.S. Cl. 261—114 **1 Claim**



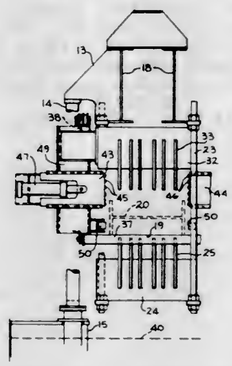
A liquid-vapour contact tray of the sieve tray type for use in a distillation column comprises a perforated plate having a liquid flow path from an inlet to an outlet, the plate being overlaid with a grid provided with a plurality of spaced slats positioned and angled so that when gas rises through the perforated plate, at least some of the gas issuing from the perforations is given a component of velocity along the liquid flow path towards the outlet.

3,467,366
FURNACE CONSTRUCTION HAVING ATMOSPHERE CURTAIN
Herbert W. Westeren, Providence, and William H. Kimball, Barrington, R.I., assignors to C. I. Hayes, Inc., Cranston, R.I., a corporation of Rhode Island
Filed Oct. 2, 1967, Ser. No. 672,085
Int. Cl. F27b *9/24, 9/30;* **F27d** *3/12*
U.S. Cl. 263—6 **9 Claims**



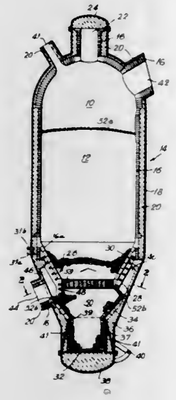
A furnace construction for use in the heat treatment of articles, wherein an atmosphere curtain is provided that is located at the entrance and exit ends of the heat treating chamber of the furnace and that prevents ambient atmospheric contaminants from inflowing into the furnace area and further prevents furnace atmosphere gases from outflowing from the furnace area for mixing with atmospheric air.

3,467,367
QUENCH PRESS
Gerald L. Bearer, Pittsburgh, Pa., assignor to Lee Wilson Engineering Company, Inc., a corporation of Ohio
Filed Sept. 19, 1966, Ser. No. 580,222
Int. Cl. C21d *1/62, 1/00*
U.S. Cl. 266—6 **8 Claims**



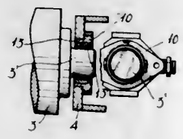
A quenching fixture for holding shapes to be quenched. The shape is clamped by fluid cylinders between upstanding and downwardly extending fingers. Two sets of side fingers are clamped by fluid cylinders against the sides of the shape to restrain it from warping during quenching. The horizontal and vertical clamping forces may be independently regulated, and the fluid pressure maintains a preset clamping force on the shape despite contraction thereof during quenching.

3,467,368
ORE-TREATING APPARATUS
Juan Celada, David Villarreal, Armando Reyna, and Patrick W. MacKay, Monterrey, Nuevo Leon, Mexico, assignors to Fierro Esponja, S.A., Monterrey, Nuevo Leon, Mexico
Filed Apr. 12, 1966, Ser. No. 542,027
Int. Cl. F27b *1/14;* **F27d** *5/00*
U.S. Cl. 266—20 **9 Claims**



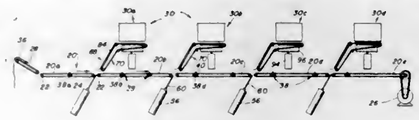
A fixed bed reactor especially adapted to be used in the gaseous reduction of iron ore to sponge iron is disclosed. In order to overcome the problems involved in using a foraminous grate, the ore body to be treated is supported in part by an internal frusto-conical baffle having a relatively large central opening and in part by a body of inert particulate refractory material at the bottom of the reactor. The internal baffle cooperates with the reactor wall to define an annular gas discharge passage. The baffle is water-cooled and details of its construction are disclosed.

3,467,369
APPARATUS FOR ADJUSTING A TILT-FURNACE
Shigenobu Shindo, Kawasaki-shi, Kanagawa-ken, Japan, assignor to Nippon Engineering Co., Ltd., and Nippon Kokan Kabushiki Kaisha, both of Tokyo, Japan
Filed June 2, 1966, Ser. No. 554,723
Claims priority, application Japan, June 8, 1965, 40/33,533
Int. Cl. C21c *5/50;* **F27b** *7/00*
U.S. Cl. 266—36 **5 Claims**



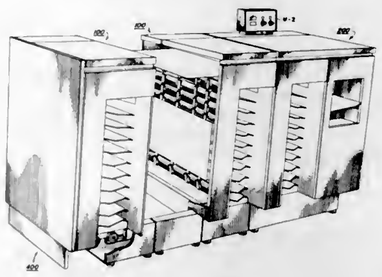
A tilt-furnace of the type which can be tilted in opposed directions for discharging molten products such as slag and pig iron. The furnace body is supported by a rocker assembly having upper and lower coextensive runners spaced from each other with the upper runners fixed directly to the furnace body. Rollers are situated between the runners and are journalled at their ends in bearings carried by a pair of side bars. At least some of these bearings are capable of adjusting the axes of the rollers connected thereto, so that in this way at least some of the rollers are angularly adjustable with respect to other rollers to adjust the position of the furnace body.

3,467,370
LAUNDRY SORTING, ACCORDING TO SIZE, AND FOLDING
Paulette Grantham, 1830 White Oak Drive, Menlo Park, Calif. 94025
Filed Nov. 27, 1964, Ser. No. 414,231
Int. Cl. B65h *45/18;* **B07c** *1/10*
U.S. Cl. 270—85 **22 Claims**



Conveyor means with sensing means at each of a plurality of stations spaced therealong, each sensing means having spaced elements for sensing the laundry pieces according to size, the sizes progressing from large to small along the conveyor means, means for removing the laundry pieces, and means at each station for folding the laundry pieces at that station.

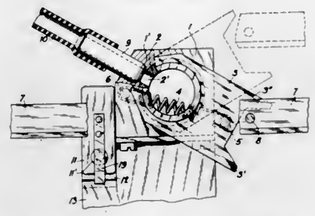
3,467,371
SHEET DISTRIBUTOR
James Edward Britt, Penfield, Larry Hartwell Warren, East Rochester, and John Ward Melville, Webster, N.Y., assignors to Xerox Corporation, Rochester, N.Y., a corporation of New York
Filed Aug. 25, 1966, Ser. No. 574,990
Int. Cl. B65h *39/02*
U.S. Cl. 270—58 **1 Claim**



Sheet distributing apparatus for use in operative relationship with a xerographic reproducing machine or the like. The apparatus includes a plurality of spaced copy catch trays along a sheet feed path. Each tray is provided with a selectively actuable sheet diverting means. The apparatus also includes a catch bin and a secondary sheet diverting means for directing sheet material into the catch bin rather than towards the plurality of catch trays. The second diverting means is actuable at the end of a distributing cycle, upon the occurrence of a malfunction either in the apparatus or in the reproducing machine with which the distributor is utilized.

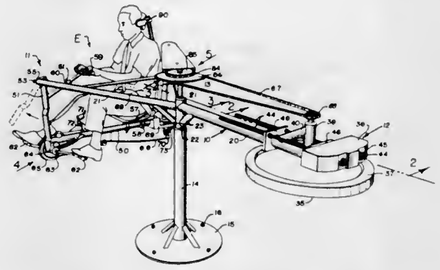
3,467,372
AUTOMATIC SHUT-OFF MECHANISM FOR A PRINTING MACHINE
Jaroslav Janeček, Brno, and Miloslav Muselík Ricmanice, Czechoslovakia, assignors to Adamovske Strojirny, narodni podnik, Adamov, Czechoslovakia
Filed Sept. 18, 1967, 668,409
Int. Cl. B65h *7/02, 3/08*
U.S. Cl. 271—56 **5 Claims**

An electrically driven printing press having a vacuum-operated sheet feeder and a receiving carrier for printed sheets, which moves downward as printed sheets accumulate thereon, is provided with a valve for venting the vacuum system to the atmosphere and with a micro-switch in the electric drive circuit. The valve and the switch are



operated in sequence by an abutment on the descending carrier so that the press is free from sheets in process when the drive is stopped.

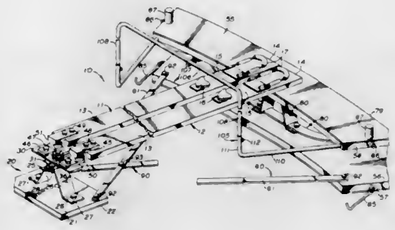
3,467,373
CENTRIFUGAL EXERCISER
Donald A. Justice, Evergreen, Colo., assignor to Martin-Marietta Corporation, New York, N.Y., a corporation of Maryland
Filed Dec. 17, 1965, Ser. No. 525,271
Int. Cl. A63g *1/12, 1/00;* **G09b** *9/08*
U.S. Cl. 272—33 **13 Claims**



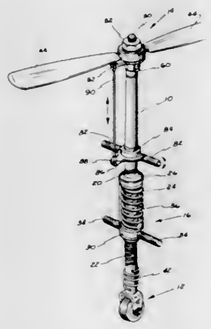
The centrifugal apparatus includes an elongated frame which is supported for rotation at its central portion. The frame carries a cradle at one end which is adapted to accommodate a passenger and a counterweight disposed at the opposite end of the frame. The counterweight is adjustable to compensate for different passenger weights. The counterweight includes a rotatable flywheel mounted for rotation about an axis parallel to the axis of rotation of the frame. A manual drive means is provided for rotating the frame and comprises a pedal device located on the cradle and driven by the passenger. The drive is transmitted from the pedals to the rotatable flywheel and drives the flywheel in one direction of rotation which in turn rotates the frame in the opposite direction.

3,467,374
SKI SIMULATOR APPARATUS
Alois Auer, 1339 Thurston St., Akron, Ohio 44320
Filed Sept. 12, 1966, Ser. No. 578,834
Int. Cl. A63g *31/02, 31/00*
U.S. Cl. 272—57 **9 Claims**

A snow ski simulator apparatus with ski-like members for supporting the feet of a skier and having forebody and tail portions, a support device for positioning the forebody portions including a tie element construction individually mounting each of the forebody portions and a hinge joint pivotally mounting the tie element construction, a pivoting support device having a platform engaging the tail portions, and a torque bar connecting the tie element construction and the platform to maintain them in substantially parallel planes, whereby actions and reactions of actual skiing conditions are substantially realistically simulated.



3,467,375
JUMPING DEVICE WITH DRIVEN AIRLIFT BLADES
Harold C. Bush, 9750 Knolson, Livonia, Mich. 48150
Filed June 26, 1967, Ser. No. 648,772
Int. Cl. A63g *31/00, 31/08*
U.S. Cl. 272—57 **9 Claims**

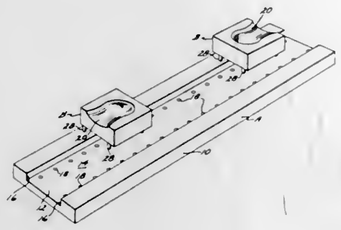


A jumping device having an upright shaft with a lower ground engaging end and blade means carried at its upper end. A reciprocal foot driven, spring loaded tubular member mounted on the shaft rotates the shaft as the device is propelled in a series of jumps so that the blades rotate to produce a lift when the device is airborne. The rotating blades produce a gliding descent.

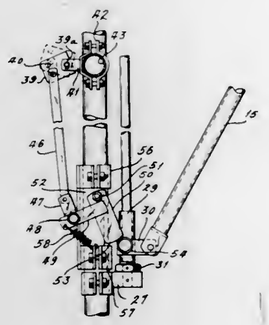
3,467,376
INDIAN WRESTLING AMUSEMENT DEVICE
Sherwood E. Feinberg, 11915 Kling, North Hollywood, Calif. 91607
Filed Aug. 8, 1967, Ser. No. 659,190
Int. Cl. A63f *9/00;* **A63b** *67/00*
U.S. Cl. 273—1 **2 Claims**

An amusement device including an elongate rigid member on which two elbow supports may be removably positioned in desired longitudinal spaced relationship to permit two participants to engage in what is commonly known as Indian wrestling. The elongate member may, by the use of additional equipment, be modified into a second form of amusement device by which a single

participant may pit his strength and skill against a force-resisting, pivotally-supported lever in an endeavor to obtain as high a rating as possible on a visual indicator associated with the device.



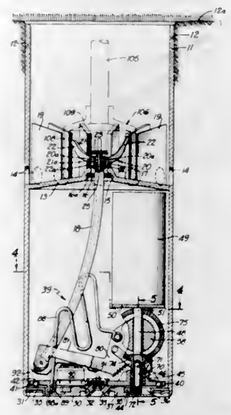
3,467,377
FOLDABLE BACKSTOP DOWN-LOCK MEANS
Joseph N. Miller, Overland, and Arthur G. Harbaugh, St. Louis, Mo., assignors to Jackes-Evans Manufacturing Company, St. Louis, Mo., a corporation of Missouri
Filed Aug. 1, 1966, Ser. No. 569,146
Int. Cl. A63b *67/00*
U.S. Cl. 273—1.5 **9 Claims**



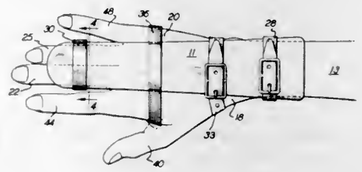
A folding support for a backstop including vertical supports and angularly extending braces. Locking means including a cam acting against a camming surface on the braces secures the support and braces when the backstop is positioned for play and biases the support and braces to rigidify the connection. The locking means is weighted for automatic locking and biasing, with release effected automatically by pulling on the hoisting cable.

3,467,378
GOLF BALL EJECTING DEVICE
John A. English, 408 Seaward Road, Corona Del Mar, Calif. 92625, and Tor H. Petterson, San Pedro, Calif.; said Petterson assignor to said English
Filed May 13, 1966, Ser. No. 549,923
Int. Cl. A63b *57/00*
U.S. Cl. 273—34 **14 Claims**

A golf cup for automatically ejecting balls received therein, having an ejection mechanism including an ejection member operatively biased from a retracted restrained position toward an extended position and operatively returned to the retracted position, and actuating means responsive to the presence of the ball in the cup for releasing the ejection member from its restrained position. The ejection mechanism includes means for delaying the ejection of the ball after it is received within the cup. The ejection mechanism is automatically rotated about the axis of the golf cup to eject in different radial directions balls sequentially entering the cup. Means adapted to receive the base of a flag stick are provided for the golf cup to prevent engagement of the ball with the actuating means.



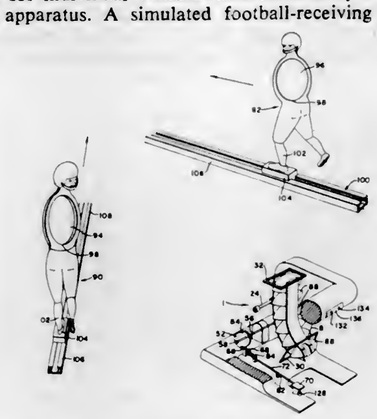
3,467,379
BOWLING GUIDE
Howard M. Kistner, Box 1069, W. Villard, Dickinson, N. Dak. 58601
Filed May 31, 1966, Ser. No. 553,739
Int. Cl. A63d *5/00*
U.S. Cl. 273—54 **4 Claims**



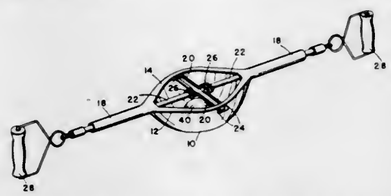
The guide is a straight rigid member which holds in alignment the bowler's forearm, wrist and the first joint of the ring and middle fingers. In this way the bowler's middle fingers cannot be removed from a ten-pin bowling ball before removal of the thumb, while the other two fingers are unrestrained in their movement.

3,467,380
COMBINED FOOTBALL CENTERING DEVICE AND PASS-RECEIVING DEVICE
Louis F. Bonacci, R.R. 1, Box 381, Holtsville, N.Y. 11742
Filed Jan. 12, 1967, Ser. No. 608,920
Int. Cl. A63b *67/00*
U.S. Cl. 273—55 **11 Claims**

An apparatus including a structure resembling the center of a football team having an arm that is capable of repeatedly snapping a football into a play position adjacent the buttocks of the simulated center. The arm is automatically moved to and from the play position to consecutively supply different footballs to the play position for individual withdrawal therefrom by the user of the apparatus. A simulated football-receiving player is arranged to move on a track away from the simulated center as the arm moves into the play position.

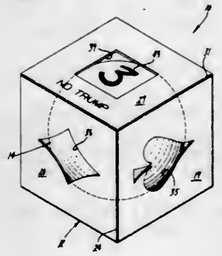


3,467,381
COMBINED PROJECTOR AND CATCHER WITH SEPARABLE RETAINING ELEMENTS
Adolf G. H. Kreiss, 4706 Mountain View Drive, San Diego, Calif. 92116
Filed Sept. 11, 1967, Ser. No. 666,646
Int. Cl. A63b *65/12*
U.S. Cl. 273—96 **4 Claims**



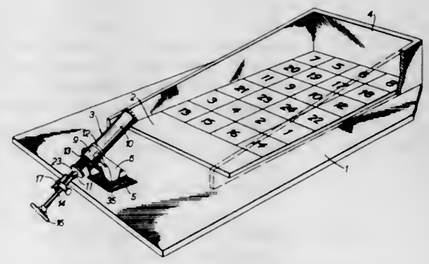
The apparatus comprises an elastic expansion type hand held exerciser, incorporating in its central portion a cup in which a playing piece is held, the cup having a trap which retains the playing piece when the apparatus is relaxed and the trap being opened when the apparatus is extended, allowing the playing piece to be thrown up and caught again in the cup in time with the expanding and relaxing action of the exercise.

3,467,382
CARD GAME BID INDICATOR
Louis Hall Leadley, 654 Arimo Ave., Oakland, Calif. 94610
Filed Dec. 20, 1967, Ser. No. 692,135
Int. Cl. A63f *1/12, 1/14, 3/00, 7/04*
U.S. Cl. 273—148 **9 Claims**



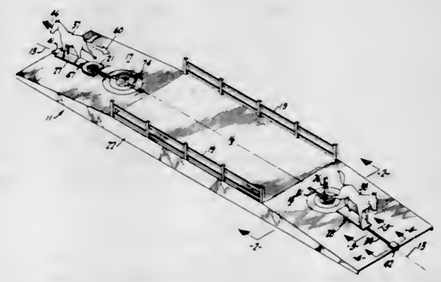
The following detailed disclosure relates to a device for visually displaying the contract bid in a card game. The device, in its preferred form, comprises a polyhedral shell having windows therein, and a ball within the shell having either integers or symbols thereon which, when displayed in a particular one of the windows in the shell, will visually represent the contract being played.

3,467,383
AERIAL PROJECTILE TARGET GAME WITH SPIN-IMPARTING PROJECTOR
Guy Jean Martin Miermans, Estancia Itati, Mercedes, Argentina
Filed Feb. 17, 1966, Ser. No. 528,178
Claims priority, application Great Britain, Feb. 19, 1965, 7,274/65
Int. Cl. A63b *65/12, 63/00*
U.S. Cl. 273—101 **4 Claims**



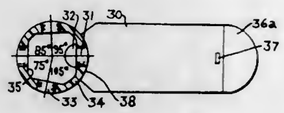
An aerial projectile game employing a ball projector which imparts spin to the projected ball and a target table with a yieldable surface having a high coefficient of friction.

3,467,384
TOY HORSESHOE GAME
Robert F. Tiner, 6715 Santa Juanita Ave., Orangevale, Calif. 95662, and O. B. Brandon, 517 8th St., Broderick, Calif. 95605
Filed Nov. 14, 1966, Ser. No. 593,951
Int. Cl. A63b *65/12, 9/02*
U.S. Cl. 273—101 **1 Claim**



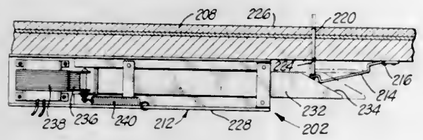
On each end of an elongated gameboard there is mounted a slidable carriage resiliently biased toward the opposite end, each carriage having a toy horse mounted thereon serving as a finger hold. Located adjacent each carriage is a peg movable between a vertical attitude and a position flush with the gameboard surface. The object of the game is to propel a toy horseshoe placed ahead of the slidable carriage (with the carriage in retracted position) toward and into encircling engagement with the peg in vertical attitude on the other end of the board.

3,467,385
BOOMERANG
James F. Liston, 866 Hare Ave., Ottawa 13, Ontario, Canada
Filed Oct. 18, 1965, Ser. No. 497,019
Int. Cl. A63b *65/00*
U.S. Cl. 273—106 **2 Claims**



An aerodynamically formed toy comprising at least two aerodynamically shaped lifting surfaces formed of soft and resilient material having a relatively heavy tip, which lifting surfaces known as blades are connected together through a light weight and durable central hub by means of a malleable adjustable connection which allows the lifting surfaces to be rotated about their longitudinal axes thus providing angular deformation of the lifting surfaces to produce various angles of incidence while sustaining the deformed adjusted position, so that the toy may be adjusted to follow a variety of flight paths.

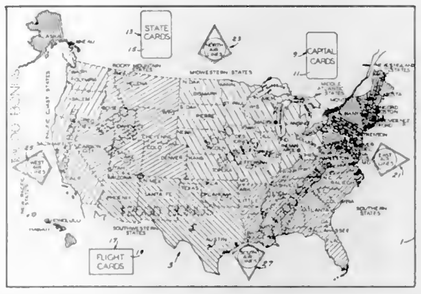
3,467,386
GAME BOARD WITH MOVABLE BARRIER MEANS
Carroll E. Smith, 2336 Graydon, Monrovia, Calif. 91016
Continuation-in-part of application Ser. No. 408,170. Nov. 2, 1964. This application Sept. 13, 1966, Ser. No. 586,906
Int. Cl. A63f *3/00*
U.S. Cl. 273—126 **3 Claims**



A game board with a vertically retractable barrier that acts to block a slidable playing piece. The barrier consists of a series of pins pivotally attached to a bar which bar is under the game board playing surface. The pins extend through holes in the playing surface and may be extended to block or be retracted to a position flush with the playing surface. The bar supporting the barrier pins is hingedly connected to the underside of the playing surface and is actuated by a camming latch bar that moves longitudinally of the table when a coin operated mechanism is activated.

3,467,387
MAP GAME APPARATUS WITH CARDS ARRANGED IN MATCHED PAIRS
Raymond C. Schmitt, Normandy, Mo. (1039 N. Grand Ave., St. Louis, Mo. 63106)
Filed June 7, 1967, Ser. No. 644,151
Int. Cl. A63f *1/04, 3/04*
U.S. Cl. 273—134 **4 Claims**

A game apparatus including a game board illustrating a map of the fifty states, each having its name and its capital city designated. First and second decks of playing cards respectively bear only the names of the states and their capitals, and a deck of instruction cards contain instructions for moving a game piece over the game board and are drawn after a player has obtained a pair of corresponding state and capital cards (a capitalized set). Each player begins with a quantity of money for use in purchasing airports in the capitalized states and



receives a quantity of stock for each purchase, the winner of the game being the first player to obtain a predetermined number of airports and a predetermined quantity of stock.

3,467,388
GOLF GAME AND PRACTICE DEVICE
Harry Weiler, 15490 Alpine Drive, Livonia, Mich. 48154
Filed July 25, 1967, Ser. No. 655,902
Int. Cl. A63b *69/36, 67/02*
U.S. Cl. 273—176 **3 Claims**

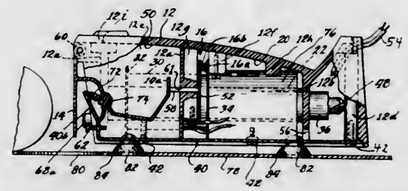


Numbered targets, up to eighteen in number, are arranged on a surface to form a practice golf course. Flat marked members are positioned adjacent the targets to indicate prescribed penalties when the golf ball comes to rest thereon. Each target includes a vertical pole having a sharpened lower end, to which a pedestal is detachably secured, and a target basket rotatably secured to the outer end of an arm having its inner end slidably secured to the pole. The connections between the target basket, arm and pole are such as to permit the target basket to be adjustably tilted to the horizontal and adjustably raised and lowered, with one of the lowered adjustments placing the target basket in contact with the pedestal supporting surface.

3,467,389
PRACTICE PUTTING APPARATUS
Harold W. Scholin, Park Ridge, and Holger E. Pedersen, Chicago, Ill., assignors, by mesne assignments, to World Golf Industries, Inc., Chicago, Ill., a corporation of Illinois
Filed Dec. 12, 1966, Ser. No. 600,967
Int. Cl. A63b *57/00, 69/36*
U.S. Cl. 273—179 **9 Claims**

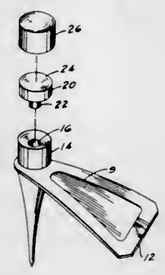
A practice putting device has a housing and a swingably mounted target plate. When a putted ball strikes the target, the target is moved inwardly to close a switch to

energize a solenoid serving to drive the target outwardly to return the ball. A suction cup is compressed between the housing and target when the target is driven outwardly and prevents reoperation of the switch. A bleed opening in the body of the suction cup provides controlled release



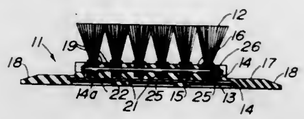
of suction. An adjustable stop limits the movement of the target and allows balls putted too fast to rebound out of range of the target. An inertia absorbing device reduces rebound of putted balls. A weight straddles the solenoid to prevent movement of the housing.

3,467,390
ADJUSTABLE HEIGHT GOLF TEE AND TARGET MEMBER
George H. Gardiner, 955 E. 40th St., Brooklyn, N.Y. 11210
Filed Oct. 5, 1966, Ser. No. 584,540
Int. Cl. A63b *69/36, 57/00*
U.S. Cl. 273—183 **5 Claims**



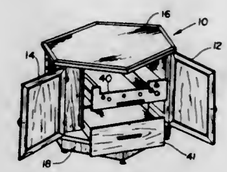
A golf tee device having a shaft to be inserted into the ground which is connected to a frangible target member which insures that the ball will be positioned above the ground a predetermined distance and which aids the golfer in hitting the ball in the intended direction.

3,467,391
GOLF-DRIVING BRUSH MAT
Joseph Elesh, 9315 Central Park Ave., Skokie, Ill. 60076
Filed Aug. 15, 1966, Ser. No. 572,491
Int. Cl. A63b *69/36*
U.S. Cl. 273—195 **3 Claims**



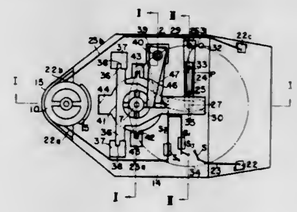
A golf practice mat from which golf balls may be driven wherein the upper surface of a resilient base member contains grooves in which bristle carrying clamps are removably secured by transversely extending rods which pass through the clamps and upwardly extending base penetrating legs of a U-shaped plate which either is embedded in the base member or abuts against a lower surface thereof. Cavities are provided on the underside of the base member to provide a suction grip.

3,467,392
STEREOPHONIC ASSEMBLY
Richard W. Williams, 1075 S. Dover St., Lakewood, Colo. 80226
Filed Sept. 13, 1967, Ser. No. 667,471
Int. Cl. G11b *1/02*
U.S. Cl. 274—2 **6 Claims**



A stereophonic assembly for a tape deck, record player and/or radio includes a generally completed closed cabinet housing and a removable frame or chassis for holding the entire sound reproducing apparatus inclusive of amplifiers, tuners, tape decks, record players, speakers, etc. Grills are mounted on two opposite sides of the cabinet for passage of sound emitted in opposite directions and the frame is spaced from the cabinet walls, leaving a space therebetween for ventilation through said grills and for sound resonances.

3,467,393
SIMPLE SOUND REPRODUCING DEVICE
Shigeru Kuwayama, 60, 2-chome, Shimouma-cho, Setagaya-ku, Tokyo, Japan
Filed June 29, 1967, Ser No. 650,091
Int. Cl. G11b *3/26*
U.S. Cl. 274—9 **5 Claims**

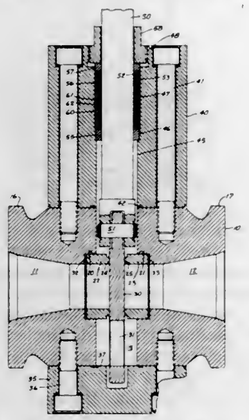


A sound reproducing device comprising a pickup having a stylus located over a turntable adapted to receive a record thereon, and an arm extending substantially in the range of operation of the pickup adjacent the latter. The arm is pressed by a pressing means, such as a plate spring, against the pickup and a stylus pressure is applied by the action of the spring on the arm pressing the stylus against the record, which pressure becomes greater as the stylus moves operatively towards the center of the turntable.

3,467,394
PACKING MEANS
Austin U. Bryant, Walnut Creek, Calif., assignor to Grove Valve and Regulator Company, Oakland, Calif., a corporation of California
Filed Oct. 15, 1965, Ser. No. 496,519
Int. Cl. F16j *15/00, 15/32*
U.S. Cl. 277—1 **17 Claims**

A packing assembly of the V-ring tape which is particularly adapted to use packing rings of a flexile material having a high degree of permanent set, such as polytetrafluoroethylene. In the preferred embodiments, relatively

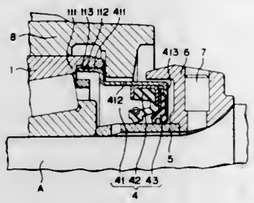
rigid V-ring shaped spacer rings are interposed between a plurality of V-packing rings. The initial shape of the packing rings, before the packing assembly is axially compressed in the packing gland, is such that the concave sides of the packing rings are more acutely convergent than the mating convex sides of the spacer rings. In addition, the spacer rings are provided with cylindrical inner and outer surfaces so dimensioned as to provide definite extrusion gaps with the respective walls of the packing gland to permit the formation of relatively thin lips on the packing rings when mechanical and pressure forces are applied to the packing assembly.



3,467,395
LUBRICANT SEAL HAVING CASING AND ITS HOLDING MEANS

Yoshiro Kan, Fujisawa-shi, Japan, assignor to Nippon Seiko Kabushiki Kaisha, Tokyo, Japan, a corporation of Japan

Filed Apr. 28, 1967, Ser. No. 634,689
Claims priority, application Japan, May 13, 1966, 41/43,773; Dec. 1, 1966, 41/78,328; Jan. 19, 1967, 42/4,486
Int. Cl. F16j *15/02;* **F16c** *33/78*
U.S. Cl. 277—37 **4 Claims**

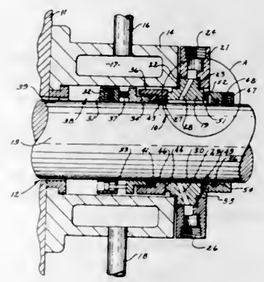


This disclosure describes a novel press-fitting fluid-tight lubricant seal housing, an interlocking mounting bore, and novel lubricant and dust seals for use therein. The seal housing has an annular peripheral groove on the exterior sidewall, and the mounting bore has an annular peripheral projection or ring extending inwardly on the interior sidewall. The annular groove and projection interlock when the seal housing is telescoped into the mounting bore. An interior, cylindrical sidewall, connected to the exterior sidewall by a radially extending flange, has provision therein for retaining a dust seal element and an oil seal element. The oil seal has at least one seal lip at its inside peripheral portion extending axially inwardly. The dust seal lip is positioned adjacent the oil seal so as to form a pocket therebetween. The seal elements are made of separate pieces of elastomeric material.

3,467,396
INTERNALLY COOLED SEAL ASSEMBLY

Lowell E. Hershey, Portage, Mich., assignor to Duralmetallic Corporation, Kalamazoo, Mich., a corporation of Michigan

Filed May 10, 1967, Ser. No. 637,506
Int. Cl. F16j *15/40, 15/44, 15/16*
U.S. Cl. 277—74 **10 Claims**

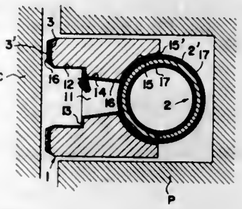


A mechanical seal construction for use between a wall and a shaft extending therethrough and rotatable relative thereto, wherein the mechanical seal has a pair of sealing members having mutually contacting sealing faces, a first sealing member being fixed with respect to the wall and a second sealing member being capable of rotation in response to rotation of the shaft. An enclosure means cooperable with said seal construction defining a chamber, has a first portion being rotatable with said second sealing member and a second portion being fixed with respect to said wall, said first and second portions thereof defining an annular passageway extending away from said chamber. A ring of external diameter substantially equal to the external diameter of the annular passageway is disposed within the chamber and adjacent the passageway so that rotation of the shaft will result in the ring being centrifugally forced against the walls defining the passageways thereby sealing the chamber.

3,467,397
OIL SCRAPING RING COMBINED WITH COILED EXPANDER

Eisuke Sugahara, Tokyo, Japan, assignor to Nippon Piston Ring Co., Ltd., Tokyo, Japan

Filed Mar. 13, 1968, Ser. No. 712,651
Int. Cl. F16j *9/04;* **F16l** *9/06*
U.S. Cl. 277—139 **8 Claims**

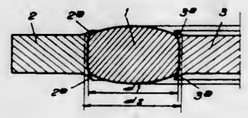


This invention has a feature of an oil scraping ring having a coiled expander combined therewith and the sliding face of said oil scraping ring against the cylinder face is covered by chrome plating and thermoplastic or thermo-setting resin is coated on said chrome-plated face thereby inhibiting possible mal effects such as scuffing and enhancing wear resistivity of said sliding face.

3,467,398
SEAL ASSEMBLIES

Rene G. Bernard, Lyon, France, assignor to Societe d'Etudes Verrieres Appliquees (S.E.V.A.), Neuilly-sur-Seine, France, a company of France

Continuation-in-part of application Ser. No. 559,763, June 23, 1966. This application Dec. 1, 1967, Ser. No. 687,316
Claims priority, application France, June 28, 1965, 3,218; Nov. 23, 1965, 3,241
Int. Cl. F16j *15/16, 15/00*
U.S. Cl. 277—180 **14 Claims**

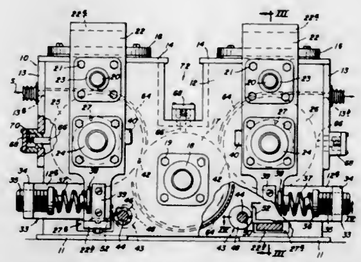


A seal assembly including two ring members of a resilient material which, when not in use, clamp between them, with a predetermined compression force, a ring of soft metal. In use, the seal assembly is clamped between two flanges and the soft metal ring is constrained to flow and form a seal between the flanges. The ring may be of substantially less thickness than the ring members.

3,467,399
ROLL SEAL FOR VACUUM STRIP-TREATING CHAMBER

Calvin E. Kelly and Thomas E. Nicely, Franklin Township, Westmoreland County, Pa., assignors to United States Steel Corporation, a corporation of Delaware

Continuation-in-part of application Ser. No. 424,405, Jan. 8, 1965. This application July 17, 1967, Ser. No. 653,687
Int. Cl. F16j *15/16, 15/00*
U.S. Cl. 277—237 **10 Claims**

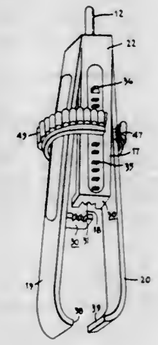


A seal for strip entering a vacuum chamber including at least two rolls between and about which the strip passes. One of the rolls is fixed and the other is bodily movable toward and from the fixed roll under adjustable spring pressure. Stops limit the movement of the movable roll toward the fixed roll so that a gap is provided which is wider than strip thickness. The movable roll is journaled in bearings carried by hanger bars pivoted externally on the side walls of the box. Low friction sealing bars parallel to the rolls engage them peripherally. The rolls include a sponge rubber ring of special shape secured to each end of the roll body, an end ring secured to each sponge rubber ring, and a low friction washer secured to the end ring and bearing against the side wall of the box to provide a dry vacuum seal.

3,467,400
CENTRIFUGAL CLEANING OF PAINT BRUSHES AND THE LIKE

Alexander K. MacKenzie, Lloyd D. MacKenzie, and George C. Pottinger, Vancouver, British Columbia, Canada, assignors to Torlo International Limited, Vancouver, British Columbia, Canada, a company

Filed Mar. 2, 1967, Ser. No. 620,103
Claims priority, application Canada, June 13, 1966, 962,775
Int. Cl. B23b *5/22, 5/34;* **F26b** *17/30*
U.S. Cl. 279—1 **4 Claims**

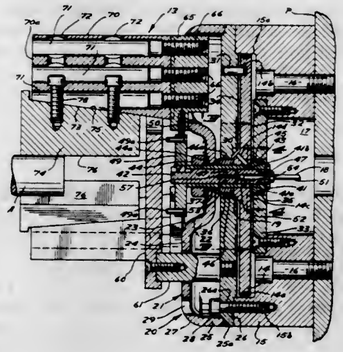


An attachment securable to an electric motor for cleaning paint brushes and the like includes a first pair of fingers for holding the bristle carrying portion of a brush, and a second pair of fingers shorter than the first for holding the handle of the brush. A clamp encircles the fingers and is movable therealong to clamp the fingers against the brush.

3,467,401
AIR CHUCK

Jesse E. Berge, 20 E. 19th St., Minneapolis, Minn. 55403

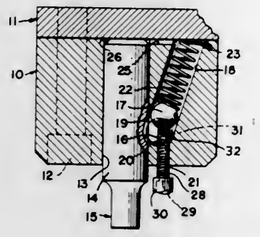
Filed May 5, 1966, Ser. No. 554,931
Int. Cl. B23b *31/30, 31/10, 5/22*
U.S. Cl. 279—4 **8 Claims**



This disclosure relates to an air chuck utilized for clamping of articles for precision machining thereof and includes a deformable plate member to which the jaws of the chuck are affixed with a movable piston mounted therebehind for shifting the position of the plate member

to either open or expand the jaws by providing a longitudinal movement to the center portion of the plate member. The valving structure for introducing air pressure to either side of the piston is entirely incorporated within the unit and includes a rotatable air directing member to direct air pressure to either side of the piston whereby the piston will move outwardly or inwardly and which rotatable member affords communication to both sides of the piston for introducing pressure to one side of the piston while relieving pressure from the other side thereof while providing a single pressure fitting for the introduction of air pressure to the rotatable member. An indexing system is also included for proper indexing of the rotatable member with regard to the passages directing air to and relieving air from the respective sides of the piston.

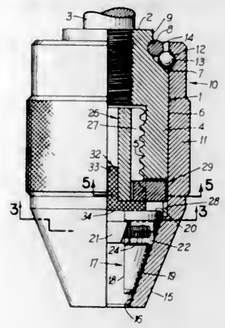
3,467,402
THREADED BALL SEAT RETAINER BLOCK
James E. Parker, 18230 Valade, Wyandotte, Mich. 48192
Continuation of application Ser. No. 346,836, Feb. 24, 1964. This application Mar. 28, 1966, Ser. No. 537,966
Int. Cl. B23b *31/30*
U.S. Cl. 279—30 **2 Claims**



A retainer block having a tool socket formed therein, a tool slidably mounted in the tool socket, a round hole formed in the retainer block and having the lower end thereof intersecting said tool socket through a communicating opening, a releasable ball locking means operatively mounted in said round hole and extended through said opening and engaged with said tool for releasably holding the tool in said tool socket, a threaded hole formed in said retainer block in a position spaced apart from said tool socket and extended upwardly inward from the lower end thereof into communication with said round hole at a position below said releasable ball locking means, and a threaded means adapted to be threadably mounted in said threaded hole to engage said ball locking means and release it from locking engagement with said tool and hold it in a released position.

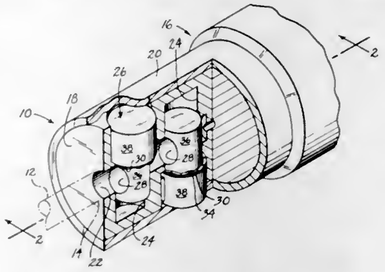
3,467,403
KEYLESS CHUCK
Harry H. Coyle and Johan L. Michelsen, Brooklyn, N.Y., assignors, by mesne assignments, to R. J. Okon Company, Inc., Chicago, Ill., a corporation of Delaware
Filed Apr. 20, 1966, Ser. No. 543,935
Int. Cl. B23b *31/12, 5/22;* **B65g** *3/02*
U.S. Cl. 279—58 **9 Claims**

The disclosure employs a chuck body which includes an interiorly threaded axially projecting tubular portion, and the shell includes a cylindrical portion which embraces the tubular portion of the body and is bearinged thereon, with the bearing means arranged to accept both radial and axial loads. The cylindrical portion of the shell projects beyond the end of the chuck body and then joins a nose portion which presents a frusto-conical inner surface embracing the assembly of jaw members, the latter having flat trailing end faces lying in a common plane which extends transversely of the chuck. Primary actuation of the jaw members is accomplished by a jackscrew means having exterior threads cooperating with the internal threads on the tubular portion of the chuck body. To transfer rotational movement from the shell to the



jackscrew means, a groove and key arrangement is used, with the groove being so dimensioned that a material amount of movement of the shell is required before a driving engagement between the wall of the groove and the key is attained.

3,467,404
CENTRIFUGAL CHUCK
Charles T. Sloan, Bloomfield, Conn., assignor to The Whitnon Manufacturing Company, Farmington, Conn., a corporation of Connecticut
Filed Nov. 14, 1966, Ser. No. 593,843
Int. Cl. B23b *31/16, 5/22, 5/34*
U.S. Cl. 279—66 **7 Claims**

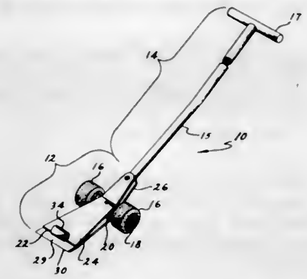


A spindle has axially spaced diametrically opposed cavities communicating with an axially extending tool receiving bore and weighted plugs are slidably received for limited radial movement in these cavities. Each plug has an opening which is alignable with the spindle bore to receive the shank portion of a tool. Springs urge the plugs slightly out of alignment to hold the tool in place when the spindle is not rotating, and the weight distribution of the plugs is such that centrifugal force complements this spring force to firmly anchor the tool for rotation with the spindle.

3,467,405
LEVER DOLLY
Walter K. Fogg, 45 Kensington St., Feeding Hills, Mass. 01030
Filed Nov. 16, 1967, Ser. No. 683,684
Int. Cl. B62b *1/00;* **B66f** *3/00*
U.S. Cl. 280—47.24 **5 Claims**

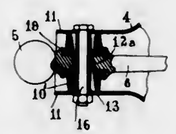
A lever dolly for moving machinery support stands having a carriage portion and a lever portion wherein the carriage portion comprises a pair of wheels mounted on an

axle and a pair of carriage plates supported thereby, the lower carriage plate having a portion which extends beyond the upper carriage plate to act as a prying lip and



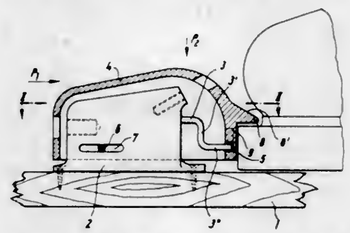
the upper carriage plate having means disposed at the end thereof for engaging support stands so that when engaged said means prevents the support stand from slipping on or falling off of the carriage portion.

3,467,406
SUSPENSION SYSTEMS OF VEHICLES
Edmond Henry-Biabaud, Paris, France, assignor to Societe Anonyme Andre Citroen, Paris, France
Filed Oct. 10, 1967, Ser. No. 674,149
Claims priority, application France, Nov. 18, 1966, 84,190
Int. Cl. B60g *3/20, 11/00*
U.S. Cl. 280—96.2 **8 Claims**



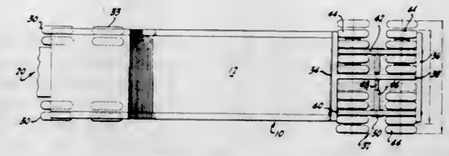
This suspension device for a vehicle wheel comprises a knuckle supporting the stub axle of the jointly steerable and driven wheel, together with two ball joints for the pair of wheel carrier wishbone links and a ball joint for the steering arm; one of the ball joints is pivoted to the end of a lever pivoted freely on one of the wishbone links, whereby this ball joint can move longitudinally in a horizontal plane, the other joint constituting a fixed point.

3,467,407
SAFETY BINDING WITH DOUBLE CRANK MEANS
Paul Unger, 1 Zirndorfer Weg, 8501 Altenberg, near Nuremberg, Germany
Filed Aug. 23, 1967, Ser. No. 662,719
Claims priority, application Germany, Aug. 27, 1966, U 13,049
Int. Cl. A63c *9/08*
U.S. Cl. 280—11.35 **7 Claims**



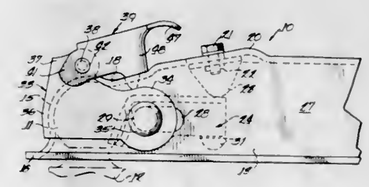
Safety binding for skis where the boot latch is linked to the pressure member of the release device for movement of the boot latch with the pressure member longitudinally of the ski and for pivotal movement of the pressure member laterally.

3,467,408
HEAVY DUTY TRUCK TRAILER
Emil Louis Regalia, 128 Foothill Blvd., Napa, Calif. 94558
Filed Apr. 20, 1967, Ser. No. 632,246
Int. Cl. B62d *21/14, 53/06*
U.S. Cl. 280—34 **6 Claims**



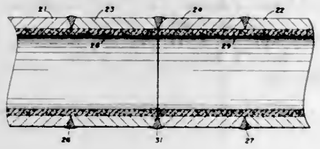
A heavy duty truck trailer particularly adapted for hauling earth moving equipment and other extremely heavy loads and including a mechanism for extending between the outsides of the tires so as to qualify the trailer to carry heavier loads, and for retracting the wheels when the trailer is empty or under light loads so as to qualify the trailer for extended travel hours.

3,467,409
LOCKING MEANS FOR TRAILER COUPLINGS
Robert K. Unter, Rockford, Ill., assignor to Keystone Consolidated Industries, Inc., Rockford, Ill., a corporation of Delaware
Filed Jan. 2, 1968, Ser. No. 695,197
Int. Cl. B60d *1/06*
U.S. Cl. 280—513 **7 Claims**



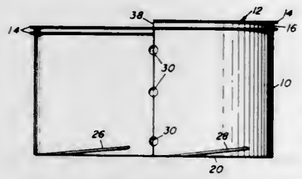
Locking means for a trailer coupling on the forward end of the frame of a trailer to be connected to a vehicle having a ball member mounted on the frame thereof. The coupling includes a downwardly opening housing forming a portion of the ball socket and a ball clamp forming the remainder of the socket is reciprocably mounted in the housing. The ball clamp is actuated by a latching lever which is pivotally mounted on a yoke that is connected to the ball clamp, and the locking means is positioned between the latching lever and the housing. In one form the locking means includes a lock housing secured on the coupling housing and having a tumbler lock with a rotatable plug and a lock bolt pivotally mounted at one end in the lock housing and at the other end to a pin on the plug. The lock bolt has a hook portion intermediate the ends cooperating with a pin in the latching lever. In another form, the tumbler lock is mounted in the latching lever and actuates a rotatable bolt having a hook end which engages the edge of a slot in the coupling housing.

3,467,410
WELDED JOINT FOR LINED PIPE
Ray J. Chandler, Dallas, Tex., assignor to Mobil Oil Corporation, a corporation of New York
Filed May 19, 1967, Ser. No. 639,856
Int. Cl. F16l *13/02, 15/00, 25/00*
U.S. Cl. 285—55 1 Claim



The joining of lengths of corrodible metal pipe which carries an internal, nonmetallic, corrosion-resistant lining. For this purpose, tubular sections of a corrosion-resistant metal are secured axially to the ends of the metal pipe. The tubular sections may be secured to the metal pipe by welding. Then, the internal lining is placed within the metal pipe to extend within the tubular sections toward their outer ends. The lining may be formed of cement. Each tubular section has an axial dimension greater than the longitudinal distance from its outer end in which the nonmetallic, corrosion-resistant lining undergoes thermal and mechanical injury during subsequent welding together of the outer ends of abutting tubular sections. Thereafter, the lengths of lined pipe are positioned with the outer ends of the tubular sections in abutment. The abutted tubular sections are then secured together in fluidtight relationship with a connecting weld of corrosion-resistant metal compatible with the metal of the tubular sections. The tubular sections, and the connecting weld therebetween, can be formed from stainless steel.

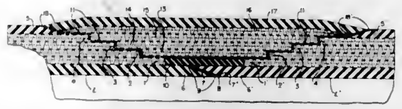
3,467,411
THREADED SHEET METAL FITTING
Christian P. Klapproth, Jr., 514 Academy Road 21228, and Melvin R. Doxzon, 228 S. Collins Ave. 21229, both of Baltimore, Md.
Filed Dec. 19, 1966, Ser. No. 602,911
Int. Cl. F16l *15/00*
U.S. Cl. 285—219 6 Claims



A collar, or joint, for use in forming the connection between a sheet metal tube and a flat-surfaced duct. The collar includes a flanged portion forming a thread at one end adapted to engage a corresponding aperture in the duct whereby the collar may be screwed into the duct to form a joint.

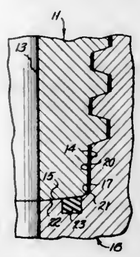
3,467,412
HOSE SPLICE
Philip W. Gore, Tallmadge, and Lawrence R. Jones, Cuyahoga Falls, Ohio, assignors to The Goodyear Tire & Rubber Company, Akron, Ohio, a corporation of Ohio
Filed Aug. 14, 1967, Ser. No. 660,308
Int. Cl. F16l *31/00, 35/00*
U.S. Cl. 285—293 2 Claims

An improved hose splice construction for joining two or more segments of previously vulcanized flexible fabric reinforced hose. The splice includes a tapered joint uniting the inner tubes of the hose segments and unvulcanized elastomeric strips and plies of rubber-covered splicing fabric to form a bond between the textile fabric reinforcing body plies and the outer flexible covers of the hose



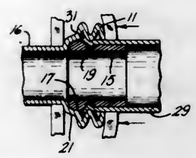
segments being united. This arrangement may be used to form long lengths of both heavy duty and lightweight hose structures and also provides a splice construction which may be severely flexed and bent without causing the splice to leak.

3,467,413
TRIPLE-SEALING PIPE JOINT
Alexandre Madrelle, Berlaimont, France, assignor to Societe Anonyme dite: Vallourec, Usines a Tubes de Lorraine-Escaut et Vallourec Reunies, Paris, France
Continuation-in-part of application Ser. No. 353,926, Mar. 23, 1964. This application Dec. 14, 1967, Ser. No. 690,529
Claims priority, application France, Mar. 25, 1963, 929,147
Int. Cl. F16l *25/00, 35/00*
U.S. Cl. 285—332.2 8 Claims



A pipe joint comprising mating tapered surfaces on male and female members, corresponding portions of each tapered surface being threaded, and the tapered surface on the female portion being connected to a shoulder by a beveled portion on which the outer edge of the end of the male member seats. A resilient sealing ring is positioned in an annular recess in the shoulder portion of the female member and is engaged by the end surface of the male member.

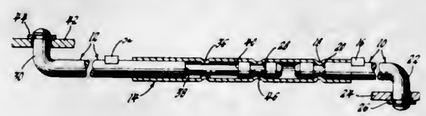
3,467,414
TUBE JOINT HAVING BUCKLED LOCKING MEANS
Ronald T. Downing, 5701 Taffy Parkway, Lansing, Mich. 48910
Filed Sept. 30, 1966, Ser. No. 583,211
Int. Cl. F16l *13/14, 13/00*
U.S. Cl. 285—382.2 6 Claims



A tubular connection comprised of two tubular members having telescoped end portions which have been

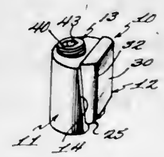
buckled into a circumferential mechanical interlocked engagement with each other and with the circumferential groove and shoulder of an internally positioned tubular mandrel.

3,467,415
ADJUSTABLE CONNECTING ROD ASSEMBLY
Bela Sandor, Detroit, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Feb. 27, 1968, Ser. No. 708,560
Int. Cl. F16b *7/00;* F16d *1/00*
U.S. Cl. 287—3 2 Claims



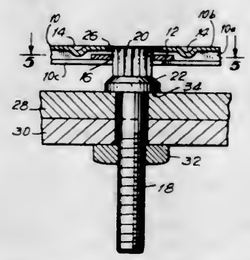
An annular rod is provided with a pair of spaced annular grooves, one being of greater longitudinal extent than the other. A tube receives the rod and when the end of the tube engages a stop on the rod, an annular rib is placed in the tube a predetermined distance from the stop so that this rib is located adjacent a wall of the groove to thereby interconnect the rod and the tube for longitudinal adjustment relative to each other. A second rod is provided with an annular groove and is received within the other end of the tube. When the end of the tube engages a stop on this rod, an annular rib is placed in the tube to axially fix the tube and second rod to each other but permit rotatable adjustment relative to each. The short lateral legs of the rods are connected to members to be operated and after this is done to fix the length of the assembly, a rib is provided in the tube to seat within the other groove of the first rod and thereby fix the tube and first rod to each other and fix the length of the assembly.

3,467,416
BLADE LOCKING DEVICES
Eugene F. Gourley, Meadville, Pa., assignor to McCrosky Tool Corporation, Meadville, Pa., a corporation of Pennsylvania
Filed Nov. 3, 1967, Ser. No. 680,582
Int. Cl. F16b *1/00*
U.S. Cl. 287—189.36 8 Claims



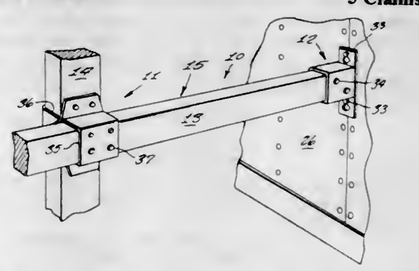
A wedging blade-locking device constituted by a truncated cylindrical cartridge adapted to be seated in a recess in the body of a cutter, which recess is adjacent to the blade which is to be locked within the cutter body. The partial lateral surface of the cylindrical cartridge remote from the blade coincides with a corresponding cylindrical surface in the cutter body, which together with a reciprocable wedge element overlying a flat-sided inclined face of said cartridge proximate to said blade, substantially fills said recess. A threaded screw, of relatively large diameter and of different pitch at the different portions thereof, engages internal differentially threaded coaxial bores in the cartridge and a projection extending laterally from said wedge element into an opening in said cartridge, to effect the reciprocation of said wedge element between the blade and cartridge to lock or release the latter quickly and reliably against the blade.

3,467,417
FASTENER UNIT
Raymond Ollis, Jr., Oreland, Pa., and Roger B. Whiteside, Cinnaminson, N.J., assignors to Standard Pressed Steel Co., Jenkintown, Pa.
Filed Nov. 9, 1966, Ser. No. 593,169
Int. Cl. F16b *39/28, 39/282*
U.S. Cl. 287—189.36 10 Claims



A unit having a fastener retained in a channel strip by a locking plate The fastener is loosely received in an aperture in the locking plate. Movement of the fastener normal to the plane of the locking plate is limited by regions of enlarged width on the fastener on both sides of the locking plate. The locking plate is so positioned within the channel strip and dimensioned that limited rotational movement of the fastener may take place. The unit is arranged so that the bearing surface of the fastener is located outside the boundaries of the channel strip.

3,467,418
JIFFY JACK SCAFFOLD BRACKET AND JOINT THEREWITH
John R. Redditt, Brownhelm Station Road, Vermillion, Ohio 44089
Filed July 24, 1967, Ser. No. 655,388
Int. Cl. F16b *7/00, 5/00, 9/00;* E04c *3/00*
U.S. Cl. 287—20.92 5 Claims

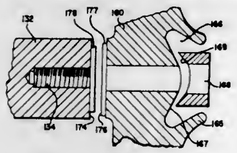


A pair of brackets comprising a set which may be used in the erection of a scaffold, one of the brackets being used for securing the end of a horizontal beam to an existing wall or post, and the other of the brackets being used for interconnecting a horizontal beam with a vertical post.

3,467,419
MEANS FOR SECURING A ROTOR ON A SHAFT
James H. Anderson, Spring Garden Township, and Marinus J. Spruitenburg, York, Pa., assignors to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois
Original application Apr. 8, 1963, Ser. No. 271,200, now Patent No. 3,273,920, dated Sept. 20, 1966. Divided and this application Aug. 23, 1966, Ser. No. 598,528
Int. Cl. F16d *1/06;* F01d *1/00*
U.S. Cl. 287—53 1 Claim

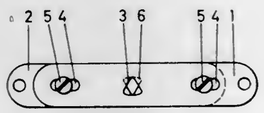
A hub member, for example the hub portion of a centrifugal compressor impeller, is secured to a drive shaft by means of a conical washer engaging a conical surface

on the hub. The cone angles of the respecting engaging surfaces are not identical so that the periphery of the cone



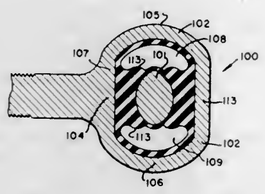
washer engages the hub before the radially innermost portions thereof.

3,467,420
LONGITUDINALLY ADJUSTABLE JOINT, FOR EXAMPLE, FOR OFFICE MACHINES
Harald Svensson, Svangsta, Sweden, assignor to Facit-Halda AB, Svangsta, Sweden, a Swedish joint-stock company
Filed Nov. 4, 1966, Ser. No. 592,035
Claims priority, application Sweden, Nov. 5, 1965, 14,291/65
Int. Cl. F16b *7/10, 7/00*
U.S. Cl. 287—58 **2 Claims**



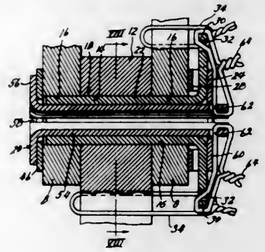
An adjustable-length joint or link having slots extending longitudinally of one of the two link elements and a sector-shaped opening in each element, the points of the two sectors lying on opposite sides of the longitudinal center line of the link and in transverse alignment when the link is at the midpoint of its range of length adjustment whereby rotary movement of a blade such as a screwdriver blade will shorten or lengthen the link. Screws extending through the slots in the overlying element and threaded into the underlying element serve to lock the link in adjusted position.

3,467,421
FLEX JOINT
Gustavus A. Bentley, Redwood City, Calif., assignor to Federal-Mogul Corporation, Detroit, Mich., a corporation of Michigan
Filed June 7, 1965, Ser. No. 461,968
Int. Cl. F16b *7/00;* **F16f** *1/38*
U.S. Cl. 287—85 **5 Claims**



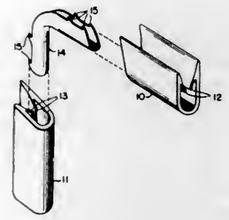
A joint connection wherein two relatively movable rods with interlocking ends are spaced from direct contact with each other by a molded elastomeric material bonded to both of the interlocking ends is characterized by one rod end being shaped as a generally cylindrical ring, preferably circular in cross section, and the other rod end having a stud with a generally oval cross section along the plane of the ring. The stud extends generally perpendicular to the plane of the ring and passes axially and centrally through the ring. The elastomeric material substantially fills the space between the stud and the ring, except for two void spaces diametrical opposite each other at the opposite extremities of the major axis.

3,467,422
SAFETY PIVOT CONNECTION
Lloyd L. Mielke, 4125 Hawthorne Circle, Kansas City, Mo. 64116
Filed May 24, 1967, Ser. No. 640,938
Int. Cl. F16c *11/00;* **B25g** *3/38;* **F16d** *27/00*
U.S. Cl. 287—100 **3 Claims**



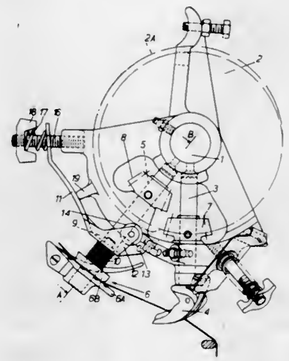
This application discloses a safety pivot connection designed primarily for making pivotal connections in aircraft control linkages, said connection comprising essentially of a tubular safety sleeve insertable in matching holes of the links or other work pieces, a retainer member in the nature of a bolt insertable through said sleeve and retained therein to secure the sleeve in place by normal means such as a nut threaded on the bolt, and means independent of or cooperating with the bolt or other retainer to secure the sleeve in place in the event of the failure and loss of the bolt or other retainer, or parts thereof.

3,467,423
GARNISHING BEAD MITER JOINT AND METHOD OF MAKING SAME
Norman C. Schlegel, Jr., Pittsford, and Alan P. Michels, Penn Yan, N.Y., assignors to The Schlegel Manufacturing Company, Rochester, N.Y., a corporation of New York
Continuation of application Ser. No. 463,833, June 14, 1965, now abandoned. This application June 7, 1967, Ser. No. 644,404
Int. Cl. F16b *1/00, 7/04*
U.S. Cl. 287—189.36 **5 Claims**



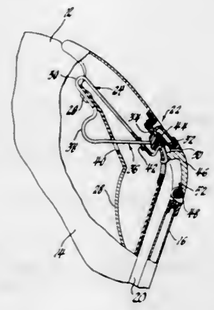
This invention relates to an improved miter joint between pieces of trim strip or garnishing bead or the like, and more particularly, to an improved miter joint between trim strips or garnishing beads at least partially formed of thermoplastic material so that the outer surface thereof comprises thermoplastic material.

3,467,424
TWINE RETAINER FOR KNOTTER
Alfred J. Wenzel, Kassel-Kirchditmold, and Alwin K. Hantel, Kassel, Germany, assignors to Massey-Ferguson G.m.b.H., Kassel, Germany
Filed Dec. 20, 1967, Ser. No. 692,002
Claims priority, application Great Britain, Jan. 25, 1967, 3,648/67
Int. Cl. B65h *69/04*
U.S. Cl. 289—13 **9 Claims**



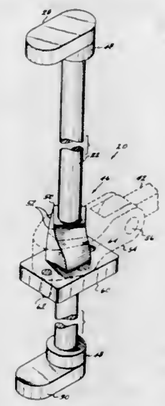
A baling machine with a knotting mechanism that has a twine retainer with two clamping parts mounted on a shaft. A leaf spring and two compression springs urge one of the clamping parts toward the other clamping part. A cam engages a cam follower on one end of the leaf spring to apply additional force through one of the compression springs to one clamping part during the bale forming operation of each cycle to increase the clamping load of the twine retainer. The cam disengages the cam follower to decrease the clamping load of the twine retainer during knotting.

3,467,425
CLOSURE LATCH
Rudolph A. Ferrara, Warren, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Jan. 15, 1968, Ser. No. 697,780
Int. Cl. E05c *19/06, 17/00, 19/00*
U.S. Cl. 292—81 **4 Claims**



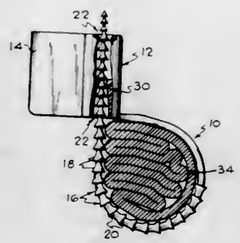
A seat back mounted writing tray is provided with a latch for securing the tray to the seat back. Upon disengagement of the latch, a blocking member blocks reengagement of the latch while the tray is still in closed position. Opening and closing of the tray disables the blocking member so that the tray may be latched again.

3,467,426
TRUCK DOOR LATCHING MECHANISM
Alfred G. O. Hix, 3230 Rancho La Carlotta Road, Covina, Calif. 91722
Filed July 18, 1967, Ser. No. 654,201
Int. Cl. E05c *3/04, 3/14;* **E05b** *3/08*
U.S. Cl. 292—218 **5 Claims**



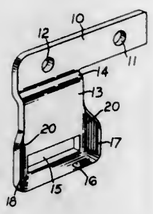
A latching apparatus for truck doors, as for example, an abutting pair of double doors, incorporating an elongate rotatably-mounted rod carried on a door for engaging and disengaging spaced-apart latching members and including a helical section matingly received in a yoke that is in turn affixed to a handle mechanism for locking the elongate member in a latching position. Set screws variously position the yoke axially on the helical section of the rod, to accomplish and maintain the desired angular displacement between the latching members and the handle.

3,467,427
ALL-PLASTIC SEAL
Sigurd M. Moberg, East Orange, N.J., assignor to E. J. Brooks Company, Newark, N.J., a corporation of New Jersey
Filed Mar. 29, 1968, Ser. No. 717,154
Int. Cl. B65d *55/06, 33/34, 27/30*
U.S. Cl. 292—322 **8 Claims**



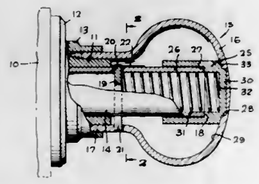
A seal formed entirely of moldable, resilient plastic material includes a circular group of similar, resilient, fingers entirely enclosed within a cylindrical housing, and having extremities thicker than their roots which latter are integral with the housing near one end thereof. The fingers extend within the housing and toward the latter's other end and have inner surfaces defining a generally conical, expansible passage tapering toward the housing's other end; and said extremities are arranged to lockably engage any one of a plurality of annular ridges formed along a substantial part of the length of a shackle.

3,467,428
HASPS FOR SUITCASES AND LIKE LUGGAGE LOCKS
Eric Frederick Constable, Solihull, England, assignor to C. W. Cheney & Son Limited, Birmingham, England, a British company
Filed Nov. 14, 1967, Ser. No. 682,914
Claims priority, application Great Britain, Dec. 20, 1966, 56,939/66
Int. Cl. E05b *15/02*
U.S. Cl. 292—340 **1 Claim**



A luggage hasp comprising a plate with a slot, in which the metal around three sides of the slot is inclined to the plane of the plate to provide an open-topped box with the slot in its base, to give great strength.

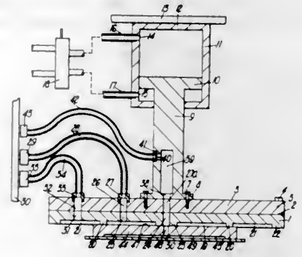
3,467,429
SPRING-URGED KNOB FACE AND SPINDLE COMBINATION
Fred J. Russell, South Gate, Richard L. Armstrong, Santa Fe Springs, and Fred L. Jennie, Buena Park, Calif., assignors, by direct and mesne assignments, to Norris Industries, Inc., Los Angeles, Calif., a corporation of California
Filed May 8, 1967, Ser. No. 636,930
Int. Cl. E05b *13/00*
U.S. Cl. 292—352 **8 Claims**



An interior tubular spindle rotatably mounted in a stationary bearing, a door knob, a transversely disposed knob catch which extends through diametrically aligned openings in the spindle and the neck of the knob, a leaf type spring yieldably urging the knob catch outwardly into engagement with the opening in the neck, and a spring acting between the inside face of the knob and the spindle, the spring pressing against the spindle and the inside face of the knob to close clearances and yieldably hold the parts in snug operating relationship.

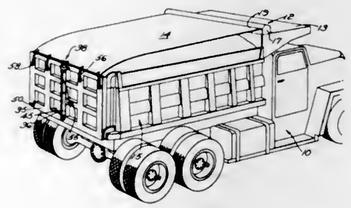
3,467,430
DOUBLE GLAZING UNITS
Albert Henry Lowe, St. Helens, England, assignor to Pilkington Brothers Limited, Liverpool, Lancashire, England, a corporation of Great Britain
Filed Aug. 1, 1967, Ser. No. 657,624
Claims priority, application Great Britain, Aug. 8, 1966, 35,443/66
Int. Cl. B66c *1/02*; **A47b** *97/00*; **C03c** *27/00*
U.S. Cl. 294—65 **1 Claim**

Vacuum holding apparatus for engaging the upper surface of a sheet of glass comprises a main clutch platen, and an auxiliary holding platen matching the size of the



sheet to be held, which holding platen is clutched by vacuum to the clutch platen.

3,467,431
COVER FOR DUMP TRUCK BODIES
Maurice W. Turcotte, 90 Ellis St., Seekonk, Mass. 02771
Filed Mar. 4, 1968, Ser. No. 710,015
Int. Cl. B60j *7/10, 7/16*
U.S. Cl. 296—98 **6 Claims**

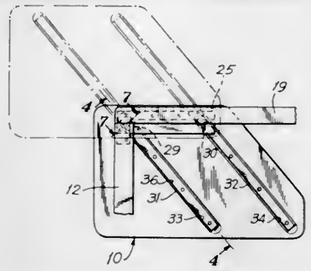


A cover for a truck particularly of the dump truck type where the cover is mounted on a spring reel over the cab section of the truck and is adapted to be drawn rearwardly over the open body of the truck by means of a cord that passes through the end of a rod which may be elevated above the upper edge of the tailgate of the truck so as to permit the cover to be drawn over a load such as gravel or the like that extends above the side walls of the body particularly at the center thereof, the rod is preferably telescoping so that it may be withdrawn to a level even with the upper edge of the tailgate and fastening means may be provided for the cover to fasten the same to the tailgate of the truck, the spring in the reel upon which the cover is mounted holding the other end of the cover in fixed position.

3,467,432
TABLET CHAIR CONSTRUCTION
William H. Sullivan, Shaker Heights, Ohio, assignor to Dictaphone Corporation, Bridgeport, Conn., a corporation of New York
Filed Jan. 5, 1968, Ser. No. 696,035
Int. Cl. A47b *39/00, 83/02*
U.S. Cl. 297—162 **5 Claims**

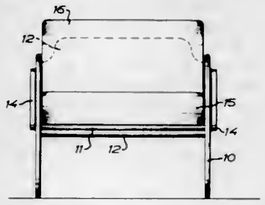
This disclosure relates to a chair having a writing tablet connected to the arm by a hinge having one leaf attached to the arm and spaced studs projecting from the other leaf. The tablet has diagonally directed spaced tracks which interlock with heads on the studs to adapt the tablet

to move upwardly, forwardly and over the arm of the chair from a rearward inoperative position at the side of



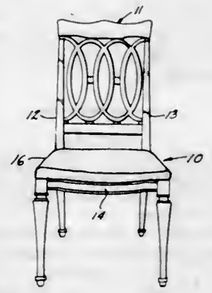
the chair to a forward operative position overlying the seat.

3,467,433
DETACHABLE FURNITURE
John Gustaf Börge Lindau, Kopp. Molleg 8B, and Bo Kristoffer Lindekrantz, Lagervagen 35B, both of Halsinborg, Sweden
Filed Sept. 19, 1967, Ser. No. 668,879
Claims priority, application Sweden, Sept. 28, 1966, 13,090/66
Int. Cl. A47c *7/02, 7/00*
U.S. Cl. 297—442 **2 Claims**



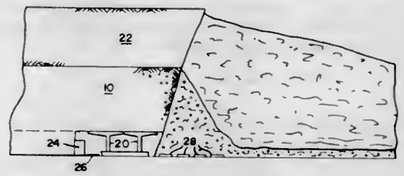
A piece of furniture the members of which are detachably connected together by pin and slot connections, the pins having such a length as to project from the slots and being provided with a ring of synthetic plastics mounted in a groove in the pin and preventing withdrawal of the pin from the slot.

3,467,434
FURNITURE CONSTRUCTION
Wayland B. Parker and Donald W. Barker, South Boston, Va., assignors to Schlumberger Limited (Schlumberger N.V.), New York, N.Y., a corporation of the Netherlands Antilles
Filed Jan. 10, 1968, Ser. No. 696,868
Int. Cl. A47c *5/00, 7/00*
U.S. Cl. 297—445 **15 Claims**



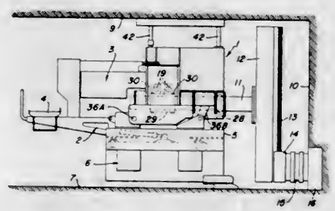
A furniture construction comprising independent members each constructed from high impact plastic materials are arranged for interfitting to provide a rigid assembly.

3,467,435
METHOD OF MINING THICK COAL SEAMS BY LONGWALLING AND CONVEYING
Richard G. Mallander, Wheatridge, Colo., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware
Filed Mar. 25, 1968, Ser. No. 715,728
Int. Cl. E21c *41/04, 35/20, 37/00*
U.S. Cl. 299—11 **6 Claims**



The face of the bottom layer of a thick underground coal seam is mined to an extent by conventional longwall mining. Conveyors are positioned rearward of and parallel to the face of coal being mined. The longwall mining operation is halted and the coal above the conveyors is caved onto the conveyors which are positioned to carry the coal caved thereon laterally of the direction of longwalling. The conveying continues until substantially all of the coal caved thereon is removed. The longwalling operation is repeated and the conveyors are advanced with the longwalling operation. The coal above the conveyors is caved onto the conveyors and removed as previous. The longwalling, caving, and removing operations continue until a chosen length of the coal seam is mined.

3,467,436
TUNNELLING MACHINE WITH ROTATABLE CUTTER CARRYING ARM FOR 360° CUTTING
Gerald R. O. Pentith and Peter Lockwood, Aycliffe Industrial Estate, near Darlington, England, assignors to Mining Progress Inc., New York, N.Y., a corporation of New York
Filed Apr. 7, 1967, Ser. No. 629,219
Claims priority, application Great Britain, Apr. 13, 1966, 16,100/66; July 20, 1966, 32,497/66
Int. Cl. E21c *27/36, 29/00*; **E21d** *23/08*
U.S. Cl. 299—31 **24 Claims**



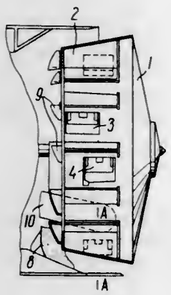
Tunnelling machine comprising a frame, support means for the frame which include advancing and retracting means for the frame, an arm mounted forwardly of the frame, being rotatable about an axis extending lengthwise of the frame as well as advanceable and retractable with respect to the frame, the arm extending radially from such axis and forming a radial slideway on which a carrier is mounted, a pick-carrying rotary cutting head mounted on the carrier and rotatable about an axis parallel to the axis of rotation of the arm, means for moving the carrier along the arm and for retaining the carrier at any position to which it is moved, means for rotating the arm such

that the cutting head may remove mineral over 360° about the axis of rotation of the arm, means for advancing and retracting the arm with respect to the frame, and means for rotating the rotary cutting head, preferably with an overhead articulated primary roof support system and/or a secondary roof support system operatively associated with the tunnelling machine, and preferably with conveyor means advanceable and retractable with respect to the machine for removing mineral extracted by the cutting head from the site of tunnelling operations, such conveyor means optionally having loading means forwardly of the machine to enhance the leading of extracted mineral onto the conveyor means.

3,467,437
DEVICE FOR LOADING GROUND IN A MECHANIZED DRIFTING SHIELD

Evgeny Moiseevich Bolotin, Otkrytoe shosse 24, korp. 25, kv. 12; Lev Abramovich Blyakher, Posledny per. 1/22, kv. 6; Boris Nikolaevich Ierusalimsky, Otkrytoe shosse 24, korp. 5–a, kv. 45; Leonid Ivanovich Saveliev, Otkrytoe shosse 29, korp. 11, kv. 58; Vladimir Ivanovich Razmerov, Leningradsky prospekt 62, kv. 90; and Leonid Konstantinovich Khaidurov, Otkrytoe shosse 24, korp. 5–g, kv. 31, all of Moscow, U.S.S.R.

Filed Mar. 1, 1967, Ser. No. 619,627
Int. Cl. E21d *13/04;* **E21c** *35/20, 27/30*
U.S. Cl. 299—33 **1 Claim**



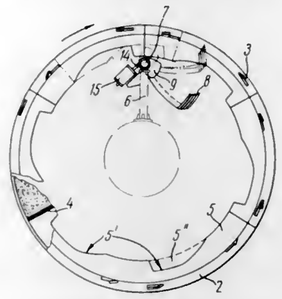
A device for loading loose soil into a mechanized drifting shield in which a drum is fixed to the rear end part of a rotary working member, the drum is provided with holes inside the side wall through which knives protrude for collecting the soil and inner radial projections constituting buckets for transferring the soil. The rear part of the drum supports blades for delivering the loose soil retained by a dumping member arranged between the body of the shield and the rotary working member in the lower part thereof.

3,467,438
LOADING DEVICE

Evgeny Molseevich Bolotin, Otkrytoe shosse 24, korp. 25, kv. 12; Lev Abramovich Blyakher, Posledny per. 1/22, kv. 6; Boris Nikolaevich Ierusalimsky, Otkrytoe shosse 24, korp. 5–a, kv. 45; Leonid Ivanovich Saveliev, Otkrytoe shosse 29, korp. 11, kv. 58; Vladimir Ivanovitch Razmerov, Leningradsky prospekt 62, kv. 90; and Leonid Konstantinovich Khaidurov, Otkrytoe shosse 24, korp. 5–6, kv. 31, all of Moscow, U.S.S.R.

Filed Mar. 1, 1967, Ser. No. 619,791
Int. Cl. E21c *1/14*
U.S. Cl. 299—33 **5 Claims**

A loading device for and a mechanized drifting shield having a rotary working member, the device comprising a rearwardly extending drum about the periphery of the working member, and traps in the lateral walls of the drum to permit the material cut by the working member to enter into the drum. Furthermore, there are support means within the drum upon which is mounted a rabble and also camming means which coacts with the drum such

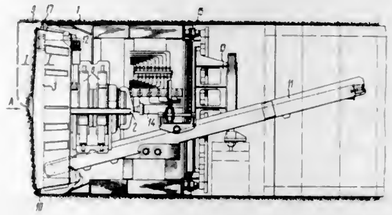


that as the drum rotates relative to the rabble, the camming means causes the rabble to oscillate in a predetermined sequence towards and away from the inner wall of the drum.

3,467,439
WORKING MEMBER OF ROTARY TYPE IN A MECHANIZED DRIFTING SHIELD

Evgeny Moiseevich Bolotin, Otkrytoe shosse 24, korp. 25, kv. 12; Lev Abramovich Blyakher, Posledny per. 1/22, kv. 6; Boris Nikolaevich Ierusalimsky, Otkrytoe shosse 24, korp. 5–a, kv. 45; Leonid Ivanovich Saveliev, Otkrytoe shosse 29, korp. 11, kv. 58; Vladimir Ivanovich Razmerov, Leningradsky prospekt 62, kv. 90, and Leonid Konstantinovich Khaidurov, Otkrytoe shosse 24, korp. 5–g, kv. 31, all of Moscow, U.S.S.R.

Filed Feb. 28, 1967, Ser. No. 619,329
Int. Cl. E21c *13/02, 1/14*
U.S. Cl. 299—90 **4 Claims**



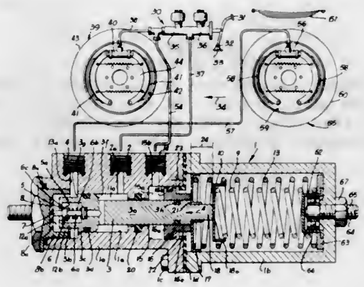
A working member of rotary type in a mechanized drifting shield for underground mining provided with at least two curvilinear blades defining the front end part of the working member and having a kerf-bar tool. The blades are inclined from the center of the working member end part towards the side opposite to the working travel of the shield.

3,467,440
BRAKE-FORCE REGULATOR

Hans Strien, Frankfurt-Bonames, Germany, assignor to Alfred Teves G.m.b.H., Rebstocker, Germany, a corporation of Germany

Filed Sept. 29, 1967, Ser. No. 671,694
Claims priority, application Germany, Oct. 4, 1966, T 32,190
Int. Cl. B60t *13/00, 11/10, 15/46*
U.S. Cl. 303—6 **9 Claims**

A dual-network vehicular brake system wherein a tandem master cylinder has one section supplying a fluid network communicating with the wheel-brake cylinders of the front wheel brakes and a second section communicating with the network of the rear wheel brakes, the latter network having a brake-force regulator in which a differential piston has a valve communicating between the master cylinder and the rear wheel-brake cylinder to permit direct pressurization of the latter upon depression of

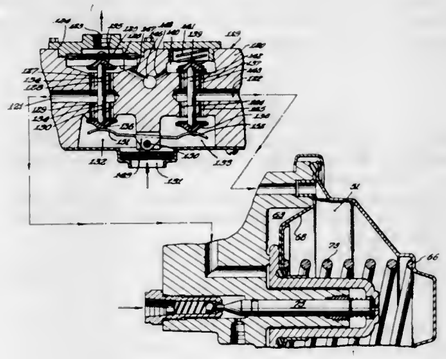


the brake pedal during initial brake operation but effective to decrease the force applied to the rear wheel brakes at a subsequent transition point, the transition point being delayed by a feedback system responsive to the pressure in the front wheel-brake network to maintain a spring out of engagement with this differential piston.

3,467,441
ANTISKID DEVICE

Hubert M. Clark and Gilbert H. Drutchas, Birmingham, Mich., assignors to TRW Inc., Cleveland, Ohio, a corporation of Ohio

Filed June 13, 1967, Ser. No. 645,654
Int. Cl. B60t *8/02, 15/02, 13/22*
U.S. Cl. 303—21 **3 Claims**

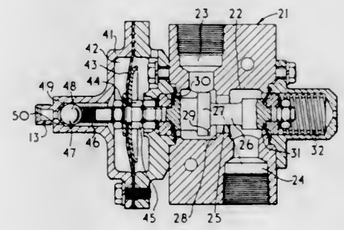


An antiskid brake system having sensing means for comparing the deceleration of the braked wheels of a vehicle with the linear deceleration of the vehicle and for developing a control signal when the angular deceleration of the wheels exceeds a critical value. The signal developed by the deceleration sensing device is applied through a pressure distributing means to a vacuum operated actuator. The power developed by the vacuum actuator is then applied to a valve means to interrupt and release the hydraulic pressure normally applied to the wheel brakes during a braking procedure. A pressure distributing means is utilized to apply vacuum or atmosphere or both to opposite sides of a movable diaphragm associated with the vacuum actuator to achieve maximum power therefrom with minimum diaphragm size.

3,467,442
VEHICLE ANTISKID BRAKING SYSTEMS

John Walter Davis, Coventry, England, assignor to The Dunlop Company Limited, Erdington, England, a corporation of Great Britain

Filed June 30, 1967, Ser. No. 650,347
Claims priority, application Great Britain, July 5, 1966, 30,121/66
Int. Cl. B60t *8/02, 9/02*
U.S. Cl. 303—21 **14 Claims**

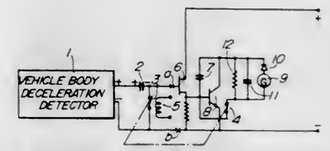


A sensitivity control valve for a vehicle antiskid braking system comprising a housing containing a passage having inlet and outlet ports through which pneumatic pressure may flow to operate a mechanism for effecting application of a brake, a restrictor member movable in the passage and spring-urged towards a position in which it provides a relatively small restriction to the flow of air from the inlet port to the outlet port, and means operated by a skid-sensing device for moving the restrictor member to a position in which it provides a relatively great restriction to the said flow of air whenever the system is in operation to check a tendency to skid.

3,467,443
ANTISKID APPARATUS FOR AUTOMOTIVE VEHICLES

Atutosi Okamoto, Toyohashi-shi, Koichi Taniguchi, Kariya-shi, and Yoshiaki Nakano, Gifu-shi, Japan, assignors to Nippon Denso Company Limited, Kariya-shi, Japan, a corporation of Japan

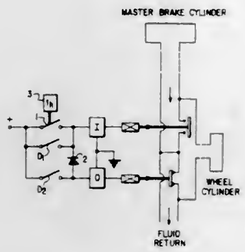
Filed Nov. 22, 1967, Ser. No. 685,118
Claims priority, application Japan, Aug. 17, 1967, 42/53,041; Aug. 21, 1967, 42/53,626; Aug. 31, 1967, 42/56,006
Int. Cl. B60t *8/02, 15/02, 8/12*
U.S. Cl. 303—21 **2 Claims**



An antiskid apparatus for an automotive vehicle having a device for detecting the speed of the vehicle body and a device for detecting the slip ratio of the wheel. The apparatus having such devices acts to prevent a loss of steerability or a gyrating movement of the vehicle body due to the locked state of the wheel resulting from the im-

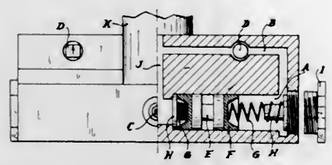
partation of a brake force to the vehicle when the vehicle is running on a slippery road surface or running at high speed.

3,467,444
VEHICLE BRAKE CONTROL SYSTEM FOR PREVENTING WHEEL LOCKING
Heinz Leiber, Leimen, Germany, assignor to Teldix Luftfahrt-Ausrustungs G.m.b.H., Heidelberg-Wieblingen, Germany
Filed Feb. 21, 1968, Ser. No. 707,032
Claims priority, application Germany, Apr. 4, 1967, T 33,585
Int. Cl. B60t *8/04*
U.S. Cl. 303—21 **4 Claims**



A brake control system for wheeled vehicles for preventing a wheel from locking when a braking force is applied to it. The system includes a brake pressure line for delivering brake fluid to the brake assembly of the wheel, a normally open inlet valve connected to the brake like for permitting the brake fluid to enter the line and a normally closed outlet valve connected to the line for permititng the braking fluid to escape from the line. The inlet and outlet valves are actuated by means, responsive to the condition of rotational deceleration of the wheel, which closes the inlet valve when the wheel exceeds a lower threshold of rotational deceleration and opens the outlet valve when the wheel exceeds an upper threshold of deceleration. Time delay means are also provided for maintaining the inlet valve closed until the wheel has begun to accelerate.

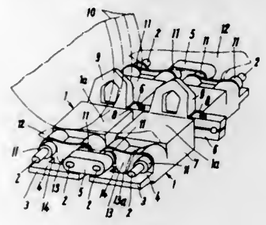
3,467,445
FAIL-SAFE HYDRAULIC BRAKE SYSTEM
José Leal Vargas, Hermosilla 96, Madrid (9), Spain
Filed Dec. 29, 1967, Ser. No. 694,735
Claims priority, application Spain, Jan. 9, 1967, 335,389
Int. Cl. B60t *15/46, 11/10*
U.S. Cl. 303—84 **3 Claims**



The improvements which are the subject of the present invention have as their purpose the obtaining of greater security against the loss of pressure in hydraulic circuits for operating brake-pumps, and also that of achieving greater pressure in the said pumps.

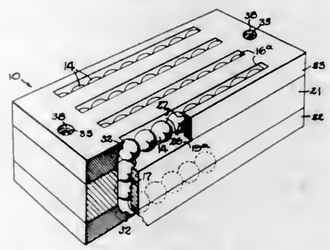
The general hydraulic circuit of the automobile is divided into two parts which are independent in the sense that, although they are connected to a common pump, there is no intercommunication of liquid between the said two parts. By means of such arrangement the loss of pressure in one of the circuits, caused, for example, by failure of a pipe, does not give rise to the loss of liquid in the whole system, as occurs in existing systems, but simply causes the operation of the pumps corresponding to the said circuit to cease, for example, those corresponding to the rear wheels or the front wheels, so that only a 50 percent loss of effectiveness in the braking system is produced.

3,467,446
VEHICLE TRACK
Erich Seelbach, Luisenstrasse 1a, 401 Hilden, Germany, and Hans Suss, Am Ueling 99, Remscheld, Germany
Filed July 24, 1967, Ser. No. 656,984
Claims priority, application Germany, July 22, 1966, T 21,097, T 31,660
Int. Cl. B62d *55/08*
U.S. Cl. 305—57 **8 Claims**



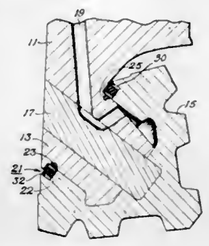
A pair of adjacent links of a track for track-laying vehicles are arrayed in the direction of travel of the track. Each link has a pair of ends extending transversely of travel and each having an extension projecting therefrom. A pair of coupling pins are provided on each of the links and extend with opposite end portions thereof in the direction of the respective extension in substantial parallelism therewith. A roller is mounted on each projecting end of each pin for turning movement relative thereto. An end connector is located at the opposite ends of the links and connects one pin of each link to an adjacent pin of the next link so that the links are connetced for pivotal movement relative to one another.

3,467,447
BALL WAY PACKAGE
William G. Newman, Oak Park, Mich., assignor to Beaver Precision Products, Inc., Clawson, Mich., a corporation of Delaware
Continuation-in-part of application Ser. No. 432,341, Feb. 12, 1965. This application June 22, 1967, Ser. No. 655,981
Int. Cl. F16c *17/00, 21/00, 19/00*
U.S. Cl. 308—6 **4 Claims**



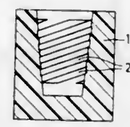
A self-contained unit adapted to support member for movement on another, such as a way of a machine tool, and including one or more series of bearing balls. Each series of balls travels through the unit in a closed path which includes an active run where the balls project through the unit and roll between the surface of the way and an internal bearing surface in the unit.

3,467,448
DRILL BIT BEARING SEAL ASSEMBLY INCLUDING RESILIENTLY MOUNTED RIGID RING
Edward M. Galle, Houston, Tex., assignor to Hughes Tool Company, Houston, Tex.
Filed Nov. 24, 1965, Ser. No. 509,480
Int. Cl. F16c *19/00, 29/00;* **E21b** *9/08*
U.S. Cl. 308—8.2 **12 Claims**



A seal means that has an annular body with a rigid and circumferentially continuous portion supported upon a resilient core which is sealingly fixed to a bearing element directly or through a retainer ring. The rigid portion engages and compresses a resilient packing ring against an opposed surface to effect a fluid seal.

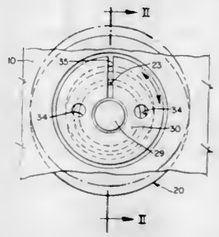
3,467,449
BEARING ELEMENT
Everhardus Albertus Muijderman, Emmasingel, Eindhoven, Netherlands, assignor, by mesne assignments, to U.S. Philips Corporation, New York, N.Y., a corporation of Delaware
Filed Dec. 4, 1967, Ser. No. 687,582
Claims priority, application Netherlands, Dec. 7, 1966, 6617168
Int. Cl. F16c *35/08, 33/10*
U.S. Cl. 308—9 **13 Claims**



A hydrodynamic bearing for a shaft, having a running surface wetted by a lubricant supplied by grooves formed in the surface. Adjustment between the running surface and the shaft is achieved through the elasticity of the bearing element, and/or the resiliency of the connection between the bearing element and its supporting structure.

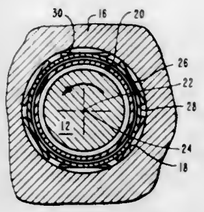
3,467,450
ECCENTRICALLY ADJUSTABLE ROLLER
Henry K. Schmidt, Levittown, and Siegfried Beimfohr, Morrisville, Pa., assignors to Roller Bearing Company of America, West Trenton, N.J., a corporation of New Jersey
Filed Dec. 14, 1967, Ser. No. 690,652
Int. Cl. F16c *13/02, 35/04, 23/06*
U.S. Cl. 308—15 **8 Claims**

An eccentrically adjustable flush-mounted load-bearing roller is disclosed. The roller comprises an annular steel outer race, an annular steel inner race and bearing means therebetween. The inner race has an enlarged bore at one end, and at the other end, in the preferred form, has an integral conical axial projection which extends beyond the outer race and is received in a correspondingly tapered or conical portion at one end of the off-center bore of a split flanged eccentric bushing which is set into a through countersunk hole in the mounting plate. The bore at the other end of the eccentric bushing is cylindrical



and threaded. A flush-mounted socket-head cap screw secures the inner race to the bushing, the head of the screw being received into the enlarged bore of the inner race. Nothing projects from the mounting plate on the other side from the roller, the flanged eccentric bushing being received fully by the countersunk hole in the mounting plate. Adjustment of the position of the roller is made by rotating the eccentric bushing.

3,467,451
RESILIENTLY MOUNTED BEARING ARRANGEMENTS
David John Marley, Buena Park, Calif., assignor to The Garrett Corporation, Los Angeles, Calif., a corporation of California
Filed Aug. 29, 1966, Ser. No. 575,666
Int. Cl. F16c *27/00, 35/00, 1/24*
U.S. Cl. 308—26 **12 Claims**

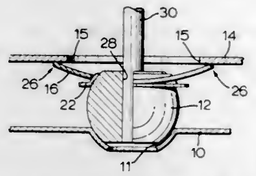


A bearing is provided in which a spring assembly circumferentially disposed between a generally circular bearing element and the wall of a housing aperture presents non-linear resiliency to the bearing element in a radial direction to improve the stability of the bearing. The bearing element extends about a rotating shaft and may comprise either a bushing or the outer race of a ball bearing. Axial movement of the bearing components may be limited by mounting retaining rings within the housing aperture wall, and the spring assembly preferably comprises an integral strip of resilient material having groups of slots which define outwardly extending resilient elements when the strip is caused to assume a cylindrical configuration.

3,467,452
SPHERICAL BEARING ASSEMBLY
Russell A. McElroy, Guelph, Ontario, Canada, assignor to Electrohome Limited, Kitchener, Ontario, Canada
Filed Sept. 15, 1967, Ser. No. 667,909
Int. Cl. F16c *27/00, 35/00, 9/06*
U.S. Cl. 308—26 **10 Claims**

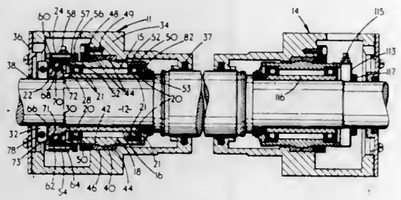
A spherical bearing assembly, including a seat for a spherical bearing and a spherical bearing seated therein.

The spherical bearing is maintained in the seat by a resilient annular member which seats against the spherical



bearing and has its two opposite halves bent in the direction away from the seat to bear resiliently against a fixed member spaced from the seat.

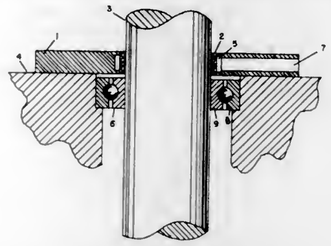
3,467,453
BEARINGS
Frederick Spencer, Cheadle Heath, Stockport, and Reginald Winstone Jones, Sale, England, assignors to Henry Simon Limited, Stockport, and The Hoffmann Manufacturing Company Limited, Chelmsford, England, both British companies
Filed Oct. 18, 1967, Ser. No. 676,131
Claims priority, application Great Britain, Oct. 22, 1966, 47,460/66
Int. Cl. F16c *19/04, 19/10, 19/14*
U.S. Cl. 308—174 **2 Claims**



A journal bearing arrangement for the shaft of a roller-mill grinding roll wherein the shaft is supported by a pair of bearings each having two sets of rollers spaced apart and retained in an outer assembly axially slidable along an inner race fixed to the shaft, the inner race surface between the roller tracks providing a co-axial journal surface for supporting the shaft during machining, and at one of the bearings a co-axial ball-bearing with its outer race fixed to the slidable assembly and its inner race fixable to the shaft, characterised in that supporting members of the outer assemblies are extended to enclose parts of the shaft and are provided with closure plates to constitute lubricant retaining housings.

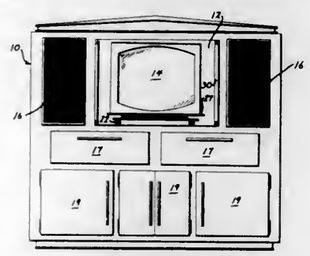
3,467,454
AIR SEALS
Richard H. Weichsel, Hudson, Ohio, assignor to Apex Bearings Company, a corporation of Ohio
Filed June 19, 1967, Ser. No. 647,105
Int. Cl. F16c *33/76;* **F16j** *15/40*
U.S. Cl. 308—187.1 **3 Claims**

An air seal consisting of an outer housing which may be in the shape of a disk and having a grooved inner periphery which groove is arranged centrally of the disk midway between its outer edges to form an annular channel. An air duct leads from the outer periphery of the disk to the channel. The air seal also consists of a porous collar arranged over the channel through which collar a shaft extends. The collar preferably has such porosity that it will maintain a uniform hydrostatic pressure which because of the self-regulating characteristics of the material of which it is composed prevents air spill during the deflection of the shaft under load. The clearance between the collar and the shaft is sufficient to assure that the shaft under the maximum surface deflection will not come in contact with the porous metal collar and the maximum clearance is arranged at a sufficient distance from the shaft to afford an outward pouring of air to insure that there will be no increase of contaminating particles of a solid, liquid, or gaseous nature into the bearing for supporting the shaft during the rotation thereof. The



bearing for supporting the shaft is preferably of the rolling element type and has its outer race secured to or fitted into a channel in a machine housing and its inner race secured to the shaft. The air seal is arranged in close proximity to the bearing with its porous collar surrounding the shaft and the outer housing thereof secured to the machine housing by suitable fastening means, such as bolts or screws.

3,467,455
ENTERTAINMENT CENTER
Daniel F. Caldemeyer, 4300 Jennings Lane, Evansville, Ind. 47712
Filed Aug. 9, 1966, Ser. No. 571,254
Int. Cl. A47b *81/06, 88/00;* **H05k** *5/00*
U.S. Cl. 312—7 **1 Claim**

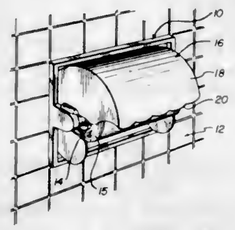


An entertainment center in the form of an integrated furniture unit housing a television receiver and various audio components characterized by the placement of the television receiver so that the viewer looks upwardly to the screen thereof and in an arrangement whereby the television receiver can be moved outwardly and rotated in a horizontal plane, the latter arrangement also being provided by a speaker element forming one of the audio components.

3,467,456
DECORATIVE COVER
John F. Chmela, 7256 Davis St., Morton Grove, Ill. 60053
Filed Dec. 5, 1967, Ser. No. 688,243
Int. Cl. B65h *19/00*
U.S. Cl. 312—39 **10 Claims**

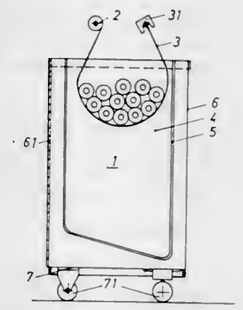
A decorative shield or cover molded as an integral unit of plastic, preferably rigid polystyrene or polypropylene. The cover has a top wall and a pair of side walls which partially conceal the rolled paper products. In a preferred embodiment, the side walls have anti-rotation lock means thereon for preventing the cover

from rotating when affixed to a fixture, and are formed in a fashion such that the cover is snap-actingly removably affixed to the fixture, without the need of additional



fastening means. In a second embodiment, the anti-rotation lock means are integrally formed with the top wall.

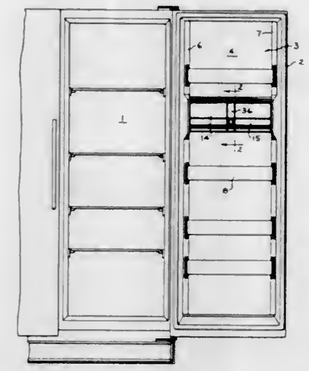
3,467,457
SPOOL OR CARTRIDGE CONTAINER
Eberhard Grimm, Ingolstadt, Germany, assignor to Schubert & Salzer Maschinenfabrik Aktiengesellschaft, Ingolstadt, Germany, a corporation of Germany
Filed July 6, 1967, Ser. No. 651,493
Claims priority, application Germany, July 6, 1966, Sch 39,220
Int. Cl. B65g *59/00, 1/14;* **A47b** *55/00*
U.S. Cl. 312—45 **4 Claims**



A pair of parallel U-shaped guides at opposite sides of a container and opening upwardly are engaged by the opposite ends of the spools in the peripheral row of a stack of spools stored in the container. The spools are placed in a belt loop with their lengths disposed transversely of the belt and the loop is expanded progressively downwardly into the container to lower the spools within the guides until the ends of the lowest spools rest on the guide bottoms. One belt end is released from a clamp and the belt is pulled from beneath the spool stack by reeling the other belt end onto a reel. The spools can be removed from one side of the stack by shelves on an upright conveyor inserted between the guides. The guide bottoms slope toward the conveyor to feed the spools to it.

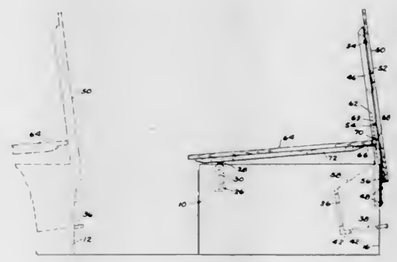
3,467,458
REFRIGERATOR INNER DOOR CONSTRUCTION
Michael L. Simms and Joseph E. Bopp, Louisville, Ky., assignors to General Electric Company, a corporation of New York
Filed Mar. 11, 1968, Ser. No. 712,172
Int. Cl. A47b *77/08;* **A47f** *3/04;* **H05k** *5/03*
U.S. Cl. 312—223 **4 Claims**

A refrigerator inner door structure formed of a plastic sheet material and comprising side-by-side storage compartment recesses separated by a partition includes a switch for controlling the operation of an electric heater for one of the compartments. The switch is mounted on



the front face of the partition and a plastic escutcheon supported on the partition face serves the dual functions of insulating the switch and providing a pivot support for the doors closing the access openings to the compartments.

3,467,459
DRAFTING BENCH
Bernard J. Wallis, % Livernois Engineering Co., 25200 Trowbridge Ave., Dearborn, Mich. 48124
Filed Aug. 30, 1967, Ser. No. 664,447
Int. Cl. A47b *27/00, 63/04;* **A47f** *5/12*
U.S. Cl. 312—231 **6 Claims**

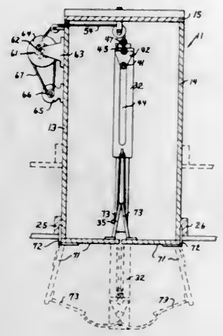


A drafting bench having two drafting surfaces, one horizontal and one vertical, with the drafting surfaces accessible from opposite sides of the bench so that when a plurality of such benches are arranged one ahead of another in a row, as is conventional in a drafting room, a draftsman at one of said benches has available for drafting purposes the horizontal drafting surface on the bench before him and the vertical drafting surface on the bench behind him.

3,467,460
RETRACTABLE CLOTHES STORAGE APPARATUS
Harold P. Acker, 118 E. Valley View Drive, Indianapolis, Ind. 46227
Filed Aug. 11, 1967, Ser. No. 660,129
Int. Cl. A47b *67/02, 97/00, 81/00*
U.S. Cl. 312—242 **7 Claims**

A retractable clothes storage apparatus having an enclosure for mounting in an attic, hinged doors for mount-

ing in a ceiling to open the enclosure to a room of a house, a clothes bar mounted on telescoping guides and

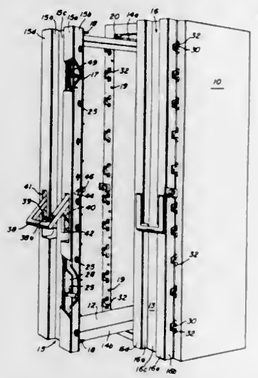


adapted to be raised into the enclosure and lowered into the room, a motor drive for raising and lowering the clothes bar and for opening and closing the doors.

3,467,461
CABINET SECURING MECHANISM

Henry K. Hauser, San Diego, Calif., assignor to the United States of America as represented by the Secretary of the Navy

Filed July 17, 1967, Ser. No. 654,012
Int. Cl. A47b *88/00*
U.S. Cl. 312—333 **6 Claims**



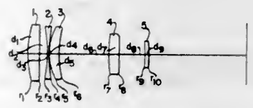
The present invention relates to heavy duty cabinets having an extensible chassis and, more particularly, to a mechanism for securing an extensible chassis securely within a cabinet. A plurality of peripherally disposed tapered guide pins frictionally fit into a plurality of correspondingly disposed pin keepers and at least one bidirectional slotted cam mounted on the cabinet and a roller pin carried on the chassis coact to overcome a frictional force when withdrawing or inserting the chassis in the cabinet. A pair of longitudinally extending cam assemblies carried on the chassis outer cover mechanically cooperate with bolt keepers mounted on the cabinet to create an interconnection between the chassis assembly and the cabinet which approaches the strength of a cabinet structural wall member. The invention is particularly related to such heavy duty cabinets housing electronic components preferably contained within electronic modules which must, as the design criteria calls for, ensure negligible or minimum exposure of the modules to the ambient effects of vibration and shock. Also to be included in such cabinets are control devices for maintaining a constant environment as to humidity and temperature.

The invention described herein may be manufactured and used by or for the Government of the United States of America for governmental purposes without the payment of any royalties thereon or therefor.

3,467,462
LENS SYSTEM OF LOW CHROMATIC ABERRATION

Tomokazu Kazamaki and Tohru Matsumoto, Itabashi-ku, Tokyo-to, Japan, assignors to Asahi Kogaku Kogyo Kabushiki Kaisha, Tokyo-to, Japan, a corporation of Japan

Filed July 9, 1965, Ser. No. 470,711
Claims priority, application Japan, Aug. 13, 1964, 39/45,432
Int. Cl. G02b *3/06, 1/10*
U.S. Cl. 350—2 **3 Claims**

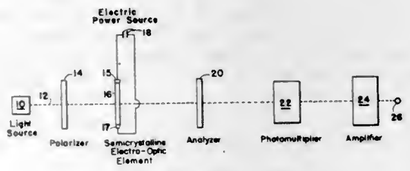


A long focus lens system of focal length F consists of five successive lenses, the first, third and fourth lenses being positive, and the second and fifth being negative. The fourth lens front face curvature is equal to or less than aplanatic to paraxial rays emerging from the third lens and the radius of curvature of the fifth lens front face is not less than 0.12F. The first lens is undercorrected for chromatic aberration, the second lens overcorrects the first lens, the third lens undercorrects the first two lenses, the fourth lens overcorrects the first three lenses and the fifth lens corrects the first four lenses.

3,467,463
ELECTROOPTIC DEVICE WITH BIREFRINGENT CRYSTALS EMBEDDED IN A GLASS MATRIX

Nicholas F. Borrelli, Elmira, and Andrew Herczog and Robert D. Maurer, Painted Post, N.Y., assignors to Corning Glass Works, Corning, N.Y., a corporation of New York

Filed Nov. 26, 1965, Ser. No. 509,812
Int. Cl. G02f *1/26, 1/24;* **G02b** *5/30*
U.S. Cl. 350—150 **13 Claims**

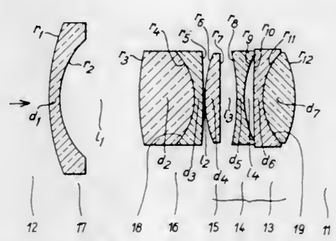


An electrooptic device in which an electrooptic element comprising a transparent semicrystalline body including submicroscopic birefringent crystals embedded in a glassy matrix is interposed between two polarizers. Light is directed through one polarizer into the electrooptic element and in the direction of the second polarizer. Variations in the amount of light passing through the second polarizer are effected by means of an electric field of light across the electrooptic element.

3,467,464
PHOTO LENS WITH A SHORT FOCAL LENGTH AND LARGER BACK INTERCEPTOR FOCAL LENGTH

Rudolf Ruehl, Wetzlar, Germany, assignor to Ernst Leitz G.m.b.H., Wetzlar an der Lahn, Germany

Filed Mar. 28, 1966, Ser. No. 537,801
Claims priority, application Germany, Apr. 8, 1965, L 50,417
Int. Cl. G02b *9/60*
U.S. Cl. 350—216 **1 Claim**

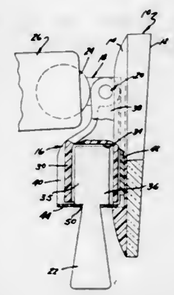


A photo lens system having a lens with a short focal length and a back intercept length greater than the focal length, comprising three components: a triplet as the main part of the system; at least one collecting component and a negative meniscus; said at least one component having two elements joined at a first collecting cemented surface, said negative meniscus positioned as the front part of the lens; said collecting component interposed spaced from said meniscus and adjacent to said triplet.

3,467,465
REARVIEW MIRROR ACTUATOR

Andrew J. Van Noord, Grand Rapids, Mich., assignor to Donnelly Mirrors, Inc., Holland, Mich., a corporation of Michigan

Continuation-in-part of application Ser. No. 475,979, July 30, 1965. This application Sept. 16, 1965, Ser. No. 487,732
Int. Cl. G02b *17/00;* **A47g** *1/24*
U.S. Cl. 350—281 **4 Claims**

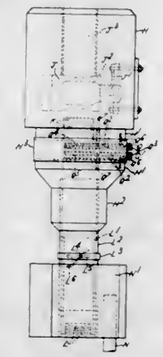


A "caseless" rearview mirror assembly, including a mirror element and a rimless molded backing portion, with a bracket element secured to the backing portion by being embedded into it, together with a second bracket pivotally attached to the first and having a lever-like actuating member extending through a slot in the first bracket disposed at an angle with respect to the mirror element, such that movement of the operating lever moves the first bracket and the mirror element with respect to the second bracket.

3,467,466
OPTICAL APPARATUS FOR THE EXAMINATION OF THE HUMAN EYE

Hugh Cecil Binstead, Harlow, Essex, and George Edgar Rondeau, London, England, assignors to United Kingdom Optical Company Limited, London, England, a company of Great Britain

Filed Nov. 4, 1964, Ser. No. 408,787
Int. Cl. A61b *3/12*
U.S. Cl. 351—14 **4 Claims**



1. Optical slit lamp apparatus for the examination of the human eye, comprising means selectively for illuminating an object position at which the eye is located and including at least two carriers supporting a number of photographically produced graticules each having light transmitting areas which differ from those of the other graticules in light-transmitting quality and consisting of a photograph at an appreciably reduced scale of a relatively large master graticule pattern, a source of light for illuminating a graticule and an optical objective for focussing an image of that graticule on the object position, a microscope for observing the object position, means for mounting the illuminating means and the microscope to permit each to move independently of the other, whereby the eye in the object position can be illuminated and viewed along various directions, means for movably supporting the graticule carrier and means for locating the graticule carriers in any one of a number of positions, whereby at least two of said graticules, one in each carrier, may be simultaneously located in an operative position in which its image is focussed on the object position, each carrier consisting of a rotatable disc bearing the differing graticules in spaced angular positions thereon and being provided with an aperture which may be located in said operative position and which, when so located, acts to transmit substantially the whole of the illuminating beam.

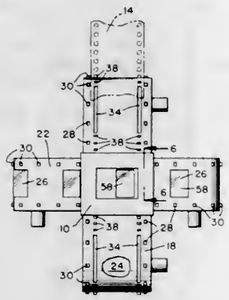
3,467,467
SHUTTER AND FILM DRIVE FOR CINECAMERA

Floyd P. Walters, 309B Monterey, China Lake, Calif. 93555

Filed May 2, 1967, Ser. No. 635,978
Int. Cl. G03b *1/00*
U.S. Cl. 352—183 **4 Claims**

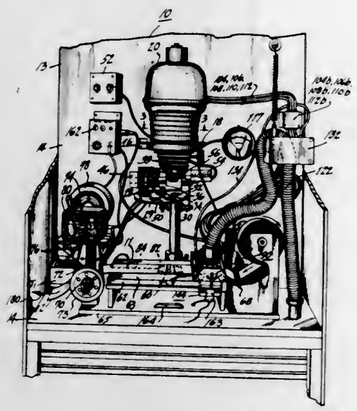
A film drive mechanism for motion picture film has a continuously moving endless belt. Projections on the front side of the belt periodically engage the film drive apertures and intermittently advance the film. Projections

on the rear side of the belt periodically engage a registering pin and pivot the pin to a position where it engages an aperture in the film and holds the film in a pre-



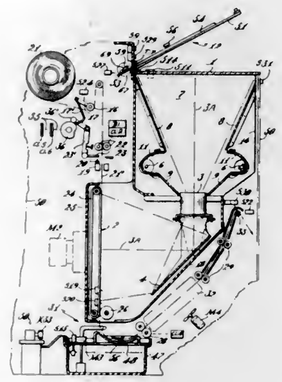
determined position while at rest. A second continuously moving endless belt comprises a shutter which moves perpendicularly to the movement of the first belt and moves in synchronism with the first belt.

3,467,468
AUTOMATIC COLOR ELECTROPHOTOGRAPHIC APPARATUS
Sigurd W. Johnson, Pennington, N.J., assignor to RCA Corporation, a corporation of Delaware
Filed Mar. 30, 1967, Ser. No. 627,064
Int. Cl. G03g *15/22*
U.S. Cl. 355—4 **20 Claims**



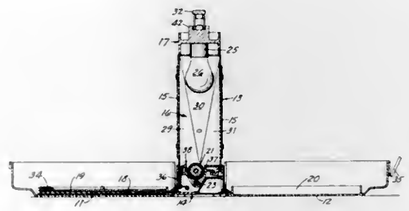
Automatic apparatus for making a colored electrophotographic print of an original colored image has a platen for positioning a recording medium at a predetermined distance from a light-image projector during its entire processing. Different light images of the original colored image are projected automatically, at appropriate times, in registration onto a photoconductive surface of the recording medium. A processing head which is reciprocated automatically over, and slightly spaced from, the photoconductive surface is controlled to charge the photoconductive surface electrostatically, to tone electrostatic images formed on the photoconductive surface with selected toners, and to rinse each of the toned images.

3,467,469
COVER FOR PHOTOCOPIERS
Dana B. Hastings, Natick, and Laurence R. Cederbaum, Framingham, Mass., assignors to Dennison Manufacturing Company, Framingham, Mass., a corporation of Nevada
Filed Oct. 17, 1966, Ser. No. 587,216
Int. Cl. G03b *27/54*
U.S. Cl. 355—67 **7 Claims**



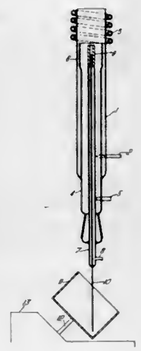
A photograghic office copier has a motor driven cover for the glass platen on which an original document to be copied is placed. The cover may be initially raised by actuating a manual switch to give access to the platen, and operation of a second manual switch then starts a programmer which lowers the cover and exposes a photosensitive sheet to the original.

3,467,470
PORTABLE LIGHT BOX AND HEAT DEVELOPING UNIT
Charles A. Donnelly, Jr., South St. Paul, Bernard W. Gaffron, Minneapolis, and Marvin A. Stoll, St. Paul, Minn., assignors to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware
Filed May 8, 1967, Ser. No. 636,933
Int. Cl. G03b *27/72*
U.S. Cl. 355—115 **6 Claims**



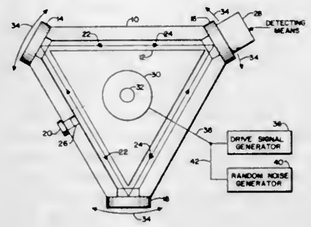
A self-contained portable copier having a removable folding light box which fits over a mangle heat-developing unit and timer unit all enclosed in a folding case. In one side of the case is located a hinged exposure pressure-plate over which the light box is placed during the exposure process.

3,467,471
PLASMA LIGHT SOURCE FOR SPECTROSCOPIC INVESTIGATION
Stanley Greenfield, Warley, Oldbury, Iorwerth Llewelyn William Jones, Harborne, Birmingham, and Christopher Thomas Berry, Edgbaston, Birmingham, England, assignors to Radyne Limited, Wokingham, England, and Albright & Wilson (Mfg.) Limited, Oldbury, England, both British companies
Filed Oct. 19, 1964, Ser. No. 404,625
Claims priority, application Great Britain, Oct. 21, 1963, 41,456/63; Mar. 6, 1964, 9,535/64; Oct. 5, 1964, 40,487/64
Int. Cl. G01n *21/54, 1/04;* **G01j** *3/28, 3/50*
U.S. Cl. 356—36 **10 Claims**



A plasma of annular form is produced by passing a gas stream along the axis of a coil carrying high frequency-alternating current and a sample is injected through a low temperature central region of the plasma annulus into the tail flame and the resulting spectrum of the plasma is examined.

3,467,472
RANDOM BIAS FOR LASER ANGULAR RATE SENSOR
Joseph E. Killpatrick, Minneapolis, Minn., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware
Filed Dec. 5 1966, Ser. No. 599,265
Int. Cl. G01b *9/02;* **H01s** *3/00*
U.S. Cl. 356—106 **4 Claims**



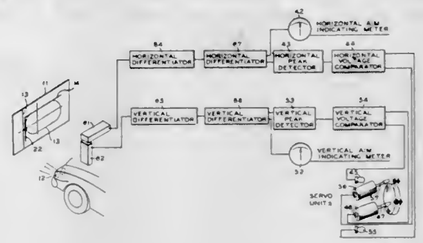
1. In a device wherein two beams of substantially monochromatic light are generated along a closed-loop path in opposite directions and the frequency difference between the two beams is determined as a measure of rotation thereof, apparatus to avoid lock-in of the two beams of light comprising:

means for biasing the beams of light to different frequencies;

means for causing the direction of the bias to periodically reverse; and

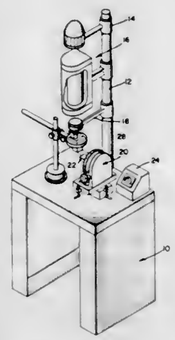
means for randomizing the bias so as to randomize the effects of lock-in during the period of time in which said bias is reversing.

3,467,473
HEADLAMP AIMING
Bruce W. Preston, Dearborn, Mich., assignor to The Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed Dec. 28, 1964, Ser. No. 421,422
Int. Cl. G01j *1/00, 1/44*
U.S. Cl. 356—121 **13 Claims**



A photoelectric headlamp aiming apparatus and method in which the high intensity zone of the low-beam headlamps of an automotive vehicle may be properly positioned by scanning the high intensity zone over an aiming board. The aiming board includes photoelectric means positioned relative to a properly positioned edge of the high intensity zone and means are coupled to said photoelectric means located on the aiming board for computing the second derivative or the approximate second derivative as the edge of the high intensity zone is scanned over the photoelectric means located on the board. When the second derivative or approximate second derivative becomes a maximum, the high intensity zone of the low-beam headlamps is properly positioned and aimed.

3,467,474
LASER MACHINING APPARATUS
Gordon A. Shifrin, Malibu, Calif., assignor to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware
Filed Jan. 3, 1966, Ser. No. 518,457
Int. Cl. G01b *11/26*
U.S. Cl. 356—138 **2 Claims**



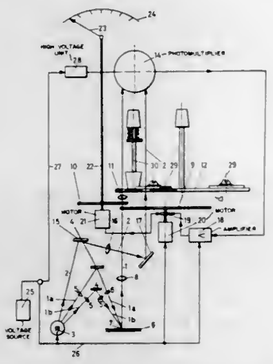
A mounting assembly to improve laser machining is disclosed. The lasing device and end reflecting mirrors are each independently mounted from a common supporting column. The laser device is mounted so that its longitudinal axis may be moved angularly in space and means are provided to angularly move the respective mirrors in space so that the optically flat surfaces thereof will be in optimum relation to the axis of the lasing device. Energy loss due to beam scattering is thus avoided and more precise machining obtained.

3,467,475

DENSITOMETER INCORPORATING SELECTIVELY AND INDIVIDUALLY CONTROLLED COLOR FILTERS

Tino Celio, Buchs, and Heinrich Hogg, Otelfingen, Switzerland, assignors to Gretag Aktiengesellschaft, Regensdorf, Switzerland

Continuation of application Ser. No. 409,117, Nov. 5, 1964. This application Sept. 9, 1968, Ser. No. 760,119
Claims priority, application Switzerland, Nov. 6, 1963, 13,599/63
Int. Cl. G01j *3/46*
U.S. Cl. 356—179 **6 Claims**



Densitometer in which two light beams issued from a common source of light are applied along two comparison paths alternately in a rapid sequence onto one and the same photoelectric cell. In one of said comparison paths a standard of comparison such as a block of magnesium carbonate is interposed, and in the other one there are interposed a sample to be tested and a variable capacity filter such as a grey wedge. The comparison is realized by so adjusting the wedge position that both luminous fluxes impinging onto said cell along the two paths are equal. Such balance is automatically effected by means of a servoing device which moves the wedge in accordance with signals coming from the photoelectric cell. Thus, the position of the wedge constitutes a measure of the optical density of the sample. The densitometer further comprises a movable support, preferably a rotatable wheel, on which two series of corresponding filters, preferably color filters, are mounted for respective insertion in the two comparison paths. The arrangement of said support and filters with respect to the two comparison paths being such that if any desired filter of the one series of filters lies in the one comparison path the corresponding filter of the other series lies in the other comparison path. Each filter of the one series, preferably of the series which is interposable in the comparison path comprising the standard, is provided with an adjustable diaphragm. A common actuating means for the adjustment of said diaphragms is so adapted and arranged that each diaphragm is adjustable only when its associated filter lies in operative position. In the other positions and while filters are changed movements of the diaphragms are prevented so that adjustments remain as long as they may be needed.

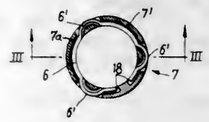
3,467,476

WRITING INSTRUMENT

Fritz König, Quickborn, Germany, assignor to Montblanc-Simplo G.m.b.H., Hamburg, Germany

Filed Jan. 23, 1967, Ser. No. 610,858
Claims priority, application Germany, Jan. 21, 1966, M 68,091
Int. Cl. B43k *9/00;* **F16l** *39/00*
U.S. Cl. 401—244 **1 Claim**

The present invention relates to a writing instrument, especially a fountain pen and is specifically directed to the shape of and the assembly of spring means for holding the cap of the writing instrument to the barrel thereof. The invention is characterized primarily in that at least one of the sections forming the barrel has an end face thereof provided with recess means on the inside of



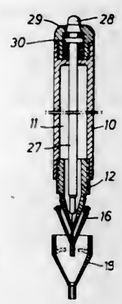
said section which recess means communicates through passage means with the outside of said section while spring means located within said recess means has rounded protruding portions passing through said passage means for displaceable engagement with a groove in the cap when said cap is mounted on said barrel.

3,467,477

MARKING DEVICE

Hans Litzka, Weiden, near Cologne, Germany, assignor to Gunther Wagner Pelikan-Werke, Hannover, Germany

Filed July 13, 1967, Ser. No. 653,273
Claims priority, application Germany, July 15, 1966, L 42,565
Int. Cl. B43k *1/06*
U.S. Cl. 401—258 **6 Claims**



A barrel defines an inner chamber which contains a supply of marking fluid. An applicator unit is mounted on one end of the barrel and comprises at least two small tubes which coaxially surround one another and of which at least the inner communicates with the marking fluid supply, the outer tube being axially movable with respect to the inner tube and surrounding the same with slight clearance so that its front face can be advanced into the plane of the front face of the inner tube, or forwardly therebeyond, thereby varying the cross-sectional area of the open front end of the fluid supply passage through which fluid escapes, and thus varying the width of a mark made with the marking device.

3,467,478

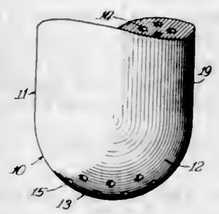
PEN POINT

Harold H. Webber, Groton, Mass., assignor to Brunswick Corporation, a corporation of Delaware

Filed July 27, 1965, Ser. No. 475,217
Int. Cl. B43k *1/00, 1/08*
U.S. Cl. 401—292 **3 Claims**

A pen point formed of a body of substantially rigid material, such as metal, having an end surface and a plurality of through passages opening through the end surface to deliver ink thereto for transfer onto a writing

medium such as a paper surface. The passages have a mean diameter of under approximately 10 mils, and are spaced apart a substantial distance such as at least approximately the mean diameter of the passages. The end surface may be provided with a layer of material differing from the material of the body, and may have different desired configurations, such as flat, semispherical,



etc. configurations. The passages may be uniformly distributed in the body or may be distributed in preselected nonuniform patterns as desired. The pen point effectively comprises a collimated hole structure which may be formed by constricting a billet having a plurality of rods distributed therein, with the rods being suitably removed as by leaching upon completion of the constriction of the billet to the desired small size.

3,467,479

LOOSE-LEAF BINDER

William W. Holes and Edward L. Libby, St. Cloud, Minn., assignors to The Holes-Webway Co., St. Cloud, Minn., a corporation of Minnesota

Filed Aug. 28, 1967, Ser. No. 663,653
Int. Cl. B42f *13/02, 13/06, 11/00*
U.S. Cl. 402—13 **6 Claims**

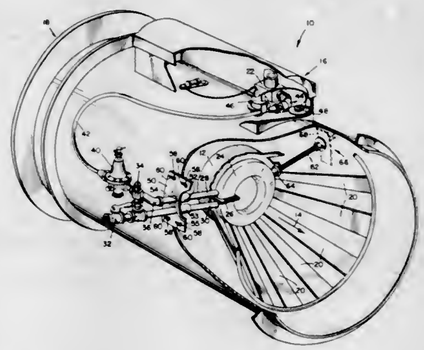
An album having front and rear covers and a plurality of similar rectangular pages, each page having a plurality of small hinge mounting tabs secured to the inner longitudinal edge thereof. A plurality of hinge elements each secured to one of said tabs and projecting outwardly therefrom. Each hinge element cooperating with a tab to define a strap confining recess through which a flexible hinge strap is passed to hingedly connect the pages together and to the covers.

3,467,480

VAPORIZER

William E. Pfeiffer, Indianapolis, Ind., assignor to Farm Fans, Inc., Indianapolis, Ind., a corporation of Indiana

Filed Oct. 18, 1967, Ser. No. 676,311
Int. Cl. F23d *11/44;* **F23n** *5/02, 1/00*
U.S. Cl. 431—41 **2 Claims**



Means for converting liquid fuel to a vapor to be used in a burner, which means comprises a vaporization chamber disposed to receive heat from the burner, means for selectively and adjustably positioning the chamber relative to the burner thereby to control the vaporization of fuel in the chamber, first conduit means for connecting the chamber to a pressurized fuel source and second conduit means for connecting the chamber to a burner control means and through the control means to the burner. Preferably, a thermostat is arranged to sense the temperature of the vapor in the second conduit means and to deenergize the burner when such temperature reaches a predetermined level. Further, pressure regulating means is disposed in the second conduit means selectively and adjustably to establish the pressure of the fuel supplied to the burner.

CHEMICAL

3,467,481

METHOD OF DYEING POLYETHYLENE TEREPHTHALATE POLYMER FILMS, STRANDS AND YARNS

Robert M. Gold, Brooklyn, N.Y., assignor to Keuffel & Esser Company, Hoboken, N.J., a corporation of New Jersey

No Drawing. Filed Oct. 23, 1964, Ser. No. 406,187
Int. Cl. D06p *3/00, 5/00*
U.S. Cl. 8—4 **3 Claims**

Polyester materials are permanently dyed by wetting with a solution of a chloroacetic acid, drying at a temperature of less than about 150° F., coating with a solution of polymer at ambient temperature, and drying at a temperature above about 150° F.

3,467,482

PROCESS FOR IMPARTING IMPROVED DYE-LIGHTFASTNESS TO BASIC DYEABLE POLYESTER STRUCTURES

Sidney B. Maerov, Kinston, N.C., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Feb. 25, 1965, Ser. No. 435,321
Int. Cl. D06p *3/00, 5/00*
U.S. Cl. 8—4 **1 Claim**

In the dyeing of shaped polyester structures with basic dyes, the method of imparting improved dye-lightfastness which comprises mixing a solution of the basic dye with a solution of a 2-phenyl-benzotriazole compound having a carboxyl group attached to an aromatic ring carbon, isolating the resulting basic dye salt of the benzotriazole compound, dispersing the basic dye salt in an

aqueous medium to form a dyebath, and dyeing the shaped structure in the dyebath.

3,467,483

DYE STUFFS COMPRISING DERIVATIVES OF ANTHRAQUINONE FOR DYEING LIVE HUMAN HAIR AND USE THEREOF

Andrée Bugaut, Boulogne-sur-Seine, Gregoire Kalopissis, Paris, and Jacques Bertrand, Tremblay-les-Gonesses, France, assignors to Societe Anonyme dite: L'Oreal, Royale, France, a corporation of France

No Drawing. Continuation of application Ser. No. 319,635, Oct. 24, 1963. This application May 19, 1967, Ser. No. 639,915

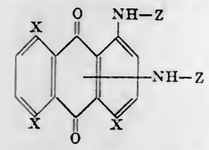
Claims priority, application France, Oct. 29, 1962, 913,810; Jan. 8, 1963, 920,795; Apr. 2, 1963, 930,212; June 20, 1963, 938,822

Int. Cl. A61k *7/12;* **C09b** *1/52*

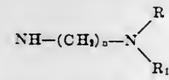
U.S. Cl. 8—10.1 **23 Claims**

This invention relates to processes and compositions for dyeing human hair with dyestuffs of the formulas:

(1)

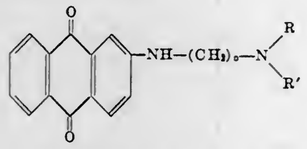


in which one X is —NH—Z and the others are hydrogen and NH—Z is



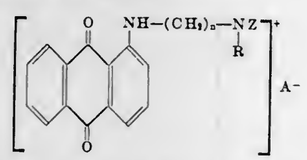
in which R and R′ are lower alkyl or together with the adjacent nitrogen represent a heterocyclic radical; or N,N-dimethyl-p-phenylenediamine;

(2)



n is 2 or 3, and R, R′ together with the adjacent nitrogen are as previously defined; and

(3)



n and R are as defined for Formula 1, NZ is a heterocyclic radical, and A is an anion.

3,467,484

PATTERNED APPLICATION OF BENZYL ALCOHOL WITH OR WITHOUT A RESIST ON NYLON FABRICS AND DYEING THE PATTERNED FABRIC

Julius Hermes, Martinsville, Va., assignor to Martin Processing Co. Incorporated, Bassett, Va., a corporation of Virginia

No Drawing. Continuation-in-part of application Ser. No. 317,124, Oct. 18, 1963. This application Mar. 7, 1966, Ser. No. 532,096

Int. Cl. D06p *3/24*

U.S. Cl. 8—15 **3 Claims**

A polyamide textile material which is treated with benzyl alcohol over less than the entire surface of the polyamide material with a dye assisting agent, benzyl alcohol, so as to impart to the treated areas of the polyamide material enhanced dye acceptance characteristics. The polyamide material is treated in localized areas by contacting the material with a bath containing benzyl alcohol and a solvent which is volatile at temperatures at less than 205° C. After the polyamide material is contacted with the bath, the excess solvent remaining on the treated surfaces of the textile material is removed by heating to a temperature less than 205° C. so that the benzyl alcohol remains entrapped in the polyamide material at the areas of contact so as to form a latent design in the so treated areas. The polyamide material is subject to ready dyeing by standard polyamide dyeing procedures.

3,467,485

PROCESS FOR THE DYEING OF POLYAMIDE FIBERS

Alfred Schaeuble, Riehen, Ernst Adolf Rauchle, Basel, and Willi Leutenegger, Basel-Land, Switzerland, assignors to J. R. Geigy A.G., Basel, Switzerland

No Drawing. Continuation-in-part of application Ser. No. 276,065, Apr. 26, 1963, which is a continuation-in-part of application Ser. No. 214,510, Aug. 3, 1962. This application May 13, 1964, Ser. No. 367,235

Claims priority, application Switzerland, May 3, 1962, 5,312/62; May 21, 1963, 6,324/63

Int. Cl. D06p *3/24;* **C09b** *67/00*

U.S. Cl. 8—54 **13 Claims**

Processes are provided for the dyeing of polyamide fibers as well as dye liquors suitable for these processes. The provided processes for coloring polyamide fibers comprise:

(a) impregnating the said fibers by padding, printing, coating or spraying with a thickened liquor containing acid wool dyestuff and a thickener, at a temperature below the drawing temperature of the dyestuff, whereby the dyestuff is deposited on the fibers without drawing on to them substantively, and then heating the impregnated fibers to at least 80° in a humid medium without introduction of steam thereinto, or

(b) impregnating the said fibers in the same manner as described under (a) and then steaming the impregnated fibers in a humid medium, or

(c) impregnating the said fibers by padding, vigoureux printing, coating or spraying, and then passing the impregnated fibers through a hot acid shock bath, or

(d) impregnating the said fibers in the same manner as under (c) and then steaming the impregnated fibers in a humid medium and subsequently passing them through a hot acid shock bath.

The impregnating material comprises a thickened aqueous liquor or a thickened printing paste containing an acid wool dyestuff and a thickener in addition to:

(1) as color transfer agent for transferring the said acid wool dyestuff during fixing from the deposit on the fiber into the interior of the fiber, an effective amount of a water-soluble salt of a saturated aliphatic monocarboxylic fatty acid having 8 to 14 carbon atoms with a mono- to divalent cation selected from the group consisting of alkali metal ion, ammonium ion, lower alkyl-substituted ammonium ion, lower alkoxy-alkyl substituted ammonium ion, morpholinium ion, piperidinium ion, and hydroxy-(lower alkyl)-substituted ethylene-diammonium ion, and

(2) a polyglycolether selected from the group consisting of fatty alcohols and saturated fatty acids having 8 to 14 carbon atoms, each mol of which is condensed with 4 to 12 equivalents of ethylene oxide.

The invention also provides impregnation liquors for the dyeing and printing of the polyamide fibers as well as compositions for use as dyeing auxiliaries in thickened dye liquors.

3,467,486

DYEING AND PRINTING ON POLYAMIDE FIBERS

Charles Soiron, Riehen, Switzerland, Hans Rafael, Weil am Rhine, Germany, and Walter Stockar, Munchenstein, Switzerland, assignors to J. R. Geigy A.G., Basel, Switzerland

No Drawing. Continuation of application Ser. No. 515,774, Oct. 22, 1965, which is a division of application Ser. No. 296,392, July 19, 1963. This application May 9, 1967, Ser. No. 637,309

Claims priority, application Switzerland, July 31, 1962, 9,156/62

The portion of the term of the patent subsequent to Jan. 17, 1984, has been disclaimed

Int. Cl. D06p *5/02, 3/24*

U.S. Cl. 8—74 **12 Claims**

In the process of dyeing and printing polyamide fibers with reactive dyestuffs, there is provided an after-treatment of the dyed fibers for the purpose of fixing still unreacted residual dyestuff on the fibers, which after-treatment does not injure the fibers and permits the drying of the after-treated fibers directly without further intermediate treatments.

3,467,487

IMPARTING ANTISTATIC PROPERTIES TO FIBROUS MATERIALS THROUGH TREATMENT WITH A POLYETHER CONTAINING TERMINAL UREA GROUPS AND A POLYFUNCTIONAL ALDEHYDE

Helmut Kirschnek, Georg von Finck, and Mathieu Quaedvlieg, Leverkusen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a German corporation

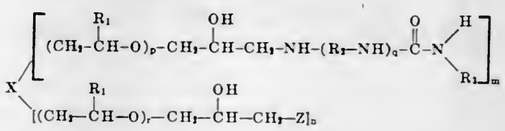
No Drawing. Filed Oct. 11, 1963, Ser. No. 315,703

Claims priority, application Germany, Oct. 24, 1962, F 38,123

Int. Cl. D06m *13/20, 13/18;* **D06p** *5/00*

U.S. Cl. 8—115.5 **8 Claims**

Process for imparting antistatic properties to a fibrous material by contacting the material with an aliphatic aldehyde and a compound of the formula:



or the corresponding quaternary compound wherein:

X is defined as the residue of a polyhydroxy compound, polycarboxylic acid, polyamine, condensation product of a polyamine with a fatty acid, alkanolamine, hydroxy carboxylic acid, aminocarboxylic acid, phenol carboxylic acid or amino phenols, said radicals containing 2–10 hydrogen atoms reactive towards alklene oxides;

R_1 is hydrogen or alkyl;

R_2 is an aliphatic or aromatic radical;

R_3 is hydrogen, alkyl, alkoxy, alkoxyalkyl, or aryl radicals;

Z is a hydrogen, hydroxyl, alkyl, alkylamino, dialkylamino, diacylamidopropylamino, quaternary alkylammonium, aliphatic alcohol, fatty acid, fatty acid amide, polyamine, polyether, —COOH or $—NH_2$ radical;

m is an integer of 2–6;
n is a number of 0–4;
p is a number of 1–100;
q is a number of 0–4; and
r is a number of 1–100.

3,467,488

RADIATION GRAFTING OF MONO- AND DI-ACRYLATES OF LOWER POLYHYDRIC ALCOHOLS AND POLYHYDRIC ALCOHOL ETHERS TO COTTON AND WOOL

Robert Timmerman, North Massapequa, N.Y., assignor to Radiation Processing, Inc., a corporation of Delaware

No Drawing. Filed May 16, 1962, Ser. No. 195,338

Int. Cl. D06m *1/00*

U.S. Cl. 8—116 **3 Claims**

1. Process for rendering fibers selected from the group consisting of cotton and wool water-repellent and shrink-resistant, which comprises immersing said fibers in an aqueous emulsion of a water insoluble acrylic ester monomer selected from the group consisting of the mono- and di-acrylates and methacrylates of lower polyhydric alcohols and polyhydric alcohol ethers containing from 1 to 8 carbon atoms, and then subjecting said fibers and said monomer to high energy ionizing radiation having an intensity between about 0.25 and about 5.0 megarads, for a period of from about 1 to about 10 seconds, to effect graft polymerization of said monomer on said fibers.

3,467,489

METHOD OF WASHING

Lino Zanussi, Ronche di Fontanafredda, Italy, assignor to Industrie A. Zanussi, Pordenone, Udine, Italy, a firm

Filed Oct. 23, 1964, Ser. No. 406,017

Claims priority, application Italy, Oct. 29, 1963, 22,203/63

Int. Cl. D06f *35/00;* **B08b** *3/08*

U.S. Cl. 8—137 **2 Claims**

An automatic washing machine in which a single unified washing stage is effected in which water and detergent are introduced in a single operation at the beginning of the stage, the temperature of the water during said stage gradually increasing while the linen to be washed is mechanically agitated and alternately stopped in such a manner that the duration of the periods of agitation decrease during the execution of the stage as compared to the duration of the periods of stoppage. Finally, the soiled water and detergent are discharged at the end of the stage.

3,467,490

PRESERVATIVE WRAPPER FOR WOOD POLES, THE PROCESS FOR ITS MANUFACTURE, AND THE METHOD OF USING SAME

Johannes Sommer, Breidenhofer Strasse 36, Haan/Rhineland, Germany

No Drawing. Filed Oct. 24, 1965, Ser. No. 505,063

Int. Cl. B27k *3/12, 3/52, 3/14*

U.S. Cl. 21—7 **12 Claims**

A wood impregnating wrapper, and method for its use; formed by fusing a paste, comprising a thermoplastic material, mineral oil and wood impregnating salt, on a fleece of glass fibers which is filled with a thermoplastic material so as to form an inherently elastic unit.

3,467,491

CATALYTIC TREATMENT OF VENT GASES CONTAINING AMMONIA

Leslie C. Hardison, Bloomer, Wis., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

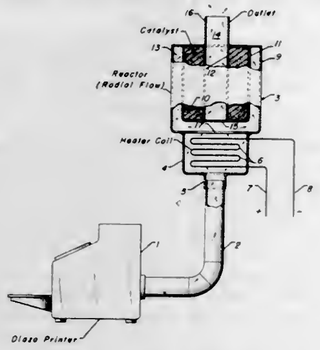
Filed Oct. 23, 1965, Ser. No. 503,665

Int. Cl. B01d *53/34, 53/00*

U.S. Cl. 23—2 **4 Claims**

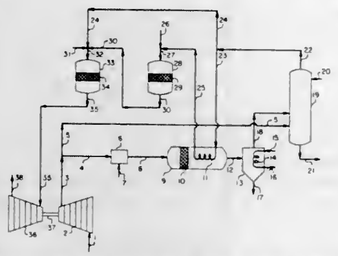
Ammonia is removed from ammonia-containing gases

by conversion thereof to nitrogen and water without production of noxious nitrogen oxides by contacting said



gases and air with a platinum-alumina catalyst at a temperature from about 400° F. to about 450° F.

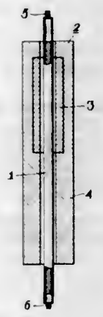
3,467,492
ELIMINATION OF NITROGEN OXIDES FROM GAS STREAMS
Daniel J. Newman, Jackson Heights, N.Y., assignor to Chemical Construction Corporation, New York, N.Y., a corporation of Delaware
Filed Nov. 6, 1964, Ser. No. 409,507
Int. Cl. B01d *49/00;* **C01b** *21/26*
U.S. Cl. 23—2 **13 Claims**



Nitrogen oxides are removed from waste gases such as the tail gases from nitric production by subjecting said gases to catalysis in a plurality of stages, a portion of the nitrogen oxides being removed in each stage. The gases are divided into a plurality of portions, the first portion thereof heated to the minimum ignition temperature of the catalyst bed, methane mixed therewith and the mixture subjected to catalysis. The treated gases are passed through the succeeding catalyst stages with a remaining portion of unheated gas and methane being added to the treated gas between each of the catalytic stages to control the temperature of the catalysis. The preheating of the first portion of the gas may be accomplished by indirect heat exchange with a hot gaseous stream produced by the catalytic air oxidation of ammonia.

3,467,493
METHOD FOR REMOVAL OF IMPURITIES IN RARE GASES
Takashi Eguchi, Chigasaki-shi, Shinichi Iwabuchi, Tokyo and Takao Akiyama, Yokohama, Japan, assignors to Japan Pure Hydrogen Company Ltd., Tokyo, Japan
Filed May 23, 1967, Ser. No. 640,716
Claims priority, application Japan, June 7, 1966, 41/36,755
Int. Cl. B01d *53/02, 53/00;* **C01b** *23/00*
U.S. Cl. 23—2 **5 Claims**

Impurities are removed from a rare gas by passing it through a single reaction zone charged with a gettering agent, the temperature in the zone decreasing gradually

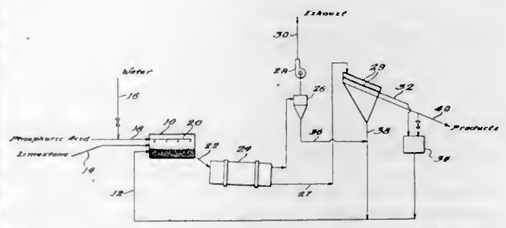


and stage by stage from 1050° C. to 350° C. in the direction of flow of the rare gas.

3,467,494
BARIUM CARBONATE PRODUCTION
John J. Posego, New Martinsville, W. Va., assignor to PPG Industries, Inc., a corporation of Pennsylvania
Filed Oct. 3, 1966, Ser. No. 583,761
Int. Cl. C01l *11/18;* **C01b** *17/16*
U.S. Cl. 23—66 **8 Claims**

Barium carbonate is produced by carbonation of an aqueous barium sulfide solution with carbon dioxide. The amount of soluble barium hydrosulfide in the barium carbonate product is monitored and the ratio of barium sulfide to carbon dioxide controlled in response thereto.

3,467,495
PREPARATION OF CALCIUM PHOSPHATES
Francis T. Nielsson, Morton Grove, Ill., assignor to International Minerals and Chemical Corporation, a corporation of New York
Filed Dec. 23, 1965, Ser. No. 515,951
Int. Cl. C01b *25/32;* **B01j** *2/00*
U.S. Cl. 23—108 **12 Claims**



A granular calcium phosphate product, which may be monocalcium phosphate, dicalcium phosphate or mixtures thereof, is produced by reacting at a temperature of about 130° to 200° F. a 28–80% H_3PO_4 phosphoric acid with ground limestone or lime in proportions to provide a mole ratio of CaO to P_2O_5 of about 0.9:1 to 2:1. The reaction is conducted while mixing the phosphoric acid and limestone or lime with sufficient particulate monocalcium phosphate, dicalcium phosphate or mixtures thereof to provide nuclei for granulation of the product of the reaction and yield a granular product. External heat is applied to the granular product to substantially dry the same.

3,467,496
PROCESS FOR PREPARING WET PROCESS PHOSPHORIC ACID AND CALCIUM SULFATE FROM PHOSPHATE ROCK
Jackson Pollard English, Princeton, John Bibb Hickman, Wyckoff, and Richard Lapham Gilbert, Jr., Princeton, N.J., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine
No Drawing. Filed Nov. 7, 1966, Ser. No. 592,300
Int. Cl. C01b *25/22;* **C01f** *11/46*
U.S. Cl. 23—122 **2 Claims**

1. In a continuous process for preparing wet process phosphoric acid which comprises the steps of: digesting crude phosphate rock with sulfuric acid at temperatures ranging from about 70° C. to about 90° C. so as to recover a phosphoric acid slurry containing calcium sulfate dihydrate free from calcium sulfate hemihydrate and filtering resultant phosphoric acid to remove said calcium sulfate dihydrate therefrom, the improvement which comprises the steps of:

(a) measuring the temperature and relative humidity above said digestion reaction in which phosphate rock is treated with aqueous sulfuric acid;

(b) adjusting the concentration of the sulfuric acid and temperature so as to maintain the latter measured relative humidity at a value above that defined by the equation:

$$Y=61.78-29.76\times10^{-2}T+53.38\times10^{-4}T^2$$

where Y is the relative humidity in percent and T is the temperature in °C., whereby the formation of calcium sulfate hemihydrate is avoided;

(c) filtering said slurry so as to remove calcium sulfate dihydrate therefrom, thereby avoiding substantial caking of said calcium sulfate during filtration; and

(d) recovering wet process acid.

2. In a continuous process for preparing wet process phosphoric acid which comprises the steps of: digesting crude phosphate rock with sulfuric acid at temperatures ranging from about 70° C. to about 90° C. so as to recover a phosphoric acid slurry containing calcium sulfate hemihydrate free from calcium sulfate dihydrate and filtering the latter to remove said calcium sulfate hemihydrate, the improvement which comprises the steps of:

(a) measuring the temperature and relative humidity above said digestion reaction in which phosphate rock is treated with aqueous sulfuric acid;

(b) adjusting the concentration of the sulfuric acid and temperature so as to maintain the relative humidity in percent at a value below that defined by the equation:

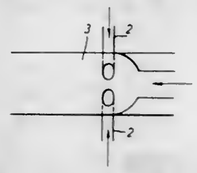
$$Y=61.78-29.76\times10^{-2}T+53,38\times10^{-4}T^2$$

where Y is the relative humidity in percent and T is the temperature in ° C., whereby the formation of calcium sulfate dihydrate is avoided; and

(c) separating said calcium sulfate hemihydrate from said slurry.

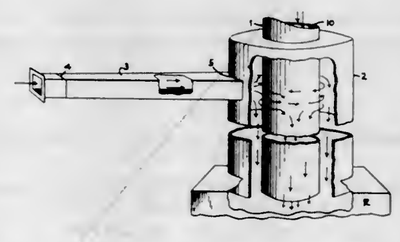
3,467,497
PROCESS FOR THE PREPARATION OF ZINC OXIDE OF HIGH PHOTOSENSITIVITY
Roland Weisbeck, Cologne-Poll, Hans-Georg Fitzky, Cologne-Stammheim, Walter Simm, Opladen, and Gerhard Heyl, Cologne-Stammheim, Germany, assignors to Agfa-Gevaert Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany
Filed Jan. 12, 1966, Ser. No. 520,288
Claims priority, application Germany, Jan. 21, 1965, A 48,187
Int. Cl. C01g *9/02*
U.S. Cl. 23—148 **4 Claims**

Zinc oxide of high photosensitivity is prepared by burning zinc vapor, carried by a reducing gas, in a combustion



zone surrounded by tangentially introduced air or oxygen.

3,467,498
METHOD FOR UNIFORM GAS DISTRIBUTION IN PROCESS FOR PRODUCING PIGMENTARY METAL OXIDE
Floyd E. Benner, Jr., Wadsworth, and Clifford E. Loehr, Akron, Ohio, assignors to PPG Industries, Inc., a corporation of Pennsylvania
Filed Apr. 20, 1964, Ser. No. 360,937
Int. Cl. C01b *13/14;* **C01g** *23/04;* **B01f** *3/02*
U.S. Cl. 23—202 **17 Claims**



The production of pigmentary metal oxides, e.g., titanium dioxide, by vapor phase oxidation of the corresponding metal halides, e.g,, titanium tetrachloride, is described. Method and apparatus for providing effective mixing of reactant gases is discussed and a particular method for delivering reactant gases to the mixing zone in a uniform manner is described.

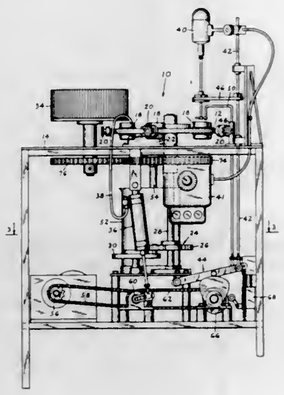
3,467,499
NITROGEN DETERMINATION CATALYST AND METHOD OF USE
Joseph E. Woodbridge, Wynnewood, Pa., assignor, by mesne assignments, to American Hospital Supply Corporation, Evanston, Ill., a corporation of Illinois
No Drawing. Filed Jan. 24, 1967, Ser. No. 616,747
Int. Cl. G01n *31/10, 31/00*
U.S. Cl. 23—230 **17 Claims**

A phenate-hypochlorite reaction for determining the presence of ammonia nitrogen in fluids in which a combination of potassium ferrocyanide and a mercuric compound is utilized as catalyst.

3,467,500
AUTOMATIC SAMPLE DIGESTING DEVICE
Robert J. Wilkinson, Burlington, and John W. Green, Gloucester, N.J., assignors to American Home Products Corporation, New York, N.Y., a corporation of Delaware
Filed Aug. 18, 1966, Ser. No. 573,413
Int. Cl. G01n *1/28;* **G01j** *3/00;* **B01d** *11/00*
U.S. Cl. 23—230 **9 Claims**

Apparatus for automatically analyzing small amounts of chemical compounds by use of a five station intermediately rotated turntable. The sample is added to a container located in the turntable, dissolved in a solvent,

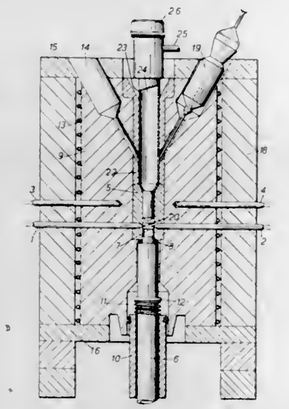
agitated, and a portion of the sample is withdrawn to an analyzer. The container is then emptied and cleaned to make it ready for the next sample. A method of carrying out such sample preparation is described which is applicable to the foregoing apparatus and to other apparatus.



3,467,501
CALORIMETER FOR THE DETERMINATION OF HEATS OF REACTION

Aleksander Jerzy Groszek, West Ealing, England, assignor to Microscal Limited, London, England

Filed June 1, 1965, Ser. No. 460,315
Claims priority, application Great Britain, June 4, 1964, 23,139/64
Int. Cl. G01n *31/06*
U.S. Cl. 23—230 **16 Claims**

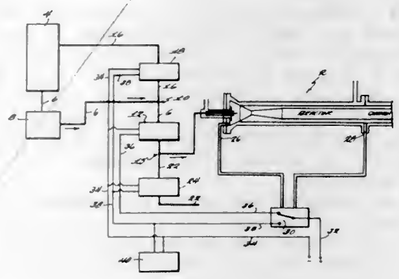


A microcalorimeter for determining the heats of reaction between a fluid and a solid reactant. The solid reactant is contained in a cell through which passes a stream of fluid. At least one measuring thermistor is mounted in the solid reactant zone and its matching reference thermistor is mounted in a block surrounding the cell, means for recording variations in the resistances of the measuring thermistors is provided.

3,467,502
FEEDSTOCK CONTROL SYSTEM FOR CARBON BLACK REACTORS

Jerry E. Davis, Dumas, Tex., assignor to Continental Carbon Company, Houston, Tex., a corporation of Delaware

Filed Oct. 12, 1966, Ser. No. 586,273
Int. Cl. C09c *1/48;* **F23n** *1/00, 5/24*
U.S. Cl. 23—259.5 **3 Claims**

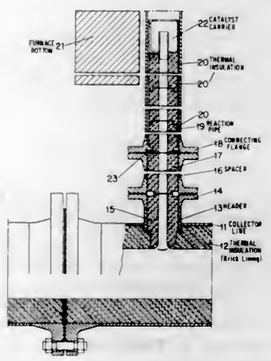


Control apparatus for a carbon black reactor comprising means for measuring the pressure in the reactor upstream and downstream of the effluent forming area, and means for continuing or discontinuing the flow of feedstock of a reservoir into the reactor on the basis of the pressure measurements as related to predetermined pressure conditions. The occurrence of a pressure differential greater than predetermined limit, in the event of a reactor obstruction such as coke buildup, activates means to suspend feedstock introduction until such time as the pressure differential is reduced within the limit again at which point the feedstock is again introduced to the reactor.

3,467,503
TUBULAR CRACKING FURNACE

Slavko T. Juric, 8 Eschbornestr., 6231 Schwalbach, Germany

Filed July 3, 1967, Ser. No. 650,904
Claims priority, application Germany, July 4, 1966, U 12,855
Int. Cl. B01j *3/00*
U.S. Cl. 23—288 **6 Claims**

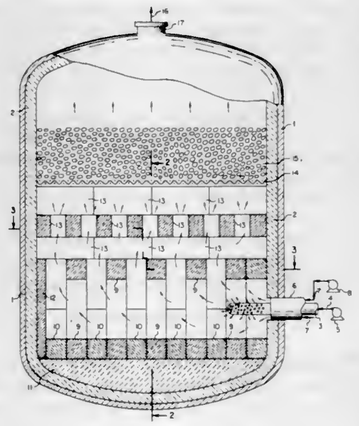


A tubular reaction furnace for cracking hydrocarbons at high temperatures and pressures for the extraction of synthesis gases in which the reaction pipes are rigid at their lower ends with collecting tubes and have their upper ends projecting through the furnace bottom. The reaction pipes in the lower part and collecting tubes are fitted with internal insulation. The insulation in the lower part of the reaction tubes can be removed in order to replace the catalyst contained therein.

3,467,504
APPARATUS FOR HYDROCARBON REFORMING

Paul Korwin, Flushing, N.Y., assignor to Chemical Construction Corporation, New York, N.Y., a corporation of Delaware

Filed Mar. 15, 1965, Ser. No. 439,601
Int. Cl. B01j *9/04;* **C10j** *1/00*
U.S. Cl. 23—288 **5 Claims**



An apparatus combination for the catalytic reforming of a hydrocarbon-containing gas stream with air, in which the reaction container is provided with an upper outlet for product gas, an upper bed of catalyst particles, stacked courses of firebrick or other refractory material below the bed, and a lower combustion container horizontally oriented in the lower part of the reaction container. The combustion container is composed of refractory shapes and has a central axially oriented horizontal gas passage and a plurality of spaced upper openings. The hydrocarbon-containing gas and process air are passed into the lower combustion container and react in this container, thereafter flowing upwards through the spaced upper openings, stacked courses of firebrick, and catalyst bed, and the catalytically reformed gas is then discharged through the upper outlet.

3,467,505
PROCESS FOR PRODUCING LITHIUM ALUMINUM HYDRIDE

Waldemar Guex, Bottmingen, Reinhard Schlapfer and Hans Spiegelberg, Basel, Switzerland, assignors to Hoffmann-La Roche Inc., Nutley, N.J., a corporation of New Jersey

No Drawing. Filed June 27, 1960, Ser. No. 38,731
Claims priority, application Switzerland, July 8, 1959, 75,493/59
Int. Cl. C01b *6/24;* **C01d** *11/02*
U.S. Cl. 23—365 **2 Claims**

Lithium aluminum hydride is produced by reacting in the presence of an inert organic solvent, a lithium-aluminum alloy with elemental hydrogen under superatmospheric pressures and temperatures above about 100° C.

3,467,506
CATALYTIC CONVERSION OF LIQUID PETROLEUM HYDROCARBONS

André Roche, Toulouse, France, assignor to Office National Industriel de l'Azote, Toulouse, France, a corporation of France

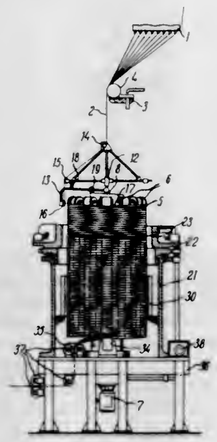
No Drawing. Filed Nov. 15, 1965, Ser. No. 507,670
Claims priority, application France, Nov. 20, 1964, 5,027
Int. Cl. C01b *2/16*
U.S. Cl. 48—214 **9 Claims**

A process for the catalytic reforming of liquid petroleum hydrocarbons with steam under high pressure in two stages to form a gas mixture that is substantially hydrogen, carbon monoxide and carbon dioxide in which the catalyst employed in the second stage is conventional but the catalyst employed in the first stage is a mixture of nickel or cobalt or iron, initially in the form of oxide, and at least one alkaline earth metal oxide, said mixture having a refractory support of at least one alkali silicate and at least one alkaline earth metal silicate. The preferred alkaline earth oxide is magnesium oxide and about 25% of the total catalyst composition may be silicates of which a predominant amount may be aluminum silicate.

3,467,507
APPARATUS FOR PRODUCING NONWOVEN FIBER MATERIAL

Galya Dmitrievna Andreevskaya, Novye Cheremushki, kvartal 21-a, korp. 2, kv. 15, and Alexandr Dmitrievich Bernatsky, Verkhnyaya maslovska, 79, korp. 2, kv. 36, both of Moscow, U.S.S.R.; Abram Elkunovich Gudelman, bulvar Perova, 11/3, kv. 83, Zelman Molseevich Volovich, ul. Chubarya, 16/50, kv. 85, and Alexandr Tosifovich Zektser, Iskrovskaya, 3, kv. 13, all of Kiev, U.S.S.R.; Eduard Semenovich Zelensky, Baltiiskaya ul., 6, korp. 2, kv. 156, Moscow, U.S.S.R.; Kuzma Nikitich Kiselev, Svechnoi proezd, 27, kv. 59, and Nikolai Fedorovich Kozlov, prospekt Engelsa, 22, kv. 70, both of Leningrad, U.S.S.R.; Vladimir Alexandrovich Kulakovsky, Krasnitskogo ul., 25, and Semen Moiseevich Polischuk, Engelsa, 17, kv. 19, both of Kiev, U.S.S.R.; Vasily Petrovich Sveshnikov, ul. Blagodatnaya, 57, kv. 22, Leningrad, U.S.S.R., and Vladimir Mikhailovich Sheinblujm, ul. Gogolevskaya, 49, kv. 8, Kiev, U.S.S.R.

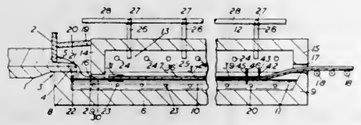
Filed May 12, 1966, Ser. No. 549,687
Int. Cl. C03c *27/00*
U.S. Cl. 65—11 **5 Claims**



A device is provided for the production of nonwoven fiber material, such as glass fiber wherein the produced fibers with a bonding agent applied thereto are formed into a tube by means of a winding head which cooperates

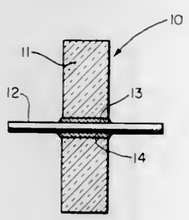
with a delivery means, the winding head being rotatable and oscillatable to provide a sloping cross winding of the fiber material of the tube on the delivery means. A cutter is mounted under the delivery means for slitting the fiber material as it is removed from the delivery means to produce a band or web of such material.

3,467,508
FLOAT GLASS SURFACE MODIFICATION PROCESS
David Gordon Loukes, Prescot, and Glen Nightingale, Rainford, England, assignors to Pilkington Brothers Limited, Liverpool, Lancashire, England, a corporation of Great Britain
Filed July 6, 1966, Ser. No. 563,138
Claims priority, application Great Britain, July 9, 1965, 29,288/65
Int. Cl. C03b *18/00, 39/00*
U.S. Cl. 65—30 **17 Claims**



Glass having desired characteristics is manufactured by separately contacting the surfaces of the glass with segregated bodies of molten electrically conductive material and passing a controlled electric current through the glass between the bodies to cause ionic migration into the glass.

3,467,509
METHOD OF MAKING GLASS TO METAL SEALS
Leigh Curtis Foster, Atherton, and John P. Lindley, Redwood City, Calif., assignors to Zenith Radio Corporation, Chicago, Ill., a corporation of Delaware
Filed Apr. 6, 1967, Ser. No. 628,994
Int. Cl. C03c *27/04;* **C03b** *23/20*
U.S. Cl. 65—33 **7 Claims**



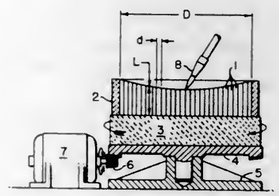
A composite article has two elements exhibiting diverse thermal expansion coefficients, as exemplified by a metal pin protruding through a ceramic wall. The pin is sealed in the wall by a vitreous glass of a material which devitrifies when subjected to a selected temperature within a certain range. The glass exihibts a thermal expansion coefficient, prior to being subjected to a temperature in that range, that is less than either of the thermal expansion coefficients of the elements. In forming the seal, the two elements and the glass are heated to a temperature substantially above the aforesaid certain range but for a period of time only sufficient to melt the glass and after the heat treatment, the glass actually exhibits an effective thermal expansion coefficient intermediate those of the elements which it has sealed together.

3,467,510
SEALING TECHNIQUE FOR PRODUCING GLASS TO METAL SEALS
William J. Knochel, West Orange, and Henry Skwirut, Verona, N.J., and Francis C. M. Lin, New York, N.Y., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Aug. 12, 1966, Ser. No. 572,058
Int. Cl. C04b *37/02, 37/04*
U.S. Cl. 65—59 **5 Claims**



A firing technique for forming high strength, vacuum tight seals between ceramic bodies and ceramic or metallic end closure members which comprises applying a prefired metallic bonding composition principally comprising aluminum oxide and calcium oxide in nearly eutectic proportions to the mating surfaces of the members to be sealed, heating the assembly to approximately 100° C. above the eutectic point of the principal constituents of the metallic oxide sealing composition and holding the assembly at that temperature for approximately 1 minute, then rapidly cooling the assembly at a rate of about 150° C. to 250° C. per minute to approximately 100° C. below the eutectic point of the principal constituents of said composition in from ½ to 1 minute and holding the assembly at that temperature for from 2 to 3 minutes to insure complete solidification of the sealing composition.

3,467,511
METHOD OF MAKING LIGHT REFLECTORS
Jean-Claude Henri George, Paris, France, assignor to Quartz & Silice S.A., Paris, France, a corporation of France
Filed Nov. 1, 1963, Ser. No. 320,708
Int. Cl. C03b *23/20, 33/08;* **C03c** *17/00*
U.S. Cl. 65—60 **2 Claims**

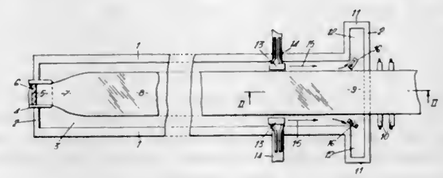


The method of making a mirror comprising the steps of assembling a parallel array of elongated transparent fused silica elements on a block of refractory material, surrounding the array with a retaining element, and fusing together the exposed ends of the elements to form a continuous surface wherein said surface may be provided with a light reflecting coating.

3,467,512
METHOD AND APPARATUS FOR FLOAT GLASS DROSS ENTRAPMENT
David Gordon Loukes, Prescot, and Robin Arnold Merryweather, Rainford, England, assignors to Pilkington Brothers Limited, Liverpool, England, a corporation of Great Britain
Filed Aug. 1, 1966, Ser. No. 569,198
Claims priority, application Great Britain, Aug. 19, 1965, 35,668/65
Int. Cl. C03b *18/02*
U.S. Cl. 65—99 **6 Claims**

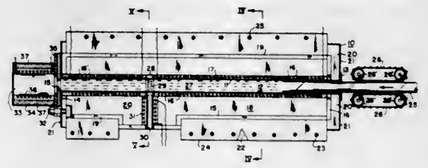
Dross is removed from the exposed surface of a bath

of molten metal in the float process for the manufacture of flat glass by using linear induction motors mounted



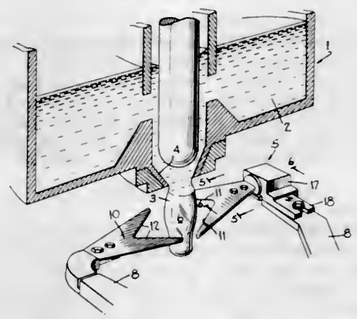
above the metal surface to direct surface flow of the molten metal into dross-receiving areas.

3,467,513
PROCESS AND APPARATUS FOR HIGH PRESSURE EXTRUSION OF GLASS
Stuart M. Dockerty, Corning, N.Y., assignor to Corning Glass Works, Corning, N.Y., a corporation of New York
Filed Oct. 20, 1965, Ser. No. 498,436
Int. Cl. C03b *37/08*
U.S. Cl. 65—183 **8 Claims**



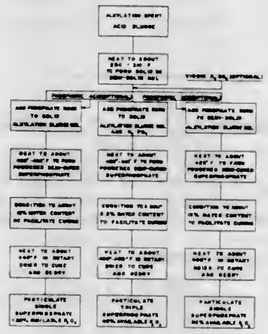
Molten glass of relatively high viscosity is forced through intricately shaped orifices at high pressures in order to extrude shaped glass articles with little or no attenuation.

3,467,514
SELF-ALIGNING GLASS SHEARS
William L. McNamara, Lancaster, Ohio, assignor to Anchor Hocking Corporation, Lancaster, Ohio, a corporation of Delaware
Filed July 20, 1966, Ser. No. 566,503
Int. Cl. C03b *5/38, 21/02*
U.S. Cl. 65—334 **2 Claims**



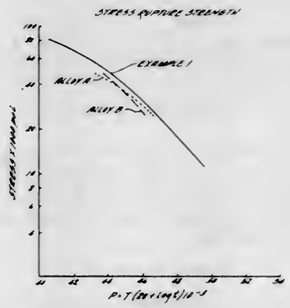
A self-aligning shear blade mechanism for cutting glass into gobs which comprises a first shear blade that is mounted in a rotary mount so that upon engagement with its related cutting blade, the contact force will turn the first blade into proper cutting alignment with the related blade.

3,467,515
PROCESS FOR THE PREPARATION OF "SINGLE" AND TRIPLE SUPERPHOSPHATE FERTILIZERS USING ALKYLATION SPENT ACID SLUDGES
Harold W. Wilson, % Wilson Laboratories, Inc., Box 9851, El Paso, Tex. 79989
Filed Aug. 30, 1966, Ser. No. 576,148
Int. Cl. C05b *1/04, 11/08*
U.S. Cl. 71—37 **5 Claims**



A process is disclosed for the production of superphosphate fertilizer from phosphate rock by the heating of alkylation spent acid sludge until the sludge jells after which particulate phosphate rock is added thereto and the acidulated rock heated to form a dry powdered semi-cured superphosphate which is conditioned with water to enhance curing of the superphosphate followed by heating thereof to produce a particulate fluent cured superphosphate fertilizer having a predetermined moisture content.

3,467,516
WROUGHT NICKEL BASE ALLOY
James F. Barker, Cincinnati, Ohio, assignor to General Electric Company, a corporation of New York
Filed May 2, 1966, Ser. No. 546,647
Int. Cl. C22c *19/00*
U.S. Cl. 75—171 **3 Claims**



A wrought nickel base alloy having good strength properties up to about 1800° F. is provided with improved weldability in sheet form through a careful balance of the precipitation strengthening elements Al and Ti and the solution strengthening elements Mo and W in the presence of carbon to form the desired carbides along with desired intermetallic compound structure. The element Cr is included at a level sufficiently low to stabilize the allow structure and Co has been included to contribute toward hot workability.

3,467,517
TUNGSTEN POWDER BODIES IMPREGNATED WITH Zr AND Bi OR Sn
Edward Joseph Zdanuk, Lexington, and Richard Howard Krock, Peabody, Mass., assignors to P. R. Mallory & Co. Inc., Indianapolis, Ind., a corporation of Delaware
Original application May 26, 1967, Ser. No. 641,698, now Patent No. 3,393,056, dated July 16, 1968. Divided and this application Feb. 6, 1968, Ser. No. 726,622
Int. Cl. B22f *7/06*
U.S. Cl. 75—208 **10 Claims**
Low gas content composites of tungsten-copper-zirconium-bismuth or tungsten-copper-zirconium-tin for use as vacuum switch contact materials.

3,467,518
PHOTOCHEMICAL CROSS-LINKING OF POLYMERS
Urbain Leopold Laridon and Gerard Albert Delzenne, Wilrijk, Belgium, and Helmut Mäder and Hans Ulrich, Leverkusen, Wolfgang Himmelmann, Cologne-Stammheim, and Bernhard Seidel, Cologne-Mulheim, Germany, assignors to Gevaert-Agfa N.V., Mortsel, Belgium, a Belgian company
No Drawing. Filed June 14, 1965, Ser. No. 471,509
Claims priority, application Great Britain, June 15, 1964, 24,762/64
Int. Cl. G03c *1/70, 5/00*
U.S. Cl. 96—35.1 **15 Claims**
A process is disclosed in which a soluble polymeric material carrying groups which are reactive with intermediates derived from the photochemical decomposition of azidosulfonyl groups is selectively insolubilized by exposing to actinic light selective portions of a photosensitive mixture containing the polymer and a minor amount of a compound containing two azidosulfonyl groups. Among the suitable soluble polymeric materials are polymers containing hydroxyl groups, pyridine groups, styrene groups, N-vinyl pyrrolidone groups, and the like. The process is especially useful in photography and in photomechanical reproduction processes. The insolubilizing (cross-linking) azidosulfonyl agents can be made from various aliphatic, aromatic, and heterocyclic and polysulfonic acids by reacting the acid chlorides of these polysulfonic acids with sodium azides.

3,467,519
SWELLING REDUCTION TREATMENT FOR THE ACCELERATED PROCESSING OF GELATIN PHOTOGRAPHIC MATERIALS
Karl Frank, Leverkusen, Wolfgang Himmelmann, Cologne-Stammheim, and Hans Ulrich, Leverkusen, Germany, assignors to Agfa-Gevaert Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany
No Drawing. Filed Apr. 15, 1966, Ser. No. 542,762
Int. Cl. G03c *5/26*
U.S. Cl. 96—50 **9 Claims**
Drying of processed photographic silver-halide-gelatin emulsions is speeded by treating processed wet emulsion with acid aqueous solution of aliphatic or aromatic sulfonic acid or aliphatic or aromatic sulfate, which compounds have more than 5 carbons.

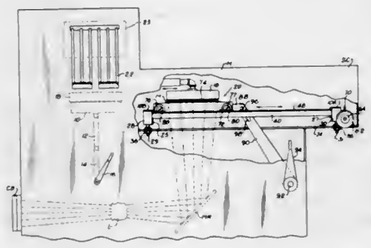
3,467,520
PRODUCTION OF COLORED DIRECT POSITIVE PHOTOGRAPHIC IMAGES
Walter Püschel, Leverkusen, and Karl-Wilhelm Schranz, Opladen, Germany, assignors to Agfa Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany
No Drawing. Filed Mar. 8, 1965, Ser. No. 438,068
Claims priority, application Germany, Mar. 20, 1964, A 45,551
Int. Cl. G03c *7/30, 7/00*
U.S. Cl. 96—53 **4 Claims**
Direct color positives are produced using silver halide emulsion containing an amidrazone that reacts with a color coupler under silver bleaching conditions to form a dye sufficiently intense to be a primary image rather than a masking image. Amidrazone is caused to react with oxidation products of the developer during development and residual amidrazone left unreacted after development forms the color image during bleaching. The color coupler is kept from reacting during development either by adding the color coupler after the development, or by having the color coupler in a separate layer in non-diffusable form, the amidrazone being diffusible during bleaching, or when the color coupler is present in the emulsion layer during development, effecting the development with a black and white developer.

3,467,521
DEVELOPER COMPOSITIONS CONTAINING SEQUESTERING AGENTS
Karl Frank, Leverkusen, and Max Heilmann, Cologne-Flittard, Germany, assignors to Agfa-Gevaert Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany
No Drawing. Filed Apr. 18, 1966, Ser. No. 543,038
Claims priority, application Germany, May 3, 1965, A 49,085
Int. Cl. G03c *5/30*
U.S. Cl. 96—66.1 **3 Claims**
Silver halide developers, the inorganic constituents of which are present in the form of their potassium salts, show less clouding during use when they contain aminoalkyl carboxylic acid derivatives, aminoalkyl phosphoric acid derivatives or aminoalkyl sulfonic acid derivatives in concentrations at least 5 times that used for sequestering calcium and magnesium.

3,467,522
PHOTOGRAPHIC MATERIAL FOR THE SILVER DYE BLEACH PROCESS
Karl-Heinz Freytag, Leverkusen-Steinbuchel, Carl Taube, Leverkusen, and Bernhard Seidel, Cologne-Mulheim, Germany, assignors to Agfa-Gevaert Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany
No Drawing. Filed Mar. 8, 1966, Ser. No. 532,590
Claims priority, application Germany, Mar. 19, 1965, A 48,674
Int. Cl. G03c *1/10, 5/52*
U.S. Cl. 96—99 **9 Claims**
The invention relates to photographic materials for the silver dye bleach process, which materials contain certain di-(naphthyl-azo)benzene cyan dyes fast to light and with particularly suitable spectral properties.

3,467,523
LIGHT-SENSITIVE COMPOSITIONS FOR PHOTOMECHANICAL PURPOSES
Bernhard Seidel, Helmut Mader, Justus Danhauser, Herbert Bartl, Leverkusen, Germany, assignor to Gevaert-Agfa N.V., Mortsel, Belgium, a Belgian company
No Drawing. Filed July 2, 1965, Ser. No. 469,332
Claims priority, application Germany, Dec. 24, 1964, A 47,993
Int. Cl. G03c *1/70;* **C08f** *3/92*
U.S. Cl. 96—115 **11 Claims**
The disclosed light-sensitive material comprises a support and a layer thereon capable of being cross-linked by the action of light. The light-sensitive layer comprises polymers containing approximately one azidosulphonyl group per four to fifty monomer units. The preferred polymers are homo-polymers or co-polymers of olefins, e.g., polyalkylenes. Small amouts of other monomer units may be included in the polymer chain. Especially suitable co-polymers are the co-polymers of vinyl acetate, vinyl alcohol, ethylene, norbornadiene, cyclopentadiene, or co-polymers of butadiene or isoprene with styrene and/or acrylonitrile. These polymers are capable of being cross-linked photochemically, but are thermally stable and resistant to acids. Thus, these light-sensitive materials are useful for various photomechanical purposes, e.g., for the manufacture of acid-proof etching resists for printed circuits or for the preparation of masters or coated plates for printing purposes.

3,467,524
PHOTOGRAPHIC APPARATUS
John H. Gruver, Cleveland, Ohio, assignor to Addressograph-Multigraph Corporation, Cleveland, Ohio, a corporation of Delaware
Filed June 1, 1965, Ser. No. 460,059
Int. Cl. G03f *5/00*
U.S. Cl. 96—116 **6 Claims**



A half-tone screen apparatus for a process camera in which a pair of horizontal guide rails are provided for supporting the screen by gravity for movement between an operative position in spaced relationship to a photosensitive sheet at an exposure station and an inoperative position remote from the exposure station all within a light-tight housing. Adjusting means are provided for raising and lowering the guide rails to thereby position the screen, in a vertical direction, in accurate parallelism with and in accurately spaced position adjacent the sensitized sheet at the exposure station.

3,467,525
PROCESS FOR MAKING AN ANIMAL FOOD
Douglas Hale, Creve Coeur, and Ronald J. Flier, Glendale, Mo., assignors to Ralston Purina Company, St. Louis, Mo., a corporation of Missouri
No Drawing. Filed Dec. 14, 1964, Ser. No. 418,266
Int. Cl. A23k *1/00*
U.S. Cl. 99—2 **6 Claims**
An improved animal food is produced through preparation of a product in which a preponderant percentage, 80–95%, of the particles or pellets are coated on the surface thereof and impregnated into the interior thereof with a liquefiable fat and the balance of the particles or pellets, 5–20%, are coated with a thickening agent which is readily soluble in water.

3,467,526
PROCESS FOR PRODUCING A SUPERSATURATED SOLUTION OF CARBON DIOXIDE
William A. Mitchell, Lincoln Park, N.J., and Henry G. Schwartzberg, Hartsdale, N.Y., assignors to General Foods Corporation, White Plains, N.Y., a corporation of Delaware
Continuation-in-part of application Ser. No. 51,606, Aug. 24, 1960. This application Feb. 19, 1965, Ser. No. 439,123
Int. Cl. A23l *1/00;* **C01b** *31/20*
U.S. Cl. 99—79 **13 Claims**
A supersaturated solution of CO_2 is formed by combining a solution of hydrogen ions and a solution containing either carbonate ions or bicarbonate ions and reacting said ions under condition which do not give rise to nucleation. The carbon dioxide released by said reaction under these conditions is retained within the liquid in an amount greater than the amount of CO_2 present in a saturated liquid of CO_2 at the same temperature and pressure.

3,467,527
METHOD OF PRODUCING A GROUND MEAT PRODUCT
Hugo E. Wistreich, Chicago, Ill., assignor to B. Heller & Co., a corporation of Illinois
No Drawing. Filed Sept. 17, 1965, Ser. No. 488,261
Int. Cl. A23l *1/40;* **A22c**
U.S. Cl. 99—108 **10 Claims**
A method of preparing a smoke flavoring composition useful for treating comminuted meat products comprising an oil extract of an aqueous smoke flavoring composition substantially free of acidic reacting organic material and having the anions of organic acids present in the form of edible salt.

3,467,528
PROCESS FOR PREPARING RICE DESSERT COMPOSITION
Augustine D'Ercole, White Plains, Aristides Krias, Brooklyn, and Robert Tewey, Irvington, N.Y., assignors to General Foods Corporation, White Plains, N.Y., a corporation of Delaware
No Drawing. Continuation-in-part of application Ser. No. 395,590, Sept. 10, 1964. This application Mar. 20, 1968, Ser. No. 714,439
Int. Cl. A23l *1/00, 1/10*
U.S. Cl. 99—139 **4 Claims**
A dry instant rice pudding product reconstitutable in hot water or milk is prepared by blending precooked rice with a sugar syrup to form a first coating on the rice grains, and blending the sugar-coated rice with an aqueous starch slurry to form a second coating on the rice grains, the amount of water used to prepare the coating being limited such that no subsequent drying step is necessary.

3,467,529
PROCESS FOR PRODUCING A STABILIZED READY-TO-EAT BREAKFAST CEREAL PRODUCT
Joseph C. Muhler, Indianapolis, Ind., assignor to Indiana University Foundation, Blomington, Ind., a not-for-profit corporation of Indiana
No Drawing. Continuation-in-part of application Ser. No. 519,004, Jan. 6, 1966, which is a continuation of applications Ser. No. 265,032, Mar. 14, 1963, and Ser. No. 351,210, Mar. 11, 1964. This application Feb. 2, 1968, Ser. No. 702,544
Int. Cl. A23l *3/34*
U.S. Cl. 99—153 **10 Claims**
The oxidative stability and other properties of a breakfast cereal product may be enhanced by including between about 0.5% and 1.5% of monosodium dihydrogen phosphase, NaH_2PO_4, disodium monohydrogen phosphate, Na_2HPO_4, or mixtures thereof, in the cereal particle.

3,467,530
PROCESS OF FREEZE-DRYING BLUEBERRIES
Rudolph K. Scharschmidt and Ralph Edward Kenyon, Battle Creek, Mich., assignors to General Foods Corporation, White Plains, N.Y., a corporation of Delaware
No Drawing. Filed Aug. 17, 1965, Ser. No. 480,473
Int. Cl. A23b *7/02*
U.S. Cl. 99—204 **4 Claims**
Rapidly rehydratable dehydrated blueberries are prepared by freezing blueberries, puncturing them while in the frozen state and freeze drying the punctured berries.

3,467,531

STERILISATION OF MILK PRODUCTS

Arthur Bratland, Rosenberggaten 34, Bergen, Norway

No Drawing. Filed Jan. 27, 1966, Ser. No. 528,024
Int. Cl. A23c *3/02, 9/00*
U.S. Cl. 99—212 7 Claims

A sterilised milk or cream is obtained which can be stored for long periods of time without a "boiled" taste. Either buttermilk or the low fat milk fraction obtained by separating cream into a fat enriched fraction and a low fat milk fraction is added to milk or cream and the mixture is then sterilised.

3,467,532

SHOE POLISHING COMPOSITIONS CONTAINING N,N - BIS - (BIS - AMINO - s - TRIAZINYL)-ALKYLAMINES

Denis Varsanyi, Arlesheim, Basel-Land, and Willy Roth, Strengelbach, Aargau, Switzerland, assignors to Geigy Chemical Corporation, Ardsley, N.Y., a corporation of New York

No Drawing. Division and continuation-in-part of application Ser. No. 560,855, June 27, 1966. This application Oct. 4, 1967, Ser. No. 672,700
Claims priority, application Switzerland, June 30, 1965, 9,158/65
Int. Cl. C09g *1/06*
U.S. Cl. 106—3 2 Claims

Shoe polishing compositions contain certain new N,N-bis - (bis-amino-s-triazinyl)-alkylamines which serve as polishing agents and which reduce the tendency of leather to absorb water. Compositions containing these new and other new N,N-bis - (bis-amino-s-triazinyl)-alkylamines and certain tris-amino-s-triazines and 1,4-bis[bis-amino-s-triazinyl]-piperazines are also useful for other surface treating purposes, particularly as floor waxes and as textile softeners.

3,467,533

PRODUCT FOR PROTECTING AGAINST AND INHIBITING CORROSION

Henri Brunel, 9 Rue du General Niox, Paris 16, France

No Drawing. Continuation-in-part of application Ser. No. 157,311, Dec. 4, 1961. This application Sept. 27, 1965, Ser. No. 490,680
Int. Cl. C09d *5/08*
U.S. Cl. 106—14 10 Claims

The invention relates to a composition or product adapted to be applied as a coating to metal surfaces to impart corrosion resistant properties thereto and which contains, as its essential ingredient, the reaction product of an alkali nitrite and an abietic resin.

3,467,534

BARIUM SILICATE GLASS-CERAMIC BODY AND METHOD OF MAKING IT

John F. MacDowell, Painted Post, N.Y., assignor to Corning Glass Works, Corning, N.Y., a corporation of New York

Filed Oct. 12, 1964, Ser. No. 403,015
Int. Cl. C04b *35/16;* C03b *31/00;* C03c *3/22*
U.S. Cl. 106—39 3 Claims

This invention relates to the manufacture of glass-ceramic articles consisting essentially of 20–70% BaO and 30–80% SiO_2 wherein the crystal content thereof comprises at least 50% by weight of the article and wherein the principal crystal phase is a barium silicate selected from the group consisting of $2BaO \cdot 3SiO_2$, $5BaO \cdot 8SiO_2$, $3BaO \cdot 5SiO_2$, high temperature $BaO \cdot 2SiO_2$, and low temperature $BaO \cdot 2SiO_2$.

3,467,535

REFRACTORY INSULATING COMPOSITIONS

Thomas A. Myles, Tonawanda, N.Y., assignor to The Carborundum Company, Niagara Falls, N.Y., a corporation of Delaware

No Drawing. Filed Oct. 17, 1966, Ser. No. 586,973
Int. Cl. C04b *35/02*
U.S. Cl. 106—64 12 Claims

An insulating, castable refractory composition is produced by mixing aluminum silicate fibers, very finely divided amorphous silica and a calcium aluminate binder with water, the amount of water used controlling the density of articles cast therefrom. Products having densities between 0.48 g./cc. and 1.28 g./cc. are obtainable.

3,467,536

LIGHT-FAST CHLORINATED TERPHENYL CONTAINING LACQUERS

Kurt Hess, Leverkusen-Schlebusch, Heinrich Meckbach, Leverkusen, Karl Brandt, Opladen, and Hermann Wolz, Leverkusen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Filed Jan. 31, 1967, Ser. No. 612,819
Claims priority, application Germany, Mar. 18, 1966, F 48,695
Int. Cl. C09d *3/00, 3/14*
U.S. Cl. 106—190 1 Claim

The addition of chlorinated terphenyls to lacquers and improvement of the light fastness of said lacquers by utilizing chlorinated terphenyls obtained by chlorination of a mixture of terphenyls containing up to 5% by weight of o-terphenyl.

3,467,537

COMPOSITION FOR THE TREATMENT OF LITHOGRAPHIC PLATES

John E. Pickard, Selma, Ind., assignor to Ball Brothers Company Incorporated, Muncie, Ind., a corporation of Indiana

No Drawing. Filed Mar. 2, 1966, Ser. No. 531,037
Int. Cl. C23f *11/08*
U.S. Cl. 117—6 5 Claims

A lithographic plate preserver composition of an acidic, aqueous mixture including a starch and a sugar syrup, preferably in amounts between .01 and .1 gram per cc. of composition and 0% to 80% by weight of the composition, respectively, wherein a buffering agent is preferably included in the form of an alkaline metal salt of an acid, and a method of preserving lithographic plates with such mixtures.

3,467,538

METHOD OF PRODUCING SIMULATED WOOD GRAIN FINISH

William J. Best, East Detroit, Mich., assignor to Michael Ladney, Jr., Grosse Pointe Shores, Mich.

No Drawing. Filed June 10, 1965, Ser. No. 463,045
Int. Cl. B44d *1/12;* B44c *1/22*
U.S. Cl. 117—8 1 Claim

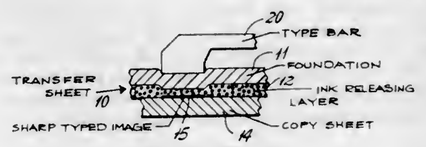
A method of wood graining wherein the workpiece surface to which the wood graining is to be applied has depressions formed therein which correspond to the pores or ticking of the wood grain. This surface of the workpiece has a base coat applied thereto so as to penetrate into, but not fill, the depressions. Thereafter the ground coat is applied to the surface of the workpiece so as to not penetrate into the depressions. The overall wood grain design is then applied to the ground coat and finally a transparent protective finish is applied.

3,467,539

INK-RELEASING SHEETS AND RIBBONS

Allan T. Schlotzhauer, Locust Valley, and Douglas A. Newman and Warren W. Platz, Glen Cove, N.Y., assignors to Columbia Ribbon and Carbon Manufacturing Co., Inc., Glen Cove, N.Y., a corporation of New York

Filed Apr. 21, 1966, Ser. No. 544,227
Int. Cl. B41c *1/06*
U.S. Cl. 117—36.1 5 Claims



Pressure-sensitive transfer sheets and ribbons having a non-transferable microporous resin binder containing pressure-exudable ink. The microporous resin is formed from a mixture of a copolymer of styrene and metbyl methacrylate and a second thermoplastic resin which is a polymer of a vinyl ester or of a vinyl acetal or polystyrene and which is soluble in the same solvent as the copolymer and compatible therewith.

3,467,540

METHOD OF INCREASING THE ADHESION OF METAL TO A SUBSURFACE

Josef Schick, Obersdorf, Germany, assignor to Siemag Siegener Maschinenbau G.m.b.H., a corporation of Germany

No Drawing. Filed Jan. 24, 1967, Ser. No. 611,251
Claims priority, application Germany, Jan. 25, 1966, M 68,122
Int. Cl. H01b *1/02;* B44d *1/44, 1/14*
U.S. Cl. 117—47 7 Claims

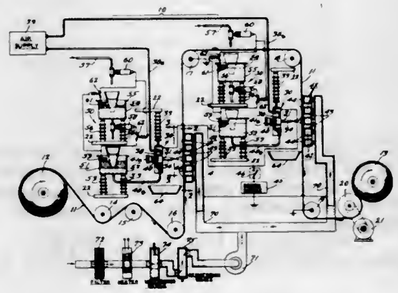
Process for improving the adhesion of metal to a subsurface by applying to the subsurface a resin coating, etching the coated surface, contacting the surface with a reducing bath, sensitizing, contacting the surface with a reducing bath, sensitizing and activating the surface.

3,467,541

METHOD AND APPARATUS FOR MOISTURIZING WEB MATERIAL

Arent Aronsson, Nacka, and Erik Tornqvist, Sundbyberg, Sweden, assignors to Aktiebolaget Svenska Flaktfabriken, Stockholm, Sweden

Filed June 15, 1966, Ser. No. 557,775
Claims priority, application Sweden, Nov. 23, 1965, 15,129/65
Int. Cl. B05b *5/00;* D21h *1/10*
U.S. Cl. 117—93.4 13 Claims



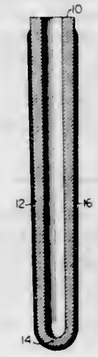
The present invention relates to a method and apparatus for conditioning a web of material, such as paper, and more particularly relates to a method and apparatus for uniformly moistening a web by subjecting the web to an electrostatic field and simultaneously therewith spraying a moistening agent such as water into the field and onto the web.

3,467,542

PROTECTION OF REFRACTORY BODIES FROM THERMAL SHOCK

Lawrence A. Nordlie, Corning, N.Y., assignor to Corhart Refractories Company, Inc., Louisville, Ky., a corporation of Delaware

Filed Dec. 13, 1965, Ser. No. 513,399
Int. Cl. B05b *13/06*
U.S. Cl. 117—94 10 Claims



Refractory articles (e.g. sheaths for immersion-type thermocouple units, bricks, ladle stoppers, etc.) that are disposed in containers for highly heated molten material (e.g. molten steel at 1000° C. or higher) and capable of withstanding the severe thermal shock, without structural damage, of sudden contact with the molten material. Each article comprises a body of refractory and an adherent composite coating on a surface of the body that is to be contacted by the molten material, which coating consists of film-forming organic coating polymer having finely divided particles of refractory imbedded therein in an amount sufficient to provide a continuous shell of sintered particles and carbonized polymer on the body surface after contact with the molten material.

3,467,543

METHOD OF MAKING DUSTING STARCH

Alfred D. Campbell, Falls Church, Va., assignor to Standard Brands Incorporated, New York, N.Y., a corporation of Delaware

No Drawing. Continuation-in-part of applications Ser. No. 118,518, June 21, 1961, and Ser. No. 480,142, Aug. 16, 1965. This application June 28, 1966, Ser. No. 561,027
The portion of the term of the patent subsequent to Apr. 9, 1985, has been disclaimed
Int. Cl. B44c *1/06*
U.S. Cl. 117—100 9 Claims

A method of preparing a free-flowing starch product. An aqueous slurry of starch granules is mixed with a small amount of a powder substance capable of increasing the mobility of powdered starch and with a small amount of a substance effective to reduce the flow rate

of the product. The starch granules are separated from the slurry, dried and pulverized. The amount of the second substance used is sufficient to reduce the Kerr Mobility of the starch product to a level within the range from 0.02 to less than 1.0.

3,467,544

PROCESS FOR PREPARATION OF AUTOGENOUSLY REACTANT MINUTE CAPSULES

Nicola Marinelli, Kettering, and John G. Whitaker, Union, Ohio, assignors to The National Cash Register Company, Dayton, Ohio, a corporation of Maryland

No Drawing. Filed Apr. 4, 1966, Ser. No. 539,718

Int. Cl. B01j *13/00;* **C08h** *7/00*

U.S. Cl. 117—100 **4 Claims**

A process is provided for preparation of autogenously reactant capsules wherein the capsules contain a polymerizable material and have a solid particulate curing agent for the polymerizable material partially embedded on the outer surface of the capsules. Capsules of this invention are intended to be used, in a mass, as an autogenously reactive composition which is activated by rupture of the capsule walls to allow reactive contact between the curing agent and the polymerizable material to form a cured polymeric material.

3,467,545

ALLOY DIFFUSION COATING PROCESS

Giles F. Carter, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed May 29, 1963, Ser. No. 284,010

Int. Cl. C23c *1/10*

U.S. Cl. 117—114 **4 Claims**

A process of forming an iron-chromium diffusion coating on a ferrous metal article is provided. The process involves immersing the ferrous article in a molten bath containing at least 10% by weight lithium and a source of chromium and which is maintained at a temperature between about 800° C. and the melting point of the article.

3,467,546

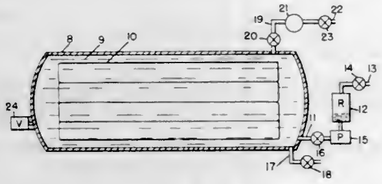
METHOD OF IMPREGNATING WOOD

Robert Z. Page, 7117 Kerr Drive, Springfield, Va. 22150, and Benjamin E. Reed, Jr., 4319 Satinwood Drive, Concord, Calif. 94521

Continuation-in-part of application Ser. No. 401,616, Oct. 5, 1964. This application June 23, 1966, Ser. No. 564,506

Int. Cl. B05c *3/02;* **B44d** *1/26, 1/02*

U.S. Cl. 117—116 **11 Claims**



This invention relates to a method of preserving wood by the impregnation thereof with a treating liquid in a closed container, and applying saw-tooth wave-form vibrations to the liquid therein so that the liquid will penetrate the wood.

3,467,547

CORRUGATED PAPERBOARD HAVING IMPROVED WET STRENGTH PROPERTIES

Wildon T. Harvey, Hockessin, Del., and Jay C. Knepper, Jr., Princeton, N.J., assignors to Sun Oil Company, Philadelphia, Pa., a corporation of New Jersey

No Drawing. Continuation-in-part of application Ser. No. 374,835, June 21, 1964. This application July 6, 1967, Ser. No. 651,365

Int. Cl. D21h *1/22;* **C09d** *3/40*

U.S. Cl. 117—158 **2 Claims**

An improved wet strength corrugated paperboard composition comprising corrugated paperboard impregnated with 25 to 50 weight percent of a specific petroleum paraffin wax containing 0.1 to 1.0 weight percent of a synthetic oil produced by the Friedel-Crafts condensation of aromatic compounds and chlorinated paraffins.

3,467,548

METHOD OF MAKING XEROGRAPHIC PLATE BY VACUUM EVAPORATION OF SELENIUM ALLOY

Virgil E. Straughan, Euclid, Ohio, assignor, by mesne assignments, to Xerox Corporation, Rochester, N.Y., a corporation of New York

Application Dec. 27, 1965, Ser. No. 516,529, now Patent No. 3,312,548, which is a continuation-in-part of application Ser. No. 293,357, July 8, 1963. Divided and this application May 31, 1966, Ser. No. 571,150

Int. Cl. H01b *1/02;* **B44d** *1/18;* **C23c** *13/02*

U.S. Cl. 117—217 **4 Claims**



A method of making a xerographic plate which comprises vacuum evaporating a mixture of selenium, arsenic, and halogen onto an electrically conductive support member to form a photoconductive alloy layer thereon. The mixture comprises arsenic in a range of about 0.5 to 50 percent by weight, a halogen in range of about 10 to 10,000 part per million, with a balance of the mixture comprising selenium.

3,467,549

DESCALING OF ALLOYS BY HIGH TEMPERATURE SURFACE VAPORIZATION

Raymond W. Bartek, Wallingford, Conn., assignor to Allegheny Ludlum Steel Corporation, Brackenridge, Pa., a corporation of Pennsylvania

No Drawing. Filed Mar. 30, 1965, Ser. No. 444,066

Int. Cl. B08b *3/10*

U.S. Cl. 134—4 **5 Claims**

Described herein is a method for removing oxide scales from metal surfaces which comprises applying an aqueous solution containing an alkali metal hydroxide to the surface to be descaled after heating same to a temperature sufficiently high to evaporate the water of solution and to fuse the resulting salt and thereafter removing the conditioned scale.

3,467,550

DEVICE IN ELECTRICAL STORAGE BATTERIES AND METHODS FOR MOUNTING SAID DEVICE

Rolf F. G. Thörnblad, Oskarshamn, Sweden, assignor to Svenska Ackumulator Aktiebolaget Jungner, Oskarshamn, Sweden

Filed May 23, 1966, Ser. No. 552,053

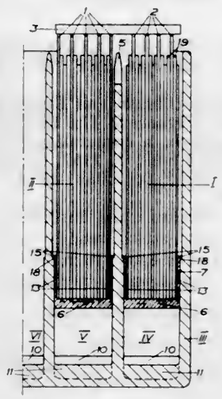
Claims priority, application Sweden, May 28, 1965, 7,052/65

Int. Cl. H01m *39/02*

U.S. Cl. 136—79 **5 Claims**

An electric storage battery having a container with sidewalls and partitions for holding a plurality of cells

made up of a number of electrode groups. A clip-shaped brace of insulating material is used to engage the lower portion of each electrode group to compress the electrode



group and to engage the sidewalls and partitions of the container for guiding and holding the electrode groups during and after assembling of the battery.

3,467,551

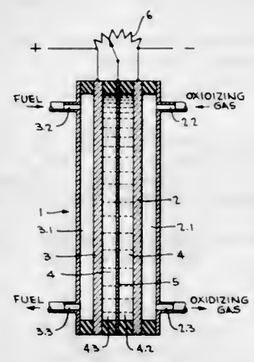
METHOD OF OPERATING FUEL CELL

Jose D. Giner, Sudbury, Mass., assignor, by mesne assignments, to Leesona Corporation, Cranston, R.I., a corporation of Massachusetts

Filed Sept. 30, 1965, Ser. No. 591,758

Int. Cl. H01m *27/12*

U.S. Cl. 136—86 **5 Claims**



An electrochemical cell comprising an anode, a cathode, a fluid electrolyte chamber between said anode and cathode, and an electrically conductive metallic diaphragm is described. The metallic diaphragm is connected to one of said anode and cathode with or without employing an external power source to maintain the diaphragm at a fixed electrical potential to render the diaphragm passive. The diaphragm has a low electrical resistance and is stable to the corrosive environment of the cell.

3,467,552

ELECTROCHEMICAL FUEL CELL

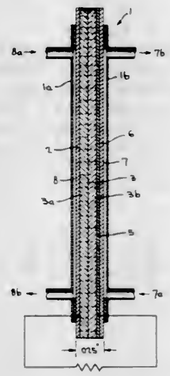
Jose D. Giner, Glastonbury, Conn., assignor, by mesne assignments, to Leesona Corporation, Cranston, R.I., a corporation of Massachusetts

Filed Sept. 30, 1965, Ser. No. 491,760

Int. Cl. H01m *27/04*

U.S. Cl. 136—86 **14 Claims**

A compact fuel cell comprising a multiple constituent electrolyte matrix is described. The matrix comprises a non-conductive element and a conductive element. Thin



electrochemically active electrodes are in contact with the major surfaces of the multiple constituent electrolyte matrix.

3,467,553

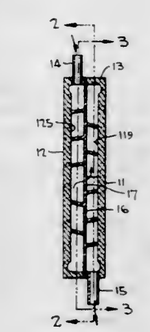
FUEL CELL CONSTRUCTION WITH INVOLUTE REACTANT FLOW DIRECTING MEANS

Loren H. White, East Hartford, Conn., assignor, by mesne assignments, to Leesona Corporation, Warwick, R.I., a corporation of Massachusetts

Filed June 29, 1966, Ser. No. 561,484

Int. Cl. H01m *27/12*

U.S. Cl. 136—86 **14 Claims**



An electrode structure is described comprising a pair of spaced electrodes constructed and arranged to define a reaction chamber therebetween and includes a flow divider disposed within said chamber and cooperating with at least one of the electrodes to define an involute flow path past the electrodes.

3,467,554

ELECTROCHEMICAL CELL INCLUDING PALLADIUM-GOLD ALLOY BLACK CATALYST

Jeremy Forten, New York, and Edwin Francis Rissman, Brooklyn, N.Y., assignors to Leesona Corporation, Warwick, R.I., a corporation of Massachusetts

Continuation of application Ser. No. 374,396, June 11, 1964. This application Sept. 25, 1967, Ser. No. 670,464

Int. Cl. H01m *27/10*

U.S. Cl. 136—86 **2 Claims**

An electrochemical cell utilizing an electrode which contains a palladium-gold alloy having from 35 to 82 atomic percent gold with the remainder being palladium

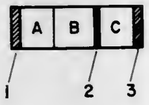
as the catalytic material is described. The alloy in black form is admixed with hydrophobic polymer particles to provide improved results.

3,467,555

LEAD-TELLURIDE WITH CESIUM CHLORIDE AND SEGMENTED THERMOELECTRIC ELEMENTS

Courtland M. Henderson, Xenia, and Emil R. Beaver, Jr., Tipp City, Ohio, and Louis J. Reitsma, Jr., Nunica, Mich., assignors to Monsanto Research Corporation, St. Louis, Mo., a corporation of Delaware

Filed Oct. 22, 1965, Ser. No. 500,997
Int. Cl. H01v *1/30*
U.S. Cl. 136—205 19 Claims



1. A p-type thermoelement consisting essentially of the three thermoelectric segments: (A) a hot-end segment prepared by hot pressing a mixture consisting essentially by weight of from 79 to 81% of boron, 9 to 12% of carbon, 6 to 8% of a p-type dopant, and 1.0 to 2.5% of calcium dioxide; (B) an intermediate segment prepared by hot pressing a mixture consisting by weight of from 51 to 53.5% of germanium, 46.0 to 48.5% of silicon, from 0.3% to 1.2% of calcium oxide and up to 1% of a p-type dopant; and (C) a cold-end segment prepared by hot pressing a mixture consisting essentially of lead telluride containing a p-type dopant and from 0.1% to 1.0% of cesium chloride, based on the total weight of the telluride plus dopant.

18. A thermoelectric composition consisting essentially of p-type doped lead telluride and from 0.1% to 0.5% of cesium chloride based on the weight of the doped lead telluride.

3,467,556

HIGH TEMPERATURE SOLDERING OIL

Robert A. Stayner, Palos Verdes Estates, Calif., assignor to Chevron Research Company, San Francisco, Calif., a corporation of Delaware

No Drawing. Filed Sept. 28, 1966, Ser. No. 582,494
Int. Cl. C10m *1/02*
U.S. Cl. 148—25 5 Claims

Refined petroleum hydrocarbon stock is combined with small amounts of a fatty acid having one site of olefinic unsaturation, a glyceride and a phenolic antioxidant for use as a high temperature soldering oil.

3,467,557

POLYCRYSTALLINE SEMICONDUCTOR DEVICES

Henley Frank Sterling, Harlow, England, assignor to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware

Filed Dec. 22, 1966, Ser. No. 603,887
Claims priority, application Great Britain, Jan. 4, 1966, 277/66
Int. Cl. H01l *7/36*
U.S. Cl. 148—175 4 Claims

A process for manufacturing a polycrystalline semiconductor junction device involving epitaxial deposition of semiconductor material of one conductivity type upon a substrate of polycrystalline semiconductor material of opposite conductivity type, said substrate being manufactured by means of the silver boat process. The silver boat process involves melting and subsequent resolidification of semiconductor material wherein the material is heated by radio frequency induction, the material being contained by a vessel of good thermal and electrical conductivity such that radio frequency currents (eddy currents) induced in the vessel interact with the currents induced in the molten material to "levitate" the molten material away from the adjacent surface of the vessel.

3,467,558

PYROTECHNIC DISSEMINATING COMPOSITION CONTAINING AN AGENT TO BE DISSEMINATED

Gary E. Wernette, Weidman, and Erwin M. Jankowiak, Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Sept. 1, 1967, Ser. No. 664,919
Int. Cl. C06d *3/00*; C06b; A01n *17/04*
U.S. Cl. 149—19 6 Claims

A pyrotechnic disseminating formulation comprising an inorganic oxidizer which readily is combustible at atmospheric pressure, an epoxy resin binder as fuel and an effective quantity of an agent to be disseminated.

3,467,559

METHOD OF PREPARING SLURRIED EXPLOSIVES MIXTURES

Julius H. Paasch and Conrad W. Ehmke, North Rand, Transvaal, Republic of South Africa, assignors to African Explosives and Chemical Industries Limited, Johannesburg, Transvaal, South Africa

No Drawing. Continuation of abandoned application Ser. No. 587,389, Oct. 18, 1966. This application Aug. 15, 1968, Ser. No. 754,113
Claims priority, application Republic of South Africa, Oct. 22, 1965, 65/5,703; Nov. 2, 1965, 65/5,903
Int. Cl. C06b *1/04*; C06d *1/00*
U.S. Cl. 149—44 10 Claims

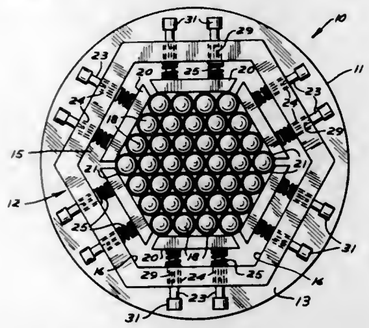
Method of preparing a slurried explosives mixture of water, inorganic oxidizing salt, gelling agent, fuel and sensitizer which involves first forming a non-explosive mixture by mixing together all of the components except for the amount of oxidizing salt necessary to render the mixture explosive, to facilitate storage and transport and adding the oxidizing salt to complete the explosives mixture at the point and time of use.

3,467,560

METHOD OF MANUFACTURE OF MASTER PATTERN CONTAINING AN ARRAY OF DOTS

Silas A. Brown, Lake Elmo, Minn., assignor to Buckbee-Mears Company, St. Paul, Minn., a corporation of Minnesota.

Filed Aug. 27, 1965, Ser. No. 483,195
Int. Cl. B32b *3/10*
U.S. Cl. 156—6 11 Claims



A number of identically-dimensioned incompressible spheres are placed on a flat surface and then pushed together so that each sphere makes tangential contact with the surface and with each adjacent sphere and the entire arrangement is then encapsulated in a settable compound. At least one side of the assembly is then ground down to expose the cross section of the spheres at the desired height

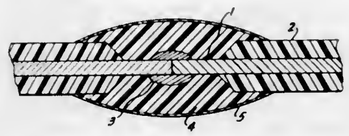
or thickness to produce an array of dots of uniform diameter which can then be used as a pattern master for later photographic processing.

3,467,561

METHOD OF JOINTING INSULATED ELECTRIC WIRES

Yoshio Waride, Daito, Japan, assignor to Sumitomo Electric Industries, Ltd., Osaka, Japan, a corporation of Japan

Filed June 23, 1965, Ser. No. 466,328
Claims priority, application Japan, June 29, 1964, 39/37,130
Int. Cl. H01b *13/08*
U.S. Cl. 156—49 5 Claims



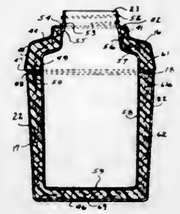
The method of insulating conductor joints for insulated cables by applying a first winding of heat fusible synthetic plastic tape over the joint and a second winding of substantially transparent sintered tetrafluoroethylene tape and heating the windings for unification while observing the interior for character of finish.

3,467,562

METHOD OF MAKING AN INSULATED CONTAINER

Herbert M. Piker, Wyoming, Ohio, assignor to The Hamilton-Skotch Corporation, Hamilton, Ohio, a corporation of Ohio

Original application Sept. 10, 1964, Ser. No. 395,392, now Patent No. 3,313,438, dated Apr. 11, 1967. Divided and this application Feb. 4, 1966, Ser. No. 525,099
Int. Cl. B32b *1/06, 3/06*
U.S. Cl. 156—69 5 Claims



The method of providing an insulated container consisting in forming the inner and outer containers complete in themselves, that is, forming each to include a bottom, a top, and a body portion between their respective tops and bottoms and each of the tops having upstanding therefrom a hollow sleeve. Forming in the outer container body portion an inwardly extending groove and through which groove the said outer member body portion is severed or cut to thereby provide said outer member with two portions one of which includes the body member and each portion having an inwardly extending flange adapted to be disposed in face contact with one another after the assemblage of the inner member and the outer member and including their tops and upstanding sleeves. Said parts being secured in assembled position by securing the face contacting inwardly extending flanges to one another and after the insertion of insulation between the inner and outer members.

3,467,563

METHOD OF PREPARING A COMPOSITION COMPRISING AN ADHEREND AND AN ADHESIVE LATEX MIXTURE

Colin P. Mason, Sarnia, Ontario, Canada, assignor to Polymer Corporation Limited, Sarnia, Ontario, Canada, a body corporate

No Drawing. Filed Mar. 28, 1967, Ser. No. 626,412
Claims priority, application Canada, Apr. 9, 1966, 957,632
Int. Cl. D04h *11/00*; C09j
U.S. Cl. 156—72 8 Claims

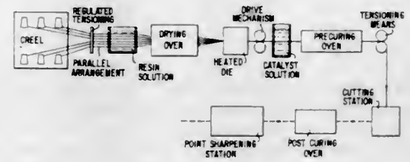
A compositon is disclosed comprising an adherend, such as organic fibers in the form of tufts, and an adhesive latex mixture of a carboxyl-containing polymer. The polymer of the latex contains a major proportion by weight of conjugated alkadiene units and a minor proportion by weight of olefinically-unsaturated nitrile units, characterized in that in preparing said polymer at least one of the alkadiene and nitrile monomers has an olefinically-unsaturated group having at least one alkyl substituent. In a specific embodiment, the latex mixture further includes at least 100 parts of filler per 100 parts polymer content. One utility of the subject matter is in the fabrication of a tufted carpet having a solvent-resistant backing.

3,467,564

METHOD OF PRODUCING A POROUS, SUBSTANTIALLY RIGID ROD TYPE NIB FOR WRITING INSTRUMENTS

Phillip M. Daugherty, Decatur, Charles K. Lovejoy, and Harry L. Vaughan, Atlanta, Ga., assignors to Scripto, Inc., a corporation of Georgia

Original application May 17, 1965, Ser. No. 456,169, now Patent No. 3,400,998, dated Sept. 10, 1968. Divided and this application Mar. 1, 1967, Ser. No. 619,634
Int. Cl. D04h *3/08*; B32b *31/26*
U.S. Cl. 156—154 5 Claims



The method of the present invention is directed to the production of a porous, substantially rigid type rod having uniform interconnecting pores of capillary dimensions that is utilized as a nib for a writnig instrument and includes the steps of arranging filaments of synthetic fibers in substantially parallel relationship, coating said filaments with a bonding agent, forming said filaments into a rod like structure, and then curing said rod like structure.

3,467,565

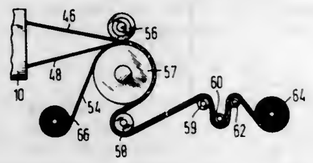
METHOD OF LAMINATING A CARRIER WEB AND A HIGH MELTING PLASTIC FILM

Kastulus Utz, Freising, Upper Bavaria, Germany, assignor to Multifol Patentverwertungs A.G., Chur, Switzerland, a corporation of Switzerland

Continuation-in-part of applications Ser. No. 211,238, July 20, 1962, and Ser. No. 427,293, Jan. 22, 1965. This application Aug. 22, 1967, Ser. No. 662,328
Claims priority, application Germany, July 27, 1961, A 37,992; Jan. 24, 1964, A 45,081
The portion of the term of the patent subsequent to May 15, 1982, has been disclaimed
Int. Cl. B32b *31/08*
U.S. Cl. 156—244 7 Claims

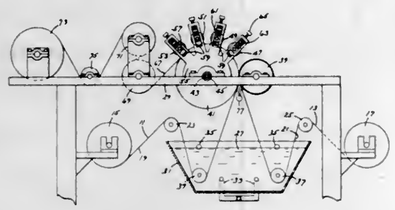
At least two film formations of different thermoplastic materials are simultaneously extruded, one of the extruded films being of a high melting and the other film being of a low melting plastic. The two films are superposed and

bonded and the freshly obtained laminated step product and a carrier web are likewise superposed and bonded, with the free surface of the low melting film contacting the carrier web. According to a modified and preferred mode of operation, the low melting film is sandwiched



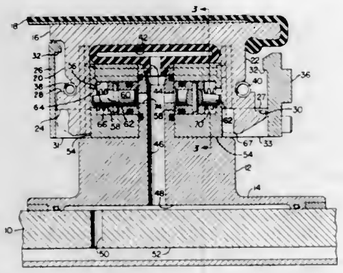
between the high melting film and the carrier web and the three layers are bonded together at the same time. The bonding in the latter case is done by subjecting the three-ply structure to pressure and heat to yield a composite laminate.

3,467,566
METHOD FOR WET LAMINATING HYDROPHILIC FILMS
John D. Conti, Elkins Park, Pa., assignor to FMC Corporation, Philadelphia, Pa., a corporation of Delaware
Filed Jan. 14, 1966, Ser. No. 520,707
Int. Cl. B32b *23/14, 31/08*
U.S. Cl. 156—307 **6 Claims**



Method in which dry hydrophilic sheet materials, having a substantially dry coating of thermoplastic material on at least one side of each pair of opposing sides, are humidified within a heated water bath and then laminated to each other under heat and gradually increasing pressure.

3,467,567
TIRE BUILDING MACHINE
Edwin S. Woodhall, Cuyahoga Falls, Ohio, assignor to The Goodyear Tire & Rubber Company, Akron, Ohio, a corporation of Ohio
Filed Dec. 23, 1965, Ser. No. 516,045
Int. Cl. B29h *17/16*
U.S. Cl. 156—415 **15 Claims**



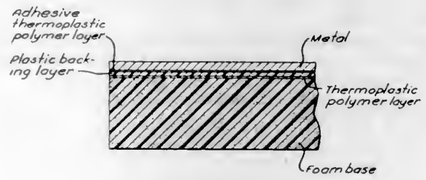
A tire building machine having positive locking means for holding the drum segments in a fixed concentric expanded position and operable by single fluid pressure connection.

The foregoing abstract is not to be taken as limiting the invention of this application, and in order to understand the full nature and extent of the technical disclosure of this application, reference must be made to the accompanying drawings and the following detailed description.

3,467,568
HEAT SEALABLE POLYETHYLENE FILM, LAMINATE AND PROCESS FOR FORMING THE SAME
Robert F. Williams, Jr., and Edward D. Morrison, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed Feb. 1, 1966, Ser. No. 524,197
Int. Cl. B32b *27/04, 27/08, 31/12*
U.S. Cl. 161—146 **15 Claims**

A self-lubricating, high slip, heat-sealable polyethylene film and method of making and sealing the same. A high density polyethylene film is coated with a composition containing a low density polyethylene, a fatty amide derivative and carnauba wax and the resultant article is pressure rolled to the desired thickness.

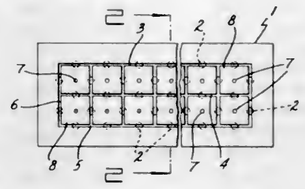
3,467,569
RESIN FOAM-METAL LAMINATE COMPOSITES
Christian A. Weber, Sanford, and Jerome L. Vincent, Auburn, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
Filed June 3, 1966, Ser. No. 555,158
Int. Cl. B32b *15/04, 5/18, 15/08*
U.S. Cl. 161—160 **8 Claims**



1. An article of manufacture which comprises a laminate having a base of a synthetic resinous foamed material and having adhered to at least one side thereof a solid thermoplastic backing material, said backing material being adhered to the foamed material through a first intermediate layer of a resinous thermoplastic material and a metal layer adhered to the backing material through a second intermediate layer of an adhesive thermoplastic material.

3,467,570
EXTRUSION OF RESINS
Samuel Baxter, Penhow, and John Harold Gilbert, Chepstow, England, assignors to Monsanto Chemicals Limited, London, England, a British company
Filed June 6, 1966, Ser. No. 555,495
Claims priority, application Great Britain, June 24, 1965, 26,765/65
Int. Cl. B32b *3/26, 5/18*
U.S. Cl. 161—165 **15 Claims**

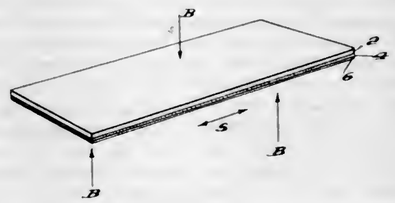
Dies and processes for extruding a foamable thermoplastic synthetic resin through a plurality of channels and passages extending from the inlet to the outlet end of a die, each of the channels communicating with a network of slits at the outlet end of the die and each of the passages having its outlet substantially in the center of a mesh of the network of slits and not communicating directly with the slits, so that a strand of foamed resin is extruded from each passage and is enveloped by foamed resin issuing from the slits of the network. Foamed articles, e.g., boards, thus formed are characterized by having a substantially uniform cross-section at right angles to the length consisting of a network of extruded foamed material having enclosed within each of the meshes of the network a strand of extruded foamed material.



3,467,571
HAT FELT AND THE METHOD OF MAKING IT
Jacques Schweig, Montreux, and Horst Charwat, Monthey, Switzerland, assignors, by mesne assignments, to Jacques Schweig, Montreux, Switzerland
No Drawing. Continuation of application Ser. No. 283,582, May 27, 1963. This application Jan. 6, 1967, Ser. No. 607,851
Claims priority, application Switzerland, Nov. 12, 1962, 13,218/62
Int. Cl. D04h *1/12;* **B32b** *9/04*
U.S. Cl. 161—170 **2 Claims**

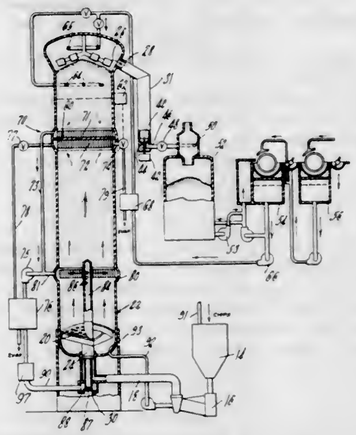
A method for producing hat felt from a mixture of fibers containing an unrestricted proportion of synthetic fibers which comprises intimately admixing natural and/or synthetic fibers by air blowing the same, suction-depositing the resultant mixture on a conical support form in a doubling machine, spraying the resultant loose fiber fleece with hot water, removing the so-obtained prestiffened hat felt from said form, subjecting said hat felt to centrifugal drying, applying to the resultant compacted and substantially water-free hat felt an aqueous solution, dispersion or emulsion of heat-curable synthetic plastic, and then subjecting the resultant felt to heat-curing to give the hat felt its final form; and the resultant products.

3,467,572
CONSTRAINED LAYER DAMPED LAMINATE STRUCTURE
Leo Ahramjian and Theodore Peng-Jung Yin, Wilmington, Del., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Nov. 9, 1964, Ser. No. 409,842
Int. Cl. B32b *27/40*
U.S. Cl. 161—190 **11 Claims**



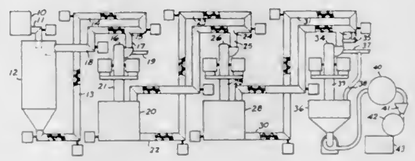
Improved bonded constrained layer damped laminated structure, the constrained damping layer consisting essentially of a specifically defined clear polyurethane composition made to reflect a maximum loss tangent to achieve a maximum damping efficiency.

3,467,573
UPFLOW DIGESTER CONTAINING MEANS FOR SEPARATE REMOVAL OF WASH LIQUOR AND PULPING LIQUOR AND METHOD OF PULPING IN SAID DIGESTER
Karl E. Vogel, McKean, Pa., assignor to Improved Machinery Inc., Nashua, N.H., a corporation of Delaware
Filed Dec. 13, 1965, Ser. No. 513,186
Int. Cl. D21c *3/26, 7/00*
U.S. Cl. 162—19 **5 Claims**



A continuous digester of the upflow type having a countercurrent washing zone at the upper end of the digester vessel, with the reaction zone positioned therebelow and with the interface between the two zones being maintained between two closely vertically spaced strainers for separate removal of the spent liquor and wash liquid, the latter being reintroduced into the vessel at its lower infeed end.

3,467,574
REFINER BLEACHING OF HIGH YIELD PULPS
William B. West, Eureka, Calif., assignor to Crown Zellerbach Corporation, San Francisco, Calif., a corporation of Nevada
Filed June 14, 1966, Ser. No. 557,498
Int. Cl. D21b *1/16*
U.S. Cl. 162—24 **6 Claims**



A process of bleaching lignocellulose material with a reducing bleaching agent which utilizes multistage refiners. The material is introduced into a first refiner where the temperature of the material is increased so that outgassing of oxygen-containing vapors deleterious to reduc-

tion bleaching takes place through a vent in a vented passageway for the material leading from the first refiner to a final refiner. The reducing bleaching agent is added to the material just prior to introduction of the material to the final refiner so that high temperature and mixing in the final refiner causes rapid bleaching.

3,467,575

PROCESS OF BLEACHING PAPER WITH PERACETIC ACID

Morris Wayman and William H. Rapson, Toronto, Ontario, Canada, assignors, by mesne assignments, to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York

Filed Aug. 2, 1965, Ser. No. 476,452
The portion of the term of the patent subsequent to Oct. 1, 1985, has been disclaimed
Claims priority, application Great Britain, Aug. 13, 1964, 33,090/64
Int. Cl. D21h *3/80;* **D06l** *3/00;* **D21c** *9/16*
U.S. Cl. 162—78 **4 Claims**

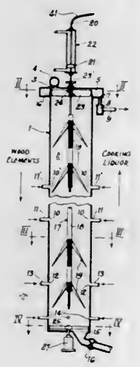
There are provided novel, economical processes for the bleaching of paper wherein bleached papers with excellent brightness and color reversion properties are obtained. In one of these processes, the paper is treated with up to about 2 percent of hydrosulphite (by weight) and then it is heated. In another of these processes, the paper is treated with from about 0.1 to about 2.6 percent of peracetic acid (by weight), heated to accelerate the bleaching reaction, and treated to neutralize the peracetic acid on the paper. In yet another of these processes the paper is treated with from about 0.1 to about 2.6 percent of peracetic acid, heated, treated with up to about 2 percent of hydrosulphite, and heated again.

3,467,576

CONTINUOUS TREATMENT OF FIBROUS MATERIAL AND APPARATUS

James d'A. Clark, Chuckanut Point, Bellingham, Wash. 98225

Continuation-in-part of application Ser. No. 368,917, May 20, 1964. This application Dec. 18, 1967, Ser. No. 691,554
Int. Cl. D21c *7/12, 7/00*
U.S. Cl. 162—237 **16 Claims**



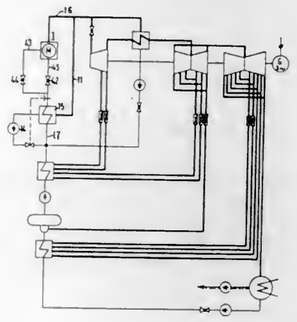
An apparatus and process for the treatment of fibrous material with treating liquids in which use is made of an elongate passage with means for introducing a fibrous material into one end portion of the passage and introduction of treating liquid into an intermediate portion of the passage with means for draining treating liquid from the one end portion of the passage and removing treated fibrous material from the other end portion of the passage and including a reciprocating pusher mounted in the passage for reciprocal axial movement with pusher arms inclined in the direction away from the one end of the passage to effect endwise displacement of the fibrous material in the same direction therewith during movement in the direction away from the one end portion of the passage and for disturbing the fibrous material for redistribution in the passage during return movement without substantial axial displacement of the fibrous material therewith thereby to permit effecting a substantially uniform countercurrent flow through the passage between the fibrous material and treating liquid and which includes means for introducing wash water into the passage beyond the region for introduction of treating liquid whereby the wash water engages the fibrous material subsequent to contact with the treating liquid to leach treating liquid from the fibrous material before removal from the passage and which may include the introduction of steam into the passage beyond the region for introduction of the treating liquid but before introduction of the wash water to raise the wash water to elevated temperature while in contact with the treated fibrous material.

3,467,577

WATER MODERATED AND COOLED NUCLEAR REACTOR POWER PLANT

Franz Winkler, Erlangen, Germany, assignor to Siemens Aktiengesellschaft, Erlangen, Germany, a corporation of Germany

Filed Aug. 11, 1966, Ser. No. 571,773
Claims priority, application Germany, Aug. 13, 1965, S 98,818
Int. Cl. G21c *15/02, 15/00*
U.S. Cl. 176—55 **1 Claim**



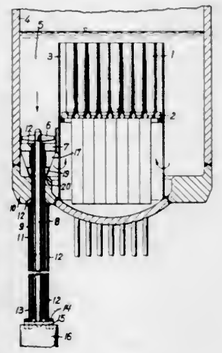
Heterogeneous nuclear reactor power plant moderated and cooled by water at supercritical temperature and pressure includes a coolant loop having means for supplying feed water through the reactor for converting it to live steam and a heat exchanger of the indirect type connected to the feed water supply means upstream of the reactor. Also provided are means for conducting a portion of the live steam from the reactor to the heat exchanger for preheating the feed water passing through the heat exchanger and for producing condensate therein, as well as a conduit connected between the heat exchanger and the feed water supply means at a location thereof upstream of the heat exchanger, and a pump connected in the conduit for returning condensate through the conduit from the heat exchanger to the feed water supply means for preheating the feed water in the supply means.

3,467,578

REACTORS

Heinz Kornbichler, Falkenstein, Taunus, Walter Ullrich, Neu-Isenburg, Alfred Mainka, Kelsterbach, and Karl-Heinz Lohse, Frankfurt am Main, Germany, assignors to Licentia Patent-Verwaltungs-G.m.b.H., Frankfurt am Main, Germany

Filed July 25, 1966, Ser. No. 567,531
Claims priority, application Germany, July 23, 1965, L 51,206
Int. Cl. G21c *15/12*
U.S. Cl. 176—61 **17 Claims**



In a boiling water reactor pressure vessel of the type employing forced circulation of a cooling medium contained therein and enclosing a core and an annular backflow space surrounding the core, at least one forced circulation pump including a rotary impeller disposed in the lower portion of the back-flow space within the pressure vessel, the impeller being arranged to have a vertical axis of rotation for imparting a downward vertical movement to the liquid medium present in the back-flow space.

3,467,579

MICROBIOLOGICAL PROCESS FOR THE PRODUCTION OF LYCOPENE

Maria Luisa Bianchi, Giovanni Franceschi, Maria Pia Marnati, and Celestino Spalla, Milan, Italy, assignors to Società Farmaceutici Italia, Milan, Italy, a corporation of Italy

No Drawing. Filed Aug. 1, 1967, Ser. No. 657,541
Claims priority, application Italy, Aug. 4, 1966, 21,083/66
Int. Cl. C12c *13/00*
U.S. Cl. 195—28 **3 Claims**

Described is a microbiological process for producing lycopene characterized in that the microorganism *Streptomyces chrestomyceticus* var. *rubescens* is cultivated in submerged culture or in surface and under aerobic conditions, in an aqueous nutritive medium containing a source of carbon, nitrogen and mineral salts, at the temperature of from 25° to 35° C., preferably at 28° C., over a period of from 4 to 8 days, and preferably 6 days.

ERRATUM

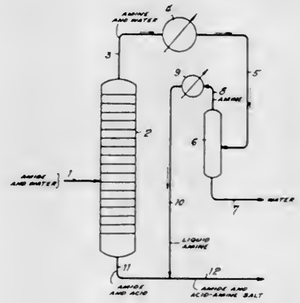
For Class 202—173 see:
Patent No. 3,467,587

3,467,580

ALKYLAMIDE-WATER DISTILLATION AND AMINE NEUTRALIZATION OF ACID FORMED

Edouard J. Weisang, Le Havre, and Jean D. Maurin, Gainneville, France, assignors to Compagnie Francaise de Raffinage, Paris, France

Filed Aug. 8, 1966, Ser. No. 571,122
Claims priority, application France, Aug. 12, 1965, 28,185
Int. Cl. B01d *3/00;* **C07b** *5/00*
U.S. Cl. 203—14 **8 Claims**



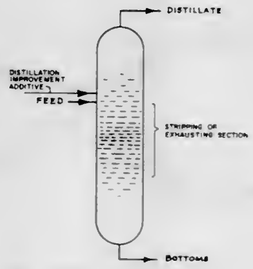
When using alkylamides as extraction solvents in various extraction processes, recovery of the alkylamide solvent for reuse is provided in accordance herewith, particularly the enhanced separation thereof from water, by distillation, which inevitably produces some hydrolysis ot the alkylamide into an alkylamine and a carboxylic acid. Such hydrolysis inevitably wastes alkylamide, and such waste is minimized in accordance herewith by admixing into the recovered distillate the alkylamine formed by such hydrolysis to provide both a neutralization of the acid component (forming an amine salt) and an equilibrium situation which stabilizes against additional hydrolysis of the alkylamide so that it may be effectively recovered for reuse as a solvent with less hydrolysis loss and without additional purification steps.

3,467,581

METHOD FOR IMPROVING DISTILLATION EFFICIENCY OF AN AQUEOUS MIXTURE BY ADDITION OF A SILICON-CONTAINING MATERIAL

Walter R. Privette, La Grange, and Elemer Domba, Olympia Fields, Ill., assignors to Nalco Chemical Company, Chicago, Ill., a corporation of Delaware

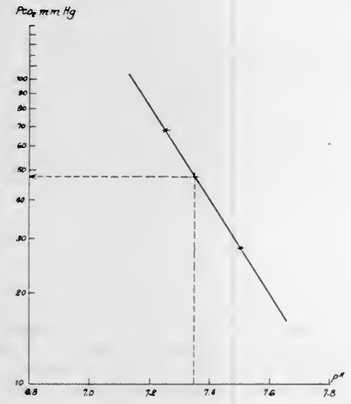
Filed Dec. 13, 1965, Ser. No. 513,603
Int. Cl. B01d *3/34*
U.S. Cl. 203—57 **4 Claims**



A method for improving the efficiency of fixed design distillation systems used to separate water-soluble organic polar compounds from aqueous solutions thereof which

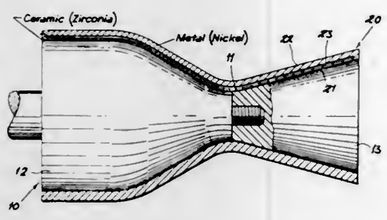
comprises treating the liquids being fractionated by the systems with water insoluble organic compounds.

3,467,582
METHOD FOR THE DETERMINATION OF ACID-BASE STATUS IN BIOLOGICAL FLUIDS
Gert Kokholm Petersen, 31 Skovbrynet, Bagsvaerd, Denmark, and Erik B. Rasmussen, 7 Skovlodden, Holte, Denmark
Filed Dec. 29, 1965, Ser. No. 517,370
Int. Cl. B01k *3/00*
U.S. Cl. 204—1 **12 Claims**



A method for determining the acid-base condition of blood and the like wherein a liquid sample of the blood is introduced into a pH-Pco_2 electrode for measuring these values. The Pco_2 of the sample is then changed by exposing the sample to a gas having a substantially different Pco_2 value. The Pco_2 value of the gas need not be known, and the exact exposure time is not critical. The changed pH and Pco_2 values are then determined, and the respective values, when placed on an acid-base nomogram provide for determination of the desired condition.

3,467,583
PROCESS FOR MAKING A HOLLOW BODY WITH PROTECTIVE INNER LAYER FOR HIGH-TEMPERATURE APPLICATIONS
Hubert L. Naimer, Vienna, Austria, assignor to Camin Laboratories, Brooklyn, N.Y., a corporation of the United States of America
Filed May 16, 1966, Ser. No. 550,202
Int. Cl. C23b *7/02*
U.S. Cl. 204—9 **6 Claims**



Method of making hollow bodies, e.g. rocket nozzles, wherein a mandrel of the shape conforming to the interior of the finished body is coated with a continuous ceramic layer to which is applied, by electrodeposition, an outer metallic shell.

3,467,584
PLATING PLATINUM METALS ON CHROMIUM
Ernest H. Lyons, Jr., Elsah, Ill. (1550 Bay Laurel Drive, Menlo Park, Calif. 94025)
Continuation-in-part of application Ser. No. 493,560, Oct. 6, 1965. This application Oct. 24, 1966, Ser. No. 589,087
Int. Cl. C23b *5/50, 5/30, 1/04*
U.S. Cl. 204—32 **21 Claims**

1. A process for plating a chromium surface to provide a corrosion-resistant adherent precious metal coating, comprising the steps of
(a) depassivating said chromium surface by cathodizing it in an acid bath,
(b) rinsing the depassivated surface with a weak acid bath,
(c) plating on said depassivated surface from an aqueous acidified solution of an alkali iodide containing a salt chosen from the group consisting of PtI_2, PdI_2, $PdCl_2$, $RhCl_3$, RhI_3 and mixtures thereof with each other.

19. A plating bath for plating platinum on chromium, comprising an aqueous solution of about 80 to 90% saturation of an iodide chosen from the group consisting of the iodides of lithium, sodium, potassium, ammonium, and magnesium, 5–15 grams per liter of PtI_2 dissolved therein, and acid to obtain a pH of 2.5 to 4.

20. A plating bath for plating palladium on chromium, comprising an aqueous solution of about 80% to 90% saturation of an iodide chosen from the group consisting of the iodides of lithium, sodium, potassium, ammonium, and magnesium, 5–15 grams per liter of PdI_2 or $PdCl_2$ dissolved therein, and acid to obtain a pH of 2.5 to 4.

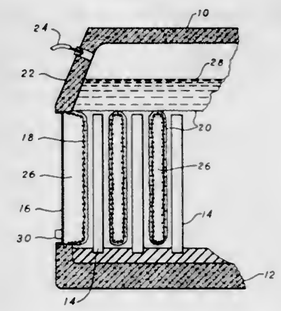
21. A plating bath for plating rhodium on chromium, comprising an aqueous soltuion of about 80% to 90% saturation of an iodide chosen from the group consisting of the iodides of lithium, sodium, potassium, ammonium, and magnesium, 5–15 grams per liter of trivalent rhodium halide dissolved therein, and acid to bring the pH to 2.5 to 4.

3,467,585
METHOD FOR TREATING STEEL BY ELECTROLYSIS IN A MOLTEN THIOCYANATE
Jacques Jean Caubet, 79 Rue Neyron, Saint-Etienne, Loire, France
Continuation-in-part of application Ser. No. 450,223, Apr. 22, 1965. This application Dec. 8, 1967, Ser. No. 691,110
Claims priority, application France, May 28, 1964, 976,152; June 19, 1964, 978,879; Nov. 17, 1964, 995,219
Int. Cl. C23b *5/50, 5/46*
U.S. Cl. 204—39 **4 Claims**

Frictional properties of steel are improved by electrolytic treatment in a bath of molten thiocyanates at a temperature not to exceed about 350° C. and with the treated part anodically connected. A superficial introduction of sulfur results. The thiocyanates may be potassium, sodium, ammonium, etc., in a concentration of 20–100% by weight of the bath, preferably 30–100% by weight of the bath. The inclusion of chlorides such as zinc and/or potassium produces a reducing bath which ensures deoxidization of the steel piece.

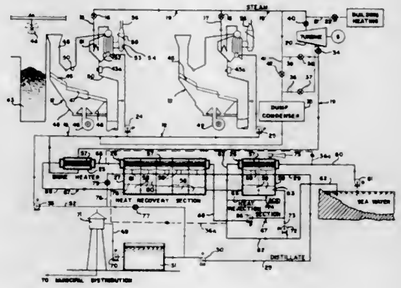
3,467,586
REJUVENATION OF DIAPHRAGMS FOR CHLOR-ALKALI CELLS
Morris P. Grotheer and Edward H. Cook, Jr., Lewiston, N.Y., assignors to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York
Filed Apr. 12, 1965, Ser. No. 447,210
Int. Cl. B01k *3/10*
U.S. Cl. 204—98 **8 Claims**

Asbestos diaphragms which have become less permeable toward the electrolyte in a chlor-alkali electrolytic cell may be rejuvenated by passing an aqueous solution of an acid through the clogged diaphragm until the effluent exhibits a pH below about 8. The acid treatment may be



conducted without disassembly of the cell. The cell, subsequent to acid treatment of the asbestos diaphragm, displays a normal brine level and operates at a reduced cell voltage.

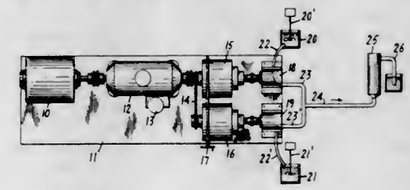
3,467,587
WASTE INCINERATOR STEAM GENERATOR-FLASH EVAPORATOR DESALINATION UNIT
John Martin Connell, Mountain Lake, and William Austin Gardner, Morristown, N.J., assignors to Foster Wheeler Corporation, New York, N.Y., a corporation of New York
Filed Jan. 5, 1966, Ser. No. 518,864
Int. Cl. C02b *1/06;* **B01d** *3/00;* **F01k** *25/00*
U.S. Cl. 202—173 **1 Claim**



A combined refuse disposal-water desalination unit for burning large quantities of waste refuse to obtain a heat source for operating a flash evaporator to obtain large quantities of potable water from sea water.

3,467,588
PRODUCTION OF UNIFORMLY GRADATED COATINGS
Kenneth A. Gebler, Dover, and Martin H. Ortner, Kinnelon, N.J., assignors to Vitro Corporation of America, New York, N.Y., a corporation of Delaware
Filed Oct. 24, 1965, Ser. No. 504,919
Int. Cl. C23b *13/00*
U.S. Cl. 204—181 **11 Claims**

Electrophoretically coating an article; the coating having a plurality of graduated materials, each being fed to the coating bath from different reservoirs; the ratio of the feeding of the materials is gradually changed during the coating process giving gradation which is continuous and

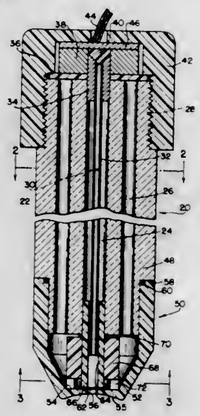


nonlamnar from the article surface to the outside surface of the applied coating.

3,467,589
METHOD OF FORMING A COPPER CONTAINING PROTECTIVE COATING PRIOR TO ELECTRODEPOSITION OF PAINT
Werner Ransch, Stierstadt, Taunus, and Hans Hansen and Gerhard Mueller, Hanau, Germany, assignors to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York
No Drawing. Filed Oct. 19, 1966, Ser. No. 587,679
Int. Cl. C23b *13/00;* **B01k** *5/02*
U.S. Cl. 204—181 **8 Claims**

1. A method for forming a protective coating on a ferrous metal surface which comprises contacting said surface with an acidic zinc phosphate coating solution containing from about 3 to 200 milligrams per liter of Cu^{++} for a period sufficient to form a zinc phosphate coating containing metallic copper on the surface and, thereafter, electrophoretically depositing a paint on the thus-coated surface.

3,467,590
ION-SENSITIVE ELECTRODE STRUCTURE
Edward J. Gibson, Billerica, Stanley L. Shiller, Needham, and John H. Riseman, Cambridge, Mass., assignors to Orion Research, Inc., Cambridge, Mass., a corporation of Massachusetts
Filed June 22, 1966, Ser. No. 559,466
Int. Cl. B01k *3/10, 3/04*
U.S. Cl. 204—195 **9 Claims**



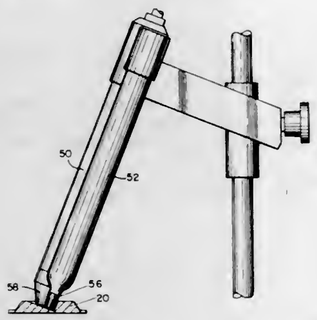
An electrochemical electrode of the potentiometric type employing ion-exchanger liquid to provide an ion-sensitive interface with a solution under test. The electrode has an elongated body enclosing two reservoirs, one for the ion-exchanger liquid, the other for a reference solution in which a reference electrode is disposed. A membrane with an interconnected porous structure disposed across an aperture in the body such that the porous structure provides the only liquid path between the reservoirs, one surface of that portion of the membrane across the aper-

ture contacting the ion-exchanger liquid, the opposite surface being intended to contact the solution under test. Because the membrane is preferentially wettable by the ion-exchanger liquid, the latter fills the pores of the membrane which also serves to wick the liquid from its reservoir.

3,467,591
CONFORMAL DISH

Martin S. Frant, Newton, Mass., assignor to Orion Research, Inc., Cambridge, Mass., a corporation of Massachusetts

Filed July 25, 1966, Ser. No. 567,605
Int. Cl. B01k *3/00*
U.S. Cl. 204—195 **4 Claims**

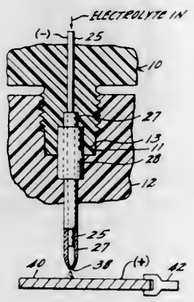


This invention concerns a dish for holding a minute sample of material for electrolytic analysis, the dish being formed to have a pair of depressions in the top surface thereto. The depressions are joined by a channel through which a fluid bridge can be formed from one depression to the other. One depression is intended to have a standard reference electrode inserted thereon, the second depression being intended to have a specific ion responsive electrode inserted thereon. Both depressions are shaped to conform to the tip configuration of the respective electrodes. The second depression also includes extending upwardly from the bottom, a small protuberance which serves to minimize the formation of interfering air bubbles at the ion sensitive surface of the specific ion responsive electrode.

3,467,592
TUBE HOLDING MEANS FOR ELECTROCHEMICAL MACHINING APPARATUS

William Laurel Eisberg, Jr., Springdale, and Carl Eugene Hill, Loveland, Ohio, assignors to General Electric Company, a corporation of New York

Filed Apr. 14, 1966, Ser. No. 542,656
Int. Cl. B23p *1/02*
U.S. Cl. 204—224 **3 Claims**

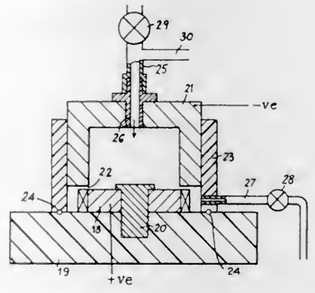


An improved dielectric tube holder for electrolytic machining apparatus includes a cylindrical, hollow, dielectric, elastic member functioning both as a liquid and electric seal and pressed to expand into a particularly sized and aligned cylindrical sealing chamber formed by mating portions of the holder.

3,467,593
ELECTROCHEMICAL DEBURRING UNDER PRESSURE

Eric Winston Dickson and Anthony Frederick Grogan, Leamington Spa, England, assignors to Associated Engineering Limited, Leamington Spa, England, a British company

Filed June 16, 1966, Ser. No. 558,034
Claims priority, application Great Britain, June 17, 1965, 25,753/65
Int. Cl. B23p *1/02;* **B01k** *3/04*
U.S. Cl. 204—224 **6 Claims**

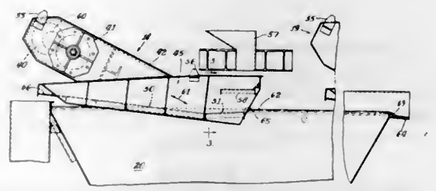


This invention relates to the deburring of metal workpieces by means of electrochemical machining employing a tool formed so that it has an exposed linear portion of metal in the surface of an enclosing body of insulating material, which exposed linear portion is aligned with and in juxtaposed relation to the linear edge of a metal workpiece from which burrs are to be removed. The tool and workpiece are disposed in an enclosure through which electrolyte flows through the working gap between the tool and the workpiece and so as to maintain a desired pressure within the enclosure.

3,467,594
SEPARATING METHOD AND APPARATUS

Albert Musschoot, Barrington, Ill., assignor to General Kinematics Corporation, a corporation of Illinois

Filed Nov. 17, 1966, Ser. No. 595,061
Int. Cl. B03b *3/26*
U.S. Cl. 209—426 **8 Claims**



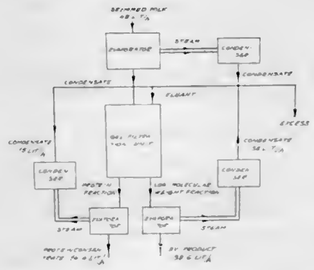
There is disclosed an apparatus and method for separating materials on the basis of their specific gravities. The material to be separated is supported on a foraminous bed, one end of which is immersed in a liquid. A current of the liquid is caused to flow upwardly through the bed while at the same time the bed is giving a conveyong action tending to convey the material toward the upper

end thereof. The effect of the current is to cause lighter materials (but of a specific gravity greater than the liquid) to move by gravity toward the lower end of the bed while the heavier materials are conveyed toward the upper end. Material having a specific gravity less than that of the liquid may be floated off by means of a continuous overflow.

3,467,595
METHOD FOR THE SEPARATION OF SUBSTANCES OF DIFFERENT MOLECULAR SIZES FROM A SOLUTION OF SAID SUBSTANCES IN A SOLVENT

Arne O. Sten, Bergsbrunna, Sweden, assignor to Pharmacia Fine Chemicals AB, Uppsala, Sweden, a company of Sweden

Filed June 20, 1967, Ser. No. 647,520
Claims priority, application Sweden, June 22, 1966, 8,589/66
Int. Cl. B01d *15/06, 15/00*
U.S. Cl. 210—26 **3 Claims**



Substances of different molecular sizes in a solution are separated by passing the solution in a bed of gel grains swollen in the solvent. The different substances are separately removed and collected by eluting with a solvent. The solvent is separated from the recovered fractions by vaporization, condensed, and reused.

3,467,596
ANTIFRICTION COMPOSITIONS AND METHOD OF APPLYING THE SAME ON A SUBSTRATE

Georges Hermann, Annecy, France, assignor to Societe Industrielle des Coussinets, Paris, France, a French company

No Drawing. Filed Jan. 26, 1967, Ser. No. 611,846
Claims priority, application France, Jan. 17, 1966, 47,033
Int. Cl. C10m *7/52;* **C08g** *51/08*
U.S. Cl. 252—12 **16 Claims**

A bearing composition is prepared by mixing a rigid coating resin and a flexible coating resin together with a suitable filler. The rigid coating resin is a single or a combination of the following resins: oil soluble, heat reactive phenolic resins and alkylated amino resins. The flexible coating resin is a single or a combination of the following resins: (1) drying oil modified resoles, (2) silicones and (3) epoxy resins. The preferred fillers are graphite, anhydrous aluminum phosphate, lead sulfide and alkaline borophosphates which have a general formula as follows:

$$P_2O_5 \cdot nB_2O_3 \cdot mM_2O \cdot pH_2O$$

wherein n and m each is in the range between 1.5 and 2,5, p is between 0.5 and 2 and M is an alkali metal. The alkaline borophosphates can also be combined with one or more of the following oxides: Al_2O, PbO, MgO, CaO, Fe_2O_3 and BeO.

Preferably the rigid-flexible coating resinous mixture is mixed with a plasticizer such as polyethylene glycol having a molecular weight about 400. Other fillers which tend to reduce the coefficient of friction of the bearing composition such as graphite and semimetallic elements such as bismuth, can also be incorporated therein.

In preparing a bearing using the composition of this invention, the composition is first preformed into the desired shape and is then deposited to a metal bearing substrate. The substrate is preferably precoated with polyvinyl butyral to increase the shock resistance of the substrate and is preheated to about 80° to 120° C. The preformed composition deposited on the substrate is heated to a temperature in the range between 40° and 70° C. and is rolled to the desired thickness thereby causing the bearing composition to laminate onto the substrate. After the lamination, a very thick coating of a surfacing agent, such as graphite powder, is applied to the laminate on the polymeric surface. The thus coated laminate is cured by baking at a temperature in the range between 180° and 300° C. The cured laminate is then subjected to a conventional molding or shaping process to form a bearing of the desired configuration and dimension.

3,467,597
GRAFTED TERPOLYMERS, THEIR PROCESS OF PRODUCTION, AND USE AS ADDITIVES FOR LUBRICANTS AND FUELS

Norman Tunkel, Perth Amboy, and Harold N. Miller, Plainfield, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Filed Nov. 22, 1966, Ser. No. 596,104
Int. Cl. C10m *3/10;* **C10l** *1/16*
U.S. Cl. 252—56 **4 Claims**

Terpolymers of ethylene, vinyl esters, and a monoolefinically unsaturated polymerizable compound grafted with ethylene are useful in hydrocarbon oils as pour depressants and flow improvers.

3,467,598
PROCESSING AIDS IN PREPARATION OF SBR FLEXIBLE MAGNETS

William J. Kroenke, Brecksville, Ohio, assignor to The B. F. Goodrich Company, New York, N.Y., a corporation of New York

No Drawing. Filed Jan. 16, 1967, Ser. No. 609,327
Int. Cl. H01f *1/117*
U.S. Cl. 252—62.54 **4 Claims**

Alkyl iminodiacetic acids and certain derivatives thereof assist in the combination of large volumes of fine barium ferrite particles with butadiene-styrene synthetic rubber polymers. The heavily loaded rubber stocks are then readily extruded into solid shapes for use as flexible magnets.

3,467,599
ETCHING SOLUTION

Andrew S. Pugliarissi, Sunnyvale, Calif., assignor to Philco-Ford Corporation, Philadelphia, Pa., a corporation of Delaware

No Drawing. Filed Aug. 8, 1966, Ser. No. 570,764
Int. Cl. C09k *3/00;* **C23f** *1/04;* **H05k** *3/06*
U.S. Cl. 252—79.2 **9 Claims**

(1) A metal etching solution consisting essentially of a mixture of 42° Baumé ferric chloride having a concentration of between about 250 milliliters to about 500 milliliters per liter of solution, concentrated hydrochloric acid having a concentration of between about 200 milliliters to about 300 milliliters per liter of solution, concentrated nitric acid having a concentration of between about 200 milliliters to about 300 milliliters per liter of solution, and water having a concentration of up to 250 milliliters per liter of solution. The volume in the solution of each of the constituents nitric acid and hydrochloric acid is less than the volume in the solution of ferric chloride. To reduce the etching rate of the solution, sulphuric acid may be added thereto in an amount not to exceed 5 milliliters per liter of said solution.

(2) The method of selectively etching a metal comprising applying the foregoing solution to said metal.

3,467,600

COMBINATION OPTICAL BRIGHTENER FOR TEREPHTHALIC ACID POLYESTER FIBERS

Reinhard Zweidler, Basel, and Max Keller, Riehen, Switzerland, assignors to Geigy Chemical Corporation, Greenburgh, N.Y., a corporation of Delaware

No Drawing. Original application May 24, 1965, Ser. No. 458,448, now Patent No. 3,416,945, dated Dec. 17, 1968. Divided and this application July 24, 1968, Ser. No. 747,118

Claims priority, application Switzerland, May 29, 1964, 7,060/64, 7,061/64

Int. Cl. C09k *1/02;* **C11d** *3/42*

U.S. Cl. 252—301.2 **8 Claims**

Improved brightener compositions comprising 2-[4'''-chlorine - 2'' - cyanostilbyl-4'']-(naptho-1',2':4,5)-1,2,3-triazole and at least one other brightener compound which forms colorless blue fluorescent solutions and contains no stilbene groups and has at least one hetero atom fused with a benzene ring selected from coumarin, benzoxazole or napthalic acid amides in which the 2-[4'''-chlorine - 2'' - cyanostilbyl-4'']-(naptho-1',2':4,5)-1,2,3-triazole is present in a weight ratio of from 1:5 to 2:1 in relation to the other brightener components. Also optically brightened terephthalic acid polyester fibers which have been impregnated with 2-[4'''-chlorine-2''-cyano-stilbyl-4''] - (naphtho - 1',2':4,5)-1,2,3-triazole which have been heated at preferably 180 to 220° C. to achieve a white to reddish-white whiter-white effect.

3,467,601

COLORIMETRIC INDICATOR

Lothar W. Brauer, Berlin, Germany, assignor to Auergesellschaft G.m.b.H., Berlin, Germany, a corporation of Germany

No Drawing. Filed Aug. 3, 1965, Ser. No. 477,026

Claims priority, application Germany, Aug. 4, 1964, A 46,760

Int. Cl. G01n *31/22*

U.S. Cl. 252—408 **6 Claims**

A colorimetric indicator for gas analysis of high reliability and uniformity in which a chemical reagent is carried on uniform crystals is made by crystallizing uniform crystals from aqueous solution, mixing the crystals with a solution of chemical reagent in a volatile solvent inert to the crystals, and removing the solvent.

3,467,602

PREPARING POROUS REFRACTORY OXIDES BY ADDING AND REMOVING POLYPROPYLENE MICROSPHERES

David W. Koester, Wilmington, Del., assignor to Air Products and Chemicals, Inc., Philadelphia, Pa., a corporation of Delaware

No Drawing. Filed Oct. 24, 1966, Ser. No. 588,758

Int. Cl. B01j *11/50, 11/40*

U.S. Cl. 252—455 **3 Claims**

Beta alumina trihydrate is mixed with dilute nitric acid and 35 micron polypropylene microspheres constituting about 10% of the weight of the ultimate eta alumina, and the composition is extruded and sliced into pellets. The pellets are dehydrated in a high humidity nitrogen atmosphere at an elevated temperature at which most of the polypropylene is thermally decomposed and volatilized. The dehydrated pellets are heated in an atmosphere containing oxygen to burn residual organic matter. The eta alumina pellets have a pore size distribution advantageously superior to conventional eta alumina pellets. Kaolin or silica or related refractory oxide pellets having advantageous distribution of pore size are prepared by similar usage of the polypropylene microspheres.

3,467,603

METHOD OF PREPARING ELECTROPHOTOGRAPHIC PHOTOCONDUCTIVE COMPOSITIONS

James A. Brown, Midland, and Walter L. Garrett, Freeland, Mich., and Henry Wielicki, Philadelphia, Pa., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 396,453, Aug. 14, 1964. This application July 28, 1967, Ser. No. 656,690

Int. Cl. G03c *1/68;* **G03g** *7/00*

U.S. Cl. 252—501 **9 Claims**

The present invention concerns a method of preparing a photoconductive composition for use in electrophotographic printing containing a photoconductive zinc oxide and an insulating film forming resinous binder which comprises milling the zinc oxide in the presence of a fluidizing quantity of a fluidizing agent and in the absence of a binder quantity of said resinous binder; admixing said binder in binder quantities with the zinc oxide so-milled at substantially the termination of the milling period; and preferably mixing said zinc oxide and the resin binder by agitation to a substantially uniform mixture.

3,467,604

MOISTURE PERMEABLE POLYION COMPLEX-RESINOUS COMPOSITES

Alan S. Michaels, Lexington, Mass., assignor to Amicon Corporation, Cambridge, Mass., a corporation of Massachusetts

No Drawing. Continuation-in-part of application Ser. No. 386,420, July 30, 1964. This application July 13, 1967, Ser. No. 653,003

Int. Cl. C08f *47/08*

U.S. Cl. 260—2.5 **10 Claims**

Compositions comprising (1) a polyelectrolyte complex resin, advantageously a highly porous form of said resin, and (2) a hydrophobic organic polymer; these compositions are characterized by a large increase in the moisture vapor transmission rate over the rate obtainable with compositions containing no polyelectrolyte complex resin. The highly-porous forms of polyelectrolyte complex resins most suitable for use in the invention are characterized by low bulk densities and very high surface areas; they are capable of increasing moisture vapor transmission rates of hydrophobic-polymer films into which they are incorporated by about an order of magnitude even when incorporated at loadings below 20% by weight of total polymer.

3,467,605

HIGH DENSITY RIGID POLYETHER/POLYESTER URETHANE FOAMS

Lawrence W. Abercrombie, Meriden, Nabil N. Saaty, Hamden, and Adnan A. R. Sayigh, North Haven, Conn., assignors to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware

No Drawing. Filed July 21, 1966, Ser. No. 566,748

Int. Cl. C08g *22/44, 22/10*

U.S. Cl. 260—2.5 **2 Claims**

High density (30 to 50 p.c.f.) rigid polyurethane foams, useful in the preparation of shoe lasts, bowling balls, and the like, are prepared by reacting, under foam producing conditions, (i) methylenebis(phenyl isocyanate) or a polymethylene polyphenyl polyisocyanate containing 35 to 85 percent of the diisocyanate, (ii) a polyether polyol of functionality 3 to 8 and equivalent weight of 50 to 200 and (iii) a polyester diol of equivalent weight 75 to 600.

Proportions of (ii) and (iii) are chosen so that the overall average functionality is 2.5 to 3.5 and overall combined equivalent weight is 100 to 175. The overall NCO/OH is 0.9:1.0 to 1.2:1.0.

3,467,606

SEMIFLEXIBLE POLYURETHANE FOAM PREPARED IN ABSENCE OF SURFACTANT

Doris M. Rice, Austin, Tex., assignor to Jefferson Chemical Company, Inc., Houston, Tex., a corporation of Delaware

No Drawing. Filed June 27, 1966, Ser. No. 560,788

Int. Cl. C08g *22/46*

U.S. Cl. 260—2.5 **9 Claims**

One-shot semiflexible polyurethane foams are prepared by reacting polyaryl polyisocyanates having functionalities of at least 2.3 with polyether triols having molecular weights of at least 4,500 and high primary hydroxyl content.

3,467,607

POLYURETHANE FOAMS BASED ON A HALOGENATED QUASI-PREPOLYMER

William C. Kuryla and Robert J. Knopf, St. Albans, W. Va., assignors to Union Carbide Corporation, a corporation of New York

No Drawing. Filed Jan. 10, 1967, Ser. No. 608,286

Int. Cl. C08g *22/48, 22/28*

U.S. Cl. 260—2.5 **10 Claims**

This invention relates to halogen containing quasi-prepolymers and to urethane polymers produced therewith. The halogen containing quasi-prepolymers are produced by the reaction of an organic polyisocyanate having an average isocyanato functionality in excess of 2.25 and a monofunctional halogen containing alcohol, thiol or amine. The quasi-prepolymer has a lower isocyanato functionality than that of the starting organic polyisocyanate, but it is at least 2. Polyurethane foams made from the quasi-prepolymers prevent excessive pressure build-up in foam-filled laminated structures.

3,467,608

CATIONIC STARCH COMPOSITIONS AND A METHOD OF PREPARATION

Henry J. Dishburger and William P. Coker, Lake Jackson, Tex., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed June 27, 1966, Ser. No. 560,828

Int. Cl. C08b *19/04;* **D21h** *3/28, 3/48*

U.S. Cl. 260—9 **8 Claims**

Novel cationic starch compositions are prepared in the novel process comprising reacting a starch with a polyalkylenimine or polyalkylenepolyamine having a molecular weight of at least about 50,000. The cationic starches are useful as flocculants.

3,467,609

PLANT GROWTH MEDIUM

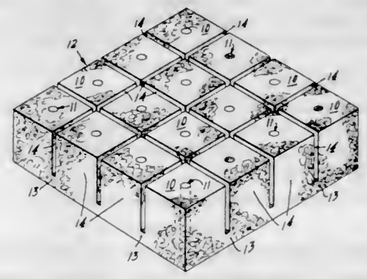
James William Adams, Schofield, and Henry Wilbert Hoftiezer, Rothschild, Wis., assignors to American Can Company, New York, N.Y., a corporation of New Jersey

Continuation-in-part of application Ser. No. 572,762, Aug. 16, 1966. This application June 26, 1967, Ser. No. 651,094

Int. Cl. A01g *31/00*

U.S. Cl. 260—17.4 **7 Claims**

A synthetic plant growth medium suitable for the propagation of plants from either seeds or from cuttings,



which medium is prepared from cellulose fibers having an olefinically unsaturated monomer polymerized thereon.

3,467,610

AQUEOUS FLOOR POLISH COMPOSITIONS CONTAINING A WATER-INSOLUBLE ADDITION POLYMER AND A POLYVALENT METAL CHELATE

Irwin S. Fiarman, Willingboro, N.J., and David R. Gehman, Harleysville, Pa., assignors to Rohm and Haas Company, Philadelphia, Pa., a corporation of Delaware

No Drawing. Filed Nov. 29, 1967, Ser. No. 686,689

Int. Cl. C09g *1/04, 1/10, 1/16*

U.S. Cl. 260—22 **10 Claims**

This invention relates to coating compositions, especially floor polishing compositions, containing a water-insoluble addition polymer, a polyvalent metal chelate and, as optional components, a wax and an alkali-soluble resin wherein the polyvalent metal chelate is derived from a polyvalent metal ion and a bidentate amino acid ligand.

3,467,611

MIXTURE OF AQUEOUS EMULSIONS

Leon Edward Wolinski, Buffalo, N.Y., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Jan. 7, 1966, Ser. No. 519,188

Int. Cl. C08f *33/08*

U.S. Cl. 260—29.6 **31 Claims**

Adhesive compositions are provided of amino-ester modified vinyl polymer emulsions with vinyl-epoxy polymer emulsions wherein the weight ratio of the amino-ester modified vinyl polymer to the vinyl-epoxy polymer is between 1:99 and 99:1.

3,467,612

TEXTILE-TREATING COMPOSITIONS CONTAINING FLUORINATED ACRYLIC POLYMERS AND POLYVALENT METAL SALTS OF WEAK ACIDS

Domenick Donald Gagliardi, 5454 Post Road, East Greenwich, R.I. 02818

No Drawing. Continuation-in-part of application Ser. No. 410,268, Nov. 10, 1964. This application May 12, 1967, Ser. No. 637,893

Int. Cl. C08f *29/16;* **D06m** *15/32*

U.S. Cl. 260—29.6 **21 Claims**

Stable compositions for rendering textiles water and stain repellent and resistant to soiling comprising a perfluoroacrylic polymer emulsion and a polyvalent metal salt of a water-soluble weak acid.

3,467,613

STABLE AQUEOUS EMULSIONS

Eugene S. Barabas, Watchung, and Frederick Grosser, Midland Park, N.J., assignors to GAF Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Nov. 17, 1966, Ser. No. 595,057
Int. Cl. C08f 1/13, 21/02
U.S. Cl. 260—29.6 3 Claims

Stable aqueous emulsions are prepared of a graft terpolymer of a polymer of an N-vinyl lactam, such as polyvinylpyrrolidone having grafted thereon as side chains acrylonitrile and styrene.

3,467,614

CROSS-LINKABLE COPOLYMER DISPERSIONS

Karl Dinges, Odenthal, and Erwin Mueller, Leverkusen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Filed Feb. 14, 1967, Ser. No. 615,903
Claims priority, application Germany, Mar. 25, 1966, F 48,777
Int. Cl. C08f 1/13; C09d 5/02
U.S. Cl. 260—29.6 4 Claims

Aqueous dispersions of cross-linkable copolymers of olefinically unsaturated monomers and 0.2 to 50% by weight, based on the weight of the copolymer, of an acrylic or methacrylic acid amide or ester which contains a terminal halomethyl carbonyl group, said copolymers being cross-linkable in the presence of hydroxyl groups as components of the copolymer or as separately added compounds, at a pH above 7.

3,467,615

EPOXIDIZED HYDROCARBON MIXTURES

Wayne Varon McConnell and William Howard Moore, Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

Continuation-in-part of application Ser. No. 337,760, Jan. 15, 1964. This application June 29, 1967, Ser. No. 659,260
Int. Cl. C08g 30/12; C08f 45/32, 45/58
U.S. Cl. 260—30.4 10 Claims

Novel epoxidized hydrocarbon mixtures (useful as stabilizers and as intermediates in the preparation of novel epoxy resins) are prepared by the liquid phase epoxidation of DAC–B, wherein said DAC–B is a liquid residual fraction of the debutanized residue from the pyrolysis of a natural gas stream predominantly comprising propane, said DAC–B having an iodine number of from about 195 to about 300 and containing from about 87 to about 91 percent carbon and from about 9 to about 13 percent hydrogen.

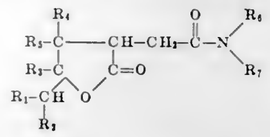
3,467,616

POLYVINYL HALIDE RESINOUS COMPOSITIONS PLASTICIZED WITH ALKENYLSUCCINIC AMIDE-LACTONES

James C. Wygant, Creve Coeur, and Erhard J. Prill, Des Peres, Mo., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Division of application Ser. No. 144,559, Oct. 12, 1961. Continuation of application Ser. No. 713,283, Mar. 15, 1968. This application Mar. 18, 1968, Ser. No. 714,024
Int. Cl. C08f 45/44
U.S. Cl. 260—30.4 8 Claims

Resinous compositions of a vinyl halide polymer such as polyvinyl chloride and copolymers of at least 70 weight percent vinyl halide and up to 30 weight percent of an unsaturated comonomer copolymerizable therewith plasticized with an effective amount of an alkenylsuccinic amide-lactone defined by the illustrative structural formula



wherein R_1, R_2, R_3, R_4, R_5 and R_6 are each selected from the group consisting of hydrogen and alkyl radicals and R_7 is selected from the group consisting of alkyl, aryl, alkaryl, haloaryl, aralkyl and alkenyl radicals, and the R groups contain up to 20 carbon atoms.

3,467,617

MOUNTING MEDIUM, MANUFACTURE AND USE THEREOF

Theodore E. Weichselbaum and Benjamin D. Zmuda, St. Louis, Mo., assignors to Brunswick Corporation, a corporation of Delaware

No Drawing. Filed Oct. 27, 1966, Ser. No. 589,845
Int. Cl. C08f 27/00; C09j 3/14
U.S. Cl. 260—33.6 13 Claims

A liquid shelf stable non-fluorescent mounting medium for mounting biological specimens on glass and like mounting surfaces, comprising a solution in an aromatic hydrocarbon solvent of a thermoplastic acrylic polymer, such as a polymer of n-butyl methacrylate. The polymer is rendered non-fluorescent by treating it with a metal oxide, such as litharge, at a temperature above the melting point of the polymer.

3,467,618

HALLOYSITE-FILLED PHENOLIC MOLDED COMPOSITION

William P. Bramlett, Jr., Lancaster, Pa., assignor to Armstrong Cork Company, Lancaster, Pa., a corporation of Pennsylvania

No Drawing. Filed Dec. 21, 1966, Ser. No. 603,420
Int. Cl. C08g 51/06, 37/16
U.S. Cl. 260—38 5 Claims

A molded article such as a cap for jars and containers having a phenol-formaldehyde resin in cured form as the binder and containing halloysite clay as a filler. Conventional lubricants, colorants, and additional filler may also be present in the composition.

3,467,619

POLYESTER COMPRESSION MOULDING MASSES

Karl Raichle, Krefeld-Bockum, Friedrich Bruhne, Krefeld, Klaus Prater, Krefeld-Bockum, Gunther Nischk, Leverkusen-Wiesdorf, and Karl-Heinz Andres, Cologne-Flittard, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Filed Dec. 23, 1964, Ser. No. 420,808
Claims priority, application Germany, Jan. 18, 1964, F 41,778
Int. Cl. C08f 21/00, 45/04
U.S. Cl. 260—40 7 Claims

Polyester compression moulding mass and process for producing same by initially dissolving a magnesium compound into an unsaturated polyester component at about 60–190° C. to obtain an intermediate polyester product containing about .05%–3% by weight of magnesium in salt-like form, dissolving the intermediate polyester product in a copolymerizable unsaturated monomeric compound, cooling and adding about .5%–10% magnesium oxide by weight of the mixture, admixing filler, additives and an active amount of catalyst therein to obtain the moulding mass.

3,467,620

SYNTHETIC RUBBER COMPOSITIONS

Robert J. Orr, Leo Breitman, and Ernest J. Buckler, Sarnia, Ontario, Canada, assignors to Polymer Corporation Limited, Sarnia, Ontario, Canada, a corporation

No Drawing. Filed May 13, 1965, Ser. No. 455,625
Claims priority, application Canada, May 26, 1964, 903,584
Int. Cl. C08d 3/02, 13/02
U.S. Cl. 260—41.5 20 Claims

A rubbery copolymer of 50–85 mole percent of 2-alkyl butadiene such as isoprene and 50–15 mole percent of a non-ionizable polar comonomer such as acrylonitrile is vulcanized in the absence of carbon black or other reinforcing agents to produce an elastic composition having a tensile strength of at least 65 kg./cm.². Sulfur-vulcanized gum compositions show a tensile strength of at least 130 kg./cm.² and ultimate elongation of at least 500. The composition is suitable for the preparation of rubber-elastic films and rubber threads.

3,467,621

ACCELERATING VULCANIZATION OF RUBBER WITH THIAZOLYLTHIO DIALKYLPYRROLIDINES

Charles G. Summers, Scott Depot, W. Va., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 196,019, Apr. 11, 1962. This application Mar. 20, 1967, Ser. No. 624,200
Int. Cl. C08c 11/62
U.S. Cl. 260—41.5 7 Claims

The vulcanization of diene rubber with sulfur is accelerated by thiazolylthio 2,5-dialkylpyrrolidines.

3,467,622

POLYHALO - α - HYDROXYBENZYLPHOSPHONIC AND -PHOSPHINIC COMPOSITIONS IN POLYMERS

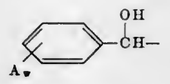
Edward D. Weil, Yonkers, and Edwin Dorfman, Grand Island, N.Y., and Jerome Linder, Westfield, N.J., assignors to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York

No Drawing. Continuation-in-part of application Ser. No. 533,792, Mar. 14, 1966. This application Nov. 29, 1967, Ser. No. 686,695
Int. Cl. C08k 3/28; C08g 51/58; C08f 45/58
U.S. Cl. 260—45.95 4 Claims

A fire retardant composition comprising a polymer and an effective concentration of a fire retardant compound having the general formula



where at least one and a maximum of two of the substituents X, Y and Z is



where each A is halogen independently selected from the group consisting of chlorine and bromine, *w* is an integer between two and five and the remaining substituents are selected from the group consisting of hydrogen, alkoxy, aryloxy and no more than one hydroxy group, and salts of said compounds having hydrogen and/or hydroxy substituents on the phosphorus atom.

3,467,623

SOLUBLE AROMATIC POLYAMIDES CONTAINING BRIDGED PARA-BIPHENYLENE LINKAGES

Helmuth E. Hinderer, Durham, N.C., and Ralph W. Smith, Gulf Breeze, Fla., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Filed Nov. 8, 1966, Ser. No. 592,721
Int. Cl. C08g 20/20
U.S. Cl. 260—47 10 Claims

This invention relates to aromatic polyamides containing para-oriented biphenylene linkages. More particularly, the invention relates to soluble, flexible aromatic polyamides containing bridged para-biphenylene linkages.

3,467,624

EPOXIDE POLYMERS AND PROCESS FOR PREPARING SAME

Akira Onishi, Takao Ishikawa, Ryozo Sakata, and Ryota Fujio, Kodaira, Tokyo, and Teiji Tsuruta, Fushimi-ku, Kyoto, Japan, assignors to Bridgestone Tire Company Limited, Chuo-ku, Tokyo, Japan, a corporation of Japan

No Drawing. Filed May 25, 1964, Ser. No. 370,119
Claims priority, application Japan, June 3, 1963, 38/28,192; July 30, 1963, 38/40,095
Int. Cl. C08g 23/14
U.S. Cl. 260—63 11 Claims

A process for the production of epoxide polymers which comprises polymerizing olefin oxides in the presence of a catalyst system comprising an organo-zinc and an alpha, beta-unsaturated ketone, wherein the polymer product contains units of the said ketone.

3,467,625

MODIFIED HOMO- AND COPOLYMERS OF FORMALDEHYDE OR TRIOXANE AND PROCESS FOR THEIR MANUFACTURE

Harald Cherdron and Hans Joachim Leugering, Wiesbaden, Edgar Fischer, Frankfurt am Main, and Klaus-Dieter Asmus, Hofheim, Taunus, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany, a corporation of Germany

No Drawing. Filed Sept. 14, 1967, Ser. No. 667,669
Claims priority, application Germany, Sept. 21, 1966, F 50,248
Int. Cl. C08g 37/02
U.S. Cl. 260—67 2 Claims

Manufacture of shaped articles of polyoxymethylenes and copolymers of formaldehyde and trioxane with cyclic ethers with the addition of imidazole derivatives whereby the size of the spherolites in the polymers is reduced and their number per unit volume is increased.

3,467,626

PROCESS FOR PREPARING A HIGHLY ELASTIC LINEAR POLYMER AND AN ELASTIC ARTICLE PRODUCED THEREFROM FROM ISOCYANATE TERMINATED PREPOLYMERS REACTED WITH AN AMINOHYDRAZIDE

Eiichi Negishi, Akihiro Horike, and Yoshio Ishizuka, Tokyo, Japan, assignors to Teijin Limited, Osaka, Japan, a corporation of Japan

No Drawing. Filed Oct. 28, 1965, Ser. No. 505,466
Claims priority, application Japan, Nov. 2, 1964, 39/62,198
Int. Cl. C08g 22/04
U.S. Cl. 260—75 9 Claims

A process for preparing highly elastic linear polymers and an elastic article produced therefrom, such process comprising reacting in an inert solvent a linear prepolymer of a molecular weight of at least 700 having

isocyanate groups at its ends with an aminohydrazide of a molecular weight of not more than 140 and having as one of its end groups a primary amino group and as its other a —CONHNH$_2$ group.

3,467,627

ADAMANTANE POLYESTERS

Irl N. Duling, West Chester, Abraham Schneider, Overbrook Hills, and Gary L. Driscoll, Boothwyn, Pa., assignors to Sun Oil Company, Philadelphia, Pa., a corporation of New Jersey

Filed Oct. 14, 1966, Ser. No. 586,825
Int. Cl. C08g *17/08, 22/10*
U.S. Cl. 260—75 **18 Claims**

Linear polyesters having a good temperature, hydrolitic and ultraviolet stability are prepared from hydrocarbon substituted adamantane diols and organic diacids. The hydroxyl groups are at bridgehead positions in the adamantane molecule and preferably the admanatane molecule contains substituents at the remaining bridgehead positions thus removing all tertiary hydrogen atoms therefrom. Some of the polyesters are noncrystalline and are useful as coatings for paper to provide waterproof barriers or strippable coatings. Other polyesters particularly those prepared with aromatic diacids have a high degree of crystallinity and are suitable for producing films and fibers said polyesters can be reacted with diisocyanates to produce products useful as films, coating, and insulating foams.

3,467,628

METHOD OF INCREASING THE MOLECULAR WEIGHT OF OLEFIN POLYMERS BY USE OF A POLYISOCYANATE MODIFYING AGENT

Robert Dean Thurn, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Sept. 28, 1966, Ser. No. 582,500
Int. Cl. C08f *27/10*
U.S. Cl. 260—77.5 **4 Claims**

A method of increasing the molecular weight of polymers of α-olefins made with soluble vanadium or titanium coordination catalysts by adding, during the synthesis of the polymer, an organic polyisocyanate in an amount sufficient to supply from 20 to 60 parts by weight of isocyanate groups for each gram atom of titanium or vanadium present in the polymerization vessel prior to terminating the polymerization reaction by addition of a Zerewitinoff-active hydrogen compound. Improved green strength results and a post-synthesis treatment step is avoided.

3,467,629

COPOLYMERS OF ACRYLONITRILE AND PROCESS FOR PREPARING SAME

Rudi Mayer, Leverkusen-Fettehenne, and Carlhans Süling, Leverkusen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Filed Mar. 28, 1967, Ser. No. 626,398
Claims priority, application Germany, Apr. 9, 1966, F 48,914
Int. Cl. C08f *15/22, 15/40*
U.S. Cl. 260—79.3 **4 Claims**

Copolymers of acrylonitrile are produced which contain at least 80% by weight acrylonitrile monomer by copolymerising acrylonitrile and an ethylenically unsaturated neutral comonomer, together with a betaine in an aqueous medium at pH below 7.

3,467,630

METHOD OF PRODUCING LIGHT-SENSITIVE PHOTOCROSSLINKABLE POLYMERS

Justus Danhäuser, Heinrich Gold, and Hans Holtschmidt, Cologne-Stammheim, and Willibald Pelz, Opladen, Germany, assignors to Agfa-Gevaert Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Filed July 29, 1966, Ser. No. 568,749
Claims priority, application Germany, Aug. 28, 1965, A 50,136
Int. Cl. C08f *27/06;* **G03c** *1/68*
U.S. Cl. 260—79.5 **1 Claim**

This invention relates tc the production of light sensitive polymers which are a photocrosslinkable layer in photographic material by the solution of an unsaturated hydrocarbon polymer in a molecular weight of 10,000 to 250,000 with sulphenyl chlorides carrying photosensitive groups. The photographic material prepared from the resultant film-forming polymer exhibits improved resistance to acids.

3,467,631

COPOLYMERS OF ETHYLENE, HIGHER ALPHA-OLEFINS AND CYCLOHEXENONORBORNENES

Alberto Valvassori, Nazzareno Cameli, and Guido Sartori, Milan, Italy, assignors to Montecatini Edison S.p.A., Milan, Italy, a corporation of Italy

No Drawing. Filed Sept. 15, 1965, Ser. No. 487,617
Claims priority, application Italy, Sept. 17, 1964, 19,889/64
Int. Cl. C08f *1/40, 21/00*
U.S. Cl. 260—79.5 **21 Claims**

There are provided modified linear, amorphous and vulcanizable ethylene/higher alpha-olefin copolymerizates made up of macromolecules containing sites of unsaturation resulting from the inclusion of cyclohexenonorbornenes in the starting monomer mixtures, and which are vulcanizable with the aid of conventional vulcanizing recipes based on sulfur.

3,467,632

METHOD OF MAKING MODIFIED BETA-PINENE RESIN AND RESULTANT PRODUCT

Bernard J. Davis, Houston, Tex., assignor to Reichhold Chemicals, Inc., White Plains, N.Y.

No Drawing. Filed Oct. 25, 1965, Ser. No. 505,192
Int. Cl. C08f *15/42*
U.S. Cl. 260—80.7 **9 Claims**

This invention discloses the production of a hard resin polymer in solution. Olefinic streams containing piperylene or isoprene or mixtures thereof are blended with beta-pinene and subsequently reacted with the aid of a Friedel-Crafts catalyst at a temperature from about 0° C. to about 80° C. The quantity of beta-pinene used should be at least 5% by weight of the blend.

3,467,633

ALPHA-OLEFIN, NON-CONJUGATED ALIPHATIC DIENE, 2 - NORBORNENE (MONO - UNSATURATED) TERPOLYMER COMPOSITIONS AND METHOD OF TACKING WITH SAME

Alexander Thomas Harris, Wilmington, and Kenneth Francis King, Hockessin, Del., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Oct. 11, 1965, Ser. No. 494,939
Int. Cl. C08f *17/00*
U.S. Cl. 260—80.78 **13 Claims**

Alpha-olefin, non-conjugated aliphatic diene, 2-norbornene (mono-unsaturated) terpolymer composition and the method of tacking uncured elastomeric articles of sulfur-curable alpha-olefin copolymers with same.

3,467,634

ORGANOSILICON TERPOLYMERS

Burton B. Jacknow and Joseph H. Moriconi, Rochester, N.Y., assignors to Xerox Corporation, Rochester, N.Y., a corporation of New York

No Drawing. Filed Aug. 10, 1966, Ser. No. 571,388
Int. Cl. C08f *19/10, 15/40*
U.S. Cl. 260—80.71 **9 Claims**

A substantially linear addition terpolymer of a styrene composition, an acrylate or methacrylate ester and a polymerizable organo silicon composition selected from the group consisting of silanes, silanols and siloxanes having from 1 to 3 hydrolyzable groups and an organic group attached directly to a silicon atom containing an unsaturated carbon to carbon linkage.

3,467,635

COPOLYMERS OF TETRAFLUOROETHYLENE AND OLEFINS CURABLE TO ELASTOMERS

Wallace Raymond Brasen, Claymont, and Charles Spencer Cleaver, Wilmington, Del., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 455,940, May 14, 1965, which is a continuation-in-part of application Ser. No. 407,860, Oct. 30, 1964. This application Sept. 8, 1966, Ser. No. 577,799
Int. Cl. C08f *15/40, 15/06*
U.S. Cl. 260—80.76 **14 Claims**

Copolymers of tetrafluoroethylene units, olefin units and optional cure-site units, the molar ratio of said tetrafluoroethylene units to said olefin units being about 1:0.6–1.2, said olefin units being selected from (1) 50 to 100 mole percent propylene, butene-1 or mixtures thereof together with from 0 to 50 mole percent ethylene or isobutylene, and (2) ethylene and isobutylene in about 1:1 molar proportion.

3,467,636

REDOX CATALYST SYSTEM FOR PREPARING VINYLIDENE FLUORIDE INTERPOLYMERS

Arthur Nersasian, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 618,347, Feb. 24, 1967. This application Nov. 15, 1967, Ser. No. 683,126
Int. Cl. C08f *1/06, 15/40, 15/06*
U.S. Cl. 260—80.77 **5 Claims**

The preparation of vinylidene fluoride interpolymers (e.g., with hexafluoropropene and tetrafluoroethylene) in aqueous medium with a peroxy compound like ammonium persulfate and a second component like NaI, NaBr, NaOCl or NaOBr, or I_2, Br_2 or Cl_2 in water. Exceptionally low Mooney viscosity polymers (e.g., ML–10/212° F. of as low as 7) can be prepared which cure to high-quality vulcanizates.

3,467,637

LOW MOLECULAR WEIGHT OLEFIN INTERPOLYMERS PREPARED IN THE PRESENCE OF BICYCLO[2.2.1]HEPTA-2,5-DIENE

Paul J. Prucnal, Cheswick, Pa., assignor to PPG Industries, Inc., a corporation of Pennsylvania

No Drawing. Filed June 1, 1965, Ser. No. 460,551
Int. Cl. C08f *15/40, 1/42*
U.S. Cl. 260—80.78 **8 Claims**

This invention relates to low molecular weight polymers of ethylene and other alpha monoolefins produced by reacting said monomers in the presence of a Ziegler catalyst and small amounts of bicyclo[2.2.1]hepta-2,5-diene. The copolymers are useful inter alia in coatings, adhesives and as tackifying resins.

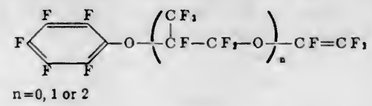
3,467,638

FLUORINATED CURE-SITE MONOMERS AND VULCANIZABLE FLUOROCARBON POLYMERS MADE THEREWITH

Dexter Brayton Pattison, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Mar. 7, 1967, Ser. No. 621,122
Int. Cl. C08f *15/02;* **C07c** *43/26, 51/58*
U.S. Cl. 260—87.5 **5 Claims**

Monomers of the formula:



n=0, 1 or 2

can be prepared in high yield by reacting cesium perfluorophenoxide with hexafluoropropylene epoxide and pyrolyzing the intermediate acid fluorides. The monomers where *n* is 1 or 2 can be copolymerized readily with other vinyl type monomers and vulcanized by treatment with aliphatic diamines or hydrazine.

3,467,639

CATALYTIC COMPOSITIONS FOR POLYMERIZATION AND COPOLYMERIZATION OF ALPHA-MONO-OLEFINS, AND PROCESSES USING SUCH COMPOSITIONS

Walter Marconi and Sebastiano Cesca, San Donato Milanese, and Sergio Arrighetti, Chiari, Italy, assignors to SNAM S.p.A., Milan, Italy, a company of Italy

No Drawing. Filed Oct. 14, 1965, Ser. No. 496,154
Claims priority, application Italy, Feb. 3, 1965, 888
Int. Cl. C08f *15/04, 3/08;* **B01j** *11/78*
U.S. Cl. 260—88.2 **2 Claims**

For polymerization and copolymerization of alpha-mono-olefins a composition is employed comprising a compound of a transition metal selected from the IV to VIII groups of the Periodic System and an aluminum compound which is a linear polymer of polyiminic nature containing at least four, and preferably between four and fifty repeating units:



where R is a hydrocarbon radical selected from alkyl, aryl, and cycloalkyl radicals.

3,467,640

PROCESS FOR THE MANUFACTURE OF CHLORINATED POLYOLEFINS

Joseph Kaupp, Helmut Klug, Karl Heinz Mittelberger, and Hans Georg Koln, all of Gerstbofen, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany, a corporation of Germany

No Drawing. Continuation-in-part of application Ser. No. 57,618, Sept. 22, 1960. This application Feb. 15, 1965, Ser. No. 432,895
Int. Cl. C08f *29/02, 37/00*
U.S. Cl. 260—88.2 **4 Claims**

A process for the manufacture of highly stable readily soluble chlorination products containing 50–80% of chlorine and having a viscosity of less than 1000 centipoises at 20° C. wherein a portion of the chlorination is conducted above the sintering temperature of the polymer being chlorinated and continuing this part of the chlorination until the chlorine content of the polymer is increased by at least 1% by weight as compared to its chlorine content prior to attaining sintering temperature.

3,467,641
POLYMERIZATION PROCESS

Arkle D. Taylor, Tallmadge, Ohio, assignor to The Goodyear Tire & Rubber Company, Akron, Ohio, a corporation of Ohio

No Drawing. Filed Feb. 2, 1967, Ser. No. 613,419
Int. Cl. C08d *1/14, 3/04;* C08c *11/44*
U.S. Cl. 260—94.3 8 Claims

A process of producing high cis 1,4 polymers of good color from 2-alkyl substituted 1,3-butadiene is disclosed. The process is the polymerization of 2-alkyl 1,3-butadiene by means of organoaluminum compounds/titanium halides catalysts wherein the polymer chain growth reaction is stopped or terminated by means of alkali metal alcoholates or alkali metal hydroxides in mixture with small quantities of triisopropanolamine. The triisopropanolamine is added simultaneously with the alkali metal alcoholates or hydroxides or immediately subsequent to their addition. The effect of the combination of triisopropanolamine and alkali metal alcoholates or alkali metal hydroxides is to produce a stable and improved lightcolored polymer.

3,467,642
METHOD FOR MAKING CHROMOGEN-BONDED-FLUORESCENT-BONDED-POLYMERS

Shojiro Horiguchi, 965 Shimohoya, Hoyamachi, Kitatama-gun, Tokyo, Japan, and Michiei Nakamura, 156, 5-chome, Motobuto-cho, Saitama-ken, Urawashi, Japan

No Drawing. Filed Dec. 28, 1965, Ser. No. 517,080
Claims priority, application Japan, Dec. 29, 1964, 39/74,160
Int. Cl. C07c *113/04;* C08f *15/42;* C09b *57/00*
U.S. Cl. 260—141 7 Claims

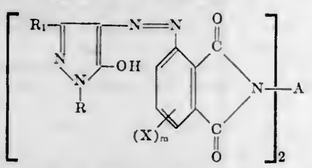
A mixture is made of a diazonium salt of a chromogen such as either a dye, a pigment, or an intermediate of a dye or pigment, and a diazonium salt of a fluorescent compound such as a fluorescent dye, a pigment or an intermediate of a fluorescent dye or pigment and one or more species of addition polymerizable monomers. The monomers are polymerized using both the diazonium salt of the chromogen and the diazonium salt of the fluorescent compound as initiators for the polymerization to form the chromogen-bonded-polymer.

3,467,643
DISAZO DYESTUFFS

Walter Horstmann, Cologne-Buchheim, and Edgar Siegel, Leverkusen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Filed July 19, 1966, Ser. No. 566,210
Claims priority, application Germany, Jan. 14, 1966, F 48,167
Int. Cl. C09b *31/14, 33/12*
U.S. Cl. 260—160 10 Claims

Azo dyestuffs which are free from sulphonic acid groups and which correspond to the formula:



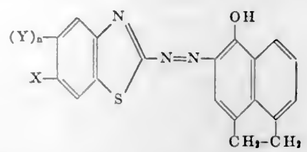
in which R denotes a member selected from the class consisting of hydrogen, identical or different alkyl, aralkyl, carbocyclic and heterocyclic radicals; R_1 stands for radicals selected from the group consisting of alkyl, aryl, carbalkoxy and carbonamido groups; X stands for substituents; *m* stands for an integer from 0 to 3; and A represents a member taken from the class consisting of aliphatic, carbocyclic and heterocyclic radicals.

3,467,644
MONOAZO DYESTUFFS

Gerhard Wolfrum, Opladen, and Hermann Wunderlich, Cologne-Mulheim, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Filed July 12, 1966, Ser. No. 564,532
Claims priority, application Germany, July 28, 1965 F 46,729
Int. Cl. C09b *29/36, 29/00*
U.S. Cl. 260—158 6 Claims

Monoazo dyestuffs useful in dyeing metal-containing synthetic fibers such as polypropylene corresponding to the general formula



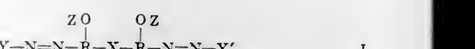
wherein X is lower alkoxy, halogen, alkyl, carboxy lower alkyl, mercapto lower alkyl, trifluoromethyl, or hydroxy ethyl; Y is lower alkoxy, halogen, or alkyl; and *n* is an integer from 0 to 1.

3,467,645
WATER-SOLUBLE DISAZO DYESTUFFS

Heinz Keller, Muttenz, and Hans Grossmann, Oberwil, Switzerland, assignors to Durand & Huguenin A.G., Basel, Switzerland

No Drawing. Filed Nov. 6, 1964, Ser. No. 409,589
Claims priority, application Switzerland, Nov. 8, 1963, 13,776/63; Aug. 14, 1964, 10,635/64
Int. Cl. C09b *31/00, 45/24, 39/00*
U.S. Cl. 260—174 1 Claim

Water-soluble metallizable disazo and trisazo dyestuffs corresponding to the general formula



I

wherein X denotes the direct bond, the radical of a hydrocarbon having 1–7 carbon atoms or a bridge of the formula —CO—, —O—, —S—, —SO_2—, —NH—,

—NHCONH—, —NHCSNH—, —NHCO—

—$NHSO_2$—, —N=N—, Y and Y′ denote the radical of a coupling component comprising the ortho-hydroxycarboxy benzene grouping, which coupling component is selected from the series of the acetoacetamides, 5-pyrazolones, benzenes and naphthalenes coupling in ortho-position with respect to a hydroxyl group, Z denotes a hydrogen atom or the group —SO_3H and R denotes a benzene radical in which the OZ group is in ortho position to the azo group and X is in meta or para position to the azo group and to the group OZ, the dyestuff molecule containing at least 2 groups of the formula —SO_3H.

One representative of dyestuffs of Formula I is produced by tetrazotizing diamines of the general formula



II

wherein R, X and Z have the above said meanings, and allowing them to react with the coupling components comprising the ortho-hydroxy-carboxy benzene grouping, which coupling components are selected from the series of acetoacetamides, 5-pyrazolones as well as benzenes and naphthalenes coupling in ortho position with respect to a hydroxyl group.

3,467,646
NOVEL FOAMS AND METHODS FOR THEIR PRODUCTION

Charles P. West, Metuchen, and Alan E. Weinberg, Verona, N.J., and William F. Oliver, New Cassel, and Rafael J. Perez, Flushing, N.Y., assignors to U.S. Plywood-Champion Papers Inc.

No Drawing. Filed May 13, 1965, Ser. No. 455,596
Int. Cl. C08f *47/10;* C08g *53/10*
U.S. Cl. 260—2.5 23 Claims

Flexible or rigid foam reaction products of polymerized diolefins produced by the interaction of a liquid diene polymer, a rosin and/or fatty acid, and sulfur monochloride.

3,467,647
CATIONIC AND ANIONIC SUBSTITUTED POLYSACCHARIDES AND PROCESS FOR PREPARING SAME

Harm Benninga, Noordlaren, Netherlands, assignor to W. A. Scholten's Chemische Fabrieken N.V., Groningen, Netherlands, a corporation of the Netherlands

No Drawing. Filed Mar. 8, 1967, Ser. No. 621,425
Claims priority, application Great Britain, Mar. 10, 1966, 10,472/66
Int. Cl. C08b *19/04*
U.S. Cl. 260—209 14 Claims

Cationic and anionic substituents are introduced into polysaccharides, more particularly starches and certain plant mucilages so as to produce polysaccharide derivatives with a predetermined isoelectric point which have protein-like properties. They are valuable for various industrial purposes, in which the production of films or coatings of reduced solubility in water or the stabilization of aqueous dispersions of fine particles are of importance. The new polysaccharide derivatives are, for instance, particularly suitable for the production of water-resistant pigment coated paper.

3,467,648
PROCESS FOR THE PREPARATION OF NUCLEOSIDE PHOSPHATE

Herbert Witzel and Hartmut Follmann, Marburg an der Lahn, Germany, assignors to Zellstofffabrik Waldhof AG, Mannheim-Waldhof, Germany, a corporation of Germany

No Drawing. Filed July 11, 1967, Ser. No. 652,404
Claims priority, application Germany, July 28, 1966, Z 12,357
Int. Cl. C07d *51/50*
U.S. Cl. 260—211.5 4 Claims

This invention relates to a process for the preparation of a

$$\text{nucleoside}_{(n)}\text{-phosphate}_{(n-1)}$$

where *n* is an integer of 2 or 3 which comprises the steps of reacting a mononucleotide completely esterified in the sugar moiety selected from the group consisting of 2′-mononucleotides and 3′-mononucleotides with a compound selected from the group consisting of a nucleoside having unprotected OH groups and a

$$\text{nucleoside}_{(m)}\text{-phosphate}_{(m-1)}$$

where $m=n-1$, having unprotected OH groups in an organic solvent media in the presence of a condensation agent, separating the reaction products, reacting the reaction products with an alkaline hydrolyzing agent and recovering said

$$\text{nucleoside}_{(n)}\text{-phosphate}_{(n-1)}$$

selected from the group consisting of

$$2'\rightarrow 5'\text{-nucleoside}_{(n)}\text{-phosphate}_{(n-1)}$$

and

$$3'\rightarrow 5'\text{-nucleoside}_{(n)}\text{-phosphate}_{(n-1)}$$

3,467,649
PURIFYING ESSENTIAL OIL OF *ARTEMISIA PONTICA* L.

Gian Mario Nano and Paolo Cabella, Turin, Italy, assignors to Collins Chemical Co., Inc., New York, N.Y.

No Drawing. Filed Mar. 27, 1967, Ser. No. 625,941
Int. Cl. C07g *17/00;* C11b *9/02*
U.S. Cl. 260—236.6 2 Claims

The invention provides a method of selectively removing α-thujone (without a simultaneous removal of isoartemisiaketone) from an essential oil of *Artemisia pontica* L. by reaction with Girard D.-reagent under specific conditions, followed by phase-splitting and solvent extraction.

3,467,650
3 - CHLORO - 5 - (α - DIMETHYLAMINOPROPYL)-IMINODIBENZYL AND ITS ACID ADDITION SALTS

Walter Schindler, Riehen, near Basel, Switzerland, and Henri Dietrich, Birsfelden, near Basel, Switzerland, assignors to Geigy Chemical Corporation, Ardsley, N.Y., a corporation of Delaware

No Drawing. Filed Dec. 4, 1959, Ser. No. 857,274
Claims priority, application Switzerland, Dec. 6, 1958, 67,046/58, 67,049/58; Jan. 12, 1959, 68,201/59
Int. Cl. C07d *41/08;* A61k *27/00*
U.S. Cl. 260—239 3 Claims

1. 3-chloro-5-(γ-dimethylamino-propyl)-iminodibenzyl.

3,467,651
1,3-DIAZETIDINE-2-THIONES

Adnan A. R. Sayigh, North Haven, and Henri Ulrich, Northford, Conn., assignors to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware

No Drawing. Filed Jan. 18, 1965, Ser. No. 426,414
Int. Cl. C07d *47/00*
U.S. Cl. 260—239 4 Claims

1,3,4-trisubstituted - 1,3 - diazetidine-2-thiones are prepared by reacting the appropriate carbodiimide with the appropriate isothiocyanate in approximately stoichiometric proportions at normal room temperatures, optionally in the presence of an organic solvent. Certain 1,3-thiazetidine-2-ones are also disclosed as starting materials in the preparation of certain of the isothiocyanates employed in the above reaction.

The 1,3,4-trisubstituted - 1,3 - diazetidine-2-thiones are useful as curing agents for elastomeric polycarboxylic acids and, by reason of their ready dissociation into their component parts on heating, as a convenient means of storing isothiocyanates in a stable form.

3,467,652
SYNTHESIS OF GONANE DERIVATIVES

Gordon Alan Hughes, Haverford, Pa., and Herchel Smith, 500 Chestnut Lane, Wayne, Pa. 19087; said Hughes assignor to said Smith

Continuation-in-part of application Ser. No. 228,384, Oct. 4, 1962. This application Mar. 25, 1966, Ser. No. 537,432
Int. Cl. C07c *169/36, 169/10;* A61k *27/00*
U.S. Cl. 260—239.55 15 Claims

The synthesis of novel 13-polycarbon-alkyl compounds having a saturated gonane nucleus is described. These compounds have qualitatively varying biological effects in animals, particularly estrogenic, androgenic, antiandrogenic, myotrophic, blood lipid, and central nervous system effects. Additionally, they are useful as intermediates for the preparation of other gonanes possessing hormonal properties.

3,467,653
ANTICOCCIDIAL SULFANILAMIDO-THIADIAZOLES

Leonard M. Weinstock, Rocky Hill, Roger J. Tull, Metuchen, and Peter I. Pollak, Scotch Plains, N.J., assignors to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey

No Drawing. Continuation-in-part of application Ser. No. 496,700, Oct. 15, 1965. This application Aug. 1, 1966, Ser. No. 569,014
Int. Cl. C07d *91/68;* A61k *27/00*
U.S. Cl. 260—239.95 3 Claims

Anticoccidial 3 - alkenyloxy(alkynyloxy or alkoxy - 4 - sulfanilamido - 1,2,5 - thiodiazoles, or the N^4 - acyl derivatives thereof, are prepared by treating a 3-chloro-4-alkenyloxy(alkynyloxy or alkoxy)-1,2,5-thiodiazole with sulfanilamide or an N^4-acylsulfanilamide in the presence of an alkali metal base to produce an alkali metal salt of the sulfathiadiazole which is converted to the free base by acidification of the reaction mixture. It is contemplated that compositions containing such sulfathiodiazoles as the essential active ingredient will be administered orally in treatment and control of coccidiosis in poultry.

3,467,654
PROCESS FOR THE RECOVERY AND PURIFICATION OF CEPHALOSPORIN C

Mack H. McCormick, West Lafayette, Ind., assignor to Eli Lilly and Company, Indianapolis, Ind., a corporation of Indiana

No Drawing. Filed Aug. 19, 1966, Ser. No. 573,489
Int. Cl. C07d *99/24*
U.S. Cl. 260—243 3 Claims

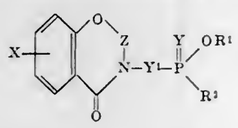
An improvement in a process for the recovery and purification of cephalosporin C from crude fermention medium is disclosed.

3,467,655
ORGANOPHOSPHORUS INSECTICIDES DERIVED FROM MONO- AND DI-OXO BENZOXAZINES

Michio Nakanishi, Oita, and Atsushi Tsuda and Shuji Inamasu, Fukuoka, Japan, assignors to Yoshitomi Pharmaceutical Industries, Ltd., Higashi-ku, Osaka, Japan

No Drawing. Filed Apr. 5, 1967, Ser. No. 628,560
Claims priority, application Japan, Apr. 5, 1966, 41/21,598; Nov. 15, 1966, 41/75,062; Nov. 16, 1966, 41/75,600
Int. Cl. C07f *9/08, 9/40;* A01n *9/36*
U.S. Cl. 260—244 13 Claims

Organophosphorus compounds of the formula



wherein

X is H, halogen or alkyl with a maximum of 4 carbon atoms,

Z is carbonyl, alkylidene with a maximum of 6 carbon atoms, benzylidene or cyclohexylidene,

=Y is =O or =S,

$—Y^1—$ is —O— or $—CH_2—Y^2—$ in which $—Y^2—$ is —O— or —S— directly bound to



R^1 is methyl or ethyl, and

R^2 is methoxy, ethoxy or phenyl,

are effective insecticides and miticides with low toxicity to to warmblooded animals and of low residual toxicity.

3,467,656
4-ARYL-3,1-BENZOXAZINE-2-THIONE

Werner Metlesics, Clifton, and Leo Henryk Sternbach, Upper Montclair, N.J., assignors to Hoffmann-La Roche Inc., Nutley, N.J., a corporation of New Jersey

No Drawing. Continuation-in-part of application Ser. No. 445,248, Apr. 2, 1965, now Patent No. 3,346,638, dated Oct. 10, 1967. This application Sept. 6, 1967, Ser. No. 665,719
Int. Cl. C07d *87/14;* A61k *27/00*
U.S. Cl. 260—244 2 Claims

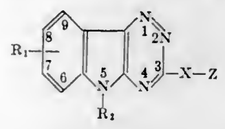
4-phenyl substituted-3,1-benzoxazine-2-thiones. Such compounds are convertible into 4-phenyl substituted-3,1-benzothiazin-2-ones which are in turn convertible into 5-phenyl substituted-4,1-benzothiazepin-2(1H)-ones, compounds having choleretic and antidepressant activities.

3,467,657
AS-TRIAZINO[5,6-b]INDOLES

Jan Mieczyslaw Zygmunt Gladych, Hertford, and John Harold Hunt, Theydon Bois, England, assignors to Allen and Hanburys Limited, London, England

No Drawing. Original application Aug. 7, 1967, Ser. No. 658,644. Divided and this application July 16, 1968, Ser. No. 745,126
Claims priority, application Great Britain, Sept. 17, 1963, 36,551/63; Feb. 20, 1964, 7,168/64; Aug. 27, 1964, 35,190/64; July 18, 1967, 33,050/67
Int. Cl. C07d *55/10;* A01n *9/22*
U.S. Cl. 260—249.5 8 Claims

As-triazino[5,6-b]indoles of the formula:



where R_1 is hydrogen, halogen, alkyl of 1–5 carbon atoms and preferably alkyl of 1–4 carbon atoms, hydroxy, alkoxy, nitro, amino or trifluoromethyl; R_2 is hydrogen, lower alkyl of 1–5 carbon atoms and preferably alkyl of 1–4 carbon atoms, benzyl or phenethyl; X is oxygen, sulphur, SO, or SO_2; and Z is hydrogen, lower alkyl of 1–5 carbon atoms and preferably alkyl of 1–4 carbon atoms, or lower alkenyl of 3–5 carbon atoms, provided that when X is SO or SO_2, Z is not hydrogen, exhibit antiviral activity.

N-oxide derivatives with a N→O group and pharmaceutically acceptable non-toxic salts are also within the scope of the above compounds. Particularly valuable compounds are those substituted in the 3-position with mercapto or methylmercapto moieties.

3,467,658
QUATERNARY LEUCOAURAMINE COMPOUNDS

Benjamin Lipka, Amherst, N.Y., assignor to Allied Chemical Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed June 14, 1965, Ser. No. 463,942
Int. Cl. C07d *49/18, 51/70*
U.S. Cl. 260—268 11 Claims

There are provided quaternary bis(p-dialkylaminophenyl)-methyl amine derivatives in which the amino N attached to the methyl C constitutes part of the residue of a primary or secondary amine also containing at least one other nitrogen atom, which other nitrogen atom is capable of being quaternized. These compounds are valuable as color precursors for colorless carbon paper and impact printing systems.

3,467,659
PROCESS FOR THE REDUCTION OF PYRIDINE N-OXIDES

Francis A. Daniher, Royal Oak, Mich., and Brennie E. Hackley, Jr., Joppa, Md., assignors to Ash Stevens, Inc., Detroit, Mich., a corporation of Michigan

No Drawing. Filed Sept. 14, 1966, Ser. No. 579,196
Int. Cl. C07d *31/02, 39/00*
U.S. Cl. 260—290 10 Claims

Pyridine N-oxide can be reduced to pyridine by reaction of the oxide with sulfur dioxide at elevated temperatures in water or a substantially water-miscible polar solvent, followed by addition of sufficient base to liberate the reduced pyridine as its free base. The process is also used to reduce substituted pyridine N-oxides to the correspondingly substituted pyridine compounds. Because pyridine N-oxides are more susceptible than pyridine to aromatic substitution reactions, it is useful to produce substituted pyridine compounds by carrying out the substitution reaction on pyridine N-oxide followed by reduction of the N-oxide by this process.

3,467,660
5,9-DIMETHYL-AZABICYCLO [3-3-1] NONANE AND PROCESS FOR MAKING SAME

Burton D. Beitchman, Springfield, Pa., assignor to Air Products and Chemicals, Inc., Philadelphia, Pa., a corporation of Delaware

No Drawing. Filed June 13, 1966, Ser. No. 556,867
Int. Cl. C07d *31/02, 31/20*
U.S. Cl. 260—293 4 Claims

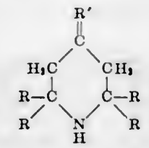
Vapors of 3-(gamma aminopropyl)-2,3 dimethyl piperidine are converted to ammonia and a mixture of 5,9 dimethyl-1-azabicyclo-(3.3.1) nonane and 5,9 dimethyl-1-azabicyclo-(3.3.1) nonene at about 675–715° F. over a cracking catalyst derived from kaolin. The tertiary amines are active catalysts for reactions of organic isocyanates.

3,467,661
N-FLUORO-DERIVATIVES OF ALKYL SUBSTITUTED PIPERIDINES

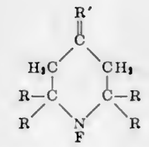
David Milton Gardner, Collegeville, and Robert Helitzer, King of Prussia, Pa., assignors to Pennsalt Chemicals Corporation, Philadelphia, Pa., a corporation of Pennsylvania

No Drawing. Filed Aug. 5, 1965, Ser. No. 477,579
Int. Cl. C07d *29/02, 29/20*
U.S. Cl. 260—293 15 Claims

Perchloryl fluoride is reacted with a substituted piperidine having the formula



where R is hydrogen or alkyl having 1 to 3 carbon atoms, at least two of the R groups being alkyl, and R′ is oxygen or two hydrogen atoms, to prepare an N-fluoro derivative of the formula



The N-fluoro-alkyl substituted piperidines are useful as herbicides, fungicides or insecticides.

3,467,662
1-PARA-CHLOROPHENYL-3-HYDRAZINO - 1,5,6,7,8, 8a-HEXAHYDROIMIDAZO[1,5-a]PYRIDINE AND PROCESS FOR ITS PREPARATION

Albert J. Frey, Essex Fells, and Robert E. Manning, Mountain Lakes, N.J., assignors to Sandoz Inc., Hanover, N.Y.

No Drawing. Filed Oct. 5, 1967, Ser. No. 672,990
Int. Cl. C07d *31/02, 31/40*
U.S. Cl. 260—293 3 Claims

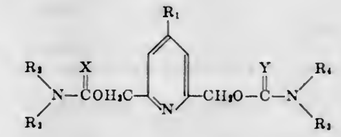
This disclosure pertains to novel 1-substituted 2-unsubstituted imidazopyridines, for example 1-para-chlorophenyl - 3 - hydrazino - 1,5,6,7,8,8a - hexahydroimidazo [1,5-a]pyridine. These compounds are useful as hypotensive agents.

3,467,663
DERIVATIVES OF 2,6- AND 2,5-BIS (HYDROXYMETHYL)PYRIDINES

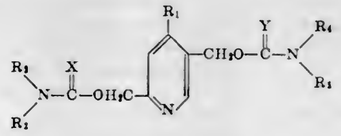
Michiro Inoue, 12 Tada-machi, Nakano-ku, Tokyo, Japan; Masayuki Ishikawa and Hisako Ishikawa, both of 208, E-22, Tokiwadaira-Danchi, Matsudo-shi, Chiba-ken, Japan; and Takio Shimamoto, 13 Kita-machi, Shinjuku-ku, Tokyo, Japan

No Drawing. Filed Apr. 10, 1964, Ser. No. 358,923
Claims priority, application Japan, Apr. 13, 1963, 38/17,978, 38/17,979, 38/17,980; Apr. 7, 1964, 39/19,329, 39/19,330, 39/19,331
Int. Cl. C07d *31/48;* A61k *25/00*
U.S. Cl. 260—294.8 12 Claims

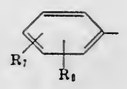
1. A member selected from the group consisting of compounds of the formulae:



and



wherein X and Y are each a member selected from the group consisting of oxygen and sulfur and R_1 is a member selected from the group consisting of hydrogen, chloro, bromo, iodo, fluoro, (lower)alkyl, hydroxyl, (lower)alkoxy, amino, (lower)alkylamino, di-(lower) alkylamino, W—NH—, (lower)alkylthio, W—S— and (lower)alkylsulfonyl wherein W— represents a radical of the formula



wherein R_6 and R_7 are each a member selected from the group consisting of hydrogen, chloro, nitro, (lower)alkyl, (lower)alkoxy and trifluoromethyl, R_2 and R_4 are each a member selected from the group consisting of hydrogen, (lower)alkyl and cyclohexyl and R_3 and R_5 each represent a member selected from the group consisting of hydrogen, (lower)alkyl, cyclohexyl, (lower)alkenyl, W— and W—(CH_2)n— wherein W was the meaning set forth above and *n* is an integer from one to three inclusive, furfuryl, pyridyl, picolyl, methylpyridyl and pyrrolyl; and nontoxic, pharmaceutically acceptable acid addition salts thereof.

3,467,664

PROCESS OF MANUFACTURING BIPYRIDYLS WITH IMPROVED DILUENTS

Philip Brook Dransfield and Allan William Olleveant, Runcorn, England, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

No Drawing. Filed Mar. 14, 1966, Ser. No. 533,776
Claims priority, application Great Britain, Mar. 17, 1965, 11,347/65
Int. Cl. C07d *31/02*
U.S. Cl. 260—296 14 Claims

There is provided an improvement in the process for the manufacture of bipyridyls by oxidising a metal-pyridine interaction product in the presence of an organic diluent. The improvement comprises using as an organic diluent one which has dielectric constant greater than 25. With the present invention, an operator of the process has greater freedom of choice of diluents and enables the use of alternate diluents but still obtaining the advantages formerly regarded as obtainable only with the known ether diluents. Also improved results are obtained. Representative of the diluents having dielectric constants greater than 25 are acetonitrile, dimethylsulphoxide, N:N-dimethylformamide and morpholine.

3,467,665

OXAZOLO- AND THIAZOLO-TROPYLIUM ALKYLSULFATES AND PROCESS FOR PREPARING THE SAME

Genshun Sunagawa, Nobuo Soma, Junichi Nakazawa, Taiichiro Watanabe, and Yoshio Sato, Hiro-machi, Tokyo, Japan, assignors to Sankyo Company Limited, Tokyo, Japan

No Drawing. Continuation-in-part of application Ser. No. 521,520, Jan. 19, 1966. This application May 31, 1967, Ser. No. 642,350
Claims priority, application Japan, Jan. 25, 1965, 40/3,889
Int. Cl. C07d *91/42, 85/48;* A61k *27/00*
U.S. Cl. 260—302 8 Claims

This invention discloses novel oxazolo- and thiazolotropylium alkylsulfates which are useful as an intermediate for the synthesis of compounds having anti-inflammatory activity. Above mentioned compounds are prepared by treating 2-acylamino-tropone or 2-acylamino-troponethione derivatives with a dialkylsulfate.

3,467,666

2-SUBSTITUTED AMINOTHIAZOLES

Martin Dexter, Briarcliff Manor, and John Denon Spivack, Spring Valley, N.Y., assignors to Geigy Chemical Corporation, Ardsley, N.Y., a corporation of New York

No Drawing. Continuation of application Ser. No. 487,348, Aug. 5, 1965. This application Nov. 7, 1966, Ser. No. 592,278
The portion of the term of the patent subsequent to June 24, 1982, has been disclaimed
Int. Cl. C07d *91/46, 91/34;* C08f *45/60*
U.S. Cl. 260—306.8 8 Claims

2-substituted aminothiazoles, such as 2-arylamino-4-arylthiazoles, 2-acenaphthylamino substituted thiazoles, 2,2′-imino-bis-(4-substituted thiazoles), 2-arylamino-4-alkylthiazoles, 2-arylamino-5-alkylthiazoles, 2-arylamino-tetrahydrobenzothiazoles, and biphenylene-bis-(2-amino-4-substituted thiazoles), are disclosed as useful for stabilizing organic material normally subject to oxidative and/or light, or thermal induced deterioration. Organic materials stabilized include polyolefinic materials such as polypropylene, fats including oils of animal and vegetable origin, gasolines, jet fuel, waxes and the like. A particularly effective stabilizer for polyolefinic material such as polypropylene is 2,2′-imino-bis-4-(p-t-butylphenyl)-thiazole. 2-(p-aminoanilino)-4-t-butylthiazole is an effective stabilizer for paraffin wax. 2-(m-aminoanilino)-4-t-butylthiazole is an effective stabilizer for polyethylene and aldehydes.

3,467,667

TETRAHYDROPYRANYL TYROSINE N-CARBOXY (AND THIOCARBOXY)ANHYDRIDES

Harvey Schwam, Flushing, N.Y., assignor to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey

No Drawing. Filed Apr. 22, 1966, Ser. No. 544,358
Int. Cl. C07d *7/04;* C07c *101/02, 103/52*
U.S. Cl. 260—307 7 Claims

The invention disclosed herein is concerned with novel derivatives of hydroxylated aromatic amino acids. More particularly it is concerned with tetrahydropyranyl derivatives of N-carboxy anhydrides and N-thiocarboxy anhydrides of hydroxylated aromatic α-amino acids such as tyrosine, which are conveniently prepared by reacting corresponding N-carboxy or N-thiocarboxy anhydride with dihydropyran. These compounds are useful in the synthesis of heteropeptides and other proteinaceous materials containing such amino acids.

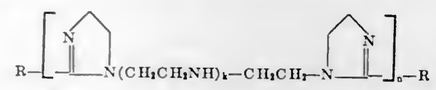
3,467,668

POLYAMINES COMPRISING ETHYLENE AND IMIDAZOLINYL GROUPS

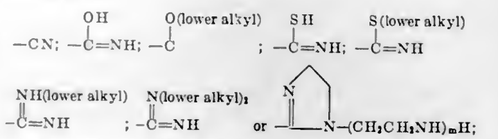
Wilhelm Gruber, Darmstadt, and Peter Quis, Gross-Zimmern, Germany, assignors to Rohm & Haas G.m.b.H., Darmstadt, Germany

No Drawing. Filed Apr. 18, 1966, Ser. No. 543,063
Claims priority, application Germany, Apr. 27, 1965, R 40,467
Int. Cl. C07d *49/34*
U.S. Cl. 260—309.6 4 Claims

Mixtures of oligomeric and polymeric polyamines of the formula



wherein R is:



n has an average value between 1 and 100; *k* is 1 or 0; and *m* is an integer from 1 to 3; made by reacting a polyethylene polyamine with dicyan or a dicyan derivative. The polyamines, when reacted with oil-soluble polyolefins such as polyisobutenyl succinic acid anhydride, form useful lubricating oil additives.

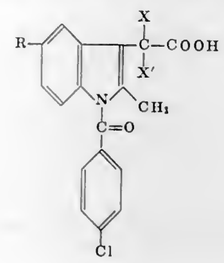
3,467,669

SUBSTITUTED-1-p-CHLOROBENZOYL-2-METHYL-5-METHOXY-3-INDOLYLACETIC ACIDS

John Martin Chemerda, Watchung, and Meyer Sletzinger, North Plainfield, N.J., assignors to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey

No Drawing. Filed July 26, 1967, Ser. No. 656,038
Int. Cl. C07d *27/56*
U.S. Cl. 260—326.12 1 Claim

This invention relates to compounds of the formula



wherein X is chloro, bromo or tosyloxy and X^1 is hydrogen, chloro, or bromo, which compounds are useful as intermediates in the preparation of 1-p-chlorobenzoyl-2-methyl-5-methoxy-3-indolylacetic acid.

3,467,670

2-PHENYL-3-AMIDO-5,6-DIMETHOXYINDOLES

John T. Suh, Mequon, Wis., assignor to McNeil Laboratories, Incorporated, a corporation of Pennsylvania

No Drawing. Original application Oct. 5, 1964, Ser. No. 401,712, now Patent No. 3,370,063, dated Feb. 20, 1968. Divided and this application Apr. 28, 1967, Ser. No. 634,491
Int. Cl. C07d *27/56*
U.S. Cl. 260—326.14 4 Claims

The compounds are of the class of 2-phenyl(or cycloalkyl)-3-amido-5,6-dimethoxyindoles, useful as ultraviolet light absorbers.

3,467,671

ETHYLENE SULFIDE PREPARATION

Alexander D. B. Sloan, Edinburgh, Scotland, assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Sept. 15, 1965, Ser. No. 487,569
Claims priority, application Great Britain Sept. 18, 1964, 38,274/64
Int. Cl. C07d *61/00*
U.S. Cl. 260—327 1 Claim

Alkylene sulphides, useful as precursors of polymers and copolymers, are produced by dehydration of mercapto-alkanols in the presence of certain acidic bisulphate materials under conditions whereby the alkylene sulphide is continuously removed from the dehydration reaction zone.

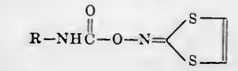
3,467,672

2-LOWER ALKYL CARBAMOYLOXYIMINO-1,3-DITHIOLE

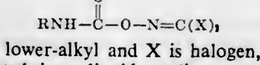
Roger Williams Addor, Pennington, N.J., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed Jan. 29, 1968, Ser. No. 701,116
Int. Cl. C07d *71/00;* A01n *9/12*
U.S. Cl. 260—327 2 Claims

A dithiole compound of the formula:



wherein R is lower-alkyl. These compounds have insecticidal activity and are prepared by reacting a dialkali metal salt of dimercapto ethylene with a compound of the formula:



wherein R is lower-alkyl and X is halogen, said reaction being conducted in a liquid medium at a temperature between 0° C. and 100° C.

3,467,673

OCTAHYDRO-5H-1-BENZAZEPIN-5-ONE, CYCLIC ETHYLENE KETALS

Stephen Sallay, Wynnewood, Pa., assignor to American Home Products Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Original application Mar. 23, 1964, Ser. No. 354,117, now Patent No. 3,294,817, dated Dec. 27, 1966. Divided and this application Oct. 10, 1966, Ser. No. 585,317
Int. Cl. C07d *57/02, 95/00;* A61k *27/00*
U.S. Cl. 260—340.9 6 Claims

The disclosure is directed to octahydro-5-H-1-benzazepin-5-one, cyclic ethylene ketals and related compounds. The compounds are useful as analgesics.

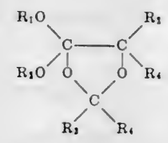
3,467,674

2,2,5,5-TETRAPERHALOALKYL-4,4-DIALKOXY SUBSTITUTED-1,3-DIOXOLANE

Robert A. Braun, Newark, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 439,452, Mar. 12, 1965, which is a continuation-in-part of application Ser. No. 325,468, Nov. 21, 1963. This application May 24, 1967, Ser. No. 640,802
Int. Cl. C07d *13/04, 15/04, 17/04*
U.S. Cl. 260—340.9 4 Claims

Compounds having the formula



R_1 and R_2 can be alkyl or substituted alkyl, alkenyl, cycloalkyl, phenyl or substituted phenyl,
R_1 and R_2 can be bridged by various divalent radicals,
R_3 can be a perfluoroalkyl or monochloroperfluoroalkyl, and
R_4 can be perfluoroalkyl.

3,467,675

ANTIDEPRESSANT BASIC DERIVATIVES OF PHTHALANES, ISO-CHROMANES AND ISO-CHROMENES

Povl Viggo Petersen, Virum, Niels Lassen, Gentofte, Jette Nørgaard, Copenhagen, and Torben Huld, Lyngby, Denmark, assignors to Kefalas A/S, Copenhagen-Valby, Denmark

No Drawing. Filed Mar. 3, 1966, Ser. No. 540,438
Claims priority, application Great Britain, Mar. 19, 1965, 11,855/65
Int. Cl. C07d *5/40, 7/40*
U.S. Cl. 260—346.2 23 Claims

Aminoalkylene derivatives of phthalanes, iso-chromanes, and iso-chromenes, useful as antidepressants.

3,467,676

5-HYDROXY-2,2,7-TRIALKYLCHROMAN-4-ONES AND DERIVATIVES

Timothy Y. Jen, Havertown, Gordon A. Hughes, Haverford, and Herchel Smith, Wayne, Pa., assignors to American Home Products Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Apr. 5, 1967, Ser. No. 628,522
Int. Cl. C07f *1/02, 1/06;* C07d *7/26*
U.S. Cl. 260—345.2 3 Claims

5-hydroxy-2,2,7-trialkylchroman-4-ones, alkali metal salts and etherified derivatives thereof (I) are prepared by condensing a 5-alkylresorcinol (II) with a dimethylacrylyl halide (III) in the presence of a catalyst and, if required, etherifying or forming a salt with an alkali metal base. Compounds (I) are central nervous system depressants useful to treat anxiety, tension and psychosomatic symptoms in warm-blooded animals.

3,467,677

17α-OXA-D-HOMO-PREGNANES AND METHODS FOR THEIR MANUFACTURE

John N. Gardner, South Mountain Pass, Garrison, N.Y., assignor to Schering Corporation, Bloomfield, N.J., a corporation of New Jersey

No Drawing. Filed Apr. 21, 1967, Ser. No. 632,521
Int. Cl. C07d *101/00;* C07c *169/34*
U.S. Cl. 260—345.2 15 Claims

Described herein are novel 3-oxygenated-16-methyl-17a-oxa-D-homo-16-pregnenes and 3-oxygenated-16-methyl-

17 - hydroxy - 17a - oxa - D - homo - pregnanes and 17-alkyl ethers thereof which have anti-androgenic properties.

Also described are methods for the preparation of the above-mentioned 16-methyl-17a-oxa - D - homopregnanes which comprise treating a 16β-methyl-17α-hydroperoxy-20-keto-pregnane with a strong acid or under non-acidic esterifying conditions whereby is formed a product mixture containing the above-mentioned 16-dehydro and 17-hydroxy-16-methyl-17a-oxa-D - homopregnane derivatives; and when a lower alkanol is added to the reaction mixture there is also formed the corresponding 17-alkoxy derivatives of the 17-hydroxy-16-methyl-17a-oxa-D-homopregnanes.

3,467,678

TETRAHYDROPYRANYL AND TETRAHYDROFURANYL ETHERS OF GRISEOFULVIN AND DERIVATIVES THEREOF

John A. Edwards, Los Altos, Calif., assignor to Syntex Corporation, Panama, Panama, a corporation of Panama

No Drawing. Filed July 14, 1966, Ser. No. 565,113

Int. Cl. C07d *5/36, 7/04, 5/04*

U.S. Cl. 260—345.9 **10 Claims**

Tetrahydrofuranyl and tetrahydropyranyl ethers of griseofulvin and derivatives thereof are used to treat dermatophytic infections.

3,467,679

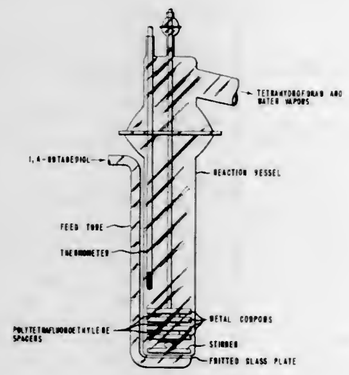
PRODUCTION OF TETRAHYDROFURAN FROM 1,4-BUTANEDIOL

Arthur O. Rogers, Lewiston, N.Y., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Filed Mar. 21, 1966, Ser. No. 535,834

Int. Cl. C07d *5/02;* **C08f** *27/06*

U.S. Cl. 260—346.9 **5 Claims**



1,4-butanediol is catalytically converted to tetrahydrofuran by heating at 100–150° C. in the presence of an acidic nuclear sulfonated cross-linked aromatic hydrocarbon cation exchange resin. Corrosion of metal equipment is much less with such catalysts than with soluble strong acid catalysts. The presence of a basic anion exchange resin having functional amine or quaternary ammonium groups along with the acidic resin catalyst reduces corrosion further so that the conversion can be practically carried out in carbon steel or cast iron equipment.

3,467,680

METHOD OF ISOLATION OF CRUDE GRISEOFULVIN

Valjter Osvaljdovich Kuljbakh and Valentina Jakovlevna Raigorodskaja, Leningrad, U.S.S.R., assignors to Leningradsky Nauchno-Issledovateljsky Institute Antibiotikov, Leningrad, U.S.S.R.

No Drawing. Filed Feb. 18, 1965, Ser. No. 433,808

Int. Cl. C07d *5/32, 5/34*

U.S. Cl. 260—346.2 **4 Claims**

1. A method of isolating crude griseofulvin which comprises extracting the moist mycelium with methylene chloride, evaporating the combined methylene chloride extract, cooling said extract, separating flocculent impurities by filtration, warming the filtrate, clarifying said filtrate with acid charcoal, separating the spent charcoal from the clarified solution, isolating crude griseofulvin from said clarified solution by crystallization, and washing and drying the crystals thus obtained.

3,467,681

1-AMINO-2-ARYLOXY-4-ARYLSULFONAMIDO-ANTHRAQUINONES

Volker Hederich, Cologne-Deutz, and Günter Gehrke, Cologne-Flittard, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

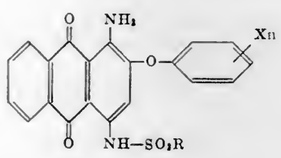
No Drawing. Continuation of application Ser. No. 387,515, Aug. 4, 1964. This application Feb. 14, 1968, Ser. No. 705,561

Claims priority, application Germany, Aug. 17, 1963, F 40,520

Int. Cl. C09b *1/52, 1/54;* **D06p** *3/52*

U.S. Cl. 260—373 **7 Claims**

Novel anthraquinone dyestuffs of the formula



are prepared. The novel compounds are suitable for dyeing synthetic fibers. In the formula X is hydrogen, halogen, alkyl, hydroxyalkyl, alkoxy, hydroxyalkoxy or alkylmercapto, R is an aryl radical, and *n* is one of the integers 1, 2 or 3.

3,467,682

13β-ALKYL-17α-ALKYNYLGON-4-ENE-3β,17β-DIOLS AND ESTERS CORRESPONDING

Paul D. Klimstra, Northbrook, Ill., assignor to G. D. Searle & Co., Chicago, Ill., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 491,446, Sept. 29, 1965. This application Apr. 28, 1967, Ser. No. 634,452

Int. Cl. C07c *169/12, 169/08;* **A06k** *17/06*

U.S. Cl. 260—397.5 **2 Claims**

Novel steroidal derivatives characterized by a 13β-alkyl substituent in which the alkyl group contains at least two carbon atoms, useful as pharmacological agents, e.g. progestational, estrogenic, anti-estrogenic, pepsin inhibitory, anti-algal and anti-protozoal, and preparable by Birch reduction of a 13β-alkyl-3-(lower alkoxy)gona-1,3,5 (10)-trien-17-one followed by oxidation of the 17-hydroxy function, alkynylation of the resulting 17-keto group, hydrolysis of the enol ether function, reduction of the resulting 3-keto substitutent and, optionally, esterification of either one or both of the 3- and 17-hydroxy groups.

3,467,683

METAL ORGANOPHOSPHORUS COMPOUNDS

Samuel Edward Harson, Warrington, and Edward Fogg, Longsight, Manchester, England, assignors to Hardman & Holden Limited, Miles Platting, Manchester, Lancashire, England, a British company

No Drawing. Filed Dec. 6, 1965, Ser. No. 512,020

Claims priority, application Great Britain, Dec. 9, 1964, 50,183

Int. Cl. C07c *9/02*

U.S. Cl. 260—403 **1 Claim**

Compounds containing phosphorus divalent metals, carboxylic acid radicals and possibly alkoxy or aryloxy groups are prepared by heating carboxylic acid salts of divalent metals with alkyl or aryl phosphates or phosphite, or acid alkyl phosphates or phosphites.

3,467,684

FATTY ACID-DIGLYCIDYL ETHER-ALKYLENE-POLYAMINE COMPOSITIONS

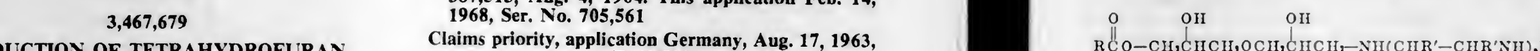
Robert E. Lane, Lake Jackson, Tex., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed May 16, 1966, Ser. No. 550,114

Int. Cl. C08g *33/06;* **C11c** *3/00*

U.S. Cl. 260—404.5 **6 Claims**

This invention relates to a new water-dispersible polyamine condensation product particularly suitable for the foam concentration of heavy metal values. These novel polyamine products have the formula:



(I)

wherein

R is a C_{15}–C_{19} alkyl or alkenyl group,
each R′ individually is H or CH_3, and
a is an integer from 1–6.

In these polyamines, a long chain alkyl or alkenyl ester is coupled through a hydrophilic hydroxyalkyl ether to an alkylenepolyamine to form a particularly active additive for the selective concentration of copper and other heavy metal ions in aqueous solution.

3,467,685

PREPARATION OF ORGANOSILOXANES BY THE REACTION OF ORGANOSILICON HYDRIDES WITH ORGANOSILANOLS

Gérard Milbert and Georges Pagni, Lyon, France, assignors to Rhone-Poulenc S.A.

No Drawing. Filed Feb. 4, 1966, Ser. No. 525,146

Claims priority, application France, Feb. 4, 1965, 4,428, Patent 1,452,005; Jan. 12, 1966, 45,711, Patent 1,473,990

Int. Cl. C07f *7/18;* **C08g** *51/50, 47/00*

U.S. Cl. 260—448.2 **7 Claims**

Hydroxylamine and substituted hydroxylamines are valuable catalysts in the reaction of compounds containing hydrogen attached to silicon with organosilanols. The products are useful, inter alia, as plasticizers in organosiloxane compositions.

3,467,686

PREPARATION OF ORGANOSILICON-NITROGEN COMPOUNDS

Charles Edward Creamer, Ridgefield, Conn., assignor to Union Carbide Corporation, a corporation of New York

No Drawing. Filed Oct. 3, 1967, Ser. No. 672,445

Int. Cl. C08g *31/30;* **C07f** *7/02*

U.S. Cl. 260—448.2 **18 Claims**

A process for producing organosilicon-nitrogen compounds which comprises contacting an organohalogensilicon compound with a nitrogen base compound at a temperature of at least 50° C. in the presence of a metal selected from the group consisting of magnesium, calcium and zinc, at a contact rate not greater than the reaction of the metal with the hydrogen halide and nitrogen-base hydrohalide salt by-products, where in the mole amount of metal present and the mole amount of nitrogen-base compound employed are about stoichiometrically equivalent to the number of silicon-halogen bonds to be reacted and a separation step which comprises contacting the solid metal halide by-product with a sufficient amount of nitrogen-base compound to form a complex of metal halide and nitrogen-base and liquifying said complex so as to form an immiscible liquid layer with the organosilicon-nitrogen product and thereafter separating same.

3,467,687

CONVERSION OF NITROSO COMPOUNDS TO ISOCYANATES

William Baptist Hardy, Bound Brook, and Robert Putnam Bennett, Bridgewater Township, Somerset, N.J., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed July 5, 1966, Ser. No. 562,492

Int. Cl. C07c *119/04*

U.S. Cl. 260—453 **10 Claims**

Organic isocyanates are prepared by reacting a carbocyclic aromatic nitroso compound, a Lewis acid and carbon monoxide in the presence of a catalyst consisting of a noble metal or compound thereof, this reaction being conducted under anhydrous, hydrogen-free conditions at a pressure above about 1,000 p.s.i. and temperature above about 150° C.

3,467,688

CONVERSION OF AZO OR AZOXY COMPOUNDS TO ISOCYANATES

Robert Putnam Bennett and Stanley Myron Davis, Bridgewater Township, Somerset County, N.J., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed July 5, 1966, Ser. No. 562,539

Int. Cl. C07c *119/04*

U.S. Cl. 260—453 **10 Claims**

Isocyanates are prepared by reacting carbon monoxide and an aromatic azo or azoxy compound in the presence of a catalyst consisting of a noble metal or compound thereof and a Lewis acid, this reaction being conducted under anhydrous, hydrogen-free conditions and at a pressure of at least about 1,000 p.s.i. and temperature of at least about 140° C.

3,467,689

PROCESS FOR OBTAINING PARACHLORO-PHENYLISOCYANATE

Adrian Moldovan Velniceriu and Traian Mihaiu, Bucharest, Rumania, assignors to Ministerul Industriei Chimice, Bucharest, Rumania, a corporation of Rumania

No Drawing. Filed July 18, 1966, Ser. No. 565,717

Claims priority, application Rumania, July 26, 1965, 50,068

Int. Cl. C07c *119/04*

U.S. Cl. 260—453 **2 Claims**

A process for preparing parachlorophenylisocyanate in toluene solution wherein phosgene is bubbled through a toluene solution of parachloroaniline with an amine/toluene ratio of 1 to 4 at a temperature of 100° to 105° C. with a molar ratio of phosgene to amine of 1.05 and in the presence of 0.1 gram of activated carbon per gram of parachloroaniline.

3,467,690

3,5-DIMETHOXYBENZYL CARBONATE ESTERS

James W. Chamberlin, Indianapolis, Ind., assignor to Eli Lilly and Company, Indianapolis, Ind., a corporation of Indiana

No Drawing. Filed May 12, 1965, Ser. No. 455,307

Int. Cl. C07c *69/00, 79/00, 99/00*

U.S. Cl. 260—463 3 Claims

3,5-dimethoxybenzyloxycarbonate esters, azides, and halides, useful in peptide synthesis to protect the amino group of the N-terminal amino acid, from which the protecting group is quantitatively cleaved by irradiation with ultraviolet light.

3,467,691

N-(N-ACYLAMINOACYL)-AMINOACETONITRILES

Tsutomu Irikura, 5 1-chome, Wakagi-cho, Itabashi-ku; Keigo Nishino, 25 5-chome, Shimo, Kita-ku; Seigo Suzue, 35 1-chome, Minami-Senju, Arakawa-ku; and Keichi Ushiyama, 32 3-chome, Ukima-cho, Kita-ku, all of Tokyo, Japan; and Hirotaka Shinada, 147 2-chome, Kita-machi, Saitama-ken, Kawaguchi-shi, Japan

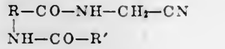
Filed Apr. 20, 1965, Ser. No. 449,472

Claims priority, application Japan, Apr. 22, 1964, 39/22,575

Int. Cl. C07c *121/44, 103/30*

U.S. Cl. 260—465 10 Claims

Compounds that are N-(N-acylaminoacyl)-aminoacetonitriles of the formula



in which



is the residue of



representing acids such as glycine, α-alanine, β-alanine, α-aminobutyric acid, α-aminoisobutyric acid, valine, leucine, isoleucine, norleucine, methionine, lysine, tryptophane, β-, α-, γ-, ε-aminocaproic acids, aspartic acid, phenylalanine, tyrosine, phenyl glycine, γ-aminovaleric acid, etc. and R—CO represents an acyl radical, R′ representing a straight or branched chain alkyl radical or an aromatic radical have been found to be useful in the treatment of liver diseases while having less undesirable side effects than the parent aminoacid-aminoacetonitriles.

3,467,692

FLUOROPHENOXY ALKYL NITRILES

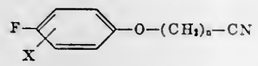
Peter E. Newallis, Morris Plains, and Edmund J. Rumanowski, Dover, N.J., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed May 12, 1965, Ser. No. 455,321

Int. Cl. C07c *121/52*

U.S. Cl. 260—465 6 Claims

Fluorophenoxy alkyl nitriles having the general formula



wherein X is H, F or Cl, and *n* is a whole number from 1 to 3, are herbicides.

3,467,693

PROCESS FOR THE PRODUCTION OF ARYLIMINO-CHLOROCARBONYL CYANIDES

Engelbert Kühle, Bergisch Gladbach, and Bertram Anders, Cologne-Stammheim, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Filed Mar. 22, 1966, Ser. No. 536,300

Claims priority, application Germany, June 18, 1965, F 46,369, Patent 1,224,306

Int. Cl. C07c *121/06;* A01n *9/20*

U.S. Cl. 260—465 9 Claims

Process for producing arylimino-chlorocarbonyl cyanides by reacting the corresponding aryl isocyanide dichloride with about a 1:1 molar ratio of cuprous cyanide at a temperature of about 100–250° C.

3,467,694

PROCESS FOR PRODUCING URETHANES

William Baptist Hardy, Bound Brook, and Robert Putnam Bennett, Bridgewater Township, Somerset County, N.J., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed Oct. 15, 1965, Ser. No. 496,687

Int. Cl. C07c *125/04;* C07d *51/42*

U.S. Cl. 260—471 8 Claims

A process of preparing a urethane compound by reacting an aromatic or aliphatic hydroxy compound, carbon monoxide, and a carbocyclic aromatic or heterocyclic aromatic nitro compound in amounts of at least three moles of carbon monoxide per nitro group, in the presence of a catalyst consisting essentially of a noble metal and a Lewis acid, said reaction being conducted under substantially anhydrous, hydrogen-free, superatmospheric pressure conditions, and at an elevated temperature below that at which the starting materials and the product decompose.

3,467,695

(ISOCYANATOETHYLTHIO)CARBOXYLATES

Hans Holtschmidt, Cologne-Stammheim, and Gunther Nischk and Eberhart Degener, Leverkusen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

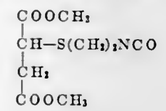
No Drawing. Continuation of application Ser. No. 131,503, Aug. 15, 1961. This application Dec. 18, 1964, Ser. No. 419,570

Claims priority, application Germany, Aug. 25, 1960, F 31,974

Int. Cl. C07c *149/20, 119/04*

U.S. Cl. 260—481 3 Claims

1. A compound having the formula



3,467,696

STABILIZED VINYL ACETATE AND PROCESS

Ryunosuke Naito and Shoichi Yamada, Toyama, Japan, assignors to Kurashiki Rayon Co., Ltd., Kurashiki-shi, Okayama Prefecture, Japan, a corporation of Japan

Filed July 26, 1965, Ser. No. 474,824

Claims priority, application Japan, Aug. 7, 1964, 39/44,296; Dec. 12, 1964, 39/69,796

Int. Cl. C07c *69/14;* C08f *3/56*

U.S. Cl. 260—488 6 Claims

A method of stabilizing vinyl ester monomers against aldehyde formation when dissolved in an alcohol solution which comprises adding to the vinyl ester monomer a small, effective amount of at least about 10 p.p.m. of a reagent selected from the group consisting of dithizone, dimethylglyoxime, parabenzoquinone and parabenzoquinone dioxime, and distilling the resulting mixture to thereby obtain stabilized vinyl ester monomer as the distillate. The stabilized vinyl ester monomers and alcohol solutions thereof are also claimed.

3,467,697

PRODUCTION OF POLYCHLOROBENZOIC ACIDS

Charles F. Kohll and Nanno Fekkes, Amsterdam, Netherlands, assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed July 8, 1966, Ser. No. 563,709

Claims priority, application Netherlands, July 22, 1965, 6509549

Int. Cl. C07c *51/00, 63/12*

U.S. Cl. 260—515 6 Claims

Aromatic o-halocarboxylic acids, such as 2,6-dichlorobenzoic acid, are obtained in almost quantitative yield by reacting aromatic o-halodichloromethyl compounds with chlorine and water in the presence of a Lewis acid catalyst such as the chlorides of iron, zinc, antimony and gallium.

3,467,698

OXIDATION OF ALKYL AROMATIC COMPOUNDS TO AROMATIC CARBOXYLIC ACIDS

Johann G. D. Schulz, Arthur C. Whitaker and Paolo Winteler, Pittsburgh, Pa., assignors to Gulf Research & Development Company, Pittsburgh, Pa., a corporation of Delaware

No Drawing. Filed Oct. 21, 1965, Ser. No. 500,271

Int. Cl. C07c *63/02, 63/26*

U.S. Cl. 260—524 5 Claims

Alkyl substituted aromatic compounds can be oxidized in a process whereby a mixture of the alkyl aromatic compound, lower aliphatic carboxylic acid, salt of a transition metal and a cyclohexane is contacted with molecular oxygen at an elevated temperature. p-Xylene can be converted to terephthalic acid.

3,467,699

PRODUCTION OF CRYSTALS FROM SOLUTIONS

Alfred William Bamforth, Stockton-on-Tees, England, assignor to The Power-Gas Corporation Limited, Stockton-on-Tees, England

Continuation of application Ser. No. 283,861, May 28, 1963. This application Oct. 12, 1966, Ser. No. 586,301

Int. Cl. C07c *51/42;* B01d *9/02*

U.S. Cl. 260—525 6 Claims

Production of benzoic acid crystals by forming a suspension of forming and growing crystals in an aqueous solution of benzoic acid, contacting the suspension with a supersaturated aqueous solution of benzoic acid formed from a feed liquor, wi hdrawing mother liquor and benzoic acid crystals from the contacted solution and suspension, in which the improvement comprises a low degree of supersaturation and maintaining the concentration difference between the feed liquor and motor liquor below approximately 2.5 grams per 100 grams water.

3,467,700

METHOD OF PREPARING UNSATURATED ALDEHYDES AND ACIDS

Jamal S. Eden, Akron, Ohio, assignor to The B. F. Goodrich Company, New York, N.Y., a corporation of New York

No Drawing. Filed Aug. 30, 1965, Ser. No. 483,868

Int. Cl. C07c *57/04, 51/20;* B01j *11/82*

U.S. Cl. 260—533 9 Claims

Unsaturated acids and aldehydes are prepared by reacting propylene and isobutylene with oxygen at an elevated temperature in the presence of a catalyst containing molybdenum oxide, tellurium oxide and a bismuth or antimony phosphate to form acrolein and acrylic acid, and methacrolein and methacrylic acid.

3,467,701

ISOLATION OF OXIDATION PRODUCTS OF CYCLOHEXANE

Alan Pounder and William Frederick Sykens, Manchester, England, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

No Drawing. Filed Apr. 4, 1966, Ser. No. 539,627

Claims priority, application Great Britain, Apr. 28, 1965, 17,896/65

Int. Cl. C07c *55/14, 51/18*

U.S. Cl. 260—533 3 Claims

A process for the manufacture of adipic acid by oxidizing cyclohexane in liquid phase at elevated temperature and pressure, with a gas containing molecular oxygen and separating cyclohexane from the resultant mixture by distilling in the absence of added water so that at least 50% by weight of unreacted cyclohexane is removed in non-azeotropic manner, then removing the remaining cyclohexane as an azetrope with water, and oxidizing the residual mixture, after removal of the cyclohexane, to produce adipic acid.

3,467,702

METHOD FOR MAKING PERFLUOROPYRUVIC ACID MONO-HYDRATE

Stanley Selman, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Continuation of application Ser. No. 553,048, May 26, 1966. This application Aug. 23, 1967, Ser. No. 662,833

Int. Cl. C07c *53/18*

U.S. Cl. 260—539 1 Claim

Perfluoropyruvic acid and its mono-hydrate can be prepared by contacting and reacting hexafluoropropylene epoxide with a carbonyl compound at a temperature between 100° C. and 300° C. and treating the resultant acid fluoride or perfluoro-4-oxo-2,5-dimethyl-2-fluorocarbonyl-1,3-dioxolane with water to produce perfluoropyruvic acid mono-hydrate. Perfluoropyruvic acid can be isolated by dehydrating the perfluoropyruvic acid mono-hydrate.

3,467,703

CHLOROFORMYL CARBOCYCLIC COMPOUNDS

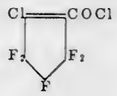
Louis G. Anello, Basking Ridge, and Richard F. Sweeney, Randolph Township, Morris County, N.J., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed Feb. 28, 1964, Ser. No. 348,274

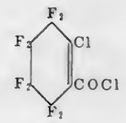
Int. Cl. C07c *61/26, 61/20*

U.S. Cl. 260—544 2 Claims

1. A compound having the formula:



2. A compound having the formula:



3,467,704
LINEAR PHOSPHONITRILES
Edward F. Moran, Wenonah, and Donald P. Reider, Woodbury, N.J., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed Aug. 24, 1966, Ser. No. 574,549
Int. Cl. C08g *33/16*
U.S. Cl. 260—551 **10 Claims**

1. A process for the preparation of a linear phosphonitrile which comprises:

(a) chlorinating with chlorine gas a trisubstituted phosphine having the formula $(R)(R^1)(R^2)P$ wherein the R's represent a phenyl or substituted phenyl radical of the formula $(C_6H_{5-n})Y_n$ where Y represents alkyl of from 1 to 6 carbon atoms, alkoxy of from 1 to 6 carbon atoms, perfluoroalkyl having 1 to 4 carbon atoms, perfluoroalkoxy having 1 to 4 carbon atoms, fluoro, nitro, cyano and *n* has a value of from 1 to 5, and subsequently ammoniating with ammonia the chlorinated phosphine to produce a trisubstituted phosphinimide chloride of the formula $R(R^1)(R^2)PNH_2Cl$,

(b) reacting said phosphinimide chloride with a phosphine selected from the group consisting of a disubstituted trivalent and pentavalent chlorophosphine of the formula $(R^3)(R^4)PCl_m$ wherein the R's represent a phenyl or substituted phenyl radical of the formula $(C_6H_{5-n})Y_n$ where Y represents alkyl of from 1 to 6 carbon atoms, alkoxy of from 1 to 6 carbons atoms, perfluoroalkyl having 1 to 4 carbon atoms, fluoro, nitro, cyano and *n* has a value of from 1 to 5, and *m* equals 1 or 3, in the presence of a Lewis base,

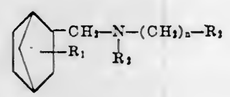
(c) ammoniating with ammonia the resulting products to produce a linear phosphonitrile of the formula

$$R[P(R^1)(R^2)=N]_nP(R^3)(R^4)XCl$$

wherein when *n* equals 1 or 2, X is an amino radical and when *n* equals 2, X is a phenyl or substituted phenyl radical of the formula $(C_6H_{5-n})Y_n$ where Y represents alkyl of from 1 to 6 carbon atoms, alkoxy of from 1 to 6 carbon atoms, perfluoroalkyl having 1 to 4 carbon atoms, perfluoroalkoxy having 1 to 4 carbon atoms, fluoro, nitro, cyano and *n* has a value of from 1 to 5, with the proviso that when *m* equals 1 in the above formula the reaction product of step (b) is chlorinated prior to ammoniation.

3,467,705
NEUROTROPIC AMIDES FROM N-SUBSTITUTED AMINOMETHYL-NOR-CAMPHANE AND A PROCEDURE FOR THEIR PREPARATION
Pietro Gigante, Demetrio Antoniu, Fabrizio Ganzina, Mario Magi, and Enrico Serino, Rome, Italy, assignors to Sir Laboratori Chimico-Biologici S.p.A., Rome, Italy, a joint-stock company of Italy
No Drawing. Filed Aug. 11, 1965, Ser. No. 479,012
Int. Cl. C07c *103/30;* **A61k** *27/00*
U.S. Cl. 260—558 **6 Claims**

Amides derived from the 1–4 endomethylene-2-aminomethylcyclohexane having the general structural formula



and 5,6 dehydro analogs thereof where

n=0, 1, 2, 3, 4, 5;

R_1=an alkyl, alkenyl, cycloalkyl, aralkyl, aryl, either free or partially substituted by OH, halogens, alkoxy, thioalkyl or amino-groups or heterocyclic groups;

R_2=an acyl

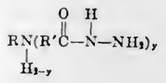
R_3=hydrogen, hydroxyl, oxyacyl, oxyalkyl, isopropyl, dialkylamino- or morpholine-, pyrrolidino-, piperidino- or piperazino-groups, either free or partially substituted by methyl, ethyl, isopropyl, OH.

3,467,706
3-OXA-16-PENTACOSENAMIDE AND 3-OXA-12-HENEICOSENAMIDE
Robert W. Hill, Leawood, and Thomas R. Hopkins, Overland Park, Kans., assignors to Gulf Oil Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
No Drawing. Filed Mar. 7, 1966, Ser. No. 532,123
The portion of the term of the patent subsequent to July 23, 1985, has been disclaimed
Int. Cl. C07c *103/12;* **C08k** *1/44*
U.S. Cl. 260—561 **2 Claims**

New compounds 3-oxa-16-pentacosenamide and 3-oxa-12-heneicosenamide, which are useful as slip agents for olefin polymers.

3,467,707
CERTAIN AMINO SUBSTITUTED HYDRAZIDE EPOXY RESIN CURING AGENTS
David Aelony, Minneapolis, Minn., assignor to General Mills, Inc., a corporation of Delaware
No Drawing. Filed Oct. 1, 1965, Ser. No. 492,298
Int. Cl. C08g *30/14*
U.S. Cl. 260—561 **6 Claims**

Compounds having the formula



where R′ is an alklene radical of 2 to about 11 carbon atoms *y* is an integer selected from 1 and 2 and R is selected from the group consisting of an aliphatic radical of 1 to about 24 carbon atoms attached to the nitrogen atom through a primary carbon atom, an aryl radical of 6 to about 40 carbon atoms having the structure

$$R_x'''\{Ar\}$$

and an aralkyl radical of 7 to about 40 carbon atoms having the structure

$$R_x'''\{Ar\}R''''—$$

where Ar is the cyclic moiety, R‴ is an aliphatic radical, R⁗ is an alkylene radical of 1 to 10 carbon atoms attached to the nitrogen atom through a primary carbon atom and *x* is an integer of 0 to about 4. Curable, partially cured and cured compositions are prepared from such hydrazides and epoxy resins.

3,467,708
ARYL-SUBSTITUTED ALIPHATIC BENZYL AND NAPHTHYL-METHYLENE QUATERNARY AMMONIUM COMPOUNDS
Eugene J. Miller, Jr., Wheaton, and Harlan E. Tiefenthal, Western Springs, Ill., assignors, by mesne assignments, to Armour Industrial Chemical Company, a corporation of Delaware
No Drawing. Continuation-in-part of applications Ser. No. 500,203, Oct. 21, 1965 and Ser. No. 502,563, Oct. 22, 1965. This application Nov. 10, 1966, Ser. No. 593,322
Int. Cl. C07c *87/68*
U.S. Cl. 260—567.6 **10 Claims**

Aryl-substituted aliphatic benzyl and naphthyl-methylene quaternary ammonium compounds having 1 to 2 long chain alkyl groups to which an aryl group is attached to an internal carbon atom, useful as cationic bituminous emulsifiers and for fabric treating and in textile processing.

3,467,709
1,1-DIPHENYL-2-METHYL - 3-(TRIMETHOXY-BENZYLAMINO) - PROPANOLS AND THE SALTS THEREOF
Robert D. Moffett, Kalamazoo, Mich., assignor to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware
No Drawing. Filed Oct. 21, 1966, Ser. No. 588,303
Int. Cl. C07c *93/14, 119/10;* **A61k** *27/00*
U.S. Cl. 260—570 **3 Claims**

1,1 - diphenyl-2-methyl-3(trimethoxybenzylamine)propanols and acid addition salts thereof (with halogen or lower alkyl substitution on the 1,1-diphenyl moiety) having CNS activity, e.g., stimulant, antidepressant, tranquilizing and anticonvulsant. The compounds are prepared by reacting a 1,1-diphenyl-2-methyl-3-aminopropanol with trimethoxybenzaldehyde and reducing the resulting Schiff base.

3,467,710
β-(4- OR 5-PHENYL-1-NAPHTHALENE) ETHYLAMINES
James S. Kaltenbronn, Ann Arbor, Mich., assignor to Parke, Davis & Company, Detroit, Mich., a corporation of Michigan
No Drawing. Continuation-in-part of application Ser. No. 569,806, Aug. 3, 1966. This application May 27, 1968, Ser. No. 732,067
Int. Cl. C07c *87/28;* **A61k** *27/00*
U.S. Cl. 260—570.8 **6 Claims**

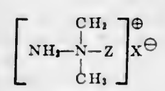
β-(4- or 5-phenyl-1-naphthalene)ethylamines, optionally substituted at β-position or on the amino group by lower alkyl, and acid-addition salts thereof. The compounds of the invention are useful as anti-inflammatory agents.

3,467,711
PREPARATION OF N-SUBSTITUTED HYDROXYLAMINES
Henry Bader, Newton Center, and Sheldon Buckler, Lincoln, Mass., assignors to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware
No Drawing. Filed July 12, 1967, Ser. No. 652,714
Int. Cl. C07c *83/04, 83/02*
U.S. Cl. 260—583 **9 Claims**

N-substituted hydroxylamines are prepared by reacting the corresponding N-substituted secondary amines with an inorganic peroxide in the presence of a metal sequestering agent and in the absence of an oxidation accelerator.

3,467,712
HYDRAZONIUM SALTS
Johann Jung, Limburgerhof, Pfalz, and Karl-Heinz Koenig, Ludwigshafen (Rhine), Germany, assignors to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany
No Drawing. Filed Dec. 13, 1965, Ser. No. 513,536
Claims priority, application Germany, Dec. 22, 1964, B 79,855
Int. Cl. C07c *109/02, 109/00*
U.S. Cl. 260—583 **4 Claims**

Compounds having the structural formula:



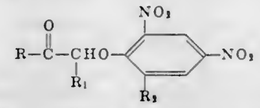
wherein $X^{\ominus}$ is a non-phytotoxic anion and Z represents a member selected from the group consisting of propargyl, allyl, methallyl, 2-chloroallyl, isopropyl, β-methylene carboxymethyl and β-methoxyethyl. Such compounds are valuable plant growth regulants.

3,467,713
PROCESS FOR THE DEFLUORINATION OF FLUOROSTEROIDS
Lawrence H. Knox, deceased, late of Mexico, Mexico, by Anne A. Knox, legal representative, Mexico, Mexico, assignor to Syntex Corporation, Panama, Panama, a corporation of Panama
No Drawing. Filed Sept. 2, 1966, Ser. No. 577,084
Claims priority, application Mexico, Oct. 8, 1965, 85,123
Int. Cl. C07c *167/00, 169/14, 169/26*
U.S. Cl. 260—586 **7 Claims**

Defluorination of fluoro steroids by heating with lithium aluminum hydride in an ether solvent.

3,467,714
[LOWER ALKYL SUBSTITUTED DINITRO-PHENOXY] KETONES
Arnold D. Gutman, Pinole Calif., George E. Lukes, deceased, late of El Cerrito, Calif., by John Hazzard, administrator, Kentfield, Calif., and Duane R. Arneklev, Sunnyvale, Calif., assignors to Stauffer Chemical Company, New York, N.Y., a corporation of Delaware
No Drawing. Filed Nov. 29, 1965, Ser. No. 510,408
Int. Cl. C07c *49/76;* **A01n** *9/20*
U.S. Cl. 260—590 **5 Claims**

(Lower alkyl substituted-dinitrophenoxy)ketones having the general formula



wherein R is the lower alkyl, phenyl or substituted phenyl wherein the substituents are phenyl, nitro, halogen, lower alkyl or lower alkoxy; R_1 is hydrogen, phenyl or lower alkyl; and R_2 is hydrogen or lower alkyl. The compounds are effective as herbicides, insecticides and microbiocides. Representative compounds are: 2-phenyl-2-(2-sec-butyl - 4,6 - dinitrophenoxy)-acetophenone, 2-(2-sec-butyl-4,6-dinitrophenoxy)-4′-phenyl acetophenone, 2-(2-sec-butyl-4,6-dinitrophenoxy)-4′ - nitroacetophenone, 2-phenone, and 1 - (2′-sec-butyl-4′,6′-dinitrophenoxy)-propanone-2.

3,467,715
2,4-DILOWERALKANOYL PHLOROGLUCINOL DERIVATIVES
John L. Broadbent, Tewin Wood, Kenneth Bowden, Bramfield, and William James Ross, Welwyn Garden City, England, assignors to Smith Kline & French Laboratories, Philadelphia, Pa., a corporation of Pennsylvania
No Drawing. Filed Jan. 18, 1968, Ser. No. 698,699
Claims priority, application Great Britain, June 12, 1963, 23,477/63
Int. Cl. C07c *43/20, 43/28*
U.S. Cl. 260—592 **6 Claims**

Novel new compounds having the basic structure of 2,4-diacylphloroglucinol. Said compounds have pronounced anthelmintic activity, especially demonstrated by substantial in vivo activity.

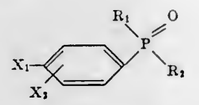
3,467,716
OXIDATION OF 1,2-OLEFINS TO OXYGENATED PRODUCTS
Ben W. Kiff, Ona, and Norman R. Cox, St. Albans, W. Va., assignors to Union Carbide Corporation, a corporation of New York
No Drawing. Continuation-in-part of application Ser. No. 519,009, Jan. 7, 1966. This application June 12, 1968, Ser. No. 736,251
Int. Cl. C07c *45/04*
U.S. Cl. 260—604 **5 Claims**

An improved vapor-phase oxidation process whereby olefins, e.g., propylene, and oxygen, in the absence of extraneous steam, and in the presence of a four metal-con-

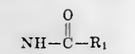
taining (Fe—Co—Mo—Te) catalyst, are converted to the corresponding aldehydes.

3,467,717
TERTIARY ORGANOPHOSPHINE OXIDES
Hill M. Priestley, North Bergen, N.J., assignor to Lever Brothers Company, New York, N.Y., a corporation of Maine
No Drawing. Continuation-in-part of application Ser. No. 329,386, Dec. 10, 1963. This application Sept. 14, 1966, Ser. No. 579,211
Int. Cl. C07f *9/50*
U.S. Cl. 260—606.5 **11 Claims**

A group of novel phosphine oxides is disclosed having the generic formula



wherein R_1 is an acyclic aliphatic hydrocrabon radical having from 8 to 18 carbon atoms, R_2 is selected from the group consisting of alkyl, dihydroxyalkyl, and alkenyl hydrocarbons having from 3 to 5 carbon atoms, X_1 is a member of the group consisting of H, NO_2, NH_2 or



when R_2 is alkyl, and X_2 is a member of the group consisting of H and alkyl having 1 to 14 carbon atoms. These compounds have been found to possess value as bacteriostatic or bacteriocidal agents. They are also valuable as intermediates in the preparation of surface-active agents. Typical derivatives are disclosed. Methods for preparing phosphine oxides of the foregoing description are also disclosed.

3,467,718
FLUOROCARBON COMPOUNDS
Phillip G. Thompson, St. Paul, Minn., assignor to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware
No Drawing. Continuation-in-part of application Ser. No. 275,473, Apr. 18, 1963. This application July 10, 1967, Ser. No. 651,988
Int. Cl. C07c *73/00*
U.S. Cl. 260—610 **4 Claims**

Certain fluoroalkyltrioxides are disclosed herein. These compounds are ozidizing agents and are useful for the purpose of bleaching, in organic synthesis and the like.

3,467,719
GLYCOLS CONTAINING TWO HYDROXYMETHYLCYCLOHEXYL GROUPS
Robert G. Thompson, Kinston, N.C., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Continuation-in-part of application Ser. No. 187,982, Apr. 16, 1962. This application Mar. 13, 1963, Ser. No. 264,783
Int. Cl. C07c *29/00, 31/20;* **C08g** *17/00*
U.S. Cl. 260—617 **10 Claims**

1. An ester-forming glycol selected from the class consisting of the glycol, bis(4-hydroxymethylcyclohexyl) ether; and compounds having the general formula,

$$HOCH_2—Q—(R)_m—Q'—CH_2OH$$

wherein Q and Q' are saturated divalent hydrocarbon radicals of the group consisting of 1,2-cyclohexylene, 1,3-cyclohexylene, 1,4-cyclohexylene, and lower alkyl derivatives thereof; *m* is 0 or 1; and R is a saturated divalent hydrocarbon radical of 1 to 8 carbon atoms.

3,467,720
PROCESS FOR THE PRODUCTION OF CYCLOHEXENOL
Ferdinand List and Helmut Alfs, Marl, Germany, assignors to Chemische Werke Huls A.G., Marl, Germany
No Drawing. Filed Mar. 30, 1966, Ser. No. 538,617
Claims priority, application Germany, Apr. 6, 1965, C 35,517
Int. Cl. C07c *35/14*
U.S. Cl. 260—617 **17 Claims**

In a process for producing cyclohexanol by hydrogenating cyclohexenol, the improvement comprising producing the cyclohexenol by oxidizing cyclohexene with oxygen at 40–60° C. in the presence of not more than about 1% of a first soluble heavy metal salt to convert about 5–30% of the cyclohexene to cyclohexenyl hydroperoxide; and then reacting the cyclohexenyl hydroperoxide with unconverted cyclohexene in the presence of an additional quantity of 1–5% by weight of a second soluble heavy metal salt, thereby forming approximately two mols of cyclohexanol from one mol of cyclohexenyl hydroperoxide and one mol of cyclohexene.

3,467,721
EXTRACTION OF PHENOL
Thomas Bewley, Epsom, Surrey, England, assignor to The Distillers Company Limited, Edinburgh, Scotland, a British company
No Drawing. Filed Sept. 26, 1966, Ser. No. 581,678
Claims priority, application Great Britain, Oct. 16, 1965, 43,945/65
Int. Cl. C07c *37/24, 39/12*
U.S. Cl. 260—621 **15 Claims**

A method of separating phenol produced from acid cleavage of cumene hydroperoxide from aqueous mixtures containing same by extracting said phenol with mesityl oxide.

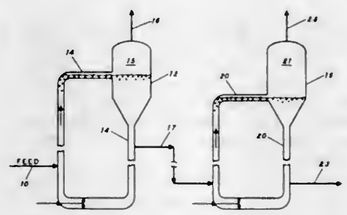
3,467,722
STABILIZATION OF 1,1,1-TRICHLOROETHANE
Wesley L. Archer, Midland, Mich., and George Richard Graybill, Honolulu, Hawaii, assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
No Drawing. Filed Dec. 14, 1967, Ser. No. 690,383
Int. Cl. C07c *17/42*
U.S. Cl. 260—652.5 **4 Claims**

The reaction of 1,1,1-trichloroethane with aluminum is inhibited by the presence in the 1,1,1-trichloroethane of a small amount of a dissolved trimethylene sulfide compound. Concentrations of the order of 0.01–1 gram mole per liter provide significant inhibition.

3,467,723
PROCESS FOR THE PURIFICATION OF AROMATIC HYDROCARBONS
Yutaro Matsumoto, Tadashi Hisatsune, Tsutomu Sasaki, Fumiaki Mitsudo, and Yasuhiro Yamauchi, Kitakyushu, Japan, assignors to Yawata Chemical Industry Co., Ltd., Tokyo, Japan
Filed Aug. 16, 1965, Ser. No. 479,814
Int. Cl. C07c *7/04, 15/00*
U.S. Cl. 260—674 **2 Claims**

Process for obtaining high purity aromatic hydrocarbons from aromatic hydrocarbon oils contaminated by non-aromatic hydrocarbons, comprising two distillation steps, wherein the first step said aromatic hydrocarbon oils are distilled by adding high-boiling point hydrocarbon oils mainly composed of saturated non-aromatic hydrocarbons, said non-aromatic hydrocarbons forming no azeotropic mixtures with aromatic hydrocarbons to be purified and having boiling point at least 20° C. higher than that of the latter, whereby a distillate containing substantially no contaminating matter is obtained and in the second step said distillate is subjected to known distillation procedures to remove low boiling point contaminating matters.

3,467,724
p-XYLENE PROCESS
Stephen A. Laurich, Warren, Pa., assignor to Chevron Research Company, San Francisco, Calif., a corporation of Delaware
Filed June 15, 1966, Ser. No. 557,761
Int. Cl. B01d *9/04;* **C07c** *15/08*
U.S. Cl. 260—674 **12 Claims**



Continuous crystallization process for the recovery of p-xylene from isomeric xylene mixtures. A body of a slurry of p-xylene crystals and mother liquor is circulated in a cyclical flow path and maintained at a p-xylene crystal-forming temperature and minor amounts of fresh feed and an inert fluid refrigerant are introduced therein. Crystal fines normally associated with shock cooling and supercooling are thereby avoided.

3,467,725
SEPARATION OF AROMATIC HYDROCARBONS WITH SOLID TERNARY COMPOUNDS
David G. Walker, Baytown, Tex., assignor, by mesne assignments, to Esso Research and Engineering Co., a corporation of Delaware
No Drawing. Continuation of application Ser. No. 689,725, Dec. 11, 1967, which is a continuation of application Ser. No. 242,365, Dec. 5, 1962. This application Nov. 1, 1968, Ser. No. 776,306
Int. Cl. C07c *15/00, 7/02*
U.S. Cl. 260—674 **8 Claims**

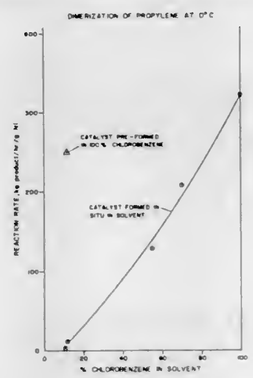
In a method for separating aromatic constituents from an admixture with paraffinic and naphthenic constituents in a hydrocarbon stream, a solid binary compound selected from the group having the general formula:

$$M^{+n}(AlX_4)_n^{-1}$$

where M is Cu^{+1}, Ag^{+1}, Zn^{+2}, Cd^{+2}, Hg^{+2}, Sn^{+2}, and Pb^{+2}; X is Cl and Br; and *n* is the valence of the metal, is admixed with the hydrocarbon stream to form a solid ternary compound with the aromatic constituents such that the solid ternary compound may be separated from the paraffinic and naphthenic constituents in the hydrocarbon stream.

3,467,726
DIMERIZATION OF OLEFIN HYDROCARBONS
William P. Griffin, Jr., Wilmington, Del., assignor to Sun Oil Company, Philadelphia, Pa., a corporation of New Jersey
Filed July 25, 1968, Ser. No. 747,570
Int. Cl. C07c *3/18;* **B01j** *11/78*
U.S. Cl. 260—683.15 **20 Claims**

Monoolefins are dimerized by contact at 100° C. to 200° C., preferably −50° C. to 100° C., with catalyst systems preformed by combining (1) certain types of nickel (II) halide phosphine coordination complexes, e.g. $(R_3P)_2NiX_2$, and (2) a Lewis acid which is $RAlX_2'$, $R_3Al_2X_3'$ or R_2AlX' in a small amount of halogenated benzenoid hydrocarbon, e.g., chlorobenzene, the pre-



formed catalyst then being employed in a predominantly hydrocarbon solvent for dimerizing the monoolefin.

3,467,727
ISOMERIZATION OF 2,3-DIMETHYLBUTENES
Samuel Kahn, Rutherford, N.J., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware
No Drawing. Filed Oct. 10, 1966, Ser. No. 585,290
Int. Cl. C07c *5/24*
U.S. Cl. 260—683.2 **7 Claims**

2,3-dimethylbutenes can be isomerized by contact with an activated clay catalyst. The 2-isomer can be converted to the 1-isomer and vice versa. The product can be used to make synthetic rubbers.

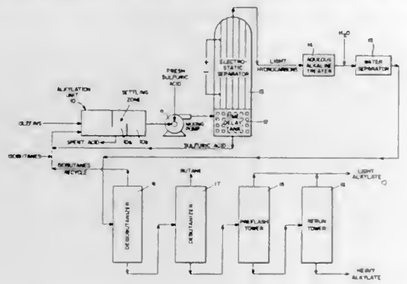
3,467,728
ISOMERIZATION PROCESS
George L. Hervert, Downers Grove, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware
No Drawing. Filed Oct. 31, 1966, Ser. No. 590,541
Int. Cl. C07c *5/24*
U.S. Cl. 260—683.2 **9 Claims**

Process for isomerizing an isomerizable olefinic hydrocarbon, such as 1-butene or 1-pentene, by contacting the hydrocarbon at a temperature of 0°–425° C. and a pressure of 1–200 atmospheres with a catalyst comprising a crystal'ine aluminosilicate combined with a substantially anhydrous boron halide. The catalyst is exemplified by the hydrogen form of faujasite or mordenite combined with substantially anhydrous BF_3. The catalyst may further comprise such BF_3-modified crystalline aluminosilicate suspended in an alumina, silica or silica-alumina matrix.

3,467,729
ALKYLATION PROCESS
Robert T. Rodgers, Newark, Del., assignor to Tidewater Oil Company, Los Angeles, Calif., a corporation of Delaware
Filed Sept. 7, 1966, Ser. No. 577,722
Int. Cl. C07c *3/54*
U.S. Cl. 260—683.62 **3 Claims**

An improved alkylation process is described, whereby alkylate effluent containing neutral esters is intimately

mixed with concentrated sulfuric acid and the intimate mixture allowed to stand for at least about one minute,



thereby purifying the alkylate effluent of the neutral esters.

3,467,730

THERMOSET CARBOXY COPOLYMER-AMINO ALDEHYDE-EPOXIDE RESIN COMPOSITIONS

Darrell D. Hicks, Louisville, Ky., assignor to Celanese Coatings Company, a corporation of Delaware

No Drawing. Continuation of application Ser. No. 811,536, May 7, 1959. This application Dec. 14, 1964, Ser. No. 418,310

Int. Cl. C08g *45/04, 45/10*

U.S. Cl. 260—834 **14 Claims**

Coating compositions are prepared from carboxy containing copolymers, epoxide resins and aminoplast resins. In an example 37 g. of a 50% copolymer (72% styrene, 20% methyl acrylate and 8% acrylic acid) solution, 6.9 g. of a polyglycidyl ether of bisphenol A prepared from 1 mole of bisphenol A and 2.04 moles epichlorohydrin, and 8.3 g. of butylated urea-formaldehyde resin were blended. The resulting film drawn on glass was cured at 200° C. for 30 minutes.

3,467,731

VINYL COATING COMPOSITIONS OF POLYVINYL CHLORIDE OF 2,2-DIMETHYL-1,3-PROPANEDIOL MONO(HYDROXYPIVALATE)

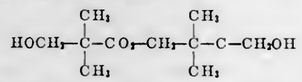
John Wynstra, Somerville, N.J., assignor to Union Carbide Corporation, a corporation of New York

No Drawing. Filed Apr. 11, 1967, Ser. No. 629,888

Int. Cl. C08g *41/04*

U.S. Cl. 260—859 **17 Claims**

Vinyl compositions suitable for industrial coating applications have been formulated from blends of about 90 to 60 percent by weight of an isocyanate terminated oligomer with 10 to 40 percent by weight of a vinyl chloride polymer. The oligomer is a condensation product of an ester-diol having the formula



with either a diisocyanate or an organic dibasic acid and a diisocyanate.

3,467,732

POLYMERS OF VINYL CHLORIDE BLENDED WITH CHLORINATED POLYMERS

David F. Schnebelen, Plaquemine, Warren L. Young, Baton Rouge, Robert R. Blanchard, Port Allen, and Glen H. Graham, Plaquemine, La., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed June 20, 1966, Ser. No. 558,596

Int. Cl. C08f *29/24*

U.S. Cl. 260—897 **6 Claims**

This invention relates to blends of vinyl chloride polymers and certain chlorinated olefin polymers. More particularly, it is directed to vinyl chloride polymer compositions containing from about 2.5 to 10 parts by weight of certain highly specific chlorinated olefin polymers wherein such chlorinated olefin polymers are of essentially linear structure and are characterized by having specified molecular weights, chlorine contents and modulus properties. These polymer blends have unexpectedly high impact strength values and are particularly useful for the preparation of essentially rigid articles such as pipes, tubing and blown bottles and the like.

3,467,733

CYCLIC ESTERS OF PHOSPHORUS AND A PROCESS FOR THE PREPARATION THEREOF

James L. Dever, Lewiston, and James J. Hodan, Williamsville, N.Y., assignors to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York

No Drawing. Filed Nov. 26, 1965, Ser. No. 510,076

Int. Cl. C07d *105/04;* **C08c** *11/66;* **C08f** *45/58*

U.S. Cl. 260—927 **10 Claims**

Cyclic phosphites and diphosphites, such as bis(1,3,2-dioxaphosphorinanyl - 2-oxy)aryl alkanes, and mono- and bis(1,3,2-dioxaphosphorinanyl-2-oxy)benzenes, useful as stabilizers for organic compositions, such as rubber and polyvinyl chloride, are made by reacting a cyclic phosphorohalidite with a hydroxy aromatic compound, subsequently neutralizing the reaction product with a nitrogen-containing compound, such as ammonia and recovering the desired cyclic phosphite or diphosphite.

3,467,734

O,O,O',O'-TETRALOWERALKYL O,O',DITHIO DI-p-PHENYLENE PHOSPHOROTHIOATES

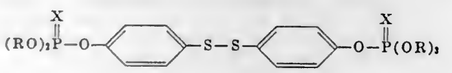
Richard Joseph Magee, Princeton, N.J., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Connecticut

No Drawing. Filed May 26, 1966, Ser. No. 553,017

Int. Cl. C07f *9/18, 9/12;* **A01n** *9/36*

U.S. Cl. 260—930 **3 Claims**

Phosphorus containing esters of the formula



wherein R is lower alkyl C_1–C_4 and X is S or O are disclosed as in their use in controlling insects.

3,467,735

HYDROXYL ARYL ESTERS OF PHOSPHOROUS ACID

Byron A. Hunter, Woodbridge, Conn., assignor to Uniroyal, Inc., a corporation of New Jersey

No Drawing. Filed Nov. 8, 1965, Ser. No. 506,860

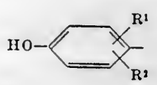
Int. Cl. C07f *9/12;* **C08c** *11/66;* **C08d** *11/04*

U.S. Cl. 260—953 **9 Claims**

Hydroxy aryl esters of phosphorous acid having the formula

$$(LO)_xP(OM)_y$$

where M is hydrocarbon (especially alkyl or alkyl phenyl, e.g., butyl, nonyl, nonyl phenyl) x is 1 to 3, y is 0 to 2, x plus y equals 3, and L is



where R^1 is secondary alkyl (e.g. alpha-methyl undecyl), terpenyl or aralkyl, and R^2 is hydrogen or one of the values stated for R^1. A typical product is made by reacting hydoquinone with dodecene-1 to produce 2,5-bis (alpha-methyl undecyl) hydroquinone; this is then reacted with phosphorus trichloride (or with mono-nonyl phenoxy phosphorus dichloride made by reacting phosphorus trichloride with monononyl phenol). Added to SBR latex, the chemicals make good stabilizers for the polymer.

3,467,736

ALLYLPHOSPHONODITHIOATES

Erik K. Regel, Mission, Kans., and Marion F. Botts, Independence, Mo., assignors to Chemagro Corporation, Kansas City, Mo., a corporation of New York

No Drawing. Filed Feb. 15, 1967, Ser. No. 616,203

Int. Cl. C07f *9/40, 9/42;* **A01n** *9/36*

U.S. Cl. 260—956 **7 Claims**

S,S-dialkyl allylphosphonodithioates are prepared by reacting allylphosphonyl dichloride with a 2 to 4 carbon atom alkyl mercaptan in the presence of a tertiary amine. The products are useful as saprophytic and parasitic nematocides.

3,467,737

PHENOLIC PHOSPHITES

Gordon D. Brindell, Wayne, N.J., assignor to Uniroyal, Inc., a corporation of New Jersey

No Drawing. Filed Nov. 8, 1965, Ser. No. 506,881

Int. Cl. C07f *9/12;* **C08f** *45/58*

U.S. Cl. 260—953 **7 Claims**

Hindered phenolic phosphites, such as tris[2,5-di(tertiary-butyl or -amyl)-4-hydroxyphenyl] phosphites (made by reacting the 2,5-di[tertiary alkyl] hydroquinone with PCl_3), or [2,5-di(tertiary-amyl)-4-hydroxyphenyl phenyl dodecyl phosphite (made by reacting 2,5-di-tert.-amylhydroquinone with triphenyl phosphite and n-dodecanol), are useful as stabilizers for polypropylene or other polymers.

3,467,738

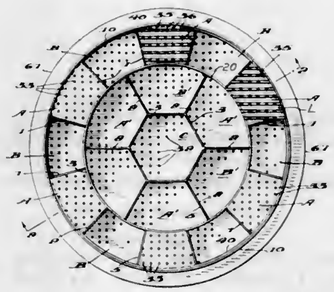
METHOD OF MAKING A REFRACTORY GRID FOR A FLUIDIZED SOLIDS REACTOR

Robert Pyzel, 82 E. End Ave., New York, N.Y. 10028

Filed July 12, 1966, Ser. No. 564,670

Int. Cl. B29c *1/00*

U.S. Cl. 264—30 **6 Claims**



A method of forming a large diameter monolithic refractory grid with air passages through the grid for use as the floor of a fluidized solids reactor which includes dividing a casting form into a plurality of sections, positioning combustible dowel pins in the form and casting a quick setting high temperature castable material into alternate sections of the form, allowing the alternate cast sections to harden, and then casting the adjacent sections, and thereafter heating the cast grid to a temperature sufficient to burn out the combustible dowel pins.

3,467,739

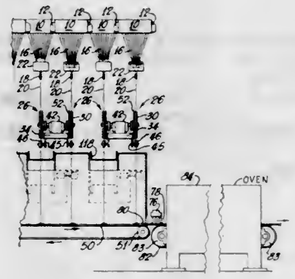
METHOD AND APPARATUS FOR FORMING PRODUCTS AND CONTROL THEREFOR

John T. Underwood, Lambertville, Mich., and Burton M. Palmer, Toledo, and Sheldon A. Canfield and Richard E. Pitt, Newark, Ohio, assignors to Owens-Corning Fiberglas Corporation, a corporation of Delaware

Filed Mar. 23, 1964, Ser. No. 356,690

Int. Cl. B29f *3/00;* **D01f** *1/00;* **C03b** *37/02*

U.S. Cl. 264—40 **11 Claims**



The invention relates to a method of and apparatus for exercising control of a plurality of material processing units arranged to normally continuously and concomitantly deliver material onto a moving conveyor and wherein a detector senses impairment or failure of delivery of a normal complement of material from a unit, the detector being effective to modify the rate of movement of the conveyor to maintain substantially normal the size and character of the composite assemblage of the collected material and wherein the unit, which is impaired or fails to deliver its normal complement of material, is rendered ineffective and further delivery of material to the conveyor from such station interrupted until normal operation is restored.

3,467,740

METHOD OF MAKING GRAVEL FILTER PIPES

Josef Bolewski, 5 Georghausserstrasse, 6101 Zeilhard, Darmstadt, Germany

Filed Nov. 21, 1966, Ser. No. 595,770

Int. Cl. B28b *7/32*

U.S. Cl. 264—69 **4 Claims**

Gravel filter pipes are made by placing an inflatable body within a perforated support body and then inflating it so that it bears against the perforated body; gravel and bonding agent are then poured around the outside of the body, the bonding agent sets, and the inflatable body is deflated.

3,467,741

METHOD OF MAKING A SHELF FRONT

Keith K. Kesling, Dayton, Ohio, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

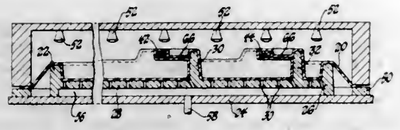
Filed Nov. 17, 1967, Ser. No. 684,049

Int. Cl. B29c *17/04*

U.S. Cl. 264—92 **2 Claims**

In the preferred process, a suitable plastic sheet is positioned over a vacuum forming mold having projections for forming shelves and forming bars, around which a shelf front is formed, which are removable from the mold. The sheet is heated and while being heated is drawn onto the

mold and around the forming bars. When the plastic sheet is removed from the mold, the forming bars remain en-



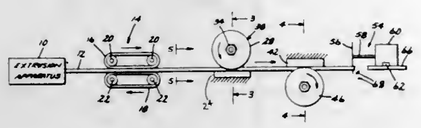
veloped in the plastic sheet as reinforcing bars in the shelf front.

3,467,742

METHOD FOR MANUFACTURING COMPLICATED SHAPES OF GLASS REINFORCED PLASTIC MATERIAL

Samuel M. Shobert, 17760 Dragoon Trail, Mishawaka, Ind. 46544

Filed May 7, 1965, Ser. No. 454,126
Int. Cl. B29c *17/10, 17/12*
U.S. Cl. 264—151 **9 Claims**



A method of manufacturing complicated shapes of glass reinforced plastic comprising the steps of (a) feeding continuously a straight rod of glass reinforced plastic longitudinally along a predetermined straight path, said path being parallel to the longitudinal extent of said rod, (b) continuously grinding a first partial fixed cross-sectional shape into one side of said rod as the latter passes a first station on said path, (c) continuously grinding a second partial fixed cross-sectional shape into another side of said rod as the latter passes a second station on said path, said second station being spaced from said first station in this direction of rod movement, (d) holding said rod against lateral movement at said second station during the grinding of said second shape, and (e) cutting said rod into lengths of predetermined size to thereby provide a multiplicity of pieces of substantially identical cross-sectional shape, size and material.

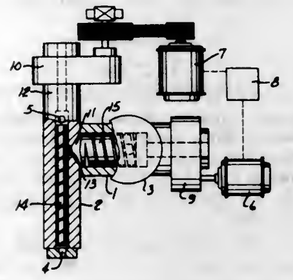
3,467,743

APPARATUS FOR THE EXTRUSION OF PLASTICS

Kanji Otani, 473 Kanagawa Prefecture, Kamakura, Japan

Filed Jan. 9, 1967, Ser. No. 608,212
Claims priority, application Japan, Jan. 11, 1966, 41/1,627
Int. Cl. B28b *3/20;* **B29f** *1/08, 3/00*
U.S. Cl. 264—176 **6 Claims**

An extruder for high speed extrusion of plastics having two transversely connected extruder stages, the first stage for receiving the plastic material for plastication and feeding the same at its extruding outlet to the transversely feeding zone of the second stage extruder whereupon the molten material is high speed metered to a die at the extruding outlet of the second stage extruder. A synchronous device is used to synchronize the operation of the extruder screws of the first and second stage extruders so that the respective rotational feed of the first and second stage extruder screw are synchronized to the extent that the speed of the second stage extruder is in excess of that ordinarily necessary to supply this stage with a constant and uninterrupted capacity flow of molten plasti-



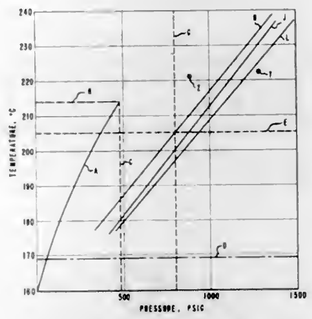
cated materials so that a resultant high shear stress is improved upon plasticated materials present in the second stage extruder.

3,467,744

PROCESS FOR FLASH SPINNING POLYPROPYLENE PLEXIFILAMENT

Rudolph Woodell, Richmond, Va., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Continuation-in-part of application Ser. No. 506,304, Nov. 4, 1965. This application Oct. 15, 1968, Ser. No. 768,617
Int. Cl. D01f *7/00*
U.S. Cl. 264—205 **2 Claims**



Solution of isotactic propylene polymer in 1,1,2-trichloro-1,2,2-trifluoroethane at elevated temperature and pressure can be flash-spun to provide highly fibrillated, strong, continuous polypropylene plexifilament.

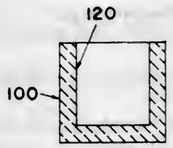
3,467,745

METHOD OF FORMING HOT PRESSED REFRACTORY CARBIDE BODIES HAVING SHAPED CAVITIES

Wingate A. Lambertson, Lexington, Ky., and Bruno R. Miccioli, North Tonawanda, N.Y., assignors to The Carborundum Company, Niagara Falls, N.Y., a corporation of Delaware

Filed Mar. 29, 1966, Ser. No. 538,341
Int. Cl. B29c *1/08*
U.S. Cl. 264—317 **8 Claims**

This invention relates to a method of forming hot pressed refractory carbide bodies having shaped cavities therein. According to one procedure, the refractory carbide powder to be hot pressed is placed in a mold together with a water-reactive carbide such as aluminum carbide, the latter being incorporated at locations and in amounts corresponding to the locations and size of the cavities desired in the hot pressed body. Following hot pressing,



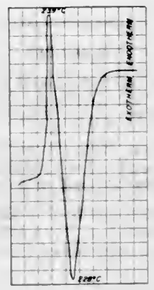
the water-reactive carbide may be leached out with water to leave the desired cavities. Instead of a water-reactive carbide, similar use may be made of a mixture which will form a water-reactive carbide under the conditions of hot pressing, e.g., a mixture of aluminum and carbon.

3,467,746

FORMING ARTICLES OF ORGANIC ACID ESTERS OF CELLULOSE WITH LOW MELTING POINTS AND IMPROVED SOLUBILITY AND MOLDING PROPERTIES

Carlton L. Crane and Robert F. Williams, Jr., Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

Filed Dec. 7, 1966, Ser. No. 598,182
Int. Cl. B29b *3/02;* **B29c** *5/00, 25/00*
U.S. Cl. 264—330 **5 Claims**



It was discovered that, although substantially pure Form II cellulose triesters have softening temperatures which are significantly lower than those of Form I material, Form II triester can be converted into the higher softening temperature material (after an article is made initially at the relatively lower temperature) by subjecting the solidified, shaped article to a temperature between about 105° C. and the heat distortion temperature of the article for a period of time.

3,467,747

METHOD OF PRODUCING A MEANS OF EXTERMINATING WARTS

Sven Hammarskjöld, Partille, and Curt Yngve Lenne, Molndal, Sweden, assignors to Aktiebolaget Bofors, Bofors, Sweden

No Drawing. Filed May 24, 1966, Ser. No. 552,419
Claims priority, application Sweden, May 26, 1965, 6,926/65; May 18, 1966, 6,880/66
Int. Cl. A61k *27/00*
U.S. Cl. 424—81 **1 Claim**

1. Method of exterminating warts consisting of the step of brushing or spraying on the warts an ethyl acetate solution of polymethyl ethoxy butyl acrylate which by itself does not have any effect on warts, having admixed therein an amount of salicylic acid which by itself does not have a sufficient viricidal effect for the complete healing of warts, and an amount of purified podophyllin which by itself does not have a sufficient viricidal effect for the complete healing of warts either.

3,467,748

COATED GELATIN CAPSULES

Arno Widmann, Eberbach, Baden, Germany, assignor to R. P. Scherer G.m.b.H., Eberbach, Baden, Germany, a firm of Germany

No Drawing. Filed Nov. 22, 1963, Ser. No. 325,756
Claims priority, application Germany, Jan. 5, 1963, Sch 32,557
Int. Cl. A61k *9/02*
U.S. Cl. 424—32 **4 Claims**

1. A gelatin capsule suitable for administration rectally and containing a medicament, the surface of which is coated with an essentially dry adherent continuous film whose softening point is above a temperature of at least 45° C., said film consisting essentially of a lubricating substance selected from the group consisting of polyethylene glycol having an average molecular weight of about 20,000, a partial ester of glycerol with an acid of the group consisting of saturated and unsaturated aliphatic monocarboxylic acids containing from 8 to 20 carbon atoms and not more than one double bond and mixtures thereof and about 0.2 percent of polyvinyl acetate, said lubricating substance being present in such amounts that upon contact with moisture the coated capsule becomes slippery and non-adherent to mucous anal tissue.

3,467,749

HYPOCHOLESTEROLEMIC NATURAL PRODUCTS AND THE PREPARATION OF SUCH FROM THE LIVERS OF STARVED MAMMALS

William H. Cevallos, Devon, William L. Holmes, Rosemont, and Richard I. Rubinstein, Melrose Park, Pa., assignors to Smith Kline & French Laboratories, Philadelphia, Pa., a corporation of Pennsylvania

No Drawing. Filed July 14, 1966, Ser. No. 565,086
Int. Cl. A61k *17/00;* **C07g** *17/00*
U.S. Cl. 424—106 **6 Claims**

A fraction isolated from the liver mitochondria of starved mammals has been demonstrated to have hypocholesterolemic activity. The methods used in isolation and purification are characterized by an acetone treatment to disrupt the cell structure of the excised mitochondrial tissue and final chromatographic purification over a phosphoric acid polystyrene resin column.

3,467,750

ANTHELVENCIN AND PROCESS FOR THE PRODUCTION THEREOF

Gerald W. Probst, Marvin M. Hoehn, and James M. McGuire, Indianapolis, Ind., assignors to Eli Lilly and Company, Indianapolis, Ind., a corporation of Indiana

Filed Mar. 12, 1964, Ser. No. 351,409
Int. Cl. A61k *21/00;* **C12d** *9/14;* **C07g** *11/00*
U.S. Cl. 424—118 **9 Claims**

Anthelvencin, an antibiotic produced by the culture of suitable strains of *Streptomyces venezuelae* and having anthelmintic properties.

3,467,751

ANTIBIOTIC A195 AND PROCESS FOR THE PREPARATION THEREOF

William W. Bromer, Marvin M. Hoehn, and James M. McGuire, Indianapolis, Ind., assignors to Eli Lilly and Company, Indianapolis, Ind., a corporation of Indiana

Filed Aug. 2, 1965, Ser. No. 476,614

Int. Cl. C07g *11/00;* A61k *21/02;* C12d *9/14*

U.S. Cl. 424—119 3 Claims

Antibiotic A195 and process for the production thereof by submerged aerobic culture of *Streptomyces spadicis,* ATCC 19017. The antibiotic demonstrates antibacterial, antifungal, and anthelmintic activity.

3,467,752

PRESERVATION OF ORGANIC MATERIALS FROM MICROBIAL ATTACK WITH HALOGENATED URACILS

Robert Duschinsky, Montclair, and Max Hoffer, Nutley, N.J., assignors to Hoffmann-La Roche Inc., Nutley, N.J., a corporation of New Jersey

No Drawing. Continuation-in-part of application Ser. No. 277,441, May 2, 1963. This application June 16, 1966, Ser. No. 557,891

Int. Cl. A61l *13/00;* D21h *5/22*

U.S. Cl. 424—251 4 Claims

The preservation of organic materials from microbial attack with halogenated uracils.

3,467,753

SUBSTITUTED PYRIDYLAMIDE AND PYRIDYLUREA NON-PHYTOTOXIC FUNGICIDES

Harold M. Foster, Park Forest, Ill., and John R. Kilsheimer, Westfield, N.J., assignors to Mobil Oil Corporation, a corporation of New York

No Drawing. Original application Mar. 29, 1965, Ser. No. 443,704, now Patent No. 3,376,309, dated Apr. 2, 1968. Divided and this application Aug. 10, 1966, Ser. No. 571,414

Int. Cl. A01n *9/22, 7/04*

U.S. Cl. 424—263 14 Claims

Pyridyl amines having at least one substituent attached to the pyridine ring in a position non-adjacent to the amide group are effective as systemic fungicides. They can be applied to a fungus, to a plant or to the soil in which a plant is to grow.

3,467,754

BRONCHODILATOR EXPECTORANT ELIXIR

Neil H. Mercer and Hugh D. Bryan, Evansville, Ind., assignors to Mead Johnson & Company, Evansville, Ind., a corporation of Indiana

No Drawing. Filed Aug. 10, 1966, Ser. No. 571,425

Int. Cl. A61k *27/00*

U.S. Cl. 424—253 3 Claims

A bronchodilator expectorant composition containing a sympathomimetic amine bronchodilator, the xanthine bronchodilator theophylline, guaiacol or a water soluble form thereof and a sedative.

3,467,755

COMPOSITIONS AND METHODS FOR PRODUCING SEDATION AND TRANQUILIZATION WITH SUBSTITUTED 4,5,6,7-TETRAHYDRO-4-OXINDOLES

Karl Schoen, Kew Gardens, and Irwin J. Pachter, Woodbury, N.Y., assignors to Endo Laboratories Inc., Garden City, N.Y., a corporation of New York

No Drawing. Continuation-in-part of application Ser. No. 348,878, Mar. 2, 1964. This application May 11, 1966, Ser. No. 549,135

Int. Cl. A61k *27/00;* C07d *27/56*

U.S. Cl. 424—274 13 Claims

Substituted 4,5,6,7-tetrahydro-4-oxoindoles are useful as psycho-therapeutic agents, in particular they reduce spontaneous motor activity, stimulate sensory perception, and have anti-depressant activity. Certain compounds also exhibit anti-inflammatory, antipyretic and analgetic activities.

3,467,756

COMPOSITION AND METHOD FOR TREATING GLAUCOMA

Clement A. Stone, Blue Bell, Pa., assignor to Merck & Co. Inc., Rahway, N.J., a corporation of New Jersey

No Drawing. Filed Mar. 16, 1967, Ser. No. 623,540

Int. Cl. A61k *27/00*

U.S. Cl. 424—283 2 Claims

Anti-glaucoma compositions containing, in an opthalmic vehicle, 10,11-dihydro-5-(3-methylaminopropyl)-5,10-epoxy-11-hydroxy-5H-dibenzo[a,d]cycloheptene or 10,11-dihydro-5-(3-dimethylaminopropyl)-5,10-epoxy-5H-dibenzo[a,d]cycloheptene-11-hydroxy-imino (or non-toxic addition salts thereof), either singly or in combination with a sympathomimetic amine, as well as methods of treatment.

3,467,757

COMPOSITION AND METHOD FOR COMBATTING MITES WITH N-4-BROMO-2-METHYL PHENYL-N',N'-DI-METHYL FORMAMIDINE

Dieter Duerr, Basel, Hans Aebi, Riehen, and Ludwig Ebner, Stein/Aargau, Switzerland, assignors to Ciba Limited, Basel, Switzerland, a company of Switzerland

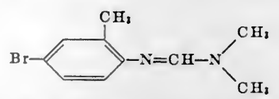
No Drawing. Original application Dec. 16, 1965, Ser. No. 514,376, now Patent No. 3,394,397, dated July 23, 1968. Divided and this application Feb. 21, 1968, Ser. No. 729,835

Claims priority, application Switzerland, Dec. 23, 1964, 16,636/64

Int. Cl. A01n *9/20*

U.S. Cl. 424—326 2 Claims

Compositions are provided which are useful for controlling harmful organisms of the animal and vegetable kingdoms, which contain as the active ingredient the compound of the formula



The compounds of this invention are especially useful in controlling acarinae.

ELECTRICAL

3,467,758

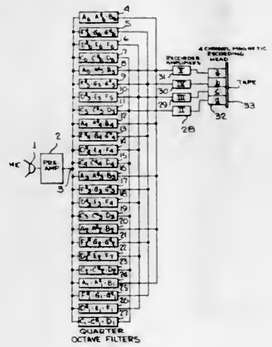
MULTIPLE SPEAKER SOUND OUTPUT SYSTEM FOR REDUCING INTERMODULATION DISTORTION

Daniel W. Martin, Cincinnati, Ohio, assignor to D. H. Baldwin Company, Cincinnati, Ohio, a corporation of Ohio

Original application Mar. 12, 1964, Ser. No. 351,427, now Patent No. 3,327,043. Divided and this application May 19, 1967, Ser. No. 654,668

Int. Cl. G11b *31/00*

U.S. Cl. 84—1.02 12 Claims



An audio frequency system for processing musical signals, particularly for reduction of intermodulation distortion produced by simultaneous tones subsisting in relatively small sub-bands of the audio frequency band, by subdividing the audio band in terms of quarter octave filters, combining the outputs of those filters which have primarily octavely related partials into separate channels, and transducing the signal content of the channels.

3,467,759

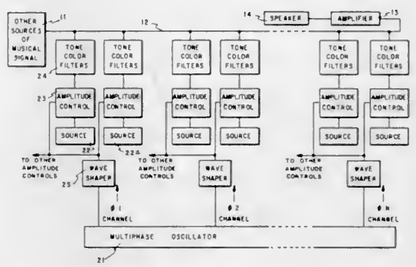
REITERATION, PERCUSSION AND SPEAKING TONE EFFECTS IN ELECTRONIC MUSIC GENERATION

Donald J. Campbell, Cincinnati, Ohio, assignor to Chicago Musical Instrument Co., a corporation of Delaware

Filed Oct. 15, 1965, Ser. No. 496,254

Int. Cl. G10h *5/12*

U.S. Cl. 84—1.25 15 Claims



A circuit for any musical instrument having different electronic signal sources by which the envelope of the tone-signal is shaped, according to predetermined patterns. Such shaping affects attack and decay, and is effected by use of a multiphase oscillator connected to control amplitude of tone signals. By this device, any rate of attack, any rate of decay, any amplitude, and any number of signal sources having any waveform can be combined in any sequence and rate to produce an infinite number of single event or repetitive tonal and/or percussion effects.

3,467,760

ELECTRICAL DEVICE WITH A FLUID INSULATING MEDIUM

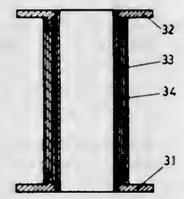
Litty Hugi, Wettingen, Switzerland, assignor to Aktiengesellschaft Brown, Boveri & Cie, Baden, Switzerland

Filed Aug. 24, 1966, Ser. No. 574,769

Claims priority, application Switzerland, Aug. 26, 1965, 12,021/65

Int. Cl. H05k *5/02*

U.S. Cl. 174—17 6 Claims



Insulating parts of electrical devices that must operate in contact with a fluorine compound are made of cast epoxy resins. In order to avoid decomposition by arcing the fillers for the resins exclude silicon and boron and their compounds.

3,467,761

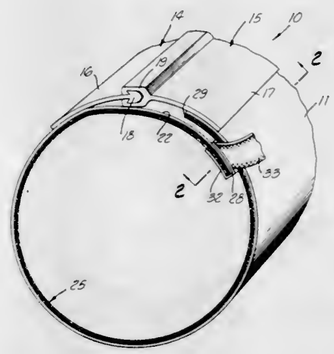
ELECTRICALLY SHIELDED HEAT-REACTIVE JACKET FOR CONDUCTORS

Walter A. Plummer, 3546 Crownridge Drive, Sherman Oaks, Calif. 91403

Continuation-in-part of application Ser. No. 667,444, Sept. 13, 1967. This application Sept. 23, 1968, Ser. No. 767,908

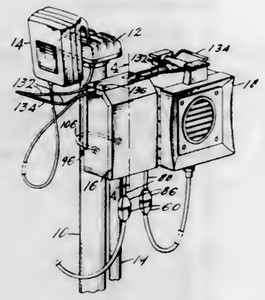
Int. Cl. H01b *11/06*

U.S. Cl. 174—36 10 Claims



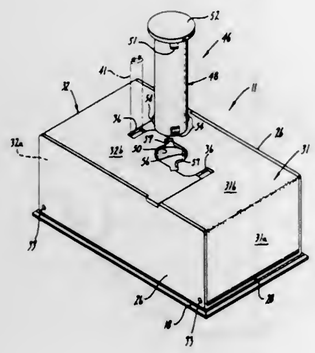
A detachable electrically shielded jacket for conductors and the like having a flexible metal mesh liner secured along only one lateral edge of a long strip of impervious insulative material which may be heat-reactive and shrinkable into a snug fit about the conductors when heated.

3,467,762
UNIVERSAL JUNCTION BOX FOR DRIVE-IN THEATER HEATERS
Angelo Boudouris, Sylvania, Ohio, assignor to Eprad Incorporated, Toledo, Ohio, a corporation of Ohio
Filed Apr. 12, 1967, Ser. No. 630,320
Int. Cl. H01r 13/46; H05k 5/02
U.S. Cl. 174—59 6 Claims



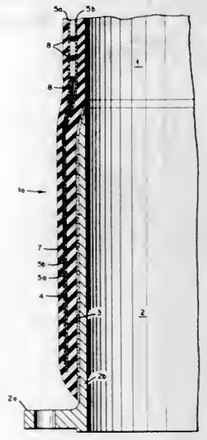
A junction box for drive-in theaters is designed to provide almost any conceivable electrical connection for a wide variety of types of car heaters, to permit conformation with electrical codes which vary widely from one area to another. The new junction box is mounted on a post which also supports the speakers, the box separately receiving the electrical lines for the heaters. The junction box can be used with permanently installed or removable heaters; the heaters can also be fused or not fused, and optionally connected to the line power through a terminal board or an electrical receptacle. The latter connection enables the heaters to be permanently mounted yet easily removed for servicing or replacement.

3,467,763
SAFETY COVER FOR ELECTRICAL OUTLETS
Howard G. Shaw, 24 Walnut Ave., Ross, Calif. 94957
Filed Aug. 15, 1967, Ser. No. 660,768
Int. Cl. H05k 5/03
U.S. Cl. 174—67 7 Claims



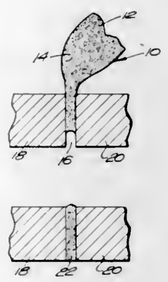
Safety cover for electrical outlets which can be mounted on the electrical outlet without changing the same and in which locking means has been provided to prevent the same from being opened by children.

3,467,764
HEAT AND CORROSION RESISTANT HOSE COUPLING FOR SUPPLYING FUEL, OIL AND THE LIKE
Heinrich Knapp, Bad Blankenburg, Thuringia Wald, Germany, assignor to VEB Transportgummi, Bad Blankenburg, Thuringia Wald, Germany
Filed Aug. 1, 1968, Ser. No. 749,545
Int. Cl. H02g 15/02
U.S. Cl. 174—74 8 Claims



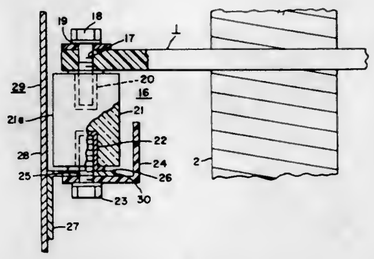
The heat resistant and electrically conductive rubber layer of the hose is firmly connected with a corrosion resistant zinc or cadmium containing fitting by means of an adhesive cobalt compound dissolved in rubber, or by a rubber solution of heavy metal salts of a branched aliphatic organic acid having a chain length of C_4 to C_{10}.

3,467,765
SOLDER COMPOSITION
Harry P. Croft, Westport, Conn., assignor to Contemporary Research, Inc., Waltham, Mass., a corporation of Delaware
Filed Oct. 4, 1965, Ser. No. 492,808
Int. Cl. H02g 15/08; H05k 1/00; B23k 31/02
U.S. Cl. 174—94 10 Claims



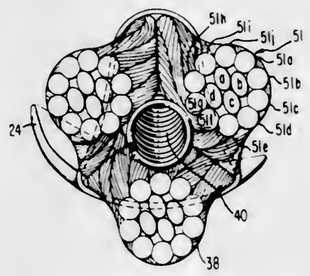
A novel tin-lead solder, having dispersed particles composed of an inert refractory compound, retains its strength together with its high electrical and heat conductivity to temperatures just under the melting point. When above the melting point, the solder is able to flow under capillary action.

3,467,766
BUS-BAR SUPPORTS
Glen L. Claybourn, Pittsburgh, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed July 26, 1967, Ser. No. 656,103
Int. Cl. H02g 5/00
U.S. Cl. 174—100 8 Claims



An insulating tie member, supporting one or more high-voltage bus bars, has its ends spaced from angle clips attached to side-frame supports by means of spacing means, either assuming the form of a standoff insulator, or a channel-shaped insulating spacing member, and additionally providing shielding means for relieving the potential gradient adjacent the inner sheared edge of the angle clip to prevent voltage breakdown.

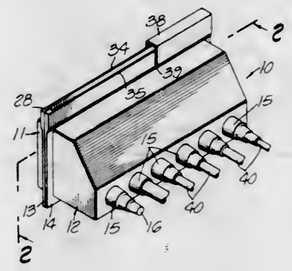
3,467,767
ELECTRICALLY CONDUCTIVE CABLE ROPE
William Toto, 3645 Warrensville Center Road, Cleveland, Ohio 44122
Original application Apr. 23, 1965, Ser. No. 450,421, now Patent No. 3,333,044, dated Aug. 25, 1967. Divided and this application May 23, 1967, Ser. No. 640,587
The portion of the term of the patent subsequent to July 25, 1984, has been disclaimed
Int. Cl. H01b 11/02
U.S. Cl. 174—113 1 Claim



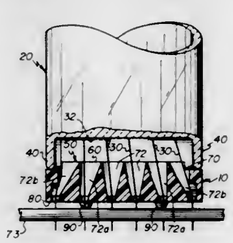
A special welding cable rope consisting essentially of 14 groups of strands of elliptical cross-section wherein 4 groups form a core section and 10 groups form a peripheral section providing minimum wear points in the passage of alternating current through the cable.

3,467,768
CONNECTOR BLOCK BOOT
Robert C. Shorey, Simi, Calif., assignor to Walter A. Plummer, Sherman Oaks, Calif.
Filed July 3, 1968, Ser. No. 742,366
Int. Cl. H01b 17/56; H02g 15/08
U.S. Cl. 174—138 8 Claims

A connector block boot molded of pliant thermoplastic material shaped to enclose, in a fluid-tight manner, a connector block for electrical conductors. The boot includes a plurality of integral nipples having closed outer ends and a stepped body sized to have a snug fit with the installation of different diameter conductors when the excess at the outer end is cut off to the proper size. The boot includes a flanged access opening formed with interlocking tongue and groove seam means effective, when closed, to exclude fluids and adapted to be opened for servicing operations. A spring clip may be assembled over the closed seam to provide more positive sealing action.



3,467,769
ELECTRON TUBE MOUNTING MEMBER
Ernest L. Tibbetts, Somerville, N.J., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan
Filed Dec. 22, 1967, Ser. No. 694,027
Int. Cl. H01b 17/56
U.S. Cl. 174—138 3 Claims



The disclosure is of an insulating disk adapted to be coupled to an electron tube having flexible leads, with the leads of the tube straightened and separated and insulated from each other by being passed through apertures in the disk. Thus, leads which are normally closely spaced and in danger of contacting each other can be safely and easily spread apart and insulated from each other.

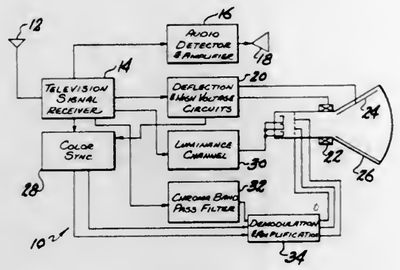
ERRATUM

For Class 174—144 see:
Patent No. 3,467,205

3,467,770
DUAL CHANNEL AUTOMATIC CONTROL CIRCUIT
Du Monte Otto Voigt, Des Plaines, and Richard Avicola, Chicago, Ill., assignors to Hoffman Products Corporation, Chicago, Ill., a corporation of Delaware
Filed June 17, 1966, Ser. No. 558,297
Int. Cl. H04n 5/38, 5/52
U.S. Cl. 178—5.4 10 Claims

An automatic control circuit is disclosed which in the described embodiment is used in a color television re-

ceiver to maintain constant chroma despite variations in brightness and contrast and includes a control circuit in the luminance channel responsive to variations in



brightness and contrast producing a control signal effective to alter the gain of an amplifier in the chrominance channel.

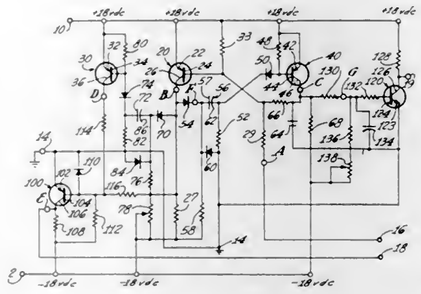
3,467,771
CLOSED CIRCUIT DETERRENT SYSTEM
Robert M. Polack, Grand Rapids, Mich., assignor to Commercial Machinery Corporation, Grand Rapids, Mich., a corporation of Michigan
Filed Mar. 12, 1968, Ser. No. 712,556
Int. Cl. H04n *5/76*
U.S. Cl. 178—6.6 **10 Claims**



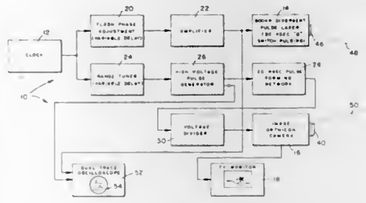
A closed circuit deterrent system suitable for utilization in banks and the like having one or more television cameras operatively connected to a video tape recorder. The recorder is actuated selectively by money-presence sensors in the cashiers drawers or switches positioned adjacent each cashier station. The recorder also has a sound track and microphones are provided at each of the cashier stations. The system performs the dual function of recording the image of a bank robber during the robbery and, additionally, recording the photographic image of persons conducting ordinary bank transactions. In the latter case, the cashier records on the sound track the transaction identification.

3,467,772
FM DEMODULATOR CIRCUIT FOR USE IN A FACSIMILE SYSTEM
Paul J. Crane, Torrance, Calif., assignor to The Magnavox Company, a corporation of Delaware
Filed Mar. 18, 1966, Ser. No. 535,442
Int. Cl. H04n *1/40*
U.S. Cl. 178—6 **9 Claims**

This invention relates to a facsimile system which converts an image into frequency modulated signals representing the image and transmits the signals to a receiver which demodulates the signals to recover the image. The system includes a demodulator which converts the frequency modulated signals to signals having substantially no duration in representation of white color and having a progressively increasing duration in progressively increasing shades of color toward black. The demodulator further has characteristics of producing a reference voltage for a white color and of producing progressive variations from the reference voltage for progressive variations toward a black color. By providing the demodulator with these characteristics, an accurate reproduction of the image at the receiver is obtained.

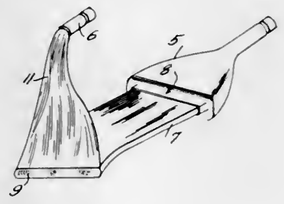


3,467,773
TELEVISION MONITORING SYSTEM FOR PENETRATING A LIGHT BACKSCATTERING MEDIUM
Paul J. Heckman, Jr., Pasadena, Calif., assignor to the United States of America as represented by the Secretary of the Navy
Filed Nov. 7, 1966, Ser. No. 592,664
Int. Cl. H04n *7/02, 5/38*
U.S. Cl. 178—7.2 **4 Claims**



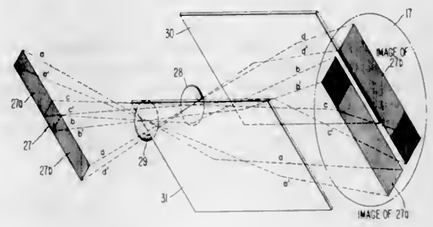
The invention is a television monitoring system for penetrating a medium which tends to backscatter light, and therefore has special utility in connection with underwater search operations. The system includes a periodically pulsed light source which emits extremely short bursts of illumination having a duration of the order of 20 nanoseconds. An image orthicon-type camera tube is employed as the television pickup. The photocathode of the image orthicon tube is energized by a periodic pulse signal which is also of a 20 nanosecond order of duration. The photocathode energizing pulse is in adjustably delayed phase relationship to the illumination pulse with a resolution of adjustment of the delay of the order of nanoseconds. The camera tube only receives light from a desired range of distances from the line of sight of the camera corresponding to the range of two-way distances light may travel during the 20 nanosecond period the photocathode is energized. The blurring effect of backscattered light from other ranges is avoided.

3,467,774
SCANNER EMPLOYING INTERLEAVED LIGHT CONDUCTING AND LIGHT DETECTING OPTICAL FIBERS
John F. Bryant, Lemon Grove, Calif., assignor to Stromberg-Carlson Corporation, Rochester, N.Y., a corporation of Delaware
Filed June 7, 1966, Ser. No. 555,812
Int. Cl. H04n *5/38*
U.S. Cl. 178—7.2 **3 Claims**



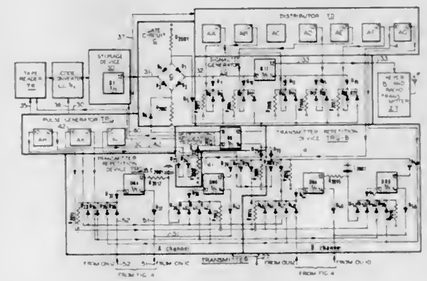
A flying spot scanner employs a cathode ray tube as a light source to scan one end of a set of fibers interleaved at the other end to contact the plane of a pattern or message sheet with alternating fibers coupled to a photo detector device to provide video signals dependent upon the reflectivity of the pattern at the instantaneous positions being scanned.

3,467,775
IMAGE DISSECTOR SCANNER
David M. Stern, Merion Station, Abe Mann, Bala Cynwyd, and James A. Ogle, Paoli, Pa., assignors to Burroughs Corporation, Detroit, Mich., a corporation of Michigan
Filed Jan. 3 1967, Ser. No. 609,989
Int. Cl. H04n *5/38, 3/02*
U.S. Cl. 178—7.2 **17 Claims**



An optical system combined with an image dissector tube for reforming the light image which normally would be focused on the photocathode of the image dissector tube into a light image of substantially larger area relative to the area of the photocathode. In one embodiment of the invention, top and bottom portions of the object are enlarged and imaged in side-by-side relationship on the photocathode. In another embodiment of the invention, the object is imaged on the photocathode and enlarged in the horizontal direction but not in the vertical direction.

3,467,776
SYSTEM FOR AUTOMATIC ERROR DETECTION AND CORRECTION OF TELECOMMUNICATED SIGNALS
Hendrik Cornelis Anthony van Duuren, Wassenaar, and Christiaan Johannes van Dalen and Herman da Silva, Voorburg, Netherlands, assignors to De Staat der Nederlanden, ten Deze Vertegenwoordigd Door de Directeur-Generaal der Posterijen, Telegrafie en Telefonie, The Hague, Netherlands
Continuation-in-part of application Ser. No. 86,404, Feb. 1, 1961. This application Nov. 25, 1966, Ser. No. 596,862
Claims priority, application Netherlands, Feb. 15, 1960, 248,434
Int. Cl. H04l *1/16*
U.S. Cl. 178—23 **13 Claims**

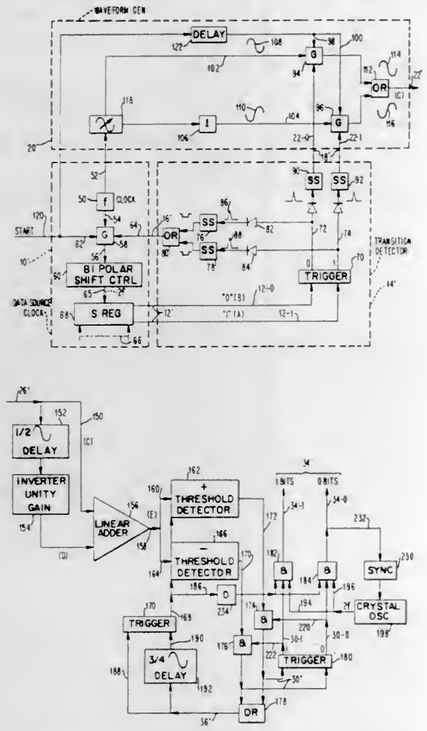


A telegraph type signal communication system between two stations for the automatic detection and correction of telegraph type signals in which no signal can be lost, transposed, or repeated, by transmitting a special service signal to set up uninterruptible repetition cycles for the same number of signals at each station when an error is detected, which repetition cycles at both stations must be in signal interval or revolution synchronism before repetition of the stored group of the last transmitted signals including the one or ones to be corrected can be repeated, both of which repetition cycles must be completed before being terminated.

3,467,777
DATA TRANSMISSION WITH PHASE ENCODING OF BINARY STATE TRANSITIONS
Dale H. Rumble, Saugerties, N.Y., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed Oct. 15, 1965, Ser. No. 496,303
Int. Cl. H04l *27/24, 15/04*
U.S. Cl. 178—67 **19 Claims**

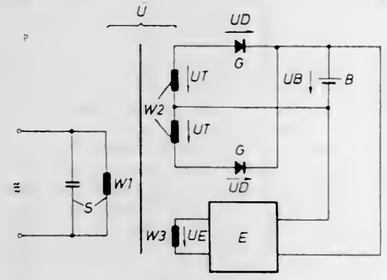
A data transmission system utilizes a full cycle of a waveform to encode a transition in the binary state in serial information, while steady state bits of information between transitions are represented by clock times operating at a nominal frequency having a period of half of that of the waveform. The data to be transmitted is shifted serially from a register at the nominal rate as "1" and "0" data bits. Transitions in the binary state of the bit series are detected and utilized to degate the shift control for one nominal period to produce a hesitation in the bit series. At the same time, circuitry gates out a sine waveform or a reverse sine waveform according to whether the data bit transition was from 1 to 0 or from 0 to 1. The hesitation in the bit rate provides the time for completion of this waveform, after which the sensing of new bits proceeds at the nominal rate. At the receiver, the received waveforms are sensed by correlation circuits which delay the waveform for one half its length (one nominal period),

invert it and add it to the undelayed incoming signal. The transition thus detected operates gates on the receiver clock for reproducing the transmitted bit series. Error rejection in the receiver is provided by deconditioning the



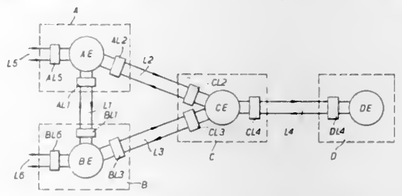
waveform sensing circuits for one half waveform length after each transition is detected and by rejecting any transition indication which is the same as the previously received one.

3,467,778
CIRCUIT ARRANGEMENT FOR POWER SUPPLY AND FOR A CONTROLLED FREQUENCY-MODULATED OPERATION OF A SUB-ASSEMBLY
Armin Konold, Dinkelgarbe, Germany, assignor to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware
Filed Feb. 2, 1966, Ser. No. 524,402
Claims priority, application Germany, Feb. 4, 1965, St 23,309
Int. Cl. H04m *19/00*
U.S. Cl. 179—1 **6 Claims**



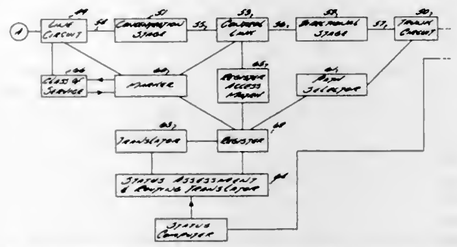
A mining cage telephone system is provided with means to conserve power. In the mining cage, a transformer is supplied to receive signals and supply them to the telephone receiver. A rectifier is connected to the transformer to receive excess energy not needed to operate the receiver and to divert the excess energy for storage in a floating battery.

3,467,779
OSCILLATOR SYNCHRONISATION IN DIGITAL COMMUNICATIONS SYSTEMS
Winston Theodore Duerdoth, 70 Evelyn Ave., Ruislip, England
Filed Aug. 5, 1966, Ser. No. 570,538
Claims priority, application Great Britain, Aug. 17, 1965, 35,203/65
Int. Cl. H04j *3/06*
U.S. Cl. 179—15 **14 Claims**



This specification describes a time division multiplex pulse code modulation system including a plurality of stages intercoupled by transmission paths, the stages having timing oscillators which must be synchronised with one another. Each transmission path at its connection to a signal input to a stage has a digit storage means or aligner by means of which digits incoming to the stage are synchronised with the timing oscillator of the stage. Associated with each digit storage means is a control signal generator which produces two types of control signal, one type when the storage means is nearly empty of digits and the other type when it is nearly full. The control signals from the generator are applied to control the frequencies of the timing oscillator of the local stage and the timing oscillator of the stage at the other end of the transmission path concerned, the senses of control being such as to tend to keep the digit storage means roughly half full of digits. Each timing oscillator has an input circuit for the control signals which inhibits a change of frequency of the oscillator in response to a control signal if control signals calling for an increase and a decrease in frequency are present simultaneously.

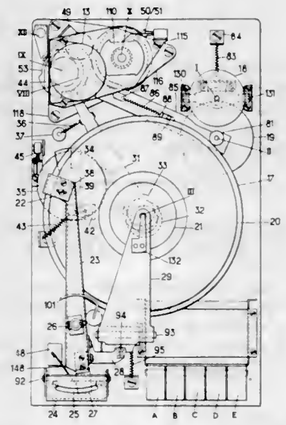
3,467,780
AUTOMATIC SWITCHING NETWORK
John E. Cox, George L. Hasser, Guenter J. Boehm, Stanley J. Westhead, Theodore Feldman, and Thomas F. Buck, Nutley, N.J., assignors to International Telephone and Telegraph Corporation, Nutley, N.J., a corporation of Delaware
Filed Oct. 21, 1965, Ser. No. 500,381
Int. Cl. H04m *3/00*
U.S. Cl. 179—18 **13 Claims**



A switching network wherein the concentration and direction switching functions are separated into individual

switching stages. Unique cable harnesses connect the separated switching stages and provide a homogeneous flow of traffic even when additional stages are added. The heart of the system is the relatively small matrices with dimensions that are uniform for each stage. The system is equipped to handle different types of signalling, such as D.C. signalling, tone signalling and voice frequency pulse signalling.

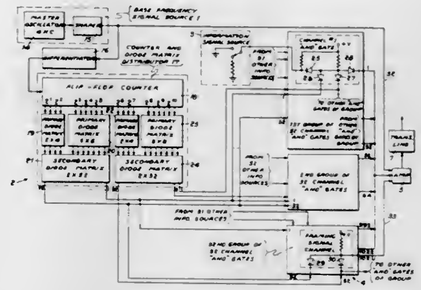
3,467,781
APPARATUS FOR THE RECORDING AND REPRODUCTION OF MESSAGES
Jean Feat, Paris, France, assignor to Crouzet, Valence, Drome, France, a French company
Filed Aug. 30, 1965, Ser. No. 483,465
Claims priority, application France, Sept. 1, 1964, 986,817
Int. Cl. H04m *11/00*
U.S. Cl. 179—6 **11 Claims**



An apparatus for the recording and reproduction of messages which can selectively be dictated from a distance or locally, said apparatus being intended for use either as a dictating machine or in conjunction with a telephone station equipped with calling means and a telephone line transformer so as to provide a telephone-answering service, wherein said apparatus comprises two message recording and reading units, one of which has an endless magnetic band. Said band is actuated by driving means comprising one capstan drivable from an electric motor common to the said two units by means of engagement means comprising on the one hand, a set of wheels mounted on a common shaft in turn mounted in a displaceable shaft support and on the other hand a slidearm controlled by a cam of an automatic selector and operatively connected with said shaft-support.

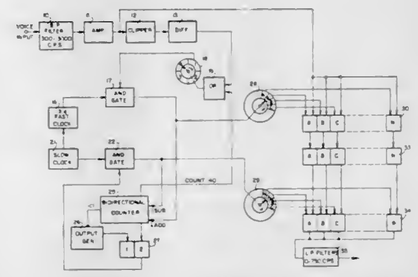
3,467,782
TIME DIVISION MULTIPLEX SYSTEM FOR LOW FREQUENCY TRANSMISSION MEDIA
Robert L. Plouffe, New Canaan, Conn., and Stanley M. Schreiner, Nutley, N.J., assignors to International Telephone and Telegraph Corporation, Nutley, N.J., a corporation of Delaware
Filed Feb. 11, 1966, Ser. No. 526,786
Int. Cl. H04j *3/02*
U.S. Cl. 179—15 **14 Claims**

The system includes a transmitter having a base frequency signal cooperating to form an information modulated multiplex signal including a framing signal, the base frequency signal being conveyed along with the multiplex signal over the transmission media, and a receiver including means responsive to the conveyed transmitter base frequency signal to provide a base frequency signal for the receiver to operate the distributor of the receiver and means responsive to the transmitted framing



signal to cause the receiver distributor to be in synchronism with the transmitter distributor.

3,467,783
SPEECH BANDWIDTH REDUCTION BY SAMPLING 1/N CYCLES STORING THE SAMPLES, AND READING THE SAMPLES OUT AT 1/N THE SAMPLING RATE
Henry Magnuski, Glenview, Ill., assignor to Motorola, Inc., Chicago, Ill., a corporation of Illinois
Filed Aug. 18, 1964, Ser. No. 390,395
Int. Cl. H04b *1/66*
U.S. Cl. 179—15.55 **9 Claims**

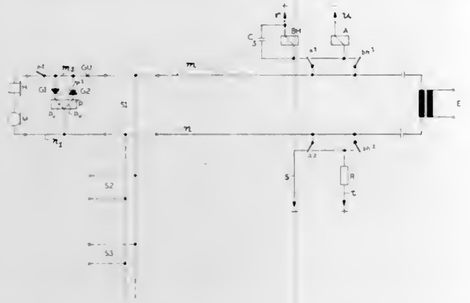


Every Nth cycle of a speech waveform is sampled at a first predetermined rate and the samples thus obtained are stored in a memory. The stored samples are read out at a rate equal to $1/N$ times the first predetermined rate, thus increasing the period of each cycle to thereby reduce the bandwidth of the electrical signals. Reconstruction of the signals is accomplished by sampling the bandwidth compressed signal at a second predetermined rate, storing the samples in a memory, reading out the samples at a rate N times the second predetermined rate to reconstruct the signal expanded in bandwith and repeating such readout an average of N times for each cycle.

3,467,784
AUTOMATIC LOCKOUT PARTY LINE TELEPHONE SYSTEM
Carl-Heinz Jeske, Munich, Germany, assignor to Sud-Atlas-Werke G.m.b.H., a corporation of Germany
Filed Feb. 9, 1966, Ser. No. 526,082
Int. Cl. H04m *3/56*
U.S. Cl. 179—17 **4 Claims**

A number of like transmitters are coupled in parallel across a pair of signal conductors. When one of the trans-

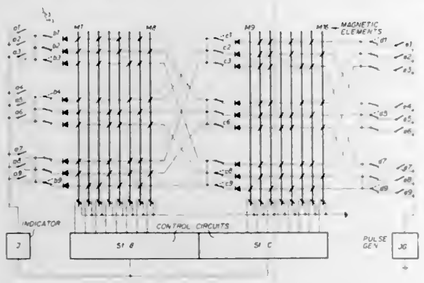
mitters is conditioned to use the pair of signal conductors, a difference in potential of predetermined polarity is applied between the signal conductors to signal other transmitters that this pair of signal conductors is being used.



3,467,785
ROUTE SEARCHING GUIDE WIRE NETWORKS

Friedrich Ulrich, Stuttgart-Weilimdorf, Germany, assignor to International Standard Electric Corporation

Filed Oct. 19, 1965, Ser. No. 497,800
Claims priority, application Germany, Oct. 23, 1964, St 22,847
Int. Cl. H04m *3/16*
U.S. Cl. 179—18 **3 Claims**



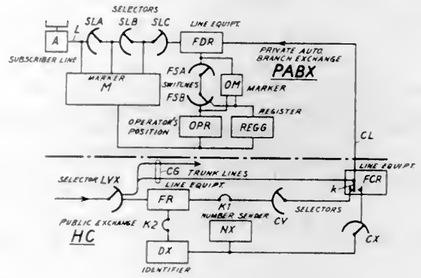
A switching network negatively simulated by a guide wire network. If a portion of the line is seized or available in the switching network, the contact in the guide wire network is opened or closed respectively. Means are provided for checking on current passage in the guide wire network to determine whether a connection can be established. After the checking, magnetic circuits are used to select one of several possible connecting routes.

3,467,786
MEANS FOR AUTOMATIC TELEPHONE TRAFFIC TO SUBSCRIBER'S LINES IN PRIVATE AUTOMATIC BRANCH EXCHANGES

Anton Kristian Diesen, Hagersten, Sweden, assignor to Telefonaktiebolaget L. M. Ericsson, Stockholm, Sweden, a corporation of Sweden

Filed June 23, 1965, Ser. No. 466,363
Claims priority, application Sweden, July 2, 1964, 8,048/64
Int. Cl. H04m *3/42, 3/00*
U.S. Cl. 179—18 **3 Claims**

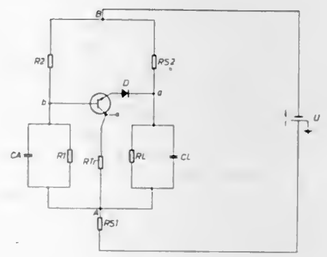
In a telephone system comprising a public automatic exchange connected by a plurality of trunk lines to a private automatic branch exchange (PABX), each trunk line has a subscriber's number and terminal in the public automatic exchange. Some of the PABX subscribers have subscriber numbers and terminals in the PABX, and they correspond to the numbers assigned to the trunks. When one of the predetermined numbers is called, it is identified in the public exchange, and by means of a number sender and a selector a trunk line is seized, over which signals indicating the desired subscriber number are sent to the PABX. Means in the PABX receive the signals and connect the called subscriber's line to the selected trunk line, while means in the public exchange connect the calling line to the same trunk line.



3,467,787
CIRCUIT ARRANGEMENT TO SUPERVISE TELECOMMUNICATION AND PARTICULARLY TELEPHONE LINES

Otto Baade, Stuttgart-Weilimdorf, Germany, assignor to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware

Filed June 1, 1966, Ser. No. 554,456
Claims priority, application Germany, June 19, 1965, St 24,002
Int. Cl. H04b *3/02*
U.S. Cl. 179—79 **2 Claims**



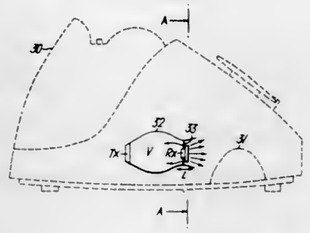
Loop supervision is provided for telephone circuits to enable recognition of short loop interruptions used in key dialling or operating signals or as part of a dial signal. The evaluating portion of the circuit is inserted in a bridge circuit which is made symmetrical by use of a capacitor.

3,467,788
TONE RINGER

John Frederick Why and Athanasios Papadopoulos, London, England, assignors to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware

Filed July 20, 1966, Ser. No. 566,624
Claims priority, application Great Britain, July 26, 1965, 31,808/65
Int. Cl. H04m *1/02*
U.S. Cl. 179—84 **9 Claims**

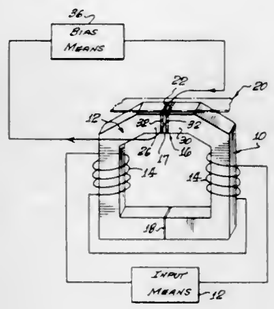
A tone ringer uses an electrical signal fed into a carbon granule telephone transmitter acoustically coupled to a receiver. The entire system is tuned electrically and acoustically, to provide a relatively high frequency resonance at about 1700 c.p.s. The resulting feedback causes the ringers system to emit a tone each time that ringing current is received. A Helmholtz resonator is especially well suited for providing the acoustical resonance.



3,467,789
MAGNETIC RECORDING HEAD WITH BIAS APPLIED TO THE GAP SPACER

Wayne R. Johnson, Woodland Hills, and Finn Jorgensen, Sherman Oaks, Calif., assignors, by mesne assignments, to United Control Corporation, Redmond, Wash., a corporation of Delaware

Filed Sept. 27, 1965, Ser. No. 490,337
Int. Cl. G11b *5/12*
U.S. Cl. 179—100.2 **3 Claims**



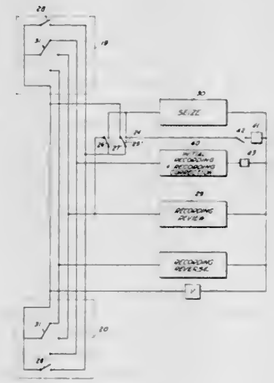
A transducer is disclosed that provides a magnetic field having a sharp field gradient which facilitates consistent penetration into a recording medium. A bias signal of unusually high frequencies (substantially greater than five times the highest information signal and at least in excess of one-half megacycle) is applied to said transducer in the proximity of the magnetic medium.

3,467,790
DICTATION-TRANSCRIPTION DEVICE

Fred C. Bolick, Jr., Atlanta, Ga., assignor to Lanier Electronics Laboratory, Inc., Atlanta, Ga., a corporation of Georgia

Filed Oct. 4, 1967, Ser. No. 672,797
Int. Cl. G11b *5/78*
U.S. Cl. 179—100.1 **13 Claims**

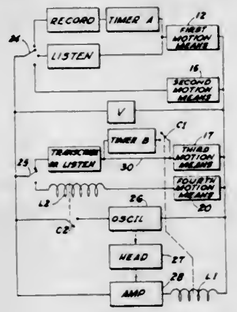
What is disclosed herein is a dictation-transcription device using a tape for recording material during a plurality of successive dictation periods. The dictation-transcription device includes an adjusting means for making those changes in the position of the tape which are required for the tape to be in the proper position for initiation of a dictation period and an accumulating means for accumulating the time that the tape is in this position. The adjusting means includes a sensing means for sensing when the tape is not in the proper position for initiation of a dictation period, a tape advance means responsive to the sensing means for moving the tape into the proper position for the initiation of a dictation period, and a disabling means responsive to the sensing means for preventing the initiation of a dictation period when the tape is not in the proper position for the initiation of a dictation period. The proper position of the tape upon initiation of each dictation period that is provided by the adjusting means is that position at which the recording of material is on a portion of the tape not used in the immediately previous dictation period. The accumulating means includes the sensing means and a registering means responsive to the sensing means and provides a means for accumulating the time during a dictation period that recording of material is on a portion of the tape not used in the dictation period. The lapsed time accumulated by the accumulating means is an accurate indication of the length of the tape on which material is recorded.



3,467,791
DEVICE TO INDICATE THE NET MOTION OF A TAPE IN ONE OF TWO DIRECTIONS OF TRAVEL

Fred C. Bolick, Jr., Atlanta, Ga., assignor to Lanier Electronic Laboratory, Inc., Atlanta, Ga., a corporation of Georgia

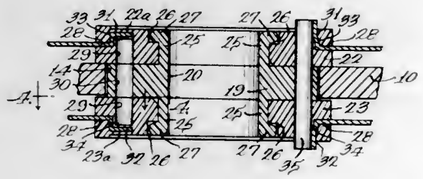
Filed Mar. 8, 1967, Ser. No. 621,641
Int. Cl. G11b *5/02, 5/78*
U.S. Cl. 179—100.2 **9 Claims**



What is disclosed herein is a tape device of the type in which a tape is moved relative to an electro-magnetic head in two directions and having an accumulating means for

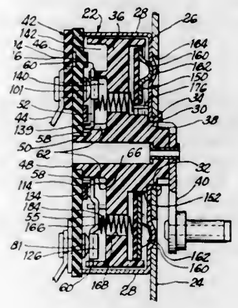
accumulating increments of a quantity such as increments of time or tape length which are proportional to the net motion of the tape in one of the two directions in connection with a particular operation of the tape device such as a transcribing operation. More specifically, what is disclosed is a tape device including a cumulating means which serves as an indicating means for indicating the accumulated increments of operating time corresponding to the motion of a tape relative to an electro-magnetic head in a first direction, and a control means for excluding from the increments of operating time accumulated by the cumulating means those increments of operating time which correspond to the motion of the tape relative to the electro-magnetic head in the first direction that is required to return the tape to its position prior to motion of the tape in a second direction or that is otherwise not in connection with a particular operation of the tape device. In one of the embodiments of the invention, the control means is a circuit means for energizing the cumulating means only when the tape is moving in the first direction in connection with a particular operating function such as the recording of dictation. In another embodiment of the invention, the control means includes a condition means for progressively changing the condition of the tape from a first condition to a second condition as the tape moves relative to the electro-magnetic head in a second direction, and a signal means responsive to the second condition of the tape for rending the cumulating means inoperative as tape in the second condition moves relative to the electro-magnetic head in the first direction. Regardless of embodiment, the control means serves to exclude from the increments of time, tape length or the like accumulated by the cumulating means, substantially all of those increments corresponding to that tape motion in the first direction which do not advance a particular operation of the tape device.

3,467,792
ROTARY ELECTRIC SWITCH ROTOR CONSTRUCTION
Kenneth C. Allison, 1546 S. Shore Drive, Crystal Lake, Ill. 60014
Filed Mar. 8, 1968, Ser. No. 711,706
Int. Cl. H01h *19/54, 21/76*
U.S. Cl. 200—11 **6 Claims**



An improved rotor construction for a multi-contact rotary switch as disclosed herein includes a molded rotor body having a rotor contact blade supporting portion in which the shank portion of each rotor contact blade is embedded and the area between the opening in the rotor for occupancy by the rotor operating shaft and the area containing said shank portions of the contact blades is provided with an axially extending recess in which radially extending inner ends or terminals of said rotor contact blades are available for welded or soldered connection with a bridge member in said recess when said terminals are upended into axially extending position. Each terminal is offset from the shank portion of the contact blade associated therewith in a direction away from the terminal in axially paired relation thereto so as to bring said terminal, when upended, closer to the surface of the rotor and accordingly more accessible for the production of a soldered or welded connection with the surface of a bridge member facing said terminals.

3,467,793
MULTIPOSITION ROTARY SWITCH WITH RADIALLY INNER AND OUTER DRIVE ELEMENTS AND REPLACEABLE MOVEABLE CONTACT CARRIAGES
William N. Schink, Crystal Lake, Ill., assignor to Indak Manufacturing Corp., Northbrook, Ill., a corporation of Illinois
Filed Aug. 31, 1967, Ser. No. 664,705
Int. Cl. H01h *19/58, 21/78*
U.S. Cl. 200—11 **13 Claims**

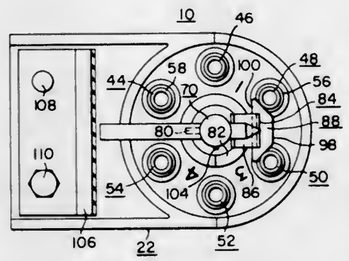


A rotary switch having a plurality of contactors mounted on an insulating carriage, each contactor being disposed substantially in a radial plane perpendicular to the axis of said carriage, each contactor being driven, so as to rotate with said carriage, by inner and outer drive tabs on said contactor, said inner drive tag being received in a slot in the hub of said carriage, said additional drive tab being received in a slot formed in a generally cylindrical flange on said contactor, said inner and outer drive tabs being substantially in said radial plane so that the driving forces on said contactor are substantially coplanar with the frictional forces between said contactor and the stationary contacts engaged thereby, the switch having a detent plate rotatable with said carriage and having detent elements engageable with cooperating detent elements on the casing of the switch, said detent plate being biased forwardly by a plurality of springs extending through openings in the carriage between the detent plate and the contactors, an insulating member being carried by the detent plate to prevent the springs from establishing any electrical connection between the detent plate and the contactors, the detent plate being formed with a pair of flanges slidably received in slots formed in the carriage so that the detent plate will rotate with the carriage, the insulating member being in the form of a plate having slots receiving said flanges on said detent plate.

3,467,794
TAP CHANGER
Donald J. Ristuccia, Sharpsville, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Mar. 25, 1968, Ser. No. 715,802
Int. Cl. H01h *19/58, 21/78*
U.S. Cl. 200—11 **7 Claims**

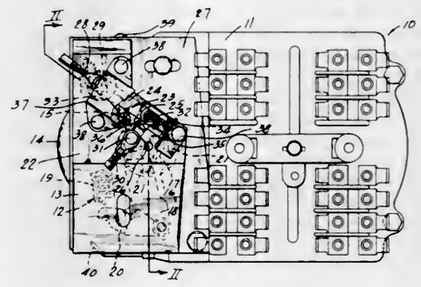
A tap changer adapted to be disposed within the casing of an electrical distribution transformer. The tap changer

includes an insulating base member having first and second ends, and an opening which extends between its ends, an insulating shaft member disposed in the opening in the base member, bearing assemblies which secure the shaft in rotary relation with the base member, and a plurality of cylindrical electrical contact members fixed to the base member in spaced circumferential relation with one



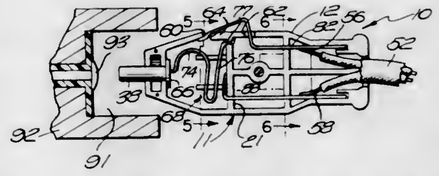
another, about the shaft. A movable contact assembly comprising a leaf spring and a contact shoe is secured to the shaft, with the leaf spring being bent to urge the contact shoe radially outward into contact with two adjacent cylindrical contact members. The contact shoe is shaped to provide a positive detent snap type wiping action at each tap changer position, as the shaft is rotated to select the desired operating position.

3,467,795
SUB-INTERVAL TIMER
Joe Bowman, Greentown, Ind., assignor, by mesne assignments, to The Scott & Fetzer Company, Lakewood, Ohio, a corporation of Ohio
Filed Nov. 7, 1966, Ser. No. 592,431
Int. Cl. H01h *7/08*
U.S. Cl. 200—38 **8 Claims**



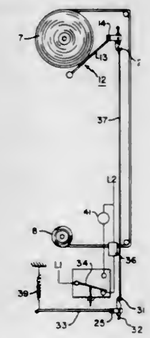
A sequential timer of the step-by-step type has, in addition to conventional components, a continuously rotatably driven member having a cam track and an auxiliary switch controlled thereby to be actuated between increments of movement of the main timing cam. The continuously rotatably driven member can close the auxiliary switch more than once for each step that the main cam is driven by the step-by-step mechanism. The auxiliary switch is supported on a cover that encloses the step-by-step mechanism, there being structural details by which the auxiliary switch structure is automatically aligned with the step-by-step mechanism during assembly of the device.

3,467,796
ELECTRICAL CONNECTOR
Abraham Grober, Providence, R.I., assignor to Victor Electric Wire & Cable Corp., West Warwick, R.I., a corporation of Rhode Island
Filed Feb. 20, 1967, Ser. No. 617,313
Int. Cl. H01r *33/30*
U.S. Cl. 200—51.09 **8 Claims**



An electrical connector including a housing that is inserted into a socket and having contact members located within the housing, one of the contact members being normally disconnected from its conductor lead and being automatically connectable therewith upon insertion of the connector housing into the socket.

3,467,797
SWITCH ARRANGEMENT FOR ROLL-TYPE FILTERS
Alan E. Revell, Louisville, Ky., assignor to American Air Filter Company, Inc., Louisville, Ky., a corporation of Delaware
Filed Feb. 27, 1968, Ser. No. 709,595
Int. Cl. B65h *25/14*
U.S. Cl. 200—61.16 **5 Claims**

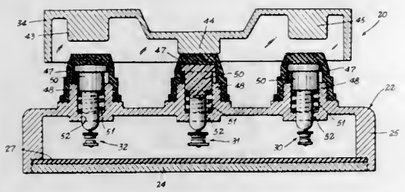


An improved switch arrangement in a roll-type filter assembly wherein a filter medium advance "on-off" control switch in the filter assembly is actuated by a filter medium supply roll sensing run-out arm, pull cable, and switch actuating arm arrangement, the switch actuating arm being biased toward the "on-off" control switch.

3,467,798
FOOT ACTUATED REMOTE CONTROL UNIT FOR FISHING MOTORS
George R. Krieger, Glendale, Mo., assignor to Byrd Industries, Inc., Memphis, Tenn., a corporation of Tennessee
Filed Nov. 17, 1967, Ser. No. 683,867
Int. Cl. H01h *3/14*
U.S. Cl. 200—86.5 **7 Claims**

A foot actuated remote control unit for energizing and steeringly positioning fishing motors comprising a closed casing adapted to be disposed loose in the bottom of a boat a central switch and two side switches operatively dis-

posed in said casing, the central switch adapted to be connected to a fishing motor, said side switches adapted to be connected to a steering motor to position a fishing motor to right or left movement, a bridge mounted on

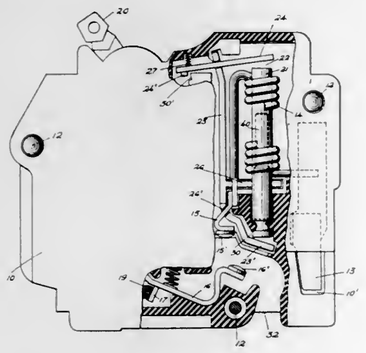


top of said casing for rocking pivotal and vertical bodily movements, and switch actuators within said bridge for selectively closing a predetermined switch or switches upon selected rocking and bodily movement of said bridge.

3,467,799
ELIMINATION OF ARCING EFFECTS IN CIRCUIT BREAKERS

Alexander R. Norden, New York, and George W. Knecht, Brooklyn, N.Y., assignors to Murray Manufacturing Corporation, Brooklyn, N.Y., a corporation of New York

Filed Dec. 8, 1965, Ser. No. 512,438
Int. Cl. H01h *9/44, 33/18*
U.S. Cl. 200—147 **6 Claims**



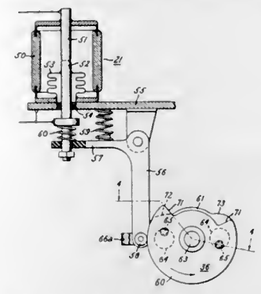
In order to eliminate the deteriorating effects of arc-over in electromagnetic circuit breakers, a runner of magnetic material, electrically coupled to one of the contacts and magnetically coupled to the magnetic circuit is disposed proximate one contact to take over the arc upon contact separation.

3,467,800
REVERSIBLE CAM ACTUATING MECHANISM FOR ELECTRIC SWITCHES

James R. Barr, Rome, Ga., assignor to General Electric Company, a corporation of New York

Filed Mar. 21, 1967, Ser. No. 624,856
Int. Cl. H01h *19/58, 21/78, 9/30*
U.S. Cl. 200—153 **4 Claims**

A reversible cam-type switch actuating mechanism, particularly for vacuum type circuit interrupting devices, wherein two juxtaposed cam plates having a lost-motion connection therebetween are reversibly driven by positive connection to one of the plates. A switch-opening cam surface on one disk is laterally adjacent a switch-closing cam surface on the other plate, and the surfaces are alternately exposed to a common follower as a result of lost-motion

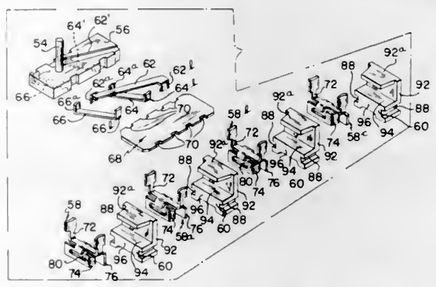


displacement of the plates in response to reversal of cam movement.

3,467,801
REVERSING SWITCH

Benjamin H. Matthews, Peninsula, Ohio, assignor to Lucerne Products, Inc., Northfield, Ohio, a corporation of Ohio

Filed May 1, 1967, Ser. No. 635,128
Int. Cl. H01h *9/06, 13/08, 21/10*
U.S. Cl. 200—157 **20 Claims**



The reversing switch is adapted for mounting in an electrically powered portable tool for selectively reversing the direction of rotation of an electric motor, such as a universal type motor, of the tool, such switch comprising a compact switch body formed of a plurality of individual insulating separator members and having a plurality of fixed electrical conducting contacts carried intermediate the separator members, and a reciprocal contact element having a plurality of electrical conducting contact points, slidably mounted on the switch body for movement into several operative positions. In one of the positions of the slidable contact element, the motor is driven in one direction and in another position of the contact element the motor is driven in the reverse or opposite direction. The contact element is adapted to be manually moved from one operative position to the other operative position by means of a pivotal lever mounted on the power tool, and coacting with an operator mounted on the switch, which in turn coacts with an actuator portion of the contact member for moving the contact member to either of its operative positions.

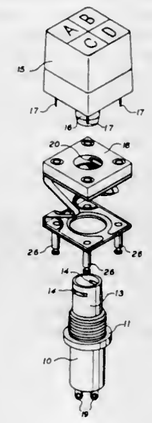
3,467,802
CONDUCTOR APPARATUS FOR SWITCH STRUCTURE

Carl E. Martin, Post Falls, Idaho, assignor to Clare-Pendar Co., Post Falls, Idaho, a corporation of Idaho

Filed June 21, 1968, Ser. No. 739,078
Int. Cl. H01h *9/16, 9/18*
U.S. Cl. 200—167 **9 Claims**

A conductor apparatus for a push button switch including a lighted lens assembly that reciprocates relative to a

switch housing. The electrical connections between the stationary mount for the switch and the moving lighted display element or lens are provided through a flexible conductor in the form of a resin strip having layers of

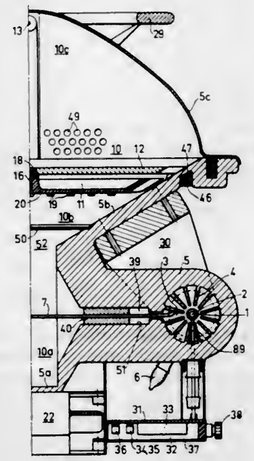


suitable conductive material embedded therein. Individual lengths of electrically conductive material are electrically in contact with the lamp terminals on the lighted lens assembly and with the stationary lamp terminals on the switch assembly.

3,467,803
APPARATUS FOR DIELECTRIC HEATING

Goran Axel Runo Ojelid, Huskvarna, Sweden, assignor to Husqvarna Vapenfabriks Aktiebolag, Huskvarna, Sweden

Filed Dec. 23, 1966, Ser. No. 604,381
Claims priority, application Sweden, Dec. 28, 1965, 16,862/65
Int. Cl. H05b *9/06*
U.S. Cl. 219—10.55 **20 Claims**

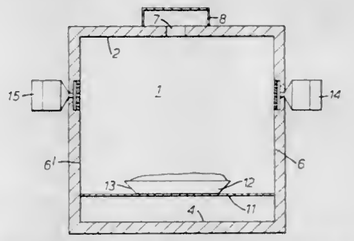


This invention relates to an apparatus for dielectric heating, particularly of deep-frozen food, by means of microwaves. The apparatus comprises a magnetron and a treatment cavity to which the magnetron is coupled by means of a coaxial line and a wave-guide in such a way, that primary electromagnetic radiation is radiated upwards into said treatment cavity from below. The treatment cavity is defined by a perforated metal casing which contains at least one secondary antenna which is coupled to the wave-guide for providing a microwave field having a polarization direction differing from that of the primary radiation.

3,467,804
DETECTION APPARATUS

Peter Harold Smith, Maidenhead, England, assignor to Microtherm Limited, London, England

Filed Jan. 3, 1967, Ser. No. 606,898
Claims priority, application Great Britain, Jan. 3, 1966, 48/66
Int. Cl. H05b *9/06;* **G08b** *13/16*
U.S. Cl. 219—10.55 **7 Claims**

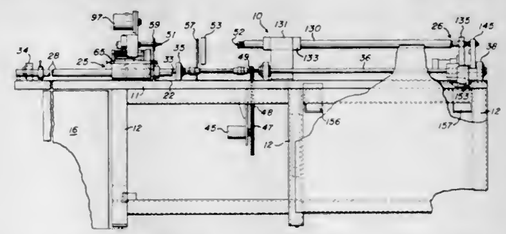


The detection apparatus disclosed exemplarily is sensitive to physical conditions prevailing in the cavity of a microwave oven. The apparatus comprises an oscillator including as a regenerative feed-back loop an acoustic transmitter and receiver coupled acoustically through the cavity so that the amplitude or frequency of oscillation is sensitive for instance to the presence of steam, or an article in the cavity and to the opening of a door to the cavity.

3,467,805
CAMSHAFT HARDENER

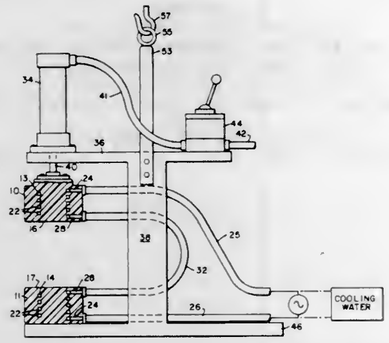
Ralph S. Easley and Donald J. Meyer, Cincinnati, Ohio, assignors to Park-Ohio Industries, Inc., a corporation of Ohio

Filed Sept. 8, 1966, Ser. No. 577,979
Int. Cl. H05b *5/08, 9/02*
U.S. Cl. 219—10.57 **8 Claims**



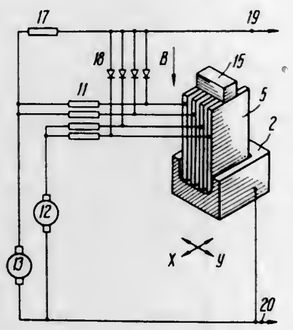
An induction heating apparatus, particularly useful in heat treating camshafts, includes a pair of carriage members for supporting a workpiece as it moves from a loading zone to a heating zone including at least one induction heating coil. A lead screw moves both carriage members in unison and provides accurate control over the rate of movement so that selected portions of the camshaft may be heat treated. The lead screw is formed in two sections which may be rotated relative to each other to vary the spacing between the carriages to accommodate workpieces of various sizes. A spindle supporting the workpiece may be rotated to assist in distributing heat, and spring means may be associated with one of the spindles, to allow for expansion of the workpiece during heating.

3,467,806
INDUCTION HEATING DEVICE
Austin Dixon, Manor, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Apr. 25, 1968, Ser. No. 724,060
Int. Cl. H05b 5/00
U.S. Cl. 219—10.73 7 Claims



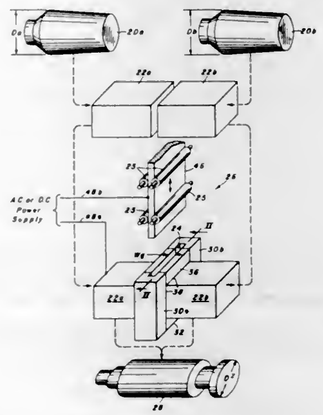
An upper retractable heat and pressure applicator member is movable by a reversible vertical pneumatic actuator cylinder into engagement with the upper layer of a laminate workpiece joint supported beneath by a lower heat and pressure applicator member. A portable frame rigidly connects the lower heat and pressure applicator member with the actuator cylinder above. The two heat and pressure applicator members include water-cooled series-connected similarly wound elongated vertically extending multi-turn induction heating coils embedded in blocks of insulating material. Flexible tubing including multi-strand conductors provide for flow of high frequency energizing current and cooling water to and from the upper heating coil.

3,467,807
APPARATUS FOR ELECTROEROSION MACHINING OF WORKPIECES BY MULTIPLE SPACED ELECTRODES
Abram Lazarevich Livshits, Anatoly Lzrailevich Aronov, Arkady Timofeevich Kravets, and Alexandr Borisovich Sosenko, Moscow, U.S.S.R., assignors to Experimentalny Navchno-Issledouatelsky Institute Metallorezhvshchikh Stankov, Moscow, U.S.S.R.
Filed July 13, 1965, Ser. No. 471,668
Int. Cl. B23p 1/14
U.S. Cl. 219—69 3 Claims



The invention consists in the simultaneous employment in the course of electroerosion machining of the following combinations: (1) division of a straight-wall electrode-tool into separate parts; (2) translational movement of the tool relative to the workpiece in lateral directions over a distance exceeding that between separate parts of the electrode; (3) maintenance of a necessary gap between all the parts of the electrode-tool and the workpiece. To realize the aforesaid combination, separate parts of an electrode are connected to a source of electric power through a series of solid-material resistors or through one electrolytic resistor, the gap being controlled in accordance with the potential difference on the workpiece being machined and the output of an additional resistor connected through diodes in parallel to the main resistor.

3,467,808
ELECTROSLAG WELDING METHOD FOR FABRICATING HEAVY FORGINGS
Fernand J. Dewez, Jr., Monroeville, and John E. Steiner, Edgewood, Pa., assignors to United States Steel Corporation, a corporation of Delaware
Filed Jan. 26, 1967, Ser. No. 612,034
Int. Cl. B23k 9/18
U.S. Cl. 219—73 15 Claims



The method of fabricating a heavy forging from a first forging and a second forging comprising the steps of positioning the first forging and the second forging to provide a mold cavity having a gap width, extending the mold cavity to provide the mold cavity with peripheral edge defect extensions, and electroslag welding together the first forging and the second forging with a weldment having a composition matching that of the first forging and the second forging, the weldment having a substantially vertical dendrite growth by maintaining during the electroslag welding a form factor F which is related to the welding voltage and to the welding current density by

$$F=c\sin\left(\frac{I-d}{e}\right)\pi+\left(\frac{2V-f}{g}\right)$$

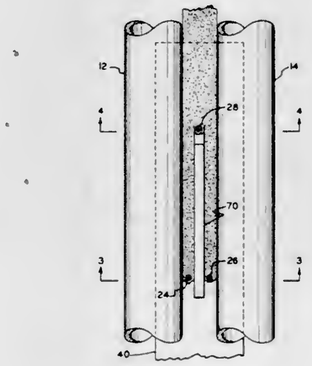
The heavy forging has uniform chemical properties and mechanical properties, and comprises a first forging, a second forging defining with the first forging a mold cavity having a gap width, and a weldment in the mold cavity having a substantially vertical dendrite growth and connecting the first forging and the second forging, the weldment having a composition matching that of the first forging and the second forging, and being formed with a form factor which is related to the welding voltage and to the welding current density by

$$F=c\sin\left(\frac{I-d}{e}\right)\pi+\left(\frac{2V-f}{g}\right)$$

The welding apparatus for producing a heavy forging having uniform chemical properties and mechanical properties, comprises a first forging, a second forging disposed a gap width from the first forging and defining with the first forging a mold cavity, mold cavity extension means disposed about the mold cavity to provide peripheral mold cavity extensions for the mold cavity, a welding electrode disposed in registry with the mold cavity and reciprocable in the mold cavity, welding power means connected between the welding electrode and one of the first forging and the second forging to produce a weldment between the first forging and the second forging, the weldment having a composition matching that of the first forging and the second forging; and said weldment having substantially vertical dendrite growth formed by maintaining during welding thereof a form factor F which is related to the welding voltage and to the welding current density by

$$F=c\sin\left(\frac{I-d}{e}\right)\pi+\left(\frac{2V-f}{g}\right)$$

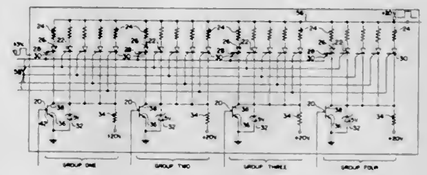
3,467,809
WELDING APPARATUS FOR FORMING PANELS OF TUBES
Roy E. Lorentz, Jr., Chattanooga, Tenn., assignor to Combustion Engineering, Inc., Windsor, Conn., a corporation of Delaware
Filed Nov. 18, 1966, Ser. No. 595,446
Int. Cl. B23k 9/12
U.S. Cl. 219—124 4 Claims



Apparatus for joining together two parallel tubular members by a web, including two electrodes positioned side by side which deposit molten metal to form separate fins on each of the tubular members, and a third electrode positioned longitudinally from the other two electrodes which deposits molten metal for joining the already-formed fins, thereby forming a continuous web between the two tubular members.

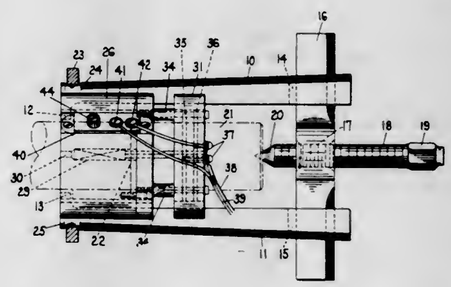
3,467,810
THERMAL PRINTING SELECTION CIRCUITRY
Richard C. Cady, Jr., Dayton, Ohio, assignor to The National Cash Register Company, Dayton, Ohio, a corporation of Maryland
Filed Oct. 2, 1967, Ser. No. 672,323
Int. Cl. G01d 15/10; H05b 1/02
U.S. Cl. 219—216 28 Claims

A thermal printing selection circuit is disclosed that employs switching devices which have a voltage-current characteristic such that the switching device is in an initial high-impedance state when the applied voltage is less than a predetermined value, and is in a low-impedance state after the applied voltage has exceeded the predetermined value and a minimum holding current is maintained through the device. One described embodiment



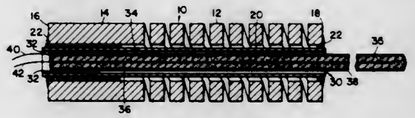
employs silicon controlled-rectifiers, and the other described embodiment employs two-terminal switching devices which have a voltage-current characteristic that is similar to that of a silicon controlled-rectifier.

3,467,811
POSITIONER AND EXTRACTOR DEVICE
Paul C. Consoletti, Milford, Mass., assignor, by mesne assignments, to John Donald Marshall and Horace L. Bomar, trustees of the Carolina Patent Development Trust
Filed Mar. 27, 1967, Ser. No. 626,237
Int. Cl. B23p 19/04; H05b 3/58
U.S. Cl. 219—227 1 Claim



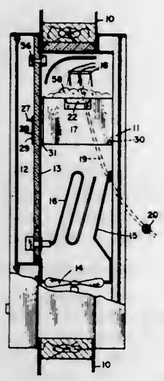
A positioner and extractor device for assembling and removing metallic sleeves or the like from a shaft having selectively controllable heating means for expanding said sleeves to facilitate their movement upon said shaft.

3,467,812
IGNITER-THERMISTOR ASSEMBLY
William T. Terrell, Youngstown, N.Y., assignor to The Carborundum Company, Niagara Falls, N.Y., a corporation of Delaware
Filed Mar. 29, 1967, Ser. No. 626,745
Int. Cl. F23q 7/00
U.S. Cl. 219—264 12 Claims



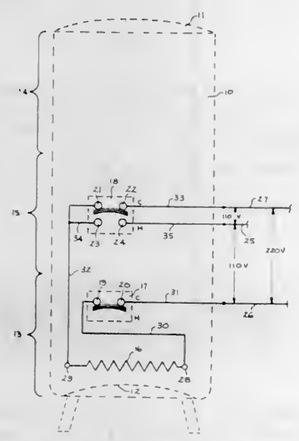
An igniter-thermistor assembly comprising an igniter having a hollow resistance body with a support tube secured therein. A thermistor, having a negative temperature coefficient, responsive to the igniter when energized is mounted within the support tube.

3,467,813
SAUNA STEAM GENERATORS
Ulo Raabe, 459 Gaulet St., St. Boniface 6, Manitoba, Canada
Filed Feb. 13, 1967, Ser. No. 619,882
Int. Cl. F22b *27/14*
U.S. Cl. 219—275 3 Claims



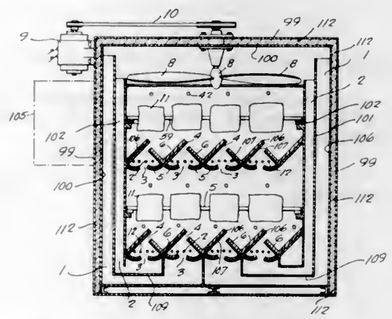
A generator composed of porous composition stone molded with an outer reinforcing mesh shell and positioned within a sheet metal container; the stone is spaced from the container walls and rests on a spacing pad to protect the container against buckling by heat; an electric element is imbedded in the stone for high temperature heating thereof, so water can be sprayed on the stone to generate steam for shock-treatment of bathers in a sauna; the element is tube-covered to eliminate shorting, and also has a cutout thermostat in the power circuit therefor to prevent overheating of the stone; and a shielding is positioned over the thermostat to deflect water therefrom.

3,467,814
ELECTRIC WATER HEATER CIRCUIT MEANS
Edward L. Macoicz, Glendale, Wis., assignor to General Electric Company, a corporation of New York
Filed Feb. 26, 1968, Ser. No. 708,181
Int. Cl. H05b *1/00, 3/02*
U.S. Cl. 219—330 6 Claims



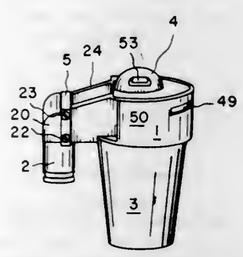
Electric heater circuit means for water tank having a lower water inlet portion, an upper water outlet portion and an intermediate portion. The circuit means comprise electrical resistance heating means located in the tank lower portion and thermally responsive switch means including a pair of switches that are responsive to water temperatures in the tank lower and intermediate portions, respectively. The electrical heating means is connected through the switches to a power supply which includes a neutral line and two outer lines. The circuit arrangement is made such that the heating means can be automatically energized at either of two different voltages or de-energized by the thermally responsive operation of the switches.

3,467,815
ELECTRIC HEATING OVEN
Aubrey Clyde Robinson, Rte. 3, Avery Drive, La Grange, Ga. 30240
Filed Sept. 21, 1965, Ser. No. 488,886
Int. Cl. F27d *11/02*
U.S. Cl. 219—400 13 Claims



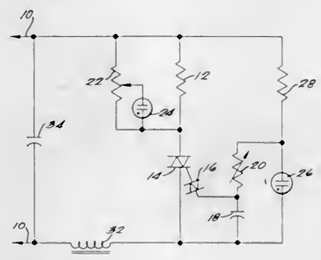
An electric heating oven system for heat treating food products and other products by passing of heated currents of air over them and avoiding direct radiation of heat onto the products. A system of sensing devices and controls maintains the temperature of the air currents within close limits. The system is particularly suitable for large roasts of meat. The volume of circulating air is controlled as well as its temperature. Provision is made for continuously turning roasts of meat.

3,467,816
PORTABLE HEATING APPLIANCE
Eric C. Wahlberg, 32 8th St., Stamford, Conn. 06905
Filed Aug. 10, 1966, Ser. No. 571,525
Int. Cl. F27d *11/02*
U.S. Cl. 219—437 6 Claims



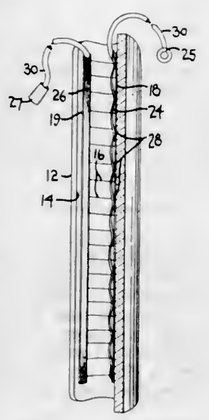
A portable device for heating foods and beverages which may be connected to any suitable electrical outlet, for example an automobile cigarette lighter socket. The removable cup, which may be of the disposable type, is inserted within the support ring that has a switch contact therein. Thus, when the cup is inserted in the ring the heating element is operated, but when the cup is removed from the ring the heating element becomes inoperative.

3,467,817
TEMPERATURE CONTROL CIRCUIT
David C. Fricker, Campbellsport, Wis., assignor to The West Bend Company, West Bend, Wis., a corporation of Wisconsin
Filed Feb. 23, 1967, Ser. No. 617,906
Int. Cl. H05b *1/02*
U.S. Cl. 219—501 8 Claims



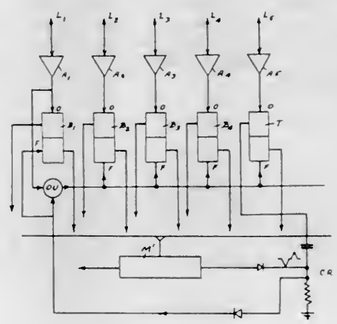
A temperature sensing and control circuit for heating-type electric appliances. The circuit has a positive temperature coefficient resistor which continually senses the heat rise imparted to a medium due to an electrical-thermal energy transfer from a heater to the medium. This resistor is in a simple charging circuit with a charging capacitor to provide phase control of the trigger voltage impressed on the trigger of a full wave semiconductor device. When the temperature sensed by the resistor reaches, say 70% of the final desired temperature, the knee or switch point of the PTC resistor is reached and its resistance rapidly increases with increased temperature and the resultant phase control causes the semiconductor device to conduct later and later in the voltage cycle decreasing the power to the heater until the thermal equilibrium has been attained.

3,467,818
ELECTRICALLY HEATED WINDOW PANEL WITH THERMALLY CONTROLLED LEAD-IN WIRES
John D. Ballentine, Monroeville, Pa., assignor to PPG Industries, Inc., Pittsburgh, Pa., a corporation of Pennsylvania
Filed May 27, 1968, Ser. No. 732,354
Int. Cl. H05b *3/06*
U.S. Cl. 219—522 6 Claims



An electrically heated window panel having a transparent sheet coated with a plurality of elongated stripes of electroconductive material interconnecting spaced bus bars connected to a voltage source through a switch and lead-in wires that incorporates a novel system for attaching said lead-in wires to said bus bars. The lead-in wires are attached to the bus bars in such a manner as to enable the wires to expand thermally at a different rate from that of the bus bars in service without introducing strains that tend to destroy the electrical connection between the bus bars and the lead-in wires and to provide a desired heating pattern over the extent of the refractory surface.

3,467,819
ELECTRONIC SORTING OF DOCUMENTS
Pierre Charles Jorgensen, L'Hay-les-Roses, France, assignor to Compagnie de St. Gobain, Neuilly-sur-Seine, France
Filed Oct. 3, 1963, Ser. No. 313,590
Claims priority, application France, Oct. 11, 1962, 912,007
Int. Cl. G06k *7/016, 7/08, 19/06*
U.S. Cl. 235—61.11 8 Claims

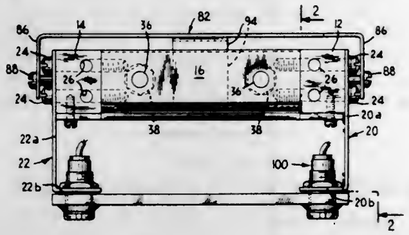


Method and means for electronically reading or decoding and transmitting coded bits of information magnetically recorded on magntizable media, wherein the latter has a supplemental magnetized control bit or band spaced from each end of a group of said coded bits and wherein a cooperating magnetic scanning head has a reading unit, including a memory cell or relay, corresponding to each said bit, the spacing of the bits and their respective reading units in the direction of translation of said media relative to the scanning head being such that the coded bits move into registry with their corresponding reading units after the trailing control bit has passed its reading unit to restore the memory cells to a condition for accurate receipt of the recorded information and before the leading control bit moves into registry with its reading unit to trigger the release of the memorized information to a recording device or other utilization mechanism.

3,467,820
PUNCHED RECORD READER
Thomas F. Droege and William D. Nelson, Kendall Park, N.J., assignors to Applied Logic Corporation, Princeton, N.J., a corporation of New Jersey
Filed June 8, 1965, Ser. No. 462,370
Int. Cl. G06k *7/00*
U.S. Cl. 235—61.11 15 Claims

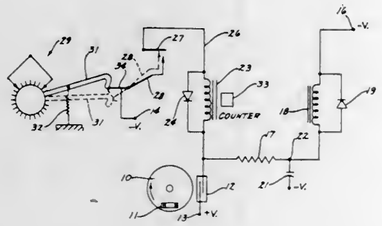
A punched record reader is described herein and comprises a plurality of thin plates spaced relatively close to each other and mounted in a receptacle having retaining

means and ejecting means for the record. Each plate carries, on its thin edge, a plurality of photocells associated



with appropriate electric circuits for detecting the punched holes in the record.

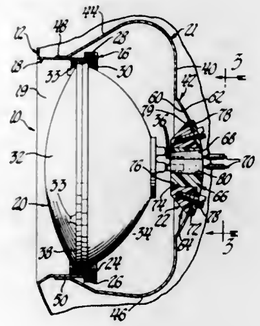
3,467,821
APPARATUS FOR COUNTING REVOLUTIONS OF PREDETERMINED TIME RANGE
Leon J. Arp, 1221 Marston, Ames, Iowa 50010
Filed Oct. 13, 1965, Ser. No. 495,650
Int. Cl. G06f *7/38*
U.S. Cl. 235—92 **3 Claims**



The invention relates to an apparatus for counting only the revolutions of a rotating member which occur within a predetermined time range, which apparatus comprises a normally open relay in a normally open electric circuit, which relay is operable in response to each rotation of the member due to a magnetic device mounted on the member passing thereby to temporarily close the circuit, a counter which is actuated only when the circuit is closed, a normally open switch in the circuit which is movable to a closed condition wherein the circuit is closed, and a timer device operable by the closing of the relay to place the switch in its closed position for a predetermined period of time, the timer device also operable to automatically place the switch in its inoperative-open condition.

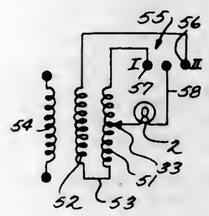
3,467,822
HEADLIGHT HOLDER AND ADJUSTER
Robert W. Plume, Utica, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Aug. 18, 1967, Ser. No. 661,670
Int. Cl. F21v *7/22*
U.S. Cl. 240—41.6 **7 Claims**

A vehicle headlamp assembly wherein a sealed beam headlamp is peripherally retained within a headlamp receiving opening by compressive engagement with an elastomeric seal member. A connector assembly is fixedly attached to the electrical connectors of the headlamp and includes parti-spherical surfaces universally positionable about complementary surfaces formed on a bracket attached interior of the vehicle. The headlamp is accurately



aimed by selective adjustment of the connector assembly and thereafter the connector assembly is rigidly secured to the bracket by clamping screws.

3,467,823
HIGH INTENSITY LIGHT SOURCE
Nazario J. Rivera, Buenos Aires, Argentina, assignor to Emil Velazco, Buenos Aires, Argentina
Filed Mar. 3, 1967, Ser. No. 620,432
Claims priority, application Argentina, Sept. 2, 1966, 3,203
Int. Cl. F21s *1/12, 9/00*
U.S. Cl. 240—81 **7 Claims**

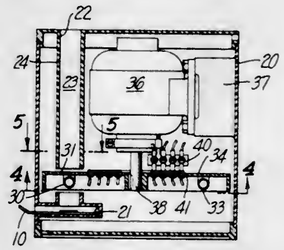


An adjustable high intensity light source having a voltage step-down transformer, the secondary coil of which is a split winding. One of these windings has a partially uninsulated surface. A movable wiper is in electrical contact with this winding and with a bulb. A switch selectively completes the circuit through the uninsulated winding or through both windings.

3,467,824
METHOD AND APPARATUS FOR X-RAY ANALYSIS WITH COMPENSATION FOR AN INTERFERING ELEMENT
Ian Stanley Boyce, Abingdon, and Thelma Grace Ahier, Steventon, England, assignors to United Kingdom Atomic Energy Authority, London, England
Filed Sept. 3, 1965, Ser. No. 484,960
Claims priority, application Great Britain, Sept. 11, 1964, 37,234/64
Int. Cl. G01n *23/20*
U.S. Cl. 250—51.5 **12 Claims**

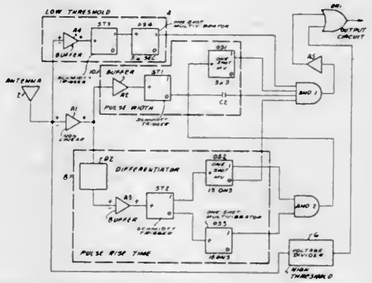
A method of X-ray analysis using backscattering geometry for the determination of a wanted element in a sample which also contains an interfering element comprises passing primary X-rays into the sample to obtain backscattered or fluorescent secondary X-rays from the wanted element and fluorescent X-rays from the interfering element. The energy of the primary X-rays is selected so that the X-rays from the interfering element are inefficiently excited but the total intensity of the X-rays is measured using a detector which is more sensitive to the X-rays from the interfering element than it is to the fluorescent X-rays from the wanted element or the backscattered radiation. Desirably a radioisotope source provides the primary X-rays.

3,467,825
SIGNATURE VERIFICATION SYSTEM
Gustav Hubert, San Gabriel, Calif., assignor to Ultra-Violet Products, Inc., San Gabriel, Calif., a corporation of California
Filed Mar. 25, 1968, Ser. No. 715, 871
Int. Cl. G01d *7/06*
U.S. Cl. 250—78 **10 Claims**



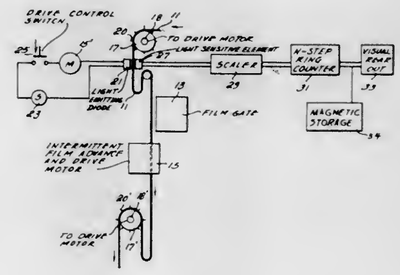
Apparatus for verifying indicia, such as signatures in a savings account passbook or on a credit card. A passbook with a layer of fluorescent material and a signature in phosphorescent material, with the two materials being indistinguishable in daylight. Means for periodically illuminating the passbook with ultraviolet, which the phosphorescent signature glow being visible between periods of illumination.

3,467,826
DETECTION OF ELECTROMAGNETIC RADIATION FROM NUCLEAR EXPLOSIONS
Robert W. Cotterman, Fort Wayne, Ind., assignor to International Telephone and Telegraph Corporation, a corporation of Delaware
Filed Oct. 6, 1964, Ser. No. 401,947
Int. Cl. G01t *1/16*
U.S. Cl. 250—83.3 **11 Claims**



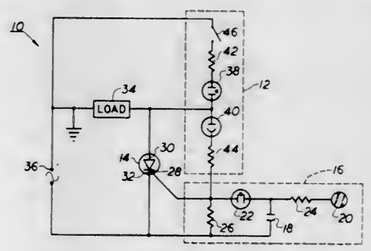
Relates to the detection of early electromagnetic radiation engendered by nuclear explosions. In particular, radiation occurring at radio frequencies for periods measured in nanoseconds is detected and proportional control signals are made available for operation of blast-closure devices and remote alarm indicators.

3,467,827
FOOTAGE INDICATOR FOR A PERFORATED FILM STRIP IN WHICH THE SPROCKET HOLES ARE SENSED USING NONACTINIC RADIATION
Oran T. Casebeer, Interlaken, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed Feb. 10, 1967, Ser. No. 615,156
Int. Cl. H01j *39/12*
U.S. Cl. 250—214 **1 Claim**



Light is directed through the sprocket holes of a moving strip of film toward a photocell. The resultant pulses of light cause the photocell to emit current pulses, which are counted to determine the length of the film.

3,467,828
A.C. LATCHING CIRCUIT FOR SCR HAVING PHOTORESISTIVE LATCHING
Rudolf F. Graf, New Rochelle, N.Y., assignor to Sprague Electric Company, North Adams, Mass., a corporation of Massachusetts
Filed Dec. 21, 1966, Ser. No. 603,555
Int. Cl. H01j *39/12*
U.S. Cl. 250—214 **4 Claims**

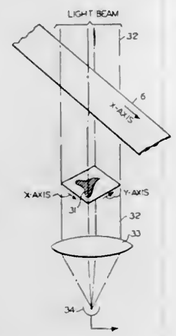


A neon lamp energized with an SCR fired load, is optically coupled to a photocell in the anode-gate-circuit of the A.C. supplied SCR, such that upon initial firing of the SCR, the resistance of the cell is reduced and continuous triggering applied. In a further arrangement, another lamp and cell are optically coupled to a second SCR for switching off the latching circuit.

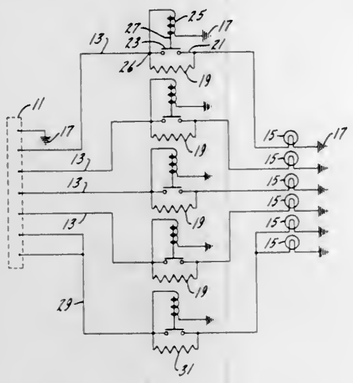
3,467,829
CORRELATION OF INFORMATION WITH ELECTRO-OPTICAL SCANNING
Raymond M. Wilmotte, 4917 Sedgwick St. NW., Washington, D.C. 20016
Filed May 10, 1966, Ser. No. 548,990
Int. Cl. G01n *21/30*
U.S. Cl. 250—219 **8 Claims**

A system for pattern recognition is disclosed, wherein a pattern area is illuminated with light so that the light

beam is modified by the pattern. The light beam is also modified by modulating different portions of the transverse area of the beam differently, as by intensity modulating these portions at different frequencies. In this way, each said portion of the light beam contains a frequency identification. The resultant total light beam is then integrated by a photocell, and the resultant waveform is characteristic of the pattern illuminated. Comparison of the waveform of the pattern with a reference waveform enables identification of the pattern.

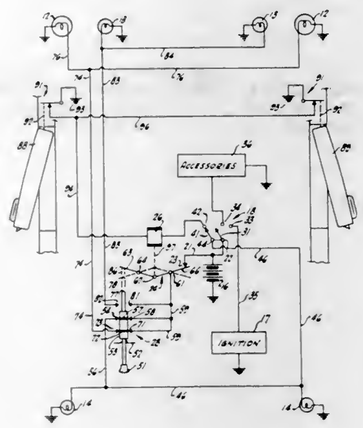


3,467,830
TRAILER ELECTRICAL CIRCUITRY
Harold L. Dobrikin, Highland Park, Ill., assignor to Berg Mfg. & Sales Co., Des Plaines, Ill., a corporation of Illinois
Filed Dec. 8, 1966, Ser. No. 600,075
Claims priority, application Germany, Dec. 29, 1965, B 85,189
Int. Cl. H02j *1/04*
U.S. Cl. 307—10 3 Claims



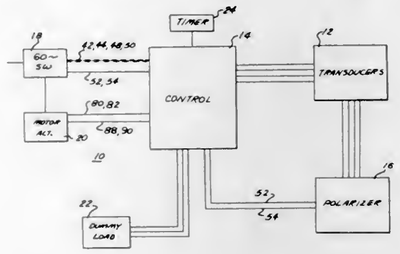
An apparatus for protecting an electrical device against burn out due to voltage above its normal operating voltage ultilizing a resistance sufficient to reduce the higher voltage to the normal operating voltage and a bypass for said resistance having a switch which is normally closed to connect said resistance in parallel when the normal operating voltage is applied and which opens when a higher voltage is applied to connect said resistance in series with said electrical device.

3,467,831
CIRCUIT BREAKER FOR VEHICLE LIGHTS
Charles M. Wilson, 5987 Gloria Drive, and Edwin F. Goman, 6090 South Land Park Drive, both of Sacramento, Calif. 95822
Filed Feb. 13, 1968, Ser. No. 705,107
Int. Cl. H02j *1/00*
U.S. Cl. 307—10 4 Claims



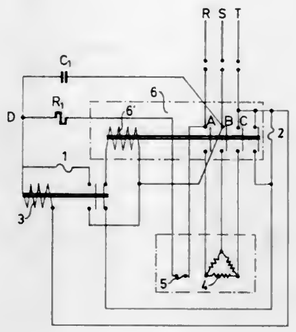
Connected to the lighting system of a motor vehicle, a circuit breaker is actuated automatically upon switching off the ignition switch and opening a vehicle door, the circuit breaker being effective to deactivate the lighting system. Circuit breaker resetting mechanism is also provided.

3,467,832
HIGH-POWER HIGH-FREQUENCY SWITCH
Carmine F. DePrisco, Glen Mills, Pa., assignor to Aeroprojects Incorporated, West Chester, Pa., a corporation of Pennsylvania
Filed Mar. 20, 1967, Ser. No. 624,505
Int. Cl. H02j *3/14*
U.S. Cl. 307—41 14 Claims



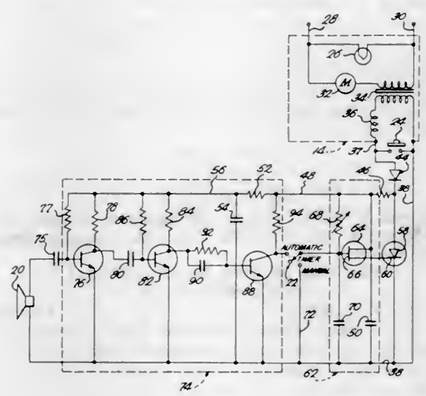
High power energy at ultrasonic frequencies is switched from an active load to a dummy load on a highly repetitive time basis using inverse parallel silicon controlled rectifiers controlled by a timer and electro-mechanical switches and gate circuit. As applied to ultrasonic frequency welders, the circuitry reduces wear on the alternator and provides good stability.

3,467,833
DEVICE FOR IN-PHASE CONNECTION OF A LOAD TO AN ELECTRIC POLYPHASE SYSTEM
Jan Erik Sandgren, Chester, Va., assignor to Stenberg-Flygt AB, Solna, Sweden
Filed Mar. 31, 1967, Ser. No. 627,358
Claims priority, application Sweden, Apr. 7, 1966, 4,866/66
Int. Cl. H02h *1/04, 3/26;* H01h *7/16*
U.S. Cl. 307—93 4 Claims



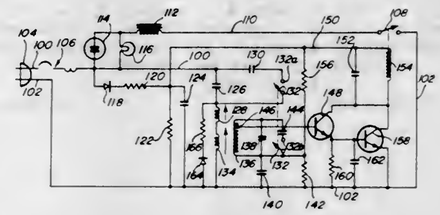
A device for in-phase connection including a phase-sequence-sensing circuit and a relay controlling a contactor is provided for the connection of a load to an electric polyphase system. The phase-sequence-sensing circuit is provided with a thermistor connectable in parallel with one or more components of said circuit and arranged to minimize the effect exerted on the relay by interference currents occurring at the instant of connection.

3,467,834
REMOTE SLIDE CHANGING CONTROL SYSTEM
Robert E. Coleman, 825 Almeria Ave., Coral Gables, Fla. 33134
Filed Jan. 2, 1968, Ser. No. 695,016
Int. Cl. H01h *35/00, 83/20*
U.S. Cl. 307—116 9 Claims



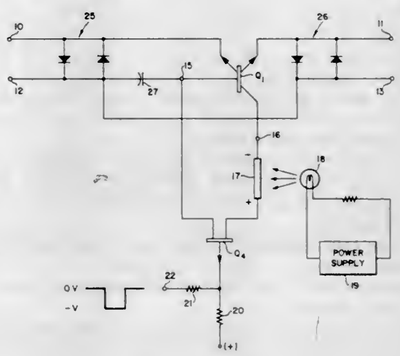
A remote control system is operatively connected with a conventional slide projector to control the operation of the slide changing mechanism thereof. The remote control system includes a sound sensing transducer means operatively connected with an amplifier means which in turn is connected through a timing means to a switch means for controlling the operation of the slide changing mechanism of the projector. The timing means is adapted to cyclically operate the slide changing mechanism and operation of the timing means is controlled by the amplifier means in response to the presence or absence of sound as sensed by the transducer means so that a slide change can be effected whenever there is a pause in the sensed sound.

3,467,835
REMOTE CONTROL SWITCH RESPONSIVE TO SUPERIMPOSED POWER LINE FREQUENCY
Rinaldo E. De Cola, Park Ridge, Ill., assignor to Warwick Electronics Inc., a corporation of Delaware
Filed Sept. 8, 1965, Ser. No. 485,820
Int. Cl. H01h *47/22, 83/16;* H02b *1/24*
U.S. Cl. 307—125 7 Claims



An electronic remote control switch using the power lines to connect a transmitter to a receiver. The signal from the transmitter, an odd harmonic of the television line frequency, is detected in the receiver to control the switch. The receiver has a series tuned circuit connected across the power line and a parallel tuned circuit connected with a relay control transistor. A diode across the inductor of the series circuit suppresses transients to prevent damage to the transistor.

3,467,836
BILATERAL ELECTRONIC SWITCHING CIRCUIT EMPLOYING LIGHT-SENSITIVE CONTROL ELEMENT AND FET INPUT
Walter C. Thomas, Richmond, Calif., assignor to Beckman Instruments, Inc., a corporation of California
Filed May 20, 1966, Ser. No. 551,599
Int. Cl. H03k *17/60*
U.S. Cl. 307—249 6 Claims



1. A switching circuit for selectively connecting an output terminal to an input terminal comprising
a bilateral semiconductor switch having a first electrode connected to said input terminal, a second electrode connected to said output terminal, and other electrodes connected to a pair of control terminals,

a source of bias potential including a photovoltaic cell connected in series between said control terminals of said semiconductor switch and a source of light optically coupled thereto, the polarity and amplitude of said bias potential being so selected as to provide a bias current for establishing a low impedance state in said bilateral semiconductor switch between said input and output terminals,

control means for interrupting said bias current in response to a control signal, and

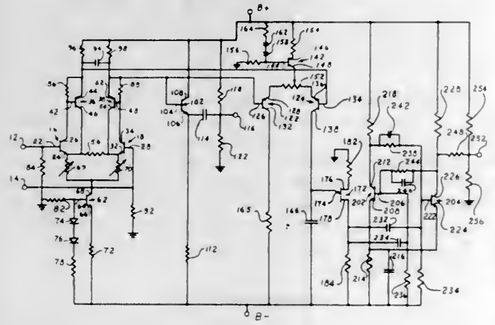
means coupling a control signal to said control means whereby said bias current may be controlled to selectively connect said output terminal to said input terminal.

3,467,837

BLOOD PRESSURE MEASURING SYSTEM FOR SEPARATING AND SEPARATELY RECORDING D.C. SIGNAL AND AN A.C. SIGNAL

Howard A. Vick, Houston, Tex., assignor to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration

Filed Dec. 27, 1966, Ser. No. 605,092
Int. Cl. H03k *5/20*
U.S. Cl. 307—260 **3 Claims**



1. A reprogramming system for separating and separately recording an input signal having a D.C. component and an A.C. component superimposed thereon comprising:

(A) a first differential amplifier having input terminals and output terminals;

(B) means for applying said input signal across the input terminals of said first differential amplifier;

(C) means for coupling said A.C. component of said input signal from one of said first differential amplifier output terminals to an A.C. output terminal;

(D) a second differential amplifier having input terminals and output terminals;

(E) means for coupling said D.C. component from another of said first differential amplifier output terminals to said second differential amplifier input terminals;

(F) an oscillator having input means and output means for producing pulses representative of said D.C. component at said second differential amplifier output terminals;

(G) a charging capacitor coupled to said second differential amplifier output terminals and across said oscillator input means;

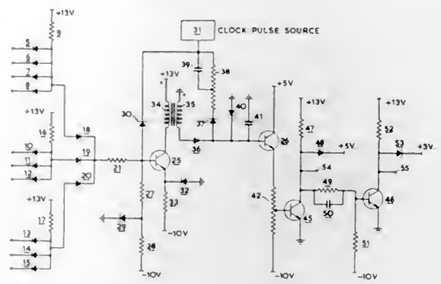
(H) means for producing a square-wave having a frequency one-half the frequency of said pulses produced by said oscillator at a D.C. output terminal having input means and output means, said square-wave producing means input means being coupled to said oscillator output means.

3,467,838

ELECTRIC PULSE DELAY CIRCUIT

Ellis Glazebrook, Ulverston, and Kenneth Duncan Fraser Chisholm, Kidsgrove, Stoke-on-Trent, England, assignors to English Electric Computers Limited, London, England, a British company

Filed Sept. 2, 1965, Ser. No. 484,671
Claims priority, application Great Britain, Sept. 3, 1964, 36,202/64
Int. Cl. H03k *5/159*
U.S. Cl. 307—268 **8 Claims**



The specification discloses an electric pulse delay circuit having an input circuit (base of transistor **25**) supplied with input pulses by an AND/OR gate, and with clock pulses by a source **31**, and an output circuit (tapping of emitter load resistor **42** of transistor **26**) which supplies output pulses each of which occurs one time period later than the corresponding input pulse giving rise to it.

During the simultaneous presence of an input pulse and a clock pulse (the latter occurs only during the last 40% of each time period) energy is stored in the inductive winding **34**, and this energy is subsequently dissipated from winding **35** at the end of the clock pulse when transistor **25** turns non-conductive, by the flow of current into the clock pulse source **31**, the capacitor **41** and the collector and emitter circuits of transistor **26**. Increased conduction of this transistor starts the output pulse. This secondary winding current flow ceases before the clock pulse in the next time period terminates and the capacitor **41** then maintains transistor **26** conductive until the end of this second-mentioned clock pulse, at which time the clock pulse source discharges the capacitor **41** rapidly and alters the conduction in transistor **26** to terminate the output pulse.

Transistors **45** and **46** driven from the emitter load tapping **42** provide COMPLEMENT and TRUE output signals.

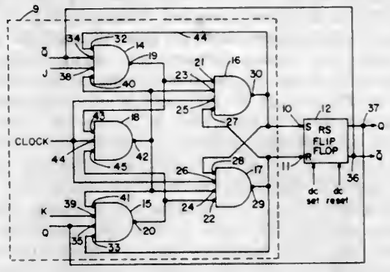
3,467,839

J-K FLIP-FLOP

Norman J. Miller, Geneva, Switzerland, assignor to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois

Filed May 18, 1966, Ser. No. 551,134
Int. Cl. H03k *3/286*
U.S. Cl. 307—289 **9 Claims**

A J-K flip-flop having a set-reset bistable element including set and reset input terminals. First and second input gates are connected to receive input J and K binary information and first and second output gates are connected between the outputs of the first and second input gates, respectively, and the set and reset terminals of the set-reset bistable element. A latch gate is connected to receive both clock signals, the output information from the first and second input gates, and the output information from the first and second output gates. The latch gate responds to clock signals, and the outputs of the first and second input and output gates to insure a determinate state of the set-reset bistable element during simul-



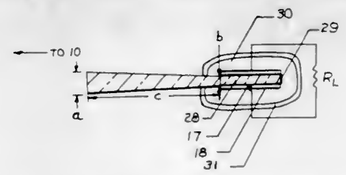
taneous application of J and K binary logic signals at inputs of the first and second input gates.

3,467,840

SOLAR THERMIONIC CONVERTOR

Melvin Weiner, 54 Harvard Ave., Brookline, Mass. 02111

Continuation-in-part of application Ser. No. 253,466, Jan. 23, 1966. This application July 5, 1966, Ser. No. 563,346
Int. Cl. H02n *3/00*
U.S. Cl. 310—4 **4 Claims**



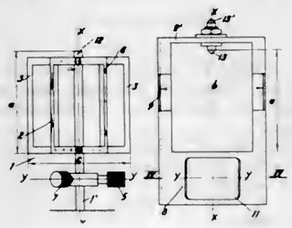
A solar concentrating system, consisting of a paraboloidal reflector with a subtended half-angle of approximately 30 degrees at its focal plane followed by a truncated light pipe with a tapering angle of approximately two degrees, provides a larger and more uniform heating of the cathode surface of a thermionic convertor at the focus of said concentrating system.

3,467,841

AMAGNETIC CRYOGENIC MOTOR

Noël Henri Marie Mignot, Versailles, and André Robert Raymond Stahl, Paris, France, assignors to societe anonyme Societe Alsacienne de Constructions Atomiques de Telecommunications et d'Electronique "Alcatel," Paris, France, a corporation of France

Filed May 16, 1966, Ser. No. 550,222
Claims priority, application France, May 17, 1965, 17,337
Int. Cl. H02k *37/00*
U.S. Cl. 310—10 **10 Claims**



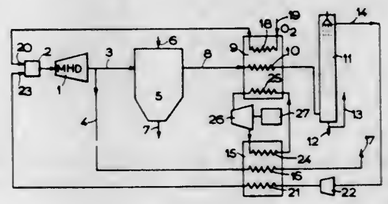
A self synchronizing cryogenic motor has a stator composed of rectangular loops of superconducting wire above radially oriented synchronization coils. A rotor is a cut-out niobium cylinder which surounds the stator. A remaining wall of an upper portion of the cylinder forms a turn which cooperates with the inductor loops. Below the turn the rotor's cylindrical wall has windows which pass ends of the synchronization coils, causing synchronization pulses.

3,467,842

OPEN MAGNETOHYDRODYNAMIC CYCLE AND METHOD OF OPERATION OF MAGNETOHYDRODYNAMIC CYCLE

Jean Marie Pierre Carrasse, Antony, France, assignor to Societe Generale de Constructions Electriques et Mecaniques (ALSTHOM), Paris, France

Filed June 29, 1967, Ser. No. 650,019
Claims priority, application France, June 30, 1966, 2,693
Int. Cl. H02k *45/00*; **G21d** *7/02*
U.S. Cl. 310—11 **10 Claims**



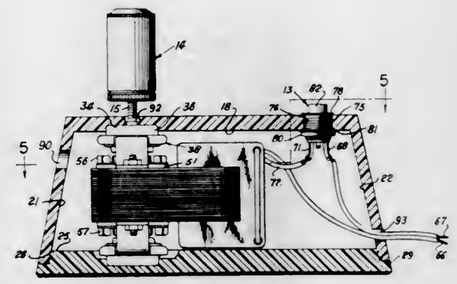
A major fraction of gases from the magnetohydrodynamic nozzle is mixed in a chemical converter with a combustible substance to obtain an endothermic reaction, thus cooling the gases and avoiding the necessity of extensive use of high temperature materials.

3,467,843

PENCIL SHARPENER

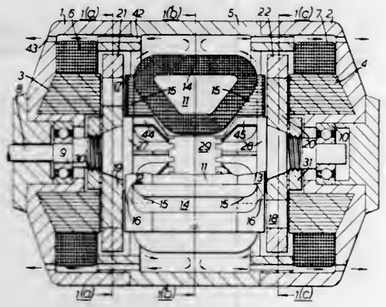
Gordon S. Dailey, 2022 Tolosa, Dallas, Tex. 75228

Filed Feb. 9, 1968, Ser. No. 704,410
Int. Cl. H02k *7/14*
U.S. Cl. 310—50 **6 Claims**



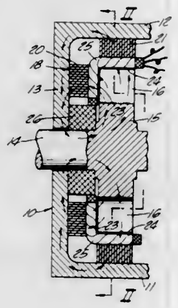
A pencil sharpener assembly having the housing in which is mounted an electric motor whose drive shaft extends vertically upwardly of the housing and has a pencil sharpener releasably secured thereto. A switch for controlling the operation of the motor being mounted on the housing, the housing having an aperture through which a tool may be inserted to hold the drive shaft of the motor against rotation during the connection or disconnection of the sharpener from the drive shaft.

3,467,844
BRUSHLESS AXIAL AIRGAP INDUCTOR-TYPE DYNAMOELECTRIC MACHINES AND SYNCHRO SYSTEMS USING THE SAME
William George Bird, 11 Cranbrook Road, Redland, Bristol 6, England
Filed Dec. 11, 1967, Ser. No. 689,414
Claims priority, application Great Britain, Dec. 14, 1966, 55,960
Int. Cl. H02k *17/42, 19/20, 19/24*
U.S. Cl. 310—168 **14 Claims**



Brushless axial airgap inductor-type dynamoelectric machines using plural variable reluctance rotors and a toroidal coil stator therebetween. Each rotor and stator may comprise a pair of concentric rotor and stator members. The stationary field coils may be replaced with a permanent magnet. The machines may be single or polyphase generators with rectifiers for D.C. if desired. The machines may be employed as synchronous motors and as resolvers or synchros. The magnetic portions of the rotors may be shaped to produce a desired wave shape as a sine or square wave.

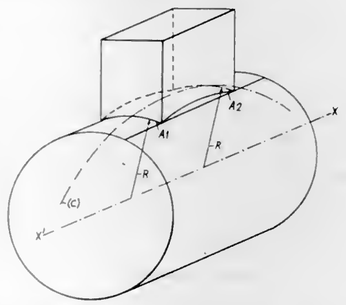
3,467,845
ALTERNATING CURRENT GENERATOR
Adolph J. Wesolowski, Phoenix, Ariz., assignor to The Garrett Corporation, Los Angeles, Calif., a corporation of California
Filed Oct. 12, 1966, Ser. No. 586,300
Int. Cl. H02k *17/42, 19/20*
U.S. Cl. 310—168 **13 Claims**



This alternating current generator has a magnetic casing with peripheral and end walls. One armature core is mounted on an end wall, another is mounted on the peripheral wall, and both have slots to provide stator teeth. A rotor is supported for rotation in the casing with circumferentially spaced poles disposed in closely spaced relation to the ends of the cores, thus providing axial and radial air gaps. A continuous armature coil is wound through the slots and around the teeth, part of the coil being parallel to the side of the rotor and part substantially parallel to the peripheral ends of the rotor poles. A field coil mounted on the end wall within the core encircles the rotor shaft and when energized causes a flux to flow through the rotor, across both air gaps, through the armature cores, and returns through the casing walls. The aramture coil is cut by the flux flowing across both air gaps. The efficiency of the generator is greatly increased.

A second form is illustrated in which the rotor has two sets of radiating poles and an armature core is mounted at each end of the casing. An armature core is also arranged in the casing in radial alignment with each set of radiating poles. An armature coil is wound through the teeth-forming slots and around the teeth on each armature core. Field excitation coils are disposed adjacent each armature core. Both forms of the invention illustrated have a single one-piece rotor, an armature core, a field coil, and an armature coil at the side and at the periphery of the rotor poles. The lines of flux crossing the axial gap at the sides of the poles cuts an armature coil the same as those crossing the radial gap.

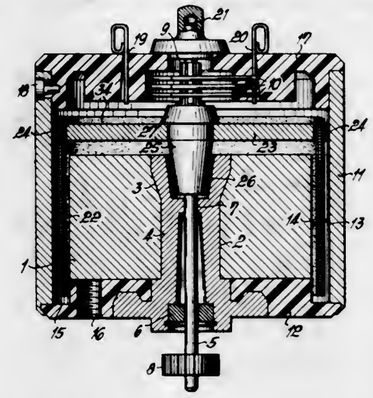
3,467,846
BRUSHES FOR ELECTRIC MOTORS
Paul Reille, Neuilly, France, assignor to Societe Le Carbone-Lorraine, Paris, France, a French body corporate
Filed Apr. 18, 1966, Ser. No. 543,423
Claims priority, application France, May 5, 1965, 15,924; Mar. 11, 1966, 53,110
Int. Cl. H02k *13/10;* **H01r** *39/18*
U.S. Cl. 310—248 **4 Claims**



A brush for electric motors has a collector-rubbing face machined to a concave form of revolution. The axis of revolution of this form corresponds to that of the collector. This enables the brush to rest in stable manner from the first on the collector so that it is silent in operation and is rapidly stabilised during the period of wearing in. The brush may be square in section so that it can be mounted along either of its horizontal axes if the material is isotropic; in this case the concave form is spherical. The opposite face may also be of concave form.

3,467,847
DIRECT-CURRENT MOTOR
Fritz Faulhaber, Schonaich, Germany, assignor, by mesne assignments, to Retobobina Handelsanstalt, Schaan, Liechtenstein
Filed Mar. 17, 1966, Ser. No. 535,134
Claims priority, application Germany, Apr. 1, 1965, F 45,687; Feb. 4, 1966, F 48,350
Int. Cl. H02k *1/22*
U.S. Cl. 310—266 **13 Claims**

A direct-current motor of the miniature type with a stationary cylindrical core magnet, a stationary motor housing and a bell-type iron-less rotary armature whose hollow cylindrical portion extends into an annular air gap formed between the outer circumference of the core magnet and the inner circumference of the motor housing. The hollow cylindrical portion of the armature comprises a self-supporting winding one end of which em-

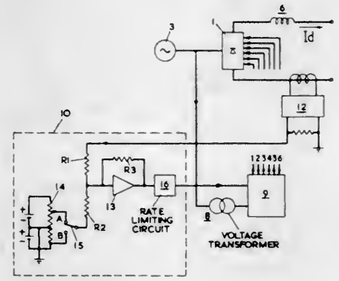


braces with the loops of its winding radially outwardly extending teeth on a circular carrier disc which is fixedly attached to the armature shaft. The loops formed in the winding are fixedly attached to the teeth and form the sole attachment of the armature winding to the carrier disc.

ERRATUM

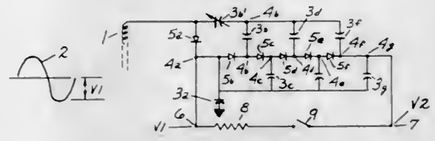
For Classes 313—325 thru 318—443 see:
Patent Nos. 3,467,877 thru 3,467,905

3,467,848
STATIC CONVERTOR CONTROL SYSTEMS IN WHICH MAXIMUM NEGATIVE RATE-OF-CHANGE OF FIRING ANGLE IS LIMITED
John Desmond Ainsworth, Stafford, England, assignor to The English Electric Company, London, England, a British company
Filed June 5, 1967, Ser. No. 643,673
Claims priority, application Great Britain, June 3, 1966, 24,746/66
Int. Cl. H02m *1/18*
U.S. Cl. 321—14 **9 Claims**



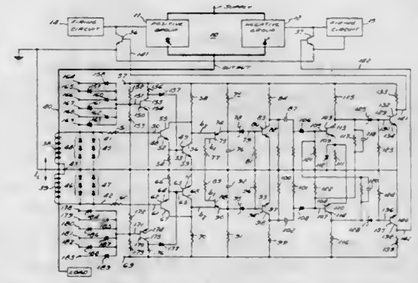
A control system for a high power convertor employed in H.V.D.C. schemes and designed to vary the angle α of the firing pulses to the convertor so as to govern the output to the desired level, a rate-limiting circuit being included to limit the maximum rate at which α can reduce to zero which could otherwise cause voltage "overshoot" in response to sudden changes in operating conditions.

3,467,849
MULTIPLE OUTPUT VOLTAGE MULTIPLIER
Donald J. Wilson, Erie, Pa., assignor to Erie Technological Products, Inc., Erie, Pa., a corporation of Pennsylvania
Filed Aug. 3, 1967, Ser. No. 658,248
Int. Cl. H02m *7/06*
U.S. Cl. 321—15 **1 Claim**



Regulation of dual output voltage multipliers is obtained by a feed back loop. In one form, the loop references the higher D.C. voltage output to the lower D.C. voltage output. The higher voltage output is adjustable.

3,467,850
CYCLOCONVERTER CONTROL CIRCUIT
Paul Christiansen, Novelty, Ohio, and Carmelo J. Amato, Lavonia, Mich., assignors to Lear Siegler, Inc., Santa Monica, Calif., a corporation of Delaware
Filed Mar. 18, 1968, Ser. No. 718,301
(Filed under Rule 47(a) and 35 U.S.C. 116)
Int. Cl. H02m *1/08*
U.S. Cl. 321—18 **6 Claims**

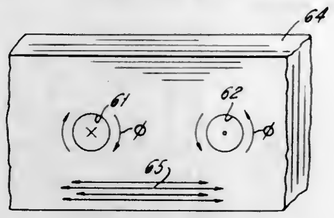


Circuit means for selectively switching positive and negative current-conducting groups within a cycloconverter in accordance with the cycloconverter alternating output current levels or an alternating current corresponding thereto. In particular, an improved circuit for preventing intergroup currents during switching and for providing relatively distortion-free output current by insuring minimum periods of no output current during switching.

3,467,851
SERIES REACTOR CONSTRUCTION FOR PARALLEL-CONNECTED THYRISTORS
Isadore K. Dortort, Philadelphia, Pa., assignor, by mesne assignments, to I-T-E Imperial Corporation, Philadelphia, Pa., a corporation of Delaware
Filed Jan. 20, 1967, Ser. No. 610,635
Int. Cl. H02m *7/00*
U.S. Cl. 321—27 **6 Claims**

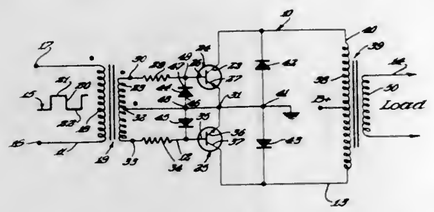
A rate-of-rise-of-current limiting reactor construction for thyristors is formed from a stack of grain-oriented magnetic laminations perpendicular to the current path of a single turn conductor extending through the stack, part of the flux path lying across the direction of orientation to provide the effect of an air-gapped reactor. This type of reactor is incorporated into a stack of punched

magnetic laminations which have openings for receiving the conductors of a large number of parallel-connected thyristors such that a portion of the stack magnetically couples adjacent thyristor current paths to one another to



balance the current flow through the parallel thyristors, while the second portion of the stack encircles each individual thyristor conductor to form a series reactor for the thyristor conductor.

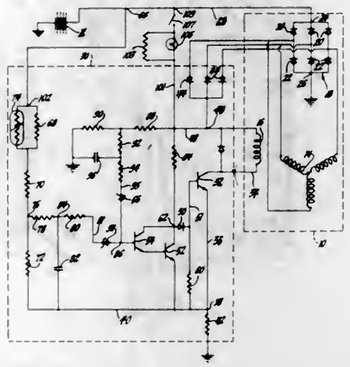
3,467,852
HIGH SPEED CONTROLLED SWITCHING CIRCUIT
James E. Murray, University Heights, and Robert G. Klimo, Parma, Ohio, assignors to TRW Inc., Cleveland, Ohio, a corporation of Ohio
Filed Jan. 26, 1967, Ser. No. 611,972
Int. Cl. H02m *7/44, 7/68*
U.S. Cl. 321—45 **9 Claims**



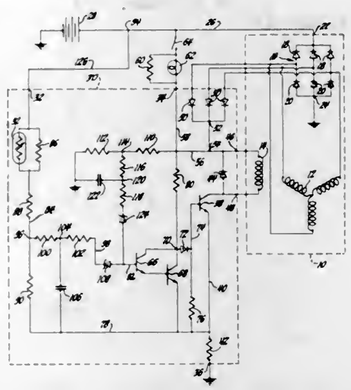
A high speed electronic switching network having a first circuit for connecting current through a load in a first directional sense and a second circuit for conducting current through the load in a second directional sense, the first and second circuits each having an electronic switch disposed in series therein for controlling the flow of current through the respective circuits and each electronic switching device having a diode or similar electronic switch connected across the input terminals thereof to compensate for the turn off switching lag of the electronic switch in the opposing circuit. A high speed rapid transition input signal is applied to the circuit and tends to forward bias one of the electronic switches and substantially simultaneously reverse bias the other electronic switch. To avoid both switches being turned on at the same time, the diodes or similar electronic devices are connected to the input terminals of each of the electronic switches to produce a time delay in the forward biasing of the respective switch.

3,467,853
GENERATOR VOLTAGE REGULATING SYSTEM
Glen E. Harland, Jr., and Charles G. Hanson, Kokomo, Ind., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Sept. 19, 1967, Ser. No. 668,794
Int. Cl. H02h *7/06*
U.S. Cl. 322—28 **5 Claims**

This invention relates to a transistor voltage regulator system for generators particularly of the type used to supply the electrical loads on motor vehicles. The regulator is designed so that it can be readily fabricated into a small integrated unit. The regulating system includes a circuit for varying the output voltage of the generator in response to changes in ambient temperature. The regulating system compensates for changes in the voltage characteristics of the semiconductor elements due to temperature change. The voltage regulator includes a resistor-capacitance circuit which forms a filter for the regulator. The capacitor of this circuit together with another resistor are operative to hold the output voltage of the generator up at high loads. The system includes a circuit for disconnecting the field circuit of the generator and regulator when the regulating system is not in operation.

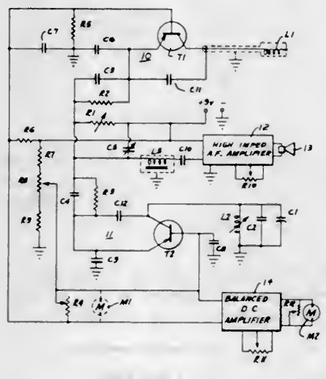


3,467,854
TRANSISTOR VOLTAGE REGULATOR INPUT CIRCUIT
Glen E. Harland, Jr., Charles G. Hanson, and Eldred H. Wiechmann, Kokomo, Ind., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Sept. 19, 1967, Ser. No. 668,800
Int. Cl. H02h *7/06*
U.S. Cl. 322—28 **4 Claims**



This invention relates to a high gain transistor voltage regulator for generators. The transistor regulator has an input filter and an input circuit which is designed to provide stable operation for the high gain transistor regulator. The input network of the regulator includes two resistors connected in series between a Zener diode and a junction of a voltage divider that senses the output voltage of the generator. A capacitor is connected between a junction of the two resistors and one end of the voltage divider.

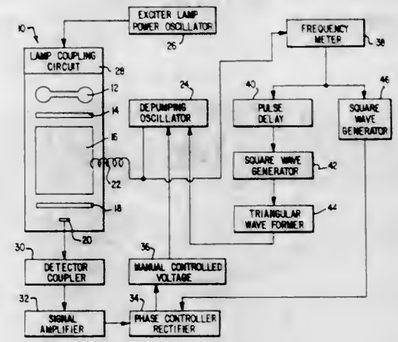
3,467,855
OBJECT DETECTOR AND METHOD FOR DISTINGUISHING BETWEEN OBJECTS DETECTED INCLUDING A PAIR OF RADIO FREQUENCY OSCILLATORS
Edwin Rance, 3709 Fannin St., Houston, Tex. 77004
Filed Aug. 3, 1967, Ser. No. 658,171
Int. Cl. G01v *3/00;* **G01r** *33/00, 33/12*
U.S. Cl. 324—3 **11 Claims**



An object detector and discriminator circuit including first and second radio frequency oscillators and an inductor probe forming the tuned circuit of the first oscillator. Electrical energy radiated from the inductor probe is disturbed sufficiently when in proximity of an object to be detected, to cause a shift in the radio frequency output and the base or grid current of the first oscillator. The second oscillator is fixed at a frequency adapted to beat with the first oscillator radio frequency output to provide a distinctive audio output which varies with the change in the frequency of the first oscillator. The base or grid current of the second oscillator is compared through a voltage divider network to provide an error signal which is amplified and indicated on a meter. The error signal responds to changes in the first oscillator base current and the beat frequency when properly adjusted so that a current increase is indicated when an object having relatively good electrical conductivity is passed, and a current decrease is indicated when an object having relatively poor electrical conductivity is passed.

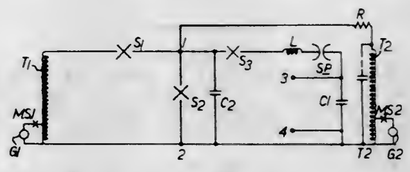
3,467,856
OPTICAL RESONANCE MAGNETOMETER WITH DIGITAL FREQUENCY MEASURING MEANS
Daniel P. Hearn, Tulsa, Okla., assignor to Sinclair Research, Inc., New York, N.Y.
Filed Nov. 17, 1966, Ser. No. 595,166
Int. Cl. G01r *33/08;* **H01s** *3/05*
U.S. Cl. 324—.5 **4 Claims**

1. In a device for measuring the strength of a magnetic field comprising a contained body of optically excitable atoms which are acted upon by said magnetic field when in the presence thereof; a source of resonance radiation impingeable upon and interacting with said body for producing alignment of said atoms contained therein; means to create and direct into said body a radio frequency magnetic field of such frequency as to diminish the alignment of atoms contained in said body including a variable control oscillator; and electrical means to measure the changes in the amount of resonance radiation absorbed by said atoms including a radiation detector, the improvement wherein said electrical means includes means for measuring said frequency over an integral number of



sweep cycles comprising frequency counting means having as an input the output of said variable oscillator, means for sweeping the frequency of said variable control oscillator and synchronizing means for synchronizing said sweeping means to said counting means for counting said frequency over an integral number of sweep cycles.

3,467,857
CIRCUIT ARRANGEMENT FOR SYNTHETIC TESTING OF ELECTRICAL APPARATUS EMPLOYING A STEADY A.C. RECOVERY VOLTAGE SUPPLY APPLIED AFTER THE TRANSIENT RECOVERY VOLTAGE
David Philip Longworth, Lymm, England, assignor to Associated Electrical Industries Limited, London, England, a British company
Filed Apr. 24, 1967, Ser. No. 633,085
Claims priority, application Great Britain, May 16, 1966, 21,667/66
Int. Cl. G01r *31/14*
U.S. Cl. 324—28 **1 Claim**

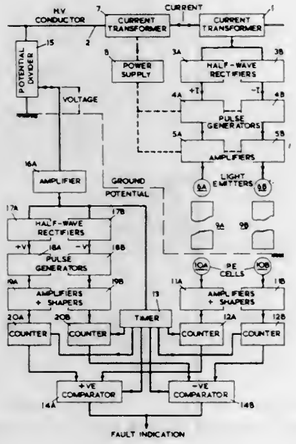


For testing it a specimen has its terminals connected through an auxiliary circuit breaker to a source supplying high amplitude current, also connected to an oscillatory series L/C circuit including a capacitor, a high D.C. voltage charging source for the capacitor, a switching means effectively completing the L/C circuit at a desired instant, and a rate capacitor connected across the L/C circuit, characterised in that an additional source supplying alternating current at an amplitude lower than that of the first current source is connected to the test terminals, and a switch is arranged for isolating said additional source from the L/C circuit.

3,467,858
SYSTEM FOR MEASURING HIGH VOLTAGE LINE PARAMETERS UTILIZING OPTICAL TRANSMISSION PATH

Thomas Brian Burnett, Stafford, England, assignor to The English Electric Company Limited, London, England, a British company

Filed May 6, 1966, Ser. No. 556,791
Claims priority, application Great Britain, May 14, 1965, 20,476/65
Int. Cl. G01r *31/08*
U.S. Cl. 324—52 8 Claims



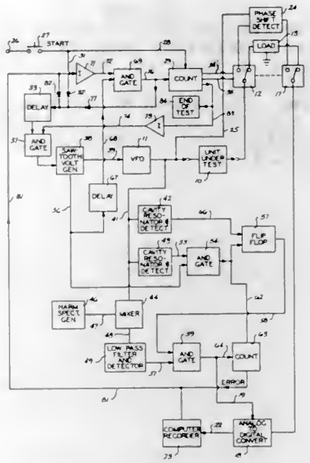
A system for measuring an electrical parameter, e.g., voltage, current, impedance, etc. of a high voltage transmission line utilizing an optical path between the line and ground for measurement of the line current so as to avoid the need for high insulation levels on the equipment employed. In particular, circuit means energised from the line itself monitor the current through the line and convert it into a train of pulses having a repetition rate proportional to the current magnitude. These pulses are then transmitted as light impulses to ground level where they are converted back into electrical signals. The line voltage is similarly monitored and converted into a pulse train, and the current and voltage quantities are then processed; a protective circuit breaker may be activated in dependence on the result if this is indicative of a fault on the line.

3,467,859
SYSTEM FOR TESTING A UNIT AT DISCRETE FREQUENCIES UTILIZING A HARMONIC SPECTRUM GENERATOR AND MEASURING MEANS ENABLED ONLY AT THE DISCRETE FREQUENCIES

Earl Hollis Nixon and John Watson Wheeler, Greensboro, N.C., assignors to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York

Filed Oct. 28, 1966, Ser. No. 590,247
Int. Cl. G01r *27/00, 23/16*
U.S. Cl. 324—57 9 Claims

A circuit for determining the characteristics of a unit under test at N discrete frequencies applies a sweep frequency to the input of the unit under test and to a mixer circuit which modulates the sweep frequency signal with the output of an harmonic spectrum generator. The difference product of the modulated signal is detected to produce pulses when the sweep frequency sweeps through the harmonic frequencies of the harmonic spectrum generator. The detected pulses control the operation of a measuring circuit connected to the output of the unit under test to obtain characteristics of the unit at discrete frequencies determined by the frequencies of the harmonic

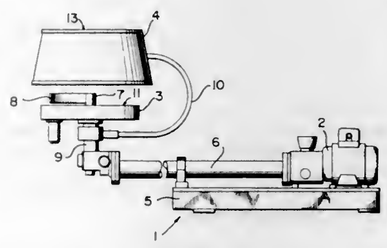


generator. The circuit tests at frequencies within a predetermined band of frequencies and prevents errors due to malfunction of the sweep frequency oscillator.

3,467,860
MOISTURE CONTENT SENSING PROBE INCLUDING WIPER MEANS FOR CONTINUOUS WIPING OF TEST MATERIAL FROM PROBE SURFACE

Karl Trischberger, 24 an der Windmuhle, 516 Dueren, Germany

Filed Dec. 29, 1966, Ser. No. 605,687
Claims priority, application Germany, Jan. 3, 1966, T 30,211
Int. Cl. G01r *27/02, 27/26*
U.S. Cl. 324—61 12 Claims

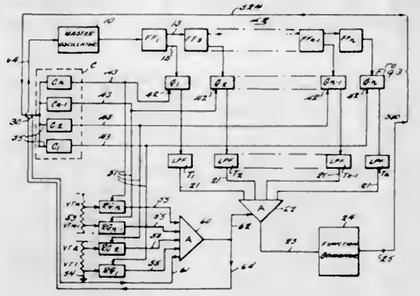


Apparatus for determining the moisture content of bulk material being conveyed along a predetermined path comprising an electrical condenser the plates of which provide a generally planar surface for the collection of the bulk material. The dielectric losses between such plates are dependent upon the moisture content of the collected bulk material and such losses are utilized to provide an indication of the moisture content. A wiper, movably disposed above the planar surface, continuously removes the bulk material from the surface and a guide housing positioned above the planar surface and the wiper guides the bulk material onto the condenser surface and maintains a back-up of material above such surface.

3,467,861
WIDE FREQUENCY RANGE SINGLE-CONTROL OSCILLATOR

Michael F. Grant, Columbus, Ohio, assignor to Industrial Nucleonics Corporation, a corporation of Ohio

Filed May 2, 1967, Ser. No. 635,434
Int. Cl. G01r *27/26;* H03b *3/04*
U.S. Cl. 324—61 21 Claims

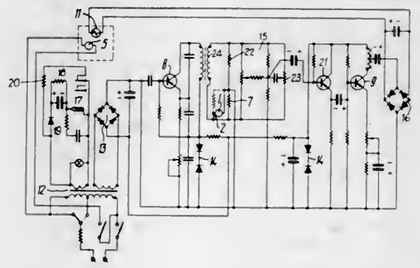


A wide frequency range single control oscillator suitable for use in constant-phase or variable-phased dielectric material gauging systems or in any other application in which a wide frequency variation in response to a single control is desirable. The oscillator comprises a variable frequency master oscillator, a frequency divider chain connected to said master oscillator for generating a plurality of alternating voltages having fractionally related frequencies and means responsive to a single input control for selectively connecting individual ones of said plurality of alternating voltages to an output terminal, and further, means for varying the frequency of said master oscillator in accordance with said single input control such that the frequency of the output at said output terminal varies in a continuous manner in response to said single input control. And the combination of such an oscillator with said dielectric material gauging systems.

3,467,862
APPARATUS FOR RECORDING RESISTANCE CHANGES DURING THE ENTIRE COAGULATION PROCESS IN A BIOLOGICAL FLUID

Usher Abramovich Vatmakher, Novoizmailovsky pr. 17, kv. 66; Inga Alexandrovna Tolstopyatova, Ulitsa Vernosti 14, korpus 3, kv. 116; Yakov Iosifovich Shvartz, Ulitsa Grazhdanskaya 21, kv. 19; and Tamara Ivanovna Pyankova, Ulitsa Opochinina 29, kv. 35, all of Leningrad, U.S.S.R.

Filed Feb. 20, 1967, Ser. No. 617,353
Int. Cl. G01r *27/02, 27/24*
U.S. Cl. 324—65 5 Claims

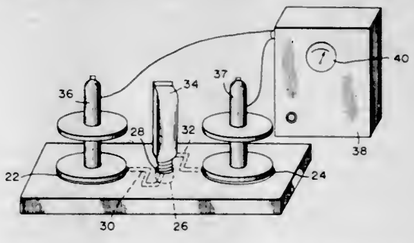


An apparatus for obtaining characteristic curves of the coagulation process in a biological fluid, e.g. blood, wherein the vessel containing the tested fluid and provided with electrodes is placed into a thermostatically controlled chamber and is associated with a crank gear that imparts oscillations to said vessel. A measuring electrical circuit is coupled to the electrodes, said circuit comprising a balanced bridge supplied with an alternating current of, for example, 8 to 12 kc./s., one of the arms of the bridge being coupled to said electrodes and the output thereof being coupled through an amplifier and a detector to a recorder means. The apparatus insures continuous time measuring and recording of the resistance of the tested fluid and variations in this resistance, said tested fluid being not subject to electrolysis during the procedure.

3,467,863
DEFIBRILLATOR PADDLE STAND INCLUDING MEANS FOR APPLYING ELECTROCARDIOGRAPHIC ELECTRODE PASTE TO PADDLES AND PERMITTING PASTE CONDUCTIVITY TESTS

Herbert Karsh, Lexington, Mass., assignor to Lexington Instrument Corporation, a corporation of Massachusetts

Filed Feb. 27, 1967, Ser. No. 618,893
Int. Cl. G01r *27/02;* A61b *5/04*
U.S. Cl. 324—65 6 Claims

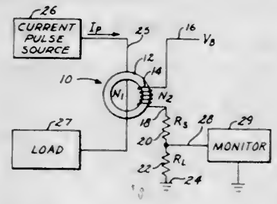


Apparatus for storing cardiac defibrillator paddles in a pair of spaced-apart containers communicating with one another through conduits connected to a separate inlet port into which conductive electrode paste can be introduced. When the conduits are filled with paste, the latter spills into the containers to contact the paddles. The paddles are then available for immediate therapeutic application to a patient. The defibrillator apparatus, to which the paddles are attached, can be tested by discharging the defibrillator apparatus between the paddles and through the paste in the conduits, the latter then constituting a test load resistor.

3,467,864
METHOD AND APPARATUS FOR MEASURING PULSE MAGNITUDE AND CHARGE

Marvin P. Vander Plaats, Fullerton, Calif., assignor to The Susquehanna Corporation, a corporation of Delaware

Filed Sept. 28, 1965, Ser. No. 490,978
Int. Cl. G01r *19/08, 27/28*
U.S. Cl. 324—102 4 Claims



Apparatus and a method are provided for measuring the magnitude and charge of a current pulse being applied to a load. The wire through which the pulse travels is coupled through a magnetic core. The core is biased into

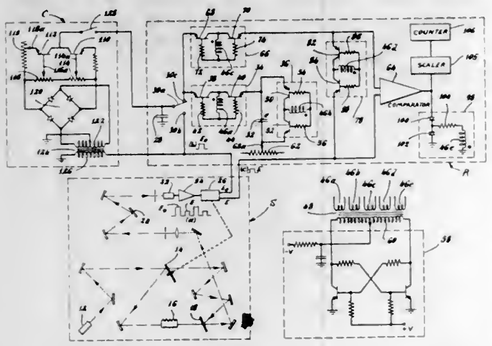
a saturated condition. The core is driven out of saturation during the presence of the current pulse, but once this pulse terminates, the core returns to saturation. The output of the core is monitored by apparatus which measures the time duration of the voltage changes occasioned by the changes of flux density in the core. These time durations are then mathematically converted, by the known circuit constants, into pulse current magnitude and charge.

3,467,865

LOGARITHMIC RATIOMETER WITH DIGITAL OUTPUT

Larkin B. Scott and George H. Keats, Fort Worth, Tex., assignors to The Perkin-Elmer Corporation, Norwalk, Conn., a corporation of New York

Filed Dec. 23, 1965, Ser. No. 515,949
Int. Cl. G01r *7/04*
U.S. Cl. 324—140 **10 Claims**



A circuit having an output representative of the logarithm of the ratio of two voltages. A first capacitor is charged to the higher of the two voltages. The first capacitor is then discharged by periodically connecting it across a smaller capacitor which, in turn, is discharged between such periodic connections. A comparator circuit compares the voltage across the first capacitor with a reference voltage and activates a counter with each discharge of the first capacitor. The number of steps required to discharge the first capacitor to the reference voltage level is displayed by the counter as the desired output. Curvature correction is provided either by injecting a steady current flow into the first capacitor or by biasing the second capacitor from ground.

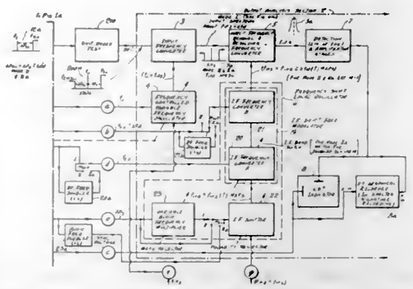
3,467,866

COMPOSITE INTERMODULATION SPECTRA SIGNATURE RECORDER

Anthony C. Palatinus, Maspeth, N.Y.
(15 Rooney Court, Glen Cove, N.Y. 11542)

Continuation-in-part of application Ser. No. 395,965, Sept. 11, 1964. This application Aug. 31, 1966, Ser. No. 576,789
Int. Cl. H04b *1/16, 1/36*
U.S. Cl. 325—67 **8 Claims**

Circuit and method for the measurement and the automatic recording, in a sequential manner of the intermodulation distortion characteristics of a network under test responding to a two-tone frequency swept signal that maintains one-tone static and provides linear variation of frequency separation between the tones. The distortion plotting technique is implemented by a test set that comprises a two-tone "carrier-sideband swept" signal generation source which simultaneously supplies operating signals to an output response analysis recorded. One operating signal is a sweep frequency carrier wave representative of the frequency deviation of the swept frequency tone of the two-tone "carrier-sideband swept" test signal. The latter signal is supplied to a resolving frequency conversion operator which frequency offsets its location in a manner that negates the sweep frequency excursion of the main or third intermodulation distortion term most adjacent to the static tone of the response output from the network under test. This sweep frequency removal action results in the selective filtering of a static third odd order intermodulation distortion product. A second operating



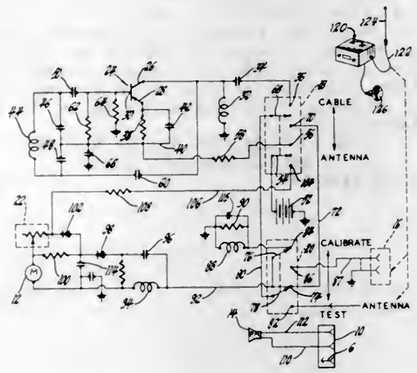
signal representative of the two-tone quiescent frequency separation or a harmonic multiple thereof, in conjunction with the multiplication of the frequency deviation amount of the first operating signal, produces successive frequency offsetting steps of the sweep negating action. The two-tone and their intermodulation distortion products sequentially coincide with the resolving passband, and the response component is detected and synchronously displayed.

3,467,867

APPARATUS FOR DETERMINING THE OPERABILITY OF VEHICLE RADIO COMPONENTS

Gerald Lee Armes, Kokomo, and James Leslie Gregg, Russiaville, Ind., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Dec. 8, 1965, Ser. No. 512,349
Int. Cl. H04b *1/16*
U.S. Cl. 325—363 **2 Claims**



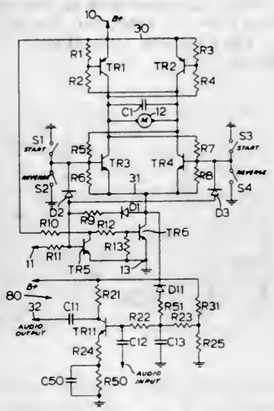
A portable device for testing the antenna, lead-in and speaker of an automotive radio receiver without removing the same from its normal position in the car. The device contains a battery, a meter, an auxiliary speaker and means to select separate test circuit to apply DC and AC current to an antenna and lead cable as well as to calibrate the meter by applying AC current to it in combination with a reactive circuit representing antenna and cable loss.

3,467,868

AUTOMATIC MUTING NETWORKS FOR SIGNAL SEEKING RECEIVERS

Jacob Buhr, Kitchener, Ontario, Canada, assignor to Electrohome Limited, Kitchener, Ontario, Canada

Filed Dec. 19, 1966, Ser. No. 602,942
Int. Cl. H04b *1/06, 1/32*
U.S. Cl. 325—456 **8 Claims**



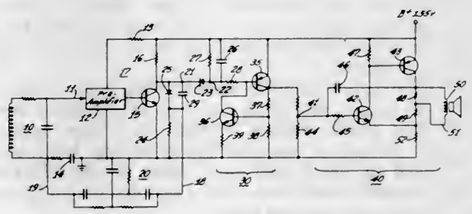
A signal seeking receiver includes a first transistor that is turned on when the receiver motor is running and off when the motor is not running. An audio muting network includes a second transistor that normally amplifies the audio signal to be reproduced by the receiver, the second transistor being biased on when the first transistor is turned off. The collector and emitter electrodes of the first transistor and a diode provide a low impedance path for reducing the bias voltage for the second transistor to a point where the second transistor turns off when the first transistor turns on.

3,467,869

SIGNALLING DEVICE PARTICULARLY IN MINIATURE RADIO RECEIVERS FOR PAGING SYSTEMS

Charles O. Forge, Cupertino, Calif., assignor to Donald W. Stillman, Playa Del Rey, California

Filed Feb. 25, 1966, Ser. No. 530,167
Int. Cl. H04b *1/06*
U.S. Cl. 325—466 **23 Claims**



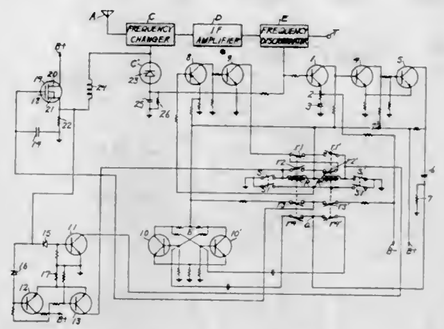
A paging receiver is disclosed having an input tank circuit, an amplifier with twin T filter feedback, a waveform distorting detector, a switch, and a free running multivibrator with loudspeaker.

3,467,870

AUTOMATIC FREQUENCY SWEEP APPARATUS

Hiroshi Aoyama, Kawasaki-shi, Japan, assignor to Trio Corporation, Tokyo, Japan, a limited-liability company of Japan

Filed Jan. 28, 1966, Ser. No. 523,645
Claims priority, application Japan, Feb. 16, 1965, 40/11,758; Mar. 2, 1965, 40/12,026; Mar. 15, 1965, 40/14,965
Int. Cl. H04b *1/32*
U.S. Cl. 325—470 **4 Claims**



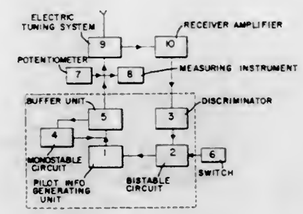
An automatic frequency sweep apparatus includes a pair of gang switches operating a pair of relays having interlocked contacts. A charge-and-discharge condenser is connected with the relays. A field effect transistor is inserted between the condenser and a capacity-variable diode of a frequency changer.

3,467,871

AUTOMATIC TUNER CONTROL DEVICES

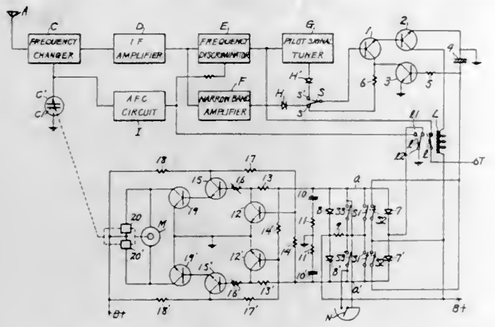
Emanuele A. Morici, Via Montedelle Gioie 9, and Carmelo Zimatore, Via Aiaccio 14, both of Rome, Italy

Filed Apr. 5, 1966, Ser. No. 540,278
Claims priority, application Italy, Jan. 14, 1966, 702/66, Patent 754,303
Int. Cl. H04b *1/32*
U.S. Cl. 325—470 **15 Claims**



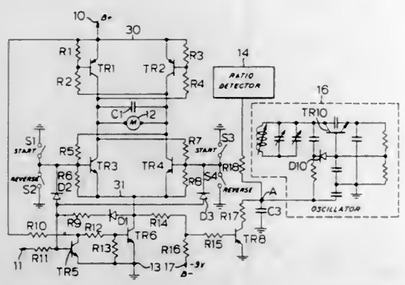
An arrangement for automatically tuning a receiver provided with an electric tuning device. A discriminator compares an incoming signal with the resonant frequency of the tuning device. When non-coincidence exists, the discriminator causes a circuit to conduct to drive a generator connected to the tuning device thereby altering its resonant frequency. When the resonant frequency matches the frequency of the incoming signal, the discriminator terminates conduction of the drive circuit to interrupt the variation of the tuning device's resonant frequency.

3,467,872
AUTOMATIC FREQUENCY SWEEP APPARATUS
Jiro Kasuga, Tokyo, and Shogo Shigeyama, Yokohama-shi, Japan, assignors to Trio Corporation, Tokyo, Japan, a limited-liability company of Japan
Filed Nov. 19, 1965, Ser. No. 508,657
Claims priority, application Japan, July 27, 1965, 40/45,429
Int. Cl. H04b *1/32*
U.S. Cl. 325—471 **2 Claims**



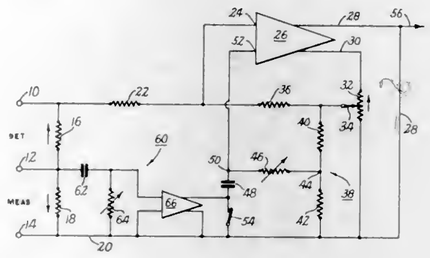
The automatic frequency sweep apparatus includes a pair of gang switches. Each of these switches is adapted to charge a large capacity condenser and a separate one of a pair of condensers. A signal is received and rectified and is adapted to influence two transistors. The large capacity condenser influences a control transistor. A relay is influenced by all of these transistors and is adapted to close an output circuit and to discharge said pair of condensers. The apparatus further includes a pair of control transistors each of which is influenced by a separate one of said condensers. Two further pairs of transistors are provided, each pair being influenced by a separate one of said condensers. The last-mentioned pairs of transistors control a motor which turns a variable condenser in order to sweep a frequency band.

3,467,873
A.F.C. DEFEAT NETWORKS FOR SIGNAL SEEKING RECEIVERS
Jacob Buhr, Kitchener, Ontario, Canada, assignor to Electrohome Limited, Kitchener, Ontario, Canada
Filed Dec. 19, 1966, Ser. No. 602,939
Int. Cl. H04b *1/06, 1/32*
U.S. Cl. 325—471 **10 Claims**



A signal seeking receiver has a first transistor that is automatically turned off when the tuner motor of the receiver is not running and on when this motor is operating. An A.F.C. defeat network automatically renders the A.F.C. network of the receiver inoperative when the first transistor is on and operative when the first transistor is off. The A.F.C. defeat network includes a second transistor which, when turned on, substantially short circuits the A.F.C. signals. The second transistor is normally biased on but is connected to the first transistor in such a manner that it is biased off when the first transistor is turned off.

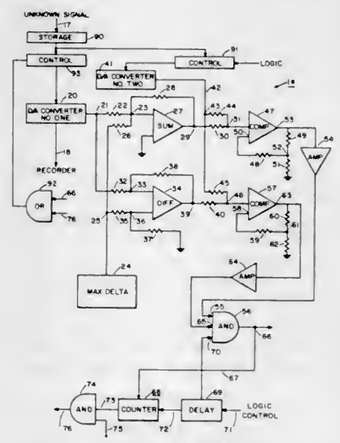
3,467,874
SOLID STATE PROCESS CONTROLLER PROVIDING TIME-VARIANT EFFECTS
David A. Richardson, Sheldonville, and Everett O. Olsen, Wrentham, Mass., assignors to The Foxboro Company, Foxboro, Mass., a corporation of Massachusetts
Filed Nov. 15, 1965, Ser. No. 507,765
Int. Cl. H03k *5/00;* **H03f** *3/68*
U.S. Cl. 328—1 **19 Claims**



A solid-state electronic controller for maintaining constant a condition of an industrial process and having means for providing time-variant effects of the reset and rate type, the controller including a high gain amplifier to which is directed a deviation signal responsive to the difference between a measured process condition and the desired value thereof, the controller being provided with feedback means for developing a feedback voltage corresponding to the amplifier output, and further including means for directing feedback signals to the amplifier input circuit, one feedback signal being coupled to one input terminal through a purely resistive path, the other feedback signal being coupled through an RC network to the other input terminal.

3,467,875
GATING SYSTEM AND METHOD FOR DISCRIMINATING BETWEEN VALID AND INVALID ANALOG SIGNAL INFORMATION IN ACOUSTIC WELL LOGGING
Allen W. Engle, Houston, Tex., assignor to Dresser Industries, Inc., Dallas, Tex., a corporation of Delaware
Filed Dec. 19, 1966, Ser. No. 603,037
Int. Cl. H03k *5/20*
U.S. Cl. 328—147 **11 Claims**

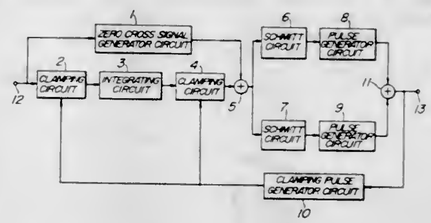
1. A system for accepting a valid signal voltage within a predetermined amplitude range comprising:
(a) first storage means having at least one input terminal and first and second output terminals, whereby a valid signal voltage can be received from said at least one input terminal and stored in said first storage means;
(b) summing amplifier means having input means and an output, said input means being connected to said first output terminal of said first storage means;
(c) differential amplifier means having input means and an output, said input means of said differential amplifier being connected to said first output terminal of said first storage means;
(d) a voltage source having a predetermined amplitude connected to said input means of said summing amplifier means and to said input means of said differential amplifier means, whereby the voltage at said output from said summing means comprises a voltage indicative of the amplitude sum of said valid signal voltage and said predetermined voltage, and the voltage at said output from said differential means comprises a voltage indicative of the amplitude difference between said valid signal voltage and said predetermined voltage;
(e) first comparator means having input means and an output, said input means of said first comparator means being connected to the output of said summing means;
(f) second comparator means having input means and an output, said input means of said second comparator means being connected to the output of said differential means;
(g) second storage means having an output terminal and at least one input termial, whereby an unknown signal voltage can be received at said at least one input terminal of said second storage means and stored in said second storage means, said output terminal of said second storage means being connected to the input means of said first and said second comparator means and also being connected to said at least one input terminal of said first storage means, whereby an unknown signal voltage from said second storage means can be compared with the output voltage from said summing means and can be compared with the output voltage from said differential means; and



(h) first gating means connected to the outputs of said first and second comparator means, respectively, whereby said first gating means provides an indication of whether said unknown voltage is within a predetermined amplitude range of said valid signal voltage.

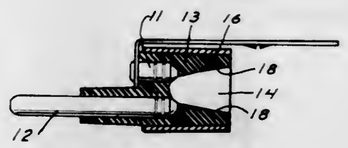
9. A method for accepting only valid signal information comprising:
(a) adding a predetermined voltage to a known valid signal voltage;
(b) subtracting said predetermined voltage from said known valid signal voltage;
(c) comparing a signal voltage of unknown validity with the sum of said predetermined voltage and said known valid signal voltage;
(d) comparing said signal voltage of unknown validity with the difference between said predetermined voltage and said known valid signal voltage;
(e) coupling the results of both of said comparisons to a gate, whereby said gate provides an indication of acceptance for valid signal voltages and an indication of rejection for invalid signal voltages.

3,467,876
PULSE MODULATION SYSTEM
Yoshinobu Tatsuzawa, Daito-shi, Kosaku Uchida, Neyagawa-shi, and Kazuaki Mayumi, Kyoto, Japan, assignors to Matsushita Electric Industries Co., Ltd., Osaka, Japan, a corporation of Japan
Filed Dec. 6, 1967, Ser. No. 688,506
Claims priority, application Japan, Dec. 9, 1966, 41/81,733, 41/81,734
Int. Cl. H03k *17/02, 3/04, 5/20*
U.S. Cl. 328—150 **8 Claims**



This specification discloses a pulse modulation system, wherein a positive modulation pulse is generated when an area defined by a deviation in an input sound signal voltage and the time axis reaches a predetermined positive value and when the input signal voltage crosses the zero level while increasing, and a negative pulse is generated when an area defined by a deviation in the input signal voltage and the time axis reaches a predetermined negative value and when the input signal voltage crosses the zero level while decreasing.

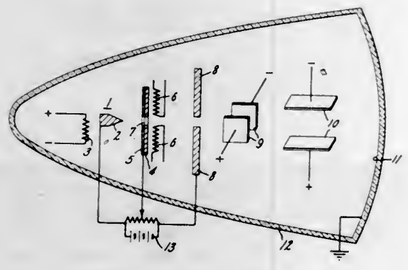
3,467,877
LIGHTNING ARRESTER WITH THE FRUSTO-CONICAL SURFACE OF THE PARALLEL ELECTRODES BEING EXPOSED TOWARD EACH OTHER AT THE NARROW END OF A DIVERGING SPARK SLOT
Kerry A. Dooley, Marion, William E. Rockhill, Delphi, David L. Swope, Kokomo, Earl E. Thomas, Lafayette, and Ralph H. Van Fossen, Jr., West Lafayette, Ind., assignors to Duncan Electric Company, Inc., Lafayette, Ind., a corporation of Indiana
Filed Aug. 16, 1966, Ser. No. 577,794
Int. Cl. H01j *17/04, 17/34*
U.S. Cl. 313—325 **12 Claims**



In a narrow but wide slot in the insulating material a lightning arrester gap is formed between the tip portions of two electrodes arranged in parallel. The axes of the electrodes are offset from the plane of the slot and the electrodes are exposed into the slot only by a small portion of the frustoconical surface forming the chamfer. The edges of the slot approximately coincide with the portions of the electrodes nearest one another and extend away therefrom in slightly diverging angles to an open end of the slot. The insulating material is gas evolving material and it is reinforced with a stainless steel band

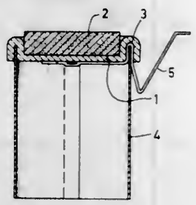
under tension. An insulating tube for one electrode extends well beyond the end of the other electrode. The inserted portions of the electrode are circumferentially grooved to help insure their retention in place when pressed into the preformed insulating member.

3,467,878
ELECTRON DISCHARGE DEVICE WITH ARRANGEMENT FOR REPLENISHING EMISSIVE MATERIAL ON A SMOOTH CATHODE SURFACE
Sterling P. Newberry, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York
Filed June 27, 1966, Ser. No. 560,733
Int. Cl. H01j *1/14, 19/06*
U.S. Cl. 313—346 **8 Claims**



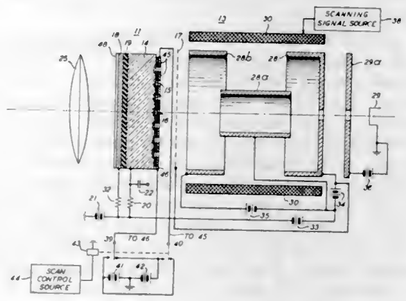
An electron discharge device includes an anode which has a reservoir for continuously providing emissive material to a point cathode as emitter material is lost by the cathode during operation. The anode is provided with a heater to evaporate the emissive material as required, the potential difference between the cathode and anode causing the evaporated material to be deposited on the cathode.

3,467,879
PLANAR DISPENSER CATHODE ASSEMBLY WITH A CAP MEMBER TO WHICH AN ELECTRON-EMISSIVE, TUBULAR HEATER, AND ROD-SHAPED SUPPORT MEMBERS ARE CLAMPED
Johannes Reinier Blatter, Emmasingel, Eindhoven, Netherlands, assignor, by mesne assignments, to U.S. Philips Corporation, New York, N.Y., a corporation of Delaware
Filed Feb. 6, 1967, Ser. No. 614,248
Claims priority, application Netherlands, Mar. 8, 1966, 6602973
Int. Cl. H01j *1/20*
U.S. Cl. 313—346 **5 Claims**



A planar dispenser cathode assembly comprising a cap member having on one side means for receiving and clamping the electron-emissive member and on the opposite side an annular groove for receiving and clamping a tubular heater enclosure and rod-shaped support members.

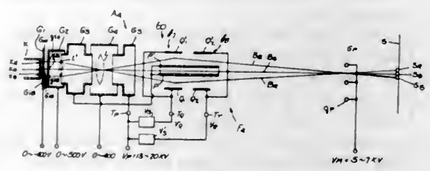
3,467,880
MULTIPLE-IMAGE ELECTRON BEAM TUBE AND COLOR CAMERA
Merton H. Crowell, Morristown, N.J., assignor to Bell Telephone Laboratories Incorporated, Murray Hill, N.J., a corporation of New York
Filed Aug. 21, 1967, Ser. No. 662,022
Int. Cl. H01j *31/48, 31/26;* **H04n** *3/00*
U.S. Cl. 315—11 **4 Claims**



In an electron beam storage device employing a monolithic array of reverse-biased p-n junctions, the surface scanned by the electron beam has superimposed upon it two interleaved conductive combs with apertures centered over the junctions. The voltages applied to the two conductive combs are switched so that first one passes electrons to a first set of junctions underlying itself for at least one scan period while the other repels them and then the other passes the electrons to a second set of junctions underlying itself, while the first repels them.

Appropriate color filters on the opposite, light-receiving side, in the case of a camera tube, can make the two sets of junctions responsive to different colors. In a scan converter, the conductive combs on the writing beam side control the diffusion of the electron-created holes; and the writing electron beam and the reading electron beam can effectively scan different sets of junctions, thereby avoiding spurious effects that occur when both beams strike the same junction at the same time.

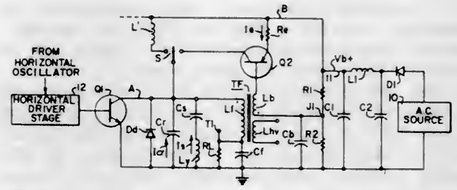
3,467,881
COLOR PICTURE TUBE
Akio Ohgoshi and Satoshi Shimada, Tokyo, and Senri Miyaoka, Kanagawa-ken, Japan, assignors to Sony Corporation, Tokyo, Japan, a corporation of Japan
Filed Apr. 4, 1968, Ser. No. 718,738
Claims priority, application Japan, Apr. 6, 1967, 42/22,173, 42/22,174; July 19, 1967, 42/46,253
Int. Cl. H01j *29/50, 31/00*
U.S. Cl. 315—13 **12 Claims**



A new and improved color picture tube system of the single-gun, plural-beam type is provided and includes electron beam deflection means which comprise first and

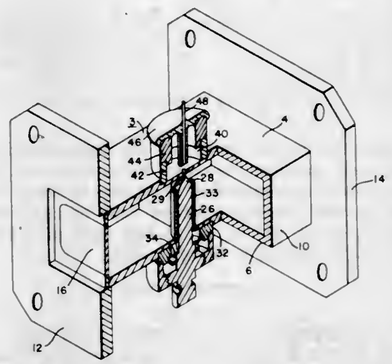
second, successively arranged electron beam deflectors to insure that the respective electron beams will be properly converged to properly strike the different color phosphor stripes of the color phosphor screen throughout the entire extent of the latter.

3,467,882
SCANNING CIRCUITS OPERATIVE WITH LINE VOLTAGE TYPE OF POWER SUPPLY
Jing-Jue Young, Elizabeth, N.J., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Nov. 23, 1966, Ser. No. 596,501
Int. Cl. H01j *29/70*
U.S. Cl. 315—27 **22 Claims**



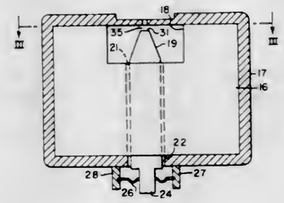
A horizontal output scanning circuit is disclosed operative with a line voltage type of power supply and which utilizes a semiconductor switching device, such as a transistor or a gate controlled switch. A feeder device, such as a transistor, is used to supply energy to the scanning circuit only during the retrace portion of the scanning cycle.

3,467,883
MICROWAVE SWITCHING DEVICE
Harry Goldie, Randallstown, and Theodore M. Nelson, Catonsville, Md., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Sept. 2, 1966, Ser. No. 576,965
Int. Cl. H01j *19/80, 7/46*
U.S. Cl. 315—39 **3 Claims**



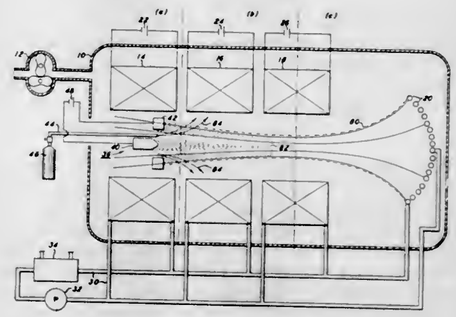
A microwave switching device in the form of a resonant discharge device in which a tuning post of a resonant iris cooperates with a sidewall of a waveguide to constitute a discharge gap within the waveguide. A keep-alive electrode, located in a chamber external to the waveguide, is positioned in alignment with the tuning post and an aperture in the waveguide.

3,467,884
FLAT RESONANT ELEMENT FOR TR TUBES
Harry Goldie, Randallstown, Md., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Feb. 13, 1967, Ser. No. 615,508
Int. Cl. H01j *19/80, 7/46*
U.S. Cl. 315—39 **6 Claims**



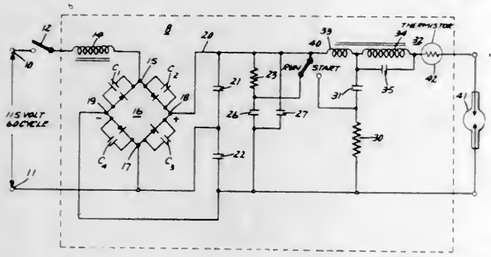
An extremely low loss resonant element for TR tubes in the form of a flat baffle plate using a single flat post is described. The element in the form of a flat baffle plate which extends across a section of rectangular microwave guide and containing a flat tuning "cone." An opening adjacent one of the walls of the wave guide constitutes an iris to which an electromagnetic wave energy can be coupled from one side of the iris to the other when the electric field on the wave energy is not sufficient to breakdown the discharge gap. A thin flat post, or tongue, having a tapered upper end, extends across the iris opening and means are provided for varying the width of the discharge gap between the flat end of the tongue and one broadwall of the wave guide.

3,467,885
METHOD AND APPARATUS FOR ELECTROMAGNETICALLY CONTAINING A PLASMA
Gordon L. Cann, Laguna Beach, Calif., assignor, by mesne assignments, to Xerox Corporation, a corporation of New York
Filed May 20, 1965, Ser. No. 457,414
Int. Cl. H01j *7/24;* **H05b** *31/26*
U.S. Cl. 315—111 **2 Claims**



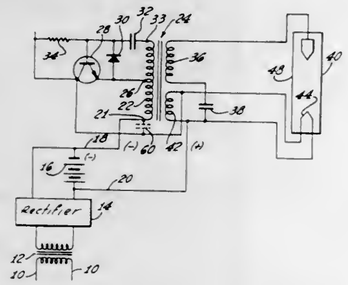
A method and apparatus for plasma containment is disclosed in which a longitudinally continuous magnetic field symmetrical about an axis converges the plasma produced by a radial electric discharge at a single axial location to a remote pinch and allows it to diverge thereafter.

3,467,886
BALLAST APPARATUS FOR STARTING AND OPERATING ARC LAMPS
Robert P. Alley, Danville, Ill., assignor to General Electric Company, a corporation of New York
Filed Feb. 24, 1966, Ser. No. 529,862
Int. Cl. H05b *41/04*
U.S. Cl. 315—163 **12 Claims**



A ballast circuit for starting and operating arc lamps includes a full wave rectifier in series with an adjustable resistor and a reactor across the terminals of an A-C supply. An arc lamp may be connected across the output terminals of the rectifier to receive its operating current therefrom which operating current is essentially controlled by the setting of the resistor and the reactance of the reactor. A circuit for providing starting current comprises a pair of storage capacitors connected to the primary winding of a pulse transformer to discharge through that transformer to provide a starting pulse higher in amplitude than the operating current when a switch is moved from a "run" to a "start" position.

3,467,887
LIGHTING SYSTEM
Clifford D. Skirvin, Pomona, Calif., assignor to Microdot Inc., South Pasadena, Calif., a corporation of California
Filed Aug. 28, 1967, Ser. No. 663,744
Int. Cl. H05b *37/02*
U.S. Cl. 315—209 **15 Claims**



This invention relates to a lighting system in which a direct voltage of a relatively low value is used to illuminate a luminescent tube such as a fluorescent tube. The system includes a current control member such as a transistor which is normally biased to a state of conductivity. A first reactance such as the primary winding of a transformer is connected to the source of direct voltage and to the transistor to store energy during the time that the transistor is conductive. A second reactance such as a capacitor is also connected to the current control member and the primary winding of the transformer to store energy during the time that the transistor is conductive.

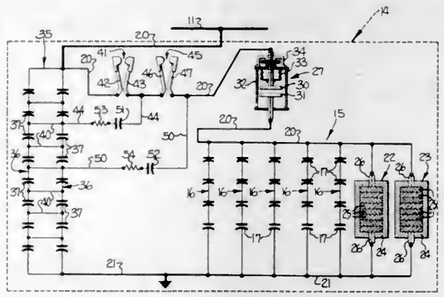
When the capacitor becomes charged to a particular value, it starts to discharge through a second current control member such as a diode which is connected to the transistor and which is connected in a circuit with the primary winding of the transformer and the capacitor. During the time that the capacitor is discharging through the diode, the transistor is biased to a state of nonconductivity.

In this way, the transistor is alternately triggered to the conductive and nonconductive states. When the transistor is triggered to the nonconductive state, the low impedance provided by the diode across the primary winding of the transformer prevents the electromotive force in the transformer from producing voltage surges which would tend to damage the transformer.

The transformer has a secondary winding which is connected across the luminescent tube to illuminate the tube. During the time that the transistor is conductive, a current flows through the secondary winding and the luminescent gas to excite the gas in the tube. When the transistor becomes nonconductive, the energy stored in the transformer discharges through the luminescent tube.

The transformer may have a third winding when the luminescent tube has a filament. This third winding is connected across the filament and in a circuit with the transistor. This causes the third winding to provide a relatively low impedance across the filament during the time that the transistor is conductive. This low impedance tends to limit the flow of current through the filament. However, when the transistor is nonconductive, the third winding provides a high impedance across the filament so that a relatively great current flows through the filament. In this way, the filament receives an alternating current so as to become heated and emit electrons for exciting the tube.

3,467,888
CAPACITOR BANK SURGE PROTECTION DEVICE
Herman B. Wolf, 1917 Beverly Drive, Charlotte, N.C. 28207
Filed Jan. 6, 1967, Ser. No. 607,821
Int. Cl. H02h *7/16*
U.S. Cl. 317—12 **10 Claims**

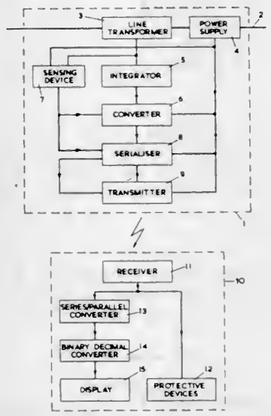


A surge limiting device having one bank of capacitors continuously connected between bus and ground, and a series of arc gaps arranged to spark over at surge voltage in the bus and connect a second bank of capacitors in shunting parallel relation to the first bank of capacitors for so long as the surge voltage persists.

3,467,889
ELECTRICAL MEASURING SYSTEMS
Keith Begbie Brough-Cunningham, Leonard George Wardle, and Michael Cullen, Stafford, England, assignors to The English Electric Company Limited, London, England, a British company
Filed Dec. 13, 1966, Ser. No. 601,398
Claims priority, application Great Britain, Dec. 17, 1965, 53,598/65
Int. Cl. H02h *3/28, 7/26*
U.S. Cl. 317—28 **11 Claims**

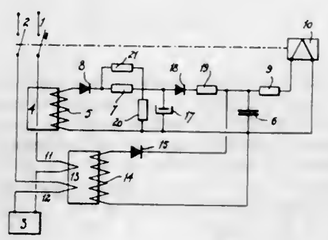
An electrical measuring system for measuring a transmission parameter, e.g. current, in a high voltage line comprises a transmitter unit suspended from the high voltage line and a receiver unit at a ground station.

The transmitter unit includes a transformer whose primary winding is constituted by the high voltage line and an integrator connected to the secondary winding of the transformer for providing an analogue voltage which is directly proportional to, and in phase with, the transmission parameter. The analogue voltage is monitored over a predetermined period of its cycle in a converter which also converts the monitored information into digital information in serial form. The digital information is then serialised and fed to an R.F. transmitter for transmission to the ground station.



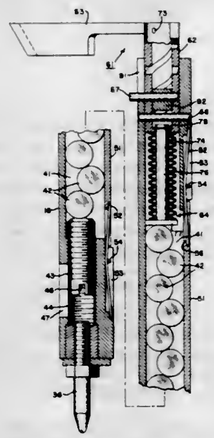
The ground station includes a receiver whose output is connected to a serial to parallel converter for reconverting the received digital information into parallel form. This digital data is then inverted into complementary decimals in a binary to decimal converter and fed to a display device. The received digital information is also fed to protective relay devices for opening a circuit breaker in the event of the received information being indicative of a fault on the high voltage line.

3,467,890
ELECTRICAL CIRCUIT PROTECTION DEVICES UTILIZING CAPACITOR DISCHARGE
Ferdy Mayer, 22 Rue Ampere, Grenoble, France
Filed June 14, 1965, Ser. No. 463,684
Claims priority, application France, June 20, 1964, 979,070
Int. Cl. H02h *7/00, 7/16, 1/04*
U.S. Cl. 317—33 **5 Claims**



A circuit protection device including a circuit breaker connected between the electrical circuit to be protected and its power source for disconnecting the circuit from its source when the circuit becomes overloaded, the device further including a current transformer connected to the circuit for monitoring the current supplied thereto, an energy storage element connected to the output of the current transformer for storing the energy supplied by the transformer, a threshold switch connected to the storage element, and a relay having its energising coil connected to the threshold switch and arranged to trigger the circuit breaker when an overload appears in the electric circuit to be protected, the energising coil of the relay receiving all of its energising power from the storage element.

3,467,891
COMBINATION ELECTRICAL, MECHANICAL, AND THERMAL CONNECTOR ASSEMBLY
Rodman A. Mogle, Chittenango, N.Y., assignor to General Electric Company, a corporation of New York
Filed Oct. 3, 1967, Ser. No. 672,641
Int. Cl. H02b *1/04, 9/00;* **H01r** *13/54*
U.S. Cl. 317—101 **10 Claims**

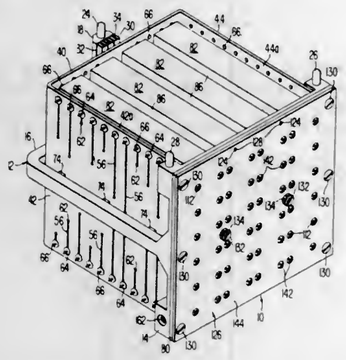


An improved mechanical arrangement is disclosed for removably attaching a "sub frame" to a "main frame." An edge portion of the sub frame slides into a recess of the main frame, the edge portion being hollow and containing roller members in an elongated staggered arrangement so as to exert force laterally along the edge portion in response to axial motion of a cam or toggle device, thus wedging the sub frame securely in the main frame recess. The cam device is arranged to provide a sequence of motions so that it drives the sub frame into locked seated position prior to wedging it in place.

3,467,892
ELECTRICAL MODULE AND SYSTEM
Edgar O. Sprude, Philadelphia, and Walter H. Marshall, Media, Pa., assignors to Burroughs Corporation, Detroit, Mich., a corporation of Michigan
Filed Jan. 25, 1968, Ser. No. 700,443
Int. Cl. H02b *1/08*
U.S. Cl. 317—117 **10 Claims**

The electrical module includes a frame, a channel-shaped circuit member secured to the frame, and a circuit board with circuitry on at least one side secured to the frame and so as to form with the channel-shaped member a four-sided structure containing circuitry on each of the elements forming the four walls of the structure. Electrical components such as resistors, capacitors, inductors, transistors, etc., either in discrete form or in integrated circuit form, are mounted in the interior of the

four-sided structure and are electrically interconnected in accordance with circuit requirements, as well as being electrically connected in accordance with circuit requirements to the circuitry on the channel-shaped member and on the printed circuit board. A number of bus bars are provided for each electrical module. Two or more modules are arranged in a stack, when more than one module is required to construct an electrical system. Adjacent modules in the stack are electrically connected through their bus bars and through strip connectors. The electrical components are arranged in each module so as to afford efficient cooling, whether the modules are utilized individually or are stacked in a system.



3,467,893

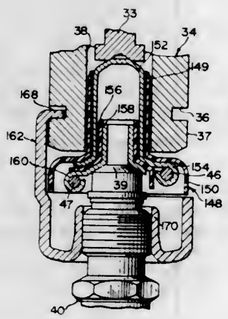
MAGNET ASSEMBLIES AND TERMINALS

Wilbur F. Jackson, Rolling Hills, and Henry C. Brucksiek, Buena Park, Calif., assignors to Robertshaw Controls Company, Richmond, Va., a corporation of Delaware

Continuation-in-part of applications Ser. No. 287,061, June 11, 1963, and Ser. No. 502,990, Aug. 5, 1965. This application Oct. 18, 1966, Ser. No. 587,598

Int. Cl. H01h *47/22*

U.S. Cl. 317—123 **9 Claims**



An electromagnetic assembly having electromagnetic means in a housing in a supporting base therefor; an electric terminal assembly is retained from a supporting base and is provided with specially constructed contacts to permit a control circuit to be series connected to the energizing circuit for the electromagnet.

3,467,894

ELECTRONIC SWITCH FOR THE RAPID SWITCHING OFF AND ON AGAIN OF CURRENT-CONVEYING COILS

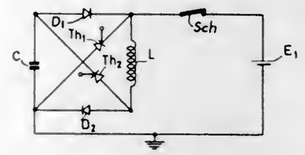
Peter Blume, Hamburg-Lurup, Germany, assignor, by mesne assignments, to U.S. Philips Corporation, New York, N.Y., a corporation of Delaware

Filed Jan. 14, 1966, Ser. No. 520,563

Claims priority, application Germany, Jan. 21, 1965, P 35,915

Int. Cl. H01h *47/22*

U.S. Cl. 317—123 **8 Claims**



A circuit for switching current in an inductor comprises a source of DC voltage, a switch, and a first diode connected in series with the inductor. A capacitor and a second diode are serially connected across the series combination of the inductor and the first diode so that the energy stored in the inductor can be transferred to the capacitor when the switch is opened. A thyristor is shunted across the series combination of the first diode and the capacitor and is poled to discharge the capacitor into the inductor with the same polarity as the voltage source.

3,467,895

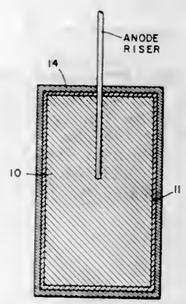
MANGANOUS NITRATE-CATALYTIC AGENT SOLUTION FOR SOLID ELECTROLYTE CAPACITOR

John Silgailis, Billerica, Mass., assignor to P. R. Mallory & Co. Inc., Indianapolis, Ind., a corporation of Delaware

Filed Nov. 28, 1967, Ser. No. 686,266

Int. Cl. H01g *9/00;* **C09k** *3/00*

U.S. Cl. 317—230 **17 Claims**



A solution containing manganous nitrate and a catalytic agent which volatilizes or decomposes at a temperature of about 100–150° C. and induces the precipitation of manganous hydroxide particles by increasing the pH of the manganous nitrate solution having a pH below about 2 to about 3 to 6. The manganous hydroxide particles are precipitated and converted in situ by the application of heat in the range of about 100–150° C. to provide manganese dioxide nucleation sites. Thereafter the anode is dipped into a standard manganous nitrate solution and the anode is subjected to a temperature of about 200–400° C. to pyrolytically convert the manganous nitrate to manganese dioxide.

3,467,896

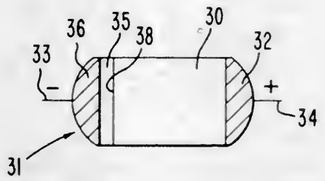
HETEROJUNCTIONS AND DOMAIN CONTROL IN BULK NEGATIVE CONDUCTIVITY SEMICONDUCTORS

Herbert Kroemer, Sunnyvale, Calif., assignor to Varian Associates, Palo Alto, Calif., a corporation of California

Filed Mar. 28, 1966, Ser. No. 538,092

Int. Cl. H01l *3/00, 5/00*

U.S. Cl. 317—234 **7 Claims**



A means for controlling the oscillation mode in bulk negative conductivity semiconductor oscillators. By doping the semiconductor so that a resistivity gradient exists between the positive and negative electrodes with a higher resistivity at the positive electrode, the oscillator can be made to reliably function in the pure accumulation mode. If the resistivity gradient is in the opposite direction, operation will be in the dipole space charge mode. Alternatively the operating mode can be controlled by utilizing a negative electrode formed of a semiconductor material having a higher resistivity than the semiconductor material of the main body and having a positive mobility over the operating range of the oscillator device.

3,467,897

HOUSING ARRANGEMENT FOR RECTIFIER DEVICE

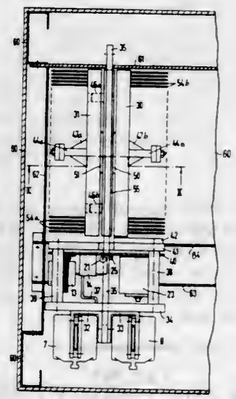
Manfred Hoffmann and Roland Wendelin, Erlangen, and Erich Katscher, Marloffstein, Germany, assignors to Siemens Aktiengesellschaft, a corporation of Germany

Filed Apr. 20, 1966, Ser. No. 545,215

Claims priority, application Germany, Apr. 23, 1965, S 96,711

Int. Cl. H01l *1/02, 1/12;* **H02b** *1/04*

U.S. Cl. 317—234 **16 Claims**



A silicon rectifier is positioned between a pair of spaced cooling bodies forming a single structural unit with the rectifier and structural components. The structural components comprise a guide plate of electrical insulating material fixedly positioned with the rectifier between the cooling bodies. The guide plate extends radially of the rectifier. An electrical fuse is supported on a front plate of electrical insulating material extending parallel to the axis of symmetry of the rectifier. The front plate is spaced from and parallel to and affixed to another plate of electrical insulating material. A base plate of electrical insulating material is affixed to the front plate.

3,467,898

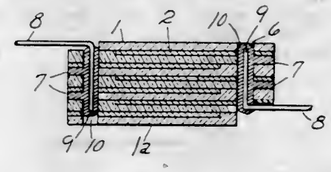
CAPACITOR WITH TERMINAL MEANS

Lawrence J. Ruffner, State College, Pa., assignor to Erie Technological Products Inc., Erie, Pa., a corporation of Pennsylvania

Filed Aug. 7, 1968, Ser. No. 750,880

Int. Cl. H01g *1/00*

U.S. Cl. 317—258 **4 Claims**



A capacitor comprising a plurality of ceramic layers, each layer having an electrode coating of one face and having a terminal area at a peripheral edge of the layer. The terminal area has a coating which is an extension of the electrode coating and a perforation extending through the terminal area and intersecting the extension. The layers are stacked so that the electrode areas of adjacent layers are in register with and in contact with each other and the terminal areas of the adjacent layers are out of register and out of contact with each other. This provides space for conductive material to make contact with the surfaces of the extensions of the electrode areas to increase the current carrying capacity.

3,467,899

TRACING STYLUS CIRCUIT FOR REPLICA PRODUCING SYSTEM

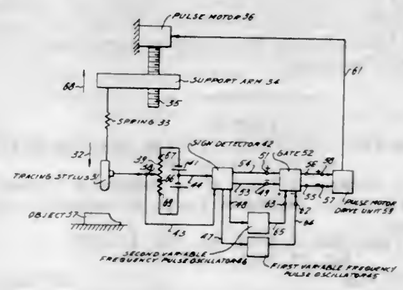
Seiuemon Inaba, Kawasaki-shi, Kanryo Shimizu, Neguro-ku, Tokiji Shimajiri, Mitaka-shi, Tokyo, and Norito Yoshitake, Kawasaki-shi, Japan, assignors to Fujitsu Limited, Kawasaki, Japan, a corporation of Japan

Filed Mar. 9, 1966, Ser. No. 533,021

Claims priority, application Japan, Mar. 15, 1965, 40/15,156

Int. Cl. H02p *1/54, 5/46, 7/68*

U.S. Cl. 318—18 **6 Claims**



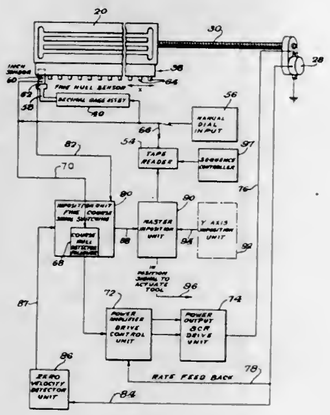
A tracing stylus circuit includes a pulse motor having a speed of rotation proportional to the repetition rate of pulses supplied to it and being coupled to a movable mounting for a tracing stylus. A voltage producing device coupled to the stylus continuously produces a voltage having a magnitude corresponding to the position of the

stylus. A pulse generator connected to the voltage producing device produces a series of pulses having a repetition rate which varies with the magnitude of a voltage applied thereto. The output of the pulse generator is applied to the pulse motor so that the motor moves the stylus in a direction which nullifies its previous movement in accordance with the series of pulses applied thereto and having a repetition rate dependent upon the position of the stylus.

3,467,900
POSITIONING APPARATUS WITH CONTROLS EMPLOYING RESISTOR INCREMENTS

Robert C. Benton, State College, Pa., assignor to Chemcut Corporation, State College, Pa., a corporation of Pennsylvania

Original application Dec. 24, 1964, Ser. No. 420,872, now Patent No. 3,384,797, dated May 21, 1968. Divided and this application May 15, 1968, Ser. No. 729,314
Int. Cl. H02p *5/46, 7/68, 7/74*
U.S. Cl. 318—18 **5 Claims**



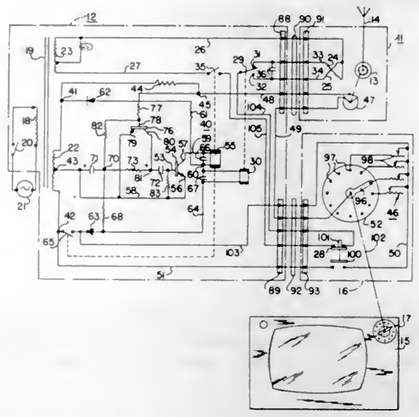
Positioning apparatus which takes a final position corresponding to a pre-recorded coordinate figure taken from a perforated tape input, and which includes a positioned part, with equally spaced apart elements thereon and movable until aligned with stop means; means selecting one of the elements and adjusting the stop means in accordance with the respective integer and decimal portions of the figure; and an apparatus drive controlled by the stop means which interrupts the drive at a point determined by transverse alignment between the selected element and stop means, at which point the positioned part will have taken its final position corresponding to the pre-recorded figure.

3,467,901
SERVOMOTOR CONTROL SYSTEM MOVED WITH SELECTOR DEVICE

Andrew F. Deming, Alliance, Ohio, assignor to Consolidated Electronics Industries Corp., a corporation of Delaware

Filed Mar. 8, 1965, Ser. No. 437,892
Int. Cl. H02p *7/68, 7/74*
U.S. Cl. 318—18 **15 Claims**

The disclosure relates to a controllable servomotor in the form of an antenna rotator which is controlled directly with the selector device of a television receiver. As this selector device is moved to select a new channel, a multiple position switch selects a different one of a plurality of resistances. The selected resistance, if of a different value from that formerly in the circuit, will establish an unbalanced condition of a bridge and the output of the bridge selects bidirectional rotation of the antenna rotator. Rotation of the rotator drives a potentiometer to rebalance

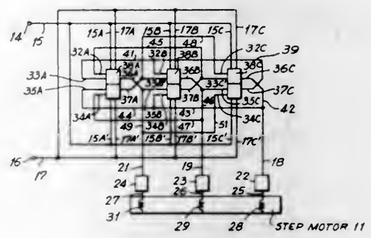


the bridge and turn off the entire system. The multiple position switch may be attached directly to the selector device for concurrent rotation.

3,467,902
STEP MOTOR DRIVE CONTROL CIRCUIT

Kanryo Shimizu, Tokyo, and Norito Yoshitake and Kengo Kobayashi, Kawasaki-shi, Japan, assignors to Fujitsu Limited, Kawasaki, Japan, a Japanese corporation

Filed Aug. 3, 1966, Ser. No. 570,031
Claims priority, application Japan, Aug. 6, 1965, 40/47,769
Int. Cl. H02k *29/04;* **H02p** *7/36*
U.S. Cl. 318—138 **5 Claims**



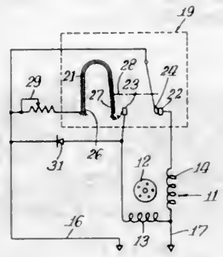
A step motor drive control circuit for a step motor having *n* windings and *n* phases includes *n* flip flops each of which comprises a two-input flip flop having a forward signal input, a reverse signal input, an outside set input, an inside set input, an outside reset input, an inside reset input, a set output and a reset output.

3,467,903
MOTOR WITH THERMAL CUTOUT

August L. Streater, Wells County, Ind., assignor to Franklin Electric Co., Inc., Bluffton, Ind., a corporation of Indiana

Filed Oct. 14, 1966, Ser. No. 586,763
Int. Cl. H02p *5/28, 1/16;* **H02k** *17/00*
U.S. Cl. 318—221 **12 Claims**

A thermal relay for an induction motor which removes the start winding from energization circuit. Means are provided to bypass a portion of the current flowing through the running winding during startup conditions when excessive current is drawn while during running

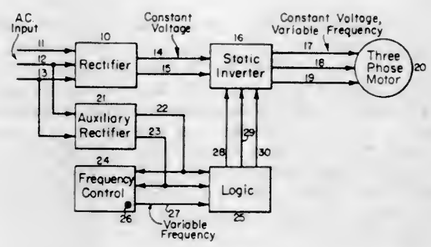


conditions, when relatively low current flows, substantially all the current flowing through the running winding flows through the thermal element.

3,467,904
SPEED CONTROL SYSTEM UTILIZING CONSTANT-AMPLITUDE VOLTAGE OF VARIABLE FREQUENCY TO ENERGIZE AN ELECTRIC MOTOR

George Henry Studtmann, Mount Prospect, and Roger W. Burtness, Urbana, Ill., assignors to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois

Continuation-in-part of application Ser. No. 519,141, Jan. 6, 1966. This application June 22, 1967, Ser. No. 648,160
Int. Cl. H02p *1/28, 1/42, 3/18*
U.S. Cl. 318—230 **6 Claims**



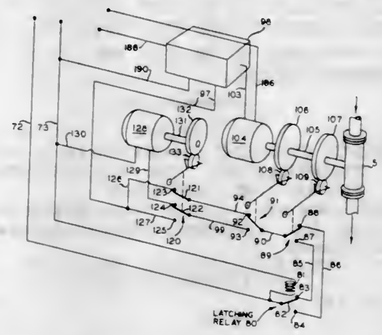
A-C energy is rectified to provide a constant voltage D-C energization of a static inverter, and an electrical motor is coupled to the static inverter so that the motor speed is a function of the frequency of the A-C voltage received from the inverter. An oscillator regulates the sequential operation of a logic circuit which in turn controls the frequency of the output voltage passed from the inverter to the motor. Only the frequency, and not the amplitude, of the voltage passed to the motor is regulated so that the motor makes available a constant mechnical power output at a speed determined by the operating frequency of the oscillator circuit.

3,467,905
CONTROL SYSTEM TO PRODUCE CYCLICAL ROTARY MOTION

William J. Thornhill and Richard O. Welty, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware

Filed Oct. 22, 1965, Ser. No. 502,096
Int. Cl. H02p *1/04;* **H02h** *7/08*
U.S. Cl. 318—443 **9 Claims**

In order to automatically add measured amounts of a catalyst or other substance to a chemical reaction as needed, a signal representing a specific reaction condition is utilized to generate a pulse which has a width representative of the magnitude of said signal. An integrator then adds the pulses and after a predetermined

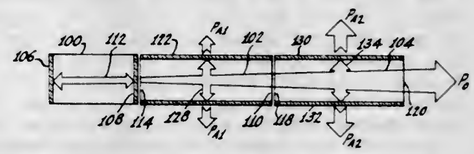


total pulse time triggers an actuating mechanism which performs the operations necessary to add a substance to the chemical reaction.

3,467,906
CONSTANT-GAIN LOW-NOISE LIGHT AMPLIFIER

Roy H. Cornely, Skillman, and Walter F. Kosonocky, Iselin, N.J., assignors to Radio Corporation of America, a corporation of Delaware

Filed June 14, 1967, Ser. No. 646,115
Int. Cl. H01s *3/18*
U.S. Cl. 330—4.3 **7 Claims**

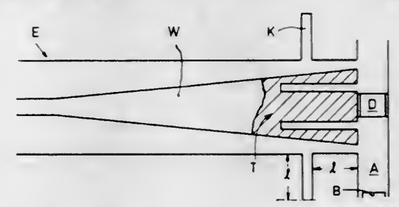


A semiconductor injection laser diode provided with a high Q resonant cavity across the width thereof and a low Q cavity across the length thereof is effective in providing constant-gain low-noise amplification of light transmitted through the diode parallel to the length thereof, if the injection laser is pumped by a forward current of a minimum magnitude at least equal to the oscillation lasing threshold of the diode in a direction parallel to the width thereof.

3,467,907
DIODE PARAMETRIC AMPLIFIER

Colin Stuart Aitchison, Horley, and Robert Davies, Reigate, England, assignors, by mesne assignments, to U.S. Philips Corporation, New York, N.Y., a corporation of Delaware

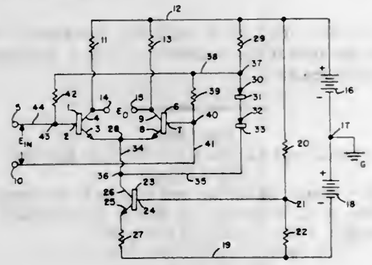
Filed Aug. 31, 1967, Ser. No. 664,801
Int. Cl. H03f *7/06*
U.S. Cl. 330—4.9 **7 Claims**



A diode parametric amplifier in which a coaxial signal line is connected to a diode in a waveguide supporting

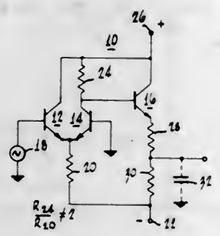
pump oscillations by way of a filter section. The filter section has substantially zero transverse impedance at the idler frequency, so that a loop circuit is formed, including the diode and transverse impedance, that is substantially resonant at the idler frequency. The filter section is inductive at the signal frequency, so that the series combination of the diode and filter is resonant at the signal frequency.

3,467,908
INPUT CURRENT COMPENSATION WITH TEMPERATURE FOR DIFFERENTIAL TRANSISTOR AMPLIFIER
Richard S. Burwen, Lexington, Mass., assignor to Analog Devices, Inc., Cambridge, Mass., a corporation of Massachusetts
Filed Feb. 7, 1968, Ser. No. 703,627
Int. Cl. H03f *1/32, 3/04*
U.S. Cl. 330—23 **7 Claims**



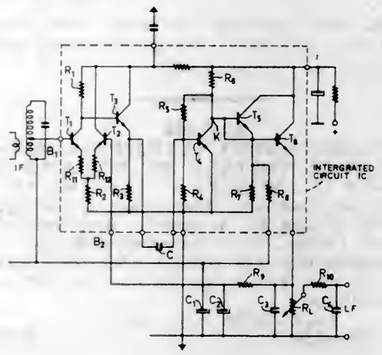
The input current to a differential transistor amplifier employing by-polar transistors increasing with temperature primarily due to an increase in h_{FE}. The increase in input current due to this increase in current gain is of the order of $+0.6\%/°$ C. It has been found possible in accordance with the present invention to reduce this change in input current by a factor of two to three times by means of a very simple circuit modification. Basically this improvement is accomplished by providing a voltage drop across two diodes in series which decreases with temperature. This voltage is used to generate a current to the transistor bases which also decreases with temperature largely off-setting the increase in current due to the change in current gain.

3,467,909
INTEGRATED AMPLIFIER CIRCUIT ESPECIALLY SUITED FOR HIGH FREQUENCY OPERATION
Jack Avins, Princeton, and Jack Craft, Somerville, N.J., assignors to Radio Corporation of America, a corporation of Delaware
Filed June 29, 1967, Ser. No. 650,088
Int. Cl. H03f *3/42*
U.S. Cl. 330—19 **9 Claims**



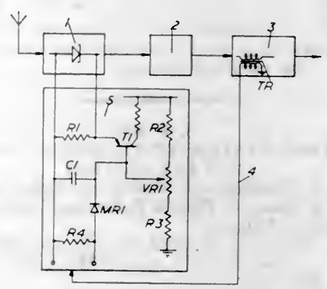
A signal translating stage especially suitable for direct coupled cascade connection in an integrated circuit device includes an emitter coupled amplifier direct current driving an emitter follower, with first means for preventing the output capacitance of the stage from degrading its performance at high frequencies and with second means for maintaining the input and output direct current potentials of the stage substantially equal.

3,467,910
AMPLIFYING ARRANGEMENT HAVING AUTOMATIC GAIN CONTROL
Heiner Schmidt, Harksheide, Germany, assignor, by mesne assignments, to U.S. Philips Corporation, New York, N.Y., a corporation of Delaware
Filed Nov. 16, 1967, Ser. No. 683,585
Claims priority, application Germany, Dec. 17, 1966, P 41,028
Int. Cl. H03g *3/30*
U.S. Cl. 330—29 **7 Claims**



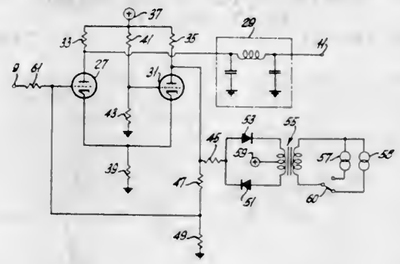
A transistor amplifier circuit has a pair of emitter coupled transistors, with signals being applied to the base of one of these transistors. A pair of emitter followers have a common base circuit to which signals are applied. The emitter circuit of one emitter follower is designed to result in signal rectification, and this circuit is connected by way of a low pass filter to the base of one of the transistors. The emitter circuit of the other emitter follower has a large negative feedback, and this circuit is connected to the base of the other transistor by way of a low pass filter.

3,467,911
TUNNEL DIODE CIRCUITS
Leonard Lewin, Kenneth George Hodgson, and Stanley George Allen, London, England, assignors to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware
Filed Jan. 24, 1966, Ser. No. 523,014
Int. Cl. H03g *3/30*
U.S. Cl. 330—61 **3 Claims**



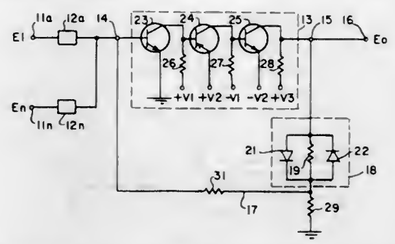
A tunnel diode amplifier circuit having a controlled gain. A biasing circuit which includes a non-linear electrical device that controls the gain of the tunnel diode responsive to feedback signals obtained from the amplifier output. Maximum bias and minimum gain for the tunnel diode is obtained when the non-linear electrical device has become saturated by the applied feedback signal.

3,467,912
SENSITIVE REGENERATIVE AMPLIFIER
Loebe Julie, New York, N.Y., assignor to Julie Research Laboratories, Inc., New York, N.Y., a corporation of New York
Filed Nov. 1, 1966, Ser. No. 591,233
Int. Cl. H03f *1/36, 3/68*
U.S. Cl. 330—104 **12 Claims**



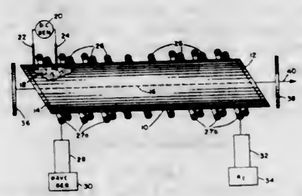
A high-gain amplifier for the amplification of weak input signals operates with switching of a first signal. The first signal is switched from an exponential or rapidly rising mode to cut-off to a stable state. The second signal, which is the input or control signal, is at a lower frequency than the first signal and affects the rate of gain of the first signal.

3,467,913
VARIABLE GAIN AMPLIFIER WITH CONSTANT FEEDBACK LOOP GAIN
Masao Kawashima, Yokohama-shi, and Tsukumo Higeta and Gen Kakehi, Kawasaki-shi, Japan, assignors to Fujitsu Limited, Kawasaki, Japan, a corporation of Japan
Continuation-in-part of application Ser. No. 702,759, Feb. 2, 1968. This application Oct. 8, 1968, Ser. No. 784,497
Claims priority, application Japan, May 28, 1964, 39/29,951
Int. Cl. H03f *1/36*
U.S. Cl. 330—110 **5 Claims**



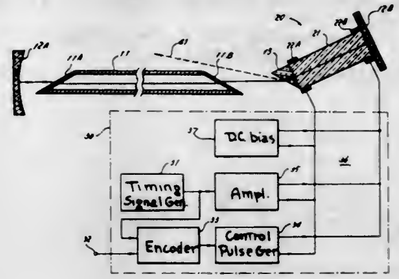
The feedback loop connected between the output and input of an amplification stage has a non-linear component and a feedback resistor. The non-linear component comprises a resistor and a pair of diodes connected in parallel with each other. A load resistor is connected in series with the non-linear component. The series connection of the load resistor and the non-linear component is connected between the output and a point at ground potential. The non-linear component functions as a load impedance and a feedback impedance at the same time.

3,467,914
GAS LASER OR MASER PUMPED BY MONO-ENERGETIC ELECTRONS
Rudolf A. Muller, Strasslach, near Munich, Germany, assignor to Siemens Aktiengesellschaft, a corporation of Germany
Filed Apr. 23, 1964, Ser. No. 362,053
Claims priority, application Germany, Apr. 30, 1963, S 85,005
Int. Cl. H01s *3/22, 3/09*
U.S. Cl. 331—94.5 **7 Claims**



A gas laser tube, containing active gas, in combination with a delay-line parallel to said tube, means for energizing said delay-line to provide a traveling electromagnetic wave accelerating free electrons axially in the tube to the wave propagation velocity, for laser active neon on the order of 0.01 the vacuum speed of light, to provide a free electron kinetic energy equal to the quantum energy necessary for population inversion in the laser active gas; a mean life time between successive gas particle-electron collisions of an electron, sufficient for it to regain such velocity, being established by the wave electrical field amplitude and neon pressure, feasibly 0.01 to 1 mm. Hg. Optionally, 10% admixed argon provides a further free electron source by ionization.

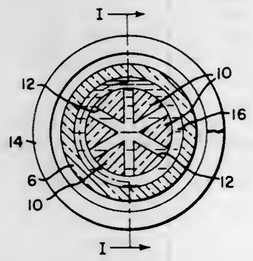
3,467,915
OPTICAL MASER DEVICE OF THE INTERNAL MODULATION TYPE FOR PULSE SIGNAL TRANSMISSION
Teiji Uchida, Tokyo, Japan, assignor to Nippon Electric Company, Limited, Tokyo, Japan, a corporation of Japan
Filed Sept. 27, 1966, Ser. No. 582,373
Claims priority, application Japan, Oct. 13, 1965, 40/62,817
Int. Cl. H01s *3/00;* **H04b** *9/00*
U.S. Cl. 331—94.5 **1 Claim**



1. An optical maser device of the internal modulation type for pulse signal transmission comprising: an optical beam producing element including an active substance having optical maser action; a pair of mirrors disposed to substantially reciprocate the optical beam generated by said element therebetween; a crystal member of large electro-optical effect, having two end surfaces formed

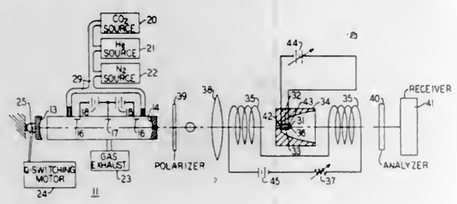
perpendicularly to one of the optical axes, disposed between said mirrors to propagate said optical beam along the axis; means for applying a timing signal voltage across said crystal member piece for modulating said optical beam, said timing signal voltage having a frequency determined by the light velocity and the optical path between said mirrors; means for applying a pulse signal across said crystal member for modulating said optical beam, said pulse signal representing the information to be transmitted and being in substantial synchronism with said timing signal; and a birefringence prism, which has at least one side surface satisfying the Brewster's reflectionless condition, coupled to said optical beam and interposed between said element and said crystal member in such manner that the plane of polarization of said optical beam and the prism's optical axis may be in one of a prependicular and a parallel relationship.

3,467,916
SLOTTED OPTICAL MASER ACTIVE ELEMENT
Gordon S. Ley, Arnold, and John H. Cullom, Baltimore, Md., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Apr. 23, 1965, Ser. No. 450,473
Int. Cl. H01s *1/00, 3/00*
U.S. Cl. 331—94.5 **5 Claims**



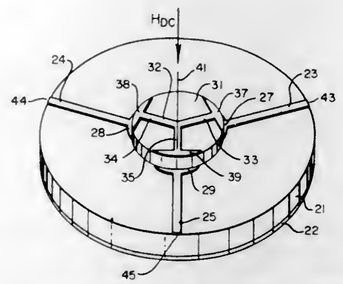
A laser rod having longitudinal slots therethrough but stopped short of the ends of the rod.

3,467,917
FIELD-TUNABLE RAMAN OPTICAL DEVICE
Chandra K. N. Patel, Chatham, and Richart E. Slusher, Millington, N.J., assignors to Bell Telephone Laboratories, Incorporated, Berkeley Heights, N.J., a corporation of New York
Filed Sept. 26, 1967, Ser. No. 670,607
Int. Cl. H01s *3/08*
U.S. Cl. 332—7.51 **4 Claims**



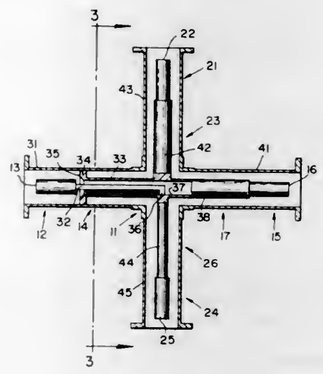
A magnetic-field-tunable Raman optical device employs electric field enhancement of the cross-section for Raman scattering in materials having nonparabolic conduction bands. Optical device oscillation can be achieved at lower charge carrier concentrations than would otherwise be necessary; or modulated coherent scattered light can be obtained. The electric field is applied parallel to the magnetic field for the transition in which $\Delta l=1$, where l is the Landau level quantum number, or is applied orthogonal to the magnetic field for the transitions in which $\Delta l=2$ or $\Delta s=1$, where s represents the spin state of the scattering mobile charge carriers.

3,467,918
MICROSTRIP JUNCTION CIRCULATOR WHEREIN THE FERRITE BODY IS DISPOSED ON THE DIELECTRIC SLAB
Vernon E. Dunn, Palo Alto, and Anthony J. Domenico, San Jose, Calif., assignors to Melabs, Palo Alto, Calif., a corporation of California
Filed Dec. 21, 1967, Ser. No. 692,581
Int. Cl. H01p *1/32*
U.S. Cl. 333—1.1 **7 Claims**



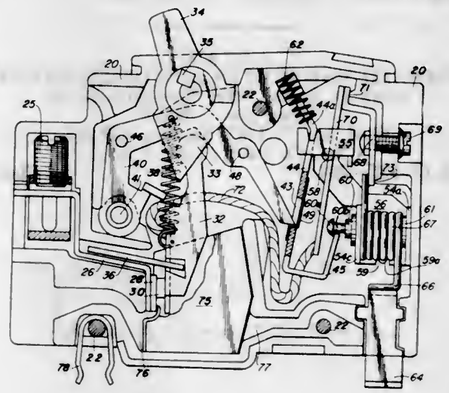
A circulator for use with microstrip transmission lines in which ferromagnetic material is disposed above and coupled to microstrip transmission lines and a D-C magnetic field is applied in a direction which is perpendicular thereto.

3,467,919
APPARATUS FOR UNEQUAL POWER DIVISION EXHIBITING HYBRID PROPERTIES
Harold H. Leach and Andrew Alford, Winchester, Mass. 01890; said Leach assignor to said Alford
Filed Aug. 30, 1967, Ser. No. 664,462
Int. Cl. H01p *5/12*
U.S. Cl. 333—9 **9 Claims**



A series branch, parallel branch and side branches I and II of substantially the same characteristic impedance are coupled by respective transformers to a junction so arranged that energy applied to either the series branch or the parallel branch goes only to the side branches in a ratio proportional to the ratio of the impedances presented at the junction by the respective side branch transformers while maintaining the isolation between the series branch and the parallel branch. A specific structure representing a modification of the coaxial hybrid disclosed in Patent No. 2,769,146 includes longitudinal slots in an intermediate conductor that is coaxial with an outside conductor outside both the series branch inner conductor and the parallel branch inner conductor which slots are separated by an angle $\theta=360/(n1)$, where n is the ratio of power division and which slots are electrically equidistant from each respective side branch while being physically closer to the side branch receiving the smaller amount of power.

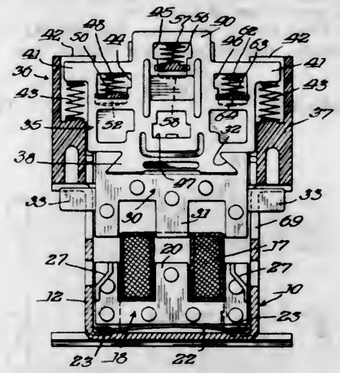
3,467,920
MOLDED CASE CIRCUIT BREAKER WITH SENSITIVE THERMAL AND MAGNETIC TRIP MECHANISM
John S. Hall, Highworth, and Peter E. G. Carpenter, Newbury, England, assignors to Square D Company, Park Ridge, Ill., a corporation of Michigan
Filed Oct. 24, 1967, Ser. No. 677,535
Claims priority, application Great Britain, Nov. 5, 1966, 49,691/66
Int. Cl. H01h *73/48*
U.S. Cl. 335—23 **6 Claims**



A latch lever of the circuit breaker has a reversely-bent tail portion received in an annular groove in a solenoid plunger which moves magnetically in response to a relatively low fault current to move the latch lever thereby to cause release of a trip lever. When heated by an overload current, a bimetallic thermal element impinges on the outer end of the plunger to cause the plunger to move the latch lever.

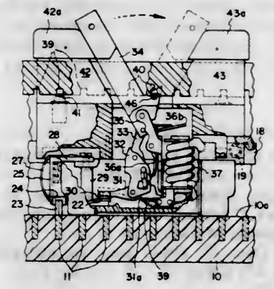
3,467,921
MAGNETIC CONTACTOR WITH SPECIAL SUPPORTING FRAME
Robert L. McGary, Batavia, Ill., assignor to Furnas Electric Company, Batavia, Ill., a corporation of Delaware
Filed Mar. 4, 1968, Ser. No. 710,264
Int. Cl. H01h *67/02*
U.S. Cl. 335—132 **8 Claims**

A metal supporting frame is primarily designed for magnetic contactors and accordingly the frame has openings and a formation in its base for positioning the plastic encased magnet coil and for also positioning a metal resilient clip which assists in maintaining the magnet field



piece in assembled relation with the plastic encased magnet coil.

3,467,922
MULTIPLE CIRCUIT ELECTRICAL SWITCHBOARD WITH CIRCUIT SELECTOR
Robert A. Greenwall, Jr., and Jack L. Halvorsen, Salt Lake City, Utah, assignors, by mesne assignments, to B. J. Management Corporation, Salt Lake City, Utah, a corporation of Utah
Filed Jan. 18, 1968, Ser. No. 698,811
Int. Cl. H01h *9/20*
U.S. Cl. 336—161 **16 Claims**

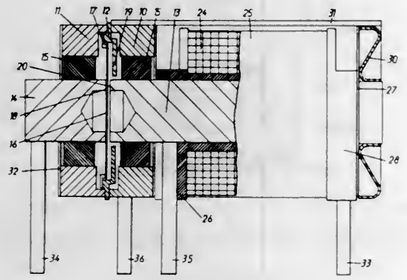


A movable switching unit which carries an electrical contact adapted for making and breaking contact, selectively, with any one of a series of stationary, electrical, load contacts during such times as the unit has protectively disconnected the electrical supply circuit operating through the switchboard. Following the "making" with any selected load contact, the unit provides for reconnecting the supply circuit through a circuit breaker arrangement, which is preferably and advantageously carried by the unit as a part of switch mechanism provided by such unit for controlling electrical supply. The stationary, load contacts are preferably flush with the working surface of the switchboard, positional indexing of the switching unit being provided by a detent arrangement sharing indexing components with keeper components of latch mechanism, which is provided for locking the switching unit in any selected "make" position. The switching unit is optionally but preferably constructed for triggering the supply switch mechanism and the latch mechanism to their break and release positions, respectively, by means of a handle that is provided primrily so the user can easily grasp and move the unit from position to position relative to the stationary, load contacts.

3,467,923
MINIATURE DIAPHRAGM RELAY

Harry Stanley Woodhead, Harlow, England, assignor to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware

Filed Jan. 5, 1967, Ser. No. 607,482
Claims priority, application Great Britain, Jan. 7, 1966, 841/66
Int. Cl. H01h *1/12*
U.S. Cl. 335—196 13 Claims

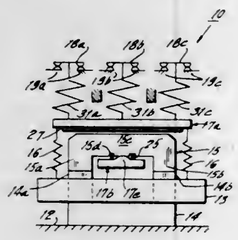


A miniature relay having changeover contacts for use in cross-point switches. The movable element of the relay is a resilient diaphragm mounted on an annular support member and normally in contact on one side thereof with a rod which forms a contact and being capable of being energized to make contact with a rod on the other side thereof. The diaphragm is slotted so that its central contact-making area is connected by two or more curved tongues to its periphery, increasing the resiliency of the diaphragm without appreciably increasing the reluctance of the magnetic circuits of which it forms part. Approximate dimensions are 0.40 inch in diameter and 0.6 inch in length.

3,467,924
MOUNTING MEANS FOR ELECTROMAGNETIC ARMATURE

Andrew J. Kralik, Detroit, Mich., assignor, by mesne assignments, to I-T-E Imperial Corporation, Philadelphia, Pa., a corporation of Delaware

Filed Dec. 12, 1966, Ser. No. 601,020
Int. Cl. H01h *50/18, 51/06, 9/54*
U.S. Cl. 335—203 9 Claims

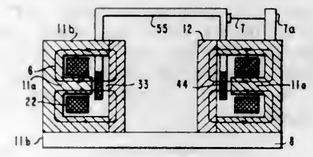


In an electromagnet having an armature mounted for linear movement, a spring biases the armature against an abutment to maintain the armature pole faces parallel to the yoke pole faces during the closing stroke thereby substantially reducing peening of pole face edges and corners, effects which reduce electromagnet holding force and increase noise of operation.

3,467,925
ELECTROMAGNETIC VIBRATION APPARATUS

Masami Masuda, Tokyo, Japan, assignor to International Mechanical Vibration Laboratory, Inc., Osaka, Japan, a corporation of Japan

Filed Nov. 7, 1967, Ser. No. 681,279
Claims priority, application Japan, Nov. 30, 1966, 41/78,009
Int. Cl. H01f *7/08;* H01k *51/32*
U.S. Cl. 335—221 8 Claims

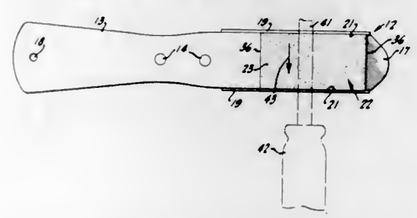


A plurality of E-type cores, arranged around the circumference of a circle or polygon and closed off by I-type cores have a circular (or polygonal) coil suspended in the gaps between the center legs of the E and the I-type cores; the cores are energized by a permanent magnet at the back of the E, or coils wound around the center leg of the E, so that a plurality of easily assembled and repaired structures are provided, each having a lesser weight than the entire assembly, and jointly powering the single circular (or polygonal) vibrating coil.

3,467,926
COMBINED MAGNETIZER AND DEMAGNETIZER

Cloyd D. Smith, 13805 Rancheros Drive, Reno, Nev. 89502

Filed Apr. 7, 1967, Ser. No. 629,256
Int. Cl. H01f *13/00, 7/02*
U.S. Cl. 335—284 4 Claims



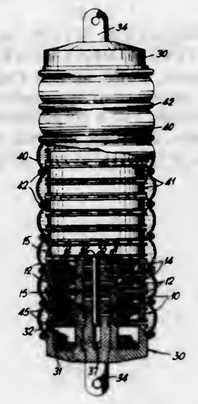
A combined magnetizer and demagnetizer constructed with a strong permanent magnet having a pair of opposed, parallel, major surfaces, each carrying an opposite polarity, and a ferromagnetic plate substantially coextensive with and mounted on one of the major surfaces of the magnet.

3,467,927
ELECTROMAGNETIC ACTUATING DEVICE

James C. Macy, Lavallette, N.J., assignor to Thrust, Incorporated, New York, N.Y., a corporation of New York

Continuation-in-part of applications Ser. No. 486,454, Sept. 10, 1965, and Ser. No. 663,792, Aug. 28, 1967. This application Mar. 22, 1968, Ser. No. 715,387
Int. Cl. H01f *7/13*
U.S. Cl. 335—296 8 Claims

Magnetic actuating devices wherein the magnetic gap is filled with a fluid or elastic medium having ferromagnetic properties. The structure can include a single electric coil with a plurality of magnetic segments to break up the magnetic gap; a plurality of electric coils with

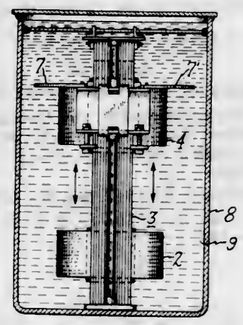


associated core pieces; or a helical coil core piece arrangement, as well as conventional solenoid and relay structures.

3,467,928
DAMPING DEVICE FOR MOVING-COIL TRANSFORMERS

James E. Lenz, Hendersonville, N.C., assignor to General Electric Company, a corporation of New York

Filed Apr. 19, 1967, Ser. No. 632,004
Int. Cl. H01f *21/02*
U.S. Cl. 336—40 3 Claims



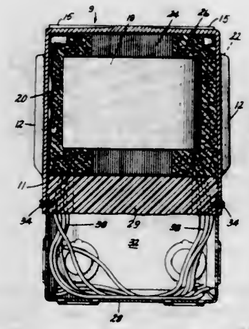
Moving coil in oil-filled constant-current transformer is provided with projecting flat paddles to damp excessive motion of the coil which would cause light flicker of gaseous discharge lamps connected to the transformer.

3,467,929
DRY TYPE TRANSFORMER AND IMPROVED ENCLOSURE ASSEMBLY THEREFOR

Charles E. Derbyshire, Robert D. Mees, and Armin F. Mittermaier, Fort Wayne, Ind., assignors to General Electric Company, a corporation of New York

Continuation of application Ser. No. 628,949, Apr. 6, 1967. This application Sept. 18, 1968, Ser. No. 768,595
Int. Cl. H01f *27/08, 17/00, 27/02*
U.S. Cl. 336—61 3 Claims

The electrical coil and magnetic core of the dry type transformer are encased by a thermally conductive material disposed within a cover portion of an enclosure assembly. The cover portion is formed with at least one interlock projection extending into the thermally conductive material to prevent displacement of the thermally conductive material relative to the cover portion and thereby positions the thermally conductive material and the electrical coil and magnetic core within the enclosure assembly. Also, the interlock projection arrangement elim-

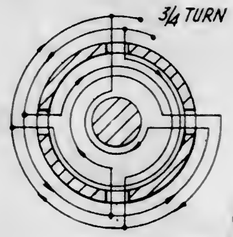


inates the need for bolts and clamps to mechanically hold the electrical coil and magnetic core within the enclosure assembly. The wiring compartment portion of the enclosure assembly is telescopically disposed at an edge thereof within the cover portion to provide an essentially waterproof housing for the electrical coil and magnetic core and to permit the transformer to be replaced without need for breaking all of the conduit connections to the wiring compartment portion.

3,467,930
FRACTIONAL TURN ELECTRICAL WINDINGS

William Frank Glover, Kent, England, assignor to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware

Filed Apr. 7, 1967, Ser. No. 629,265
Claims priority, application Great Britain, Apr. 22, 1966, 17,680/66
Int. Cl. H01f *15/02, 17/04*
U.S. Cl. 336—83 6 Claims



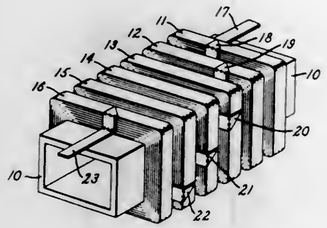
Windings are provided having a fractional number of turns M/N which are able to link with the whole of a given magnetic flux. Windings are located within a cavity of a pot core of magnetic material having no air gap in the central limb. Lead out conductors of each of the sections of winding are taken through the outer shell of the core before connecting the sections in parallel with each other.

3,467,931

CONTINUOUS DISK WINDING AND INTEGRAL RADIAL COIL CONNECTOR FOR ELECTRIC TRANSFORMER AND THE LIKE

John C. Dutton, Rome, Ga., assignor to General Electric Company, a corporation of New York

Filed Sept. 23, 1966, Ser. No. 581,525
Int. Cl. H01f 27/30
U.S. Cl. 336—180 6 Claims



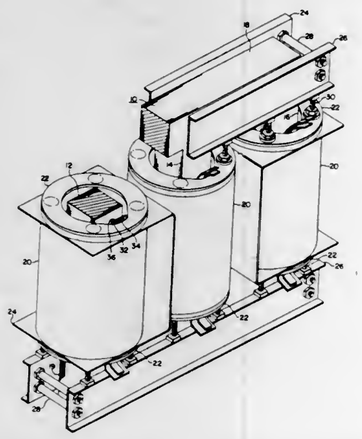
A transformer winding comprising a plurality of axially adjacent disk coils wound from one continuous band or strip of wide, thin electric conductor. Each coil is spirally upwound and radial cross connectors between radially offset winding turns are formed integrally with the coils by forming in the strip material a series of flat angularly disposed folds and intermediate perpendicular bends.

3,467,932

TRANSFORMER CONSTRUCTION

Landis E. Feather, Sharon, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Continuation of application Ser. No. 466,787, June 24, 1965. This application July 28, 1967, Ser. No. 656,947
Int. Cl. H01f 27/30
U.S. Cl. 336—197 4 Claims



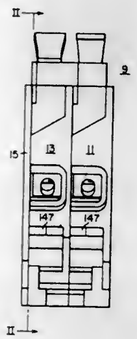
A transformer of the core-form type having a non-metallic pressure ring formed of a plurality of continuous turns of filamentary fibrous material impregnated with a bonding resin. The fibrous material forms 70 to 85% of the weight of the pressure ring. The resin bonding material is epoxy and the fibrous material, glass, is under a tension of 2 to 3 pounds. The ring is between pressure means and the winding and has a flexural strength of approximately 100,000 pounds for square inch.

3,467,933

CIRCUIT BREAKER WITH MEANS FOR FACILITATING ADJUSTMENT THEREOF

Francis L. Gelzheiser, Fairfield, and Charles E. Nystrom, Derby, Conn., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Nov. 29, 1966, Ser. No. 597,689
Int. Cl. H01h 71/16, 61/00
U.S. Cl. 337—84 3 Claims



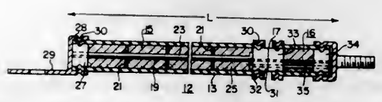
A circuit breaker comprises an insulating housing formed to provide an adjustable-tool passage that is blocked by a break-off portion of the housing, which portion can be broken off to open the passage in order to facilitate adjustment of the circuit breaker trip device.

3,467,934

FLEXIBLE-TUBE FUSE CONSTRUCTION

Robert T. Innis, Ellettsville, and George E. Mercier, Bloomington, Ind., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Sept. 25, 1967, Ser. No. 670,077
Int. Cl. H01h 71/20, 85/36
U.S. Cl. 337—144 8 Claims



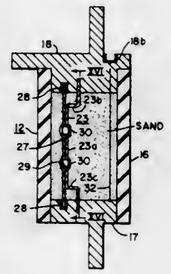
An indicating sectional fuse, having a flexible fuse tube, is provided with a high-current section and a low-current section with the sections separable, upon fuse operation, to provide a break-away indicating position between the bus-bar and the capacitor terminal. The high-current section of the fuse may contain a silver fuse element spaced centrally within the flexible fuse tube and in electrical parallel with a Nichrome strain element, and the low-current section of the fuse may comprise a low-temperature meltable fuse element, also in parallel with the aforesaid Nichrome strain element, which may extend the entire length of the fuse.

3,467,935

FUSIBLE MEANS FOR ROTATING ELECTRICAL DEVICE

Bernard B. Winer, Pittsburgh, and Richard J. Keady, Monroeville, Pa., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Feb. 16, 1962, Ser. No. 174,370
Int. Cl. H01h 85/14
U.S. Cl. 337—229 4 Claims



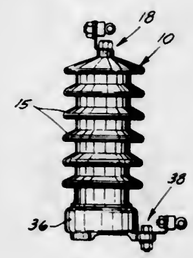
A fuse assembly adapted for rotating movement and being mounted radially with respect to the axis of rotation in which the interiorly disposed fuse-link member is supported adjacent its mid-portion so as to reduce the possibility of fuse-link failure due to mechanical loads.

3,467,936

LIGHTNING ARRESTOR AND METHOD OF USING THE SAME

Essam Nasser, Ames, Iowa, assignor to Iowa State University Research Foundation, Ames, Iowa, a corporation of Iowa

Filed Mar. 28, 1966, Ser. No. 537,892
Int. Cl. H01c 7/12
U.S. Cl. 338—21 14 Claims



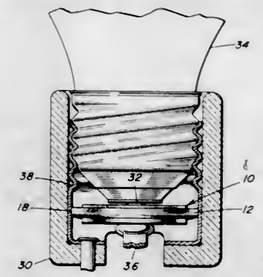
A lighting arrestor for use with high potential lines having an insulative housing, a top terminal adapted to be connected to a source of high potential, a bottom terminal adapted to be connected to ground, a plurality of spaced apart electrodes located between said terminals, and a shield means of high electrical resistance and low electrical conductivity located in spaced relation around said electrodes and electrically connected to said terminals. The method of maintaining constant equipotential planes between electrodes in a lightning arrestor by passing a current of constant value through a high resistance element located in the area surrounding the space between such electrodes.

3,467,937

LAMP SOCKET INSERT

Orlo C. Norton, 544 Virginia Ave., Erie, Pa. 16505

Filed June 26, 1967, Ser. No. 648,810
Int. Cl. H01c 13/00
U.S. Cl. 338—219 4 Claims



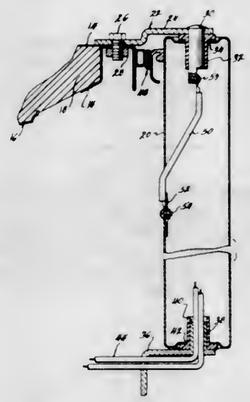
A lamp socket insert is disclosed which serially connects a thermistor disk in the power line circuit to an incandescent lamp bulb to absorb initial current surges whenever the latter is turned on. A rimmed, elastic housing of heat resistive and insulating silicone rubber is provided in thin annular shape and formed with a circular cavity. This housing is distended to receive the disk in the cavity on assembly. The opposing contact surfaces of the thermistor are exposed for contact respectively through the central openings in the housing. The peripheral rim, by interference fit, prevents the device from falling out of an inverted socket when the lamp is removed.

3,467,938

REFRIGERATOR DOOR GROUNDING ARRANGEMENT

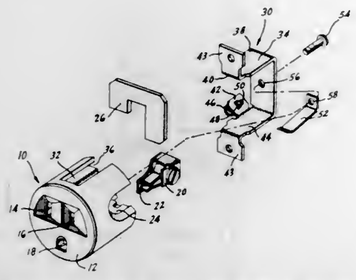
Richard T. Jahr, Minneapolis, Minn., assignor, by mesne assignments, to Franklin Manufacturing Company, St. Cloud, Minn., a corporation of Iowa

Filed Sept. 11, 1967, Ser. No. 666,581
Int. Cl. H01r 39/00, 3/06; H05k 5/02
U.S. Cl. 339—4 4 Claims



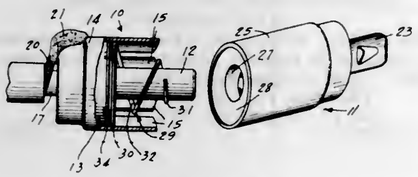
A refrigerator comprising an open-sided cabinet having an outer metallic shell and a door having an outer metallic shell pivotally supported on said cabinet for closing the open side of the cabinet. Means are provided for electrically grounding the door to the cabinet. Such grounding means includes top hinge means secured in electrical contact with the outer shell of the cabinet, the top hinge means having a pivot pin projecting downwardly therefrom, ground tab means secured in electrical contact with the outer shell of the door and a ground wire connected between the pivot pin and the ground tab means.

3,467,939
GROUNDING STRAP IMPROVEMENT FOR ROUND GROUNDING OUTLET
Robert L. Martin, Cranston, R.I., assignor to General Electric Company, New York, N.Y.
Filed Mar. 1, 1967, Ser. No. 619,677
Int. Cl. H01r *3/06;* **H02b** *1/02*
U.S. Cl. 339—14 **2 Claims**



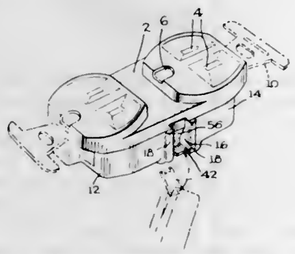
A single round grounding convenience outlet is provided with a novel grounding screw terminal on the device mounting strap permitting rapid low-cost manufacture.

3,467,940
ELECTRICAL CONNECTING SPRING DEVICE
William H. Wallo, 7401 N. Sheridan Road, Chicago, Ill. 60626
Filed Mar. 17, 1967, Ser. No. 624,038
Int. Cl. H01r *3/06, 31/08, 17/18*
U.S. Cl. 339—14 **11 Claims**



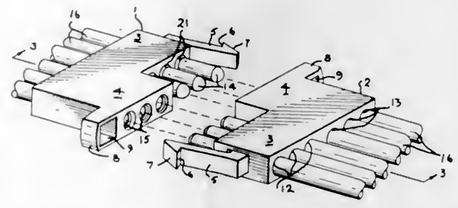
A coiled compression spring mounted in a separable plug and jack connector automatically expands and grounds the plug in the absence of the jack and is inactivated upon being compressed by assembly of the jack with the plug.

3,467,941
DUPLEX SOCKET CONTACT WITH BREAKOFF TAB
Robert L. Martin, Cranston, R.I., assignor to General Electric Company, a corporation of New York
Filed Nov. 3, 1966, Ser. No. 591,844
Int. Cl. H01r *29/00, 3/06*
U.S. Cl. 339—31 **5 Claims**



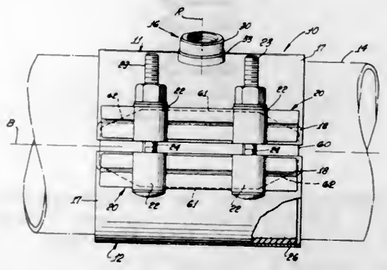
A duplex grounding outlet is provided having electric contact strips adapted to split circuit wiring by removal of a breakoff tab from each strip to permit separate power supply to each half of the duplex outlet. The breakoff tab is provided in readily accessible and easily severable combination with the housing.

3,467,942
HOUSING MEMBER
Harry John Dell, Camp Hill, and Charles Robert Stoyer III, Enola, Pa., assignors to AMP Incorporated, Harrisburg, Pa.
Filed Mar. 10, 1965, Ser. No. 438,573
Int. Cl. H01r *25/04, 13/54*
U.S. Cl. 339—49 **3 Claims**



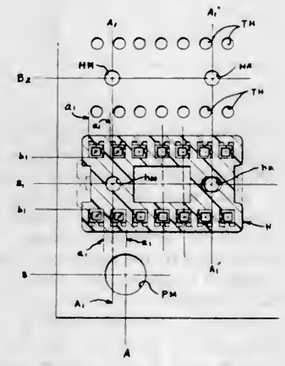
A housing member comprises identical parts, each of the parts having one section offset from another section so that the one section of each part engages the other section of each part in an intermeshed condition so that latching means on each part main.ain the parts in the intermeshed condition with electrical connectors in passageways of the parts being maintained in mated connection. Projections surround entrances of the passageways of the one section of each part and these projections extend into corresponding passageways of the o her section of each part when the parts are latched toge:her to provide insulation around the mated electrical connectors.

3,467,943
PIPE CLAMP DEVICE
Philip N. Adams, West Covina, Calif., assignor, by mesne assignments, to Mueller Co., Decatur, Ill., a corporation of Illinois
Original application Apr. 1, 1963, Ser. No. 269,605, now Patent No. 3,355,794, dated Dec. 5, 1967. Divided and this application May 15, 1967, Ser. No. 671,507
Int. Cl. F02m *45/10*
U.S. Cl. 339—95 **8 Claims**



The service outlet is a flexible band having an outlet member welded to an upset peripheral wall integral with the band. The band is installed by clamping it about the pipe. Other features include a gasket member associated with the metal band so that edge portions of the band will serve to limit flow of the resilient material of the gasket member when the clamp is tightened; the provision of a metal shim having a specific configuration adapted to facilitate tightening of the clamp means with respect to the relationship of the gasket member, shim and band; and button means carried by the gasket member for electrical conductive relation between a pipe and the band whereby electrical conductivity between adjacent pipe ends or through the pipe clamp device is assured.

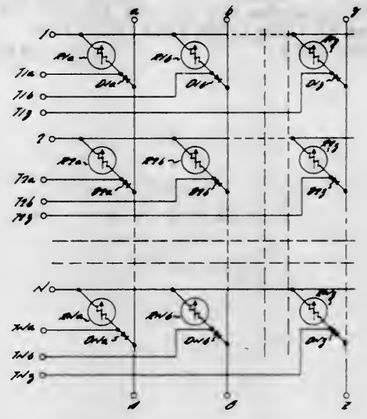
3,467,944
INTERCONNECTION SYSTEM WITH PRECISION TERMINAL ALIGNMENT
Kemper Martel Hammell, Harrisburg. and Kenneth Leon Whitmoyer, Camp Hill, Pa., assignors to AMP Incorporated, Harrisburg, Pa.
Filed Mar. 4, 1968, Ser. No. 710,308
Int. Cl. H02b *1/02;* **H01r** *33/76, 9/12*
U.S. Cl. 339—125 **15 Claims**



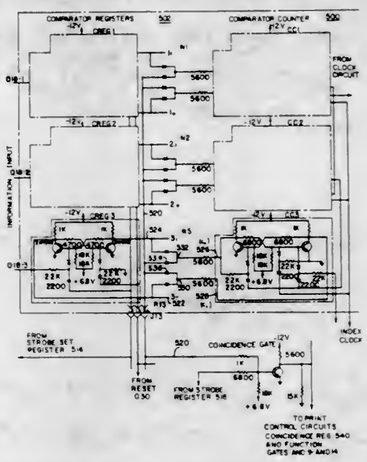
An interconnection system is disclosed which features an assembly comprised of a panel having a series of headers mounted thereon each adapted to receive a component plugged into header terminals which are extended through the panel in a manner suitable to permit automatic machine wiring. Header terminal position is controlled relative to header apertures which each include intersecting surfaces positioned relative to a header master mounting hole. The header apertures are oversize relative to the cross-sectional area of the terminals and the terminals include spring elements biasing the terminals into the corner defined by the intersecting surfaces of the header apertures. The panel includes a series of terminal holes which are oversized to provide clearance around each terminal to thus make terminal placement dependent upon header placement. The panel further includes a series of header mounting holes positioned relative to a panel master hole to thus provide a control of header placement and thereby control of terminal placement. The header terminals each include post portions at one end and at the other end spring contact portions adapted to receive the leads of components which may be plugged into the headers or removable therefrom.

3,467.945
ELECTRICALLY CONTROLLED MATRIX
Oscar Myers, New York, N.Y., assignor to International Telephone and Telegraph Corporation, a corporation of Delaware
Filed Mar. 8, 1966, Ser. No. 541,426
Int. Cl. H04q *1/18*
U.S. Cl. 340—166 **13 Claims**

An electrical translator is provided in the form of a matrix. Each crosspoint in the matrix is formed by a variable resistor which can be controlled separately as a switch between stages of high and low conductivity. The variable resistors are formed of amorphous materials which exhibit large variations in conductivity when control potentials are applied.



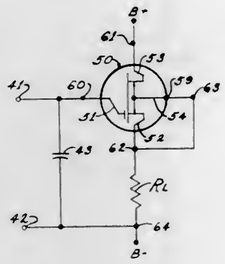
3,467,946
BINARY NUMBERS COMPARATOR CIRCUIT
Donald J. Stefanik, Berwyn, Ill., assignor to SCM Corporation, New York, N.Y., a corporation of New York
Original application Oct. 25, 1962, Ser. No. 233,109, now Patent No. 3,291,909, dated Dec. 13, 1966. Divided and this application May 2, 1966, Ser. No. 546,808
Int. Cl. G06f *7/02, 11/00*
U.S. Cl. 340—146.2 **4 Claims**



There is disclosed a control system including comparator circuit for determining whether binary numbers presented by two groups of binary registers are identical. The complementary outputs of corresponding registers are interconnectet by resistor-diode series circuits. The nodes formed by the junctions of the resistors and the diodes are then connected to a common lead by diodes. The potential on the common lead then is used as an indication of whether the binary numbers presented by the registers are equal.

3,467,947
CONTROL APPARATUS

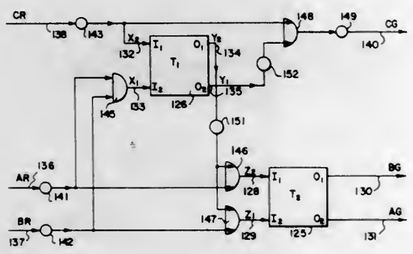
Vernon C. Rees, Newark, Ohio, assignor to Owens-Corning Fiberglas Corporation, a corporation of Delaware
Continuation of application Ser. No. 495,786, Oct. 14, 1965. This application July 24, 1968, Ser. No. 749,909
Int. Cl. G11b *13/00*; G06f *15/20, 1/00*
U.S. Cl. 340—172.5 19 Claims



Apparatus for generating or calculating a succession of separate control signals for controlling respective separate conditions which includes memory means for storing each of the control signals and providing a continuous output signal to each condition being controlled until a new or changed control signal is received by the memory means, the output signal being proportional in magnitude to the last received control signal. A time sharing arrangement for a digital to analog converter for digital control signals is also described. The novel memory means includes a field-effect transistor having a capacitive storage means connected to a gate electrode thereof.

3,467,948
APPARATUS PROVIDING A UNIQUE DECISION SIGNAL FOR CONCURRENT INTERROGATION SIGNALS

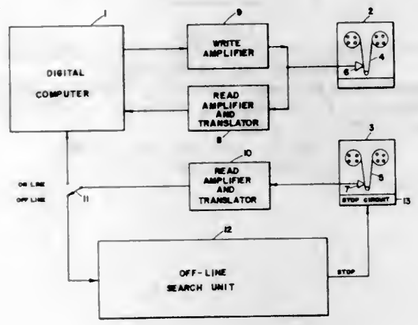
Jesse P. Barlow, Reseda, Calif., and Charles R. Jones and James L. Kerr, Phoenix, Ariz., assignors to General Electric Company, a corporation of New York
Filed June 21, 1966, Ser. No. 559,305
Int. Cl. G06f *7/00, 15/00*
U.S. Cl. 340—172.5 11 Claims



Apparatus is disclosed which utilizes a plurality of tristate devices. A requirement of these devices is that, in response to two input signals concurrently applied, each operates in a state in which it produces no output signals. The tristate devices are interconnected to produce a unique decision or output signal in response to the application of any combination of a plurality of interrogation or request input signals applied to the apparatus.

3,467,949
MAGNETIC TAPE SEARCH UNIT

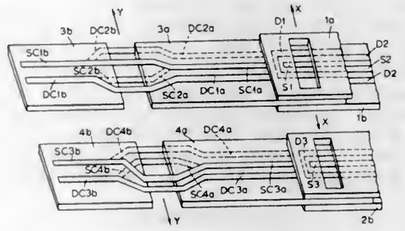
Earl Moore, Garland, Tex., assignor to Mobil Oil Corporation, a corporation of New York
Filed Apr. 6, 1965, Ser. No. 445,889
Int. Cl. G11b *13/00*
U.S. Cl. 340—172.5 9 Claims



The specification discloses an electronic device for use with a magnetic tape transport in locating a particular block or record of digital data on a magnetic tape having many blocks of data, each block including a unique identifying number. The desired record number is selected by a series of manually actuated switches. When the selected number is detected by the transport reading heads, the transport is stopped automatically. The disclosed device can be used to conserve digital computer operating time. While the computer is processing data from one tape transport operating on-line, another tape transport operating off-line can be used to pre-position the data next to be processed.

3,467,950
DIGITAL STORAGE DEVICES WITH TURNABLE CAPACITATIVE ELEMENT FOR SUPPRESSION

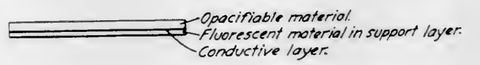
Raymond Frank Sivyer, Sunbury-on-Thames, England, assignor to Electric & Musical Industries Limited, Hayes, Middlesex, England, a company of Great Britain
Filed Aug. 17, 1965, Ser. No. 480,288
Claims priority, application Great Britain, Aug. 29, 1964, 35,470/64
Int. Cl. G11c *11/14*
U.S. Cl. 340—173 5 Claims



In a thin film magnetic store in which the storage elements are disposed in a plurality of different planes, it is usual to reduce inductive coupling between the digit and sense conductors, which are coupled to the storage elements in columns, by reversing the sense of either the digit or the sense conductors between adjacent planes. However it is difficult to achieve complete cancellation of inductive coupling by this means especially when the transit time for a pulse from one end of a digit conductor to the other is comparable with the duration of the pulse. In accordance with the invention, the residual inductive coupling between respective digit and sense conductors is substantially nullified by providing projections from the digit and sense conductors which form balancing capacity between the respective digit and sense conductors.

3,467,951
ELECTRON BEAM RECORDING AND READOUT PROCESS FOR INFORMATION STORAGE AND RETRIEVAL

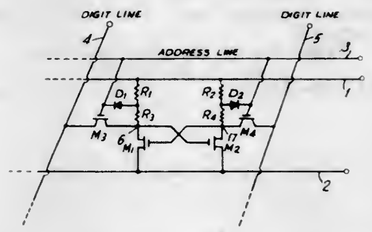
Joseph A. Wiese, Jr., St. Paul, Minn., assignor to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware
Filed Mar. 18, 1964, Ser. No. 352,819
Int. Cl. G11b *9/00, 11/00*
U.S. Cl. 340—173 6 Claims



An information storage and retrieval process is shown which utilizes a sheet-like storage member formed of a layer capable of photon emission when uniformly irradiated with an unmodulated electron beam and a layer which is initially capable of chemically and internally selectively altering its initial composition to form a photon masking material upon exposure to differential irradiation wherein the process includes the steps of differentially irradiating the sheet-like storage member whereby the photon transmission properties of the storage medium are selectively altered by the differential irradiation and subsequently exposing the storage medium to electron irradiation so as to produce differential photon emission from the storage medium.

3,467,952
FIELD EFFECT TRANSISTOR INFORMATION STORAGE CIRCUIT

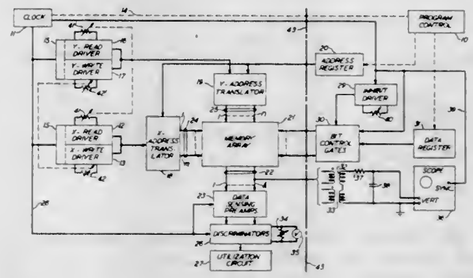
Masamichi Shiraishi and Hirohiko Yamamoto, Tokyo, Japan, assignors to Nippon Electric Company, Ltd.
Filed Feb. 9, 1967, Ser. No. 614,959
Claims priority, application Japan, Feb. 9, 1966, 41/7,597
Int. Cl. G11b *9/00*
U.S. Cl. 340—173 3 Claims



A novel non-destructive information storage circuit is constituted by a flip-flop circuit having two field effect transistors, and a load impedance connected to each of the transistors; each impedance consisting of a high and low resistance resistor. A diode is connected to the junction between the two resistors of each load impedance so that the power dissipation of the storage circuit is minimized and the read-out information voltage maximized.

3,467,953
DRIVE CURRENT OPTIMIZATION FOR MAGNETIC MEMORY SYSTEMS

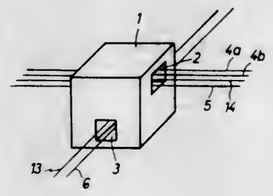
Philip A. Harding, Middletown, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed July 12, 1963, Ser. No. 294,506
Int. Cl. G11b *5/00*
U.S. Cl. 340—174 19 Claims



Noise voltages in magnetic memory sensing circuits are reduced by determining the amount of noise in one sensing circuit and then adjusting the output current magnitude of at least one of the memory drive signal sources to minimize the noise. In one arrangement the noise signals are displayed on an oscilloscope and one or more drive sources are manually adjusted. In another, a single inhibit driver common to all digit planes is automatically adjusted by servo loop circuits. A sensing circuit discriminator and a ZERO location decoder for use in the latter arrangement are also shown.

3,467,954
MAGNETIC EXCLUSIVE-OR CIRCUIT PROVIDING THE STORAGE OF AN INPUT VARIABLE

Ortwin Feustel, Lubbecke, Westphalia, Germany, assignor to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware
Filed June 9, 1966, Ser. No. 556,323
Claims priority, application Germany, June 19, 1965, St 23,999
Int. Cl. G11c *7/00*
U.S. Cl. 340—174 3 Claims

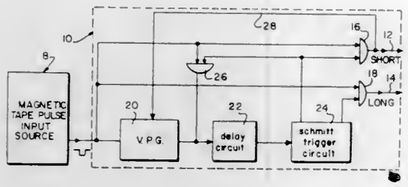


The disclosure describes a Biax memory element which is interrogated by the coincidence of a current pulse on the conductor associated with interrogation, of the same polarity as during the writing process, and with a current pulse, depending in its polarity upon another input variable, on the conductor associated with writing of the other input variable, such that in the case of a coincidence between the store and offered value, there is obtained a signal having a smaller amplitude than in the case of a non-coincidence.

3,467,955
SIGNAL SEPARATOR FOR A SELF-CLOCKING DIGITAL MAGNETIC RECORDING

Eleuthere Poumakis, East Islip, N.Y., assignor to Potter Instrument Company, Inc., Plainview, N.Y., a corporation of New York

Filed May 19, 1966, Ser. No. 551,357
Int. Cl. G06k *7/08*
U.S. Cl. 340—174.1 **8 Claims**

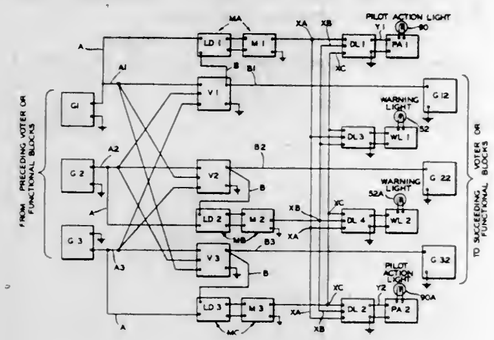


This specification discloses a system for reading out self-clocking data stored along a magnetic track. The system generates pulses in response to each flux transition read out from the magnetic track. It is necessary to determine for each pulse whether it occurs atfer a short interval following the preceding pulse or after a long interval. This is accomplished by detecting whether each interval between adjacent pulses is longer or shorter than a standard deflection interval. The length of the standard detection interval is controlled to be longer following a long interval vetween pulses and to be shorter following a short interval between pulses.

3,467,956
CROSSVOTER MONITOR SYSTEM

Harold Moreines, Springfield, N.J., assignor to The Bendix Corporation, Teterboro, N.J., a corporation of Delaware

Filed Oct. 22, 1963, Ser. No. 317,970
Int. Cl. G08b *21/00*
U.S. Cl. 340—248 **15 Claims**

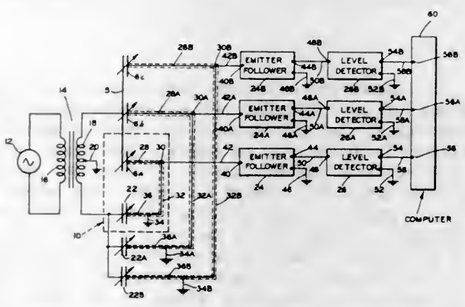


A crossvoter monitor system in which a plurality of voter devices each produce an output signal as a result of instantaneous differences in amplitude or phase of input signals and in which each input signal is compared in the monitor system differentially with an output signal from a voter device so that a narrow tolerance spread in the monitored differential voltage may be maintained during normal operation, since each input signal is compared against a median voter output signal which is a significant factor in minimizing the occurrence of nuisance disconnects due to normal tolerance spreads between functional elements in the redundant channels. Further while the monitor system includes memory means and means effective upon a change in any of said output signals for indicating an out of tolerance signal, there is provided additional means responsive to a change in said output signals, together with a two-out-of-three logic detector or means responsive to a change of state of a majority of the memory means for indicating the presence of more than one out of tolerance signal to provide a pilot action signal.

3,467,957
ELECTROSTATICALLY DIGITIZED TAPE DISPLAY DEVICE

Alfred L. Levine, Waldwick, N.J., assignor to The Bendix Corporation, a corporation of Delaware

Filed Nov. 22, 1965, Ser. No. 509,133
Int. Cl. G08c *9/08, 9/02*
U.S. Cl. 340—347 **9 Claims**

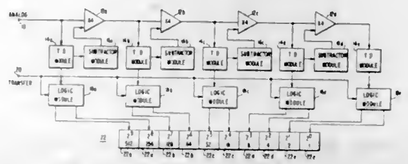


An electrically digitized tape display means including an elongated tape having a plurality of output channels coded to a functional scale and a common input channel. A sensing device including electrically energized capacitive means having a plurality of output plates corresponding to the output channels and a common input plate corresponding to the common input channel is arranged for relative longitudinal movement with the tape for providing digital signals corresponding to the functional scale.

3,467,958
ANALOG TO DIGITAL CONVERTER USING A PLURALITY OF RADIX AMPLIFIERS

James L. McKinney, Littleton, Colo., assignor to Martin-Marietta Corporation, New York, N.Y., a corporation of Maryland

Filed Dec. 29, 1965, Ser. No. 517,278
Int. Cl. H03k *13/02*
U.S. Cl. 340—347 **6 Claims**

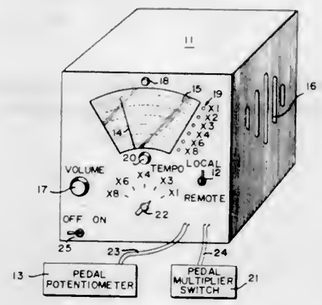


An analog-to-digital converter of the comparison type which uses a plurality of stages each made up of a threshold detector, a subtractor and a radix amplifier. The input analog signal is quantized by the first threshold detector; that quantized level is subtracted from the input and the remainder is amplified by the radix factor. The amplified remainder then goes to the next stage where the same operation is again performed. The output of the threshold detectors is the digital indication of the analog level.

3,467,959
METRONOME

George A. Zazofsky, Waban, Mass. (% Boston Symphony Orchestra, Symphony Hall, Boston, Mass. 02115)

Filed May 23, 1966, Ser. No. 552,146
Int. Cl. G08b *3/00;* **G04b** *21/00*
U.S. Cl. 340—384 **3 Claims**

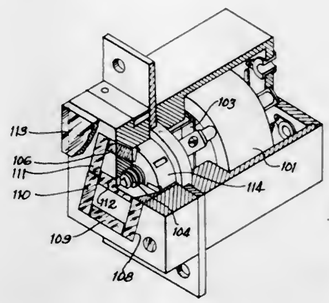


A metronome includes a foot pedal for controlling the beat rate over a continuous range and a meter that indicates the beat rate in response to the rate of the beat. A feature of the invention resides in a foot pedal multiplier switch that allows a musician to control the beat rate to a selected multiple of the fundamental beat rate.

3,467,960
DIGITAL READOUT DEVICE WITH LIGHT GUIDES

Gerald R. Hosker, London, Ontario, Canada, assignor to American Gage & Machine Company, Chicago, Ill., a corporation of Illinois

Filed Jan. 10, 1966, Ser. No. 519,596
Int. Cl. G08b *5/36*
U.S. Cl. 340—378 **9 Claims**

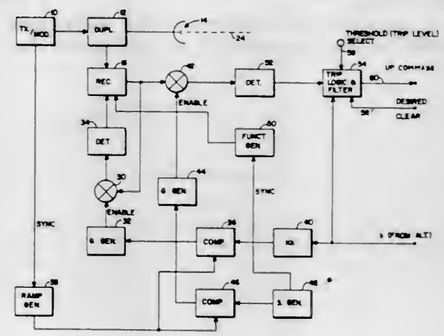


A digital readout device associated with a condition responsive apparatus wherein a plurality of light guides define rectangular outer faces and are arranged in the configuration of the numeral **8** and are separated so that different numbers can be displayed depending upon which of the light guides are illuminated. A source of light is provided for the light guides, and a shutter is interposed between the light source and the opposite ends of the light guides. Apertures are defined by the shutter, and the shutter is connected to the condition responsive device so that movements imparted to the shutter will change the position of the apertures whereby different ones of the light guides will be illuminated.

3,467,961
TERRAIN WARNING RADAR WITH SIDE LOBE GAIN CONTROL

Robert J. Follen and Baard H. Thue, Minneapolis, Minn., assignors to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware

Filed Dec. 27, 1967, Ser. No. 693,847
Int. Cl. G01s *9/06*
U.S. Cl. 343—7 **6 Claims**

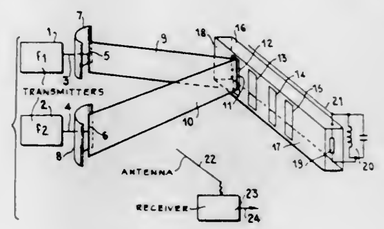


A terrain warning system for an aircraft. The system comprises a pulsed radar having an antenna with a side lobe pattern as well as a main lobe pattern where the side lobe is used for monitoring the backscattering characteristic of the terrain, and the gain of a receiver in the system is automatically adjusted in accordance therewith to make the system output independent of the backscattering characteristic. The terrain is interrogated with the main lobe of the antenna and the backscattered energy from the terrain is electronically scanned to provide a warning signal when the line of flight of the aircraft intercepts the terrain.

3,467,962
OBJECT IDENTIFICATION SYSTEM

Jacques Laplume, Gif sur Yvette, France, assignor to Societe d'Etudes Techniques et d'Entreprises Generales, a corporation of France

Filed Dec. 6, 1967, Ser. No. 688,425
Claims priority, application France, Dec. 15, 1966, 87,573
Int. Cl. G01s *9/56*
U.S. Cl. 343—6.5 **15 Claims**



A pair of microwave radiation transmitters direct radiation at two discrete frequencies, f_1 and f_2 towards a

target, which contains a non-linear circuit and a circuit tuned to the difference frequency ($f_1 - f_2$), re-radiating the difference frequency back to a receiver tuned thereto; by arranging the target for the impinging microwave radiation in coded form, the receiver will obtain a difference frequency signal in a code peculiar to the particular object.

3,467,963

MONOPULSE RADAR APPARATUSES

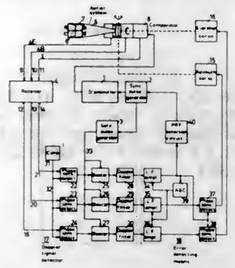
Yftinus Frederik van Popta, Hengelo, Netherlands, assignor to N.V. Hollandse Signaalapparaten, Hengelo, Overijsel, Netherlands, a firm of the Netherlands

Filed Nov. 27, 1967, Ser. No. 685,987

Int. Cl. G01s *9/02*

U.S. Cl. 343—16 **6 Claims**

A monopulse radar system in which intermediate frequency signals corresponding to echo signals from at least two receiving patterns are coherently detected to produce audio signals proportional to Doppler shift due to



target movement. The audio signals are compared to produce an error signal for controlling a tracking circuit.

DESIGNS

SEPTEMBER 16, 1969

215,194

SNACK FOOD

Jonathan Yentis and Charles H. Staff, Greenville, Ill., assignors to Pet Incorporated, St. Louis, Mo., a corporation of Delaware

Filed Dec. 26, 1967, Ser. No. 9,929

Term of patent 14 years

Int. Cl. D1—*01*

U.S. Cl. D1—13



215,195

BUCKLE

William Krengel, Reseda, and Alvin I. Jensen, Canoga Park, Calif., assignors to American Safety Equipment Corporation, Sherman Oaks, Calif., a corporation of New York

Filed Nov. 5, 1968, Ser. No. 14,314

Term of patent 14 years

Int. Cl. D2—*08*

U.S. Cl. D2—408



215,196

BUCKLE FOR A SAFETY SEAT BELT

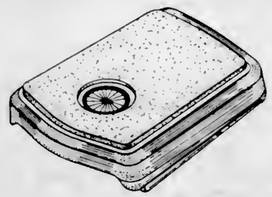
Gerald J. Partridge, Roseville, Mich., assignor to Jim Robbins Seat Belt Co., Troy, Mich.

Filed Aug. 7, 1968, Ser. No. 13,057

Term of patent 14 years

Int. Cl. D2—*08*

U.S. Cl. D2—408



215,197

DESOLDERING TOOL OR THE LIKE

William S. Fortune, 14250 Dearborn St., Panorama City, Calif. 91402

Filed Nov. 1, 1968, Ser. No. 14,279

Term of patent 14 years

Int. Cl. D8—*02*

U.S. Cl. D8—30



215,198

HAND TOOL FOR PERFORATING

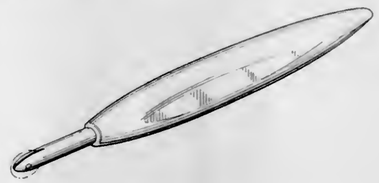
John C. Hall, West Los Angeles, Calif., assignor to Productline, Incorporated, a corporation of California

Filed July 22, 1968, Ser. No. 12,839

Term of patent 14 years

Int. Cl. D8—*02*

U.S. Cl. D8—98



215,199

LUGGAGE LOCK OR SIMILAR ARTICLE

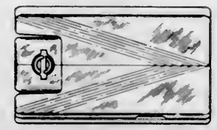
Anthony N. D'Elia, New York, and Edward M. Stolarz, Yorktown Heights, N.Y., assignors to Presto Lock Co., Inc. Garfield, N.J., a corporation of New York

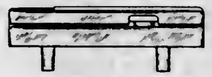
Filed May 29, 1968, Ser. No. 12,136

Term of patent 14 years

Int. Cl. D8—*03*

U.S. Cl. D8—122





215,200

BOTTLE

John L. Dobyns, 514 E. McHarg Ave., Stamford, Tex. 97553

Filed Aug. 1, 1968, Ser. No. 13,001

Term of patent 14 years

Int. Cl. D9—*01*

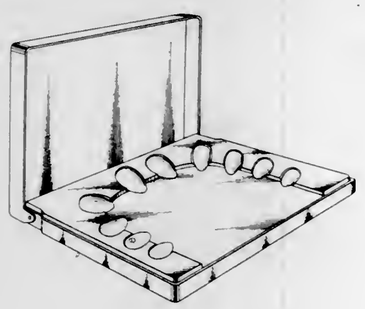
U.S. Cl. D9—23



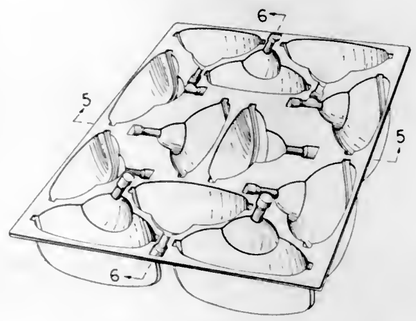
215,201
DECANTER OR SIMILAR ARTICLE
Bernard A. David, 291 Utah Ave., South San Francisco, Calif. 94080
Filed Nov. 14, 1968, Ser. No. 14,445
Term of patent 14 years
Int. Cl. D9—*01*
U.S. Cl. D9—29



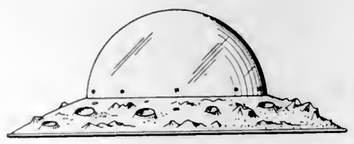
215,202
COMBINED CONTAINER AND ARTIFICIAL FINGERNAILS
Eric Victor Aylott, Welwyn Garden City, England, assignor to Eylure Limited
Original design applications Nov. 17, 1967, Ser. No. 9,451, and Ser. No. 9,453. Divided and this application Aug. 22, 1968, Ser. No. 14,857
Claims priority, application Great Britain July 24, 1967
Term of patent 14 years
Int. Cl. D9—*04*
U.S. Cl. D9—187



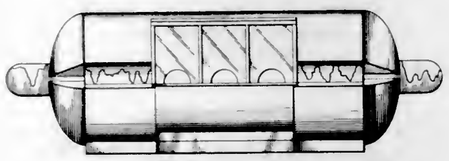
215,203
CARTON INSERT FOR SHIPPING CATHODE-RAY PICTURE TUBES
Thomas J. Deeren, 1862 Glen Ellyn Drive, Toledo, Ohio 43614
Filed Aug. 19, 1968, Ser. No. 13,185
Term of patent 14 years
Int. Cl. D9—*04*
U.S. Cl. D9—188



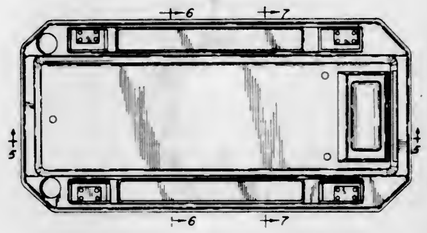
215,204
DISPLAY CONTAINER
Leonard J. Rimm, McAdoo, Pa. (R.D. 2, Tamaqua, Pa. 18252)
Filed Mar. 4, 1968, Ser. No. 10,835
Term of patent 14 years
Int. Cl. D9—*04*
U.S. Cl. D9—239



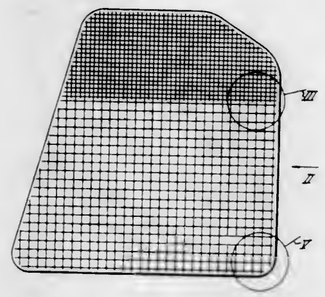
215,205
HOTDOG STAND
Norman Mumford, % The Beach Sands, 17970 Gulf Blvd., Redington Shores, Fla. 33708
Filed Aug. 30, 1968, Ser. No. 13,351
Term of patent 14 years
Int. Cl. D25—*04*
U.S. Cl. D13—1



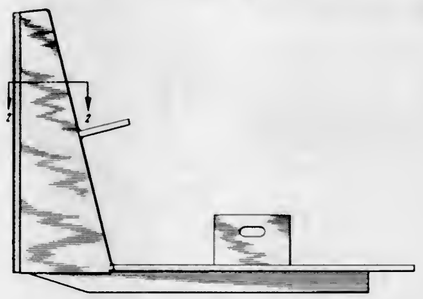
215,206
LOW PROFILE WHEELED CART OR SIMILAR ARTICLE
Jack Evans, Box 55, Rte. 1, Grant Park, Ill. 60940
Continuation-in-part of design application Ser. No. 10,152, Jan. 15, 1968. This application Feb. 24, 1969, Ser. No. 15,867
Term of patent 14 years
Int. Cl. D12—*02*
U.S. Cl. D14—3



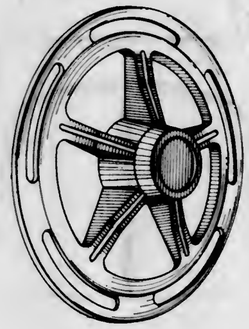
215,207
CAR MAT
David Atkin, London, England, assignor to The Cannon Rubber Manufacturers Limited, London, England
Filed June 6, 1968, Ser. No. 12,242
Claims priority, application Great Britain May 18, 1968
Term of patent 7 years
Int. Cl. D12—*14*
U.S. Cl. D14—5



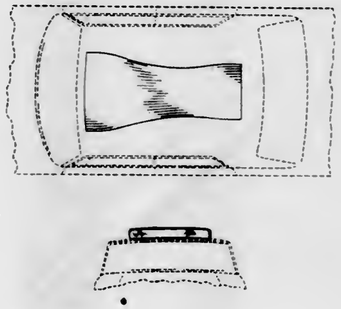
215,208
VEHICLE BUMPER ATTACHMENT
Lawrence D. Taylor, 4710 Crestview Drive, Carmichael, Calif. 95608
Filed Nov. 26, 1968, Ser. No. 14,676
Term of patent 14 years
Int. Cl. D12—*14*
U.S. Cl. D14—6



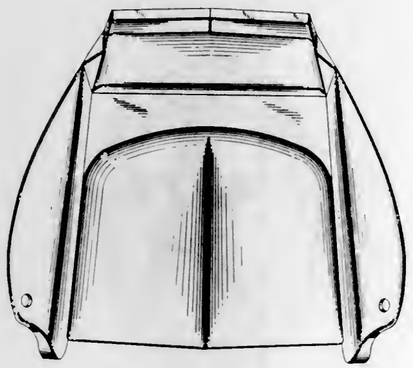
215,209
WHEEL COVER
Joel A. Anderson, River Forest, Ill., assignor to Namsco, Inc., Bellwood, Ill., a corporation of Illinois
Filed July 10, 1968, Ser. No. 12,674
Term of patent 3½ years
Int. Cl. D12—*14*
U.S. Cl. D14—30



215,210
ROOF VENTILATOR FOR A VEHICLE
Frederick W. Feldmann and Rodney S. Hill, Dover, Del., assignors to ILC Industries, Inc., Dover, Del., a corporation of Delaware
Filed Feb. 16, 1968, Ser. No. 10,600
Term of patent 14 years
Int. Cl. D12—*14*; D23—*04*
U.S. Cl. D14—27



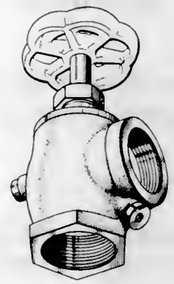
215,211
SWING SEAT OR SIMILAR ARTICLE
Irwin Cohn, 746 West St., Leominster, Mass. 01453
Filed Oct. 18, 1968, Ser. No. 14,079
Term of patent 3½ years
Int. Cl. D6—*01*
U.S. Cl. D15—11



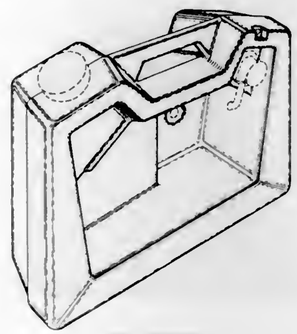
215,212
DRONE AIRCRAFT
George Calvin Grogan, Charles Henry Green, and Ronald McKenzie Beattie, Camarillo, David Armstrong Miller, Northridge, and Robert Taylor Johnston, Thousand Oaks, Calif., assignors to Northrop Corporation, Beverly Hills, Calif., a corporation of California
Filed June 21, 1968, Ser. No. 12,469
Term of patent 14 years
Int. Cl. D12—*07*
U.S. Cl. D22—17



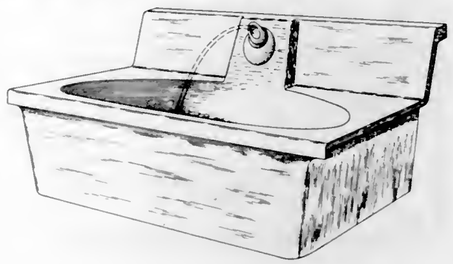
215,213
VALVE
Henry Wesley Beaver, 273 Gamma St., Toronto, Ontario, Canada
Filed Aug. 3, 1967, Ser. No. 8,111
Term of patent 14 years
Int. Cl. D23—*01*
U.S. Cl. D23—38



215,214
PORTABLE LAVATORY UNIT
Robert G. Huling, Battle Creek, Mich., assignor to S. H. Leggitt Company, Marshall, Mich., a corporation of Michigan
Filed June 5, 1968, Ser. No. 12,215
Term of patent 14 years
Int. Cl. D23—*02*
U.S. Cl. D23—58



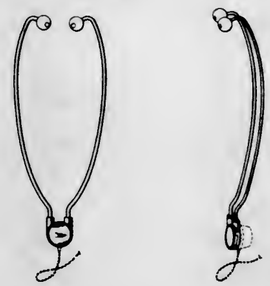
215,215
SURGEON'S SCRUB SINK
Robert W. Nagel, Floyds Knobs, Ind., assignor to American Standard Inc., New York, N.Y., a corporation of Delaware
Filed July 26, 1968, Ser. No. 12,922
Term of patent 14 years
Int. Cl. D23—*02*
U.S. Cl. D23—58



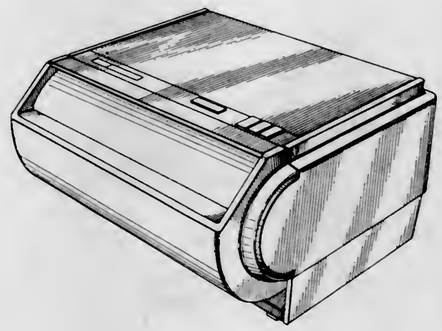
215,216
DESOLDERING IMPLEMENT OR THE LIKE
William S. Fortune, 14250 Dearborn St., Panorama City, Calif. 91402
Filed Apr. 2, 1968, Ser. No. 11,269
Term of patent 14 years
Int. Cl. D8—*02*
U.S. Cl. D26—1



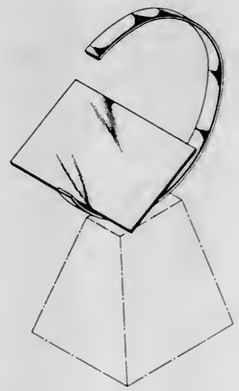
215,217
HEADSET OR THE LIKE
Eliot F. Noyes, New Canaan, Conn., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Continuation-in-part of design application Ser. No. 9,849, Dec. 19, 1967. This application Aug. 1, 1968, Ser. No. 12,984
Term of patent 14 years
Int. Cl. D14—*01*
U.S. Cl. D26—14



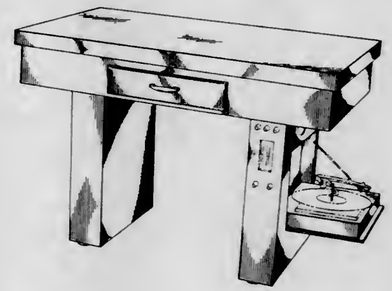
215,218
FACSIMILE TRANSCEIVER
Robert G. Plantholt, Rochester, Mich., assignor to Xerox Corporation, Rochester, N.Y., a corporation of New York
Filed Jan. 8, 1968, Ser. No. 10,069
Term of patent 14 years
Int. Cl. D14—*03*
U.S. Cl. D26—14



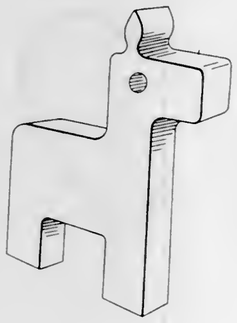
215,219
LECTERN
Jacob De Vries, 908 W. 18th Ave., Vancouver, British Columbia, Canada
Filed Aug. 12, 1968, Ser. No. 13,113
Term of patent 14 years
Int. Cl. D6—*01*
U.S. Cl. D33—10



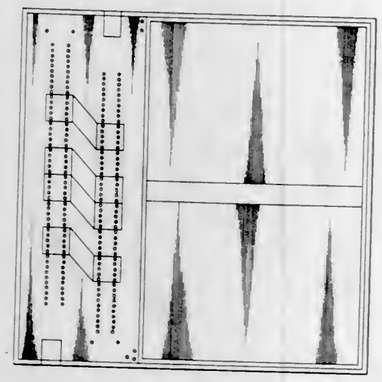
215,220
COMBINED GAME TABLE, CABINET, AND RECORD PLAYER UNIT
Allen N. Eide, 2001 Winnetka Ave. N., Minneapolis, Minn. 55427
Filed Oct. 20, 1967, Ser. No. 9,086
Term of patent 14 years
Int. Cl. D6—*01*; D21—*01, 04*
U.S. Cl. D33—14



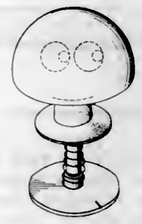
215,221
ANIMAL FIGURE FOR PLAYGROUND APPARATUS
John E. Hill, 21 Sheraton Park, Arlington, Mass. 02172, and Joseph E. Hill, 221 Mount Auburn St., Cambridge, Mass. 02139
Filed July 24, 1968, Ser. No. 12,879
Term of patent 7 years
Int. Cl. D21—*03*
U.S. Cl. D34—5



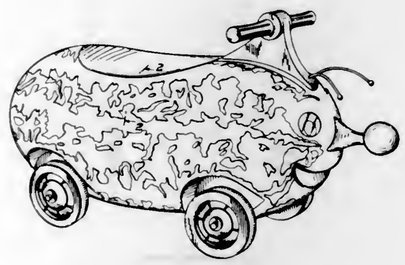
215,222
GAME BOARD
James H. Nicholas, 115 S. Macomb St., Monroe, Mich. 48161
Filed Aug. 15, 1968, Ser. No. 13,145
Term of patent 14 years
Int. Cl. D21—*01*
U.S. Cl. D34—5



215,223
GAME PIECE
Adolph E. Goldfarb, 7427 Varna St., Los Angeles, Calif., and Rene Soriano, Los Angeles, Calif.; said Soriano assignor to said Adolph E. Goldfarb
Filed Jan. 9, 1969, Ser. No. 15,278
Term of patent 14 years
Int. Cl. D21—*01*
U.S. Cl. D34—5



215,224
RIDING TOY
Irwin Cohn, 746 West St., Leominster, Mass. 01453
Filed Nov. 12, 1968, Ser. No. 14,407
Term of patent 3½ years
Int. Cl. D21—*02*
U.S. Cl. D34—15



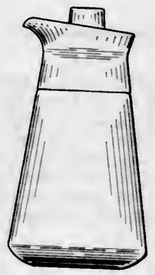
215,225
SADDLE TOY OR SIMILAR ARTICLE
Irwin Cohn, 746 West St., Leominster, Mass. 01453
Filed Nov. 12, 1968, Ser. No. 14,390
Term of patent 3½ years
Int. Cl. D21—*99*
U.S. Cl. D34—15



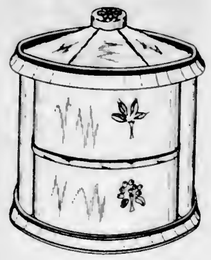
215,226
TUMBLER OR SIMILAR ARTICLE
Frank J. Benes, Lancaster, Ohio, assignor to Anchor Hocking Corporation, a corporation of Delaware
Filed Nov. 14, 1968, Ser. No. 14,465
Term of patent 14 years
Int. Cl. D7—*01*
U.S. Cl. D36—8



215,227
JUICER OR THE LIKE
Glenn B. Beckman, Corning, N.Y., assignor to Corning Glass Works, Corning, N.Y., a corporation of New York
Filed Nov. 22, 1968, Ser. No. 14,598
Term of patent 14 years
Int. Cl. D7—*01*
U.S. Cl. D44—21



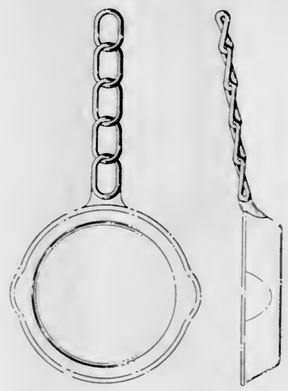
215,228
CANISTER SET
Jack Solomon, Brooklyn, N.Y., assignor to Pantry Queen Products Inc., Brooklyn, N.Y., a corporation of New York
Filed Sept. 16, 1968, Ser. No. 13,548
Term of patent 14 years
Int. Cl. D7—*01*
U.S. Cl. D44—6



215,229
CAKE PAN HOLDER
Elizabeth E. Rohling, 4114 Irving Ave. N., Minneapolis, Minn. 55412
Filed Mar. 25, 1968, Ser. No. 11,112
Term of patent 3½ years
Int. Cl. D7—*99*
U.S. Cl. D44—10



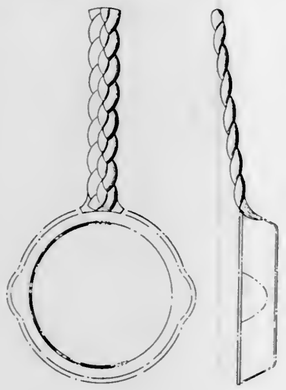
215,230
HANDLE FOR A CULINARY UTENSIL
John J. Fitzpatrick, Hellam, James E. Hess, Columbia, and Ralph P. Wilton, Wrightsville, Pa., assignors to Wilton Brass Company, Columbia, Pa., a corporation of Pennsylvania
Filed Mar. 15, 1968, Ser. No. 10,996
Term of patent 14 years
Int. Cl. D8—*02*
U.S. Cl. D44—29



215,231
HANDLE FOR A CULINARY UTENSIL
John J. Fitzpatrick, Hellam, James E. Hess, Columbia, and Ralph P. Wilton, Wrightsville, Pa., assignors to Wilton Brass Company, Columbia, Pa., a corporation of Pennsylvania
Filed Mar. 15, 1968, Ser. No. 10,991
Term of patent 14 years
Int. Cl. D8—*02*
U.S. Cl. D44—29



215,232
HANDLE FOR A CULINARY UTENSIL
John J. Fitzpatrick, Hellam, James E. Hess, Columbia, and Ralph P. Wilton, Wrightsville, Pa., assignors to Wilton Brass Company, Columbia, Pa., a corporation of Pennsylvania
Filed Mar. 15, 1968, Ser. No. 10,985
Term of patent 14 years
Int. Cl. D7—*02*
U.S. Cl. D44—29



215,233
HANDLE FOR A CULINARY UTENSIL
John J. Fitzpatrick, Hellam, James E. Hess, Columbia, and Ralph P. Wilton, Wrightsville, Pa., assignors to Wilton Brass Company, Columbia, Pa., a corporation of Pennsylvania
Filed Mar. 15, 1968, Ser. No. 10,986
Term of patent 14 years
Int. Cl. D7—*02*
U.S. Cl. D44—29



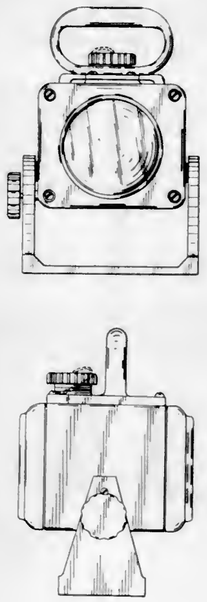
215,234
COMBINED LOCKET AND DOLL
Guy J. Colwell, Hollywood, Erin Libby, Hermosa Beach, Cyril Gordon Shireman, Rolling Hills Estates, and David Weissman, Palos Verdes Estates, Calif., assignors to Mattel, Inc., a corporation of California
Filed Nov. 16, 1967, Ser. No. 9,442
Term of patent 14 years
Int. Cl. D11—*01*
U.S. Cl. D45—15



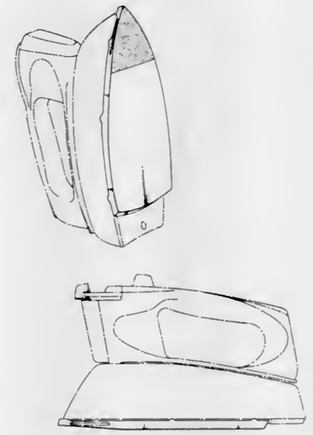
215,235
FLOOR LAMP BASE
Morris Lange, Shaker Heights, Ohio, assignor to Superior Funeral Supply Corporation, Cleveland, Ohio, a corporation of Ohio
Filed June 26, 1968, Ser. No. 12,505
Term of patent 14 years
Int. Cl. D26—*02*
U.S. Cl. D48—20



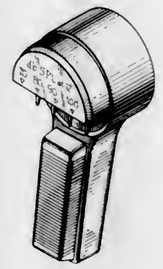
215,236
LANTERN WITH TWO LAMPS
Thomas F. Roche, 21 W. Main St., Merrimac, Mass. 18860
Filed Oct. 7, 1968, Ser. No. 13,869
Term of patent 14 years
Int. Cl. D26—*04*
U.S. Cl. D48—24



215,237
ELECTRIC IRON OR THE LIKE
Arthur E. Uber, Jr., Hampton Township, Allegheny County, Pa., Robert L. Finch, Mansfield, Ohio, and William A. English, Export, Pa., assignors to Westinghouse Electric Corporation, a corporation of Pennsylvania
Filed Mar. 20, 1967, Ser. No. 6,295
Term of patent 14 years
Int. Cl. D7—*06*
U.S. Cl. D49—6



215,238
PORTABLE AUDIOMETER
Ralph H. Seidel, Cicero, Ill., assignor to Zenith Radio Corporation, Chicago, Ill., a corporation of Delaware
Filed Aug. 7, 1968, Ser. No. 13,055
Term of patent 14 years
Int. Cl. D10—*11, 10*
U.S. Cl. D52—6



215,239
FORK OR SIMILAR ARTICLE
James Russell Price, Esmond, R.I., assignor to Textron Inc., Providence, R.I.
Filed Dec. 24, 1968, Ser. No. 15,118
Term of patent 14 years
Int. Cl. D7—*03*
U.S. Cl. D54—12



215,240
SPOON OR SIMILAR ARTICLE
Marion Weeber, New York, N.Y., assignor to American Home Products Corporation, New York, N.Y., a corporation of Delaware
Filed Sept. 11, 1968, Ser. No. 13,487
Term of patent 14 years
Int. Cl. D7—*03*
U.S. Cl. D54—12



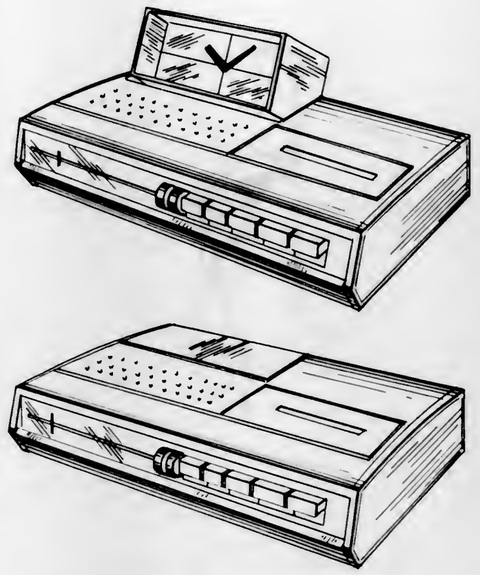
215,241
SPOON OR SIMILAR ARTICLE
Marion Weeber, New York, N.Y., assignor to American Home Products Corporation, New York, N.Y., a corporation of Delaware
Filed Sept. 11, 1968, Ser. No. 13,486
Term of patent 14 years
Int. Cl. D7—*03*
U.S. Cl. D54—12



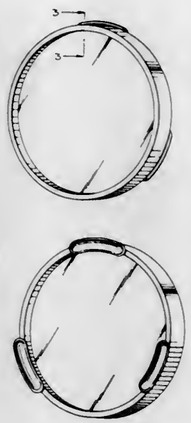
215,242
SPOON OR SIMILAR ARTICLE
Frank R. Perry, Oneida, N.Y., assignor to Oneida Ltd., Oneida, N.Y., a corporation of New York
Filed Dec. 26, 1968, Ser. No. 15,127
Term of patent 14 years
Int. Cl. D7—*03*
U.S. Cl. D54—12



215,243
COMBINED TAPE RECORDER-RADIO WITH BUILT-IN CLOCK OR SIMILAR ARTICLE
Madeleine Aghababian, Fort Lee. N.J., assignor to U.S. Industries, Inc., New York, N.Y., a corporation of Delaware
Filed Jan. 10, 1969, Ser. No. 15,294
Term of patent 14 years
Int. Cl. D14—*03*
U.S. Cl. D56—4



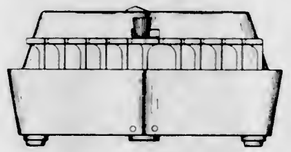
215,245
MAGNIFIER
Bernard J. Schwab, Beverly Hills, Calif., assignor to Stimulant Products, Inc., a corporation of California
Filed Nov. 27, 1968, Ser. No. 14,696
Term of patent 14 years
Int. Cl. D16—*08*
U.S. Cl. D57—1



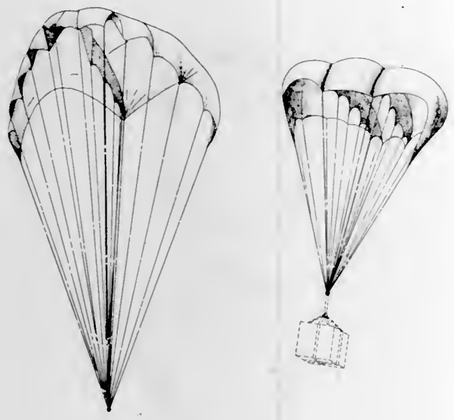
215,244
ELECTRIC PIANO
Harold B. Rhodes, Anaheim, Calif., assignor to Columbia Broadcasting Systems, Inc., New York, N.Y., a corporation of New York
Filed Aug. 15, 1968, Ser. No. 13,143
Term of patent 14 years
Int. Cl. D17—*01*
U.S. Cl. D56—9



215,246
STENOTYPE MACHINE
Marcel Leroy, Paris, France, assignor to Stenotype Grandjean, Société Anonyme, Paris, Seine, France
Filed May 10, 1968, Ser. No. 11,884
Term of patent 14 years
Int. Cl. D18—*01*
U.S. Cl. D64—11



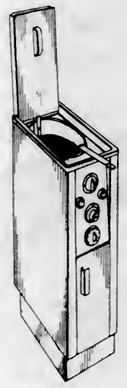
215,247
WING GLIDER
Herbert Q. Bair, Tallmadge, and Fred R. Nebiker, Akron, Ohio, assignors to Goodyear Aerospace Corporation, Akron, Ohio, a corporation of Delaware
Filed Feb. 29, 1968, Ser. No. 10,786
Term of patent 14 years
Int. Cl. D12—*07*
U.S. Cl. D71—1



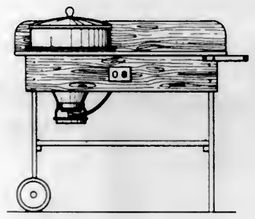
215,248
SOAP BAR
Heikki Viitanen, Turku, Finland, assignor to Farmos Oy, Turku, Finland
Filed Dec. 3, 1968, Ser. No. 14,765
Term of patent 14 years
Int. Cl. D7—*06;* D28—*02*
U.S. Cl. D73—1



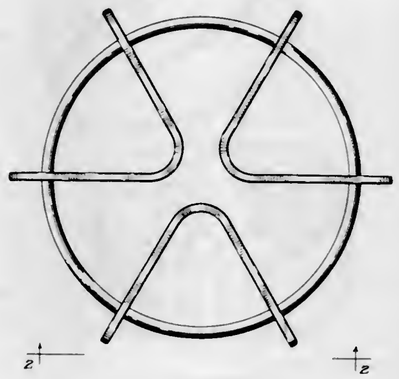
215,249
COMBINED FRYER AND STORAGE LOCKER
Fritz Jakob Wenger, Ecublens, Vaud, Switzerland, assignor to Comptoir des Machines S.A., Renens, Switzerland
Filed July 27, 1967, Ser. No. 8,018
Claims priority, application Switzerland Apr. 3, 1967
Term of patent 14 years
Int. Cl. D7—*04;* D15—*12*
U.S. Cl. D81—10



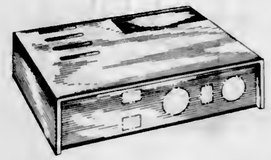
215,250
COMBINATION ELECTRIC COOKER AND SUPPORT STAND THEREFOR FOR BROILING AND BARBECUING FOOD
Cecil L. McClaren, 366 S. Minnesota, Wichita, Kans. 67211
Filed May 27, 1968, Ser. No. 12,101
Term of patent 14 years
Int. Cl. D7—*04*
U.S. Cl. D81—10

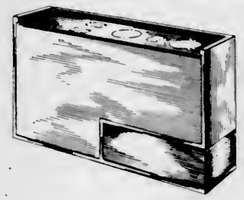


215,251
BURNER GRATE OR THE LIKE
Leroy J. Berlik, Cleveland, and Clarence E. Feldkircher, Nashville, Tenn., assignors to Hardwick Stove Company, Cleveland, Tenn., a corporation of Delaware
Filed May 6, 1968, Ser. No. 11,798
Term of patent 14 years
Int. Cl. D7—*04*
U.S. Cl. D81—25

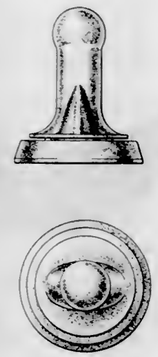


215,252
HOUSING FOR A HEART MONITOR
Gilbert G. Pfaff, Holland, and Harry J. Edenhofer, Southampton, Pa., assignors to Princo Instruments, Inc., Southampton, Pa., a corporation of Pennsylvania
Filed Nov. 21, 1968, Ser. No. 14,575
Term of patent 14 years
Int. Cl. D24—*02;* D14—*02*
U.S. Cl. D83—1

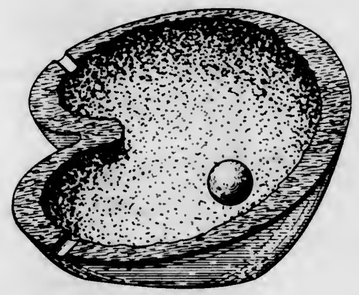




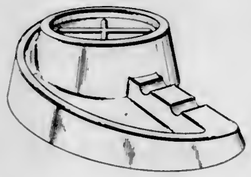
215,253
NURSER NIPPLE
Raymond W. Barton and Glen A. Claybaugh, Evansville, Ind., assignors to Mead Johnson & Company, a corporation of Indiana
Filed Dec. 10, 1968, Ser. No. 14,872
Term of patent 14 years
Int. Cl. D24—*05*
U.S. Cl. D83—8



215,254
ASH TRAY
Anthony J. Glavin, 49 Marshall St., Medford, Mass. 02155
Filed Oct. 21, 1968, Ser. No. 14,098
Term of patent 14 years
Int. Cl. D27—*03*
U.S. Cl. D85—2



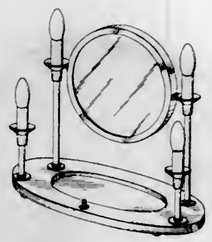
215,255
COMBINED ASHTRAY AND COASTER
Harry W. Kent, 2306 Scottwood, Garland, Tex. 75040
Filed Aug. 7, 1968, Ser. No. 13,049
Term of patent 14 years
Int. Cl. D27—*03*
U.S. Cl. D85—2



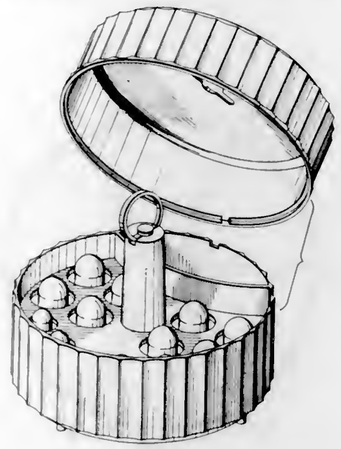
215,256
COMB
Anton Rizner, Elmhurst, Ill., assignor to H. Fishlove & Co., Chicago, Ill., a corporation of Illinois
Filed Sept. 11, 1968, Ser. No. 13,484
Term of patent 14 years
Int. Cl. D28—*03*
U.S. Cl. D86—8



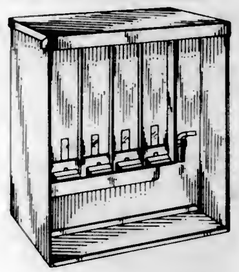
215,257
ILLUMINABLE VANITY MIRROR
William A. Folger, Toledo, Ohio, assignor to Lighting Products, Inc., Toledo, Ohio, a corporation of Ohio
Filed Oct. 28, 1968, Ser. No. 14,207
Term of patent 14 years
Int. Cl. D28—*03*
U.S. Cl. D86—10



215,258
HEATER HOUSING FOR HAIR CURLERS OR SIMILAR ARTICLE
Theodore G. Daher, Stratford, Conn., assignor to General Electric Company, a corporation of New York
Filed Sept. 5, 1968, Ser. No. 13,405
Term of patent 14 years
Int. Cl. D28—*03*; D23—*03*
U.S. Cl. D86—10



215,259
BEVERAGE DISPENSER
Martelle J. Syverson, Albert Lea, Minn., assignor to Fountain Industries, Inc., Albert Lea, Minn., a corporation of Iowa
Filed July 10, 1967, Ser. No. 7,735
Term of patent 14 years
Int. Cl. D15—*12*
U.S. Cl. D94—3



LIST OF DEFENSIVE PUBLICATIONS

APPLICANTS TO WHOM

DEFENSIVE PUBLICATIONS WERE ISSUED ON THE 16TH DAY OF SEPTEMBER, 1969

"Published at the request of the applicant or owner in accordance with the Notice of April 11, 1968, 849 O.G. 1221. Identification is by serial number of the application."

Alpert, Edward D., C. M. Shaw, and J. H. Humphreys, Jr., to Atlantic Richfield Co. Method and apparatus for determining gasoline plugging index. 818,031, 9-16-69, Cl. 73—61.
Aluminum Co. of America: *See*—
Dunn, Lloyd G. 793,231.
Atlantic Richfield Co.: *See*—
Alpert, Edward D., Shaw, and Humphreys. 818,031.
Beavers, Dorothy J. Silver halide emulsions containing metal chelate fog inhibitors. 825,420, 9-16-69, Cl. 96—110.
Burch, Wendell D., and J. T. Minor. Method for preparing stabilized suspensions of ammonium polyphosphate fertilizer. 801,843, 9-16-69, Cl. 71—29.
Cobb, James S., Jr., to E. I. du Pont de Nemours and Co. Fabrication method. 811,338, 9-16-69, Cl. 76—107.
Coover, Harry W., Jr.: *See*—
Shields, Donald J., Guillet, and Coover. 657,707.
Dunn, Lloyd G., to Aluminum Co. of America. Container end having easy-opening means. 793,231, 9-16-69, Cl. 220—54.
Du Pont de Nemours, E. I., and Co.: *See*—
Cobb, James S., Jr. 811,338.
Evans, Ronald H., and D. F. Myers. Recovery of volatile liquid from underground storage. 818,609, 9-16-69, Cl. 62—54.
Fitzgerald, John W.: *See*—
Tardif, Richard E., Fitzgerald, and Le Blanc. 752,701.
Ford Motor Co.: *See*—
Woolgar, Ronald J. H. 743,678.
Guillet, James E.: *See*—
Shields, Donald J., Guillet, and Coover. 657,707.
Humphreys, John H., Jr.: *See*—
Alpert, Edward D., Shaw, and Humphreys. 818,031.
Isenberg, John F.: *See*—
Johnson, William L., and Isenberg. 788,681.
Johnson, William L., and J. F. Isenberg. Method for weaving fabrics from synthetic yarn. 788,681, 9-16-69, Cl. 28—72.
Le Blanc, Roy A.: *See*—
Tardif, Richard E., Fitzgerald, and Le Blanc. 752,701.
Minor, John T.: *See*—
Burch, Wendell D., and Minor. 801,843.
Myers, David F.: *See*—
Evans, Ronald H., and Myers. 818,609.
Noddings, Charles R. Method for the production of aliphatic conjugated diolefines. 804,478, 9-16-69, Cl. 73—61.
Pearson, William M. Process for improving traction on surfaces. 754,989, 9-16-69, Cl. 94—22.
Shaw, Clifford M.: *See*—
Alpert, Edward D., Shaw, and Humphreys. 818,031.
Shields, Donald J., J. E. Guillet, and H. W. Coover, Jr. Crystalline polystyrene graft copolymers and their preparation. 657,707, 9-16-69, Cl. 260—878.
Tardif, Richard E., J. W. Fitzgerald, and R. A. Le Blanc. Use of in-line mixer to uniformly disperse bubbles throughout molten polyester prepolymer. 752,701, 9-16-69, Cl. 260—2.5.
Woolgar, Ronald J. H., to Ford Motor Co. Collapsible steering column for a motor vehicle. 743,678, 9-16-69, Cl. 74—492.

LIST OF PLANT PATENTEES

TO WHOM

PATENTS WERE ISSUED ON THE 16TH DAY OF SEPTEMBER, 1969

NOTE.—Arranged in accordance with the first significant character or word of the name (in accordance with city and telephone directory practice).

Kerrigan, Howard, to Nurserymen's Exchange, Inc. Azalea plant. 2,918, 9-16-69, Cl. 57.
McGredy, Samuel D. Rose plant. 2,919, 9-16-69, Cl. 19.
Nurserymen's Exchange, Inc.: *See*—
Kerrigan, Howard. 2,918.

LIST OF DESIGN PATENTEES

Adickes, Cecil F., and G. W. Schmidt, to Columbia Broadcasting System, Inc. Toy oven. 215,244, 9-16-69, Cl. D34—15.
Aghababian, Madeleine, to U.S. Industries, Inc. Combined tape recorder-radio with built-in clock or similar article. 215,243, 9-16-69, Cl. D56—4.
American Home Products Corp.: *See*—
Weeber, Marion. 215,240.
Weeber, Marion. 215,241.
American Safety Equipment Corp.: *See*—
Krengel, William, and Jensen. 215,195.
American Standard Inc.: *See*—
Nagel, Robert W. 215,215.
Anchor Hocking Corp.: *See*—
Benes, Frank J. 215,226.
Anderson, Joel A., to Namsco, Inc. Wheel cover. 215,209, 9-16-69, Cl. D14—30.
Atkin, David, to The Cannon Rubber Manufacturers Ltd. Car mat. 215,207, 9-16-69, Cl. D14—5.
Aylott, Eric V., to Eylure Ltd. Combined container and artificial fingernails. 215,202, 9-16-69, Cl. D9—187.
Bair, Herbert Q., and F. R. Nebiker, to Goodyear Aerospace Corp. Wing glider. 215,247, 9-16-69, Cl. D71—1.
Barton, Raymond W., and G. A. Claybaugh, to Mead Johnson & Co. Nurser nipple. 215,253, 9-16-69, Cl. D83—8.
Beaver, Henry W. Valve. 215,213, 9-16-69, Cl. D23—38.
Beckman, Glenn B., to Corning Glass Works. Juicer or the like. 215,227, 9-16-69, Cl. D44—21.
Benes, Frank J., to Anchor Hocking Corp. Tumbler or similar article. 215,226, 9-16-69, Cl. D36—8.
Berlik, Leroy J., and C. E. Feldkircher, to Hardwick Stove Co. Burner grate or the like. 215,251, 9-16-69, Cl. D81—25.
Cannon Rubber Manufacturers Ltd., The: *See*—
Atkin, David. 215,207.
Claybaugh, Glen A.: *See*—
Barton, Raymond W., and Claybaugh. 215,253.
Cohn, Irwin. Swing seat or similar article. 215,211, 9-16-69, Cl. D15—11.
Cohn, Irwin. Riding toy. 215,224, 9-16-69, Cl. D34—15.
Cohn, Irwin. Saddle toy or similar article. 215,225, 9-16-69, Cl. D34—15.
Columbia Broadcasting System, Inc.: *See*—
Adickes, Cecil F., and Schmidt. 215,244.
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Comptoir des Machines S.A.: *See*—
Wenger, Fritz J. 215,249.
Corning Glass Works: *See*—
Beckman, Glenn B. 215,227.
Daher, Theodore G., to General Electric Co. Heater housing for hair curlers or similar article. 215,258, 9-16-69, Cl. D86—10.
David, Bernard A. Decanter or similar article. 215,201, 9-16-69, Cl. D9—29.
Deeren, Thomas J. Carton insert for shipping cathode-ray picture tubes. 215,203, 9-16-69, Cl. D9—188.
D'Elia, Anthony N., and E. M. Stolarz, to Presto Lock Co., Inc. Luggage lock or similar article. 215,199, 9-16-69, Cl. D8—122.
De Vries, Jacob. Lectern. 215,219, 9-16-69, Cl. D33—10.
Dobyns, John L. Bottle. 215,200, 9-16-69, Cl. D9—23.
Edenhofer, Harry J.: *See*—
Pfaff, Gilbert G., and Edenhofer. 215,252.
Elde, Allen N. Combined game table, cabinet, and record player unit. 215,220, 9-16-69, Cl. D33—14.
Evans, Jack. Low profile wheeled cart, or similar article. 215,206, 9-16-69, Cl. D14—3.
Eylure Ltd.: *See*—
Aylott, Eric V. 215,202.
Farmos Oy: *See*—
Viitanen, Heikki. 215,248.
Feldmann, Frederick W., and R. S. Hill, to ILC Industries, Inc. Roof ventilator for a vehicle. 215,210, 9-16-69, Cl. D14—27.

Feldkircher, Clarence E.: *See*—
Berlik, Leroy J., and Feldkircher. 215,251.
Finch, Robert L.: *See*—
Uber, Arthur E., Jr., Finch, and English. 215,237.
Fishlove, H., & Co.: *See*—
Rizner, Anton. 215,256.
Fitzpatrick, John J., J. E. Hess, and R. P. Wilton, to Wilton Brass Co. Handle for a culinary utensil. 215,230, 9–16–69, Cl. D44—29.
Fitzpatrick, John J., J. E. Hess, and R. P. Wilton, to Wilton Brass Co. Handle for a culinary utensil. 215,231, 9–16–69, Cl. D44—29.
Fitzpatrick, John J., J. E. Hess, and R. P. Wilton, to Wilton Brass Co. Handle for a culinary utensil. 215,232, 9–16–69, Cl. D44—29.
Fitzpatrick, John J., J. E. Hess, and R. P. Wilton, to Wilton Brass Co. Handle for a culinary utensil. 215,233, 9–16–69, Cl. D44—29.
Folger, William A., to Lighting Products, Inc. Illuminable vanity-mirror. 215,257, 9–16–69, Cl. D86—10.
Fortune, William S. Desoldering tool or the like. 215,197, 9–16–69, Cl. D8—30.
Fortune, William S. Desoldering implement or the like. 215,216, 9–16–69, Cl. D26—1.
Fountain Industries, Inc.: *See*—
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Glavin, Anthony J. Ash tray. 215,254, 9–16–69, Cl. D85—2.
Goldfarb, Adolph E., and R. Soriano; said Soriano assor. to said Goldfarb. Game piece. 215,223, 9–16–69, Cl. D34—5.
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Grogan, George C., Green, Beattie, Miller, and Johnston. 215,212.
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Fitzpatrick, John J., Hess, and Wilton. 215,230.
Fitzpatrick, John J., Hess, and Wilton. 215,231.
Fitzpatrick, John J., Hess, and Wilton. 215,232.
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Feldmann, Frederick W., and Hill. 215,210.
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Noyes, Elliot F. 215,217.
Jensen, Alvin I.: *See*—
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Leggitt, S. H., Co.: *See*—
Huling, Robert G. 215,214.
Leroy, Marcel, to Stenotype Grandjean, Societe Anonyme. Stenotype machine. 215,246, 9–16–69, Cl. D64—11.
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Mattel, Inc.: *See*—
Colwell, Guy J., Libby, Shireman, and Weissman. 215,234.
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Barton, Raymond W., and Claybaugh. 215,253.
McClaren, Cecil L. Combination electric cooker and support stand therefor for broiling and barbecuing food. 215,250, 9–16–69, Cl. D81—10.
Mumford, Norman. Hot dog stand. 215,205, 9–16–69, Cl. D13—1.
Nagel, Robert W., to American Standard Inc. Surgeon's scrub sink. 215,215, 9–16–69, Cl. D23—58.
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Neblker, Fred R.: *See*—
Bair, Herbert Q., and Neblker. 215,247.
Nicholas, James H. Game board. 215,221, 9–16–69, Cl. D34—5.
Nicholas, James H. Game board. 215,222, 9–16–69, Cl. D34—5.
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Grogan, George C., Green, Beattie, Miller, and Johnston. 215,212.
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Solomon, Jack. 215,228.
Partridge, Gerald J., to Jim Robbins Seat Belt Co. Buckle for a safety seat belt. 215,196, 9–16–69, Cl. D2—408.
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Barabas, Eugene S., and Grosser, Frederick, to GAF Corporation. Stable aqueous emulsions. 3,467,613, Cl. 260-029.6
Barber-Greene Company: *See—*
Archer, Fred Curtis, 3,467,281.
Barker, Donald W.: *See—*
Parker, Wayland B., and Barker, Donald W. 3,467,434.
Barker, James F., to General Electric Company. Wrought nickel base alloy. 3,467,516, Cl. 075-171.
Barlow, Jesse P., Jones, Charles R., and Kerr, James L., to General Electric Company. Apparatus providing a unique decision signal for concurrent interrogation signals. 3,467,948, Cl. 340-172.5
Barnes Drill Co.: *See—*
Estabrook, Mark R., 3,466,809.
Barouh, Victor: *See—*
Glenn, Robert, and Barouh, Victor 3,467,235.
Barr, James R., to General Electric Company. Reversible cam actuating mechanism for electric switches. 3,467,800, Cl. 200-153.
Barrera, Salvatore E., to Muskin Manufacturing Company, Inc. Pool structure. 3,466,676, Cl. 004-172.
Barsam, Edward Wesley: *See—*
Pajak, Theodore Peter, Barsam, Edward Wesley, and Moll, Bishop Joseph 3,466,733.
Bartek, Raymond W., to Allegheny Ludlum Steel Corporation. Descaling of alloys by high temperature surface vaporization. 3,467,549, Cl. 134-004.
Bartl, Herbert: *See—*
Seidel, Bernhard, Mader, Helmut, Danhauser, Justus, and Bartl, Herbert 3,467,523.
Barton, Walter S.: *See—*
Vaughan, George W., Barton, Walter S., and Simpson, Mott E. 3,467,275.
Baxter, Samuel, and Gilbert, John Harold, to Monsanto Chemicals Limited. Extrusion of resins. 3,467,570, Cl. 161-165.
Bearer, Gerald L., to Wilson, Lee, Engineering Company, Inc. Quench press. 3,467,367, Cl. 266-006.
Bearings, Seals & Gears, Inc.: *See—*
Cain, Earl S., Carlson, Jerome A., and Goodrich, George E., 3,466,697.
Beaver, Emil R., Jr.: *See—*
Henderson, Courtland M., Beaver, Emil R., Jr., and Reitsma, Louis J., Jr. 3,467,555.
Beaver Precision Products, Inc.: *See—*
Newman, William G., 3,467,447.
Becker, Roger T., and Becker, William K., to Aero-Motive Manufacturing Company. Dual hydraulic reel. 3,467,134, Cl. 137-355.17
Becker, William K.: *See—*
Becker, Roger T., and Becker, William K. 3,467,134.
Beckman Instruments, Inc.: *See—*
Thomas, Walter C., 3,467,836.
Becton, Dickinson and Company: *See—*
Ayres, Waldemar A., 3,467,098.
Beekes, Hugh A., Herrmann, Thomas R., Lipp, Melbourne A., Olson, Henning H., and Schleicher, Allen K., to Kaiser Aluminum & Chemical Corporation, mesne. Multistation packaging apparatus and system for forming a multicomponent package. 3,466,845, Cl. 053-194.
Beger, Udo: *See—*
Glaser, Dieter, and Beger, Udo 3,466,677.
Behney, Robert J. Rope clamp. 3,466,712, Cl. 024-123.
Behr, Samuel H.: *See—*
Chatten, Clarence K., and Behr, Samuel H. 3,467,047.
Beimfohr, Siegfried: *See—*
Schmidt, Henry K., and Beimfohr, Siegfried 3,467,450.
Beitchman, Burton D., to Air Products and Chemicals, Inc.5,9-Dimethyl-azabicyclo [3-3-1] nonane and process for making same. 3,467,660, Cl. 260-293.
Belart, Juan, to Teves, Alfred, Maschinen- und Armaturenfabrik K.G. Wheel-brake cylinder adjuster. 3,467,226, Cl. 188-196.
Belart, Juan, to Teves, Alfred, Maschinen- und Armaturenfabrik K.G. Brake system with wear-compensated means. 3,467,227, Cl. 188-196.
Bell Aerospace Corporation: *See—*
Spivey, Richard F., and Drees, Jan M., 3,467,197.
Bell & Howell Company: *See—*
Bradt, Gordon E., 3,467,339.
Bell Telephone Laboratories, Incorporated: *See—*
Crowell, Merton H., 3,467,880.
Harding, Philip A., 3,467,953.
Patel, Chandra K. N., and Slusher, Richart E., 3,467,917.
Bendix Corporation, The: *See—*
Lanni, Michael J., 3,466,935.
Levine, Alfred L., 3,467,957.
Moreines, Harold, 3,467,956.
Benjamin, Milton L., and Walker, David D., to Erickson Tool Company. Self-releasing tap holder. 3,466,681, Cl. 010-141.
Benner, Floyd E., Jr., and Loehr, Clifford E., to PPG Industries, Inc. Method for uniform gas distribution in process for producing pigmentary metal oxide. 3,467,498, Cl. 023-202.
Bennett Industries, Inc.: *See—*
Aurelio, Salvatore P., and Gardner, Thomas A., 3,466,689.
Bennett, Robert Putnam: *See—*
Hardy, William Baptist, and Bennett, Robert Putnam 3,467,687.
Hardy, William Baptist, and Bennett, Robert Putnam 3,467,694.
Bennett, Robert Putnam, and Davis, Stanley Myron, to American Cyanamid Company. Conversion of azo or azoxy compounds to isocyanates. 3,467,688, Cl. 260-453.
Benninga, Harm, to Scholten's, W. A., Chemische Fabrieken N.V. Cationic and anionic substituted polysaccharides and process for preparing same. 3,467,647, Cl. 260-209.
Benson, Ann L. Position-holding headwear assembly. 3,467,111, Cl. 132-046.
Bentley, Gustavus A., to Federal-Mogul Corporation. Flex joint. 3,467,421, Cl. 287-085.
Benton, Robert C., to Chemcut Corporation. Positioning apparatus with controls employing resistor increments. 3,467,900, Cl. 318-018.
Benz, Emil: *See—*
Dosch, Peter, Benz, Emil, and Bruhin, Paul 3,467,149.
Berg Mfg., & Sales Co.: *See—*
Dobrikin, Harold L., 3,467,830.
Berge, Jesse E. Air chuck. 3,467,401, Cl. 279-004.
Bergevin, Charles R. Wire feed control mechanism for spring coiling machine. 3,466,906, Cl. 072-036.
Berglund, Larry G., and Novak, Robert P., to Trane Company, The. Absorption refrigerating system. 3,466,894, Cl. 062-476.
Bernard, Francis A., to Collins Radio Company. Printer hammer drive circuit. 3,467,005, Cl. 101-093.
Bernard Plastics Molding Corporation: *See—*
Phillips, Robert, and Levine, Bernard B., 3,467,291.

Bernard, Rene G., to Societe d'Etudes Verrieres Appliquees (S.E.V.A.). Seal assemblies. 3,467,398, Cl. 277-180.

Bernatsky, Alexandr Dmitrievich: *See—*
Andreevskaya, Galya Dmitrievna, Bernatsky, Alexandr Dmitrievich, Gudelman, Abram Elkunovich, Volovich, Zelman Moiseevich, Zektser, Alexandr, Tosifovich, Zelensky, Eduard Semenovich, Kiselev, Kuzma Nikitich, Kozlov, Nikolai Fedorovich, Kulakovsky, Vladimir Alexandrovich, Polischuk, Semen Moiseevich, Sveshnikov, Vasily Petrovich, and Sheinblujm, Vladimir Mikhailovich 3,467,507.

Bernotas, Ralph J., Fisher, James W., and Scott, Robert H., to General Motors Corporation. Self-loading scraper. 3,466,765, Cl. 037-008.

Bernotat, Rainer: *See—*
Corleis, Horst, Bernotat, Rainer, and Roessger, Edgar 3,466,923.

Berry, Thomas G., and Kline, Thomas F., to Fairchild Hiller Corporation. Self-extending antenna. 3,467,328, Cl. 242-054.

Bertrand, Jacques: *See—*
Bugaut, Andree, Kalopissis, Gregoire, and Bertrand, Jacques 3,467,483.

Best, Howard S., Gibbs, Paul F., and Mosely, Graham Hartwell, to Corning Glass Works. Automatic silk screening machine. 3,467,004, Cl. 101-035.

Best, William J., to Ladney, Michael, Jr. Method of producing simulated wood grain finish. 3,467,538, Cl. 117-008.

Bethlehem Steel Corporation: *See—*
Koncsics, David M., and Whitmore, Bruce C., 3,467,284.

Bewley, Thomas, to Distillers Company Limited, The. Extraction of phenol. 3,467,721, Cl. 260-621.

Bianchi, Maria Luisa, Franceschi, Giovanni, Marnati, Maria Pia, and Spalla, Celestino, to Societa Farmaceutici Italia. Microbiological process for the production of lycopene. 3,467,579, Cl. 195-028.

Biller, Theodor, to Thyssen Rohrenwerke Aktiengesellschaft. Track for wheel and track laying vehicles. 3,466,986, Cl. 094-013.

Binder and Company: *See—*
Oser, Jorg, 3,467,241.

Binns, Jack N. Tool holder. 3,466,721, Cl. 029-097.

Binstead, Hugh Cecil, and Rondeau, George Edgar, to United Kingdom Optical Company Limited. Optical apparatus for the examination of the human eye. 3,467,466, Cl. 351-014.

Bird, Forrest M., and Pohndorf, Henry L. Spirometer. 3,467,078, Cl. 128-002.08

Bird, Forrest M., and Pohndorf, Henry L. Anesthesia apparatus and resuscitator. 3,467,092, Cl. 128-145.6

Bird, William George. Brushless axial airgap inductor-type dynamoelectric machines and synchro systems using the same. 3,467,844, Cl. 310-168.

Blanchard, Robert R.: *See—*
Schnebelen, David F., Young, Warren L., Blanchard, Robert R., and Graham, Glen H. 3,467,732.

Blatter, Johannes Reinier, to U.S. Philips Corporation, mesne. Planar dispenser cathode assembly with a cap member to which an electron-emissive, tubular heater and rod-shaped support members are clamped. 3,467,879, Cl. 313-346.

Bledstein, Louis, to Arvin Industries, Inc. Multiple radius punch for pipe bending. 3,466,919, Cl. 072-389.

Blekhman, Ilja Izrailevich: *See—*
Dubrovin, Boris Nickolaevich, Fedorov, Boris Nickolaevich, Blekhman, Ilja Izrailevich, and Petrosjants, Anatoly Aramaisovich 3,467,318.

Block, Aleck, to Merit Products, Inc. Method of fabricating an abrasive wheel. 3,466,816, Cl. 051-336.

Block, M Sabel, Sidbury, Melvin D., and Reich, Melvin F., to Lorillard P., Company, Inc. Method and apparatus for making reconstituted tobacco. 3,467,109, Cl. 131-140.

Bloechl, Hanns: *See—*
Phleps, Konrad, Fruth, Franz, and Bloechl, Hanns 3,467,011.

Blume, Peter, to U.S. Philips Corporation, mesne. Electronic switch for the rapid switching off and on again of current-conveying coils. 3,467,894, Cl. 317-123.

Blyakher, Lev Abramovich: *See—*
Bolotin, Evgeny Moiseevich, Blyakher, Lev Abramovich, Ierusalimsky, Boris Nikolaevich, Saveliev, Leonid Ivanovich, Razmerov, Vladimir Ivanovitch, and Khaidurov, Leonid Konstantinovich 3,467,437.
Bolotin, Evgeny Moiseevich, Blyakher, Lev Abramovich, Ierusalimsky, Boris Nikolaevich, Saveliev, Leonid Ivanovich, Razmerov, Vladimir Ivanovich, and Khaidurov, Leonid Konstantinovich 3,467,438.
Bolotin, Evgeny Moiseevich, Blyakher, Lev Abramovich, Ierusalimsky, Boris Nikolaevich, Saveliev, Leonid Ivanovich, Razmerov, Vladimir Ivanovich, and Khaidurov, Leonid Konstantinovich 3,467,439.

Boborykin, Jury Alexandrovich, Kononenko, Vadim Grigorievich, Dadykin, Georgy Fedetovich, Levkin, Dmitry Dmitrievich, Pravdin, Viktor Sergeevich, Stelmakh, Viktor Alexeevich, Fulmakht, Veniamin Veniaminovich, Schekochikhin, Serafim Vasilievich, and Pikhtovnikov, Rostislav Vyacheslavovich. Device for cutting moving ingots, preferably those obtained by the continuous casting method. 3,466,960, Cl. 083-308.

Bobst Champlain, Inc.: *See—*
Chesnut, William R., and Smuts, I. Robert, 3,467,334.

Boccard, Rene. Hydropneumatic flushing cisterns. 3,466,673, Cl. 004-052.

Boehm, Guenter J.: *See—*
Cox, John E., Hasser, George L., Boehm, Guenter J., Westhead, Stanley J., Feldman, Theodore, and Buck, Thomas F. 3,467,780.

Boesen, Thomas E.: *See—*
Keyes, Jack, Greene, Robert R., and Boesen, Thomas E. 3,467,014.

Bohler, Wilhelm Valentin. Adjustable clamp. 3,467,352, Cl. 248-221.

Bohn, Samuel. Sealing joint. 3,466,801, Cl. 049-404.

Boise Cascade Corporation: *See—*
Meyer, Robert W., 3,467,299.

Bolewski, Josef. Method of making gravel filter pipes. 3,467,740, Cl. 264-069.

Bolick, Fred C., Jr., to Lanier Electronics Laboratory, Inc. Dictation-transcription device. 3,467,790, Cl. 179-100.1

Bolick, Fred C., Jr., to Lanier Electronic Laboratory, Inc. Device to indicate the net motion of a tape in one of two directions of travel. 3,467,791, Cl. 179-100.2

Bolkow Gesellschaft mit beschrankter Haftung: *See—*
Stangl, Arnold, Herberhold, Dieter, and Pfister, Franz, 3,466,968.

Bolotin, Evgeny Moiseevich, Blyakher, Lev Abramovich, Ierusalimsky, Boris Nikolaevich, Saveliev, Leonid Ivanovich, Razmerov, Vladimir Ivanovitch, and Khaidurov, Leonid Konstantinovich. Device for loading ground in a mechanized drifting shield. 3,467,437, Cl. 299-033.

Bolotin, Evgeny Moiseevich, Blyakher, Lev Abramovich, Ierusalimsky, Boris Nikolaevich, Saveliev, Leonid Ivanovich, Razmerov, Vladimir Ivanovich, and Khaidurov, Leonid Konstantinovich. Working member of rotary type in a mechanized drifting shield. 3,467,438, Cl. 299-033.

Bolotin, Evgeny Moiseevich, Blyakher, Lev Abramovich, Ierusalimsky, Boris Nikolaevich, Saveliev, Leonid Ivanovich, Razmerov, Vladimir Ivanovich, and Khaidurov, Leonid Konstantinovich. Loading device. 3,467,439, Cl. 299-090.

Bomar, Horace L.: *See—*
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Bomer, Horace L.: *See—*
Brown, Ralph H., Jr., 3,467,148.
Nydam, John H., 3,467,147.

Bonacci, Louis F. Combined football centering device and pass- receiving device. 3,467,380, Cl. 273-055.

Bonner, Oscar. Fishing line twirler. 3,466,784, Cl. 043-019.2

Bopp, Joseph E.: *See—*
Simms, Michael L., and Bopp, Joseph E. 3,467,458.

Borden, Inc.: *See—*
Sommer, William Albert, 3,466,996.

Borg-Warner Corporation: *See—*
Anderson, James H., and Spruitenburg, Marinus J., 3,467,419.
Studtmann, George Henry, and Burtness, Roger W., 3,467,904.

Borrelli, Nicholas F., Herczog, Andrew, and Maurer, Robert D., to Corning Glass Works. Electro-optic device with birefringent crystals embedded in a glass matrix. 3,467,463, Cl. 350-150.

Borresen, Sven C. Holder device for service records for a machine. 3,466,774, Cl. 040-010.

Boshold, Raymond F., to Baldwin-Lima-Hamilton Corporation. Extrusion press container apparatus. 3,466,915, Cl. 072-272.

Bostitch, Incorporated: *See—*
Fisher, Edward I., 3,467,294.

Botts, Marion F.: *See—*
Regel, Erik K., and Botts, Marion F. 3,467,736.

Boudouris, Angelo, to Eprad Incorporated. Universal junction box for drive-in theater heaters. 3,467,762, Cl. 174-059.

Bowden, George F., and Dagiel, Richard T., to Symons Mfg., Company. Concrete wall form installation and tie rod load indicator therefor. 3,467,054, Cl. 116-114.

Bowden, Kenneth: *See—*
Broadbent, John L., Bowden, Kenneth, and Ross, William James 3,467,715.

Bowe, Bohler & Weber KG.: *See—*
Fuhring, Heinrich, and Fleschhut, Richard, 3,466,688.

Bowers, Charles W., to Mac Tools, Inc. Wrench socket with multi-sided and special shaped driving faces. 3,466,956, Cl. 081-121.

Bowles Engineering Corporation: *See—*
Bowles, Romald E., 3,467,043.
Bowles, Romald E., 3,467,121.
Dexter, Edwin M., 3,467,125.
Jones, Donnie Roland, 3,467,122.

Bowles, Romald E., to Bowles Engineering Corporation. Pure fluid force generator. 3,467,043, Cl. 114-066.5

Bowles, Romald E., to Bowles Engineering Corporation. Dual fluid systems. 3,467,121, Cl. 137-081.5

Bowman, Joe, to Scott & Fetzer Company, The, mesne. Sub-interval timer. 3,467,795, Cl. 200-038.

Box, William A., and Rall, Waldo, to United States Steel Corporation. Apparatus for vaporizing metal. 3,467,058, Cl. 118-049.5

Boyce, Ian Stanley, and Ahier, Thelma Grace, to United Kingdom Atomic Energy Authority. Method and apparatus for X-ray analysis with compensation for an interfering element. 3,467,824, Cl. 250-051.5

Boyle, Donn George, and Osborn, Robert Otto, to Du Pont de Nemours, E. I., and Company. Flow device and method of manufacture thereof. 3,467,142, Cl. 138-111.

Boytz, Charles B.: *See—*
Armington, George E., and Boytz, Charles B. 3,467,264.

Bradford, William E. Circular gang saw. 3,467,152, Cl. 143-037.

Bradt, Gordon E., to Bell & Howell Company. Tape reel with releasable closure means. 3,467,339, Cl. 242-055.13

Bradt, Lynn J., to S I Handling Systems, Inc. Tow truck dispatch system. 3,467,025, Cl. 104-172.

Bramlett, William P., Jr., to Armstrong Cork Company. Halloysite-filled phenolic molded composition. 3,467,618, Cl. 260-038.

Brand, Warren H.: *See—*
Hetz, Heinz K., Brand, Warren H., and Dabinett, George B. 3,467,017.

Brandes, Roy H., to General Motors Corporation. Hot gas engine with gas pressure control means. 3,466,867, Cl. 060-024.

Brandner, Carl F.: *See—*
Dunlap, Peggy M., Brandner, Carl F., and Townsend, Harold L. 3,467,190.

Brandon, O. B.: *See—*
Tiner, Robert F., and Brandon, O. B. 3,467,384.

Brandt, Karl: *See—*
Hess, Kurt, Meckbach, Heinrich, Brandt, Karl, and Wolz, Hermann 3,467,536.

Brasen, Wallace Raymond, and Cleaver, Charles Spencer, to Du Pont de Nemours, E. I., and Company. Copolymers of tetrafluoroethylene and olefins curable to elastomers. 3,467,635, Cl. 260-080.76

Bratland, Arthur. Sterilisation of milk products. 3,467,531, Cl. 099-212.

Braucksiek, Henry C.: *See—*
Jackson, Wilbur F., and Braucksiek, Henry C. 3,467,893.

Brauer, Lothar W., to Auergesellschaft G.m.b.H. Colorimetric indicator. 3,467,601, Cl. 252-408.

Braun, Gilles G. Heater stand and cavity injector. 3,466,752, Cl. 032-060.

Braun, Robert A., to Du Pont de Nemours, E. I., and Company. 2,2,5,5-Tetraperhaloalkyl-4,4-dialkoxy substituted-1,3-dioxolane. 3,467,674, Cl. 260-340.9

Bray, Geo., & Company Limited: *See—*
Hancock, John, 3,467,316.

Breitman, Leo: *See—*
Orr, Robert J., Breitman, Leo, and Buckler, Ernest J. 3,467,620.

Brenner, William C.: *See—*
Frisch, Erling, and Brenner, William C. 3,467,076.

Breuer, Klaus, to Hai Hacmun. Intelligence storing tape device. 3,467,338, Cl. 242-192.

Bricker, Robert E., and Price, Ralph E., to Landis Tool Company, mesne. Feed stabilizing device. 3,467,074, Cl. 125-011.

Bridges, Trevor Frederick, and Climie, Ian E. Application of liquid to filaments. 3,467,062, Cl. 118-216.

Bridgestone Tire Company Limited: *See—*
Onishi, Akira, Ishikawa, Takao, Sakata, Ryozo, Fujio, Ryota, and Tsuruta, Teiji, 3,467,624.

Brindell, Gordon D., to Uniroyal, Inc. Phenolic phosphites. 3,467,737, Cl. 260-953.

Brinkley, Max D., and Griffiths, Robert I., to Goodyear Tire & Rubber Company , The. Applying adhesive to skived tire tread. 3,467,063, Cl. 118-314.

British Hovercraft Corporation Limited: *See—*
Hardy, Derek James, and Riddle, Lavis Albert Henry, 3,467,215.

British Oxygen Company Limited, The: *See—*
Webster, Thomas J., 3,467,365.

Britt, James Edward, Warren, Larry Hartwell, and Melville, John Ward, to Xerox Corporation. Sheet distributor. 3,467,371, Cl. 270-058.

Broadbent, John L., Bowden, Kenneth, and Ross, William James, to Smith, Kline & French Laboratories. 2,4-diloweralkanoyl phloroglucinol derivatives. 3,467,715, Cl. 260-592.

Broggie, Roger E., and Gurr, Robert H., to Wed Enterprises, Inc. Passenger-carrying apparatus. 3,467,026, Cl. 105-341.

Brohl, Walter. Ship's rudder. 3,467,045, Cl. 114-167.

Broll, Gunter, and Kopp, Gerhard, to Entwicklungsring Sud GmbH. Airframe-integrated nozzle for aircraft. 3,467,315, Cl. 239-265.35

Bromer, William W., Hoehn, Marvin M., and McGuire, James M., to Lilly, Eli, and Company. Antibiotic A195 and process for the preparation thereof. 3,467,751, Cl. 424-119.

Broniewski, Bodhan, and Warszawski, Bernard, to Societe Generale de Constructions Electriques et Mechaniques (ALSTHOM). Air-cushion supported, high-speed vehicle for operation on a support and guide track. 3,467,024, Cl. 104-134.

Brooks, E. J., Company: *See—*
Moberg, Sigurd M., 3,467,427.

Brooks, Robert, Wakabayashi, Kinjiro, and Kida, Nobutoshi. Umbrella. 3,467,115, Cl. 135-025.

Brough-Cunningham, Keith Begbie, Wardle, Leonard George, and Cullen, Michael, to English Electric Company Limited, The. Electrical measuring systems. 3,467,889, Cl. 317-028.

Broussard, Douglas E., and Hemphill, Dean P., to Shell Oil Company. Offshore installation and method of installing a pipe riser. 3,466,882, Cl. 061-072.3

Brown, Boveri & Cie Aktiengesellschaft: *See—*
Stopp, Alfred, 3,466,745.

Brown, Cicero C. Hydraulically driven power head. 3,467,202, Cl. 173-057.

Brown, Fred, to Union Tank Car Company. Tank car. 3,467,027, Cl. 105-362.

Brown, James A., Garrett, Walter L., and Wielicki, Henry, to Dow Chemical Company, The. Method of preparing electrophotographic photoconductive compositions. 3,467,603, Cl. 252-501.

Brown, James Rankin, to Hemisphere Food Products Corporation, mesne. Dispensing system. 3,467,230, Cl. 141-059.

Brown, Martin M., to Robin Products Company. Molding fastener. 3,466,709, Cl. 024-073.

Brown, Martin M., to Robin Products Company. Resilient fastening device in threaded bore. 3,466,966, Cl. 085-005.

Brown, Ralph H., Jr., to Marshall, John Donald, and Bomer, Horace L., as trustee of Carolina Patent Development Trust, The. Filling control for shuttleless looms and fabric. 3,467,148, Cl. 139-122.

Brown, Silas A., to Buckbee-Mears Company. Method of manufacture of master pattern containing an array of dots. 3,467,560, Cl. 156-006.

Brown, William H., 'Automatic'Sprinkler Corporation of America, mesne. Demand valve. 3,467,137, Cl. 137-494.

Bruhin, Paul: *See—*
Dosch, Peter, Benz, Emil, and Bruhin, Paul 3,467,149.

Bruhne, Friedrich: *See—*
Raichle, Karl, Bruhne, Friedrich, Prater, Klaus, Nischk, Gunther, and Andres, Karl-Heinz 3,467,619.

Brumlik, George C. Molecular model assembly. 3,466,759, Cl. 035-018.

Brunel, Henri. Product for protecting against and inhibiting corrosion. 3,467,533, Cl. 106-014.

Brunner, Alfred, to Sulzer Brothers Limited. Combustion chambers of angular cross-section for steam-raising plants. 3,467,068, Cl. 122-510.

Brunsdon, William E.: *See—*
Keller, Robert C., and Brunsdon, William E. 3,466,942.

Brunswick Corporation: *See—*
Webber, Harold H., 3,467,478.
Weichselbaum, Theodore E., and Zmuda, Benjamin D., 3,467,617.

Bryan, Hugh D.: *See—*
Mercer, Neil H., and Bryan, Hugh D. 3,467,754.

Bryant, Austin U., to Grove Valve and Regulator Company. Packing means. 3,467,394, Cl. 277-001.

Bryant, John F., to Stromberg-Carlson Corporation. Scanner employing interleaved light conducting and light detecting optical fibers. 3,467,774, Cl. 178-007.2

Buck, Thomas F.: *See—*
Cox, John E., Hasser, George L., Boehm, Guenter J., Westhead, Stanley J., Feldman, Theodore, and Buck, Thomas F. 3,467,780.

Buckbee-Mears Company: *See—*
Brown, Silas A., 3,467,560.

Buckler, Ernest J.: *See—*
Orr, Robert J., Breitman, Leo, and Buckler, Ernest J. 3,467,620.

Buckler, Sheldon: *See—*
Bader, Henry, and Buckler, Sheldon 3,467,711.

Bugaut, Andree, Kalopissis, Gregoire, and Bertrand, Jacques, to Societe anonyme dite: L'Oreal. Dye stuffs comprising derivatives of anthra- quinone for dyeing live human hair and use thereof. 3,467,483, Cl. 008-010.1

Buhr, Jacob, to Electrohome Limited. Automatic muting networks for signal seeking receivers. 3,467,868, Cl. 325-456.

Buhr, Jacob, to Electrohome Limited. A.F.C. defeat networks for signal seeking receivers. 3,467,873, Cl. 325-471.

Buick, Kurt, Klein, Heinrich, and Weber, Eduard, to Siemens Aktiengesellschaft. Air cleaner for internal combustion engines. 3,466,853, Cl. 055-001.

Buker, Paul S., Taylor, Donald M., and Weich, Peter J., to Armco Steel Corporation. Crimping tool. 3,466,727, Cl. 029-200.

Burbridge, William P., Morgan, John R., and Schmitt, Thomas S., to Surgical Eng., and Research Corporation. Method and apparatus for dental anesthetization. 3,467,104, Cl. 128-400.

Burch, Edward N. Combination sled and boat. 3,467,048, Cl. 115-021.

Burke, Donald J., to Continental Industries, Inc. Ball valve with improved resilient closing means. 3,467,355, Cl. 251-163.

Burnett, Thomas Brian, to English Electric Company Limited, The. System for measuring high voltage line parameters utilizing optical transmission path. 3,467,858, Cl. 324-052.

Burroughs Corporation: *See—*
Jablonski, Richard J., 3,467,233.
Paige, Walter Griffin, 3,467,232.
Sprude, Edgar O., and Marshall, Walter H., 3,467,892.
Stern, David M., Mann, Abe, and Ogle, James A., 3,467,775.
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Hughes, Gordon Alan, and Smith, Herchel. Synthesis of gonane derivatives. 3,467,652, Cl. 260-239.55

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Janke, Fritz, to General Motors Corporation. Lubricating arrangements for motor vehicle change- speed gearing. 3,467,221, Cl. 184-006.

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Jen, Timothy Y., Hughes, Gordon A., and Smith, Herchel, to American Home Products Corporation. 5-Hydroxy-2,2,7-trialkylchroman-4-ones and derivatives. 3,467,676, Cl. 260-345.2

Jenkins, Roy M., to Lindy Pen Company Incorporated. Holding clip for pocket instrument. 3,466,708, Cl. 024-011.

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Justice, Donald S. Method and apparatus for making piling. 3,466,879, Cl. 061-535.

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Karsh, Herbert, to Lexington Instrument Corporation. Defibrillator paddle stand including means for applying electrocardiographic electrode paste to paddles and permitting paste conductivity tests. 3,467,863, Cl. 324-065.

Kasuga, Jiro, and Shwgeyama, Shogo, to Trio Corporation. Automatic frequency sweep apparatus. 3,467,872, Cl. 325-471.

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Kawawada, Akiko, to Fuji Shashin Film Kabushiki Kaisha. Shock absorbing package and display member. 3,467,245, Cl. 206-046.

Kazamaki, Tomokazu, and Matsumoto, Tohru, to Asahi Kogaku Kogyo Kabushiki Kaisha. Telephoto lens system of low chromatic aberration. 3,467,462, Cl. 350-002.

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Klapproth, Christian P., Jr., and Doxzon, Melvin R. Threaded sheet metal fitting. 3,467,411, Cl. 285-219.

Klebanow, Norman K., and Sager, Dan, to Longacre Press, Inc., The, mesne. Apparatus for coating and curing epoxy resin on sheets. 3,467,060, Cl. 118-058.

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Magee, Richard Joseph, to American Cyanamid Company. 0,0,0'-Tetraloweralkyl 0,0' dithio di-ρ- phenylene phosphorothioates. 3,467,734, Cl. 260-930.

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Magnavox Company, The: *See—*
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Magnuski, Henry, to Motorola, Inc. Speech bandwidth reduction by sampling 1/N cycles, storing the samples, and reading the samples out at 1/N the sampling rate. 3,467,783, Cl. 179-015.555

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Magrini, Ugo. Apparatus for the measurement of low velocities of flow of liquids with weak electrical conductance. 3,466,927, Cl. 073-194.

Mahaffy & Harder Engineering Company: *See—*
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Mahaffy, Reid A., and Hamilton, Joel A., to Mahaffy & Harder Engineering Company. Evacuated package with semirigid shell and flexible closure. 3,467,244, Cl. 206-045.34

Mahin, William E., to Kaiser Industries Corporation. Process for continuously casting oxidizable metals. 3,467,167, Cl. 164-056.

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Maidenform, Inc.: *See—*
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Makowicki, James M., to Curtis, S., & Son, Incorporated. Blister package. 3,467,248, Cl. 206-078.

Mallander, Richard G., to Shell Oil Company. Method of mining thick coal seams by longwalling and conveying. 3,467,435, Cl. 299-011.

Mallory, P. R., & Co., Inc.: *See—*
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March, Adrian Anthony Cecil. Structural assembly for use in a building. 3,466,832, Cl. 052-536.

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Marchant, Paul A., and McHardy, Kenneth Ray, to Rexall Drug and Chemical Company. Rotatable closure assembly with rim. 3,467,287, Cl. 222-480.

Marconi, Walter, Cesca, Sebastiano, and Arrighetti, Sergio, to SNAM S.p.A. Catalytic compositions for polymerization and copolymerization of alpha-mono-olefins, and processes using such compositions. 3,467,639, Cl. 260-088.2

Marcovitch, Jacob, to Rotary Profile Anstalt. Mass production of standardised components. 3,466,911, Cl. 072-091.

Marcovitch, Jacob, to Rotary Profile Anstalt. Manufacture of annular articles. 3,466,912, Cl. 072-110.

Marcovitch, Jacob, to Rotary Profile Anstalt. Working of plastically deformable materials. 3,466,916, Cl. 072-299.

Marcovitch, Jacob, to Rotary Profiles Anstalt. Profiling of workpieces. 3,466,918, Cl. 072-366.

Marinelli, Nicola, and Whitaker, John G., to National Cash Register Company, The. Process for preparation of autogenously reactant minute capsules. 3,467,544, Cl. 117-100.

Marle, David John, to Garrett Corporation, The. Resiliently mounted bearing arrangements. 3,467,451, Cl. 308-026.

Marnati, Maria Pia: *See—*
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Martin, Daniel W., to Baldwin, D. H., Company. Multiple speaker sound output system for reducing intermodulation distortion. 3,467,758, Cl. 084-001.02

Martin, John, to Fabricacion de Maquinas. Rolls for glass drawing machinery. 3,466,722, Cl. 029-123.

Martin-Marietta Corporation: *See—*
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McKinney, James L., 3,467,958.

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Martin, Robert L., to General Electric Company. Duplex socket contact with breakoff tab. 3,467,941, Cl. 339-031.

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Massey-Ferguson G.m.b.H.: *See—*
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Massey-Ferguson Industries Limited: *See—*
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Massey, Gail A., to Sylvania Electric Products, Inc. Apparatus and method for producing holograms with acoustic waves. 3,467,216, Cl. 181-000.5

Masuda, Masami, to International Mechanical Vibration Laboratory, Inc. Electromagnetic vibration apparatus. 3,467,925, Cl. 335-221.

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Matthews, Benjamin H., to Lucerne Products, Inc. Reversing switch. 3,467,801, Cl. 200-157.

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Maxwell, Richard D., to Amana Refrigeration, Inc. Combination freezer and refrigerator with fast freezing means. 3,466,891, Cl. 062-419.

Mayer & Cie: *See—*
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Mayer, Ferdy. Electrical circuit protection devices utilizing capacitor discharge. 3,467,890, Cl. 317-033.

Mayer, Rudi, and Suling, Carlhans, to Farbenfabriken Bayer Aktiengesellschaft. Copolymers of acrylonitrile and process for preparing same. 3,467,629, Cl. 260-079.3

Mayumi, Kazuaki: *See—*
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Mazzoni, Renato J.: *See—*
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Mc Callister, Joseph David, Mc Math, Allen M., and Anderson, Darwin Arthur, to University of Iowa, The State of Iowa for the use and benefit of the. Tablet cleaning apparatus. 3,466,695, Cl. 015-306.

McCarthy, John J., to Norco, Inc. Releasable plug-and-socket fastener. 3,466,715, Cl. 024-230.

McCarthy, John J., to Norco, Inc. Quick release pin. 3,466,965, Cl. 085-003.

McConnell, Wayne Varon, and Moore, William Howard, to Eastman Kodak Company. Epoxidized hydrocarbon mixtures. 3,467,615, Cl. 260-030.4

McCormick, Mack H., to Lilly, Eli, and Company. Process for the recovery and purification of cephalosporin C. 3,467,654, Cl. 260-243.

McCrosky Tool Corporation: *See—*
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McElro, Russell A., to Electrohome Limited. Spherical bearing assembly. 3,467,452, Cl. 308-026.

McGahee, Welbourne D., 1/4 to Maddux, William R., and 1/4 to Rathmann, Jim. Fluid tank with dump valve. 3,466,672, Cl. 004-041.

McGary, Robert L., to Furnas Electric Company. Magnetic contactor with special supporting frame. 3,467,921, Cl. 335-132.

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Bromer, William W., Hoehn, Marvin M., and McGuire, James M. 3,467,751.

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McHenry, Kenneth A., and Amtsberg, Lester A., to Chicago Pneumatic Tool Company. Fastener driving machine. 3,466,730, Cl. 029-208.

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McKay Machine Company, The: *See—*
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Mc Kinney, Dorsey L.: *See—*
Pfeffer, John W., and Mc Kinney, Dorsey L. 3,467,155.

McKinney, James L., to Martin-Marietta Corporation. Analog to digital converter using a plurality of radix amplifiers. 3,467,958, Cl. 340-347.

Mc Kinney, Richard W.: *See—*
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McKinstry, John R., Monck, Myron C., and Hayes, Robert L., to Goodrich, B. F., Company, The. Inflatable bag catheter. 3,467,103, Cl. 128-349.

Mc Math, Allen M.: *See—*
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McNair, Samuel, to Songrand Corporation, The. Combined heating and massaging device. 3,467,080, Cl. 128-024.2

McNamara, William L., to Anchor Hocking Corporation. Self-aligning glass shears. 3,467,514, Cl. 065-334.

McNeal, Daniel R., Jr., to Andale Company. Valve operating equipment particularly for automatically modulated valves. 3,466,945, Cl. 074-625.

McNeil Laboratories, Incorporated: *See—*
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McSherry, Thomas W., to Pedersen, Jakob S. Pedersen, Peder M., each a twelve and one-half percent, and Lazar, Joseph D., a twenty-five percent. Transformable structures. 3,467,114, Cl. 135-002.

McVicker, Robert F.: *See—*
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Mead Johnson & Company: *See—*
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Mec-O-Matic, Inc.: *See—*
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Meckbach, Heinrich: *See—*
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Mees, Robert D.: *See—*
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Mehl, Thomas L. Decofative furpiece. 3,466,663, Cl. 002-065.

Mehr, Hans P., to General Electric Company. Ejector nozzle. 3,467,312, Cl. 239-127.3

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Melville, John Ward: *See—*
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Menell, Hans, and Johannes, Gunter, to Continental Gummi-Werke Aktiengesellschaft. Pneumatic tire. 3,467,161, Cl. 152-354.

Mercer, Neil H., and Bryan, Hugh D., to Mead Johnson & Company. Bronchodilator expectorant elixir. 3,467,754, Cl. 424-253.

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Merck & Co., Inc.: *See—*
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Schwam, Harvey, 3,467,667.
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Merkatoris, John R.: *See—*
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Mess, Alfred W. Grinder for truing and smoothing the tires of the mammoth rotary kilns used in the manufacture of cement and similar purposes. 3,466,808, Cl. 051-099.

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Messerschmitt-Bolkow Gesellschaft mit beschrankter Haftung: *See—*
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Meyer-Jagenberg, Gunther, to Jagenberg-Werke AG. Method of and apparatus for inserting marking strips into stacks of sheets. 3,466,983, Cl. 093-093.

Meyer, Robert W., to Boise Cascade Corporation. Proof-of-purchase compartment envelope. 3,467,299, Cl. 229-070.

Miccioli, Bruno R.: *See—*
Lambertson, Wingate A., and Miccioli, Bruno R. 3,467,745.

Michaels, Alan S., to Amicon Corporation. Moisture permeable polyion complex-resinous composites. 3,467,604, Cl. 260-002.5

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Microdot Inc.: *See—*
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Microscal Limited: *See—*
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Microtherm Limited: *See—*
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Mielke, Lloyd L. Safety pivot connection. 3,467,422, Cl. 287-100.

Miermans, Guy Jean Martin. Aerial projectile target game with spin imparting projector. 3,467,383, Cl. 273-101.

Mignot, Noel Henri Marie, and Stahl, Andre Robert Raymond, to Societe Anonyme Societe Alsacienne de Construations Atomiques de Telecommunications et d'Electronique. Amagnetic cryogenic motor. 3,467,841, Cl. 310-010.

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Milbert, Gerard, and Pagni, Georges, to Rhone-Poulenc S.A. Preparation of organosiloxanes by the reaction of organosilicon hydrides with organosilanols. 3,467,685, Cl. 260-448.2

Miles Laboratories, Inc.: *See—*
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Miller, Harold N.: *See—*
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Miller, Joseph N., and Harbaugh, Arthur G., to Jackes-Evans Manufacturing Company. Foldable backstop down-lock means. 3,467,377, Cl. 273-001.5

Miller, Norman J., to Motorola, Inc. J-K flip-flop. 3,467,839, Cl. 307-289.

Miller, Paul F. Teaching machine. 3,466,758, Cl. 035-008.

Milligan, Frederick H., to Crown Zellerbach Canada Limited. Method and apparatus for reeling flexible sheet material. 3,467,335, Cl. 242-067.1

Mills, George, to Colgate-Palmolive Company. Apparatus for making steel wool pads. 3,467,056, Cl. 118-040.

Milton Industries Incorporated: *See—*
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Mitchell, William A., and Schwartzberg, Henry G., to General Foods Corporation. Process for producing a supersaturated solution of carbon dioxide. 3,467,526, Cl. 099-079.

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Mittag, Walter, to Voit, J. M., G.m.b.H. Mechanism for tensioning endless belt-like members. 3,466,940, Cl. 074-242.14

Mittelberger, Karl Heinz: *See—*
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Mittermaier, Armin F.: *See—*
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Mizell, Leonard. Drawworks. 3,467,360, Cl. 254-175.7

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Mobil Oil Corporation: *See—*
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Dingley, Alan J., 3,467,189.
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Messenger, Joseph U., 3,467,193.
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Moffett, Robert D., to Upjohn Company, The. 1,1-Diphenyl-2-methyl-3-(trimethoxy- benzylamino)-propanols and the salts thereof. 3,467,709, Cl. 260-570.

Mogle, Rodman A., to General Electric Company. Combination electrical, mechanical, and thermal connector assembly. 3,467,891, Cl. 317-101.

Moldovan Velniceriu, Adrian, and Mihaiu, Traian, to Ministerul Industriei Chimice. Process for obtaining parachlorophenylisocyanate. 3,467,689, Cl. 260-453.

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Monsanto Chemicals Limited: *See—*
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Montblanc-Simplo G.m.b.H.: *See—*
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Mooney, Ida May. Headwear. 3,466,665, Cl. 002-207.

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Moran, Edward F., and Reider, Donald P., to Du Pont de Nemours, E. I., and Company. Linear phosphonitriles. 3,467,704, Cl. 260-551.

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Morgan Engineering Company: *See—*
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Morici, Emanuele A., and Zimatore, Carmelo. Automatic tuner control devices. 3,467,871, Cl. 325-470.

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Morris, Hosea D., Sr. Method of manufacturing centrifugal pump casings. 3,466,724, Cl. 029-156.4

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Morrison, Frank W., and Morrison, Jerry E. Self-propelled earth excavating and leveling apparatus. 3,466,770, Cl. 037-117.5

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Morrison, Frank W., and Morrison, Jerry E. 3,466,770.

Morrison, John K.: *See—*
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Mortley, Harold Redvers, Chapman, Thomas Grandin, Goodspeed, Morley James, and Savage, John Vivian. Event recorder. 3,467,305, Cl. 234-001.

Morton Manufacturing Company: *See—*
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Mosely, Graham Hartwell: *See—*
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Mosgrove, Walter G.: *See—*
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Mosher, Walter W., Jr.: *See—*
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Motis, Gilbert M. Linear to rotational movement converter. 3,466,937, Cl. 074-089.22

Motis, Gilbert M. Solenoid elbow. 3,466,944, Cl. 074-527.

Motorola, Inc.: *See—*
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Mount, Wadsworth W. Method of joining tubes by driven force fit and joint produced thereby. 3,466,738, Cl. 029-525.

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Mueller Co.: *See—*
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Mueller, Gerhard: *See—*
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Muessel, Dan C., to American Metal Climax, Inc. Breakaway for a sliding closure. 3,466,805, Cl. 049-141.

Muhler, Joseph C., to Indiana University Foundation. Process for producing a stabilized ready-to-eat breakfast cereal product. 3,467,529, Cl. 099-153.

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Spivack, John Denon: *See—*
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Spivey, Richard F., and Drees, Jan M., to Bell Aerospace Corporation. Rotor blade. 3,467,197, Cl. 170-159.
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Spruitenburg, Marinus J.: *See—*
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Standley, Wendell E., and Wittmann, Richard B., to Johns-Nigrelli-Johns, Inc. Method and apparatus for loading cases. 3,466,834, Cl. 053-026.
Stang Cofor Inc.: *See—*
Novet, Gabriel, 3,466,769.
Stangl, Arnold, Herberhold, Dieter, and Pfister, Franz, to Bolkow Gesellschaft mit beschrankter Haftung. Aiming and tracking device for guided jet- propelled missiles. 3,466,968, Cl. 089-001.815
Stangl, Arnold, Herberhold, Dieter, and Pfister, Franz, to Messerschmitt-Bolkow Gesellschaft mit beschrankter Haftung. Guided missile aiming and tracking device in form of self-contained unit. 3,466,969, Cl. 089-001.815

Stark, William A.: *See—*
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Stayner, Robert A., to Chevron Research Company. High temperature soldering oil. 3,467,556, Cl. 148-025.

Stefanik, Donald J., to SCM Corporation. Binary numbers comparator circuit. 3,467,946, Cl. 340-146.2

Steffen, Hermann, Jones, Rodney, and Nellen, Horst, to Teves, Alfred, GmbH. Hydrodynamic brake with axially shiftable stator. 3,467,225, Cl. 188-090.

Steiner, John E.: *See—*
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Stelmakh, Viktor Alexeevich: *See—*
Boborykin, Jury Alexandrovich, Kononenko, Vadim Grigorievich, Dadykin, Georgy Fedetovich, Levkin, Dmitry Dmitrievich, Pravdin, Viktor Sergeevich, Stelmakh, Viktor Alexeevich, Fulmakht, Veniamin Veniaminovich, Schekochikhin, Serafim Vasilievich, and Pikhtovnikov, Rostislav Vyacheslavovich 3,466,960.

Sten, Arne O., to Pharmacia Fine Chemicals AB. Method for the separation of substances of different molecular sizes from a solution of said substances in a solvent. 3,467,595, Cl. 210-026.

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Stenger, Hans G., to American Can Company, mesne. Apparatus for making hollow plastic objects. 3,466,702, Cl. 018-005.

Stephanoff, Nicholas N., to Fluid Energy Processing & Equipment Company. Fluid energy grinding method and means. 3,467,317, Cl. 241-005.

Sterling, Henley Frank, to International Standard Electric Corporation. Polycrystalline semiconductor devices. 3,467,557, Cl. 148-175.

Sterling Seal Company: *See—*
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Stier, Henry W., to Carmet Company. Tool holder. 3,466,955, Cl. 082-036.

Stillman, Donald W.: *See—*
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Stilson, Vernard McComb. Protective structure for rose trees and the like. 3,466,799, Cl. 047-021.

Stinchcomb, Raymond G., to AAI Corporation. Hit indicator arrangement. 3,466,761, Cl. 035-025.

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Stoner, Norman H. Disposable horse blanket and girth sheath. 3,466,852, Cl. 054-065.

Stopp, Alfred, to Brown, Boveri & Cie Aktiengesellschaft. Method of making laminated bus bar assembly. 3,466,745, Cl. 029-624.

Stotzer, Roger H., Lee, William H., and Vandeman, Jack E., to Harris-Intertype Corporation. Electrical controls for a multiple couple printing press. 3,467,007, Cl. 101-137.

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Strien, Hans, to Teves, Alfred, GmbH. Brake-force regulator. 3,467,440, Cl. 303-006.

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Stuart, Whitfield M. P., and Stuart, Derek M. Pantographic milling machine. 3,466,974, Cl. 090-013.1

Studtmann, George Henry, and Burtness, Roger W., to Borg-Warner Corporation. Speed control system utilizing constant- amplitude voltage of variable frequency to energize an electric motor. 3,467,904, Cl. 318-230.

Sturges, Thomas B., to Crown Zellerbach Corporation. Bag placer mechanism and method. 3,466,837, Cl. 053-029.

Sud-Atlas-Werke GmbH: *See—*
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Sugahara, Eisuke, to Nippon Piston Ring Co., Ltd. Oil scraping ring combined with coiled expander. 3,467,397, Cl. 277-139.

Suh, John T., to McNeil Laboratories, Incorporated. 2-Phenyl-3-amido-5,6-dimethoxyindoles. 3,467,670, Cl. 260-326.14

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Sumiyoshi, Masaharu: *See—*
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Sundstrand Corporation: *See—*
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Surgical Eng., and Research Corporation: *See—*
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Susquehanna Corporation, The: *See—*
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Swope, David L.: *See—*
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Symons Mfg., Company: *See—*
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Syntex Corporation: *See—*
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Tamura, Hifumi, and Kimura, Hirokazu, to Hitachi, Ltd. Electron beam evaporator. 3,467,057, Cl. 118-049.1

Taniguchi, Koichi: *See—*
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Tarmann, Bruno, to Gebr. Bohler & Co., Aktiengesellschaft. Apparatus for the continuous casting of tubular products. 3,467,170, Cl. 164-282.

Tatsuzawa, Yoshinobu, Uchida, Kosaku, and Mayumi, Kazuaki, to Matsushita Electric Industries Co., Ltd. Pulse modulation system. 3,467,876, Cl. 328-150.

Taube, Carl: *See—*
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Taylor, Arkle D., to Goodyear Tire & Rubber Company, The. Polymerization process. 3,467,641, Cl. 260-094.3

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Taylor, George H., Jr. Method of servicing printed circuit boards. 3,466,732, Cl. 029-426.

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Teggelaar, Claude, and De Bruyn, William T., to Grand Rapids Hardware Manufacturing Co., mesne. Balance structure for windows and the like. 3,466,806, Cl. 049-445.

Teijin Limited: *See—*
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Temple, Hiram E., to Baker Perkins Inc. Bakery product handling system. 3,466,839, Cl. 053-055.

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Teves, Alfred, GmbH: *See—*
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Tevis, Petr Isaakovich, Kostochkin, Vladimir Nikolaevich, Ananev, Vladimir Alexandrovich, Krjukov, Viktor Mikhailovich, and Mitin, Dmitry Mikhailovich. Recirculating heating device. 3,467,179, Cl. 165-122.

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Thomas, Walter C., to Beckman Instruments, Inc. Bilateral electronic switching circuit employing light-sensitive control element and FET input. 3,467,836, Cl. 307-249.

Thompson, James R., to Washington Iron Works. Snorkel-equipped loading boom with safeguard against destructive bending of snorkel. 3,467,260, Cl. 212-007.

Thompson, Phillip G., to Minnesota Mining and Manufacturing Company. Fluorocarbon compounds. 3,467,718, Cl. 260-610.

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Thompson, Robert G., to Du Pont de Nemours, E. I., and Company. Glycols containing two hydroxymethylcyclohexyl groups. 3,467,719, Cl. 260-617.

Thornblad, Rolf F. G., to Svenska Ackumulator Aktiebolaget Jungner. Device in electrical storage batteries and methods for mounting said device. 3,467,550, Cl. 136-079.

Thornhill, William J., and Welty, Richard O., to Phillips Petroleum Company. Control system to produce cyclical rotary motion. 3,467,905, Cl. 318-443.

Thrust, Incorporated: *See—*
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Thue, Baard H.: *See—*
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Thurn, Robert Dean, to Du Pont de Nemours, E. I., and Company. Method of increasing the molecular weight of olefin polymers by use of a polyisocyanate. 3,467,628, Cl. 260-077.5

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Tignor, Thomas Franklin. Therapeutic vapor bath. 3,466,675, Cl. 004-160.

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Tiner, Robert F., and Brandon, O. B. Toy horseshoe game. 3,467,384, Cl. 273-101.

Tisdale, Norman E., Jr., to Susquehanna Corporation, The. Hot top liner. 3,467,173, Cl. 164-339.

Tkachev, Vladimir Vasilievich, Oganesov, Vladimir Nikitovich, and Slanevsky, Anatoly Vasilievich. Sorting armored linings for tube mills. 3,467,321, Cl. 241-183.

Toesca, Rene A. M., to Energy Transformation Corporation. Combustion optimizing devices and methods. 3,467,072, Cl. 123-141.

Tolchinsky, Efim Moiseevich: *See—*
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Toto, William A., to Schubert & Salzer Maschinenfabrik Aktiengesellschaft. Connectors for flexible welding cable assemblies. 3,467,457, Cl. 312-045.

Toto, William. Electrically conductive cable rope. 3,467,767, Cl. 174-113.

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Trischberger, Karl. Moisture content sensing probe including wiper means for continuous wiping of test material. 3,467,860, Cl. 324-061.

Troutner, Arthur L. Modular space deck. 3,466,824, Cl. 052-262.

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Tunkel, Norman, and Miller, Harold N., to Esso Research and Engineering Company. Grafted terpolymers, their process of production, and use as additives for lubricants and fuels. 3,467,597, Cl. 252-056.

Turcotte, George J. Paddle wheel boat. 3,467,049, Cl. 115-023.

Turcotte, Maurice W. Cover for dump truck bodies. 3,467,431, Cl. 296-098.

Tyler, Nelson, to NTT Enterprises, Inc. Vibration damping mount. 3,467,350, Cl. 248-179.

U.S. Industries, Inc.: *See—*
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Uchida, Kosaku: *See—*
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Uchida, Teiji, to Nippon Electric Company, Limited. Optical maser device of the internal modulation type for pulse signal transmission. 3,467,915, Cl. 331-094.5

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Ulrich, Friedrich, to International Standard Electric Corporation. Route searching guide wire networks. 3,467,785, Cl. 179-018.

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Ulrich, Raymond M.: *See—*
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Ulrich, Solomon D.: *See—*
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Ultra-Violet Products, Inc.: *See—*
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Underwood, John T., Palmer, Burton M., Canfield, Sheldon A., and Pitt, Richard E., to Owens-Corning Fiberglas Corporation. Method and apparatus for forming products and control therefor. 3,467,739, Cl. 264-040.

Unger, Paul. Safety binding with double crank means. 3,467,407, Cl. 280-011.35

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Union Tank Car Company: *See—*
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United Control Corporation: *See—*
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ISSUED SEPTEMBER 16, 1969

NOTE.—First number, class; second number, subclass; third number, patent number

2– 65	3,466,663	29–200	3,466,728	51–336	3,466,816	66– 86	3,466,898	93– 93	3,466,983	116–114	3,467,054
171	3,466,664	203	3,466,729	52– 1	3,466,819	68– 5	3,466,899		3,466,984	117– 6	3,467,537
207	3,466,665	208	3,466,730	30	3,466,817	17	3,466,900	94– 1.5	3,466,985	8	3,467,538
227	3,466,666	426	3,466,732	79	3,466,818	18	3,466,901	13	3,466,986	36.1	3,467,539
240	3,466,667	429	3,466,731	188	3,466,820	207	3,466,902	18	3,466,987	47	3,467,540
322	3,466,668	455	3,466,733	204	3,466,821	253	3,466,903	39	3,466,988	93.4	3,467,541
3– 1	3,466,669	470.9	3,466,734	223	3,466,822	69– 30	3,466,904	44	3,466,989	94	3,467,542
	3,466,670	472.9	3,466,735	227	3,466,823	70–264	3,466,905	46	3,466,990	100	3,467,543
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4– 41	3,466,672	492	3,466,737	344	3,466,825	72– 27.2	3,466,915	11.5	3,466,992	114	3,467,545
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9– 8	3,466,680	205	3,466,754	74	3,466,840	467	3,466,922	212	3,467,531	406	3,467,069
10–141	3,466,681		3,466,755	124	3,466,842	73– 1	3,466,923	251	3,466,996	510	3,467,068
11– 1	3,466,682	34– 5	3,466,756	137	3,466,843		3,466,924	330	3,466,997	123– 14	3,467,070
12– 17	3,466,683	22	3,466,757	182	3,466,844	38	3,466,925	349	3,466,998	41.12:	3,467,071
142	3,466,684	35– 8	3,466,758	194	3,466,845	151	3,466,926	413	3,466,999	141	3,467,072
14– 27	3,466,685	18	3,466,759		3,466,846	194	3,466,927	100– 43	3,467,000	124– 11	3,467,073
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250.35:	3,466,694	101	3,466,768	27.5	3,466,856	88	3,466,936	216	3,467,009	66	3,467,082
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18– 4	3,466,700	10	3,466,774	34	3,466,862	516	3,466,942	38	3,467,017		3,467,088
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19	3,466,706	158	3,466,780	30	3,466,868	792	3,466,948	152	3,467,021	204	3,467,094
	3,466,707	43– 4	3,466,781	54	3,466,869	813	3,466,949	272	3,467,022	214.2	3,467,095
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	3,467,492	19.2	3,466,784	61– 22	3,466,872	208	3,467,517		3,467,025	303.1	3,467,098
	3,467,493	27.4	3,466,785	35	3,466,873	77– 1	3,466,951	105–341	3,467,026		3,467,099
66	3,467,494	42.17:	3,466,786	39	3,466,874		3,466,952	362	3,467,027	305	3,467,100
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122	3,467,496	44.96:	3,466,788	46	3,466,877	121	3,466,956	106– 3	3,467,532		3,467,102
148	3,467,497	131	3,466,789	.5	3,466,876	82– 14	3,466,954	14	3,467,533	349	3,467,103
202	3,467,498	46– 21	3,466,790		3,466,878	36	3,466,955	39	3,467,534	400	3,467,104
230	3,467,499	40	3,466,791	53.5	3,466,879	83– 23	3,466,957	64	3,467,535	425	3,467,105
	3,467,500	146	3,466,792	63	3,466,880	71	3,466,958	190	3,467,536	431	3,467,106
	3,467,501	161	3,466,793	72.3	3,466,881	205	3,466,959	107– 1	3,467,029	501	3,467,107
259.5	3,467,502	177	3,466,794		3,466,882	226	3,466,963	9	3,467,030	131– 20	3,467,108
288	3,467,503	232	3,466,797	84	3,466,883	308	3,466,960	14	3,467,031	140	3,467,109
	3,467,504	239	3,466,795	62– 13	3,466,884	694	3,466,961	108– 51	3,467,032	132– 5	3,467,110
365	3,467,505	241	3,466,796	48	3,466,885	84– 1.02:	3,467,758	150	3,467,033	46	3,467,111
24– 11	3,466,708	243	3,466,798	55	3,466,886	.25:	3,467,759	109– 59	3,467,034	133– 3	3,467,112
73	3,466,709	47– 21	3,466,799	141	3,466,887	312	3,466,962	110– 8	3,467,035	134– 4	3,467,549
	3,466,710	48–214	3,467,506	156	3,466,888	85– 1	3,466,964	106	3,467,036	113	3,467,113
95	3,466,711	49–141	3,466,805	184	3,466,889	3	3,466,965	112–121.15:	3,467,037	135– 2	3,467,114
123	3,466,712	174	3,466,800	320	3,466,890	5	3,466,966	203	3,467,038	25	3,467,115
205.1	3,466,713	404	3,466,801	419	3,466,891	11	3,466,967		3,467,039	47	3,467,116
208	3,466,714	428	3,466,802	467	3,466,892	89– 1.815	3,466,968	210	3,467,040	54	3,467,117
230	3,466,715	441	3,466,803	476	3,466,893		3,466,969	215	3,467,041	136– 79	3,467,550
28– 1.6	3,466,716	445	3,466,806		3,466,894	90– 11	3,466,970	113–116	3,467,042	86	3,467,551
28	3,466,717	483	3,466,804	64– 1	3,466,895		3,466,971	114– 66.5	3,467,043		3,467,552
72.16:	3,466,718	51– 60	3,466,807	27	3,466,896	12	3,466,972	72	3,467,044		3,467,553
29– 25.42:	3,466,719	99	3,466,808	65– 11	3,467,507		3,466,973	167	3,467,045		3,467,554
95	3,466,720	165	3,466,809	30	3,467,508	13.1	3,466,974	230	3,467,046	205	3,467,555
97	3,466,721		3,466,976	33	3,467,509	28.1	3,466,975	235	3,467,047	137– 1	3,467,118
123	3,466,722	229	3,466,812	59	3,467,510	91–458	3,466,977	115– 21	3,467,048	66	3,467,119
155	3,466,723		3,466,813	60	3,467,511	92– 95	3,466,978	23	3,467,049	68	3,467,120
156.4	3,466,724	238	3,466,810	99	3,467,512	93– 8	3,466,979	34	3,467,050	81.5	3,467,121
.8	3,466,725	266	3,466,811	183	3,467,513		3,466,980		3,467,051		3,467,122
157.3	3,466,726	297	3,466,814	334	3,467,514	35	3,466,981	40	3,467,052		3,467,123
200	3,466,727	313	3,466,815	66– 14	3,466,897	58.2	3,466,982	116–114	3,467,053		3,467,124

137– 81.5	3,467,125	174– 74	3,467,764	210– 26	3,467,595	242–197	3,467,339	260–327	3,467,671	277– 1	3,467,394
115	3,467,126	94	3,467,765	105	3,467,255		3,467,340		3,467,672	37	3,467,395
117	3,467,127	100	3,467,766	132	3,467,256		3,467,341	340.9	3,467,673	74	3,467,396
171	3,467,128	113	3,467,767	484	3,467,257	209	3,467,342		3,467,674	139	3,467,397
236	3,467,129	138	3,467,768	211– 43	3,467,258	244– 17.17	3,467,343	345.2	3,467,676	180	3,467,398
268	3,467,130		3,467,769	74	3,467,259	77	3,467,344		3,467,677	237	3,467,399
269	3,467,131	144	3,467,205	212– 7	3,467,260	105	3,467,345	.9	3,467,678	279– 1	3,467,400
323	3,467,132	175– 13	3,467,206	214– 1	3,467,261	110	3,467,347	346.1	3,467,679	4	3,467,401
329.04	3,467,133	55	3,467,207	2.5	3,467,262	130	3,467,348	.2	3,467,675	30	3,467,402
355.17	3,467,134	.72	3,467,208	15	3,467,263	135	3,467,349		3,467,680	58	3,467,403
410	3,467,135	386	3,467,210	16.4	3,467,264	137	3,467,346	373	3,467,681	66	3,467,404
489	3,467,136	395	3,467,209	42	3,467,265	248–179	3,467,350	397.5	3,467,682	280– 11.35	3,467,407
494	3,467,137	422	3,467,211	77	3,467,266	216	3,467,351	403	3,467,683	34	3,467,408
625.24	3,467,138	176– 55	3,467,577	305	3,467,267	221	3,467,352	404.5	3,467,684	47.24	3,467,405
.48	3,467,139	61	3,467,578	505	3,467,268	358	3,467,353	448.2	3,467,685	96.2	3,467,406
138– 31	3,467,140	178– 5.4	3,467,770	215– 6	3,467,269	249– 13	3,467,354		3,467,686	513	3,467,409
97	3,467,141	6	3,467,772	40	3,467,270	250– 51.5	3,467,824	453	3,467,687	285– 55	3,467,410
111	3,467,142	.6	3,467,771	219– 10.55	3,467,803	78	3,467,825		3,467,688	219	3,467,411
113	3,467,143	7.2	3,467,773		3,467,804	83.3	3,467,826		3,467,689	293	3,467,412
176	3,467,144		3,467,774	.57	3,467,805	214	3,467,827	463	3,467,690	332.2	3,467,413
139– .1	3,467,145		3,467,775	.73	3,467,806		3,467,828	465	3,467,691	382.2	3,467,414
26	3,467,146	23	3,467,776	69	3,467,807	219	3,467,829		3,467,692	287– 3	3,467,415
116	3,467,147	67	3,467,777	73	3,467,808	251–163	3,467,355		3,467,693	20.92	3,467,418
122	3,467,148	179– 1	3,467,778	124	3,467,809	164	3,467,356	471	3,467,694	53	3,467,419
371	3,467,149	6	3,467,781	216	3,467,810	214	3,467,357	481	3,467,695	58	3,467,420
140– 92.94	3,467,150	15	3,467,779	227	3,467,811	252– 12	3,467,596	488	3,467,696	85	3,467,421
141– 59	3,467,230		3,467,782	264	3,467,812	56	3,467,597	515	3,467,697	100	3,467,422
67	3,467,151	.55	3,467,783	275	3,467,813	62.54	3,467,598	524	3,467,698	189.36	3,467,416
143– 37	3,467,152	17	3,467,784	330	3,467,814	79.2	3,467,599	525	3,467,699		3,467,417
85	3,467,153	18	3,467,780	400	3,467,815	301.2	3,467,600	533	3,467,700		3,467,423
115	3,467,154		3,467,785	437	3,467,816	408	3,467,601		3,467,701	289– 13	3,467,424
135	3,467,155		3,467,786	501	3,467,817	455	3,467,602	539	3,467,702	292– 81	3,467,425
146–226	3,467,156	79	3,467,787	522	3,467,818	501	3,467,603	544	3,467,703	218	3,467,426
148– 25	3,467,556	84	3,467,788	220– 24.5	3,467,271	253– 77	3,467,358	551	3,467,704	322	3,467,427
175	3,467,557	100.1	3,467,790	39	3,467,272	254–168	3,467,359	558	3,467,705	340	3,467,428
149– 19	3,467,558	.2	3,467,789	46	3,467,273	175.7	3,467,360	561	3,467,706	352	3,467,429
44	3,467,559		3,467,791	86	3,467,274	256– 13.1	3,467,361		3,467,707	294– 65	3,467,430
151– 14	3,467,157	180– 6.2	3,467,212	221–197	3,467,275	259– 14	3,467,362	567.6	3,467,708	296– 98	3,467,431
30	3,467,158	120	3,467,213	260	3,467,276	36	3,467,363	570	3,467,709	297–162	3,467,432
152–209	3,467,159	127	3,467,214	264	3,467,277	260– 2.5	3,467,604	.8	3,467,710	442	3,467,433
352	3,467,160	128	3,467,215	222– 1	3,467,278		3,467,605	583	3,467,711	445	3,467,434
354	3,467,161	181– .5	3,467,216	31	3,467,279		3,467,606		3,467,712	299– 11	3,467,435
156– 6	3,467,560	31	3,467,218	57	3,467,280		3,467,607	586	3,467,713	31	3,467,436
49	3,467,561	182– 2	3,467,217	70	3,467,281		3,467,646	590	3,467,714	33	3,467,437
69	3,467,562	93	3,467,219	94	3,467,282	9	3,467,608	592	3,467,715		3,467,438
72	3,467,563	115	3,467,220	95	3,467,283	17.4	3,467,609	604	3,467,716	90	3,467,439
154	3,467,564	184– 6	3,467,221	166	3,467,284	22	3,467,610	606.5	3,467,717	303– 6	3,467,440
244	3,467,565	7	3,467,222	171	3,467,285	29.6	3,467,611	610	3,467,718	21	3,467,441
307	3,467,566	187– 29	3,467,223	394	3,467,286		3,467,612	617	3,467,719		3,467,442
415	3,467,567	188– 65.1	3,467,224	480	3,467,287		3,467,613		3,467,720		3,467,443
159– 47	3,467,162	90	3,467,225		3,467,288		3,467,614	621	3,467,721		3,467,444
160– 1	3,467,163	196	3,467,226	223– 40	3,467,289	30.4	3,467,615	652.5	3,467,722	84	3,467,445
188	3,467,164		3,467,227	52	3,467,290		3,467,616	674	3,467,723	305– 57	3,467,446
161–146	3,467,568		3,467,228	85	3,467,291	33.6	3,467,617		3,467,724	307– 10	3,467,830
160	3,467,569	245	3,467,229	226– 19	3,467,292	38	3,467,618		3,467,725		3,467,831
165	3,467,570	192– 43.1	3,467,231	189	3,467,293	40	3,467,619	683.15	3,467,726	41	3,467,832
170	3,467,571	195– 28	3,467,579	227– 8	3,467,294	41.5	3,467,620	.2	3,467,727	93	3,467,833
190	3,467,572	197– 1	3,467,232	228– 49	3,467,295		3,467,621		3,467,728	116	3,467,834
162– 19	3,467,573	16	3,467,233	229– 3.1	3,467,296	45.95	3,467,622	.62	3,467,729	125	3,467,835
24	3,467,574	133	3,467,234	37	3,467,297	47	3,467,623	834	3,467,730	249	3,467,836
78	3,467,575	172	3,467,235	41	3,467,298	63	3,467,624	859	3,467,731	260	3,467,837
237	3,467,576	198– 33	3,467,236	70	3,467,299	67	3,467,625	897	3,467,732	268	3,467,838
164– 6	3,467,165		3,467,237	230–143	3,467,300	75	3,467,626	927	3,467,733	289	3,467,839
49	3,467,166	88	3,467,238	235	3,467,301		3,467,627	930	3,467,734	308– 6	3,467,447
56	3,467,167	179	3,467,240	270	3,467,302	77.5	3,467,628	953	3,467,735	8.2	3,467,448
64	3,467,168	195	3,467,239	232– 35	3,467,303	79.3	3,467,629		3,467,737	9	3,467,449
98	3,467,169	220	3,467,241	233– 28	3,467,304	.5	3,467,630	956	3,467,736	15	3,467,450
282	3,467,170	200– 11	3,467,792	234– 1	3,467,305		3,467,631	261– 24	3,467,364	26	3,467,451
316	3,467,171		3,467,793	32	3,467,306	80.7	3,467,632	114	3,467,365		3,467,452
338	3,467,172		3,467,794	235– 61.11	3,467,819	.71	3,467,634	263– 6	3,467,366	174	3,467,453
339	3,467,173	38	3,467,795		3,467,820	.76	3,467,635	264– 30	3,467,738	187.1	3,467,454
165– 9	3,467,174	51.09	3,467,796	89	3,467,307	.77	3,467,636	40	3,467,739	310– 4	3,467,840
11	3,467,175	61.16	3,467,797	92	3,467,821	.78	3,467,633	69	3,467,740	10	3,467,841
17	3,467,176	86.5	3,467,798	236– 15	3,467,308		3,467,637	92	3,467,741	11	3,467,842
47	3,467,177	147	3,467,799	59	3,467,309	87.5	3,467,638	151	3,467,742	50	3,467,843
107	3,467,178	153	3,467,800	238– 4	3,467,310	88.2	3,467,639	176	3,467,743	168	3,467,844
122	3,467,179	157	3,467,801	10	3,467,311		3,467,640	205	3,467,744		3,467,845
180	3,467,180	167	3,467,802	239–127.3	3,467,312	94.3	3,467,641	317	3,467,745	248	3,467,846
166– 85	3,467,181	202–173	3,467,587	134	3,467,313	141	3,467,642	330	3,467,746	266	3,467,847
121	3,467,182	203– 14	3,467,580	138	3,467,314	158	3,467,644	266– 6	3,467,367	312– 7	3,467,455
	3,467,183	57	3,467,581	265.35	3,467,315	160	3,467,643	20	3,467,368	39	3,467,456
129	3,467,184	204– 1	3,467,582	594	3,467,316	174	3,467,645	36	3,467,369	45	3,467,457
147	3,467,185	9	3,467,583	240– 41.6	3,467,822	209	3,467,647	270– 58	3,467,371	223	3,467,458
216	3,467,186	32	3,467,584	81	3,467,823	211.5	3,467,648	85	3,467,370	231	3,467,459
251	3,467,189	39	3,467,585	241– 5	3,467,317	236.6	3,467,649	271– 56	3,467,372	242	3,467,460
252	3,467,190	98	3,467,586	42	3,467,318	239	3,467,650	272– 33	3,467,373	333	3,467,461
269	3,467,191	181	3,467,588	67	3,467,319		3,467,651	57	3,467,374	313–325	3,467,877
273	3,467,187		3,467,589	89	3,467,320	.55	3,467,652		3,467,375	346	3,467,878
274	3,467,188	195	3,467,590	183	3,467,321	.95	3,467,653	273– 1	3,467,376		3,467,879
279	3,467,192		3,467,591	213	3,467,322	243	3,467,654	.5	3,467,377	315– 11	3,467,880
292	3,467,193	224	3,467,592	247	3,467,323	244	3,467,655	34	3,467,378	13	3,467,881
305	3,467,194		3,467,593	242– 1.1	3,467,324		3,467,656	54	3,467,379	27	3,467,882
314	3,467,195	206– 1	3,467,242	18	3,467,325	249.5	3,467,657	55	3,467,380	39	3,467,883
315	3,467,196		3,467,243	43	3,467,326	268	3,467,658	96	3,467,381		3,467,884
170–159	3,467,197	45.34	3,467,244	46.21	3,467,327	290	3,467,659	101	3,467,383	111	3,467,885
160.48	3,467,198	46	3,467,245	54	3,467,328	293	3,467,660		3,467,384	163	3,467,886
172–261	3,467,199	56	3,467,246		3,467,329		3,467,661	106	3,467,385	209	3,467,887
584	3,467,200	57	3,467,249	55	3,467,331		3,467,662	126	3,467,386	317– 12	3,467,888
173– 36	3,467,201	59	3,467,250	.53	3,467,330	294.8	3,467,663	134	3,467,387	28	3,467,889
57	3,467,202	62	3,467,251	56	3,467,332	296	3,467,664	148	3,467,382	33	3,467,890
159	3,467,203	65	3,467,252	.2	3,467,333	302	3,467,665	176	3,467,388	101	3,467,891
169	3,467,204	72	3,467,247	58.3	3,467,334	306.8	3,467,666	179	3,467,389	117	3,467,892
174– 17	3,467,760	78	3,467,248	67.1	3,467,335	307	3,467,667	183	3,467,390	123	3,467,893
36	3,467,761	209– 73	3,467,253	84.53	3,467,336	309.6	3,467,668	195	3,467,391		3,467,894
59	3,467,762	111.6	3,467,254	107.4	3,467,337	326.12	3,467,669	274– 2	3,467,392	230	3,467,895
67	3,467,763	426	3,467,594	192	3,467,338	.14	3,467,670	9	3,467,393	234	3,467,896

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15 : 3,467,849	470 : 3,467,870	335– 23 : 3,467,920	31 : 3,467,941	7 : 3,467,961	81 : 3,467,747
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5 : 3,467,040
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6 : 215,195	6 : 215,245	18 : 215,215	26 : 215,214	36 : 215,240	42 : 215,231
215,197	9 : 215,217	215,253	215,218	215,241	215,232
215,198	215,258	20 : 215,250	215,222	215,242	215,233
215,201	10 : 215,210	25 : 215,211	27 : 215,220	39 : 215,203	215,237
215,208	12 : 215,205	215,221	215,229	215,226	215,252
215,212	17 : 215,194	215,224	215,259	215,235	44 : 215,239
215,216	215,206	215,225	34 : 215,243	215,247	47 : 215,251
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Plant Patents

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Defensive Publications Applications

Reference is by Serial No. (Notice of Apr. 11, 1968, 849 O.G. 1221)

1 : 804,478	36 : 752,701	40 : 801,843	42 : 793,231	47 : 657,707	51 : 811,338
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U.S. DEPARTMENT OF COMMERCE

OFFICIAL GAZETTE of the UNITED STATES PATENT OFFICE

September 16, 1969 Volume 866 Number 3

TRADEMARKS

NOTICES

Orders for Copies of Foreign Patents and/or Published Applications

Some foreign countries are not publishing their patents and/or applications in numerical order. Since the U.S. Patent Office will begin supplying orders for copies of these foreign documents from master microfilm reels made up on weekly or other periodic publishing sequences, effective immediately all orders must include the country, patent or application number, and the publication date (if known) of the ordered document. Reference should be made to Section 901 05(a) of the Manual of Patent Examining Procedure to assist in determining the publication date of the commonly encountered foreign patents and applications.

W. R. ARMSTRONG,
Aug. 21, 1969. *Director, Office of Patent Services.*

Service by Publication

A petition to cancel each of the registrations identified below having been filed, and the notice of such proceedings sent by registered mail to each registrant at the last known address having been returned by the Post Office as undeliverable, notice is hereby given that unless the registrants listed herein, their assigns or legal representatives, shall enter an appearance within thirty day from the date of this publication, the cancelation will be proceeded with as in the case of default.

Doggy-Cola, Inc., Miami, Fla., Reg. No. 822,070, Canc. No. 9354.

S. A. Shenk & Co., Columbus, Ohio, Reg. No. 597,214, Canc. No. 9405.

EDWIN L. REYNOLDS,
First Assistant Commissioner of Patents.

Trademark Suits

Notices under 15 U.S.C. 1116; Trademark Act of July 5, 1946

Reg. No. 155,951 (ALFRED DUNHILL (SIGNATURE)), Alfred Dunhill Limited, Tobacco, manufactured or unmanufactured; cigars and cigarettes; **Reg. No. 527,207** ("DUNHILL"), same, Pyrophoric lighters; **Reg. No. 527,208**, same, Tobacco pipes, cigar and cigarette holders; **Reg. No. 534,705**, same, Tobacco pouches made of leather; **Reg. No. 539,892**, same, Raw tobacco, smoking and chewing tobacco, snuff, cigars, and cigarettes; **Reg. No. 540,389**, same, Billfolds, purses, handbags, document cases, and wallets, all being goods made of leather; **Reg. No. 541,949** (DUNHILL DOUBLE-CLARO), same, Tobacco products, particularly cigars; **Reg. No. 634,071** (ALFRED DUNHILL), same, Men's neckties; **Reg. No. 815,651** (DUNHILL ETC. AND DESIGN), same, Cigarettes; **Reg. No. 843,143** (DUNHILL), same, Radios, telephones, flash lights, desk lamps, electrical converters and electrical appliances—namely, bun warmers, cocktail mixers, coffee makers, lighters, and portable pants pressers; **Reg. No. 843,152**, same, Playing cards, bridge sets, mahjong sets, and game sets—namely, chess, checkers, backgammon, dice, poker dice, and roulette; **Reg. No. 843,178**, same, Barometers, com-

CONDITION OF TRADEMARK APPLICATIONS AS OF JULY 31, 1969

Total number of applications awaiting action [excluding renewals and Sec. 12(c)]	14,039
Date of oldest new application	October 9, 1968
Date of oldest amended application (filing date)	April 1, 1966

C. M. WENDT, Director, Trademark Examining Operation

TRADEMARK EXAMINING DIVISIONS, EXAMINERS AND TRADEMARK CLASSES UNDER EXAMINATION	Oldest Application	
	New	Amended
(I) L. J. BETTENDORF, Classes 2, 3, 4, 5, 7, 9, 10, 11, 27, 28, 30, 32, 33, 37, 38, 39, 40, 41, 42, 43, 50; Certification Marks, Classes A and B	2-17-69	5-3 -66
(II) F. H. WETHERBEE, Classes 1, 6, 15, 18, 45, 46, 47, 48, 49, 51, 52; Collective Membership Mark, Class 200	10-28-68	5-24-66
(III) P. S. BALL, Classes 19, 21, 23, 26, 31, 34, 35, 36	12-18-68	11-10-66
(IV) M. E. ABRAMSON, Classes 8, 12, 13, 14, 16, 17, 20, 22, 24, 25, 29, 44; Service Marks, Classes 100, 101, 102, 103, 104, 105, 106, and 107	10-9 -68	4-1 -66
Renewals (All Classes)	6-3 -69	----------
Sec. 12(c) Publications (All Classes)	6-16-69	----------

Applications filed during the month of July 1969—2,747

Registrations Issued ---------- 450—No. 876,794 to No. 877,243
Renewals Issued ---------- 150

The TRADEMARK SECTION of the OFFICIAL GAZETTE, issued weekly, is mailed under the direction of the Superintendent of Documents, Government Printing Office, Washington, D.C., 20402 to whom all subscriptions should be made payable and all communications addressed; subscription price, $20.50 per annum, foreign mailing $5.75 additional; single copies, 40 cents each.

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passes, thermometers, hygrometers, hour glass timers, and map globes, class 26; clocks and watches, class 27; **Reg. No. 843,193,** same, Cups and saucers, creamers, sugarers, tea pots and coffee pots, all made of crockery, earthenware, or porcelain; **Reg. No. 843,198,** same, Glasses, cocktail mixers and shakers, decanters, flasks and pitchers, all made of glass; **Reg. No. 843,270,** Canes, walking sticks, golf seats, umbrellas, and golf umbrellas; **Reg. No. 847,942,** same, Tea; **Reg. No. 858,876,** same, Knives, carving sets, electric razors, bottle openers, cork screws, and tool kits comprising hammers, saws, pliers, wrenches, drills, screw drivers, awls, files and tape measures; **Reg. No. 858,928,** same, Men's jewelry—namely, cuff links, tie bars, tie clasps, tie pins, stud sets, key chains, key rings, belt buckles and money clips; women's jewelry—namely, rings, earrings, bracelets, chains, pins and brooches, and precious-metal ware—namely, spoons; **Reg. No. 858,939,** same, Ashtray stands, bars, bookcases, book ends, desks, globe stands, magazine racks, picture frames, serving tables, smokers' cabinets, umbrella stands and valets; **Reg. No. 858,964,** same, Pens, pencils, desk sets, lap desks, pen holders, diaries, address books, memo pads, scrap books, photograph albums, and desk calendars; **Reg. No. 859,052,** same, Men's toiletries—namely, pre-electric shave lotion, after shave lotion, shave cream, cologne, talcum powder, and personal deodorant; **Reg. No. 863,403** (DUNHILL THE "ROYAL YACHT" AND DESIGN), same, Smoking tobacco; **Reg. No. 868,123** (DUNHILL VIRGINIA FILTER AND DESIGN), same, Filter tipped Virginia cigarettes; **Reg. No. 868,124** (DUNHILL ETC. AND DESIGN), same, **filed** July 2, 1969, D.C., N.D. Calif. (San Francisco), Doc. 51667, *Alfred Dunhill of London, Inc.* v. *E. Martinoni Co.*

Reg. No. 507,856 (TROJAN), Eaton Yale & Towne, Inc., Road construction and maintenance machinery and earth moving machinery—namely, graders, bulldozers, angledozers, and snow plows, **filed** Aug. 30, 1967, D.C. N.D.N.Y. (Utica), Doc. 67-C-284, *Eaton Yale & Towne, Inc.* v. *Watco Machine Products, Inc.* Consent judgment, Garden Way Manufacturing Co., Inc. formerly Watco Machine Products, Inc. permanently restrained and enjoined, July 23, 1969.

Reg. No. 527,207. (See Reg. No. 155,951.)

Reg. No. 527,208. (See Reg. No. 155,951.)

Reg. No. 530,116 (TORQOMETER), Snap-On Tools Corporation, Hand wrenches and hand tools for tightening machine parts fasteners, such as nut, screws, and the like, **filed** Sept. 27, 1968, D.C., N.D. Ill. (Chicago), Doc. 68c1791, *Snap-On Tools Corporation* v. *Edward V. Sundt and Power Instruments, Inc.* Consent judgment, July 1, 1969.

Reg. No. 534,705. (See Reg. No. 155,951.)

Reg. No. 539,892. (See Reg. No. 155,951.)

Reg. No. 540,389. (See Reg. No. 155,951.)

Reg. No. 541,949. (See Reg. No. 155,951.)

Reg. No. 634,071. (See Reg. No. 155,951.)

Reg. No. 741,652 (LORD-WEST), Mavest, Societe Anonyme, Clothing—namely, suits, trousers, sport coats, sport vests, overcoats, topcoats, lodens, trenchcoats, rainwear for men and young men, **filed** July 1, 1969, D.C., S.D.N.Y., Doc. 69-C-2849, *West Mill Clothes Inc.* v. *Mavest, Societe Anonyme.* Judgment by default, trademark is valid and owned by the plaintiff, and has been infringed. The Commissioner of Patents is directed, pursuant to 15 U.S.C. Sec. 1119, to cancel U.S. Patent Office Reg. No. 741,652 for "Lord-West" currently registered in the name of defendant Mavest, Societe Anonyme, Aug. 4, 1969.

Reg. No. 766,864 (MAN-POWER), Shulton, Inc., Body deodorant for men, **filed** Sept. 20, 1968, D.C., S.D.N.Y., Doc. 68-C-3796, *Shulton, Inc.* v. *April Showers, Inc.* Filed voluntary dismissal, Dec. 4, 1968.

Reg. No. 815,651. (See Reg. No. 155,951.)

Reg. No. 821,659 (DEMI-TALL), Tall Apparel N.Y. Corp., Misses' and ladies' coats, suits, dresses, skirts, raincoats, jackets, lingerie, and hosiery, **filed** June 30, 1969, D.C., S.D.N.Y., Doc. 69-C-2811, *Tall Apparel N.Y. Corp.* v. *Tall Styles by Kay.*

Reg. No. 826,713 (RIVER JACKS), Joseph Busik, Jr., doing business as Delaware Quarries, Natural stone cut or selected to various sizes and shapes, for decorative use in the construction of stone masonry and landscaping, **filed** June 14, 1968, D.C.N.J. (Trenton), Doc. 607-68, *Joseph Busik, Jr., doing business as Delaware Quarries* v. *Harold W. Lindblad and Raymond G. Lindblad.* Consent judgment, plaintiff is owner of trademark "River Jacks," enjoining defendants, July 17, 1969.

Reg. No. 834,630 (LECTRA-SOX), Timely Products Corporation, Battery heated socks, **filed** July 18, 1969, D.C. Conn. (Bridgeport), Doc. 13,295, *Timely Products Corp.* v. *Stanley Arron, Max Arron and Anna Arron, Visa-Therm Products, Inc.*

Reg. No. 843,143. (See Reg. No. 155,951.)

Reg. No. 843,152. (See Reg. No. 155,951.)

Reg. No. 843,178. (See Reg. No. 155,951.)

Reg. No. 843,193. (See Reg. No. 155,951.)

Reg. No. 843,198. (See Reg. No. 155,951.)

Reg. No. 843,270. (See Reg. No. 155,951.)

Reg. No. 874,942. (See Reg. No. 155,951.)

Reg. No. 856,033 (21), Monogram Publications, Inc., Magazine, **filed** June 17, 1969, D.C., C.D. Calif. (Los Angeles), Doc. 69-1177-CC, *Monogram Publications, Inc.* v. *American Art Agency, Inc. et al.*

Reg. No. 858,876. (See Reg. No. 155,951.)

Reg. No. 858,876. (See Reg. No. 155,951.)

Reg. No. 858,928. (See Reg. No. 155,951.)

Reg. No. 858,939. (See Reg. No. 155,951.)

Reg. No. 858,964. (See Reg. No. 155,951.)

Reg. No. 859,052. (See Reg. No. 155,951.)

Reg. No. 863,403. (See Reg. No. 155,951.)

Reg. No. 868,123. (See Reg. No. 155,951.)

Reg. No. 868,124. (See Reg. No. 155,951.)

Reg. No. 869,281. (See Reg. No. 155,951.)

MARKS PUBLISHED FOR OPPOSITION

SECTION 1

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Application for the registration of these marks in more than one class has been filed as provided in section 30 of said act as amended by Public Law 772, 87th Congress, approved Oct. 9, 1962, 76 Stat. 769. Opposition under section 13 may be filed within thirty days of this publication. See Rules 2.101 to 2.105.

A separate fee of twenty-five dollars for each class opposed must accompany the opposition.

[NOTE: For publication of marks presented in applications for registration in one class, see section 2.]

SN 246,002. United Control Corporation (Delaware corporation), Redmond, Wash, assignee of United Control Corporation (Washington corporation), Redmond, Wash. Filed May 18, 1966.

UNITED CONTROL

Class 21—Electrical Apparatus, Machines, and Supplies

For Highway Control Flashers (Int. Cl. 9).
First use September 1965.

Class 26—Measuring and Scientific Appliances

For Avionics Systems, Components and Test Equipment—Namely, Flight Programmers, Weapon Release Programmers, Stall Warning Computers, Stall Prevention Computers, Speed Command Computers, Engine Throttle Controls, Altitude Indication (Gyro Horizon) Inflight Refueling Amplifiers, Operational Amplifiers, Fuel Loading Computers, Propellant Utilization Systems, Caution Light Controllers, Aircraft Navigation Flashers, Current Flow Detectors, Equipment Comparators, Analog-To-Digital Converters, Vertical Navigation Computers, Go-Around Computers, and Approach Control and Landing Systems Comprised of Auto Throttle Systems, Clutch Pack Assemblies, Throttle Trim Assemblies, Computer Amplifiers and Motor Generator Assemblies; Tape Recorders—Namely, Cockpit Voice Recorders and Inflight Data Recorders; Transducers—Namely, Pressure Transducers, Linear Servoed Accelerometers, Angular Servoed Accelerometers, Digital Output Servoed Accelerometers, Cryogenic Level Sensors, Cryogenic Level Sensor Controllers, Velocity Sensors and Float Switches; Temperature Control Devices—Namely, Temperature Control Systems, Equipment Cooling Systems, Airborne Air Conditioning Systems, Windshield Temperature Controllers, Temperature Sensors, Cooling Effect Detectors, Heated Air Intakes, Engine Inlet Anti-Ice Control Systems, Rotor Blade De-Ice Control Systems, Leading Edge Wing De-Icing Programmers, Ice Detectors, and Thermal Switches; and Fluid Flow Detectors (Int. Cl. 9).
First use 1949.

Class 36—Musical Instruments and Supplies

For Tape Recorders—Namely, Inflight Audio Entertainment Systems and Automatic Airport Terminal Announcing Systems (Int. Cl. 9).
First use April 1966.

SN 275,776. National Institutional Food Distributor Associates, Inc., Smyrna, Ga. Filed July 11, 1967.



The representation of the map of the United States is disclaimed apart from the mark as shown. Owner of Reg. Nos. 696,892, 710,022, and others.

Class 45—Soft Drinks and Carbonated Waters

For Syrups for Soft Drinks (Int. Cl. 32).

Class 46—Foods and Ingredients of Foods

For Baking Products—Namely, Pie Crust Mix, Graham Cracker Crusts and Flour; Cream and Jelly Doughnut Filling, Fruit Batter, Canned Fruit Pie Filling, Canned and Frozen Fruits and Vegetables, Tea, Coffee, Apple Cider, Cheese; Chinese Food—Namely, Bean Sprouts, Chop Suey Vegetables, Chow Mein Noodles, Bamboo Shoots, Water Chestnuts, Egg Noodles, Beef Chop Suey, Meatless Chow Mein and Chicken Chow Mein; Cookies, Dietetic Fruits and Vegetables, Powdered Eggs, Canned and Frozen Fish, Canned and Frozen Fruit and Vegetable Juices, Canned and Frozen Meat, Macaroni and Spaghetti, Marshmallows, Powdered Milk, Candy Mints; Prepared Mixes—Namely, Pancake, Cake, Pie Crust, and Breading Mixes; Nuts, Salt, Rice, Canned Soups, and Spices; Sauces—Namely, Tartar, Worcestershire, Barbecue, Soy, Tomato, Cheese, Chili, Creole, and Lemon Butter (Int. Cls. 5, 29, 30, 32, and 33).

SN 284,148. Baker Industries, Inc., Newark, N.J. Filed Nov. 6, 1967.



Owner of Reg. Nos. 708,531 and 708,532.

Class 100—Miscellaneous

For Security Services for the Premises of Customers (Int. Cl. 42).

Class 103—Construction and Repair

For Equipment and Building Maintenance Services (Int. Cl. 37).

First use Oct. 31, 1967.

SN 284,150. Baker Industries, Inc., Newark, N.J. Filed Nov. 6, 1967.

WELLS FARGO

Owner of Reg. Nos. 708,531 and 708,532.

Class 100—Miscellaneous

For Security Services for the Premises of Customers (Int. Cl. 42).

Class 103—Construction and Repair

For Equipment and Building Maintenance Services (Int. Cl. 37).

First use Oct. 31, 1967.

SN 284,152. Baker Industries, Inc., Newark, N.J. Filed Nov. 6, 1967.



Owner of Reg. Nos. 708,531 and 708,532.

Class 100—Miscellaneous

For Security Services for the Premises of Customers (Int. Cl. 42).

Class 103—Construction and Repair

For Equipment and Building Maintenance Services (Int. Cl. 37).

First use Oct. 31, 1967.

SN 287,504. Aero Products Research, Inc., Culver City, Calif. Filed Dec. 26, 1967.



The mark consists of a stylized design of the letter "a."

Class 3—Baggage, Animal Equipments, Portfolios, and Pocketbooks

For Aviators' Flight Cases (Int. Cl. 18).
First use October 1962.

Class 26—Measuring and Scientific Appliances

For Pilot Training Flight Simulators; Instrument Training Hoods; Aviators' Computers; and Aviation Plotters (Int. Cl. 9).
First use January 1961.

Class 37—Paper and Stationery

For Pilots' Record Boards; Log Books; and Flight Logs (Int. Cl. 16).
First use July 1961.

Class 38—Prints and Publications

For Reference Books and Programmed Instruction Books for Pilots and Aircraft Owners (Int. Cl. 16).
First use April 1964.

SN 294,224. Almanna Svenska Elektriska Aktiebolaget, Vasteras, Sweden. Filed Mar. 27, 1968.

SIDELINER

Owner of Swedish Reg. No. 121,232, dated Sept. 29, 1967.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Cranes—Namely, Ships' Cranes, Program-Controlled Cranes, Harbor Cranes, and Overhead Cranes (Int. Cl. 7).

Class 26—Measuring and Scientific Appliances

For Automatic Program Controllers for Operating Cranes and Ship Winches (Int. Cl. 9).

SN 295,692. Whirl-Air-Flow Corporation, Minneapolis, Minn. Filed Apr. 15, 1968.



Owner of Reg. No. 833,282.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Pneumatic Conveying Equipment and Parts Thereof—Namely, Transporters, Switches, Control Cabinets, Receivers, Chip Injector Units, and Blending Units (Int. Cl. 7).

Class 26—Measuring and Scientific Appliances

For Pneumatic Conveying Equipment and Parts Thereof—Namely, Automatic Weighing Units (Int. Cl. 9).

First use Sept. 28, 1954.

SN 299,055. Ambard, Inc., New Hyde Park, N.Y. Filed May 27, 1968.



Class 16—Protective and Decorative Coatings

For Paints, Varnishes, Shellacs and Lacquers, Which Are Organic and of a Protective and Decorative Nature (Int. Cl. 2).

Class 52—Detergents and Soaps

For Paint Strippers, Paint Removers, and Metal Cleaners (Int. Cl. 3).

First use Jan. 15, 1968.

SN 300,758. Thomas Dam Designs and Copyrights AG, Zug, Switzerland. Filed June 18, 1968.



Owner of Swiss Reg. No. 229,179, dated Dec. 6, 1967.

Class 22—Games, Toys, and Sporting Goods

For Dolls and Representations of Animals Used as Playthings for Children (Int. Cl. 28).

Class 50—Merchandise Not Otherwise Classified

For Knick-Knacks, Not of Precious Metal, in the Form of Figurines (Int. Cl. 20).

First use 1959; in commerce 1962.

SN 301,979. Topp Import & Export, Inc., Miami, Fla. Filed July 3, 1968.



Class 21—Electrical Apparatus, Machines, and Supplies

For Radios, Television Receivers, Transceivers, and Batteries (Int. Cl. 9).

Class 36—Musical Instruments and Supplies

For Tape Recorders and Phonographs (Int. Cl. 9).

First use on or about Mar. 1, 1968.

SN 304,180. Coleman/Meyer, Inc., New York, N.Y. Filed Aug. 2, 1968.



Class 100—Miscellaneous

For Arranging of Lodgings for Participants (Int. Cl. 42).

Class 101—Advertising and Business

For Preparation and Production of Written and Graphic Sales Training, Promotional and Advertising Materials Including Brochures, Slides, Films and Audio and Video Tapes; and Arranging Meetings and Conferences Including the Obtaining and Equipping of Meeting and Conference Facilities, Research Into Subject Matter of Such Meetings and Conferences, the Development of Meeting and Conference Programs, the Outlining of Speeches; and the Design of Display Booths and of Advertising Logos (Int. Cl. 35).

Class 105—Transportation and Storage

For Arranging of Transportation for Participants in Conferences and Meetings (Int. Cl. 39).

First use Feb. 4, 1965.

SN 304,811. Plant Bros. Corp., San Francisco, Calif. Filed Aug. 9, 1968.



Class 100—Miscellaneous

For Planning, Design, and Engineering of Buildings of All Types, and Furniture and Fixtures for Use Therein (Int. Cl. 42).
First use at least as early as December 1954.

Class 103—Construction and Repair

For Construction and Repair of Buildings of All Types and in the Construction and/or Manufacture of Furniture and Fixtures for Use Therein (Int. Cl. 37).
First use December 1954.

SN 305,933. H & P Manufacturing Corp., Rushville, Nebr. Filed Aug. 26, 1968.

ZIP TWIST

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Cone Wringers for Mops (Int. Cl. 7).

Class 29—Brooms, Brushes, and Dusters

For Mops (Int. Cl. 21).

First use May 23, 1968.

SN 306,420. Stiefel Laboratories, Inc., Oak Hill, N.Y. Filed Sept. 3, 1968.

ACNE-AID

Owner of Reg. No. 846,422.

Class 18—Medicines and Pharmaceutical Preparations

For Medicated Preparations in the Form of a Cream, for the Treatment of Acne (Int. Cl. 5).

Class 52—Detergents and Soaps

For Hair Shampoo (Int. Cl. 3).

First use Apr. 23, 1965.

SN 307,979. Continental Telephone Corporation, St. Louis, Mo. Filed Sept. 23, 1968.



Class 101—Advertising and Business

For Telephone Directory Printing, Distribution, and Composition (Int. Cl. 35).
First use Sept. 1, 1965.

Class 103—Construction and Repair

For Telephone Maintenance Services (Int. Cl. 37).
First use June 30, 1964.

Class 104—Communication

For Telephone, Audio Program, Telegraph, Telephotograph, Telemetering, Signaling, Remote Control, Data Transmission, Television and CATV Services (Int. Cl. 38).
First use March 1962.

SN 309,323. A. M. Byers Co., Ambridge, Pa. Filed Oct. 10, 1968.

Galis

Class 19—Vehicles

For Underground Haulage Vehicles—Namely, Portal Cars (Int. Cl. 12).
First use July 15, 1960.

Class 21—Electrical Apparatus, Machines, and Supplies

For Electric Motors (Int. Cl. 7).
First use at least as early as 1961.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Mining Machinery—Namely, Mobile Roof Drills, Face Drills, and Belt Feeders (Int. Cl. 7).
First use Jan. 14, 1959.

Class 103—Construction and Repair

For Installing Material Handling Systems and Repairing and Rebuilding Mining Equipment (Int. Cl. 37).
First use at least as early as 1959.

SN 312,367. Lifetime Career Schools, Incorporated, Los Angeles, Calif. Filed Nov. 18, 1968.

Amori

Class 5—Adhesives

For White Glue, Fibre Binder, and Glass Paste (Int. Cl. 16).

Class 12—Construction Materials

For Rock Putty (Int. Cl. 16).

Class 16—Protective and Decorative Coatings

For Art Colors, Paint Drying Retarder, Glaze, Priming Base, and Ingredients Used in Artistic Compositions—Namely, Mother-of-Pearl Flakes and Pounce Powder Used in Accelerated Drying (Int. Cls. 2 and 16).

First use Aug. 26, 1966.

SN 312,539. R. F. Simmons Company, Attleboro, Mass. Filed Nov. 19, 1968.

CAMPUSCREST CREATIONS

Without waiver of common law rights, applicant disclaims the word "Creations" apart from the mark as shown. Owner of Reg. No. 723,304.

Class 2—Receptacles

For Leather Mugs; Rope Handle Mugs; Salt and Pepper Sets; and Pill Boxes (Int. Cl. 21).

Class 8—Smokers' Articles, Not Including Tobacco Products

For Pocket and Table Lighters; Combination Cigarette Box-Ashtrays; Ashtrays; and Cigarette Urns (Int. Cl. 34).

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

For Pewter Tankards; Copper Mugs (Int. Cl. 21).

Class 26—Measuring and Scientific Appliances

For Thermometers; Barometers; and Combined Barometers and Thermometers (Int. Cl. 9).

Class 28—Jewelry and Precious-Metal Ware

For Pins and Guards; Tie Clips; Tie Tacks; Cuff Links; Rings; Money Clips; Charms; Charm Bracelets; Necklaces; Pins; Neck Chains; Scatter Pins; Key Chains; Key Rings; Belt Buckles; Earrings and Broaches, Made of Precious Metal or Ornamented Therewith (Int. Cl. 14).

Class 30—Crockery, Earthenware, and Porcelain

For Ceramic Beer Mugs and Ceramic Coffee Mugs (Int. Cl. 21).

Class 37—Paper and Stationery

For Desk Calendars; Paper Clips; and Book Marks (Int. Cl. 16).

Class 50—Merchandise Not Otherwise Classified

For Plaques (Int. Cl. 20).

First use at least as early as November 1961.

SN 313,641. King-Wilkinson, Inc., Tulsa, Okla. Filed Dec. 5, 1968.

King-Wilkinson KW

Class 100—Miscellaneous

For Engineering Design and Evaluation of Process and Construction Projects in the Processing Industries (Int. Cl. 42).

Class 101—Advertising and Business

For Managing Process Operations and Construction of Industrial Plants in the Areas of the Process Industries (Int. Cl. 35).

First use July 23, 1968.

SN 313,642. King-Wilkinson, Inc., Tulsa, Okla. Filed Dec. 5, 1968.

KING-WILKINSON

Class 100—Miscellaneous

For Engineering Design and Evaluation of Process and Construction Projects in the Processing Industries (Int. Cl. 42).

Class 101—Advertising and Business

For Managing Process Operations and Construction of Industrial Plants in the Areas of the Process Industries (Int. Cl. 35).

First use Apr. 3, 1964.

SN 314,466. The Stuart McGuire Company, Inc., Salem, Va. Filed Dec. 13, 1968.

STUART MCGUIRE

"Stuart McGuire" is fanciful and does not refer to any specific individual. Owner of Reg. No. 780,380.

Class 28—Jewelry and Precious-Metal Ware

For Cuff Links, Tie Clasps, Tie Tacks and Tie Bars (Int. Cl. 14).

Class 39—Clothing

For Men's Shirts, Knit Shirts, Sweaters, Jackets, Slacks, Walking Shorts, Sport Coats and Neckwear; and Women's and Children's Shoes (Int. Cl. 25).

First use Nov. 19, 1968.

SN 314,843. The Millard Norman Co., Cincinnati, Ohio. Filed Dec. 19, 1968.

Millard Norman

Class 2—Receptacles

For Hemp Bowls, Hemp Baskets, Hemp Platters, Hemp Hampers, Hemp Casserole Holders, Wooden Bowls, Wooden Platters, Wooden Coasters, Wooden Trays, Wooden Lazy Susans, and Wooden Baskets and Buckets (Int. Cls. 20 and 21).
First use December 1967.

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

For Enamel Steel Pots, Pans, Bowls, Fondue Pots, Kettles, Coffee and Tea Pots (Int. Cl. 21).
First use June 1967.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Kitchen Knives, Forks, and Wooden Cutting and Carving Boards (Int. Cl. 8).
First use September 1967.

Class 30—Crockery, Earthenware, and Porcelain

For Stoneware, Earthenware and Crockery—Namely, Dishes, Butter Holders, Sugar Holders, Cups, Bowls, Saucers, Plates, Trivets, Pitchers for Coffee, Tea, Cream and Other Liquids, Pots, and Salt and Pepper Shakers (Int. Cl. 21).
First use October 1967.

Class 33—Glassware

For Glass Cups, Glass Pitchers, Drinking Glasses, Glass Goblets and Dessert Glasses (Int. Cl. 21).
First use October 1968.

Class 50—Merchandise Not Otherwise Classified

For Hemp Pads and Wooden Trivets for Table Use—Namely, for Use as Placemats, Hot Pads and Mats Upon Which Are Placed Pitchers, Flower Pots and Table Center Pieces (Int. Cl. 27).
First use December 1967.

SN 316,164. W. R. Grace & Co., New York, N.Y. Filed Jan. 9, 1969.

LETTERFLEX

Class 6—Chemicals and Chemical Compositions

For Chemical Used for Etching Printing Plates (Int. Cl. 1).
First use Oct. 22, 1968.

Class 26—Measuring and Scientific Appliances

For Photocomposing Apparatus for Preparing Flexible Printing Plates Comprising Camera Unit, Exposure Unit, and Processing Unit (Int. Cl. 9).
First use Oct. 28, 1968.

Class 50—Merchandise Not Otherwise Classified

For Printing Plates and a Coated Film Used as a Backing for Printing Plates (Int. Cl. 7).
First use Oct. 31, 1968.

SECTION 2

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Opposition under section 13 may be filed within thirty days of publication. See Rules 2.101 to 2.105.
A fee of twenty-five dollars must accompany the opposition.
[NOTE: For publication of marks presented in a combined application for registration in more than one class, see section 1.]

Class 1—Raw or Partly Prepared Materials

SN 295,737. Imperial Chemical Industries Limited, Millbank, London, England. Filed Apr. 16, 1968.

SPUNSTRON

Owner of British Reg. No. B898,338, dated Aug. 12, 1966.
For Synthetic Textile Fibres (Int. Cl. 22).

SN 311,244. Dierks Forests, Inc., Hot Springs, Ark. Filed Nov. 4, 1968.

CeraSpheres

For Cellular Ceramic Material for Industrial Use (Int. Cl. 1).
First use Sept. 17, 1968.

SN 313,230. Gillespie-Rogers-Pyatt Co., Inc., Finderne, Bridgewater Township, Somerset County, N.J. Filed Nov. 29, 1968.

LEC-221

For Shellac Epoxy Resins for Use in the Manufacture of Protective and Decorative Coatings and in the Manufacture of Seamless Floor Cements (Int. Cl. 2).
First use Aug. 6, 1963.

SN 315,349. Bingham Seed Company, Inc., d.b.a. Sparklgreen Company, Jacksonville, Fla. Filed Dec. 30, 1968.

Sparklgreen

For Raw Prepared Lawn Grass Seed and Pasture Grass Seed (Int. Cl. 31).
First use July 1960.

SN 321,111. Charcoal Unlimited, d.b.a. C and O Distributing Co., City of Industry, Calif. Filed Mar. 10, 1969.

CHEF'S DELIGHT

For Charcoal (Int. Cl. 4).
First use 1957.

SN 322,237. Solar Control Products Corp., Allston, Mass. Filed Mar. 20, 1969.

SOLAR-X

Owner of Reg. No. 808,259.
For Heat-Reflecting, Light-Transmitting Plastic and Plastic Laminate Sheet Materials for Application to Windows, Skylights, Transparent Doors, One-Way Observation Windows, and in the Manufacture of Roller-Type Window Shades, Venetian Blinds, and Vertical Strip Blinds (Int. Cl. 17).
First use at least as early as Feb. 4, 1968.

SN 324,631. Anglo-American Clays Corporation, New York, N.Y. Filed Apr. 16, 1969.

BETACOTE

For Clay for Coating Paper Products (Int. Cl. 1).
First use on or about Oct. 19, 1968.

Class 2 — Receptades

SN 315,386. Cooke & Associates, Inc., Houston, Tex. Filed Dec. 30, 1968.

CHART CADET

Applicant disclaims any exclusive right to the word "Chart" when used apart from the mark.
For Receptacle for Medical Charts, Which May Be Mounted on a Wall (Int. Cl. 20).
First use Nov. 7, 1968.

SN 322,391. Wolff Products Co., Long Island City, N.Y. Filed Mar. 21, 1969.

SPLENDOUR

For Waste Baskets, Tumblers, Tissue Boxes, Soap Dishes, and Clothes Hampers (Int. Cls. 20 and 21).
First use Feb. 14, 1969.

Class 3 — Baggage, Animal Equipments, Portfolios, and Pocketbooks

SN 311,207. Lyn-Rand Metal Fabrications Co., Inc., Hialeah, Fla. Filed Nov. 4, 1968.

LYN-RAND

For Animal Equipment—Namely, Cages (Int. Cl. 21).
First use Oct. 14, 1968.

Class 4 — Abrasives and Polishing Materials

SN 272,564. Leon Avedisian, d.b.a. Sun-Shine Polish Co., Detroit, Mich. Filed May 29, 1967.

SUN-SHINE

Owner of Reg. No. 228,404.
For Polishes for Use on Varnished, Lacquered, and Enameled Surfaces To Clean, Restore, and Preserve the Said Surfaces (Int. Cl. 3).
First use 1906.

SN 293,300. Real Estate Maintenance Chemical Specialties Corp., Pelham Manor, N.Y. Filed Mar. 14, 1968.

REMSCO

For Floor Waxes (Int. Cl. 3).
First use Dec. 12, 1967.

SN 299,381. James H. Rhodes and Company, Chicago, Ill. Filed May 29, 1968.

COLOSSUS

Owner of Reg. No. 435,754.
For Felt Attachments for Tools—Namely, Felt Polishing Wheels, Blockers, Bobs, Scratch Wheel Felt Strips and Polishing Sheets (Int. Cl. 7).
First use Jan. 30, 1945.

SN 313,288. W. R. Grace & Co., New York, N.Y. Filed Nov. 29, 1968.



The trademark consists of a white annular band encircling the bottom one-sixth of a drum and on which appears the number 1776, a blue annular band on which appears white stars encircling one-sixth of a drum immediately above the white band, and alternating red and white vertical stripes on the remaining two-thirds of a drum. No claim is made to the representation of the drum apart from the mark as shown.
For Polymeric Floor Polish (Int. Cl. 3).
First use Jan. 3, 1967.

SN 316,199. General Steel Industries, Inc., d.b.a. Flex-O-Lite Division, St. Louis, Mo. Filed Jan. 9, 1969.



Owner of Reg. Nos. 563,749 and 708,308.
For Industrial Glass Beads for Peening and Finishing Metal Surfaces (Int. Cl. 3).
First use Nov. 2, 1957.

SN 317,526. The Carborundum Company, Niagara Falls, N.Y. Filed Jan. 27, 1969.



For Sheet Material Coated With Abrasive Grains and for Bonded Abrasive Shapes Including Abrasive Blades, Grinding Wheels, and Sharpening Stones (Int. Cls. 3 and 8).
First use June 13, 1967.

SN 318,263. Wyandotte Chemicals Corporation, Wyandotte, Mich. Filed Feb. 3, 1969.



Owner of Reg. Nos. 613,328, 785,362, and others.
For Burnishing Compositions, Wax-Like Floor Finishes, and Floor Polishes (Int. Cl. 3).
First use September 1968.

SN 319,458. National Service Industries, Inc., d.b.a. Zep Manufacturing Company, Atlanta, Ga. Filed Feb. 18, 1969.

ZEPREMIER

Owner of Reg. Nos. 681,037, 696,197, and others.
For Floor Polishing Preparations and Combined Preparations for Cleaning, Washing and Polishing Automotive Finishes and the Like (Int. Cl. 3).
First use Jan. 2, 1965.

SN 319,463. National Service Industries, Inc., d.b.a. Zep Manufacturing Company, Atlanta, Ga. Filed Feb. 18, 1969.

ZEP-O-TRED

Owner of Reg. Nos. 681,027, 696,197, and others.
For Floor Polishing Preparation (Int. Cl. 3).
First use June 6, 1960.

Class 5 — Adhesives

SN 291,076. Granville W. Jones, d.b.a. Lox-Aire Mfg. Co., Dallas, Tex. Filed Feb. 14, 1968.

LOX-AIRE

For Preservative and Sealing Composition for Use With Pneumatic Tires (Int. Cl. 1).
First use June 15, 1967.

SN 316,658. S. S. Kresge Company, Detroit, Mich. Filed Jan. 15, 1969.



For Pressure Sensitive Tape (Int. Cl. 16).
First use on or before Dec. 4, 1968.

SN 322,759. Sumner Corporation, Fort Myers, Fla. Filed Mar. 25, 1969.

POLYFLEX

For Reinforced, Gummed, Laminated Paper Sealing Tapes (Int. Cl. 17).
First use as early as March 1965.

Class 6 — Chemicals and Chemical Compositions

SN 296,252. Standard Oil Company, Flemington, N.J. Filed Apr. 23, 1968.

EDCO

For Polyethylene Glycol Ingredients in the Nature of Petroleum Susceptible Dispersants, Demulsifiers and Emulsifiers Used in the Manufacture of Industrial Compounds (Int. Cl. 1).
First use Nov. 14, 1967.

SN 296,273. Standard Oil Company, Flemington, N.J. Filed Apr. 23, 1968.

ENCO

Owner of Reg. No. 713,000 and others.
For Industrial Chemical Additives and Processing Aids for Improving and Altering Characteristics and Performance of Petroleum Products; and Rust Inhibitors for General Use, but Exclusive of Use by the Graphic Arts Industry, the Office Machine Reproduction Field, the Engineering Reproduction Field and the Field of Photographic and Transfer Reproduction (Int. Cls. 1 and 2).
First use Nov. 2, 1967.

SN 301,543. F. J. Morse & Company, Inc., St. Paul, Minn. Filed June 27, 1968.



The wording "Armor-Plate Your Concrete Floors" and "Proved Effective Since 1914" is disclaimed.
For Liquid Composition for Hardening Cement Floors (Int. Cl. 1).
First use May 6, 1947.

SN 302,898. National Patent Development Corporation, New York, N.Y. Filed July 17, 1968.

HYDRONIZED

For Chemical Preparation Having Anti-Fogging Properties for Use on Dental Mirrors (Int. Cl. 1).
First use July 15, 1968.

SN 305,301. Atlantic Richfield Company, Philadelphia, Pa. Filed Aug. 16, 1968.



The drawing is lined for the colors green and blue. Owner of Reg. Nos. 849,655 and 849,656.
For Surface Active Agents for Use in Household, Laundry, Shampoo, and Industrial Applications; Hydrocarbons; and Ammonia (Int. Cl. 1).
First use Dec. 9, 1966.

SN 305,302. Atlantic Richfield Company, Philadelphia, Pa. Filed Aug. 16, 1968.



Owner of Reg. Nos. 849,655 and 849,656.
For Surface Active Agents for Use in Household, Laundry, Shampoo, and Industrial Applications; Hydrocarbons; and Ammonia (Int. Cl. 1).
First use Dec. 9, 1966.

SN 307,568. Eugen Durrwachter and Eberhard Bosch (joint owners), d.b.a. Dr. Eugen Durrwachter Doduco, Pforzheim, Germany. Filed Sept. 17, 1968.

GALVEX

Owner of German Reg. No. 844,100, dated Sept. 10, 1966.
For Chemical Products for Galvanotechnical Purposes—Namely, Metal Salts (Int. Cl. 1).

SN 307,685. A. E. Staley Manufacturing Company, Decatur, Ill. Filed Sept. 18, 1968.



Owner of Reg. Nos. 753,576 and 774,796.
For Dextrose for Industrial Purposes (Int. Cl. 1).
First use July 22, 1965.

SN 312,885. Geigy Chemical Corporation, Ardsley, N.Y. Filed Nov. 22, 1968.

IGRAN

Owner of Reg. No. 819,718.
For Herbicide (Int. Cl. 5).
First use Oct. 2, 1968.

SN 313,000. Philip A. Hunt Chemical Corporation, Palisades Park, N.J. Filed Nov. 25, 1968.

STARFIX

For Photographic Fixer and Replenisher for Same (Int. Cl. 1).
First use Aug. 30, 1965.

SN 313,356. Texize Chemicals, Inc., Greenville, S.C. Filed Nov. 29, 1968.

BABY FLUF

For Liquid Laundry Rinse for Fluffing and Softening (Int. Cl. 3).
First use Dec. 16, 1960.

SN 318,508. Parke, Davis & Company, Detroit, Mich. Filed Feb. 6, 1969.

AMCILL

For Discs for Laboratory Use for Testing Sensitivity of Microorganisms to Ampicillin (Int. Cl. 1).
First use Jan. 23, 1969.

SN 319,466. National Service Industries, Inc., d.b.a. Zep Manufacturing Company, Atlanta, Ga. Filed Feb. 18, 1969.

ZEPYNAMIC

Owner of Reg. Nos. 681,037, 696,197, and others.
For Disinfectant Preparation Having Incidental Sanitizing and Deodorant Properties (Int. Cl. 5).
First use Jan. 2, 1960.

SN 319,468. National Service Industries, Inc., d.b.a. Zep Manufacturing Company, Atlanta, Ga. Filed Feb. 18, 1969.

ZEPREVENT

Owner of Reg. Nos. 681,037, 696,197, and others.
For Disinfectant Preparation for Use in Poultry Houses, Poultry Processing Plants, and on Equipment Used Therein (Int. Cl. 5).
First use Jan. 2, 1967.

SN 320,220. Roux Laboratories, Inc., New York, N.Y. Filed Feb. 27, 1969.

ROUMINE

For Coloring Preparation for the Manufacture of Hair Colorings and Cosmetics (Int. Cl. 1).
First use July 3, 1941.

SN 323,213. R. F. Weber, d.b.a. Scientific Oil & Chemical Co., Dickinson, Tex. Filed Apr. 1, 1969.

FIRE-JELL

For Solidified Hydrocarbon (Int. Cl. 1).
First use Mar. 25, 1969.

SN 324,144. Virginia Chemicals Inc., Portsmouth, Va. Filed Apr. 10, 1969.



Owner of Reg. Nos. 753,571, 820,557, and others.
For Water Treatment Chemicals—Namely, Slimicides and Algaecides (Int. Cl. 1).
First use June 21, 1968.

Class 7 — Cordage

SN 318,732. American Cotton Yarns, Inc., Chicago, Ill. Filed Feb. 10, 1969.

NORD

For Braided Cord (Int. Cl. 22).
First use in 1954.

Class 8 — Smokers' Articles, Not Including Tobacco Products

SN 318,828. Ronson Corporation, Woodbridge, N.J. Filed Feb. 10, 1969.

EUROLITE

For Cigarette Lighters (Int. Cl. 34).
First use July 8, 1968.

Class 10 — Fertilizers

SN 319,716. Ernest B. Lute, d.b.a. Oasis Fertilizer Co., Kansas City, Mo. Filed Feb. 20, 1969.

OASIS

For Lawn Fertilizer (Int. Cl. 1).
First use Feb. 6, 1969.

Class 12 — Construction Materials

SN 267,739. Ervin Industries Inc., Charlotte, N.C., by change of name from Ervin Construction Company, Incorporated, Charlotte, N.C. Filed Mar. 28, 1967.



For Residential and Commercial Buildings (Int. Cl. 19).
First use at least as early as August 1962.

SN 301,537. Lumaside, Inc., Milwaukee, Wis. Filed June 27, 1968.

VYNASTEEL

For Steel Residential Siding (Int. Cl. 6).
First use June 6, 1968.

SN 304,948. National Expansion Joint Co., Oakland, Calif. Filed Aug. 12, 1968.

LIQUID FELT

For Roofing and Deck Products—Namely, Surface Coatings and Compounds Used in the Construction and Maintenance of Roofs and Decks (Int. Cl. 19).
First use June 14, 1968.

SN 306,819. A. R. Tennison, Inc., Cincinnati, Ohio. Filed Sept. 6, 1968.

FLEXCAP

For Sealing Strips for Expansion Joints (Int. Cl. 17).
First use on or about June 9, 1968.

SN 310,266. Vestal Manufacturing Company, Sweetwater, Tenn. Filed Oct. 22, 1968.



Owner of Reg. No. 749,651.
For Wall Ties, Circulator Fireplaces, Ash Dumps, Cleanout Doors, Foundation Ventilators, and Underground Garbage Receivers (Int. Cl. 6).
First use July 16, 1965, on circulator fireplaces.

SN 315,891. Dierks Forests, Inc., Kansas City, Mo. Filed Jan. 6, 1969.



Owner of Reg. No. 732,162.
For Gypsum Wallboard (Int. Cl. 19).
First use Sept. 13, 1968.

SN 316,593. Baker-Aldor-Jones, Inc., Hialeah, Fla. Filed Jan. 15, 1969.

TUFLITE

For Fiberglass Garage Doors (Int. Cl. 19).
First use Sept. 12, 1968.

SN 316,820. Ranco Industrial Products Corporation, Cleveland, Ohio. Filed Jan. 16, 1969.

DYNACRETE

For High Density, Cement-Type Topping and Re-Surfacer for Concrete Floors (Int. Cl. 19).
First use on or about Jan. 23, 1951.

SN 316,822. Ranco Industrial Products Corporation, Cleveland, Ohio. Filed Jan. 16, 1969.

IMPERVITITE

For Epoxy Based Patching Compound for Concrete Floors (Int. Cl. 19).
First use on or about Apr. 7, 1954.

SN 316,823. Ranco Industrial Products Corporation, Cleveland, Ohio. Filed Jan. 16, 1969.

QUARTEX

For Cement-and-Pulverized-Iron Based, High-Density, Hardener for Concrete Floors (Int. Cl. 19).
First use on or about Jan. 25, 1961.

SN 317,465. Panelboard Manufacturing Co., Inc., Newark, N.J. Filed Jan. 24, 1969.

DECORA-FRAME

Owner of Reg. No. 767,388.
For Decorative Shutters (Int. Cl. 19).
First use July 1, 1968.

SN 323,443. Energy Resources Corporation, Fort Worth, Tex. Filed Apr. 2, 1969.

ENERGY RESOURCES

For Structural Steel and Sheet Steel Products for Buildings and Heavy Equipment (Int. Cl. 6).
First use at least as early as about Nov. 15, 1968.

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

SN 285,916. Clyde H. Foulds, Medina, Ohio. Filed Nov. 30, 1967.

JACKO

For Faucet Couplings With Built-In Venturi Type Siphoning Tube (Int. Cl. 11).
First use on or about Nov. 7, 1967.

SN 293,147. International Wire Works, Menasha, Wis. Filed Mar. 13, 1968.

MONO FAB

For Papermaking Cloth in the Nature of Woven Fabrics Featuring Synthetic and/or Metallic Threads (Int. Cl. 24).
First use Feb. 19, 1968.

SN 310,690. Pioneer Screw & Nut Co., Elk Grove Village, Ill. Filed Oct. 28, 1968.

PIONEER SCREW

No claim of exclusive right is made in the word "Screw" apart from the mark as shown.
For Screws, Nuts, Bolts, Rivets, Washers, Studs and Related Screw Machine and Cold-Headed Hardware Products, Including Eyelets, Plugs, Pins, and Bushings (Int. Cl. 6).
First use in 1952.
Subj. to Intf. with SN 295,553.

SN 311,530. Teledyne, Inc., Gardena, Calif. Filed Nov. 6, 1968.

LIN BRAZE

The word "Braze" is disclaimed apart from the mark as shown.
For Brazed Tube Fittings (Int. Cl. 6).
First use Sept. 9, 1968.

SN 316,463. Penn Engineering & Manufacturing Corp., Doylestown, Pa. Filed Jan. 14, 1969.

PEMSERT

Owner of Reg. Nos. 732,947, 781,236, and 857,863.
For Inserts (Int. Cl. 6).
First use on or about Jan. 7, 1969.

SN 321,674. Linatex Corporation of America, Stafford Springs, Conn. Filed Mar. 13, 1969.

JACO

For Pinch Valves (Int. Cl. 6).
First use Mar. 29, 1961.

SN 323,499. Welding and Steel Fabrication Co., Inc., Tonawanda, N.Y. Filed Apr. 2, 1969.

RAPID COUPLER

Owner of Reg. No. 773,066.
For Units for Connecting and Disconnecting Conduits to Conduits, or Conduits to Tanks, or Tanks to Tanks (Int. Cl. 6).
First use on or about Mar. 17, 1969.

Class 14—Metals and Metal Castings and Forgings

SN 301,222. The Joseph Freedman Co., Inc., Sprinfield, Mass. Filed June 24, 1968.

ALUM·A·CUT

For Shot-Like Aluminum Pellets for Deoxidizing Molten Steel, the Pellets Being Added to the Steel During Pouring (Int. Cl. 6).
First use Mar. 4, 1968.

SN 323,256. Carpenter Technology Corporation, Reading, Pa. Filed Apr. 1, 1969.

U.D.R.

For Steel in the Form of Wire, Strips, Bars, Billets and Shapes (Int. Cl. 6).
First use Mar. 5, 1969.

SN 325,118. National-Standard Company, Niles, Mich. Filed Apr. 21, 1969.

NATALITE

Owner of Reg. No. 743,267.
For Wire (Int. Cl. 6).
First use Feb. 4, 1969.

Class 15—Oils and Greases

SN 296,426. James Henderson, Hollywood, Calif. Filed Apr. 24, 1968.

wax lamps

The words "Wax Lamps" are disclaimed apart from the mark as shown.
For Candles (Int. Cl. 4).
First use Apr. 17, 1968.

SN 306,178. The Standard Oil Company, Cleveland, Ohio. Filed Aug. 28, 1968.

FACTOQUENCH

Owner of Reg. Nos. 190,708 and 782,292.
For Quenching Oil (Int. Cl. 4).
First use July 11, 1968.

SN 306,929. Malco Products, Inc., Akron, Ohio. Filed Sept. 9, 1968.

MXP

For Motor Oil Additive (Int. Cl. 4).
First use Aug. 1, 1968.

SN 307,204. Hanka, Inc., Louisville, Ky. Filed Sept. 12, 1968.

ROBO GAS

The word "Gas" is disclaimed apart from the mark as shown.
For Gasoline (Int. Cl. 4).
First use at least as early as July 18, 1968.

SN 308,829. U-Filler-Up, Inc., Greensboro, N.C. Filed Oct. 3, 1968.

OLE'

The Spanish word "Olé" in English means "bravo."
For Gasoline (Int. Cl. 4).
First use Sept. 9, 1968.

SN 315,714. Diamond Shamrock Corporation, Cleveland, Ohio. Filed Jan. 3, 1969.

For Motor Oil (Int. Cl. 4).
First use Oct. 1, 1960.

Class 16—Protective and Decorative Coatings

SN 268,042. General Electric Company, Hendersonville, N.C. Filed Mar. 31, 1967.

ALGLAS

For Reflector Finish (Int. Cl. 1).
First use during December 1966.

Class 17—Tobacco Products

SN 312,520. United States Tobacco Company, New York, N.Y. Filed Nov. 18, 1968.

KING

No claim is made to the word "King" when used to describe the size of a cigarette. The drawing is lined for the color gold.
Owner of Reg. Nos. 221,737, 231,708, and 437,606.
For Cigarettes (Int. Cl. 34).
First use January 1968.

SN 312,521. United States Tobacco Company, New York, N.Y. Filed Nov. 18, 1968.

sano

The drawing is lined for the colors gold and brown. Owner of Reg. Nos. 221,737, 231,708, and 437,606.
For Cigarettes (Int. Cl. 34).
First use January 1968.

Class 18—Medicines and Pharmaceutical Preparations

SN 272,166. Ciba Corporation, d.b.a. The Gland-O-Lac Company, New York, N.Y. Filed May 23, 1967.

CLONE VAC

The word "Clone" is disclaimed apart from the mark without waiving any common law rights therein.
For Fowl Pox Vaccine (Int. Cl. 5).
First use Dec. 2, 1966.

SN 275,424. Alma Laboratories, Inc., New Orleans, La. Filed July 6, 1967.

HYDRO SURCO

For Medicated Preparation for Treatment of Epidermitis of Acne (Int. Cl. 5).
First use June 12, 1956.

SN 275,425. Alma Laboratories, Inc., New Orleans, La. Filed July 6, 1967.

SURCO

For Medicated Preparation for Treatment of Acne or Acne Pimples (Int. Cl. 5).
First use Jan. 15, 1950.

SN 299,791. Richardson-Merrell Inc., New York, N.Y. Filed June 5, 1968.

CLĀR-A-MYCIN

For Antibiotic for Poultry and Livestock (Int. Cl. 5).
First use Dec. 8, 1967.

SN 301,600. Aktiebolaget Astra, Sodertalje, Sweden. Filed June 28, 1968.

TERBUL

Priority claimed under Sec. 44(d) on Swedish application filed Apr. 2, 1968; Reg. No. 125,596, dated Dec. 6, 1968.
For Bronchodilator (Int. Cl. 5).

SN 301,641. Reed & Carnrick, Kenilworth, N.J. Filed June 28, 1968.

PHASIL

Owner of Reg. No. 722,166.
For Medicinal Preparation for the Treatment of Intestinal Gaseousness (Int. Cl. 5).
First use on or about June 12, 1968.

SN 301,982. Unimed, Inc., Morristown, N.J. Filed July 3, 1968.

BETASERC

Owner of Reg. No. 732,084.
For Drug for the Treatment of Circulatory Disorders and Peripheral Vascular Disease, and for Improving Microcirculation (Int. Cl. 5).
First use June 28, 1968.

SN 303,331. Moorman Manufacturing Company, Quincy, Ill. Filed July 22, 1968.

MOOR-MA-STRESS

For Medicated Cattle Feed (Int. Cl. 5).
First use Mar. 1, 1968.

SN 305,057. Midro G.m.b.H., Basel, Switzerland. Filed Aug. 13, 1968.

MIDRO

Owner of Swiss Reg. No. 191,193, dated Apr. 10, 1962.
For Preparation Used for the Relief of Constipation (Int. Cl. 5).

SN 305,155. The Norwich Pharmacal Company, Norwich, N.Y. Filed Aug. 14, 1968.

Count Sheep

For Sleep-Inducing Agent for Human Use (Int. Cl. 5).
First use July 25, 1968.

SN 305,234. The Norwich Pharmacal Company, Norwich, N.Y. Filed Aug. 15, 1968.

COUNT SHEEP

For Sleep-Inducing Agent for Human Use (Int. Cl. 5).
First use July 25, 1968.

SN 305,425. Endo Laboratories, Inc., Garden City, N.Y. Filed Aug. 19, 1968.

VERADONE

For Pharmaceutical Preparation for Use as a Psychotherapeutic Agent (Int. Cl. 5).
First use on or about July 19, 1968.

SN 305,442. Geri Creme Inc., New York, N.Y. Filed Aug. 19, 1968.

GERI CREME

The term "Creme" is disclaimed apart from the mark as shown.
For Cream for the Treatment of Bedsores, Decubitus, Varicose and Arteriosclerotic Ulcers (Int. Cl. 5).
First use May 14, 1968.

SN 306,513. Ro-Paul Drug Corp., Jamaica, N.Y. Filed Sept. 3, 1968.

DECUBITEX

For Pharmaceutical Preparations for the Treatment of Decubitus Ulcers (Int. Cl. 5).
First use Mar. 1, 1967.

SN 307,957. American Home Products Corporation, New York, N.Y. Filed Sept. 23, 1968.

THE COLD BREAKER

Applicant makes no exclusive claim to the word "Cold" apart from the mark as shown.
For Pharmaceutical Preparation for the Relief of Colds, Hayfever, and Sinus Congestion (Int. Cl. 5).
First use Sept. 12, 1968.

SN 308,880. Federal Pharmacal Corporation, Fort Lauderdale, Fla. Filed Oct. 4, 1968.

LAUD-IRON

For Brand of Ferrous Fumarate for Use as a Source of Iron in Iron Deficiency Anemia (Int. Cl. 5).
First use Jan. 1, 1958.

SN 311,361. Eli Lilly and Company, Indianapolis, Ind. Filed Nov. 5, 1968.

KEFLEX

For Broad Spectrum Antibiotic (Int. Cl. 5).
First use Oct. 18, 1968.

SN 313,319. McNeil Laboratories, Inc., Fort Washington, Pa. Filed Nov. 29, 1968.

INNOSTAT

Owner of Reg. No. 780,892.
For Tranquilizer-Analgesic Combination (Int. Cl. 5).
First use Sept. 3, 1968.

SN 314,924. Texas Pharmacal Company, San Antonio, Tex. Filed Dec. 19, 1968.

PERSADOX

For Acne Cream (Int. Cl. 5).
First use Jan. 1, 1968.

SN 314,951. Bristol-Myers Company, New York, N.Y. Filed Dec. 20, 1968.

ECONOMYCIN

Owner of Reg. No. 856,897.
For Antibiotic Preparation (Int. Cl. 5).
First use Nov. 4, 1968.

SN 318,277. U.S. Ethicals Inc., Long Island City, N.Y. Filed Feb. 4, 1969.

PAVRONG

For Antispasmodic (Int. Cl. 5).
First use Aug. 15, 1961.

SN 318,319. Miles Laboratories, Inc., Elkhart, Ind. Filed Feb. 4, 1969.

ACNE-CORT-DOME

Owner of Reg. Nos. 674,493 and 674,496.
For Dermatological Preparation Used in the Treatment of Acne and Related Conditions (Int. Cl. 5).
First use on or before May 31, 1958.

SN 318,512. U.S. Ethicals Inc., Long Island City, N.Y. Filed Feb. 6, 1969.

BIPAVINE

For Antispasmodic (Int. Cl. 5).
First use Aug. 15, 1961.

SN 318,700. Chesebrough-Pond's Inc., New York, N.Y. Filed Feb. 10, 1969.

FRESH-START

Owner of Reg. Nos. 762,615 and 846,953.
For Acne Medicine in Gel and Lotion Form (Int. Cl. 5).
First use Jan. 16, 1969.

Class 19—Vehicles

SN 305,986. Siltronics, Inc., Oakmont, Pa. Filed Aug. 26, 1968.

SEA-SWINGER

For Sailboats (Int. Cl. 12).
First use December 1967.

SN 309,372. The General Tire & Rubber Company, Akron, Ohio. Filed Oct. 10, 1968.

GTR COASTER

Owner of Reg. Nos. 581,368, 837,130, and others.
For Bicycles (Int. Cl. 12).
First use Sept. 10, 1968.

SN 310,669. The Joyce-Cridland Company, Dayton, Ohio. Filed Oct. 28, 1968.

JOYCYCLE

For Motor Driven, Three-Wheeled Industrial Personnel Vehicles Provided With a Plaform for the Operator To Stand Upon (Int. Cl. 12).
First use Oct. 7, 1968.

SN 310,805. Seedman International Corp., Brooklyn, N.Y. Filed Oct. 29, 1968.

CONQUEROR

For Bicycles (Int. Cl. 12).
First use Nov. 30, 1966.
Subj. to Intf. with SN 307,364.

Class 21—Electrical Apparatus, Machines, and Supplies

SN 194,569. Automatic Radio Mfg. Co., Inc., Boston, Mass. Filed June 1, 1964.

AR AUTOMATIC RADIO

The term "Radio" is disclaimed apart from the mark as a whole.
For Radios (Int. Cl. 9).
First use about February 1961.

SN 302,637. RFL Industries, Inc., Boonton, N.J. Filed July 12, 1968.

AUTOMAGNETIC

For Apparatus for Charging and Treating Permanent Magnets (Int. Cl. 9).
First use May 1, 1968.

SN 303,709. Simplex Wire and Cable Company, Cambridge, Mass. Filed July 26, 1968.

CAP-CEL

For Coaxial Cable (Int. Cl. 9).
First use Dec. 31, 1964.

SN 304,067. Edwards Company, Inc., Norwalk, Conn. Filed Aug. 1, 1968.

DUOTRONIC

For Combined Electronic Horns and Sirens (Int. Cl. 9).
First use Sept. 10, 1967.

SN 304,166. U.S. Capacitor Corporation, Burbank, Calif. Filed Aug. 1, 1968.

CERAMOLITHIC

For Ceramic Capacitor (Int. Cl. 9).
First use May 1967.

SN 304,376. National Union Electric Corporation, Bloomington, Ill. Filed Aug. 5, 1968.

NAP ADAPT

For Nozzle Height-Adjusting Devices for Electric Vacuum Cleaners—Namely, Removable Height-Adjusting Tires for the Wheels of Electric Vacuum Cleaners (Int. Cl. 9).
First use July 1968.

SN 305,354. Studebaker Corporation, Harrison, N.J. Filed Aug. 16, 1968.

BIG FOUR

For Battery Testers, Battery Chargers, and Battery Service Equipment—Namely, Jumpers, Voltage Transformers, and Starting Boxes (Int. Cl. 9).
First use not later than Feb. 9, 1968.

SN 305,765. Telemation, Incorporated, Salt Lake City, Utah. Filed Aug. 22, 1968.

MULTICASTER

Owner of Reg. No. 852,629.
For Video Signal Switching and Camera Control Apparatus for Television Systems (Int. Cl. 9).
First use Nov. 1, 1967.

SN 306,602. Tri-Point Industries, Inc., Commack, N.Y. Filed Sept. 4, 1968.

TRINSEEL

For Machined Parts—Namely, Electrically Insulated Standoffs, Feed-Throughs, and Terminals Using Polytetrafluorethylene (Int. Cl. 17).
First use Aug. 9, 1968.

SN 306,785. Kustom Electronics, Incorporated, Chanute, Kans. Filed Sept. 6, 1968.

Kustom

Owner of Reg. No. 844,110.
For Lighting Systems—Namely, Lamps, Sockets, Cables, Switches, and Carrying Cases; Public Address Sound Equipment—Namely, Amplifiers, Microphones, Loudspeakers, Cables, Housings for the Foregoing; and Components Thereof (Int. Cls. 9 and 11).
First use on or about July 16, 1964.

SN 307,184. Avco Corporation, Cincinnati, Ohio. Filed Sept. 12, 1968.

COUPLIFIER

For Radio Communication Equipment (Int. Cl. 9).
First use Aug. 16, 1968.

SN 307,456. General Time Corporation, Stamford, Conn. Filed Sept. 16, 1968.



Owner of Reg. Nos. 816,589 and 854,121.
For Electrical Controls for Electromagnetic Clutches and Brakes (Int. Cl. 9).
First use Sept. 27, 1965.

SN 308,329. Tri-Point Industries, Inc., Commack, N.Y. Filed Sept. 26, 1968.

TRILON 200

For Rod and Tube Stock for Electrical Insulation Members (Int. Cl. 17).
First use Sept. 17, 1968.

SN 308,330. Tri-Point Industries, Inc., Commack, N.Y. Filed Sept. 26, 1968.

TRILON 100

For Rod and Tube Stock for Electrical Insulation Members (Int. Cl. 17).
First use Aug. 9, 1968.

SN 310,314. Electrospace Corporation, Glen Cove, N.Y. Filed Oct. 23, 1968.

insta-tran

For Telephone Intercommunicating Apparatus and Print Out Receivers for Conducting Two-Way Transactions (Int. Cl. 9).
First use Oct. 4, 1968.

SN 312,654. Belden Corporation, Chicago, Ill. Filed Nov. 20, 1968.

BELDTHERM N

Owner of Reg. Nos. 657,060, 706,254, and others.
For Electrical Wire (Int. Cl. 9).
First use Oct. 25, 1968.

SN 312,925. The Valtronic Corporation, Bronx, N.Y. Filed Nov. 22, 1968.

AURATRON

For Electric Lighting Fixtures Primarily for Industrial and Commercial Use (Int. Cl. 11).
First use Oct. 7, 1964.

Class 22 — Games, Toys, and Sporting Goods

SN 264,073. Ervin Litkel, d.b.a. Olympia Specialty Co., New York, N.Y. Filed Feb. 6, 1967.

THE OLYMPIA·E·S·P·BOARD

Applicant disclaims the words "E.S.P. Board" apart from the mark as shown.
For Equipment Sold as a Unit for Playing an Extra Sensory Perception Type Amusement Board Game (Int. Cl. 28).
First use Nov. 15, 1966.

SN 267,954. Les Plastiques Synthetiques, Sallanches, Haute-Savoie, France. Filed Mar. 30, 1967.

rubis

Owner of French Reg. No. 708,095, dated May 12, 1966.
For Snow Skis (Int. Cl. 28).

SN 284,621. Continental Importers and Distributors Limited, Regina, Saskatchewan, Canada. Filed Nov. 13, 1967.

HOOTER SCOOTER

The word "Scooter" is disclaimed apart from the mark as shown. Owner of Canadian Reg. No. 152,305, dated July 28, 1967.
For Non-Motorized Toy Carts (Int. Cl. 28).

SN 299,696. Northwestern Golf Company, Chicago, Ill. Filed June 4, 1968.

THE GREATEST GRIP SINCE THE HANDSHAKE

For Grips Incorporated as a Component Part of Golf Clubs (Int. Cl. 28).
First use Jan. 1, 1968.

SN 300,139. Trio Sporting Goods Manufacturing Co., Chicago, Ill. Filed June 10, 1968.



For Baseball Gloves and Mitts, Softball Gloves and Mitts, Baseballs and Softballs, Baseball and Softball Bats; Badminton Sets and Components (Rackets, Nets, Poles, Shuttlecocks); Tennis Rackets, Balls, Presses and Racket Covers; Soccer Balls; Volleyballs and Volleyball Sets; Tetherballs and Tetherball Sets; Golf Balls and Golf Equipment; Basketballs, Nets and Goals; Footballs, Football Tees, Pumps; Boxing Gloves; Dart Boards, Dart Games, Darts; Table Tennis Sets and Components (Paddles, Nets, Posts, Table Tennis Balls); Ice Hockey Sticks, Ice Hockey Gloves, Shin Guards, Helmets and Pucks (Int. Cls. 7 and 28).
First use Mar. 1, 1968.

SN 302,948. William Thomas Mann, d.b.a. Mann's Bait Company, Eufaula, Ala. Filed July 17, 1968.

JELLY WORM

No claim of exclusive right is made to "Worm" for the goods recited.
For Fishing Lures (Int. Cl. 28).
First use May 5, 1968.

SN 303,074. St. Regis Paper Company, New York, N.Y. Filed July 18, 1968.

ST REGIS

For Golf Balls (Int. Cl. 28).
First use in or about July 1965.

SN 303,283. Deutsche Angelgeräte Manufaktur (Dam) Hellmuth Kuntze Gesellschaft mit beschränkter Haftung & Co. Kommanditgesellschaft, Berlin, Germany. Filed July 22, 1968.

TURBLER

For Artificial Fishing Lures (Int. Cl. 28).
First use Oct. 12, 1967; in commerce Apr. 15, 1968.

SN 303,712. Sportsman's Den, Inc., d.b.a. Kendon Mfg. Co., Ooltewah, Tenn. Filed July 26, 1968.

POP FILE

For Fishing Lures (Int. Cl. 28).
First use July 7, 1968.

SN 303,808. Mar-Kay Krafts, Inc., Dearborn, Mich. Filed July 29, 1968.

BEAN BAGGER

Applicant disclaims the word "Bean" apart from the mark as shown.
For Toy Bean Bags for Playing Games (Int. Cl. 28).
First use Apr. 17, 1968.

SN 305,141. Kenner Products Company, Cincinnati, Ohio. Filed Aug. 14, 1968.

GLOW-GLOBS

For Toy Modeling Compounds (Int. Cl. 28).
First use about Jan. 8, 1968.

SN 305,235. P & H Bait Co., Palmyra, Mo. Filed Aug. 15, 1968.

RIPPLE TAIL

For Spinner-Type Flyrod and Spinning Fishing Lure (Int. Cl. 28).
First use July 1, 1948.

SN 305,305. Bell-Hop Corp., Detroit, Mich. Filed Aug. 16, 1968.

Bell-hop

For Skip Toy Comprising a Leg Ring and Attached Bell on a Cord (Int. Cl. 28).
First use on or about June 10, 1968.

SN 306,640. Brunswick Corporation, Chicago, Ill. Filed Sept. 5, 1968.

AUTOMATIC SCORER

For Bowling Balls (Int. Cl. 28).
First use May 7, 1968.

SN 306,814. A. G. Spalding & Bros. Inc., Chicopee, Mass. Filed Sept. 6, 1968.

QUESTOR

For Athletic Goods Including Equipment for Playing Golf—Namely, Clubs, Balls, Bags, Carts, Head Covers; Equipment for Playing Baseball and Softball—Namely, Bats, Balls, Gloves; Equipment for Playing Tennis, Squash, Table Tennis and Badminton—Namely, Rackets, Nets, Balls, and Birds; Inflated Athletic Balls—Namely, Footballs, Basketballs, Soccer Balls, Volley Balls, Tether Balls, and Game Balls; Athletic Body Protective Equipment—Namely, Pads, Headgear, Catchers' Masks; Boxing Equipment—Namely, Gloves and Striking Devices; Athletic Shoes—Namely, Baseball, Football, Basketball, Track, and Golf Shoes; Athletic Clothing—Namely, Game Uniforms, and Golf Gloves; and for Toys—Namely, Construction Sets, Beads, Toy Animals, and Educational Toys (Int. Cl. 28).
First use Aug. 16, 1968.

SN 307,011. Diversified Products Corporation, Opelika, Ala. Filed Sept. 10, 1968.

ULTRA-K-TRON

For Barbells (Int. Cl. 28).
First use on or about June 15, 1968.

SN 307,632. Eagle Druggists Supply Co., Inc., New York, N.Y. Filed Sept. 18, 1968.

BAMBINOS

For Rattles (Int. Cl. 28).
First use January 1957.

SN 312,265. Mattel, Inc., Hawthorne, Calif. Filed Nov. 15, 1968.

BABY DAWN

No claim of exclusive right is made to "Baby" for the goods recited.
For Dolls, Doll Clothing, and Doll Accessories (Int. Cl. 28).
First use Oct. 7, 1968.

SN 312,391. Mattel, Inc., Hawthorne, Calif. Filed Nov. 18, 1968.

CRISIS

For Equipment Sold as a Unit for Playing a Board Game (Int. Cl. 28).
First use Oct. 11, 1968.

Class 23 — Cutlery, Machinery, and Tools and Parts Thereof

SN 289,096. Hermann Berstorff Maschinenbau GmbH, Hannover-Kleefeld, Germany. Filed Jan. 18, 1968.

BERSTORFF

Owner of German Reg. No. 539,682, dated Nov. 27, 1941.
For Rolling Mills; Tube Making Machines; Vulcanizing Presses and Autoclave Presses; Calenders for Calendering Rubber, Synthetic Rubber, Synthetic Resins and Plastic Substances, Calenders for Rubberizing Tire Cord and for Unplasticized Film and Multi-Roll Profile Calenders; Extruders for Extruding Rubber, Synthetic Rubber, Synthetic Resins, Plastic Substances, Rigid Pipes and Sheeting; Machines for Laminating Plastic Film to Other Plastic Film, to Paper and to Textiles; Winding Machines and Wrapping Machines for Hoses and Rubber Rollers; Crackers and Refiners for Waste Rubber, Synthetic Rubber, Synthetic Resins and Plastic Substances; Cutting Machines, Moulding Machines, Curing Machines, Granulating Machines, Mixing Mills and Stock Blenders, All for Use With Rubber, Synthetic Rubber, Synthetic Resins and Plastic Substances; Machines for Covering Cables With Rubber, Synthetic Rubber, Synthetic Resins and Plastic Substances; Machines for Building Rubber Rollers and Parts of All the Foregoing (Int. Cl. 7).
First use 1923; in commerce 1923.

SN 300,062. The Capewell Manufacturing Company, Hartford, Conn. Filed June 10, 1968.

CAPEWELL

Owner of Reg. Nos. 51,221, 580,980, and others.
For Hand Saw Blades; Power Saw Blades; Bandsaw Blades; Reciprocating Power Saw Blades—Namely, Sabre Saw and Jig-Saw Type Blades; Hole Saws; Hole Saw Holders and Arbors (Int. Cls. 7 and 8).
First use Sept. 15, 1947.

SN 302,434. Mite Corporation, New Haven, Conn. Filed July 10, 1968.

MITE

Owner of Reg. No. 671,771.
For Sewing Machine Attachments and Sewing Aids—Namely, Cloth Guides, Attachment Feet, Adjustable Zipper and Cording Feet, Gathering Feet, Quilters, Narrow Hemmers, Hemmers, Edge Stitchers, Multiple Slotted Binders, Rufflers, Blind Stitch Hemmers, Automatic Buttonholers, and Decorative Zig-Zaggers (Int. Cl. 7).
First use September 1961.

SN 302,773. Sturtevant Industries, Inc., Sturtevant, Wis. Filed July 15, 1968.

SPEEDMASTER

For Wrapping and Labeling Machines for Food (Int. Cl. 7).
First use May 22, 1968.

SN 303,726. Welty-Way Products Incorporated, Cedar Rapids, Iowa. Filed July 26, 1968.

COLATCH

For Sheet Metal Machine for Attaching Collars to Boots or Other Fittings (Int. Cl. 7).
First use Jan. 6, 1966.

SN 304,453. FMC Corporation, San Jose, Calif. Filed Aug. 6, 1968.

SIDEWINDER

Owner of Reg. Nos. 664,377 and 775,743.
For Ditchers for Digging Ditches Such as Water Furrows or Fire Lanes, Seed Planters, Agricultural Row Markers, Sprayers and Agricultural Bed Shapers (Int. Cl. 7).
First use February 1965.

SN 304,511. T.F.H. Publications, Inc., Jersey City, N.J. Filed Aug. 6, 1968.

QUIETtwo

For Aquarium Air Pump (Int. Cl. 7).
First use July 23, 1968.

SN 304,514. T.F.H. Publications, Inc., Jersey City, N.J. Filed Aug. 6, 1968.

QUIETone

For Aquarium Air Pump (Int. Cl. 7).
First use July 23, 1968.

SN 304,572. Atlas Supply Company, Springfield, N.J. Filed Aug. 7, 1968.

ATLAS

Owner of Reg. Nos. 591,103, 837,520, and others.
For Lifting Equipment—Namely, Automotive Jacks and Parts Thereof (Int. Cl. 8).
First use July 29, 1968.

SN 305,474. Multi-Gunite Co., Phoenix, Ariz. Filed Aug. 19, 1968.

MULTI-GUN

For Unitized Machine for Air Placement of Powdered and Granular Materials, Such as Cement Mortar Mixtures, Granular Refractory Materials, and Insulating Materials (Int. Cl. 7).
First use June 18, 1968.

SN 305,638. Crane Sales, Inc., Tulsa, Okla. Filed Aug. 21, 1968.

FLOATING SAUCER

Without prejudice to applicant's common law rights, the word "Floating" is disclaimed apart from its association in the mark as a whole.
For Floating Pumps and Accessories Therefor—Namely, Aerators and Skimmers (Int. Cl. 7).
First use Aug. 2, 1968.

SN 306,593. Sherman Car Wash Equipment Co., Inc., Palmyra, N.J. Filed Sept. 4, 1968.

instawash

The word "Wash" is disclaimed apart from the mark as shown.
For Automatic Car Washing System (Int. Cl. 7).
First use July 5, 1968.

SN 307,740. Harsco Corporation, Wormleysburg, Pa. Filed Sept. 19, 1968.

MOBILCLIMBER

For Concrete Handling Equipment—Namely, Conveyors (Int. Cl. 7).
First use July 2, 1968.

SN 308,335. The Vaughn Machinery Company, Cuyahoga Falls, Ohio. Filed Sept. 26, 1968.

LINEBLOX

Owner of Reg. Nos. 209,787, 762,277, and others.
For Wire Drawing Machines and Parts Thereof (Int. Cl. 7).
First use on or about July 17, 1964.

SN 308,336. The Vaughn Machinery Company, Cuyahoga Falls, Ohio. Filed Sept. 26, 1968.

ROTUBLOC

Owner of Reg. Nos. 209,787, 762,277, and others.
For Tube Drawing Machines and Parts Thereof (Int. Cl. 7).
First use on or about Feb. 21, 1966.

SN 310,934. Sybron Corporation, Rochester, N.Y. Filed Oct. 30, 1968.

Cyberail

For Self-Propelled Monorail Mounted Transport Vehicles and Detachable Detainers Therefor, Primarily Used in Hospitals for Distributing, Storing and Collecting Material (Int. Cl. 12).
First use on or before June 4, 1968.

SN 310,935. Sybron Corporation, Rochester, N.Y. Filed Oct. 30, 1968.

NLV

For Self-Propelled Monorail Mounted Transport Vehicles and Detachable Detainers Therefor, Primarily Used in Hospitals for Distributing, Storing and Collecting Material (Int. Cl. 12).
First use on or before June 4, 1968.

SN 312,515. Textron Inc., Providence, R.I. Filed Nov. 18, 1968.

ETHAN ALLEN

The mark "Ethan Allen" was derived from the name of a now deceased former Vermont Revolutionary War hero.
For Stainless Steel Flatware (Int. Cl. 8).
First use Oct. 18, 1968.

SN 313,480. Ashworth Bros., Inc., Fall River, Mass. Filed Dec. 3, 1968.



For Card Clothing and Other Components of Carding Machines (Int. Cl. 7).
First use Sept. 11, 1968.

SN 313,683. Dana Corporation, Toledo, Ohio. Filed Dec. 5, 1968.



For Hydraulic Pumps and Parts Thereof (Int. Cl. 7).
First use Aug. 5, 1968.

SN 314,557. Imperial Knife Associated Companies, Inc., Providence, R.I. Filed Dec. 16, 1968.

SILVER DAWN

For Stainless Steel Knives, Forks, and Spoons (Int. Cl. 8).
First use Nov. 15, 1968.

SN 314,558. Imperial Knife Associated Companies, Inc., Providence, R.I. Filed Dec. 16, 1968.

GOLDEN MEADOW

For Stainless Steel Knives, Forks, and Spoons (Int. Cl. 8).
First use Nov. 15, 1968.

Class 25 — Locks and Safes

SN 317,934. Clary Corporation, San Gabriel, Calif. Filed Jan. 30, 1969.

CLARY

Owner of Reg. Nos. 770,759, 856,488, and others.
For Door Locks (Int. Cl. 6).
First use on or about Aug. 30, 1968.

Class 26 — Measuring and Scientific Appliances

SN 287,179. Systron-Donner Corporation, Concord, Calif. Filed Dec. 18, 1967.



For Counter-Timers, Plug-In Frequency Extenders for Counter-Timers, Frequency Meters, Plug-In Frequency Extenders for Frequency Meters, Plug-In Frequency Converters, Time Interval Measurement Plug-Ins, Time Interval and Dual Measurement Plug-Ins, Preset Plug-Ins, Video Amplifier Plug-Ins, Pre-Scaler Plug-Ins, Frequency Counters, Frequency to D.C. Converters, Digit-Set Universal Counters, Digital Recorders, Remote In-Line Indicators, D.C. to Time Converters, High Speed Digital Volt Meters, Time Interval Meters, Digital Limit Detectors, Digital Volt Meters, Digital Clocks, Electronic Counters, Automatic Checkout Equipment, Single and Multi-Channel Data Processors, Voltage to Time Converters, Electronic Data Acquisition Systems, Analog Computers, Summers, Integrators, Multipliers, Inverters for Analog Computers, Variable Diode Function Generators, Comparators, Digital Logic Control Modules, Operational Amplifiers, Summers/Inverters, Function Relays, Electronic Switches, Function Switches, Coefficient Potentiometers, Flip Flops, Gates, Power Supplies for Analog Computers, Analog Computer Problem Boards, Linear and Angular Servo Accelerometers, Servo Accelerometer Power Supplies, Electronic Filters for Accelerometers, Inertial Stabilizing Systems, Acceleration Switches, Velocity Sensors, Velocity Preset Electronics Modules, Gyros, Time Code Generators and Tape Search Systems (Int. Cl. 9).
First use Feb. 5, 1963.

SN 289,892. The Harland Engineering Company of Canada Ltd., Lasalle, Quebec, Canada. Filed Jan. 30, 1968.

TECTOWELD

Priority claimed under Sec. 44(d) on Canadian application, filed Oct. 19, 1967; Reg. No. 159,809, dated Dec. 6, 1968.
For Machine Used for the Testing and Control of Resistance Welds, Comprising Sensing Heads, Control Units, Recorders and Printers (Int. Cl. 9).

SN 297,704. Princeton Applied Research Corporation, Princeton, N.J. Filed May 8, 1968.

PAR

Owner of Reg. Nos. 775,569 and 769,724.
For Scientific Instrumentation and Electronic Apparatus—Comprising Laboratory Instrumentation, Laboratory Test Equipment, and Process Control Equipment—Namely, High Temperature Ovens for Laboratory Use; Calibration Function Computer, Fourier Analyzer, Cryogenic Temperature Controller, Box Car Integrator, Electrochemical Material Analyzer, Variable Speed Light Chopper, Strip Chart Recorder, D.C. Photometer, Power Amplifier Reference/Supply, Operational Amplifiers, Lock-In Amplifiers, Photometric Preamplifiers, and Modular Instrument Enclosures for Instruments Such as the Above (Int. Cl. 9).
First use Dec. 6, 1967.

SN 304,416. Gordon Q. Vancil, Wayne, Ill. Filed Aug. 5, 1968.

DR. OPTIC'S

Applicant disclaims "Optic's" apart from the mark as shown.
For Home Vision Testing Kit Comprising Directions for the Examiner, Child's Distant Vision Chart, Adult's Distant Vision Chart, Near Vision Chart, Eye Occluder, Fifteen Inch String, Fifteen Foot String and Score Sheets (Int. Cl. 9).
First use May 8, 1968.

SN 316,149. Transidyne General Corporation, Ann Arbor, Mich. Filed Jan. 8, 1969.

MICROTRODE

For Electrodes for Physiological Measurement or Stimulation (Int. Cl. 9).
First use Nov. 19, 1968.

SN 317,623. Schwien Engineering, Inc., Pomona, Calif. Filed Jan. 27, 1969.

MERCO-MASTER

For Manometers (Int. Cl. 9).
First use Feb. 27, 1968.

SN 318,455. Perfect Film and Chemical Corporation, Manhasset, N.Y. Filed Feb. 5, 1969.

Perfect Pan

Owner of Reg. No. 741,081.
For Photographic Film (Int. Cl. 1).
First use Aug. 4, 1961.

SN 318,769. Digilin, Inc., Glendale, Calif. Filed Feb. 10, 1969.

DIGILIN

For Digital Readout Electric Meters and Parts Thereof (Int. Cl. 9).
First use July 1, 1968.

SN 319,007. Western Blue Print Company, Kansas City, Mo. Filed Feb. 12, 1969.

OPTI-COPY

Owner of Reg. No. 851,486.
For Cameras and Projectors (Int. Cl. 9).
First use December 1967.

SN 324,332. Bio-Tek Instruments, Inc., Shelburne, Vt. Filed Apr. 14, 1969.

MED-SAFE

For Ammeters (Int. Cl. 9).
First use Sept. 21, 1968.

SN 324,355. Neurodyne-Dempsey, Inc., d.b.a. R. H. Dempsey Manufacturing Company, Napa, Calif. Filed Apr. 14, 1969.



The mark consists of a fanciful design of the letters "rhd."
For Portable Electronic Signal Generators (Int. Cl. 9).
First use Jan. 8, 1969.

Class 28 — Jewelry and Precious-Metal Ware

SN 300,195. The International Silver Company, Meriden, Conn. Filed June 11, 1968.

VALENCIA

For Holloware and Flatware Made in Whole or in Part of Precious Metal (Int. Cls. 8 and 14).
First use at least as early as 1935.

SN 324,358. Pappagallo, Inc., New York, N.Y. Filed Apr. 14, 1969.

Pappagallo

For Costume and Precious Metal Jewelry (Int. Cl. 14).
First use at least as early as Apr. 3, 1969.

Class 29 — Brooms, Brushes, and Dusters

SN 300,126. South Eastern Cordage Co., Cleveland, Ohio. Filed June 10, 1968.

POLI-FLEECE

For Dust Mops (Int. Cl. 21).
First use on or about Apr. 1, 1968.

SN 300,128. South Eastern Cordage Co., Cleveland, Ohio. Filed June 10, 1968.

CELLU-FLEECE

For Dust Mops (Int. Cl. 21).
First use on or about Apr. 1, 1968.

SN 300,295. South Eastern Cordage Co., Cleveland, Ohio. Filed June 12, 1968.

SYNTHA FLEECE

The term "Fleece" is disclaimed apart from the mark as shown.
For Dust Mops (Int. Cl. 21).
First use May 1968.

SN 316,459. Claire Nika, d.b.a. Pyramid Products, Green Brook, N.J. Filed Jan. 13, 1969.



The drawing is lined for the color blue.
For Hand Held Sponge Mop for Doing Dishes (Int. Cl. 21).
First use Dec. 30, 1968.

Class 32 — Furniture and Upholstery

SN 274,545. Lear Siegler, Inc., Santa Monica, Calif. Filed June 22, 1967.

ADAPTAFILE

For Filing Cabinets (Int. Cl. 20).
First use approximately Feb. 3, 1965.

SN 298,970. Schlaraffia-Werke Hüser & Co., Wuppertal-Barmen, Germany. Filed May 23, 1968.



Owner of German Reg. No. 694,939, dated Sept. 17, 1956.
For Mattresses, Pillows, Upholstered Furniture, Bed-Frames, Clamps for Beds, Box Springs, Pre-Cut Sponge- and Foam-Type Materials for Mattresses, and Beds (Int. Cl. 20).

SN 300,385. Stow/Davis Furniture Company, Grand Rapids, Mich. Filed June 13, 1968.

ELECTIVE DESIGN SYSTEM

Applicant disclaims the words "Design System" apart from the mark as shown.
For Office Furniture (Int. Cl. 20).
First use on or about May 31, 1968.

SN 305,224. Lehman Specialty Company, Philadelphia, Pa. Filed Aug. 15, 1968.

BATH-VALET

For Self Standing Bathroom Cabinet (Int. Cl. 20).
First use July 15, 1968.

SN 323,710. Lady Fair Kitchens, Inc., Salt Lake City, Utah. Filed Apr. 4, 1969.

LADY FAIR

Owner of Reg. No. 856,505.
For Prefinished Kitchen Cabinets, Bathroom Vanity Cabinets, China Cabinets, and Kitchen Desk Cabinets (Int. Cl. 20).
First use January 1964.

SN 323,779. The Berkline Corporation, West Springfield, Mass. Filed Apr. 7, 1969.

el Royale

For Upholstered Living Room Furniture (Int. Cl. 20).
First use Jan. 14, 1969.

SN 323,790. Clopay Corporation, Cincinnati, Ohio. Filed Apr. 7, 1969.

ALLNITE

For Window Shades (Int. Cl. 20).
First use February 1965.

SN 323,791. Clopay Corporation, Cincinnati, Ohio. Filed Apr. 7, 1969.

MID-NITE

For Window Shades (Int. Cl. 20).
First use January 1969.

SN 325,434. Jarke Corporation, Chicago, Ill. Filed Apr. 24, 1969.

STEELTREE

For Modular Racks Having Adjustable Cantilever Arms for Storing Elongate Stock and Parts Thereof (Int. Cl. 20).
First use Apr. 5, 1968.

Class 34 — Heating, Lighting, and Ventilating Apparatus

SN 298,614. Midwesco-Enterprise, Inc., Chicago, Ill. Filed May 20, 1968.

THERMAL CARE

For Custom Built Process Water Treatment Plants for Industrial Use (Int. Cl. 11).
First use June 6, 1967.

SN 310,590. Rhodia Inc., New York, N.Y. Filed Oct. 25, 1968.

RHO-D-AIR

For Vaporizer for Diffusing Aromatic Chemicals (Int. Cl. 7).
First use July 12, 1968.

SN 324,375. The Torrington Manufacturing Company, Torrington, Conn. Filed Apr. 14, 1969.



For Devices for Propelling Air and Other Gases, and Components for Such Devices—Namely, Centrifugal Fans, Axial Flow Fans, Transverse Flow Fans and Impellers, Housings and Other Parts for Such Fans; and Welding Machines (Int. Cls. 7 and 11).
First use on or about Mar. 27, 1969.

Class 35 — Belting, Hose, Machinery Packing, and Nonmetallic Tires

SN 293,165. Nicolet Industries, Inc., Ambler, Pa. Filed Mar. 13, 1968.

HY-TENSILE

For Asbestos Rubber Sheet Packing (Int. Cl. 17).
First use Feb. 8, 1968.

SN 320,654. James A. Speers, Dearborn, Mich. Filed Mar. 3, 1969.

WEAR MASTER

For Brake Linings (Int. Cl. 12).
First use Feb. 20, 1969.

Class 36 — Musical Instruments and Supplies

SN 272,430. Thomas Organ Company, Sepulveda, Calif. Filed May 25, 1967.

AMPLIPHONIC

Owner of Reg. No. 342,362.
For Combined Music Stands and Electronic Amplifiers (Int. Cl. 9).
First use Mar. 15, 1967.

SN 306,675. Le-Bo Products Co., Inc., Woodside, N.Y. Filed Sept. 5, 1968.

LE-BO

For Phonograph Records and Phonograph Record Accessories—Namely, Phonograph Needles, Brushes, Adapters, Spindles, Earphones, Loaded Blank Cassettes, Loaded Blank Tape Cartridges, Phonograph Record Racks, Carrying Case for Phonograph Records, Reel to Reel Magnetic Tapes, Tape Cartridges and Cassettes (Int. Cl. 9).
First use January 1959.

SN 306,676. Le-Bo Products Co., Inc., Woodside, N.Y. Filed Sept. 5, 1968.

LEBOTONE

For Phonograph Records and Phonograph Record Accessories—Namely, Phonograph Needles, Brushes, Adapters, Spindles, Earphones, Loaded Blank Cassettes, Loaded Blank Tape Cartridges, Phonograph Record Racks, Carrying Case for Phonograph Records, Reel to Reel Magnetic Tapes, Tape Cartridges and Cassettes (Int. Cl. 9).
First use May 1966.

SN 308,137. Plattendurcharbeitung Ultraphone Aktiengesellschaft, Schaan, Liechtenstein. Filed Sept. 24, 1968.



Owner of Liechtenstein Reg. No. 2,477, dated Nov. 9, 1967.
For Phonograph Records (Int. Cl. 9).

SN 316,561. Berlitz Publications, Inc., New York, N.Y. Filed Jan. 15, 1969.

ZERO

For Language Instructional Material—Namely, Pre-Recorded Cassettes and Related Manuals (Int. Cl. 9).
First use Dec. 2, 1968.

SN 320,635. Midas Productions, Inc., Los Angeles, Calif. Filed Mar. 3, 1969.

MADRIGAL

For Musical Instruments—Namely, Musical Pipes (Int. Cl. 15).
First use Jan. 3, 1969.

Class 37 — Paper and Stationery

SN 272,844. Norcross, Inc., New York, N.Y. Filed June 1, 1967.

NORCROSS PANORAMIC

For Gift Wrapping Paper (Int. Cl. 16).
First use May 17, 1967.

SN 295,603. American Camera and Photo Supply Co., Chicago, Ill. Filed Apr. 15, 1968.

ADMORE

For Photographic Albums and Pages for Photographic Albums (Int. Cl. 16).
First use June 2, 1967.

SN 306,998. Adams Industries, Inc., Huntington Woods, Mich. Filed Sept. 10, 1968.

PLASTIYARN

For Reinforcing Strand for Use in Paper Manufacture (Int. Cl. 16).
First use July 14, 1968.

Class 38 — Prints and Publications

SN 266,582. Violet Priestley, d.b.a. Library Filmstrip Center, Wichita, Kans. Filed Mar. 13, 1967.

LIBRARY FILMSTRIP CENTER

For Color-Sound Slide Films (Int. Cl. 9).
First use on or about June 17, 1962.

SN 284,584. The Board of Missions of the Methodist Church, New York, N.Y. Filed Nov. 13, 1967.

WORLD OUTLOOK

For Magazine (Int. Cl. 16).
First use in the month of January 1915.

SN 284,658. Gunther Wagner Pelikan-Werke, Hannover, Germany. Filed Nov. 13, 1967.

PELIKAN

Owner of German Reg. No. 677,564, dated June 14, 1955.
For Booklets (Int. Cl. 16).

SN 293,804. The Confederate Air Force, Mercedes, Tex. Filed Mar. 21, 1968.

CAF

For Pamphlets (Int. Cl. 16).
First use Sept. 6, 1957.

SN 298,117. The Exclusive Company, Philadelphia, Pa. Filed May 14, 1968.

MY SHADOW

For Stationery—Namely, Printed Postcards (Int. Cl. 16).
First use Feb. 23, 1968.

SN 298,134. Liberty Marking Tag Co., Inc., Plainview, N.Y. Filed May 14, 1968.

ROTOCOLOR

For Printed Marking Tags for Attachment to Garments in Dry Cleaning Establishments (Int. Cl. 16).
First use May 2, 1968.

SN 307,577. Institute for Scientific Information, Inc., Philadelphia, Pa. Filed Sept. 17, 1968.

INDEX CHEMICUS REGISTRY SYSTEM

Applicant disclaims the terminology "Registry System" apart from the mark as shown. Owner of Reg. No. 826,421.
For Index Published Periodically on Chemical Compounds (Int. Cl. 16).
First use Aug. 30, 1968.

SN 312,770. Hachette, Inc., New York, N.Y. Filed Nov. 21, 1968.

Le LIVRE de POCHE

Applicant disclaims the words "Le Livre de Poche" apart from the mark as shown. The English translation of the words in the mark is "pocket book" or "paperback book."
For Books (Int. Cl. 16).
First use Sept. 1, 1968.

SN 315,306. Creative Merchandisers, Inc., Chicago, Ill. Filed Dec. 27, 1968.

TATTOODLES

For Adhesively Coated Designs for Application to the Skin (Int. Cl. 16).
First use Sept. 4, 1968.

SN 320,825. Frank Jogerst, d.b.a. Auto Math, Altadena, Calif. Filed Mar. 5, 1969.

AUTO MATH

Applicant disclaims the terminology "Math" apart from the mark as shown.
For Printed Cards Which Serve as Aides for Understanding New Elementary Mathematics (Int. Cl. 16).
First use Feb. 21, 1969.

SN 324,860. Dial-A-Star, Inc., Englewood, Colo. Filed Apr. 18, 1969.

DIAL-A-STAR

For Printed Horoscope in Card Form (Int. Cl. 16).
First use Apr. 9, 1969.

SN 325,002. Larry L. Booda, d.b.a. Booda News Enterprises, Rockville, Md. Filed Apr. 21, 1969.

SEAS

For Periodical Publication in Newsletter Form (Int. Cl. 16).
First use Apr. 14, 1969.

SN 325,017. The Dow Chemical Company, Midland, Mich. Filed Apr. 21, 1969.

DOWETCH FACTS

For Trade News Bulletin (Int. Cl. 16).
First use at least as early as March 1963.

SN 325,108. John Wallace, d.b.a. Reveal-A-Tax Company, Old Bridge, N.J. Filed Apr. 14, 1969.

REVEAL-A-TAX

For Series of Publications Devoted to Real Property Tax, Amounts and Rates in Different Municipalities (Int. Cl. 16).
First use Mar. 20, 1969.

SN 325,217. Periodical Publishers' Service Bureau, Inc., New York, N.Y. Filed Apr. 22, 1969.

PPS BELL RINGER

For House Organ (Int. Cl. 16).
First use on or about Nov. 15, 1963.

SN 325,418. Westvaco Corporation, New York, N.Y. Filed Apr. 23, 1969.

TASTE AND ODOR CONTROL JOURNAL

For Series of Pamphlets (Int. Cl. 16).
First use September 1934.

SN 325,450. American Optical Corporation, Southbridge, Mass. Filed Apr. 24, 1969.

INSIGHT

For Periodical Magazine Constituting a Corporate House Organ (Int. Cl. 16).
First use February 1969.

Class 39—Clothing

SN 272,744. The Perry Knitting Company, Perry, N.Y. Filed May 31, 1967.

SWITCHABOUT

For Sleeping Garments for Children (Int. Cl. 25).
First use May 28, 1958.

SN 287,150. Corsets Silhouette Ltd., London, England. Filed Dec. 18, 1967.

LITTLE X PLUS

Owner of British Reg. No. 903,953, dated Jan. 10, 1967; and U.S. Reg. Nos. 641,444, 676,359, and others.
For Corsets, Girdles (Corsets) and Suspender Belts (Int. Cl. 25).

SN 287,174. Societe: "M. Bril & Co.," Paris, France. Filed Dec. 18, 1967.

FBI

FABRICATION BRIL INTERNATIONAL

Priority claimed under Sec. 44(d) on French Reg. No. 725,897, dated July 31, 1967.
For Men's, Young Men's and Women's Dresses and Tailored Apparels—Namely, Suits, Coats, Trousers, Vests, Town Suits, Evening Dresses, Day and Night Shirts, Ties, Sweaters, Pullovers, Socks, Gloves, Hats, Caps, Shoes, and Men's Underwear (Int. Cl. 25).

SN 289,711. National Knitting Company, Royersford, Pa. Filed Jan. 26, 1968.

Nursery Nits by NATIONAL

The word "Nits" is disclaimed apart from the mark shown.
For Coveralls, Jackets, Pram Suits, Two-Piece Dress-Up Suits, Sun Suits, Swim Wear and Sleepers (Int. Cl. 25).
First use Dec. 15, 1967.

SN 292,681. Country Miss, Inc., Northampton County, Pa. Filed Mar. 7, 1968.

COUNTRY PETITES

The word "Petites" is disclaimed apart from the mark as shown.
For Ladies' Suits, Dresses, Two Piece Dresses and Three Piece Dresses (Int. Cl. 25).
First use Feb. 13, 1968.

SN 293,464. Bates Manufacturing Company, Incorporated, Lewiston, Maine. Filed Mar. 18, 1968.

MR. BATES

Owner of Reg. Nos. 86,025, 125,958, and others.
For Sportswear, i.e., Trousers, Jackets, Knit Shirts, Sweaters, Jump Suits, Socks, and Scarves (Int. Cl. 25).
First use February 1968.

SN 293,465. Bates Manufacturing Company, Incorporated, Lewiston, Maine. Filed Mar. 18, 1968.

LORD BATES

Owner of Reg. Nos. 86,025, 125,958, and others.
For Sportswear, i.e., Trousers, Jackets, Knit Shirts, Sweaters, Jump Suits, Socks, and Scarves (Int. Cl. 25).
First use February 1968.

SN 294,018. David W. Lupton, New York, N.Y., assignee of Contact Marketing Inc., New York, N.Y. Filed Mar. 25, 1968.



For Men's and Boys' Wearing Apparel—Namely, Jackets, Slacks, Jeans, Sport Shirts, T-Shirts and Sport Caps (Int. Cl. 25).
First use Dec. 27, 1967.

SN 298,104. Robert Bruce, Inc., Philadelphia, Pa. Filed May 14, 1968.

GRUBB

For Men's and Boys' Knit Shirts, Sweaters, Swimwear and Swim Tops (Int. Cl. 25).
First use November 1966.

SN 299,234. I. C. Isaacs and Company, Inc., Baltimore, Md. Filed May 28, 1968.

TRIMFIT

Owner of Reg. No. 573,063.
For Ladies' and Men's Slacks (Int. Cl. 25).
First use August 1951.

SN 300,710. Harry Irwin, Inc., New York, N.Y. Filed June 18, 1968.

L'VIVA

For Men's Topcoats, Overcoats, Sport Jackets and Women's Coats (Int. Cl. 25).
First use June 3, 1964.

SN 300,391. Robert Hall Clothes, Inc., d.b.a. Robert Hall Clothes, New York, N.Y. Filed June 20, 1968.

Juilliard

Owner of Reg. No. 502,513.
For Coats, Shirts, Slacks, Suits, Sweaters and Ties (Int. Cl. 25).
First use on or about July 3, 1963.

SN 301,382. Lady Barry Inc., Lawrence, Mass. Filed May 14, 1968.

TONI O JUNIOR

The word "Junior" is disclaimed apart from the mark as shown.
For Women's Coats and Jackets (Int. Cl. 25).
First use Mar. 22, 1968.

SN 302,868. Sero of New Haven, Inc., New Haven, Conn. Filed July 16, 1968.



The mark does not represent or depict any living individual.
For Men's Shirts (Int. Cl. 25).
First use Dec. 12, 1962.

SN 303,092. Sam Vermut and Sons, Brooklyn, N.Y., assignee of "XLO" Shoe Findings Co., New York, N.Y. Filed July 18, 1968.

Vollon

For Shoe Lifts, Shoe Heels, Shoe Taps, and Shoe Soles (Int. Cl. 25).
First use Mar. 1, 1967.

SN 304,484. Top Form-Yolande, Inc., New York, N.Y., assignee of Tanya Mendoza, New York, N.Y. Filed Aug. 6, 1968.

Tanya LOUNGEWEAR

The word "Loungewear" is disclaimed apart from the mark as shown.
For Girdles, Brassieres, Panties Made From Silk, Cotton, Nylon, Acrylic, and Dacron, Knitted or Woven (Int. Cl. 25).
First use June 6, 1968.

SN 308,082. Baba Originals, Inc., New York, N.Y. Filed Sept. 24, 1968.

Baba original

Applicant disclaims the term "Original" separate and apart from the mark as shown.
For Women's Wear—Namely, Dresses, Coats, Suits, Pants, Lingerie, and Lounging Wear—Namely, Pajamas, Robes, and Gowns (Int. Cl. 25).
First use 1954.

SN 308,500. Munsingwear, Inc., Minneapolis, Minn. Filed Sept. 30, 1968.

STOCKING LOCKING

For purposes of registration, applicant disclaims the word "Stocking" apart from the mark as shown and without waiving any of applicant's common law rights therein.
For Garterless Panty Girdles (Int. Cl. 25).
First use Sept. 13, 1968.

SN 308,716. Prince Dinori, Inc., Miami, Fla. Filed Oct. 2, 1968.

Prince Dinori

"Prince Dinori" is a fictitious name and is not the name of a particular individual.
For Shirts, Coats, Rainwear and Slacks (Int. Cl. 25).
First use July 5, 1968.

SN 314,310. Joseph Bancroft & Sons Company, New York, N.Y. Filed Dec. 12, 1968.

NORTHMONT

For Women's and Misses' Hosiery, Panty Hose, Leotards and Tights (Int. Cl. 25).
First use May 2, 1927.

SN 315,373. Abracadabra Creations Inc., New York, N.Y. Filed Dec. 30, 1968.

ABRACADABRA

For Beachwear, Loungewear, Sleepwear, Dresses, Coats, Slacks, Jackets and Suits (Int. Cl. 25).
First use prior to May 1, 1968.

SN 316,451. Miller Harness Company, Inc., New York, N.Y. Filed Jan. 13, 1969.

"EQUI-STRETCH"

For Riding Breeches (Int. Cl. 25).
First use Nov. 1, 1967.

SN 317,451. Infanta Knitting Mills, Rockledge, Pa. Filed Jan. 24, 1969.

Babes by Infanta

The term "Babes" is disclaimed apart from the mark as shown. Owner of Reg. Nos. 441,196, 756,476, and 756,477.
For Children's Sweaters and Sweater Sets (Int. Cl. 25).
First use on or about Jan. 19, 1946.

SN 317,944. Garland Corporation, Brockton, Mass. Filed Jan. 30, 1969.

INTERMISSION

For Women's Sportswear—Namely, Cotton-Knit Jerseys, Slacks, Shirts and Jumpers (Int. Cl. 25).
First use at least as early as Dec. 20, 1968.
Subj. to Intf. with SN 320,924.

SN 318,961. Infanta Knitting Mills, Rockledge, Pa. Filed Feb. 12, 1969.

Babes by Infanta

The term "Babes" is disclaimed apart from the mark as shown. Owner of Reg. Nos. 441,196, 756,476, and 756,477.
For Children's Sweaters and Sweater Sets (Int. Cl. 25).
First use on or about Jan. 2, 1960; on or about Jan. 19, 1946, as to "Babes by Infanta."

SN 319,941. Oxford Industries, Inc., Atlanta, Ga. Filed Feb. 24, 1969.

wright ever-pressed

"Ever-Pressed" is disclaimed apart from any of the elements of the composite mark as shown without any disclaimer of common law right therein. The drawing is lined for the color gold. Owner of Reg. No. 804,723.
For Slacks (Int. Cl. 25).
First use June 8, 1964.

SN 320,226. Adorable Brassiere Company, Inc., New York, N.Y. Filed Feb. 27, 1969.

Adorable

For Brassieres (Int. Cl. 25).
First use Sept. 1, 1940.

SN 320,924. The United States Shoe Corporation, Cincinnati, Ohio. Filed Mar. 6, 1969.

Intermission

For Ladies' Shoes (Int. Cl. 25).
First use at least as early as Jan. 17, 1969.
Subj. to Intf. with SN 317,944.

SN 325,299. GAF Corporation, New York, N.Y. Filed Apr. 23, 1969.

GAF

Owner of Reg. Nos. 509,124, 837,005, and others.
For Aprons for Photographic and Laboratory Use (Int. Cl. 25).
First use at least as early as June 20, 1967.

Class 40—Fancy Goods, Furnishings, and Notions

SN 271,873. Yardley of London, Inc., Totowa, N.J. Filed May 18, 1967.

TWIGGY

"Twiggy" identifies Lesley Hornby whose consent is of record.
For False Eyelashes (Int. Cl. 26).
First use May 11, 1967.

SN 292,779. Thomas French & Sons Limited, Manchester, England. Filed Mar. 8, 1968.

RUFFLETTE REGIS

Owner of British Reg. No. 872,591, dated Dec. 1, 1964.
For Curtain Heading Tapes (Int. Cl. 26).

Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

SN 308,155. Soptra Fabrics Corporation, New York, N.Y. Filed Sept. 24, 1968.

Soptra FABRICS

The word "Fabrics" is disclaimed separate and apart from the mark as shown.
For Cotton, Rayon, and Woolen Piece Goods (Int. Cl. 24).
First use 1941.

SN 311,405. Poppili Fabrics, Naples, Fla. Filed Nov. 5, 1968.

POPPILI

For Textile Fabrics in the Piece Composed of Cotton, Linen, Silk and Synthetic Fibers (Int. Cl. 24).
First use Oct. 1, 1964.

SN 314,183. Cannon Mills Company, Kannapolis, N.C. Filed Dec. 11, 1968.

FEATHERLITE

Owner of Reg. No. 616,614.
For Sheets, Pillowcases, Towels, Wash Cloths, Bedspreads and Blankets (Int. Cl. 24).
First use Nov. 5, 1968; as early as 1927 in a different form.

SN 319,144. Crown Textile Mfg. Corp., New York, N.Y. Filed Feb. 14, 1969.

ARMOFLEXXX

Owner of Reg. No. 441,752.
For Interlining and Interfacing Fabrics (Int. Cl. 24).
First use Jan. 24, 1969.

Class 43 — Thread and Yarn

SN 321,198. The Duplan Corporation, New York, N.Y. Filed Mar. 10, 1969.

RECALL

For Stretch Yarn for Use in Making Hosiery (Int. Cl. 23).
First use Feb. 14, 1969.

Class 45 — Soft Drinks and Carbonated Waters

SN 297,464. Wakefern Food Corporation, Elizabeth, N.J. Filed May 6, 1968.

SHOP-RITE

Owner of Reg. Nos. 738,144, 812,306, and others.
For Ginger Ale and Root Beer (Int. Cl. 32).
First use at least as early as 1962.
Subj. to Intf. with SN 319,023.

Class 46 — Foods and Ingredients of Foods

SN 262,125. Central Dairy Products Company, d.b.a. Timothy Farms, Norman, Okla. Filed Jan. 9, 1967.



No claim is made to the use of the word "Pizza" apart from the mark as shown.
For Frozen Pizza (Int. Cl. 30).
First use Sept. 1, 1966.
Subj. to Intf. with SN 314,860 and SN 314,861.

SN 296,157. Hills Bros. Coffee, Inc., San Francisco, Calif. Filed Apr. 22, 1968.

Food Services BLEND

Applicant disclaims the words "Food" and "Blend" apart from the mark as shown.
For Coffee (Int. Cl. 30).
First use Feb. 9, 1968.

SN 299,841. General Foods Corporation, White Plains, N.Y. Filed June 6, 1968.

OPEN SEA

For Sauce for Sea Food (Int. Cl. 30).
First use May 5, 1961.

SN 300,643. Deltown Foods, Inc., Yonkers, N.Y. Filed June 18, 1968.

DELLAC

For Milk Derived Proteins and Protein Fat Emulsions, in Powder Form, for Use as a Food Ingredient and as an Ingredient for Livestock Feeds (Int. Cls. 5 and 31).
First use Jan. 19, 1967.

SN 300,877. Jiffy Fry, Inc., Crookston, Minn. Filed June 20, 1968.



For Frozen French Fried and Crinkle Cut Potatoes (Int. Cl. 29).
First use Oct. 1, 1961.

SN 301,689. Armour and Company, Chicago, Ill. Filed July 1, 1968.



For Fresh Beef (Int. Cl. 29).
First use on or prior to June 11, 1968.

SN 301,691. Armour and Company, Chicago, Ill. Filed July 1, 1968.

TES-TENDER

For Fresh Beef (Int. Cl. 29).
First use on or prior to June 11, 1968.

SN 301,796. Worthington Foods, Inc., Worthington, Ohio. Filed July 1, 1968.

stripples

For High Protein, Vegetable Base Foods for Use in the Place of Meat of Animal Flesh Type (Int. Cl. 29).
First use May 28, 1968.

SN 303,945. Welch Foods Inc., Westfield, N.Y., by change of name from The Welch Grape Juice Company, Inc., Westfield, N.Y. Filed July 30, 1968.

WELCH'S

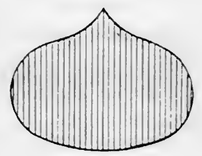
Owner of Reg. Nos. 109,970, 355,513, and 742,054.
For Prune Juice (Int. Cl. 32).
First use July 18, 1968.

SN 307,088. Ed Collins Seafood, Inc., Palacios, Tex. Filed Sept. 11, 1968.



Applicant disclaims exclusive rights to the word "Brand" apart from the mark as shown.
For Seafoods Packaged in Containers or Cans (Int. Cl. 29).
First use on or about Jan. 1, 1968.

SN 308,284. Gaymont Laboratories, Inc., Chicago, Ill. Filed Sept. 26, 1968.



The drawing is lined for the color red, but no claim is made to color.
For Flavored Dry Seasoning Mixes for Making Dips, Fruit Bases for Making Fruit Flavored Yogurt and Food Beverages (Int. Cl. 30).
First use Jan. 7, 1966, on dry seasoning mixes.

SN 308,605. Country Lad Foods, Inc., Atlanta, Ga. Filed Oct. 1, 1968.



For High Protein Food Beverage Containing Vegetable Fat Rather Than Butterfat (Int. Cl. 29).
First use May 13, 1968.

SN 309,455. Harvest Brand, Inc., Pittsburg, Kans. Filed Oct. 11, 1968.

harvest brand

STOCKADE

The term "Brand" is disclaimed apart from the mark as shown.
For Livestock Feed (Int. Cl. 31).
First use July 15, 1968.

SN 309,456. Harvest Brand, Inc., Pittsburg, Kans. Filed Oct. 11, 1968.

harvest brand

The term "Brand" is disclaimed apart from the mark as shown.
For Livestock Feed (Int. Cl. 31).
First use July 15, 1968.

SN 311,876. Allen Products Company, Inc., d.b.a. Allen Products Co., Inc., Allentown, Pa. Filed Nov. 13, 1968.

ALPO MEAT TRIO

Applicant claims exclusive right to use of the words "Meat Trio" as part of its mark, but not otherwise. Owner of Reg. Nos. 782,941 and 785,326.
For Dog Food (Int. Cl. 31).
First use on or about Aug. 22, 1968.

SN 311,886. Interstate Bakeries Corporation, Kansas City, Mo. Filed Nov. 12, 1968.

ROUND THE CLOCK

Owner of Reg. No. 560,060.
For Bread and Frozen Snack Pies (Int. Cl. 30).
First use 1948.

SN 312,073. Staff Supermarket Associates, Inc., Jericho, N.Y. Filed Nov. 13, 1968.

Minuet

Owner of Reg. No. 749,860.
For Bacon, Fruit Preserves, Sandwich Spread Consisting of Salad Dressing With Condiments, Vegetable Oil, Canned Vegetables, Canned Fruits, Pickles, Canned Pork and Beans and Pancake and Waffle Syrup (Int. Cls. 29 and 30).
First use Jan. 18, 1959.

SN 312,074. Staff Supermarket Associates, Inc., Jericho, N.Y. Filed Nov. 13, 1968.

Minuet

Owner of Reg. No. 749,860.
For Shortening Comprised of Vegetable Oils and Meat Fats, Fruit Preserves, Tomato Catsup, Canned Vegetables, Whipped Salad Dressing, Canned Fruits, Maraschino Cherries and Frozen Fruits (Int. Cls. 29 and 30).
First use Aug. 1, 1965.

SN 313,740. The Taylor Provisions Company, Trenton, N.J. Filed Dec. 5, 1968.

TAYLORETTES

Owner of Reg. Nos. 61,356, 668,119, and others.
For Smoked Sausages (Int. Cl. 29).
First use Oct. 24, 1968.

SN 314,227. Helms Bakeries, Los Angeles, Calif. Filed Dec. 11, 1968.

BING BANGS

For Bakery Goods—Namely, Cup Cakes (Int. Cl. 30).
First use Nov. 8, 1968.

SN 314,359. Penn Dairies, Inc., Lancaster, Pa. Filed Dec. 12, 1968.

MED-O-FARMS

For Fluid Milk (Int. Cl. 29).
First use not later than Oct. 10, 1922.

SN 314,360. Peter Paul, Inc., Naugutuck, Conn. Filed Dec. 12, 1968.

MILK JOY

Applicant disclaims the word "Milk" apart from the mark as shown. Owner of Reg. No. 443,802.
For Milk Chocolate Coconut Candy (Int. Cl. 30).
First use Oct. 29, 1968.

SN 314,836. United States Tobacco Company, New York, N.Y. Filed Dec. 18, 1968.

GRECO'S Scotch Almond

No claim is made to the words "Almond" and "Scotch" when used apart from the mark as shown. Owner of Reg. Nos. 260,343, 826,179, and others.
For Candy Bars Wrapped for Retail Sale (Int. Cl. 30).
First use about July 1966.

SN 315,239. S. S. Kresge Company, Detroit, Mich. Filed Dec. 26, 1968.

Kmart

Owner of Reg. Nos. 784,920, 853,764, and others.
For Non-Dairy Milk and Cream Substitutes (Int. Cl. 29).
First use on or before July 15, 1968.

SN 315,325. David Michael & Co., Inc., Philadelphia, Pa. Filed Dec. 27, 1968.

MICHTEX

For Stabilizers Used in All Branches of the Food Industry (Int. Cl. 30).
First use Apr. 3, 1968.

SN 316,287. Bagel Master, Inc., Wheaton, Md. Filed Jan. 10, 1969.



No claim is made for the representation of the bagel or the word "Bagel" apart from the mark as shown.
For Dough Products—Namely, Bagels (Int. Cl. 30).
First use at least as early as Nov. 25, 1968.

SN 317,524. Beckham Candy Company, Inc., Atlanta, Ga. Filed Jan. 27, 1969.

FLAPJACK

For Candy Suckers (Int. Cl. 30).
First use on or about Jan. 15, 1948.

SN 317,535. Dean Foods Company (Delaware corporation), Franklin Park, Ill., assignee of Dean Foods Company (Illinois corporation), Franklin Park, Ill. Filed Jan. 27, 1969.

TOPSY TURVY

For Yogurt (Int. Cl. 29).
First use Dec. 16, 1968.

SN 317,577. Kern Foods, Inc., City of Industry, Calif. Filed Jan. 27, 1969.

CRYSTAL

For Table Syrup and Catsup (Int. Cl. 30).
First use 1925.

SN 317,578. Kern Foods, Inc., City of Industry, Calif. Filed Jan. 27, 1969.

CALIFORNIA CLUB

For Catsup (Int. Cl. 30).
First use September 1954.

SN 317,729. Comet Rice Mills, Inc., Dallas, Tex. Filed Jan. 28, 1969.

COMET SUN

Owner of Reg. Nos. 77,427, 850,693, and others.
For Milled Rice (Int. Cl. 30).
First use Mar. 26, 1968.

SN 318,026. Bunte Candies, Inc., Oklahoma City, Okla. Filed Jan. 31, 1969.

TREASURE CHEST

For Candy (Int. Cl. 30).
First use Jan. 23, 1969.

SN 318,055. Knapp-Sherrill Company, Donna, Tex. Filed Jan. 31, 1969.

SWANK

Owner of Reg. No. 721,415.
For Tomato Cocktail or Juice (Int. Cl. 32).
First use Sept. 6, 1968.

SN 318,619. Barrington Foods, Inc., Honeoye Falls, N.Y. Filed Feb. 7, 1969.

OLDE HOMESTEAD

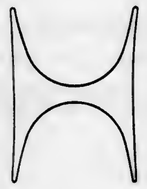
For Orange Marmalade, and Other Jams, Jellies and Preserves (Int. Cl. 29).
First use 1922.

SN 318,838. Swift & Company, Chicago, Ill. Filed Feb. 10, 1969.

TABLE QUEEN

For Oleomargarine (Int. Cl. 29).
First use on or about Mar. 19, 1918.

SN 319,674. Morton International, Inc., Chicago, Ill. Filed Feb. 20, 1969.



For Salt, Pepper, Sugar, Honey, Cheese Dressings, Meatless Condiment Sauces and Dressings, Sugar Substitutes, Salt Substitutes, Flavoring Extracts, Syrups and Concentrates, and Condimental Seasonings for Vegetables, Meats and Other Edibles (Int. Cls. 1, 5, 29, and 30).
First use on or about Apr. 23, 1964.

SN 320,350. Karlsburger Foods, Inc., Fort Lauderdale, Fla. Filed Feb. 28, 1969.

Karlsburger

For Soup Bases—Namely, Chicken, Beef, Ham, Onion and Consomme (Int. Cl. 29).
First use November 1968.

SN 321,865. Food Fair Stores, Inc., d.b.a. Hygrade Bakery Company, Philadelphia, Pa. Filed Mar. 17, 1969.



Owner of Reg. No. 756,983.
For Cheese Puffs, Pretzel Puffs, Pretzels, Shelled Peanuts, Cookies and Potato Chips (Int. Cls. 29 and 30).
First use Sept. 3, 1967.

SN 324,368. Ralston Purina Company, St. Louis, Mo. Filed Apr. 14, 1969.

DYNAMAN

Owner of Reg. No. 864,322.
For Breakfast Cereal Product (Int. Cl. 30).
First use July 29, 1968.

SN 324,982. Fairmont Foods Company, Omaha, Nebr. Filed Apr. 21, 1969.

SKIP-THE-DIP

For Potato Chips (Int. Cl. 29).
First use Mar. 15, 1969.

SN 325,130. Delson Candy Co., Inc., New York, N.Y. Filed Apr. 22, 1969.

ROYAL PEPPERMINT CREAMS

The exclusive right to the use of the words "Peppermint Creams" is disclaimed apart from the mark as shown.
For Candies (Int. Cl. 30).
First use Apr. 1, 1969.

SN 325,295. P. Ferrero & C. S.p.A., Alba, Cuneo, Italy. Filed Apr. 23, 1969.

SILHOUETTE

Owner of Italian Reg. No. 215,645, dated Oct. 2, 1967.
For Dietetic Candy With Low Sugar Content (Int. Cl. 5).

SN 325,668. Runciman & Runciman, Exeter, Calif. Filed Apr. 28, 1969.

BLUE FLASH

For Fresh Grapes (Int. Cl. 31).
First use Oct. 23, 1941.

SN 325,669. Runciman & Runciman, Exeter, Calif. Filed Apr. 28, 1969.



For Fresh Grapes (Int. Cl. 31).
First use Dec. 8, 1953.

Class 47 — Wines

SN 324,646. E. & J. Gallo Winery, d.b.a. Gallo Vineyards, Modesto, Calif. Filed Apr. 16, 1969.

Serengeti

For Wines (Int. Cl. 33).
First use Apr. 10, 1969.

Class 49 — Distilled Alcoholic Liquors

SN 324,024. Puerto Rico Distillers, Inc., d.b.a. Barcelo Marques & Co., Arecibo, Puerto Rico. Filed Apr. 9, 1969.

PALO VIEJO

The Spanish words "Palo Viejo" means "old stick" or "old tree." Owner of Reg. Nos. 641,850, 641,851, and 818,826.
For Alcoholic Beverages—Namely, Rum and Liqueurs (Int. Cl. 33).
First use 1906.

Class 50 — Merchandise Not Otherwise Classified

SN 301,926. Foil-Sculpt, Inc., New York, N.Y. Filed July 3, 1968.

FOIL-SCULPT

For Kit Containing Pre-Cut Patterns for Assembling Three Dimensional Works of Art for Hanging on Walls (Int. Cl. 20).
First use Jan. 14, 1968.

SN 307,767. Transilwrap Company, Inc., Chicago, Ill. Filed Sept. 19, 1968.

TRANSIL-MASK

For Orange Calendered Vinyl Sheet Used for Opaquing and Masking Negatives When Exposing Lithographic Plates (Int. Cl. 16).
First use February 1963.

SN 320,751. Spillers Limited, London, England. Filed Mar. 4, 1969.

TYDISAN

For Removable Sheet Intended for Insertion in the Bottom of Pet Cages, Such as Bird Cages (Int. Cl. 21).
First use in or about 1956; in commerce at least as early as January 1969.

SN 320,976. Spatz Paint Industries, Inc., St. Louis, Mo. Filed Mar. 6, 1969.

BUCKET BONNET

For Protective Covers for Containers for Paints and Other Coating Materials (Int. Cl. 22).
First use Jan. 3, 1969.

SN 323,762. Creative Metals, Inc., Hazelwood, Mo. Filed Apr. 7, 1969.

TABLEAU

For Art Works Consisting of Panels Having Divider Strips Between Which Bits of Metal Are Adhered (Int. Cl. 20).
First use Aug. 30, 1968.

Class 51 — Cosmetics and Toilet Preparations

SN 276,768. Societe Francaise de Marques, Paris, France. Filed July 25, 1967.

PARFUMS DE VILLIERS

The mark can be translated as "perfume of villiers." Applicant disclaims "Parfums" apart from the mark as shown. Owner of French Reg. No. 488,427, dated May 27, 1960 (Seine); Natl. Inst. No. 145,202.
For Creams, Powders and Make-Up for the Face; Lipstick; Lotions for the Face and Hands; Make-Up Removing Creams and Lotions, Eyelash and Eye Brow Make-Up Preparations; Nail Polish and Nail Polish Remover (Int. Cl. 3).

SN 290,056. Posner Laboratories, Inc., Corona, N.Y. Filed Feb. 1, 1968.

SO-MILD

For Hair Straightener (Int. Cl. 3).
First use October 1963.

SN 292,513. Stendhal, Societe Anonyme, Paris, France. Filed Mar. 5, 1968.

CHARTREUSE DE PARME

"Chartreuse de Parme" is translated to be "Carthusian Monastery of Parma." Owner of French Reg. No. 727,548, dated Sept. 21, 1967.
For Perfumes, Toilet Waters, Cologne, Face and Body Lotions, Face and Body Creams, Lipstick, Face Powder and Rouge (Int. Cl. 3).

SN 294,394. Richard Hudnut, Morris Plains, N.J. Filed Mar. 28, 1968.

EYE OPENERS

For Eye Shadow (Int. Cl. 3).
First use Mar. 25, 1968.

SN 298,191. Avon Products, Inc., New York, N.Y. Filed May 15, 1968.

INTERMISSION

For Cream Sachet, Dusting Powder, Powder Sachet, Cologne Mist and Perfume (Int. Cl. 3).
First use May 1, 1968.

SN 298,403. Avon Products, Inc., New York, N.Y. Filed May 17, 1968.

ACCOLADE

For After Shave Lotion and Talcum Powder (Int. Cl. 3).
First use May 6, 1968.

SN 308,216. Laboratoire du Dermophil Indien, La Ferte-Mace, Orne, France. Filed Sept. 25, 1968.

DERMOLIP

Owner of French Reg. No. 731,295, dated Apr. 5, 1967.
For Cosmetic Preparation for Lips (Int. Cl. 3).

SN 312,829. Viviane Woodard Corporation, Panorama City, Calif. Filed Nov. 21, 1968.

TOUCH OF APERITIF

Owner of Reg. No. 591,395.
For Scented Body Lotion (Int. Cl. 3).
First use Sept. 20, 1967.

SN 318,571. Pat Palmer Products Corp., New York, N.Y. Filed Feb. 6, 1969.

SEA LIME

The word "Lime" is disclaimed apart from the mark as shown.
For Cologne (Int. Cl. 3).
First use Jan. 30, 1969.

SN 318,935. Shulton, Inc., Clifton, N.J. Filed Feb. 12, 1969.

LIP SILK

Reserving unto itself all of its common law rights, applicant disclaims sole right to the word "Lip" apart from the mark as shown.
For Lipstick (Int. Cl. 3).
First use Jan. 20, 1969.

SN 319,529. American Home Products Corporation, New York, N.Y. Filed Feb. 19, 1969.

SUN DRY

Applicant makes no exclusive claim to the word "Dry" separately and apart from the mark as a whole.
For Anti-Perspirant Deodorant (Int. Cl. 5).
First use Jan. 27, 1969.

SN 320,063. Lancôme S.A., Paris, France. Filed Feb. 25, 1969.

FRESCABEL

Owner of French Reg. No. 481,798, dated July 10, 1959 (Seine); Natl. Inst. No. 129,097.
For Perfume and Toilet Water (Int. Cl. 3).
First use 1959; in commerce 1959.

SN 320,184. Philip M. Scaglia, d.b.a. P. M. Scaglia Company, Kansas City, Mo. Filed Feb. 26, 1969.

SCENTCRAFT

For Perfume and Cologne (Int. Cl. 3).
First use Feb. 20, 1969.

SN 320,889. Youngs Drug Products Corporation, Piscataway, N.J. Filed Mar. 5, 1969.

BIDETTE

Owner of Reg. Nos. 705,059 and 813,590.
For Feminine Hygiene Deodorant Spray (Int. Cl. 5).
First use Feb. 19, 1969.

SN 322,548. John H. Breck, Inc., Wayne, N.J. Filed Mar. 24, 1969.

I FEEL PRETTY

Owner of Reg. No. 839,268.
For Wave Set (Int. Cl. 3).
First use Mar. 12, 1969.

SN 322,549. John H. Breck, Inc., Wayne, N.J. Filed Mar. 24, 1969.

I FEEL PRETTY

Owner of Reg. No. 839,268.
For Hair Spray (Int. Cl. 3).
First use Mar. 12, 1969.

SN 323,509. The Gillette Company, Boston, Mass. Filed Apr. 3, 1969.

HOT 'N' HEAVY

For Shaving Cream (Int. Cl. 3).
First use Jan. 15, 1969.

SN 323,629. Chesebrough-Pond's Inc., New York, N.Y. Filed Apr. 4, 1969.

HIGH GEAR

For Hair Dressing (Int. Cl. 3).
First use Mar. 12, 1969.

SN 323,631. Chesebrough-Pond's Inc., New York, N.Y. Filed Apr. 4, 1969.

SHORT RANGE

For Mouth Wash (Int. Cl. 3).
First use Mar. 12, 1969.

SN 323,632. Chesebrough-Pond's Inc., New York, N.Y. Filed Apr. 4, 1969.

CARACALLA

For Bath Oil (Int. Cl. 3).
First use Mar. 12, 1969.

SN 323,760. Chesebrough-Pond's Inc., New York, N.Y. Filed Apr. 7, 1969.

PRE-TALK

For Mouth Wash (Int. Cl. 3).
First use Mar. 12, 1969.

SN 323,989. Charmaceuticals, Inc., Los Angeles, Calif. Filed Apr. 9, 1969.

The Beauty King

For Face Cream (Int. Cl. 3).
First use Nov. 1, 1968.

SN 324,129. Elizabeth Arden Sales Corporation, d.b.a. Elizabeth Arden, New York, N.Y. Filed Apr. 10, 1969.

SEAQUA

For Bath Preparations—Namely, Bath Salts, Dusting Powder, Talcum Powder, Bath Oils and Cologne (Int. Cl. 3).
First use Mar. 20, 1969.

SN 324,145. Vitabath Inc., New York, N.Y. Filed Apr. 10, 1969.

BLACK FOREST

For After Shave Lotion (Int. Cl. 3).
First use on or about Jan. 13, 1969.

Class 52 — Detergents and Soaps

SN 279,684. Sep-Ko Chemicals, Inc., Minneapolis, Minn. Filed Sept. 5, 1967.

MONACID

Owner of Reg. No. 728,700.
For Dairy Equipment Cleaner in Liquid Form (Int. Cl. 3).
First use on or about January 1952.

SN 285,210. Delta Chemical Corporation, Memphis, Tenn. Filed Nov. 20, 1967.

CONTROL-PAKS

For Synthetic Detergents and Cleaning Compounds in Powder Form for Commercial and Industrial Uses When Dissolved in Water To Spraywash and Steam Clean Vehicles, and To Clean Equipment, Food Plants, Concrete Floors and Walls, and To Wash Dishes (Int. Cl. 3).
First use Jan. 1, 1967.

SN 293,576. Racasan Limited, Ellesmere Port, England. Filed Mar. 18, 1968.

RACASAN BLUE-FLUSH

Without waiving any common law rights applicant disclaims any exclusive rights in the word "Blue-Flush" apart from the mark as shown. Owner of British Reg. No. 893,150, dated Apr. 14, 1966; and U.S. Reg. Nos. 814,807 and 814,828.
For Water Closet Cleansers (Int. Cl. 3).

SN 310,962. Excel-Mineral Company, Inc., Los Angeles, Calif. Filed Oct. 31, 1968.

SAFE-T-SORB

For Oil and Grease Absorbent for Use as a Sweeping Compound, and Also for Use in Home Barbecue Units To Absorb Dripping Grease, for Use in Garbage Cans To Absorb Drippings From the Garbage, and for Other Similar Uses (Int. Cl. 4).
First use Sept. 28, 1968.

SN 315,974. Jancyn Manufacturing Corp., East Northport, N.Y. Filed Jan. 7, 1969.

drainz

The drawing is lined for the color red.
For Cesspool and Septic Tank Cleaners (Int. Cl. 3).
First use Mar. 3, 1965.

SN 316,564. Lever Brothers Company, New York, N.Y. Filed Jan. 15, 1969.

TRAIN

For Laundry Detergent (Int. Cl. 3).
First use Jan. 8, 1969.

SN 318,885. C. J. Webb, Inc., Dresher, Pa. Filed Feb. 11, 1969.

CRC

Owner of Reg. Nos. 696,251, 835,369, and others.
For Cleaner for Electric Motors, Cleaner for Electric Systems, Cleaner for Electric Equipment, and Hand Cleaner (Int. Cl. 3).
First use Aug. 24, 1966.

SN 319,473. National Service Industries, Inc., d.b.a. Zep Manufacturing Company, Atlanta, Ga. Filed Feb. 18, 1969.

ZEPEZ

Owner of Reg. Nos. 681,037, 696,197, and others.
For Multi-Purpose Cleaning and Degreasing Preparation (Int. Cl. 3).
First use June 1, 1967.

SN 319,477. National Service Industries, Inc., d.b.a. Zep Manufacturing Company, Atlanta, Ga. Filed Feb. 18, 1969.

ZEPECON

Owner of Reg. Nos. 681,037, 696,197, and others.
For Floor Cleaning Preparation (Int. Cl. 3).
First use Jan. 2, 1959.

SN 319,480. National Service Industries, Inc., d.b.a. Zep Manufacturing Company, Atlanta, Ga. Filed Feb. 18, 1969.

ZEPRESTIGE

Owner of Reg. Nos. 681,037, 696,197, and others.
For Waterless Hand Cleansing Preparation (Int. Cl. 3).
First use June 1, 1964.

SN 319,481. National Service Industries, Inc., d.b.a. Zep Manufacturing Company, Atlanta, Ga. Filed Feb. 18, 1969.

ZepHex

Owner of Reg. Nos. 681,037, 696,197, and others.
For Antibacterial Skin Cleansing Preparation (Int. Cl. 3).
First use June 1, 1964.

SN 319,488. National Service Industries, Inc., d.b.a. Zep Manufacturing Company, Atlanta, Ga. Filed Feb. 18, 1969.

ZEP SEWER-AID

Owner of Reg. Nos. 681,037, 696,197, and others.
For Cleaning Preparation for Sewers and Industrial Drains (Int. Cl. 3).
First use July 1, 1952.

SN 322,196. Steer Clear, Inc., Roslyn, N.Y. Filed Mar. 19, 1969.

STEER CLEAR

For Packaged Small Paper Towel Impregnated With a Cleaning Composition Especially Adapted for the Removal of Soil From Automobile Windshields (Int. Cl. 21).
First use Feb. 3, 1967.

SN 322,296. Hercules Chemical Company, Inc., New York, N.Y. Filed Mar. 20, 1969.

FLIP-STICK

For Soot Remover (Int. Cl. 1).
First use Feb. 24, 1969.

SN 322,713. Irontite Products Co., Inc., Los Angeles, Calif. Filed Mar. 25, 1969.

THORO-FLUSH

Owner of Reg. No. 765,272.
For Automobile Cooling System Cleaner and Sludge Remover (Int. Cl. 3).
First use Feb. 28, 1962.

SN 323,204. Purex Corporation, Ltd., Lakewood, Calif. Filed Apr. 1, 1969.

MODERN WHITE

For Cleaning Preparation for Whitening, Brightening, and Removing Stains From Fabrics (Int. Cl. 3).
First use Mar. 3, 1969.

SN 323,990. Colgate-Palmolive Company, New York, N.Y. Filed Apr. 9, 1969.

ALL AT ONCE

Owner of Reg. Nos. 706,761, 838,032, and 838,927.
For Hair Shampoo (Int. Cl. 3).
First use Mar. 25, 1969.

SN 323,991. Colgate-Palmolive Company, New York, N.Y. Filed Apr. 9, 1969.

SNUG'L

Owner of Reg. No. 847,149.
For Hair Shampoo (Int. Cl. 3).
First use Mar. 25, 1969.

SN 323,992. Colgate-Palmolive Company, New York, N.Y. Filed Apr. 9, 1969.

SOFT STEP

For Hair Shampoo (Int. Cl. 3).
First use Mar. 25, 1969.

SERVICE MARKS

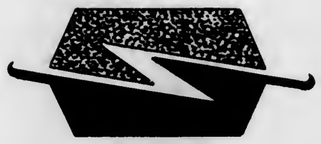
Class 100 — Miscellaneous

SN 261,655. Griffin Publications, Inc., d.b.a. Good Sam Club, Glendale, Calif. Filed Dec. 29, 1966.

MEMBER 'GOOD SAM' CLUB

For Promoting Safety Among Users of Trailers and Campers and Up-Grading Recreational Facilities Therefor (Int. Cl. 42).
First use on or about Sept. 25, 1966.

SN 271,252. Holiday Inns of America, Inc., Memphis, Tenn. Filed May 11, 1967.



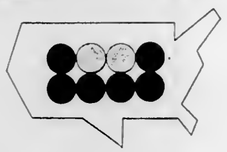
For Designing Tele-Communications Systems for Others (Int. Cl. 42).
First use Oct. 5, 1966.

SN 274,627. International Systems & Equipment, Inc., Los Angeles, Calif. Filed June 23, 1967.

ISE

For Design of Data Processing Systems for Others (Int. Cl. 35).
First use May 10, 1967.

SN 280,235. Large Families of America, Inc., Fairfield, Conn. Filed Sept. 13, 1967.



For Family Advisory Services and Assistance in the Areas of Public Education and Scholarships, Housing, Recreation, Cooperative Buying, Tax Relief, Community Programs for Families Having Four or More Children; Sociological, Psychological, Economic and Other Research and Programs for Such Essential Family Needs; and the Representation of Such Families in the Areas of Mass Communications, Family Legislation, Education, Medicine and the Economy (Int. Cl. 42).
First use May 10, 1967.

SN 291,397. The Howard Research and Development Corporation, Columbia, Md. Filed Feb. 19, 1968.



For Land and Community Development Services (Int. Cl. 42).
First use Jan. 5, 1966.

SN 296,805. Chicken Delight, Inc., Des Plaines, Ill. Filed Apr. 29, 1968.



Owner of Reg. Nos. 568,388, 779,635, and others.
For Take-Out Food Shop Services—Namely, the Preparing of Meals for Consumption Off-The-Premises and Delivering the Same to Customers When Requested (Int. Cl. 42).
First use June 29, 1967.

SN 306,533. Whitenack Restaurants, Inc., Cincinnati, Ohio. Filed Sept. 3, 1968.

DAVID'S BUFFET

For Operation and Management of Cocktail Lounges, Restaurant and Catering Services (Int. Cl. 42).
First use Mar. 1, 1962.

SN 309,441. Cut & Curl International, Inc., Great Neck, N.Y. Filed Oct. 11, 1968.

The Sugar and Spice Salon

Owner of Reg. No. 395,614.
For Beauty Parlor Services, Particularly for Children and Teenagers—Namely, Hair Cutting, Hair Setting, Permanent Waves, Shampoos, and Hair Treatment (Int. Cl. 42).
First use June 28, 1968.

SN 310,837. Beefmaster Inn, Inc., Southern Pines, N.C. Filed Oct. 30, 1968.



Owner of Reg. No. 804,404.
For Restaurant Services (Int. Cl. 42).
First use Dec. 14, 1962.

SN 313,134. P.P.B., Inc., Washington, D.C. Filed Nov. 26, 1968.

BASTILLE

For Night Club Services (Int. Cl. 42).
First use Dec. 31, 1967.
Subj. to Intf. with SN 308,063 and SN 315,135.

SN 314,775. Crummy's, Inc., Houston, Tex. Filed Dec. 18, 1968.

CRUMMY'S

For Drive-In Restaurant Services (Int. Cl. 42).
First use November 1968.

SN 316,570. Chris McGuire, Inc., Fort Lauderdale, Fla. Filed Jan. 15, 1969.

CHRIS McGuire's PUB

No claim of exclusive right is made to the word "Pub" apart from the mark as shown, but applicant waives none of its common law rights therein. "Chris McGuire" identifies a living individual whose consent is of record.
For Restaurant and Cocktail Lounge Services (Int. Cl. 42).
First use Aug. 29, 1968.

SN 316,571. Chris McGuire, Inc., Fort Lauderdale, Fla. Filed Jan. 15, 1969.

Chris McGuire's Pub

No claim of exclusive right is made to the word "Pub" apart from the mark as shown, but applicant waives none of its common law rights therein. "Chris McGuire" identifies a living individual whose consent is of record.
For Restaurant and Cocktail Lounge Services (Int. Cl. 42).
First use Aug. 29, 1968.

SN 316,572. Chris McGuire, Inc., Fort Lauderdale, Fla. Filed Jan. 15, 1969.

Chris McGuire's PUB

No claim of exclusive right is made to the word "Pub" apart from the mark as shown, but applicant waives none of its common law rights therein. "Chris McGuire" identifies a living individual whose consent is of record.
For Restaurant and Cocktail Lounge Services (Int. Cl. 42).
First use Aug. 29, 1968.

SN 318,011. Standard Oil Company, Flemington, N.J. Filed Jan. 31, 1969.

SOLVABILITY

For Advisory and Consulting Services in Respect of the Manufacture of Products in and by the Vegetable Oil Extraction, Specialty Products, Polymer, Agricultural Formulation and Coatings Industries (Int. Cl. 42).
First use at least as early as October 1967.

SN 319,781. Rickshaw Boy, Inc., Ogden, Utah. Filed Feb. 24, 1969.



The Chinese lettering means "rickshaw boy."
For Restaurant Services (Int. Cl. 42).
First use Jan. 9, 1969.

SN 323,212. Tiny Tim Enterprises, Inc., Reading, Pa. Filed Apr. 1, 1969.

TINY TIM

For Take-Out Restaurant Services (Int. Cl. 42).
First use at least as early as 1946.

SN 324,000. Four Flags, Inc., Minneapolis, Minn. Filed Apr. 9, 1969.

4 FLAGS

For Restaurant Services (Int. Cl. 42).
First use Feb. 6, 1969.

SN 324,362. The Pickle Barrel, Inc., Chicago, Ill. Filed Apr. 14, 1969.



For Restaurant Services (Int. Cl. 42).
First use May 13, 1963.

Class 101—Advertising and Business

SN 309,520. Puppy Palace Enterprises, Inc., Philadelphia, Pa. Filed Oct. 14, 1968.



For Retail Pet Shop Services (Int. Cl. 35).
First use May 1, 1968.

SN 309,521. Puppy Palace Enterprises, Inc., Philadelphia, Pa. Filed Oct. 14, 1968.



For Retail Pet Shop Services (Int. Cl. 35).
First use May 1, 1968.

SN 309,522. Puppy Palace Enterprises, Inc., Philadelphia, Pa. Filed Oct. 14, 1968.



For Retail Pet Shop Services (Int. Cl. 35).
First use May 1, 1968.

SN 309,737. David L. Arrington, d.b.a. Virginia-Craft Printing Company, Manassas, Va. Filed Oct. 16, 1968.

HOT COPY

The term "Copy" is disclaimed apart from the mark as shown.
For Printing Services (Int. Cl. 35).
First use Sept. 7, 1968.

SN 310,748. Best Products Company, Inc., Richmond, Va. Filed Oct. 29, 1968.



The mark consists of the fanciful letters "B" and "P."
For Mail Order Department Store Services (Int. Cl. 35).
First use Sept. 16, 1968.

SN 316,667. National Bank of Commerce in Mankato, Mankato, Minn. Filed Jan. 15, 1969.

DATA-POST

For Financial Data Processing and Bookkeeping Services (Int. Cl. 35).
First use July 1, 1968.

SN 318,116. Wash-A-Car, Inc., Columbus, Ohio. Filed Jan. 31, 1969.

DAVY JONES

For Rendering Technical Assistance in the Establishment and Operation of Car Wash Systems (Int. Cl. 35).
First use Aug. 3, 1967.

SN 320,689. Service Specialists Ltd., Oklahoma City, Okla. Filed Mar. 4, 1969.

National PERSONNEL COVERAGE Service Specialists Ltd. SERVING THE NATIONS PERSONNEL NEEDS

No claim is made to the terms "National Personnel Coverage" and "Serving the Nation's Personnel Needs" apart from the mark as shown.
For Employment Agency Services (Int. Cl. 35).
First use Feb. 1, 1968.

Class 102 — Insurance and Financial

SN 285,564. Lincoln First Group Inc., Rochester, N.Y. Filed Nov. 24, 1967.



For Banking Services (Int. Cl. 36).
First use May 17, 1967.

SN 291,538. The Union Central Life Insurance Company, Cincinnati, Ohio. Filed Feb. 20, 1968.

ADJUSTO-MATIC

For Underwriting Life Insurance (Int. Cl. 36).
First use Sept. 18, 1967.
Subj. to Intf. with SN 285,808.

SN 300,671. American Fire and Casualty Company, Orlando, Fla. Filed June 18, 1968.



For Fire and Casualty Insurance Underwriting Services (Int. Cl. 36).
First use at least as early as 1934.

SN 304,307. Citizens National Bank of Macomb, Macomb, Ill. Filed Aug. 5, 1968.

GOLDEN NEST EGG

For Savings Account Services (Int. Cl. 36).
First use June 1, 1968.

SN 305,149. Marsh & McLennan, Incorporated, New York, N.Y. Filed Aug. 14, 1968.

VIP service M & McL INSURANCE

The words "Service" and "Insurance" are disclaimed apart from the mark as shown. Owner of Reg. No. 761,089.
For Insurance Brokerage Services—Namely, Placing Insurance and Providing for Premium Payments Through a Payroll Deduction Plan (Int. Cl. 36).
First use Apr. 4, 1968.

SN 317,282. Perera Company, Inc., New York, N.Y. Filed Jan. 23, 1969.



For Issuance and Redemption of Travelers' Checks (Int. Cl. 36).
First use on or about Apr. 1, 1964.

SN 321,413. United Virginia Bankshares, Incorporated, Richmond, Va. Filed Mar. 11, 1969.



For Banking Services (Int. Cl. 36).
First use Feb. 19, 1969.

SN 324,356. The North Central Companies, St. Paul, Minn. Filed Apr. 14, 1969.



Owner of Reg. No. 829,935.
For Creditor/Debtor Life and Disability Insurance Underwriting Services (Int. Cl. 36).
First use at least as early as May 1950.

Class 103 — Construction and Repair

SN 292,797. Linen Maid Limited, Flaxholm, Duffield, England. Filed Mar. 8, 1968.

Linen Maid

Without waiving any common law rights applicant disclaims any exclusive rights to the word "Linen" apart from the mark as shown.
For Laundry Services (Int. Cl. 37).
First use Feb. 11, 1967; in commerce Dec. 1, 1967.

SN 295,714. Bain Pest Control Service, Inc., Lowell, Mass. Filed Apr. 16, 1968.



The drawing is lined for the color yellow. No claim is made for the words "Pest Control Service" apart from the mark as shown.
For Pest Control Service (Int. Cl. 37).
First use about Aug. 24, 1964.

SN 298,931. Fiberline Pool Company, Incorporated, Newton Center, Mass. Filed May 23, 1968.

FIBERLINE

For Laminating Fiberglass Interiors to Swimming Pools To Render Them Waterproof and Reduce Maintenance (Int. Cl. 37).
First use at least as early as July 14, 1966.

SN 304,504. Skeldon-Green Electric Inc., Minneapolis, Minn. Filed Aug. 6, 1968.



For Electrical Contracting Services (Int. Cl. 37).
First use May 20, 1968.

SN 324,027. Royal Services, Inc., Jacksonville, Fla. Filed Apr. 9, 1969.



Owner of Reg. No. 829,296.
For Cleaning, Deodorizing, Custodial, Janitorial, Maintenance, and Elevator Operation Services in Buildings Owned by Others (Int. Cl. 37).
First use on or about Mar. 25, 1969.

SN 324,028. Royal Services, Inc., Jacksonville, Fla. Filed Apr. 9, 1969.

ROYAL SERVICES

For the purposes of registration, no claim is made to the exclusive right to the use of the word "Services" apart from the mark as shown. Owner of Reg. No. 829,296.
For Cleaning, Deodorizing, Custodial, Janitorial, Maintenance, and Elevator Operation Services in Buildings Owned by Others (Int. Cl. 37).
First use April 1960.

Class 104 — Communication

SN 303,080. Television Communications Corporation, New York, N.Y. Filed July 18, 1968.



Applicant disclaims any exclusive rights in the letters "TV" apart from the mark as shown.
For Operating Community Antenna Television Systems by Providing a Master Antenna and Cable Service for the Distribution of Television Signals to Subscribers Within a Given Community Area (Int. Cl. 38).
First use August 1967.

Class 105 — Transportation and Storage

SN 285,234. Integrated Container Service, Inc., New York, N.Y. Filed Nov. 20, 1967.

AIRTAINER

For Transportation, by Air, Sea and Land of the Goods of Others, in Specially Designed Containers Provided by the Applicant and Not Sold (Int. Cl. 39).
First use Oct. 9, 1967.

SN 307,644. Hermann Services, Inc., North Brunswick, N.J. Filed Sept. 18, 1968.

Without waiving any of its common law rights and for the purposes of this registration only, applicant makes no exclusive claim to the words "Total Distribution Service" and "Services, Inc." apart from the mark as shown.

For Transportation of Cargo by Truck, Warehousing and Distribution of Goods and Leasing of Cargo-Carrying Trailers and Storage Units (Int. Cl. 39).

First use April 1968.

SN 307,645. Hermann Services, Inc., North Brunswick, N.J. Filed Sept. 18, 1968.

Without waiving any of its common law rights and for the purposes of this registration only, applicant makes no exclusive claim to the words "Total Distribution Service" and "Services, Inc." apart from the mark as shown.

For Transportation of Cargo by Truck, Warehousing and Distribution of Goods and Leasing of Cargo-Carrying Trailers and Storage Units (Int. Cl. 39).

First use at least as early as Jan. 19, 1968.

Class 107 — Education and Entertainment

SN 290,011. Platonian Enterprises, Inc., Cleveland, Ohio. Filed Jan. 31, 1968.

For Night Club Services (Int. Cl. 41).
First use Apr. 15, 1967.

SN 304,703. Nite Clubs International, Inc., Atlanta, Ga. Filed Aug. 8, 1968.

THE SCENE

For Night Club Services (Int. Cl. 41).
First use on or about Feb. 1, 1967.
Subj. to Intf. with SN 310,361.

SN 305,767. The Theatre Guild, New York, N.Y. Filed Aug. 22, 1968.

Owner of Reg. Nos. 192,663, 681,985, and others.
For Providing Theatre Ticket Subscription Services (Int. Cl. 41).
First use April 1967.

SN 306,683. Roy H. Park Broadcasting of Virginia, Inc., Richmond, Va. Filed Sept. 5, 1968.

VIRGINIA TODAY

For Television Program Consisting of Local Farm Market Reports, News, and Extended Agricultural Weather Forecast, Interviews With County Agents and Other Agrarian Leaders (Int. Cl. 41).
First use Apr. 4, 1966.

SN 306,684. Roy H. Park Broadcasting of Virginia, Inc., Richmond, Va. Filed Sept. 5, 1968.

RICHMOND TODAY

For Television Program Consisting of News, Weather, and Interviews With Local and Regional Leaders From All Walks of Life Discussing Current Topics of the Day (Int. Cl. 41).
First use Apr. 4, 1966.

SN 306,928. Beef 'n' Boards Company of Kentucky, Inc., Simpsonville, Ky., assignee of Marshall Lawrence, Louisville, Ky. Filed Sept. 9, 1968.

BEEF 'N' BOARDS

The word "Beef" is disclaimed apart from the mark as shown.

For Operating a Dinner Theatre Featuring Plays (Int. Cl. 41).
First use Aug. 1, 1967.

SN 309,487. Show Biz, Inc., Nashville, Tenn. Filed Oct. 11, 1968.

HOT COUNTRY

For Entertainment Services—Namely, a Television Program Featuring Country and Popular Music (Int. Cl. 41).
First use Sept. 7, 1968.

SN 310,361. The Scene, Inc., Cincinnati, Ohio. Filed Oct. 23, 1968.

For Nightclub Services (Int. Cl. 41).
First use Nov. 7, 1967.
Subj. to Intf. with SN 304,703.

SN 312,762. Edutronics, Inc., Cleveland, Ohio. Filed Nov. 21, 1968.

EDUTRONICS

For Educational Services in the Data Processing Field (Int. Cl. 41).
First use on or about Nov. 11, 1968.

COLLECTIVE MEMBERSHIP MARKS

Class 200

SN 293,814. The Explorers Club, New York, N.Y. Filed Mar. 21, 1968.

THE EXPLORERS CLUB

For Indicating Membership in Applicant.
First use November 1905.

SN 293,815. The Explorers Club, New York, N.Y. Filed Mar. 21, 1968.

For Indicating Membership in Applicant.
First use April 1925.

SN 304,707. The Phi Mu Delta Fraternity, Lancaster, Pa. Filed Aug. 8, 1968.

The Greek lettering shown in the mark is "Phi Mu Delta."
For Indicating Membership in Applicant.
First use on or about Mar. 1, 1918.

SN 304,708. The Phi Mu Delta Fraternity, Lancaster, Pa. Filed Aug. 8, 1968.

PHI MU DELTA

For Indicating Membership in Applicant.
First use on or about Mar. 1, 1918.

SN 319,348. Optimist International, St. Louis, Mo. Filed Feb. 17, 1969.

Owner of Reg. Nos. 428,048 and 557,038.
For Indicating Membership in Applicant.
First use July 1, 1967.

CERTIFICATION MARKS

Class A — Goods

SN 309,607. National Kitchen Cabinet Association, Louisville, Ky. Filed Oct. 14, 1968.

The mark certifies that kitchen and vanity cabinets built by cabinet manufacturers meet the standards and conditions prescribed by applicant.

For Kitchen and Vanity Cabinets.
First use June 3, 1968.

TRADEMARK REGISTRATIONS ISSUED
PRINCIPAL REGISTER

Class 1 — Raw or Partly Prepared Materials

S76,794. GREER'S ALICIA (ALISA). Cecil Greer, d.b.a. Cecil Greer's Grass Farms. SN 286,343. Pub. 7–1–69. Filed 12–6–67.

S76,795. EDCO. Standard Oil Company. MULTIPLE CLASS (Classes 1 and 12). SN 296,253. Pub. 7–1–69. Filed 4–23–68.

S76,796. LURA-LEI. B. L. Cobia, Inc. SN 297,387. Pub. 7–1–69. Filed 5–6–68.

S76,797. LIVING LEI. B. L. Cobia, Inc. SN 297,388. Pub. 7–1–69. Filed 5–6–68.

S76,798. EDISOL–M. Polymer Films Incorporated. SN 297,700. Pub. 7–1–69. Filed 5–8–68.

S76,799. DAHLIADEL. A. L. Freedlander, d.b.a. Dahliadel in the Mountains. SN 297,779. Pub. 7–1–69. Filed 5–9–68.

S76,800. ECKESPOINT. Paul Ecke, Inc. SN 299,767. Pub. 7–1–69. Filed 6–5–68.

S76,801. POLYMIN. Badische Anilin- & Soda-Fabrik Aktiengesellschaft. SN 300,675. Pub. 7–1–69. Filed 6–18–68.

S76,802. RR "RYANRED." Carlton Nursery Company, Inc. SN 301,914. Pub. 7–1–69. Filed 7–3–68.

S76,803. OATMOR. L. Teweles Seed Co. SN 304,411. Pub. 7–1–69. Filed 8–5–68.

S76,804. TEWLIFIC. L. Teweles Seed Co. SN 305,357. Pub. 7–1–69. Filed 8–16–68.

S76,805. DAHLIADEL IN THE MOUNTAINS. A. L. Freedlander. SN 307,995. Pub. 7–1–69. Filed 9–23–68.

S76,806. YTTRALOX. General Electric Company. SN 317,028. Pub. 7–1–69. Filed 1–21–69.

S76,807. BI-PAK. A & E Plastik Pak Co., Inc. SN 318,141. Pub. 7–1–69. Filed 2–3–69.

S76,808. CHAR-TIME AND DESIGN. Char-Lite Briquets, Inc. SN 318,525. Pub. 7–1–69. Filed 2–6–69.

Class 2 — Receptacles

S76,809. 1ST COLONY AND DESIGN. First Colony Corporation. SN 286,115. Pub. 3–4–69. Filed 12–4–67.

S76,810. PZAZZ ! Sweetheart Plastics, Inc. SN 292,824. Pub. 7–1–69. Filed 3–8–68.

S76,811. METER-FEEDER. Ferrell McRee Tittsworth, d.b.a. Mini-Products Industries. SN 308,442, Pub. 7–1–69. Filed 9–30–68.

S76,812. NEWFOLD. Harleyarts, Inc. SN 311,147. Pub. 7–1–69. Filed 11–1–68.

S76,813. BUTTERFLY DESIGN. Cor-Box, Inc. SN 316,292. Pub. 7–1–69. Filed 1–10–69.

S76,814. WORLD OF COLOR BY COR-BOX AND BUTTERFLY DESIGN. Cor-Box, Inc. SN 316,293. Pub. 7–1–69. Filed 1–10–69.

S76,815. E-Z WRAP. Gulf States Paper Corporation. SN 317,744. Pub. 7–1–69. Filed 1–28–69.

Class 3 — Baggage, Animal Equipments, Portfolios, and Pocketbooks

S76,816. AAE–G. All American Engineering Company. SN 290,233. Pub. 7–1–69. Filed 2–5–68.

S76,817. GYPSY. Sirco Products Co., Inc. SN 293,743. Pub. 7–1–69. Filed 3–20–68.

S76,818. SUMMIT CRUISER. Jack C. Abert, d.b.a. Camp Trails. SN 299,078. Pub. 7–1–69. Filed 5–27–68.

Class 4 — Abrasives and Polishing Materials

S76,819. INNKARE. Holiday Inns of America, Inc. MULTIPLE CLASS (Classes 4, 6, and 52). SN 307,476. Pub. 7–1–69. Filed 9–16–68.

Class 5 — Adhesives

S76,820. PERMA-BOND SUPER STRENGTH GLUE AND DESIGN. Hercules Glue Company, Inc. SN 261,958. Pub. 3–28–67. Filed 1–5–67.

S76,821. PATRIOT AND DESIGN. Publishers Supply, Inc. MULTIPLE CLASS (Classes 5 and 15). SN 294,655. Pub. 7–1–69. Filed 4–1–68.

Class 6 — Chemicals and Chemical Compositions

S76,819. (See Class 4 for this trademark.)

S76,822. KELCO. Kelco Company. SN 269,669. Pub. 7–1–69. Filed 4–20–67.

S76,823. BORALKAT. Ventron Corporation. SN 279,760. Pub. 7–1–69. Filed 9–6–67.

S76,824. CRAVA-LIN. Crown-Metro, Inc., assignee of Crown Chemical Corporation. SN 285,529. Pub. 7–1–69. Filed 11–24–67.

S76,825. NONSCENTS. Carolina Company, Inc., d.b.a. The Carolina Soap & Candle Makers. SN 288,598. Pub. 7–1–69. Filed 1–11–68.

S76,826. AEROGEN. Madison Chemical Corporation. SN 291,620. Pub. 7–1–69. Filed 2–21–68.

S76,827. ADMIRAL. Admiral Products Corporation. SN 291,822. Pub. 7–1–69. Filed 2–26–68.

S76,828. METACOPY. Metacomet Inc. SN 295,045. Pub. 7–1–69. Filed 4–5–68.

S76,829. METACOLOR. Metacomet Inc. SN 295,046. Pub. 7–1–69. Filed 4–5–68.

S76,830. BALLMATE. The Ballmate Corporation of America. SN 297,951. Pub. 7–1–69. Filed 5–13–68.

S76,831. LEFKO. Leffingwell Chemical Company. SN 299,778. Pub. 7–1–69. Filed 6–5–68.

S76,832. RUBICON, Rubicon Chemicals, Inc. SN 299,793. Pub. 7–1–69. Filed 6–5–68.

S76,833. MUST GO. Amway Corporation. SN 299,822. Pub. 7–1–69. Filed 6–6–68.

S76,834. SCALE-PREP. Crown Chemical Company, Inc. SN 301,486. Pub. 7–1–69. Filed 6–27–68.

S76,835. LASER. Puritan Chemical Company. SN 301,548. Pub. 7–1–69. Filed 6–27–68.

S76,836. COLD PRO. Jos. Schlitz Brewing Company. SN 307,175. Pub. 7–1–69. Filed 9–12–68.

S76,837. HYDROZEL. Zel Chemical Distributing Co. Corp. SN 308,939. Pub. 7–1–69. Filed 10–4–68.

S76,838. SULFHYDRO. Stauffer Chemical Company. SN 311,799. Pub. 7–1–69. Filed 11–12–68.

S76,839. BAC-GARD. Holliston Laboratories, Inc. SN 313,233. Pub. 7–1–69. Filed 11–29–68.

S76,840. SHAMROCK AND DESIGN. Diamond Shamrock Corporation. SN 314,679. Pub. 7–1–69. Filed 12–17–68.

Class 7 — Cordage

S76,841. TENSION-WELD. Signode Corporation. SN 315,603. Pub. 7–1–69. Filed 1–2–69.

Class 8 — Smokers' Articles, Not Including Tobacco Products

876,842. PREMIER. S. M. Frank & Co., Inc. SN 288,801. Pub. 6–24–69. Filed 1–15–68.

Class 10 — Fertilizers

S76,843. CHICCOSOIL. U.F. Chemical Corporation. SN 307,885. Pub. 7–1–69. Filed 9–20–68.

876,844. MEDINA SOIL ACTIVATOR AND DESIGN. Medina Agricultural Products Co., Inc. SN 313,827. Pub. 7–1–69. Filed 12–6–68.

Class 11 — Inks and Inking Materials

786,845. HI-SPEED. Pacific Industries, Inc. MULTIPLE CLASS (Classes 11 and 37). SN 264,468. Pub. 7–1–69. Filed 2–13–67.

S76,846. VAN SON HOLLAND INKS AND DESIGN. Van Son Holland Ink Corporation of America. SN 294,761. Pub. 7–1–69. Filed 4–2–68.

S76,847. RAPIER. Sun Chemical Corporation. SN 312,347. Pub. 7–1–69. Filed 11–15–68.

Class 12 — Construction Materials

S76,795. (See Class 1 for this trademark.)

S76,848. RANGER. Pacific Wood Products Company. SN 309,986. Pub. 7–1–69. Filed 10–18–68.

S76,849. TEMCOR. Temcor. SN 312,513. Pub. 7–1–69. Filed 11–18–68.

S76,850. ROUGH 'N' READY. U.S. Plywood-Champion Papers Inc. SN 316,170. Pub. 7–1–69. Filed 1–9–69.

S76,851. SWIF-CRETE. Wade & Schmidt Inc. SN 317,169. Pub. 7–1–69. Filed 1–21–69.

Class 13 — Hardware and Plumbing and Steam-Fitting Supplies

S76,852. AMG. AMG Industries, Inc. MULTIPLE CLASS (Classes 13 and 35). SN 246,015. Pub. 7–1–69. Filed 5–19–66.

S76,853. ORC-O-RINGS. Eagle-Picher Industries, Inc. SN 305,930. Pub. 7–1–69. Filed 8–26–68.

S76,854. DRAIN-O-MAT. Air Techniques Incorporated. SN 309,006. Pub. 7–1–69. Filed 10–7–68.

S76,855. BULL DOG AND DESIGN. E. H. Tate Company. SN 315,506. Pub. 7–1–69. Filed 12–31–68.

Class 14 — Metals and Metal Castings and Forgings

S76,856. NIFDA AND DESIGN. National Institutional Food Distributor Associates, Inc. SN 275,778. Pub. 7–1–69. Filed 7–11–67.

S76,857. MIF. MIF Industries, Inc. SN 276,146. Pub. 7–1–69. Filed 7–17–67.

S76,858. CSCG AND DESIGN. Cumberland Steel Company. SN 318,172. Pub. 7–1–69. Filed 2–3–69.

S76,859. LEDRITE. National Distillers and Chemical Corporation. SN 319,344. Pub. 7–1–69. Filed 2–17–69.

S76,860. PRECISION BRAND PSW AND DESIGN. Precision Steel Warehouse, Inc. SN 319,952. Pub. 7–1–69. Filed 2–24–69.

Class 15 — Oils and Greases

S76,821. (See Class 5 for this trademark.)

S76,861. CORENA. Shell Oil Company. SN 282,731. Pub. 7–1–69. Filed 10–17–67.

S76,862. CAROLINA. Carolina Company, Inc., d.b.a. The Carolina Soap & Candle Makers. SN 291,581. Pub. 7–1–69. Filed 2–21–68.

S76,863. PBC. K. S. Paul Products Limited. SN 292,487. Pub. 7–1–69. Filed 3–5–68.

S76,864. POLYBUTYL CUPRYSIL. K. S. Paul Products Limited. SN 292,937. Pub. 7–1–69. Filed 3–11–68.

S76,865. TRIPLE DEED. Montrose Oil and Belting Company, Inc., d.b.a. Montrose Supply & Equipment Co. SN 311,793. Pub. 7–1–69. Filed 11–12–68.

S76,866. ATRO-SPRAY. Diamond Shamrock Corporation. SN 312,544. Pub. 7–1–69. Filed 11–19–68.

Class 16 — Protective and Decorative Coatings

S76,867. LACTIMON. Byk-Gulden Lomberg Chemische Fabrik GmbH. SN 292,883. Pub. 7–1–69. Filed 3–11–68.

S76,868. DISPERBYK. Byk-Gulden Lomberg Chemische Fabrik GmbH. SN 292,884. Pub. 7–1–69. Filed 3–11–68.

S76,869. BYKTONE. Byk-Gulden Lomberg Chemische Fabrik GmbH. SN 292,885. Pub. 7–1–69. Filed 3–11–68.

S76,870. PERMA BLUE. Fuller Laboratories, Inc. SN 310,077. Pub. 7–1–69. Filed 10–21–68.

S76,871. STAR BURST AND DESIGN. Star Burst Co. SN 311,075. Pub. 7–1–69. Filed 10–31–68.

S76,872. SUB-SIL. Wyandotte Chemicals Corporation. SN 316,157. Pub. 7–1–69. Filed 1–8–69.

S76,873. INDUCOTE. Finnaren & Haley, Incorporated, d.b.a. Finnaren & Haley, Inc. SN 317,546. Pub. 7–1–69. Filed 1–27–69.

S76,874. STAR-LUX. Hooker Glass & Paint Mfg. Co. SN 317,949. Pub. 7–1–69. Filed 1–30–69.

S76,875. NEW ERA. Ideal Brushes, Inc. SN 317,955. Pub. 7–1–69. Filed 1–30–69.

Class 17 — Tobacco Products

S76,876. GT GREAT TASTE, GREAT TOBACCO. Sutliff Tobacco Company, d.b.a. Sutliff Tobacco Co. SN 310,828. Pub. 7–1–69. Filed 10–30–68.

Class 18 — Medicines and Pharmaceutical Preparations

S76,877. SPORTADE AND DESIGN. Becton, Dickinson and Company, assignee of Gerard Balakian, M.D. SN 276,273. Pub. 7–1–69. Filed 6–2–67.

S76,878. ROHTO. Rohto Pharmaceutical Co., Ltd. SN 284,036. Pub. 7–1–69. Filed 1–30–69.

S76,879. IMBULLIN. Immuno (Canada) Ltd. SN 286,527. Pub. 7–1–69. Filed 12–8–67.

S76,880. TETABULLIN. Immuno (Canada) Ltd. SN 286,528. Pub. 7–1–69. Filed 12–8–67.

S76,881. DOSA-TROL. Bristol-Myers Company. SN 286,635. Pub. 7–1–69. Filed 12–11–67.

S76,882. SIGNATROL. Bristol-Myers Company. SN 286,636. Pub. 7–1–69. Filed 12–11–67.

S76,883. VISI-TROL. Bristol Myers Company. SN 287,628. Pub. 7–1–69. Filed 12–27–67.

S76,884. REMINDO-CARD. Bristol-Myers Company. SN 287,887. Pub. 7–1–69. Filed 1–2–68.

S76,885. VITALITY. A. H. Cummings, d.b.a. Texas Nutrition & Service Co. SN 294,263. Pub. 7–1–69. Filed 3–27–68.

S76,886. LOZI-TABS. The Kendall Company. SN 296,171. Pub. 7–1–69. Filed 4–22–68.

S76,887. ROLITETRIN-1M. Bristol-Meyers Company. SN 297,967. Pub. 7–1–69. Filed 5–13–68.

S76,888. AUDIMYCIN. The Purdue Frederick Company. SN 299,585. Pub. 7–1–69. Filed 6–3–68.

S76,889. SPORLAN. Eli Lilly and Company. SN 300,076. Pub. 7–1–69. Filed 6–10–68.

S76,890. ZZILAGE. Cosby-Hodges Milling Company. SN 301,204. Pub. 7–1–69. Filed 6–24–68.

S76,891. CALCITOID. Marion Laboratories, Inc. SN 307,492. Pub. 7–1–69. Filed 9–16–68.

S76,892. SPAR-CAL. Mead Johnson & Company. SN 310,825. Pub. 7–1–69. Filed 10–30–68.

S76,893. PIG AND FLOWER DESIGN. Chas. Pfizer & Co., Inc. SN 316,755. Pub. 7–1–69. Filed 1–16–69.

Class 19 — Vehicles

S76,894. LIFE GARD. Alofs Manufacturing Company. SN 288,762. Pub. 7–1–69. Filed 1–15–68.

S76,895. NORSE. North American Hudson Corp. SN 301,592. Pub. 7–1–69. Filed 6–28–68.

S76,896. BUGETTA. Bugetta Inc. SN 302,037. Pub. 7–1–69. Filed 7–5–68.

S76,897. BREEZE. Traveleze Trailer Co., Inc. SN 304,519. Pub. 4–1–69. Filed 8–6–68.

S76,898. ELASTO-CUSHION. The Buckeye Steel Castings Company. SN 313,679. Pub. 7–1–69. Filed 12–5–68.

Class 20 — Linoleum and Oiled Cloth

S76,899. RIBANDEL. Kentile Floors Inc. SN 311,155. Pub. 7–1–69. Filed 11–1–68.

S76,900. ALLURE. Allpro Corporation. SN 311,999. Pub. 7–1–69. Filed 11–13–68.

S76,901. SAND PEBBLES. Kentile Floors Inc. SN 312,305. Pub. 7–1–69. Filed 11–15–68.

Class 21 — Electrical Apparatus, Machines, and Supplies

S76,902. DU PONT AND DESIGN. E. I. du Pont de Nemours and Company. SN 275,841. Pub. 7–1–69. Filed 7–12–67.

S76,903. MISCELLANEOUS DESIGN. Colonial Electric & Specialty Co., Inc. SN 279,629. Pub. 8–27–68. Filed 9–5–67.

S76,904. MISCELLANEOUS DESIGN. TDK Electronics Co., Ltd. MULTIPLE CLASS (Classes 21, 26, and 36). SN 294,687. Pub. 7–1–68. Filed 4–1–68.

S76,905. FUSA-FLEX. General Electric Company. SN 297,669. Pub. 7–1–69. Filed 5–8–68.

S76,906. PERMA FLASH. Chadwick-Miller, Inc. SN 298,804. Pub. 7–1–69. Filed 5–22–68.

S76,907. SQUID. International Telephone and Telegraph Corporation, assignee of ITT Blackburn Corporation. SN 299,356. Pub. 3–18–69. Filed 5–29–68.

S76,908. ROTOMARK. The Monarch Marking System Company. MULTIPLE CLASS (Classes 21, 23, and 37). SN 301,577. Pub. 7–1–69. Filed 6–28–68.

S76,909. MISCELLANEOUS DESIGN. Columbia Broadcasting System, Inc. SN 301,584. Pub. 7–1–69. Filed 6–28–68.

S76,910. HELIGEAR. Opperman Gears Limited. MULTIPLE CLASS (Classes 21 and 23). SN 303,063. Pub. 7–1–69. Filed 7–18–68.

S76,911. IDEC. Izumi Denki Company. SN 309,587. Pub. 7–1–69. Filed 10–14–68.

S76,912. HONEY BEE. Hurst Manufacturing Corporation. SN 310,782. Pub. 7–1–69. Filed 10–29–68.

S76,913. TWIN DISC. Twin Disc, Incorporated. MULTIPLE CLASS (Classes 21, 23, and 26). SN 311,086. Pub. 7–1–69. Filed 11–1–68.

S76,914. STYLIZED K AND DESIGN. KSC Semiconductor Corporation. SN 311,154. Pub. 7–1–69. Filed 11–1–68.

S76,915. PROTISTOR. Lucien Ferraz & Cie. SN 312,785. Pub. 7–1–69. Filed 11–21–68.

S76,916. MPI AND DESIGN. Medical Plastics, Inc. SN 312,957. Pub. 7–1–69. Filed 11–25–68.

S76,917. STA-STRAP. Panduit Corp. SN 313,135. Pub. 7–1–69. Filed 11–26–68.

S76,918. MICRO-CELL. Microdot Inc. SN 313,183. Pub. 7–1–69. Filed 11–27–68.

S76,919. EMCON. Illinois Tool Works Inc., assignee of Electro Materials Corporation. SN 314,145. Pub. 4–22–69. Filed 12–11–68.

S76,920. EMCRON. Illinois Tool Works Inc., assignee of Electro Materials Corporation. SN 314,146. Pub. 4–22–69. Filed 12–11–68.

S76,921. HOLD-HEET. Hold-Heet Products Corporation. SN 314,791. Pub. 7–1–69. Filed 12–18–68.

Class 22 — Games, Toys, and Sporting Goods

S76,922. "LUCKY STAMP." King Korn Stamp Company. SN 268,359. Pub. 7–18–67. Filed 4–5–67.

S76,923. MERI. J. Swedlin, Inc., d.b.a. Gund Manufacturing Company. SN 272,426. Pub. 2–20–68. Filed 5–25–67.

S76,924. TOTE-A-GRAF. Adorable Toy Corporation. SN 291,821. Pub. 7–1–69. Filed 2–26–68.

S76,925. DIVE BOOT. Randolph Manufacturing Co., Inc. (Delaware corporation), assignee of Randolph Manufacturing Co., Inc. (Massachusetts corporation). SN 296,347. Pub. 7–1–69. Filed 4–23–68.

S76,926. MAGIC. Franz Kneissl, Skifabrik, Kufstein. SN 297,068. Pub. 7–1–69. Filed 5–1–68.

S76,927. THE LUCKIEST LURES IN THE WORLD. Glen L. Evans, Inc. SN 299,224. Pub. 7–1–69. Filed 5–28–68.

S76,928. TICTACKERS. Walter A. Hallerud. SN 299,349. Pub. 7–1–69. Filed 5–29–68.

S76,929. WATER LOO AND DESIGN. Walters Enterprises. SN 304,029. Pub. 7–1–69. Filed 7–31–68.

S76,930. DEELIE-BOBBERS. Parker Brothers, Inc., assignee, by mesne assignment, of Products of the Behavioral Sciences, Inc. SN 304,385. Pub. 7–1–69. Filed 8–5–68.

S76,931. PUFFER. Albert D. Neal. SN 304,806. Pub. 7–1–69. Filed 8–9–68.

S76,932. WHITE STAR. Wonder Products Company. SN 305,584. Pub. 7–1–69. Filed 8–20–68.

S76,933. RANGER. Wonder Products Company. SN 305,588. Pub. 7–1–69. Filed 8–20–68.

S76,934. CHEYENNE. Wonder Products Company. SN 305,589. Pub. 7–1–69. Filed 8–20–68.

S76,935. SCEPTRE. U.S. Golf Corporation. SN 305,770. Pub. 7–1–69. Filed 8–22–68.

S76,936. JOG-MASTER. MacLevy Products Corporation. SN 305,836 Pub. 7–1–69. Filed 8–23–68.

S76,937. JOG-O-MATIC. MacLevy Products Corporation. SN 305,837. Pub. 7–1–69. Filed 8–23–68.

S76,938. SEA STRIKE. Brunswick Corporation. SN 305,917. Pub. 7–1–69. Filed 8–26–68.

S76,939. MONTCLAIR. Brunswick Corporation. SN 305,918. Pub. 7–1–69. Filed 8–26–68.

S76,940. TWIRLOGRAPH. The Ohio Art Company. SN 305,967. Pub. 7–1–69. Filed 8–26–68.

S76,941. DAN MATTHEWS. Matsam Corp. SN 306,539. Pub. 7–1–69. Filed 9–4–68.

S76,942. WHIRL-R-OOOS. Mister-R-Ooo Enterprises, Inc. SN 306,575. Pub. 7–1–69. Filed 9–4–68.

S76,943. DP (DESIGN). Diversified Products Corporation. SN 306,762. Pub. 7–1–69. Filed 9–6–68.

S76,944. JOHNNY REB. Atlantic Lures, Inc. SN 308,593. Pub. 7–1–69. Filed 10–1–68.

S76,945. CASTO'S SPECIAL. E. Hugh Casto. SN 308,654. Pub. 7–1–69. Filed 10–2–68.

S76,946. TIMMY TIGER. Mattel, Inc. SN 308,961. Pub. 7–1–69. Filed 10–7–68.

S76,947. SIFO. Sifo Company. SN 312,403. Pub. 7–1–69. Filed 11–18–68.

S76,948. JUNIOR HULA HOOP. Wham-O Mfg. Co. SN 318,937. Pub. 7–1–69. Filed 2–12–69.

S76,949. FOIL. Minnesota Mining and Manufacturing Company. SN 319,547. Pub. 7–1–69. Filed 2–19–69.

S76,950. MONAD. Minnesota Mining and Manufacturing Company. SN 319,548. Pub. 7–1–69. Filed 2–19–69.

S76,951. TRYCE. Minnesota Mining and Manufacturing Company. SN 319,550. Pub. 7–1–69. Filed 2–19–69.

Class 23 — Cutlery, Machinery, and Tools, and Parts Thereof

S76,908. (See Class 21 for this trademark.)

S76,910. (See Class 21 for this trademark.)

S76,913. (See Class 21 for this trademark.)

S76,952. LELAND "DOUBLE ACTION." Leland Detroit Manufacturing Company. SN 278,502. Pub. 7–1–69. Filed 8–17–67.

S76,953. DEFOST. Greenville Industries, Inc. SN 282,695. Pub. 7–1–69. Filed 10–17–67.

S76,954. STERLEX. Sterling Extruder Corporation. SN 283,939. Pub. 7–1–69. Filed 11–1–67.

S76,955. MODULAR D. McCord Corporation. SN 285,034. Pub. 7–1–69. Filed 11–16–67.

S76,956. ACM AND DESIGN. American Custom Metals Co., Inc. SN 292,062. Pub. 7–1–69. Filed 2–28–68.

S76,957. IR AND DESIGN. The Inta-Roto Machine Company, Inc. SN 294,280. Pub. 7–1–69. Filed 3–27–68.

S76,958. CAM AND DESIGN. CAM Industries, Inc. SN 300,902. Pub. 7–1–69. Filed 6–20–68.

S76,959. GALAXY DESIGN. Strato Enterprises, Limited. SN 301,371. Pub. 7–1–69. Filed 6–25–68.

S76,960. ASTRO. Avery Products Corporation, d.b.a. Astro Products. SN 305,601. Pub. 7–1–69. Filed 8–21–68.

S76,961. SIMS AND DESIGN. J. Frank Sims Cab. Co., Inc. SN 309,960. Pub. 7–1–69. Filed 10–18–68.

S76,962. MOWBOT. Mowbot, Inc. SN 311,390. Pub. 7–1–69. Filed 11–5–68.

S76,963. MORGEN AND DESIGN. Morgen Manufacturing Co. MULTIPLE CLASS (Classes 23 and 50). SN 313,778. Pub. 7–1–69. Filed 12–6–68.

S76,964. SCHWITZER S AND DESIGN. Wallace-Murray Corporation. SN 314,993. Pub. 7–1–69. Filed 12–20–68.

S76,965. TENSION-WELD. Signode Corporation. SN 315,604. Pub. 7–1–69. Filed 1–2–69.

S76,966. PERFORMER. Dana Corporation. SN 315,887. Pub. 7–1–69. Filed 1–6–69.

S76,967. COLORTROL. Miehle-Goss-Dexter, Incorporated. SN 316,326. Pub. 7–1–69. Filed 1–10–69.

S76,968. POLY-SPHERE. Buell Engineering Company, Inc. SN 316,520. Pub. 7–1–69. Filed 1–14–69.

S76,969. VARI-L. Buell Engineering Company, Inc. SN 316,521. Pub. 7–1–69. Filed 1–14–69.

S76,970. TC AND DESIGN. Ingersoll-Rand Company. SN 317,570. Pub. 7–1–69. Filed 1–27–69.

S76,971. A AND GEAR DESIGN. Arrow Gear Company. SN 317,810. Pub. 7–1–69. Filed 1–29–69.

S76,972. BEADEX. 300 Service, Inc. SN 318,105. Pub. 7–1–69. Filed 1–31–69.

S76,973. SUPERVANE. Rex Chainbelt Inc. SN 319,248. Pub. 7–1–69. Filed 2–17–69.

Class 25 — Locks and Safes

S76,974. SKI-WISE. Sport Imports Inc. SN 320,007. Pub. 7–1–69. Filed 2–25–69.

S76,975. HANDS OFF. Sport Imports Inc. SN 320,008. Pub. 7–1–69. Filed 2–25–69.

Class 26 — Measuring and Scientific Appliances

S76,904. (See Class 21 for this trademark.)

S76,913. (See Class 21 for this trademark.)

S76,976. MKS BARATRON. MKS Instruments, Inc. SN 248,716. Pub. 7–1–69. Filed 6–22–66.

S76,977. FEATHERTOUCH. Pauli & Griffin Company. SN 276,347. Pub. 7–1–69. Filed 7–19–67.

S76,978. PIAB. Aktiebolaget PIAB. SN 283,968. Pub. 7–1–69. Filed 11–2–67.

S76,979. STRATAMETER. Soiltest, Inc. SN 291,197. Pub. 7–1–69. Filed 2–15–68.

S76,980. MI (DESIGN). May B. Rogers, executrix of the estate of Murray K. Rogers, deceased, assignee of Murray K. Rogers, d.b.a. Multi-Line Pen Company. SN 304,968. Pub. 7–1–69. Filed 8–12–68.

S76,981. MISCELLANEOUS DESIGN. Parker Instrument Corporation. SN 307,229. Pub. 7–1–69. Filed 9–12–68.

S76,982. D STAR-D AND DESIGN. Star-D Manufacturing Co., Inc. SN 308,405. Pub. 7–1–69. Filed 9–27–68.

S76,983. DIPTIP. Leeds & Northrup Company. SN 314,095. Pub. 7–1–69. Filed 12–10–68.

S76,984. MONOSTAT. Colab Laboratories, Inc. SN 314,675. Pub. 7–1–69. Filed 12–17–68.

S76,985. RHINO. Complex (Japan), Ltd., assignee of Arrow International, Ltd., d.b.a. Complex, Japan. SN 316,586. Pub. 7–1–69. Filed 1–15–69.

Class 27 — Horological Instruments

S76,986. PRESMATIC. Kabushiki Kaisha Hattori Tokeiten. SN 285,333. Pub. 7–1–69. Filed 11–21–67.

Class 28 — Jewelry and Precious-Metal Ware

876,987. FLIP-IT. Hedison Corp. SN 314,349. Pub. 7–1–69. Filed 12–12–68.

Class 29 — Brooms, Brushes, and Dusters

876,988. PLEX. American Sponge and Chamois Co. Inc. SN 294,569. Pub. 7–1–69. Filed 4–1–68.

876,989. H AND DESIGN. Henlopen Manufacturing Co. Inc. SN 296,959. Pub. 7–1–69. Filed 4–30–68.

876,990. SASH-RIDER. H & G Industries, Inc. SN 301,421. Pub. 7–1–69. Filed 6–26–68.

876,991. SMOOTH-RIDER. H & G Industries, Inc. SN 301,799. Pub. 7–1–69. Filed 6–26–68.

Class 31 — Filters and Refrigerators

876,992. DRY-SYS. Michigan Oven Company, d.b.a. Drying Systems Co. SN 262,492. Pub. 7–1–69. Filed 1–13–67.

876,993. CENTRIFLO. Amicon Corporation. SN 300,796. Pub. 7–1–69. Filed 6–19–68.

Class 32 — Furniture and Upholstery

876,994. VELERO. Drexel Enterprises, Inc. SN 303,150. Pub. 7–1–69. Filed 7–19–68.

876,995. DG. Design Group, Incorporated. SN 307,199. Pub. 7–1–69. Filed 9–12–68.

876,996. THE EXHIBITOR. Kewaunee Scientific Equipment Corporation. SN 313,509. Pub. 7–1–69. Filed 12–3–68.

Class 34 — Heating, Lighting, and Ventilating Apparatus

876,997. DRY-SYS. Michigan Oven Company, d.b.a. Drying Systems Co. SN 262,493. Pub. 7–1–69. Filed 1–13–67.

876,998. WIGGI. Messer Griesheim G.m.b.H. SN 282,112. Pub. 7–1–69. Filed 10–9–67.

876,999. THERMOTRON. Thermo-Dynamics Corporation. SN 299,257. Pub. 7–1–69. Filed 5–28–68.

877,000. VITA-RAY. The Tappan Company. SN 303,204. Pub. 7–1–69. Filed 7–19–68.

877,001. EXCELAIRE. Larry L. Kaufman Company. SN 304,353. Pub. 7–1–69. Filed 8–5–68.

Class 35 — Belting, Hose, Machinery Packing, and Nonmetallic Tires

876,852. (See Class 13 for this trademark.)

877,002. ZIG-ZAG. Vaberg Company. SN 309,802. Pub. 7–1–69. Filed 10–16–68.

Class 36 — Musical Instruments and Supplies

876,904. (See Class 21 for this trademark.)

877,003. PORTA-TEACH. Portable Recording Ministries, Inc. SN 297,089. Pub. 7–1–69. Filed 5–1–68.

877,004. DALE AND DESIGN. Dale Electronics, Inc. SN 312,029. Pub. 7–1–69. Filed 11–13–68.

877,005. DJM AND DESIGN. Dick James Music, Inc. SN 315,700. Pub. 7–1–69. Filed 10–30–68.

Class 37 — Paper and Stationery

876,845. (See Class 11 for this trademark.)

876,908. (See Class 21 for this trademark.)

877,006. KLEEN PLUS. Kimberly-Clark Corporation. SN 296,834. Pub. 7–1–69. Filed 4–29–68.

877,007. XLN. Laminating & Coating Corporation. SN 300,525. Pub. 7–1–69. Filed 6–17–68.

877,008. CUREX. Curwood, Inc. SN 311,575. Pub. 7–1–69. Filed 11–7–68.

877,009. CONSO-MATTE W.O. Consolidated Papers, Inc. SN 311,837. Pub. 7–1–69. Filed 11–12–68.

877,010. SPECIAL SEVEN. Eastex Incorporated. SN 312,032. Pub. 7–1–69. Filed 11–13–68.

877,011. MOON AND STARS DESIGN. The Procter & Gamble Company. SN 319,553. Pub. 7–1–69. Filed 2–19–69.

Class 38 — Prints and Publications

877,012. UP COUNTRY. Department of the Army. SN 290,162. Pub. 7–1–69. Filed 2–2–68.

877,013. TECHNOMIC. Technomic Publishing Company, Inc. SN 309,314. Pub. 7–1–69. Filed 10–9–68.

877,014. FOND MEMORIES AND DESIGN. Gibson Greeting Cards, Inc. SN 309,375. Pub. 7–1–69. Filed 10–10–68.

877,015. MINI-BOPPERS. Harry K. Privette. SN 309,396. Pub. 7–1–69. Filed 10–10–68.

877,016. RAMPARTS. Ramparts Magazine, Inc. SN 310,694. Pub. 7–1–69. Filed 10–28–68.

877,017. BLACK BOOK. Black Book. SN 311,434. Pub. 7–1–69. Filed 11–6–68.

877,018. REMARKABLE. Marion Donovan, d.b.a. Donovan Systems. SN 313,864. Pub. 7–1–69. Filed 12–9–68.

877,019. GOODIE PRODUCTS AND DESIGN. Nero Investment Company, Inc., d.b.a. Goodie Products. SN 316,056. Pub. 7–1–69. Filed 1–8–69.

877,020. "FAMILY SHOPPER." Chesterfield Club, Inc. SN 316,988. Pub. 7–1–69. Filed 1–21–69.

877,021. CARROTS. Norcross, Inc. SN 318,215. Pub. 7–1–69. Filed 2–3–69.

877,022. NORCROSS FUNNIES. Norcross, Inc. SN 318,216. Pub. 7–1–69. Filed 2–3–69.

877,023. FLOWER SHOW. Norcross, Inc. SN 318,220. Pub. 7–1–69. Filed 2–3–69.

877,024. GREEN EYES. Norcross, Inc. SN 318,221. Pub. 7–1–69. Filed 2–3–69.

Class 39 — Clothing

877,025. MISCELLANEOUS DESIGN. Acme Cotton Products. Co., Inc. MULTIPLE CLASS (Classes 39 and 44). SN 228,502. Pub. 10–31–67. Filed 9–24–65.

877,026. DUSETTA. Glensder Corporation. SN 260,659. Pub. 7–1–69. Filed 12–13–66.

877,027. UNDER-WONDER. True Form Foundations, Inc. SN 269,029. Pub. 7–1–69. Filed 4–13–67.

877,028. SHOE SAVE-A-THON. A. S. Beck Shoe Corporation. SN 275,825. Pub. 7–1–69. Filed 7–12–67.

877,029. FUNFELT. Fashions Four, Inc. SN 280,577. Pub. 7–1–69. Filed 9–18–67.

877,030. BARCLAY SQUARE. Barclay Square, Inc. SN 287,136. Pub. 7–1–69. Filed 12–18–67.

877,031. OLD STURBRIDGE VILLAGE. Old Sturbridge, Inc. SN 289,115. Pub. 7–1–69. Filed 1–18–68.

877,032. TAPERTOWNE U.S.A. L. W. Foster Sportswear Co., Inc., d.b.a. Foster Company. SN 289,796. Pub. 7–1–69. Filed 1–29–68.

877,033. SLIP SHAPE. Maidenform, Inc. SN 291,556. Pub. 7–1–69. Filed 2–21–68.

877,034. POLLY. Steiner-Lobman Dry Goods Company. SN 292,456. Pub. 7–1–69. Filed 3–5–68.

877,035. LEWIS BRYANT. Lewis Bryant, Inc. SN 293,631. Pub. 7–1–69. Filed 3–19–68.

877,036. STAGE I OF CALIFORNIA. Irving Margel. SN 296,437. Pub. 7–1–69. Filed 4–24–68.

877,037. JASKA. Jaska Limited. SN 300,199. Pub. 7–1–69. Filed 6–11–68.

877,038. BRILLS/COLONY. Brills, Inc. SN 301,695. Pub. 7–1–69. Filed 7–1–68.

877,039. B/C AND DESIGN. Brills, Inc. SN 301,696. Pub. 7–1–69. Filed 7–1–68.

877,040. MEN'S STUFF. Lilly Pulitzer, Inc. SN 301,964. Pub. 7–1–69. Filed 7–3–68.

877,041. BARNEY'S NEW YORKER SHOP. Barney's Clothes, Inc. SN 302,212. Pub. 7–1–69. Filed 7–8–68.

877,042. E-Z CHANGE. Glen Raven Mills, Inc. SN 302,738. Pub. 7–1–69. Filed 7–15–68.

877,043. BELK AND DESIGN. Belk Stores Services, Inc. SN 302,797. Pub. 7–1–69. Filed 7–9–68.

877,044. PACIFIC. Dorfman-Pacific Co. SN 303,898. Pub. 7–1–69. Filed 7–30–68.

877,045. SARCO. Sarco Lingerie Corp. SN 304,156. Pub. 7–1–69. Filed 8–1–68.

877,046. OLD LYME. Oxford Industries, Inc. SN 304,809. Pub. 7–1–69. Filed 8–9–68.

877,047. FRANCONIA INTERNATIONAL AND DESIGN. Franconia Ski Wear, Inc. SN 305,824. Pub. 7–1–69. Filed 8–23–68.

877,048. SELF. Onishi Iryo Kabushiki Kaisha (Onishi Iryo Co., Ltd.). SN 306,938. Pub. 7–1–69. Filed 9–9–68.

877,049. LORD KINGSBURY. King's Department Stores, Inc. SN 307,108. Pub. 7–1–69. Filed 9–11–68.

877,050. POCKETCHIEF. Paul Harvey, Ltd. Inc. SN 308,203. Pub. 7–1–69. Filed 9–25–68.

877,051. THEM APPLES AND DESIGN. Gay Togs, Inc. SN 308,345. Pub. 7–1–69. Filed 9–27–68.

877,052. SAXON HAWK AND DESIGN. Headrow Clothes Limited. SN 308,489. Pub. 7–1–69. Filed 9–30–68.

877,053. DONBROS. Donaldson Textiles Limited. SN 312,363. Pub. 7–1–69. Filed 11–13–68.

877,054. ANIMAL CRACKERS. Daniel Fur Co., Inc. SN 312,660. Pub. 7–1–69. Filed 11–20–68.

877,055. MOHAWK. Rockower Brothers, Inc. SN 312,701. Pub. 7–1–69. Filed 11–20–68.

877,056. MELBOURNE WORSTED. Jaymar-Ruby, Inc. SN 313,003. Pub. 7–1–69. Filed 11–25–68.

877,057. RATCATCHER. Variety Manufacturing Co., Inc. SN 313,040. Pub. 7–1–69. Filed 11–25–68.

877,058. HINDU HONDOS. Blue Bell, Inc. SN 313,399. Pub. 7–1–69. Filed 12–2–68.

877,059. MARSHALL & REED. Hughes Hatcher, Inc. SN 313,425. Pub. 7–1–69. Filed 12–2–68.

877,060. FARR·WEST. Farr·West Fashions. SN 313,812. Pub. 7–1–69. Filed 12–6–68.

877,061. SPEEDJAC. De Wan Manufacturing Corporation. SN 314,057. Pub. 7–1–69. Filed 12–10–68.

877,062. HANES AND DESIGN. Hanes Corporation. SN 314,073. Pub. 7–1–69. Filed 12–10–68.

877,063. FAB-U-LEGS. Knit Products Corporation. SN 314,715. Pub. 7–1–69. Filed 12–17–68.

877,064. VAN SLYKE. Vaneli. SN 315,129. Pub. 7–1–69. Filed 12–23–68.

877,065. QUAD. J. C. Penney Company, Inc. SN 315,668. Pub. 7–1–69. Filed 12–30–68.

877,066. LITTLESTICKS! Littlesticks Inc. SN 318,555. Pub. 7–1–69. Filed 2–6–69.

876,067. JUGGERNAUT AND DESIGN. Donald A. Ingalls, d.b.a. Sunset Shoes. SN 318,962. Pub. 7–1–69. Filed 2–12–69.

Class 40 — Fancy Goods, Furnishings, and Notions

877,068. FASHION TRESS. Fashion Tress, Inc. SN 147,814. Pub. 5–31–66. Filed 6–27–62.

877,069. EXCELON. Tovar Tresses, Inc. SN 287,685. Pub. 7–1–69. Filed 12–27–67.

877,070. BUTTERFLY. Harry Camp Company. SN 311,013. Pub. 7–1–69. Filed 10–31–68.

Class 42 — Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

877,071. TIGER AND DESIGN. Tiger Fabrics, Inc. SN 275,323. Pub. 7–1–69. Filed 7–3–67.

877,072. TELRON. Robertson Carpet Corp. SN 292,715. Pub. 7–1–69. Filed 3–7–68.

877,073. JASKA. Jaska Limited. SN 300,198. Pub. 7–1–69. Filed 6–11–68.

877,074. FIBERGLO. Hedwin Corporation. SN 306,773. Pub. 7–1–69. Filed 9–6–68.

877,075. JAPANESE LETTERS. Kanegafuchi Boseki Kabushiki Kaisha, d.b.a. Kanegafuchi Spinning Co., Ltd. SN 308,903. Pub. 7–1–69. Filed 10–4–68.

877,076. SERENE. Fiber Industries, Inc. SN 310,223. Pub. 7–1–69. Filed 10–22–68.

877,077. KENTSHIRE. Spartans Industries, Inc. SN 310,705. Pub. 7–1–69. Filed 10–28–68.

877,078. ROUGHHOUSE. Trend Mills, Inc. SN 310,720. Pub. 7–1–69. Filed 10–28–68.

877,079. DOUBLE MATE. Beaunit Corporation. SN 310,836. Pub. 7–1–69. Filed 10–30–68.

877,080. VC VALLEY CARPETS AND DESIGN. Keystone Floor Products Co. SN 311,156. Pub. 7–1–69. Filed 11–1–68.

877,081. THE VILLAGER. Villager Industries, Inc., by change of name from The Villager, Inc. SN 311,319. Pub. 7–1–69. Filed 11–4–68.

877,082. WEAR BEATERS. Graniteville Company. SN 311,487. Pub. 7–1–69. Filed 11–6–68.

877,083. BLENDTEX. West Virginia Pulp and Paper Company. SN 311,961. Pub. 7–1–69. Filed 11–12–68.

877,084. SENECA. United Merchants and Manufacturers, Inc. SN 312,078. Pub. 7–1–69. Filed 11–13–68.

877,085. STORMASTER. J. P. Stevens & Co., Inc. SN 313,033. Pub. 7–1–69. Filed 11–25–68.

877,086. SWANTEX. The Taylor Maker, Inc. SN 315,608. Pub. 6–24–69. Filed 1–2–69.

Class 43 — Thread and Yarn

877,087. ANGEL DESIGN. Deering Milliken, Inc. SN 311,242. Pub. 7–1–69. Filed 11–4–68.

877,088. LIBLON. Liberty Fabrics of New York, Inc. SN 311,894. Pub. 7–1–69. Filed 11–12–68.

877,089. COLORPLUS. National Rayon Dyeing Company, Inc. SN 313,131. Pub. 7–1–69. Filed 11–26–68.

Class 44 — Dental, Medical, and Surgical Appliances

S77,025. (See Class 39 for this trademark.)

S77,090. GC (DESIGN). Graphic Controls Corporation. SN 293,133. Pub. 7–1–69. Filed 3–13–68.

S77,091. PNEUMOPAK. Rodana Research Corporation. SN 294,315. Pub. 7–1–69. Filed 3–27–68.

S77,092. SSIC. Elton Duff, d.b.a. Special Surgical Instruments Company. SN 296,673. Pub. 7–1–69. Filed 4–26–68.

S77,093. D DENTHETICS INC. AND DESIGN. Denthetics, Inc. SN 299,655. Pub. 7–1–69. Filed 6–4–68.

S77,094. MIRACLE-STONE. Flaire Cosmetics, Inc. SN 302,404. Pub. 7–1–69. Filed 7–10–68.

S77,095. MISCELLANEOUS DESIGN. Synthes AG. SN 312,549. Pub. 7–1–69. Filed 11–19–68.

S77,096. HYDRO-FLOAT. The Jobst Institute, Inc. SN 314,714. Pub. 7–1–69. Filed 12–17–68.

S77,097. MELCO MED. The Foregger Company, Inc. SN 315,751. Pub. 7–1–69. Filed 1–3–69.

S77,098. DIALYTE. Western Gear Corporation. SN 319,656. Pub. 7–1–69. Filed 2–19–69.

Class 45 — Soft Drinks and Carbonated Waters

S77,099. BRIDGEMAN AND DESIGN. Land O'Lakes Creameries, Inc. MULTIPLE CLASS (Classes 45 and 46). SN 276,238. Pub. 7–1–69. Filed 7–18–67.

Class 46 — Foods and Ingredients of Foods

S77,099. (See Class 45 for this trademark.)

S77,100. DUTCH MAID. Arbogast & Bastian, Inc. SN 256,052. Pub. 7–1–69. Filed 10–10–66.

S77,101. OAK FARMS. The Southland Corporation. SN 259,481. Pub. 7–1–69. Filed 11–25–66.

S77,102. KING DAVID. Hawthorn-Mellody Farms Dairy of Wisconsin, Inc. SN 267,426. Pub. 7–1–69. Filed 3–23–67.

S77,103. PO-POLSKU. Hawthorn-Mellody Farms Dairy of Wisconsin, Inc. SN 267,427. Pub. 7–1–69. Filed 3–23–67.

S77,104. CHIPICO. Hawthorn-Mellody Farms Dairy of Wisconsin, Inc. SN 267,428. Pub. 7–1–69. Filed 3–23–67.

S77,105. ACTINISE. Etablissement Actimonde. SN 273,949. Pub. 7–1–69. Filed 6–15–67.

S77,106. KELCO AND DESIGN. Kelco Company. SN 274,755. Pub. 7–1–69. Filed 6–26–67.

S77,107. SHO-BEEF. Fruen Milling Company. SN 276,435. Pub. 7–1–69. Filed 7–20–67.

S77,108. Q-POP. American Dairy Queen Corporation. SN 277,605. Pub. 7–1–69. Filed 8–7–67.

S77,109. PROTEENYTE. Hynite Corporation. SN 279,652. Pub. 6–4–68. Filed 9–5–67.

S77,110. ACME. Acme Poultry Company. SN 285,897. Pub. 7–1–69. Filed 11–30–67.

S77,111. PENN MAID AND DESIGN. Penn Maid Foods, Inc. SN 287,940. Pub. 7–1–69. Filed 1–2–68.

S77,112. CUPPA. Theodore J. Gotthelf. SN 290,733. Pub. 7–1–69. Filed 2–9–68.

S77,113. MISCELLANEOUS DESIGN. Plantation Foods Corporation. SN 291,634. Pub. 7–1–69. Filed 2–21–68.

S77,114. BAR·B·Q DOODLES. The Borden Company. SN 292,174. Pub. 7–1–69. Filed 2–29–68.

S77,115. SENORA PONGA LA MESA. Miavana Wholesale Co., Inc. SN 292,596. Pub. 7–1–69. Filed 3–6–68.

S77,116. MINNIE PEARL'S. Performance Systems, Inc., by change of name from Minnie Pearl's Chicken System, Inc. SN 292,802. Pub. 7–1–69. Filed 3–8–68.

S77,117. WILLIAMSON'S MAKERS OF QUALITY CANDIES SINCE 1913 Warner-Lambert Pharmaceutical Company. SN 296,224. Pub. 7–1–69. Filed 4–22–68.

S77,118. A.—C. Horner Sales Corporation. SN 296,428. Pub. 7–1–69. Filed 4–24–68.

S77,119. ONE STAR AND DESIGN. S. E. Rykoff & Co. SN 297,151. Pub. 7–1–69. Filed 5–2–68.

S77,120. ISLAND QUEEN. Shore Lobster & Shrimp Corp., by change of name from Shore Shrimp & Lobster Corp., d.b.a. Shore Lobster & Shrimp Corp. SN 298,051. Pub. 7–1–69. Filed 5–13–68.

S77,121. HYDE PARK AND DESIGN. Malone & Hyde, Inc. SN 300,834. Pub. 7–1–69. Filed 6–19–68.

S77,122. FRANK FRITTER AND DESIGN. Olympic Corn Products, Inc. SN 302,111. Pub. 7–1–69. Filed 7–5–68.

S77,123. STANI. Productos Stani Sociedad Anonima Industrial y Comercial. SN 302,512. Pub. 7–1–69. Filed 7–11–68.

S77,124. BAKE SHOP QUALITY. Gourmet Bakers, Inc. SN 303,791. Pub. 7–1–69. Filed 7–29–68.

S77,125. KERNCO AND DESIGN. Kern County Land Company. SN 304,929. Pub. 7–1–69. Filed 8–12–68.

S77,126. KERN STAR. Kern County Land Company. SN 304,934. Pub. 7–1–69. Filed 8–12–68.

S77,127. DIPPLE. Bessire & Company, Incorporated. SN 305,182. Pub. 7–1–69. Filed 8–15–68.

S77,128. STRAWBERRY SWIRL. Friendship Dairies, Inc. SN 306,028. Pub. 7–1–69. Filed 8–27–68.

S77,129. OLDE CARRIAGE. Delicious Foods, Inc. SN 306,354. Pub. 7–1–69. Filed 8–30–68.

S77,130. GIVES A MEAL MAN-APPEAL. OXO (Canada) Limited. SN 306,733. Pub. 7–1–69. Filed 9–6–68.

S77,131. SURFBURGER. Duffy-Mott Company, Inc. SN 306,899. Pub. 7–1–69. Filed 9–9–68.

S77,132. SUPER CHARGERS. General Foods Corporation. SN 312,452. Pub. 7–1–69. Filed 11–18–68.

S77,133. MAIZORO. Cereales Industrializados, S.A. SN 312,542. Pub. 7–1–69. Filed 11–19–68.

S77,134. CRICKETS. Beatrice Foods Co. SN 312,869. Pub. 7–1–69. Filed 11–22–68.

S77,135. LEPRECHAUNS. Beatrice Foods Co. SN 312,870. Pub. 7–1–69. Filed 11–22–68.

S77,136. CRUMPETS. Beatrice Foods Co. SN 312,871. Pub. 7–1–69. Filed 11–22–68.

S77,137. LTD. Glumarra Bros. Fruit Co., Inc. SN 314,495. Pub. 7–1–69. Filed 12–16–68.

Class 47 — Wines

S77,138. CORA AND BOTTLE DESIGN. G. & L. Fili Cora S.p.A. SN 287,907. Pub. 7–1–69. Filed S.R. 1–2–68; Am. P.R. 1–31–69.

S77,139. ROSE DES ANGES. Julius Wile Sons & Co., Inc. SN 303,373. Pub. 7–1–69. Filed 7–22–68.

Class 48 — Malt Beverages and Liquors

S77,140. KELCO. Kelco Company. SN 269,671. Pub. 7–1–69. Filed 4–20–67.

Class 49 — Distilled Alcoholic Liquors

S77,141. A AND DESIGN. The American Tobacco Company. SN 315,002. Pub. 7–1–69. Filed 12–23–68.

Class 50 — Merchandise Not Otherwise Classified

S76,963. (See Class 23 for this trademark.)

S77,142. BIRDHAVEN AND DESIGN. Donald H. Snyder, d.b.a. Snyder Woodcraft Company. SN 283,936. Pub. 7–1–69. Filed 11–1–67.

S77,143. WOODSTONE. Sam R. Turner, d.b.a. Decorative Arts. SN 297,455. Pub. 7–1–69. Filed 5–6–68.

S77,144. WOOD-ROP-SUPER-FLONG. Wood Flong Corporation. SN 302,805. Pub. 7–1–69. Filed 7–9–68.

S77,145. WOOD DUROMAT. Wood Flong Corporation. SN 302,806. Pub. 7–1–69. Filed 7–9–68.

S77,146. WOOD HTP MAT. Wood Flong Corporation. SN 302,807. Pub. 7–1–69. Filed 7–9–68.

S77,147. WOOD SUPER AD MAT. Wood Flong Corporation. SN 302,808. Pub. 7–1–69. Filed 7–9–68.

S77,148. SU SU SECURITY STONE. Sue G. Levy. SN 304,475. Pub. 7–1–69. Filed 8–6–68.

S77,149. SU SU SQUIGGLE ROX. Sue G. Levy. SN 304,476. Pub. 7–1–69. Filed 8–6–68.

S77,150. PORT-O-KAP. Haskon, Inc. SN 308,005. Pub. 7–1–69. Filed 9–23–68.

S77,151. LUMINACTIVE. Pictorial Productions, Inc. SN 311,917. Pub. 7–1–69. Filed 11–12–68.

S77,152. IDENTA-FOLD. G. G. Tauber Company, Inc. SN 312,509. Pub. 7–1–69. Filed 11–18–68.

S77,153. SECURITAINER. Johnsen & Jorgensen (Trident) Ltd. SN 313,585. Pub. 7–1–69. Filed 12–4–68.

S77,154. ROCED. Rocéd Manufacturers Inc. SN 316,911. 7–1–69. Filed 1–17–69.

S77,155. GK. Polychrome Corporation. SN 317,608. Pub. 7–1–69. Filed 1–27–69.

S77,156. DECORATIVE ADVENTURES. Suburban Management Company, d.b.a. Decorative Adventures, Inc. SN 317,643. Pub. 7–1–69. Filed 1–27–69.

S77,157. MAGNETICO. Magnetico International, Inc. SN 317,964. Pub. 7–1–69. Filed 1–30–69.

Class 51 — Cosmetics and Toilet Preparations

S77,158. FASHION TRESS. Fashion Tress, Inc., assignee of Diane Smith Dawson, d.b.a. Fashion Tress Beauty Shop. SN 160,533. Pub. 6–7–66. Filed 1–11–63.

S77,159. COVER GIRL "WHIPPEE." Noxell Corporation. SN 254,311. Pub. 3–26–68. Filed 9–12–66.

S77,160. COVER GIRL CREME WHIP. Noxell Corporation. SN 254,312. Pub. 1–9–68. Filed 9–12–66.

S77,161. JOLEN AND DESIGN. Jolen, Inc. SN 277,051. Pub. 7–1–69. Filed 7–28–67.

S77,162. HOUBIGANT. Houbigant, Inc. SN 282,370. Pub. 7–1–69. Filed 10–12–67.

S77,163. HAIRBENDER'S AND DESIGN. Joseph Q. Nesmith and Dorothy E. Nesmith (joint owners), d.b.a. The Hairbenders Wig and Beauty Salon. SN 284,715. Pub. 7–1–69. Filed 11–13–67.

S77,164. FLECHE DE LANCOME AND DESIGN. Lancôme S.A. SN 286,017. Pub. 7–1–69. Filed 12–1–67.

S77,165. EVER NEW. Bishop Industries Inc. SN 308,084. Pub. 7–1–69. Filed 9–24–68.

S77,166. DIMINISH. Aloe Creme Laboratories, Inc. SN 309,732. Pub. 7–1–69. Filed 10–16–68.

S77,167. FABRICE. Stendhal, Societe Anonyme. SN 316,349. Pub. 7–1–69. Filed 1–10–69.

S77,168. SURF PARTY. Johnson & Johnson. SN 316,897. Pub. 7–1–69. Filed 1–17–69.

Class 52 — Detergents and Soaps

S76,819. (See Class 4 for this trademark.)

S77,169. HENKOMAT. Henkel & Cie G.m.b.H. SN 284,198. Pub. 7–1–69. Filed 11–6–67.

S77,170. CAROLINA. Carolina Company, Inc., d.b.a. The Carolina Soap and Candle Makers. SN 291,580. Pub. 7–1–69. Filed 2–21–68.

S77,171. FLUFF-UP. Simoniz Company. SN 293,859. Pub. 7–1–69. Filed 3–21–68.

S77,172. WAYCLEAN. Philip A. Hunt Chemical Corporation. SN 301,843. Pub. 7–1–69. Filed 7–2–68.

S77,173. WIN-PON. Watsco, Inc. SN 301,987. Pub. 7–1–69. Filed 7–3–68.

S77,174. PROFOUND. Wyandotte Chemicals Corporation. SN 302,165. Pub. 7–1–69. Filed 7–5–68.

S77,175. HOLCO MATIC. Premier Industrial Corporation. SN 308,260. Pub. 7–1–69. Filed 9–26–68.

S77,176. FREE & LOVELY. Beecham Inc. SN 319,268. Pub. 7–1–69. Filed 2–17–69.

Service Marks

Class 100 — Miscellaneous

S77,177. MISCELLANEOUS DESIGN. Social Dynamics, Incorporated. SN 281,399. Pub. 7–1–69. Filed 9–28–67.

S77,178. ESPA AND DESIGN. Ernst W. Spannhake, d.b.a. ESPA Development Company. SN 290,027. Pub. 7–1–69. Filed 1–31–68.

S77,179. ARKANSAS FATS. Arkansas Fats Establishment, Inc. SN 304,751. Pub. 7–1–69. Filed 8–9–68.

S77,180. UNDERWOOD'S. Underwood's of Texas, Inc. SN 306,827. Pub. 7–1–69. Filed 9–6–68.

S77,181. HALF CIRCLE AND DESIGN. Crow's Investment Co. SN 307,434. Pub. 7–1–69. Filed 9–16–68.

S77,182. TWO BILLS. Variety Enterprises, Incorporated. SN 318,474. Pub. 7–1–69. Filed 2–5–69.

S77,183. FISH DESIGN. Orca, Inc. SN 319,246. Pub. 7–1–69. Filed 2–17–69.

Class 101 — Advertising and Business

S77,184. "MATCH THE MAN TO THE JOB." Decision/Inc. SN 234,735. Pub. 7–1–69. Filed 12–16–65.

S77,185. GIANT BINGO AND DESIGN. Billie J. Wagner, d.b.a. B. J. Wagner Promotions. SN 254,823. Pub. 6–27–67. Filed 9–20–66.

S77,186. INSTANT CREDIT AND DESIGN. Credit Clearing Corp. of America, Inc. SN 280,213. Pub. 7–1–69. Filed 9–13–67.

S77,187. SAV-A-STAMP. Service Station Management Corp. SN 285,585. Pub. 7–1–69. Filed 11–24–67.

S77,188. FOREIGN MARKET. Allied Stores of New York, Inc. SN 287,128. Pub. 3–18–69. Filed 12–18–67.

S77,189. BREAD BASKET AND DESIGN. Bread Basket Inc., assignee of Store Services, Inc. MULTIPLE CLASS (Classes 101 and 103). SN 294,547. Pub. 5–20–69. Filed 4–1–68.

S77,190. BASIS FOR PROFIT. John E. Bonnett, d.b.a. John Bonnett Associates. SN 295,011. Pub. 7–1–69. Filed 4–5–68.

S77,191. EKW SINCE 1935 AND DESIGN. Edwin K. Williams & Co. SN 296,227. Pub. 7–1–69. Filed 4–22–68.

S77,192. VISIT 'N WIN. Spot-O-Gold Corporation. SN 300,317. Pub. 7–1–69. Filed 6–13–68.

S77,193. MEDI MART. Stop & Shop, Inc. SN 301,557. Pub. 7–1–69. Filed 6–27–68.

S77,194. 4 V DESIGN. Ebsco Industries, Inc. d.b.a. Vulcan Printing & Lithographing. SN 301,727. Pub. 7–1–69. Filed 7–1–68.

S77,195. L. S. AYRES & CO. L. S. Ayres and Company. SN 303,496. Pub. 7–1–69. Filed 7–24–68.

S77,196. C H O L L A R. Chollar-Dollars Corporation. SN 303,772. Pub. 7–1–69. Filed 7–29–68.

S77,197. CHOLLAR AND DESIGN. Chollar-Dollars Corporation. SN 303,773. Pub. 7–1–69. Filed 7–29–68.

S77,198. CHEST O' GOLD. Spot O Gold Corporation. SN 303,834. Pub. 7–1–69. Filed 7–29–68.

S77,199. QP. Qualified Personnel, Inc. SN 305,754. Pub. 7–1–69. Filed 8–22–68.

S77,200. RTS. International Telephone and Telegraph Corporation. SN 308,898. Pub. 7–1–69. Filed 10–4–68.

S77,201. WELCOME ABOARD VACATION CENTER AND DESIGN. Welcome Aboard Vacation Centers, Inc. SN 309,211. Pub. 7–1–69. Filed 10–9–68.

S77,202. IK AND DESIGN. Holiday Inns of America, Inc. SN 310,331. Pub. 7–1–69. Filed 10–23–68.

Class 102 — Insurance and Financial

S77,203. LIVING HERITAGE. Colonial Penn Life Insurance Company. SN 213,767. Pub. 4–29–69. Filed 3–10–65.

S77,204. KS & CO. AND DESIGN. Katzenberg, Sour & Company. SN 303,052. Pub. 7–1–69. Filed 7–18–68.

S77,205. THE CONSERVER. Reserve Insurance Company. SN 304,017. Pub. 7–1–69. Filed 7–31–68.

Class 103 — Construction and Repair

S77,189. (See Class 101 for this trademark.)

S77,206. SAFECO. Safeco Exterminators, Inc. SN 284,046. Pub. 7–1–69. Filed 11–2–67.

S77,207. ELEPHANT AND GRASS (DESIGN). Powers Taxidermy, Inc. SN 300,843. Pub. 7–1–69. Filed 6–19–68.

S77,208. Exec Air, Inc., assignee of Robert J. Markowski and Ann L. Markowski (joint owners), d.b.a. Exec Air, Inc. SN 304,480. Pub. 7–1–69. Filed 8–6–68.

S77,209. EXEC AIR RED CARPET SERVICE. Exec Air, Inc., assignee of Robert J. Markowski and Ann L. Markowski (joint owners), d.b.a. Exec Air, Inc. SN 310,241. Pub. 7–1–69. Filed 10–22–68.

Class 105 — Transportation and Storage

S77,210. RED CAR TOURS AND DESIGN. Joseph Perillo & Sons, Inc. SN 297,797. Pub. 7–1–69. Filed 5–9–68.

S77,211. RECEPTOURS AND DESIGN. Receptours Travel Service, Inc. SN 299,588. Pub. 7–1–69. Filed 6–3–68.

S77,212. MISCELLANEOUS DESIGN. Main Trucking & Rigging Co., Inc. SN 303,324. Pub. 7–1–69. Filed 7–22–68.

S77,213. TRAV-L-BOND. Holiday Inns of America, Inc. SN 312,998. Pub. 7–1–69. Filed 11–25–68.

Class 106 — Material Treatment

S77,214. SNAP 'N SWAP. Garden City Photo Service. SN 270,819. Pub. 7–1–69. Filed 5–5–67.

S77,215. FASTEN-PAK. Mid-Continent Screw Products Co. SN 282,595. Pub. 7–1–69. Filed 10–16–67.

S77,216. KROME-BRITE. Premier Vacuum Process Corp. SN 292,418. Pub. 7–1–69. Filed 3–4–68.

Class 107 — Education and Entertainment

S77,217. BRAWLEY CATTLE CALL. Brawley Chamber of Commerce. SN 265,787. Pub. 7–1–69. Filed 3–2–67.

S77,218. ABUSA YA YA Dan F. Miller III, d.b.a. Abusa-Ya-Ya. SN 282,472. Pub. 7–1–69. Filed 10–13–67.

S77,219. THE ZUG ISLAND ALL STARS. John F. La Brecque, d.b.a. The Zug Island All Stars. SN 287,021. Pub. 7–1–69. Filed 12–15–67.

S77,220 IT'S A BEAUTIFUL DAY. Matthew Katz. SN 293,390. Pub. 7–1–69. Filed 3–15–68.

S77,221. MISS WORLD. Mecca Limited. SN 295,043. Pub. 7–1–69. Filed 4–5–68.

S77,222. YOUR LOVIN' ST. BERNARD. Joel A. Brown, d.b.a Joel A. Brown & Associates, International. SN 296,304. Pub. 7–1–69. Filed 4–23–68.

S77,223. SALES-SONICS. The Larry Wilson Corporation. SN 299,805. Pub. 7–1–69. Filed 6–5–68.

S77,224. IES. Carle A. Christensen, d.b.a. Institute of Ethical Salesmanship. SN 301,710. Pub. 7–1–69. Filed 7–1–68.

Collective Membership Marks

Class 200

S77,225. SAY SOCCER USA AND DESIGN. The Soccer Association for Youth, U.S.A. SN 283,583. Pub. 7–1–69. Filed 10–27–67

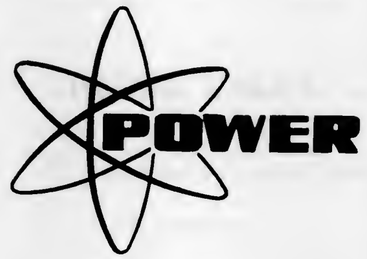
S77,226. MLT. American Medical Technologists. SN 303,882. Pub. 7–1–69. Filed 7–30–68.

SUPPLEMENTAL REGISTER

These registrations are not subject to opposition.

Class 21 — Electrical Apparatus, Machines, and Supplies

S77,227. Reliance Electric Company, Misbawaka, Ind., by merger and assignment from Dodge Manufacturing Corporation, Mishawaka, Ind. SN 265,708. Filed P.R. 3–1–67; Am. S.R. 5–19–69.



For Electric Motor Control Apparatus Other Than Automotive—Namely, Apparatus for Controlling Speed, Rotation, or Torque, Applied to a Shaft or Other Driven Machine Element (Int. Cl. 9).
First use Jan. 24, 1967.

Class 39 — Clothing

S77,228. Reuben E. Landau, d.b.a. Landau Creations, Trenton N.J. SN 243,678. Filed P.R. 4–18–66; Am. S.R. 8–4–67.

THE *Italian* TOUCH

For Men's Neckwear (Int. Cl. 25).
First use Mar. 1, 1955.

S77,229. Modern Bridal Shoppe, Inc., Philadelphia, Pa. SN 295,002. Filed P.R. 4–5–68; Am. S.R. 6–25–69.

Modern Bridal

For Brides' and Bridesmaids' Gowns and Ladies' Formal Dresses (Int. Cl. 25).
First use Jan. 15, 1968.

S77,230. Alfred Powers, Los Angeles, Calif. SN 300,619. Filed 6–17–68.

ORIGINAL SOCKLESS SHOES

For Footwear (Int. Cl. 25).
First use Oct. 24, 1966.

Class 46 — Foods and Ingredients of Foods

S77,231. Heidi B. Singer, Bayonne, N.J. SN 263,956. Filed P.R. 2–3–67; Am. S.R. 5–12–69.

MINIT MEAL

For Packaged Food Products for Institutional Feeding: Breakfast Cereals; Herbs and Spices; Frozen Foods—Namely, Meats, Poultry, Fish and Shellfish, Fruits, Vegetables, Fruit Juice Concentrates, Gelatin Desserts, Dessert Puddings, Soups and Cheeses; Freeze-Dried Foods—Namely, Fruits, Vegetables, Fish and Shellfish; Dry Powdered Mixes—Namely, Cheese Sauce Mix, Pancake Batter Mixes, Crepe Batter Mixes, Vegetable Butter Seasoning Mixes, Creole Sauce Mixes, Dill Sauce Mixes, Sauerbraten Sauce Mixes, Hollandaise Sauce Mixes, Saffron Rice Seasoning Mixes, Rice Seasoning With Mushrooms Mix, Wild Rice Seasoning Mixes, Fried Rice Mixes, Soup Mixes, Gelatin Dessert Mixes and Pudding Dessert Mixes (Int. Cls. 29, 30, and 32).
First use Oct. 29, 1963.

S77,232. Savannah Sugar Refining Corporation, Savannah, Ga. SN 269,796. Filed P.R. 4–21–67; Am. S.R. 3–26–69.

EVER-SOFT-PAK

For Consumer-Size Packages of Brown Sugar (Int. Cl. 30)
First use Mar. 13, 1967.

S77,233. Borden, Inc., New York, N.Y., by change of name from The Borden Company, New York, N.Y. SN 280,204. Filed P.R. 9–13–67; Am. S.R. 6–6–69.

SWEET KURD

For Pasteurized Processed Cheese Food (Int. Cl. 29).
First use Mar. 24, 1966.

S77,234. Conservenfabrik Eugen Lacroix KG, Frankfurt am Main, Germany. SN 281,969. Filed P.R. 10–6–67; Am. S.R. 3–18–69.

LACROIX

Priority claimed under Sec. 44(d) on German application filed July 13, 1967; Reg. No. 839,840, dated Dec. 5, 1967. Owner of U.S. Reg. No. 643,758.
For Dietetic and Non-Dietetic Cakes, Cookies, Pies and Unfilled Patties and Patties Filled With Meat, Fish, Liver, Mushrooms, Vegetables or Jam (Int. Cls. 5 and 30).

S77,235. Consolidated Foods Corporation, d.b.a. Joe Lowe Company, Englewood, N.J. SN 296,402. Filed P.R. 4–24–68; Am. S.R. 2–14–69.

MALTEE KRISP

For Frozen Confections on Sticks and Concentrates for Making the Frozen Confections (Int. Cl. 30).
First use Jan. 25, 1968.

S77,236. Consolidated Foods Corporation, d.b.a. Joe Lowe Company, Englewood, N.J. SN 296,403. Filed P.R. 4–24–68; Am. S.R. 2–14–69.

FUDGEE KRISP

For Frozen Confections on Sticks and Concentrates for Making the Frozen Confections (Int. Cl. 30).
First use Jan. 25, 1968.

S77,237. Purepac Laboratories Corporation, Elizabeth, N.J., by change of name from Purepac Corporation, Elizabeth, N.J. SN 298,352. Filed P.R. 5-16-68; Am. S.R. 5-15-69.

SWEETASTE

For Artificial Food Sweetener—Namely, Saccharin Tablets (Int. Cl. 1).
First use May 7, 1968.

S77,238. The Donruss Company, Memphis, Tenn. SN 300,914. Filed P.R. 6-20-68; Am. S.R. 6-23-69.

IT'S GREAT

For Chewing Gum, Bubble Gum, and Candy (Int. Cl. 30).
First use Mar. 17, 1967.

S77,239. The Dalles Cherry Growers, Inc., The Dalles, Oreg. SN 302,493. Filed P.R. 7-11-68; Am. S.R. 6-25-69.

THE DALLES CHERRY GROWERS, INC.

For Fresh Sweet Cherries (Int. Cl. 31).
First use June 1967.

S77,240. Lonnie Rees Shand, d.b.a. L. Rees Product, San Antonio, Tex. SN 302,533. Filed 6-20-69.



For Honey Product Tasting Like Molasses (Int. Cl. 30).
First use Apr. 10, 1968.

Class 51 — Cosmetics and Toilet Preparations

S77,241. Ar-Ex Products Co., Chicago, Ill. SN 309,220. Filed P.R. 10-9-68; Am. S.R. 4-30-69.

DISAPPEAR

For Preparation for the Concealment of Minor Skin Imperfections (Int. Cl. 3).
First use about Feb. 15, 1968.

S77,242. Elizabeth Arden Sales Corporation, New York, N.Y. SN 319,108. Filed P.R. 2-14-69; Am. S.R. 5-27-69.

FAINT BLUSH

For Cosmetic Facial Foundation (Int. Cl. 3).
First use July 1962.

Class 52 — Detergents and Soaps

S77,243. Alberto-Culver Company, Melrose Park, Ill. SN 294,122. Filed P.R. 3-26-68; Am. S.R. 6-9-69.

CREME DE SOAP

For Foam Toilet Soap (Int. Cl. 3).
First use Nov. 22, 1967.

TRADEMARK REGISTRATIONS RENEWED

75,448. WHITE CLOVER. Cl. 46 (Int. Cl. 29). 10-5-09.
75,450. PURITAN. Cl. 46 (Int. Cl. 29). 10-5-09.
253,391. QUICK TRAIN. Cl. 27 (Int. Cl. 14). 2-26-29.
254,765. FOREMOST. Cl. 39 (Int. Cl. 25). 4-2-29.
254,832. FOREMOST. Cl. 39 (Int. Cl. 25). 4-2-29.
254,843. "FOREMOST." Cl. 39 (Int. Cl. 25). 4-2-29.
255,902. PURITAN. Cl. 46 (Int. Cl. 30). 4-30-29.
257,769. TOASTMASTER. Cl. 46 (Int. Cl. 30). 6-18-29.
258,754. MALL. Cl. 39 (Int. Cl. 25). 7-16-29.
258,811. TIDE. Cl. 39 (Int. Cl. 25). 7-16-29.
258,812. ARAPASTEL. Cl. 39 (Int. Cl. 25). 7-16-29.
259,050. "WAXELS" ETC. Cl. 15 (Int. Cl. 4). 7-23-29.
259,967. SERVADISH. Cl. 2 (Int. Cl. 16). 8-13-29.
260,019. "SENTRY" AND REPRESENTATION OF SENTRY. Cl. 46 (Int. Cls. 30 and 31). 8-13-29.
260,456. JETTA. Cl. 1 (Int. Cl. 18). 8-27-29.
261,531. "BREATHLETS" ETC. AND DESIGN. Cl. 46 (Int. Cl. 30). 9-17-29.
262,678. "STAR OF CALIFORNIA" ETC. AND REPRESENTATION OF MAP OF CALIFORNIA. Cl. 46 (Int. Cl. 31). 10-22-29.
262,679. "HEART OF CALIFORNIA" ETC. AND REPRESENTATION OF MAP OF CALIFORNIA. Cl. 46 (Int. Cl. 31). 10-22-29.
263,418. "WASHINGTON" AND PICTORIAL REPRESENTATION OF WASHINGTON MONUMENT. Cl. 46 (Int. Cl. 31). 11-5-29.
263,505. CARBITOL. Cl. 6 (Int. Cls. 1 and 2). 11-5-29.
263,523. RAYOX AND DESIGN. Cl. 16 (Int. Cl. 2). 11-5-29.
264,368. CASCO. Cl. 52 (Int. Cl. 3). 11-26-29.
264,904. MEDALIST. Cl. 22 (Int. Cl. 28). 12-10-29.
264,947. BOND. Cl. 22 (Int. Cl. 28). 12-10-29.
442,671. GUTTAFORM. Cl. 44 (Int. Cls. 3 and 5). 5-10-49.
442,962. HORST'S. Cl. 48 (Int. Cls. 3 and 32). 6-21-49.
443,041. VICTOR "4 IN 1" V. Cl. 50 (Int. Cl. 21). 7-5-49.
443,241. RAMBLER. Cl. 39 (Int. Cl. 25). 8-16-49.
443,246. BINGO. Cl. 39 (Int. Cl. 25). 8-16-49.
443,556. BOTANY. Cl. 39 (Int. Cl. 25). 11-22-49.
508,200. WELD-ON. Cl. 5 (Int. Cl. 1). 4-5-49.
509,422. SUNNYDAY. Cl. 16 (Int. Cl. 2). 5-3-49.
509,694. FLOWERS OF FASHION. Cl. 1 (Int. Cl. 31). 5-10-49.
510,788. SOCIETE HYGIENIQUE COTTAN AND DESIGN. Cl. 51 (Int. Cl. 3). 6-7-49.
510,982. JAN-O. Cl. 29 (Int. Cl. 21). 6-14-49.
511,037. MONSANTO. Cl. 4 (Int. Cl. 3). 6-14-49.
511,128. INDIAN HEAD AND DESIGN. Cl. 39 (Int. Cl. 25). 6-21-49.
511,259. BUCKSKIN. Cl. 16 (Int. Cl. 2). 6-21-49.
511,260. PATRICIAN. Cl. 16 (Int. Cl. 2). 6-21-49.
511,360. NCG. Cl. 35 (Int. Cl. 17). 6-21-49.
511,470. SILVALUME. Cl. 44 (Int. Cl. 8). 6-21-49.
511,581. RESION. Cl. 31 (Int. Cl. 1). 6-28-49.
511,587. AWARD. Cl. 46 (Int. Cl. 30). 6-28-49.
511,622. LITTLE CHAMP. Cl. 50 (Int. Cl. 21). 6-28-49.
511,688. MISCELLANEOUS DESIGN. Cl. 19 (Int. Cl. 12). 6-28-49.

511,694. CRAFTSMITH AND DESIGN. Cl. 28 (Int. Cl. 14). 6-28-49.
511,736. BOWMAN. Cl. 46 (Int. Cls. 29 and 30). 7-5-49.
511,785. COVER THE EARTH AND DESIGN. Cl. 1 (Int. Cls. 2 and 4). 7-5-49.
511,861. BOKIDE. Cl. 1 (Int. Cl. 18). 7-5-49.
511,862. PLA-PAC. Cl. 1 (Int. Cl. 18). 7-5-49.
511,863. RANGOON. Cl. 1 (Int. Cl. 18). 7-5-49.
511,864. SKEET. Cl. 1 (Int. Cl. 18). 7-5-49.
511,868. BABUCK. Cl. 1 (Int. Cl. 18). 7-5-49.
511,869. FIORD. Cl. 1 (Int. Cl. 18). 7-5-49.
512,231. AUTO SOLER AND DESIGN. Cl. 14 (Int. Cl. 6). 7-12-49.
512,284. SEITZ. Cl. 31 (Int. Cl. 11). 7-12-49.
512,382. WALDES. Cl. 13 (Int. Cl. 6). 7-19-49.
512,441. COSALINE. Cl. 1 (Int. Cl. 18). 7-19-49.
512,442. COSSACK. Cl. 1 (Int. Cl. 18). 7-19-49.
512,444. IVORY. Cl. 1 (Int. Cl. 18). 7-19-49.
512,445. MAISON. Cl. 1 (Int. Cl. 18). 7-19-49.
512,448. SHEWAN. Cl. 1 (Int. Cl. 18). 7-19-49.
512,754. SUPER SURFACED. Cl. 23 (Int. Cl. 7). 7-26-49.
512,800. CRIMPRESS. Cl. 23 (Int. Cl. 7). 7-26-49.
512,801. LONGCRIMP. Cl. 23 (Int. Cl. 7). 7-26-49.
512,910. TRIKOLPON. Cl. 18 (Int. Cl. 5). 7-26-49.
513,096. AUTO NAILER AND DESIGN. Cl. 14 (Int. Cl. 6). 8-2-49.
513,112. BOSTON. Cl. 23 (Int. Cl. 16). 8-2-49.
513,211. ACCENT. Cl. 39 (Int. Cl. 25). 8-2-49.
513,317. SOUTHERN COMFORT AND DESIGN. Cl. 49 (Int. Cl. 33). 8-9-49.
513,370. DIAMOND (DESIGN). Cl. 16 (Int. Cl. 2). 8-9-49.
513,410. COFFEE SOUTHERN. Cl. 49 (Int. Cl. 33). 8-9-49.
513,492. PURE AND DESIGN. Cl. 35 (Int. Cl. 12). 8-9-49.
513,561. BAREKAT. Cl. 39 (Int. Cl. 25). 8-16-49.
513,583. HAZELTINE. Cl. 21 (Int. Cl. 9). 8-16-49.
513,710. STATLER. Cl. 37 (Int. Cl. 16). 8-16-49.
513,752. BUTCH. Cl. 23 (Int. Cl. 8). 8-16-49.
513,785. HONEYLANE. Cl. 39 (Int. Cl. 25). 8-16-49.
513,958. PURO. Cl. 15 (Int. Cl. 4). 8-23-49.
514,028. PURE. Cl. 15 (Int. Cl. 4). 8-23-49.
514,052. WUZ-BLAK. Cl. 52 (Int. Cl. 3). 8-23-49.
514,112. WILLSON-WELD. Cl. 26 (Int. Cl. 9). 8-23-49.
514,259. PURE AND DESIGN. Cl. 6 (Int. Cls. 1, 2 and 7). 8-23-49.
514,356. TREAT-O. Cl. 46 (Int. Cl. 29). 8-30-49.
514,391. PLEETWAY. Cl. 39 (Int. Cl. 25). 8-30-49.
514,460. AMWELD. Cl. 19 (Int. Cl. 12). 8-30-49.
514,848. COPPERSETTER. Cl. 13 (Int. Cl. 6). 9-6-49.
514,849. COPPERHORN. Cl. 13 (Int. Cl. 6). 9-6-49.
514,913. GILT EDGE. Cl. 11 (Int. Cl. 16). 9-6-49.
515,047. METLBRITE. Cl. 4 (Int. Cl. 3). 9-13-49.
515,090. SOUTH MOUNTAIN. Cl. 46 (Int. Cl. 31). 9-13-49.
515,091. DETREX. Cl. 31 (Int. Cl. 11). 9-13-49.
515,093. PALL MALL. Cl. 52 (Int. Cl. 3). 9-13-49.
515,141. PUROSOL. Cl. 15 (Int. Cl. 4). 9-13-49.
515,162. BISMATE. Cl. 6 (Int. Cl. 1). 9-13-49.
515,168. DARVAL. Cl. 15 (Int. Cl. 4). 9-13-49.
515,239. PRES-A-PLY. Cl. 37 (Int. Cl. 16). 9-20-49.
515,274. TWIN DISC AND DESIGN. Cl. 23 (Int. Cls. 7 and 12). 9-20-49.
515,287. SPARGROUND. Cl. 23 (Int. Cl. 7). 9-20-49.
515,291. R. Cl. 23 (Int. Cl. 7). 9-20-49.
515,459. JUMPING-JACKS. Cl. 39 (Int. Cl. 25). 9-20-49.
515,542. NOVAMATIC. Cl. 27 (Int. Cl. 14). 9-27-49.
515,547. PUROTURBINE. Cl. 15 (Int. Cl. 4). 9-27-49.
515,676. CORNNUTS. Cl. 46 (Int. Cl. 30). 9-27-49.
515,806. HOLDETTE. Cl. 40 (Int. Cls. 21 and 26). 9-27-49.
515,808. MET-LIT AND DESIGN. Cl. 14 (Int. Cl. 6). 9-27-49.
516,007. DOORMASTER. Cl. 12 (Int. Cl. 19). 10-4-49.
516,125. FITZ-EM. Cl. 13 (Int. Cl. 6). 10-4-49.
516,452. BORHIDE. Cl. 39 (Int. Cl. 25). 10-18-49.
516,748. VELVA FLO. Cl. 13 (Int. Cl. 6). 10-25-49.
516,882. CRAYOLET. Cl. 37 (Int. Cl. 16). 10-25-49.
517,054. STRIPTEX. Cl. 16 (Int. Cl. 3). 11-1-49.
517,074. DIXIANNA. Cl. 46 (Int. Cl. 30). 11-1-49.
517,098. PORTO-POWER. Cl. 23 (Int. Cl. 7). 11-1-49.
517,130. POWER-PACKER. Cl. 23 (Int. Cl. 7). 11-1-49.
517,141. MALTA. Cl. 46 (Int. Cl. 31). 11-1-49.
517,387. REDALOY. Cl. 14 (Int. Cl. 6). 11-8-49.
517,508. CYCOIL. Cl. 31 (Int. Cl. 12). 11-8-49.
517,509. MULTI-DUTY. Cl. 31 (Int. Cl. 11). 11-8-49.
517,517. AUTO-SOLER. Cl. 14 (Int. Cl. 6). 11-8-49.
517,618. TOTE. Cl. 2 (Int. Cl. 6). 11-15-49.
517,622. AKIVA. Cl. 47 (Int. Cl. 33). 11-15-49.
517,697. MATEUS AND DESIGN. Cl. 47 (Int. Cl. 33). 11-22-49.
517,719. TACO AND DESIGN. Cl. 45 (Int. Cl. 32). 11-22-49.
517,799. CHEMISTAT. Cl. 13 (Int. Cl. 6). 11-22-49.
517,841. COOPER-TOX. Cl. 6 (Int. Cl. 5). 11-22-49.
517,870. SERENADE. Cl. 46 (Int. Cl. 31). 11-22-49.
517,930. MUIRHEAD'S. Cl. 49 (Int. Cl. 33). 11-22-49.
518,123. ARISTOCORD. Cl. 42 (Int. Cl. 24). 11-29-49.
518,178. MAHALA. Cl. 46 (Int. Cl. 31). 11-29-49.
518,185. CLEAN AIR. Cl. 23 (Int. Cl. 7). 11-29-49.
518,291. O-MI-O. Cl. 46 (Int. Cls. 29 and 31). 12-6-49.
518,329. WIZARD. Cl. 21 (Int. Cls. 9, 11, and 12). 12-6-49.
518,330. GOLDEN DOT. Cl. 22 (Int. Cl. 28). 12-6-49.
518,377. SIRLOIN BRAND. Cl. 46 (Int. Cl. 29). 12-6-49.
518,440. ATLAS. Cl. 21 (Int. Cl. 6). 12-6-49.
518,441. ATLAS AND FIGURE DESIGN. Cl. 21 (Int. Cl. 6). 12-6-49.
518,444. DEARBORN. Cl. 23 (Int. Cl. 7). 12-6-49.
518,453. CARTER BROS. Cl. 42 (Int. Cls. 24 and 27). 12-6-49.
518,513. STRESTCRETE. Cl. 12 (Int. Cl. 19). 12-6-49.
518,583. LADY PERFECTION AND DESIGN. Cl. 32 (Int. Cl. 20). 12-13-49.
518,648. MRS. FILBERT'S. Cl. 46 (Int. Cl. 29). 12-13-49.
518,653. DESIGN OF TWIN BABIES. Cl. 46 (Int. Cl. 30). 12-13-49.
518,688. CRESCENT. Cl. 37 (Int. Cl. 16). 12-13-49.
518,709. RONZONI. Cl. 46 (Int. Cls. 5 and 30). 12-13-49.
518,908. PASSAIC. Cl. 43 (Int. Cl. 23). 12-20-49.
518,909. PERFECTSEAM. Cl. 43 (Int. Cl. 23). 12-20-49.
518,910. FULTON. Cl. 7 (Int. Cl. 22). 12-20-49.
518,929. HART AND DESIGN. Cl. 7 (Int. Cl. 22). 12-20-49.
519,069. RAMBLER. Cl. 3 (Int. Cl. 18). 12-20-49.

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741,652. LORD-WEST. Cl. 39. 12-4-62.

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753,524. POWER PAK AND DESIGN. Cl. 1.
753,526. TERRA-GEL. Cl. 1.
753,530. DOLCE. Cl. 1.
753,531. BLACK PANTHER. Cl. 1.
753,540. CAGE-UM. Cl. 3.
753,544. "CARRARA STONES." Cl. 4.
753,545. LENZON. Cl. 4.
753,546. CINDERELLA. Cl. 4.
753,553. BLINK. Cl. 6.
753,560. BABY SAFE AND DESIGN. Cl. 6.
753,562. MIRA-KIL. Cl. 6.
753,567. GRAND WAY. Cl. 6.
753,572. ALDEFORM. Cl. 6.
753,577. END-DT. Cl. 6.
753,579. U.S. ROYAL. Cl. 6.
753,587. BO 103 AND DESIGN. Cls. 9(A) and 19(B).
753,588. METROC. Cl. 9.
753,589. CRAB-BANE. Cl. 10.
753,591. PATCO'S TURFGRO. Cl. 10.
753,593. MISS-LOU. Cl. 10.
753,597. STRATEGIC UDY AND DESIGN. Cl. 14.
753,599. 4-E. Cl. 14.
753,604. DECOR-EZE. Cl. 16.
753,607. WEATHERGARD ETC. AND DESIGN. Cl. 16.
753,616. NORLANTHATE. Cl. 18.
753,625. MYCRAS. Cl. 18.
753,630. PICK-GLO. Cl. 18.

753,633. CAMPHOIL. Cl. 18.
753,634. GLO-STREP. Cl. 18.
753,639. ORA-ZONE. Cl. 18.
753,645. TIPPIES. Cl. 18.
753,648. CONTRASOR. Cl. 18.
753,651. PATHINOX. Cl. 18.
753,652. PROMONE. Cl. 18.
753,654. IRCON-PLUS. Cl. 18.
753,658. CENTAUR AND DESIGN. Cl. 19.
753,660. CROFTONITE. Cl. 20.
753,666. SKILLWAY. Cl. 22.
753,668. FIGURE. Cl. 22.
753,672. WHICH LANE? CHICANE. Cl. 22.
753,673. AMERICAN FLYER. Cl. 22.
753,682. THE SWAN BY JOHN LETTERS AND DESIGN. Cl. 22.
753,685. SCOP. Cl. 23.
753,686. SUGAR BABE. Cl. 23.
753,698. HOUSE-O-PROTECTION. Cl. 26.
753,701. RIDL AND DESIGN. Cl. 26.
753,702. OMNITRONICS. Cls. 26 and 36.
753,703. OMNI-DATA. Cls. 26 and 36.
753,704. DITTO BRAND AND DESIGN. Cl. 26.
753,706. BLEND-O-MIXER. Cl. 26.
753,708. O–I AND DESIGN. Cl. 26.
753,709. IS IN A FANCIFUL DESIGN. Cl. 26.
753,710. MULTI-RANGE RECTICLE AND DESIGN. Cl. 26.
753,712. MC AND DESIGN. Cl. 26.
753,715. NIKKO FINE CHINA AND DESIGN. Cl. 30.
753,717. FALL–X. Cl. 31.
753,718. DESQUIRE. Cl. 32.
753,720. KEYLOCK. Cl. 34.
753,722. POWER-CURVE. Cl. 35.
753,723. PLEASANT PEASANT AND DESIGN. Cl. 36.
753,738. BM (DESIGN) T. Cl. 37.
753,740. COAST-T-COAST. Cl. 38.
753,744. BACK STAGE AND DESIGN. Cl. 38.
753,745. USA 1. Cl. 38.
753,746. TWIS-CARDS. Cl. 38.
753,748. THERAPLAY. Cl. 38.
753,750. DE LUXE GOLDEN LINE. Cl. 40.
753,762. TENDER GOLD THE "QUEEN" AND DESIGN. Cl. 46.
753,763. PINE-O-CHERI. Cl. 46.
753,766. AC'CETTE. Cl. 46.
753,770. MR. CRISP AND DESIGN. Cl. 46.
753,772. BISKALETS. Cl. 46.
753,777. VANITY. Cl. 46.
753,779. COFFEE CHUM. Cl. 46.
753,782. VOGUE. Cl. 46.
753,785. S-MASH. Cl. 46.
753,786. QUATRO-CAL. Cl. 46.
753,787. CHUN KING. Cl. 46.
753,795. GROTESQUE SEA CAPTAIN (DESIGN). Cl. 46.
753,807. BURGER-MATE. Cl. 46.
753,808. WESPAC. Cl. 46.
753,809. ROYAL DISH. Cl. 46.
753,815. KRUG'S. Cl. 46.
753,816. GOLDEN SAFF. Cl. 46.
753,819. RUBI RANCHO. Cl. 46.
753,821. SUZANNE MARIE. Cl. 46.
753,833. MEDITERRANEE FLOWERS. Cl. 50.
753,834. LAZY LODGER. Cl. 50.
753,836. FLAIR. Cl. 50.
753,838. PENNY PAK. Cl. 50.
753,845. SEA TALK. Cl. 51.
753,846. FULL SAIL. Cl. 51.
753,849. MAINTENOL. Cl. 52.
753,860. LITTLE PIGS OF AMERICA ETC. AND DESIGN. Cl. 100.
753,862. CA (DESIGN). Cl. 100.
753,866. TREASURE TRADER. Cl. 101.
753,874. CREDICARD AND DESIGN. Cl. 102.
753,878. TIECRAFTERS. Cl. 103.
753,887. HOLLYWOOD MUSEUM ASSOCIATES AND DESIGN. Cl. 107.
753,889. DEMAND RADIO AND DESIGN. Cl. 107.
753,892. JUMBO RUBS. Cl. 4.
753 894. FIREAID. Cl. 34.
753,896. SOFT 'N' SMART. Cl. 39.

Errata

In the OFFICIAL GAZETTE of April 8, 1969, at page TM 105, "745,598. FORNEY. Cl. 26" should be deleted.

In the OFFICIAL GAZETTE of August 12, 1969, at page TM 97, "751,850. ACWA UNION MADE AND DESIGN. Cl. A" should be deleted.

TRADEMARK REGISTRATIONS AMENDED, DISCLAIMED, CORRECTED, ETC.

261,559. AGUA DE FLORIDA ETC. AND DESIGN. Cl. 6. 9–17–29. Lanman & Kemp, Inc. Lanman & Kemp-Barclay & Co. Incorporated, Palisades Park, N.J. Corrected: In the statement, column 1, line 7, "Florida" should be deleted and *toilet* should be inserted.

512,056. EVERHOT. Cl. 21. 7–12–49. The Swartzbaugh Manufacturing Company. McGraw-Edison Company, Elgin, Ill. Amended: In the statement, column 1, lines 7 and 8, the description of goods is deleted and *broilers, oven broilers, waffle bakers, sandwich grills, electric fry pans, electric griddles and electric table stoves* is inserted.

514,679. HELENE CURTIS. Cl. 44. 9–6–49. Helene Curtis Industries, Inc., Chicago, Ill. Amended: In the statement, column 1, lines 8 through 21, the description of goods is deleted and *permanent hair waving appliances and attachments therefor—namely, curling rods; spacer replacement rubbers; cold wave processing caps, hair driers and heater clamps* is inserted.

516,561. LEVI'S. Cl. 39. 10–18–49. Levi Strauss & Company. Levi Strauss & Co., San Francisco, Calif. Amended: In the statement, column 1, line 7, "overalls" is deleted and *jeans* is inserted.

775,185. SUN-GLO. Cl. 6. 8–18–64. Texize Chemicals, Inc., d.b.a. Beacon Products Div., Greenville, S.C. Corrected: In the statement, column 1, line 2, "Deacon" should be deleted and *Beacon* should be inserted.

872,150. CORBEX. Cl. 35. 7–1–69. Jointine Products Company Limited, Lincoln, England. Corrected: In the statement, column 1, line 1, "Jointline" should be deleted and *Jointine* should be inserted.

873,491. LACE-CONFECTION. Cl. 39. 7–22–69. Maidenform, Inc., New York, N.Y. Corrected: In the statement, column 2, line 2, "35" should be deleted and *25* should be inserted.

873,584. CIAO. Cl. 49. 7–22–69. Mediterranean Importing Co., Inc., Long Island City, N.Y. Corrected: In the statement, column 1, line 2, "45—15" should be deleted and *42—15* should be inserted.

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(Registered ; Renewed ; Canceled ; Amended, Disclaimed, Corrected, etc. ; New Certificates ; 12c Publications.)

A & E Plastik Pak Co., Inc., Los Angeles, Calif. 876,807, pub. 7–1–69. Cl. 1.
AMG Industries, Inc., Akron, Ohio. 876,852, pub. 7–1–69. Multiple Class (Classes 13 and 35).
Abert, Jack C., d.b.a. Camp Trails, Phoenix, Ariz. 876,818, pub. 7–1–69. Cl. 3.
Abramovitz, Stanley, New York, N.Y. 753,748, canc. Cl. 38.
Abusa-Ya-Ya : *See*—
Miller, Dan F., III.
Acme Cotton Products Co., Inc., Valley Stream, N.Y. 877,025, pub. 10–31–67. Multiple Class (Classes 39 and 44).
Acme Poultry Co., Seattle, Wash. 877,110, pub. 7–1–69. Cl. 46.
Admiral Products Corp., Maspeth, N.Y. 876,827, pub. 7–1–69. Cl. 6.
Adorable Toy Corp., New York, N.Y. 876,924, pub. 7–1–69. Cl. 22.
Air Techniques Inc., New Hyde Park, N.Y. 876,854, pub. 7–1–69. Cl. 13.
Aktiebolaget Plab, Danderyd, Sweden. 876,978, pub. 7–1–69. Cl. 26.
Alberto-Culver Co., Melrose Park, Ill. 877,243. Cl. 52.
All American Engineering Co., Wilmington, Del. 876,816, pub. 7–1–69. Cl. 3.
Allied Stores of New York, Inc., New York, N.Y. 877,188, pub. 3–18–69. Cl. 101.
Allis-Chalmers Mfg. Co., West Allis, Wis. 753,686, canc. Cl. 23.
Allpro Corp., Maplewood, N.J. 876,900, pub. 7–1–69. Cl. 20.
Aloe Creme Laboratories, Inc., Fort Lauderdale, Fla. 877,166, pub. 7–1–69. Cl. 51.
Alofs Mfg. Co., Grand Rapids, Mich. 876,894, pub. 7–1–69. Cl. 19.
Alves Photo Service, Inc., d.b.a. Coast-T-Coast Photo, Braintree, Mass. 753,740, canc. Cl. 38.
American Air Filter Co., Inc., Louisville, Ky. 517,508–9, ren. 9–16–69, Cl. 31.
American Antiseptic Co., Inc., Providence, R.I. 753,560, canc. Cl. 6.
American Blind Stitch Machine Co., to The Singer Co., New York, N.Y. 518,444, ren. 9–16–69. Cl. 23.
American Custom Metals Co., Inc., Cincinnati, Ohio. 876,956, pub. 7–1–69. Cl. 23.
American Cyanamid Co., Wayne, N.J. 753,651, canc. Cl. 18.
American Dairy Queen Corp., Minneapolis, Minn. 877,108, pub. 7–1–69. Cl. 46.
American Health Credit Plan, Inc., Battle Creek, Mich. 753,874, canc. Cl. 102.
American Home Products Corp. : *See*—
Boyle-Midway Inc.
American Liberty Foundation, Winter Park, Fla. 753,744, canc. Cl. 38.
American Medical Technologists, Park Ridge, Ill. 877,226, pub. 7–1–69. Cl. 200.
American Motor Scooter Corp., New York, N.Y. 753,658, canc. Cl. 19.
American Sponge & Chamois Co. Inc., Long Island City, N.Y. 876,988, pub. 7–1–69. Cl. 29.
American Tobacco Co., The, New York, N.Y. 877,141, pub. 7–1–69. Cl. 49.
American Welding & Mfg. Co., The, Warren, Ohio. 514,460, ren. 9–16–69. Cl. 19.
Amicon Corp., Lexington, Mass. 876,993, pub. 7–1–69. Cl. 31.
Amway Corp., Ada, Mich. 876,833, pub. 7–1–69. Cl. 6.
Andomia Products Ltd., Bradford, England. 753,772, canc. Cl. 46.
Animal Trap Co. of America, to Woodstream Corp., Lititz, Pa. 443,041, ren. 9–16–69. Cl. 50.
Animal Trap Co. of America, to Woodstream Corp., Lititz, Pa. 511,622, ren. 9–16–69. Cl. 50.
Apex Coated Fabrics Co. Inc., New York, N.Y. 753,523, canc. Cl. 1.
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Arbogast & Bastian, Inc., Allentown, Pa. 877,100, pub. 7–1–69. Cl. 46.
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Arkansas Fats Establishment, Inc., Little Rock, Ark. 877,179, pub. 7–1–69. Cl. 100.
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Armstrong Paint & Varnish Works.
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Avery Products Co., d.b.a. Astro Products, San Marino, Calif. 876,960, pub. 7–1–69. Cl. 23.
Ayers, L. S., & Co., Indianapolis, Ind. 877,195, pub. 7–1–69. Cl. 101.
Bacon, Charles H., Co., Inc. : *See*—
Bacon-Scott Co., Inc.
Bacon-Scott Co., Inc., New York, N.Y., to Charles H. Bacon Co., Inc., Lenoir City, Tenn. 443,241, ren. 9–16–69. Cl. 39.
Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany. 876,801, pub. 7–1–69. Cl. 1.
Balakian, Gerard, M.D. : *See*—
Becton, Dickinson & Co.
Balimate Corp. of America, The, Alamogordo, N. Mex. 876,830, pub. 7–1–69. Cl. 6.
Barclay Square, Inc., Boston, Mass. 877,030, pub. 7–1–69. Cl. 39.
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Barton Mines Corp., North Creek, N.Y. 753,545, canc. Cl. 4.
Basalt Rock Co., Inc., Napa, Calif. 518,513, ren. 9–16–69. Cl. 12.
Bates, C. J., & Son, Chester, Conn., to The Bates File Mfg. Co., Newington, Conn. 511,470, ren. 9–16–69. Cl. 44.
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Beatrice Foods Co., Chicago, Ill. 877,134–6, pub. 7–1–69. Cl. 46.
Beaunit Corp., New York, N.Y. 877,079, pub. 7–1–69. Cl. 42.
Beck, A. S., Shoe Corp., New York, N.Y. 877,028, pub. 7–1–69. Cl. 39.
Becton, Dickinson & Co., East Rutherford, N.J., from Gerard Balakian, M.D., West Englewood, N.J. 876,877, pub. 7–1–69. Cl. 18.
Beecham Inc., Clifton, N.J. 877,176, pub. 7–1–69. Cl. 52.
Belk Stores Services, Inc., Charlotte, N.C. 877,043, pub. 7–1–69. Cl. 39.
Benson & Hullinger Mfg. Corp., Salt Lake City, Utah. 753,834, canc. Cl. 50.
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Blackhawk Mfg. Co., to Applied Power Industries, Inc., Milwaukee, Wis. 517,130, ren. 9–16–69. Cl. 23.
Blue Bell, Inc., Greensboro, N.C. 877,058. pub. 7–1–69. Cl. 39.
Bolkow-Apparatebau G.m.b.H., Nabern/Teck, near Kircheim, Wurttemburg, Germany. 753,587, canc. Multiple Class (Classes 9(A) and 19(B)).
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Borg-Warner Corp., Chicago, Ill. 753,702–3, canc. Multiple Class (Classes 26 and 36).
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Boyle-Midway Inc., Jersey City, N.J., to American Home Products Corp., New York, N.Y. 515,047, ren. 9–16–69. Cl. 4.
Brawley Chamber of Commerce, Brawley, Calif. 877,217, pub. 7–1–69. Cl. 107.
Bread Basket Inc., from Store Services, Inc., Atlanta, Ga. 877,189, pub. 5–20–69. Multiple Class (Classes 101 and 103).
Breese Grain Co., Breese, Ill. 260,019, ren. 9–16–69. Cl. 46.
Brills, Inc., Milwaukee, Wis. 877,038–9, pub. 7–1–69. Cl. 39.
Bristol-Myers Co., New York, N.Y. 876,881–4, pub. 7–1–69. Cl. 18.
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Brown, L. V. W., Estate, Highgrove, Calif. 518,178, ren. 9–16–69. Cl. 46.
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Brown, Joel A., d.b.a. Joel A. Brown & Associates, International, Columbus, Ohio. 877,222, pub. 7–1–69. Cl. 107.
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Buckeye Steel Castings Co., The, Columbus, Ohio. 876,898, pub. 7–1–69. Cl. 19.
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Bugetta Inc., Costa Mesa, Calif. 876,896, pub. 7–1–69. Cl. 19.
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Cal-Zona Co.
Cam Industries, Inc., Hanover, Pa. 876,958, pub. 7–1–69. Cl. 23.
Camp, Harry, Co., San Francisco, Calif. 877,070, pub. 7–1–69. Cl. 40.
Camp Trails: *See*—
Abert, Jack C.
Canned Foods Forum: *See*—
Zwicky, Robert H.
Carlton Nursery Co., Inc., Forest Grove, Oreg. 876,802, pub. 7–1–69. Cl. 1.
Carbide & Carbon Chemicals Corp., to Union Carbide Corp., New York, N.Y. 263,505, ren. 9–16–69. Cl. 6.
Carolina Co., Inc., d.b.a. The Carolina Soap & Candle Makers, Southern Pines, N.C. 876,825, pub. 7–1–69. Cl. 6.
Carolina Co., Inc., d.b.a. The Carolina Soap & Candle Makers, Southern Pines, N.C. 876,862, pub. 7–1–69. Cl. 15.
Carolina Co., Inc., d.b.a. The Carolina Soap & Candle Makers, Southern Pines, N.C. 877,170, pub. 7–1–69. Cl. 52.
Carolina Soap & Candle Makers, The: *See*—
Carolina Co., Inc.
Carrara Stone Co.: *See*—
Leavell, William A., Jr.
Carten, Frederick J., Westmount, Quebec, Canada. 753,785, canc. Cl. 46.
Carter Bros. Inc., Chattanooga, Tenn. 518,453, ren. 9–16–69. Cl. 42.
Casto, E. Hugh, Clarksburg, W. Va. 876,945, pub. 7–1–69. Cl. 22.
Cereales Industrializados, S.A., Mexico City, Mexico. 877,133, pub. 7–1–69. Cl. 46.
Cerna Food Products Co., Chicago, Ill. 753,763, canc. Cl. 46.
Cerro Corp.: *See*—
Titan Metal Mfg. Co.
Chadwick-Miller, Inc., Boston, Mass. 876,906, pub. 7–1–69. Cl. 21.
Charl-Lite Briquets, Inc., Lewisville, Ark. 876,808, pub. 7–1–69. Cl. 1.
Chartres Co., Inc., New Orleans, La. 753,562, canc. Cl. 6.
Chattanooga Medicine Co., The, d.b.a. Chattem Laboratories, Chattanooga, Tenn. 753,648, canc. Cl. 18.
Chattem Laboratories: *See*—
Chattanooga Medicine Co., The.
Chemetron Corp.: *See*—
National Cylinder Gas Co.
Chesterfield Club, Inc., Minneapolis, Minn. 877,020, pub. 7–1–69. Cl. 38.
Chicago Cardboard Co., to Crescent Cardboard Co., Chicago, Ill. 518,688, ren. 9–16–69. Cl. 37.
Chicago Specialty Mfg. Co., Skokie, Ill. 516,125, ren. 9–16–69. Cl. 13.
Chicago Specialty Mfg. Co.: *See*—
Firestone Tire & Rubber Co., The.
Chollar-Dollars Corp, Kingston, N.Y. 877,196–7, pub. 7–1–69. Cl. 101.
Christensen, Carle A., d.b.a. Institute of Ethical Salesmanship, North Hollywood, Calif. 877,224, pub. 7–1–69. Cl. 107.
Chun King Corp., The, Duluth, Minn. 753,787, canc. Cl. 46.
Cinderella International Co., Inc., Chicago, Ill. 753,546, canc. Cl. 4.
Cluett, Peabody & Co., Inc., Troy, N.Y. 258,754, ren. 9–16–69. Cl. 39.
Cluett, Peabody & Co., Inc., Troy, N.Y. 258,811–12, ren. 9–16–69. Cl. 39.
Coast-T-Coast Photo: *See*—
Alves Photo Service, Inc.
Cobia, B. L., Inc., Winter Garden, Fla. 876,796–7, pub. 7–1–69. Cl. 1.
Colab Laboratories, Inc., Glenwood, Ill. 876,984, pub. 7–1–69. Cl. 26.
Colonial Electric & Specialty Co., Inc., Northridge, Calif. 876,903, pub. 8–27–68. Cl. 21.
Colonial Penn Life Insurance Co., Philadelphia, Pa. 877,203, pub. 4–29–69. Cl. 102.
Columbia Broadcasting System, Inc., New York, N.Y. 876,909, pub. 7–1–69. Cl. 21.
Columbia Ribbon & Carbon Mfg. Co., Inc., Glen Cove, N.Y. 514,913, ren. 9–16–69. Cl. 11.
Complex, Japan: *See*—
Complex (Japan), Ltd.
Complex (Japan), Ltd., from Arrow International, Ltd., d.b.a. Complex, Japan, Kobe, Japan. 876,985, pub. 7–1–69. Cl. 26.
Computer Associates, Inc., Woburn, Mass. 753,862, canc. Cl. 100.
Conservenfabrik Eugen Lacroix KG, Frankfurt am Main, Germany. 877,234. Cl. 46.
Consolidated Foods Corp., d.b.a. Joe Lowe Co., Englewood, N.J. 877,235–6. Cl. 46.
Consolidated Papers, Inc., Wisconsin Rapids, Wis. 877,009, pub. 7–1–69. Cl. 37.
Continental Elastic Corp., New Bedford, Mass., to Dot Line Co., Inc., South Otselic, N.Y. 518,330, ren. 9–16–69. Cl. 22.
Continental Sales Co., Nevada, Iowa. 753,706, canc. Cl. 26.
Cooper, William, & Nephews, Inc., Chicago, Ill. 517,841, ren. 9–16–69. Cl. 6.
Co-operative Citrus Assn., Exeter, to Sierra Citrus Assn., Lindsay, Calif. 262,678–9, ren. 9–16–69. Cl. 46.
Co-operative Citrus Assn., Exeter, Calif., to Sierra Citrus Assn., Lindsay, Calif. 263,418, ren. 9–16–69. Cl. 46.
Cor-Box, Inc., York, Pa. 876,813–4, pub. 7–1–69. Cl. 2.
Cornnuts, Inc.: *See*—
Holloway, Albert F.
Cosby-Hodges Milling Co., Birmingham, Ala. 876,890, pub. 7–1–69. Cl. 18.
Cottan Parfumeur Paris: *See*—
Societe A Responsabilite Limitee-Cottan, Parfumeur.
Crawford Door Co., Ecorse, Mich. 516,007, ren. 9–16–69. Cl. 12.
Credit Clearing Corp. of America, Inc., Jacksonville, Fla. 877,186, pub. 7–1–69. Cl. 101.
Crescent Cardboard Co.: *See*—
Chicago Cardboard Co.
Crofton Plastics, Inc., Byron Center, Mich. 753,660, canc. Cl. 20.
Crompton Co., New York, N.Y. 518,123, ren. 9–16–69. Cl. 42.
Crow's Investment Co., Evansville, Ind. 877,181, pub. 7–1–69. Cl. 100.
Crown Chemical Co., Inc., Indianapolis, Ind. 876,834, pub. 7–1–69. Cl. 6.
Crown Chemical Corp.: *See*—
Crown-Metro, Inc.
Crown-Metro, Inc., from Crown Chemical Corp., Providence, R.I. 876,824, pub. 7–1–69. Cl. 6.
Crucible Steel Co. of America, Pittsburgh, Pa. 753,599, canc. Cl. 14.
Cumberland Steel Co., Cumberland, Md. 876,858, pub. 7–1–69. Cl. 14.
Cummings, A. H., d.b.a. Texas Nutrition & Service Co., Fort Worth, Tex. 876,885, pub. 7–1–69. Cl. 18.
Curtis, Helene, Industries, Inc., Chicago, Ill. 514,679. Am. 7(d). Cl. 44.
Curwood, Inc., New London, Wis. 877,008, pub. 7–1–69. Cl. 37.
Dahliadel in the Mountains: *See*—
Freedlander, A. L.
Dale Electronics, Inc., Columbus, Nebr. 877,004, pub. 7–1–69. Cl. 36.
Dalles Cherry Growers, Inc., The, The Dalles, Oreg. 877,239. Cl. 46.
Dana Corp., Toledo, Ohio. 876,966, pub. 7–1–69. Cl. 23.
Daniel Fur Co., Inc., New York, N.Y. 877,054, pub. 7–1–69. Cl. 39.
Davies-Young Soap Co., The, Dayton, Ohio. 753,849, canc. Cl. 52.
Davis Candy Corp., Long Island City, N.Y. 753,821, canc. Cl. 46.
Dawson, Diane Smith: *See*—
Fashion Tress, Inc.
Dean Foods Co.: *See*—
Bowman Dairy Co.
Decision Inc., Cincinnati, Ohio. 877,184, pub. 7–1–69. Cl. 101.
Decorative Adventures, Inc.: *See*—
Suburban Management Co.
Decorative Arts: *See*—
Turner, Sam R.
Deering Milliken, Inc., New York, N.Y. 877,087, pub. 7–1–69. Cl. 43.
Delicious Foods, Inc., Eau Claire, Wis. 877,129, pub. 7–1–69. Cl. 46.
Dennison Mfg. Co., to Dennison Mfg. Co., Framingham, Mass. 515,239, ren. 9–16–69. Cl. 37.
Denthetics, Inc., Needham Heights, Mass. 877,093, pub. 7–1–69. Cl. 44.
Department of the Army, Washington, D.C. 877,012, pub. 7–1–69. Cl. 38.
Design Group, Inc., Portland, Oreg. 876,995, pub. 7–1–69. Cl. 32.
Detrex Chemical Industries, Inc.: *See*—
Detrex Corp.
Detrex Corp., to Detrex Chemical Industries, Inc., Detroit, Mich. 515,091, ren. 9–16–69. Cl. 31.
De Wan Mfg. Corp., Milwaukee, Wis. 877,061, pub. 7–1–69. Cl. 39.
Diamond Shamrock Corp., Cleveland, Ohio. 876,840, pub. 7–1–69. Cl. 6.
Diamond Shamrock Corp., Cleveland, Ohio. 876,866, pub. 7–1–69. Cl. 15.

Ditto, Inc., from Ditto, Inc., Chicago, Ill. 753,704, canc. Cl. 26.
Diversey Corp., The, Chicago, Ill. 517,054, ren. 9–16–69. Cl. 16.
Diversified Products Corp., Opelika, Ala. 876,943, pub. 7–1–69. Cl. 22.
Dodge Mfg. Corp.: *See*—
Reliance Electric Co.
Donaldson Textiles Ltd., Lornshill, Alloa, Scotland. 877,053, pub. 7–1–69. Cl. 39.
Donovan, Marion, d.b.a. Donovan Systems, Southport, Conn. 877,018, pub. 7–1–69. Cl. 38.
Donovan Systems: *See*—
Donovan, Marion.
Donruss Co., The, Memphis, Tenn. 877,238. Cl. 46.
Dorfman-Pacific Co., Oakland, Calif. 877,044, pub. 7–1–69. Cl. 39.
Dot Line Co., Inc.: *See*—
Continental Elastic Corp.
Drexel Enterprises, Inc., Drexel, N.C. 876,994, pub. 7–1–69. Cl. 32.
Dritz, John, & Sons, Inc., Spartanburg, S.C. 753,750, canc. Cl. 40.
Drying Systems Co.: *See*—
Michigan Oven Co.
Duff, Elton, d.b.a. Special Surgical Instruments Co., El Cajon, Calif. 877,092, pub. 7–1–69. Cl. 44.
Duffy-Mott Co., Inc., New York, N.Y. 877,131, pub. 7–1–69. Cl. 46.
Du Pont de Nemours, E. I., & Co., Wilmington, Del. 876,902, pub. 7–1–69. Cl. 21.
ESB Inc.: *See*—
Willson Products, Inc.
ESPA Development Co.: *See*—
Spannhake, Ernst W.
Eagle-Picher Industries, Inc., Cincinnati, Ohio. 876,853, pub. 7–1–69. Cl. 13.
Eastex Inc., Silsbee, Tex. 877,010, pub. 7–1–69. Cl. 37.
Ebsco Industries, Inc., d.b.a. Vulcan Printing & Lithographing, Birmingham, Ala. 877,194, pub. 7–1–69. Cl. 101.
Ecke, Paul, Inc., Encinitas, Calif. 876,800, pub. 7–1–69. Cl. 1.
Edmonds, Allen, Shoe Corp., Belgium, Wis. 516,452, ren. 9–16–69. Cl. 39.
Elsendrath, B. D., Tanning Co., Chicago, Ill. 753,530, canc. Cl. 1.
Electro Materials Corp.: *See*—
Illinois Tool Works Inc.
Ellison Laboratories, Inc., Westbury, N.Y. 753,639, canc. Cl. 18.
Enterprise Mfg. Co., The, to Pflueger Corp., Akron, Ohio. 264,904, ren. 9–16–69. Cl. 22.
Enterprise Mfg. Co., The, to Pflueger Corp., Akron, Ohio. 264,947, ren. 9–16–69. Cl. 22.
Etablissement Actimonde, Liechtenstein Co., Vaduz, Liechtenstein. 877,105, pub. 7–1–69. Cl. 46.
Evans, Gerardine O., d.b.a. Gae's Originals, Briarcliff Manor, N.Y. 753,746, canc. Cl. 38.
Evans, Glen L., Inc., Caldwell, Idaho. 876,927, pub. 7–1–69. Cl. 22.
Exec Air, Inc., from Robert J. Markowski and Ann L. Markowski, d.b.a. Exec Air, Inc., Grand Island, Nebr. 877,208–9, pub. 7–1–69. Cl. 103.
Fairfield Glove Co., Fairfield, Iowa. 443,246, ren. 9–16–69. Cl. 39.
Farbenfabriken Bayer Aktiengesellschaft, Leverkusen-Bayerwerk, Germany. 753,625, canc. Cl. 18.
Farr-West Fashions, Palo Alto, Calif. 877,060, pub. 7–1–69. Cl. 39.
Fashion Tress Beauty Shop: *See*—
Fashion Tress, Inc.
Fashion Tress, Inc., Miami Beach, Fla. 877,068, pub. 5–31–66. Cl. 40.
Fashion Tress, Inc., Hialeah, Fla., from D. S. Dawson, d.b.a. Fashion Tress Beauty Shop, Beverly Hills, Calif. 877,158, pub. 6–7–66. Cl. 51.
Fashions Four, Inc., New York, N.Y. 877,029, pub. 7–1–69. Cl. 39.
Fern Shoe Co., Los Angeles, Calif. 753,896, canc. Cl. 39.
Fiber Industries, Inc., Charlotte, N.C. 877,076, pub. 7–1–69. Cl. 42.
Filbert, J. H., Inc., Baltimore, Md. 518,648, ren. 9–16–69. Cl. 46.
Finnaren & Haley, Inc., d.b.a. Finnaren & Haley, Inc., Philadelphia, Pa. 876,873, pub. 7–1–69. Cl. 16.
Firestone Tire & Rubber Co., The, Akron, Ohio, to Chicago Specialty Mfg. Co., Skokie, Ill. 516,748, ren. 9–16–69. Cl. 13.
First Colony Corp., Marietta, Ohio. 876,809, pub. 3–4–69. Cl. 2.
Flaire Cosmetics, Inc., Skokie, Ill. 877,094, pub. 7–1–69. Cl. 44.
Flintkote Co., The, White Plains, N.Y. 508,200, ren. 9–16–69. Cl. 5.
Food Industry Flavors: *See*—
Karmen, Bernardo H.
Ford Meter Box Co., Inc., The, Wabash, Ind. 514,848–9, ren. 9–16–69. Cl. 13.
Foregger Co., Inc., The, Smithtown, N.Y. 877,097, pub. 7–1–69. Cl. 44.
Foster Co.: *See*—
Foster, L. W., Sportswear Co., Inc.
Foster, L. W., Sportswear Co., Inc., d.b.a. Foster Co., Philadelphia, Pa. 877,032, pub. 7–1–69. Cl. 39.
Franconia Ski Wear, Inc., Somerville, Mass. 877,047, pub. 7–1–69. Cl. 39.
Frank, S. M., & Co., Inc., New York, N.Y. 876,842, pub. 6–24–69. Cl. 8.
Franz Kneissl, Skifabrik, Kufstein, Kurstein/Tyrol, Austria. 876,926, pub. 7–1–69. Cl. 22.
Freedlander, A. L., d.b.a. Dahliadel in the Mountains, Waynesville, N.C. 876,799, pub. 7–1–69. Cl. 1.
Freedlander, A. L., Waynesville, N.C. 876,805, pub. 7–1–69. Cl. 1.
Friendship Dairies, Inc., Friendship, N.Y. 877,128, pub. 7–1–69. Cl. 46.
Fruen Milling Co., Minneapolis, Minn. 877,107, pub. 7–1–69. Cl. 46.
Fuller Laboratories, Inc., Eden Prairie, Minn. 876,870, pub. 7–1–69. Cl. 16.
G. & L. Flli Cora S.p.A., Turin, Italy. 877,138, pub. 7–1–69. Cl. 47.
Gae's Originals: *See*—
Evans, Gerardine O.
Garden City Photo Service, Floral Park, N.Y. 877,214, pub. 7–1–69. Cl. 106.
Garden Grove Citrus Assn., Garden Grove, Calif., to CWR Citrus Processors, Inc., Yuma, Ariz. 517,870, ren. 9–16–69. Cl. 46.
Gay Togs, Inc., Inwood, N.Y. 877,051, pub. 7–1–69. Cl. 39.
General Electric Co., East Cleveland, Ohio. 876,806, pub. 7–1–69. Cl. 1.
General Electric Co., Schenectady, N.Y. 876,905, pub. 7–1–69. Cl. 21.
General Foods Corp., White Plains, N.Y. 877,132, pub. 7–1–69. Cl. 46.
General Mills, Inc., Minneapolis, Minn. 753,816, canc. Cl. 46.
General Motors Corp., Detroit, Mich. 511,688, ren. 9–16–69. Cl. 19.
Gibson Greeting Cards, Inc., Cincinnati, Ohio. 877,014, pub. 7–1–69. Cl. 38.
Gilbert, A. C., Co., The, New Haven, Conn. 753,672–3, canc. Cl. 22.
Glen Raven Mills, Inc., Glen Raven, N.C. 877,042, pub. 7–1–69. Cl. 39.
Glensder Corp., New York, N.Y. 877,026, pub. 7–1–69. Cl. 39.
Goldman, Frederick, New York, N.Y. 511,694, ren. 9–16–69. Cl. 28.
Goodle Products: *See*—
Nero Investment Co., Inc.
Goodrich, B. F., Co., The, Akron, Ohio. 753,722, canc. Cl. 35.
Goothelf, Theodore J., New York, N.Y. 877,112, pub. 7–1–69. Cl. 46.
Gourmet Bakers, Inc., Linden, N.J. 877,124, pub. 7–1–69. Cl. 46.
Grand Union Co., The, East Paterson, N.J. 753,567, canc. Cl. 6.
Graniteville Co., Graniteville, S.C. 877,082, pub. 7–1–69. Cl. 42.
Graphic Controls Corp., Buffalo, N.Y. 877,090, pub. 7–1–69. Cl. 44.
Great West Coal Sales Co., New York, N.Y. 753,524, canc. Cl. 1.
Green, Doyle, Carpenter, d.b.a. Triple AAA Co., to Triple "AAA" Co., Oklahoma City, Okla. 517,719, ren. 9–16–69. Cl. 45.
Green & Reedy Fertilizer, Inc., Franklinton, La. 753,593, canc. Cl. 10.
Greenville Industries, Inc., Wilmington, Del. 876,953, pub. 7–1–69. Cl. 23.
Greer, Cecil, d.b.a. Cecil Greer's Grass Farms, Edna, Tex. 876,794, pub. 7–1–69. Cl. 1.
Greer's, Cecil, Grass Farms: *See*—
Greer, Cecil.
Guimarra Bros. Fruit Co., Inc., Los Angeles, Calif. 877,137, pub. 7–1–69. Cl. 46.
Gulf States Paper Corp., Tuscaloosa, Ala. 876,815, pub. 7–1–69. Cl. 2.
Gund Mfg. Co.: *See*—
Swedlin, J., Inc.
HCA Food Corp.: *See*—
Boyce Extract Co.
H & G Industries, Inc., Belleville, N.J. 876,990–1, pub. 7–1–69. Cl. 29.
Haefeli, Max, to Max Haefely, Basel, Switzerland. 442,671, ren. 9–16–69. Cl. 44.
Haefely, Max: *See*—
Haefeli, Max.
Hairbenders Wig & Beauty Salon, The: *See*—
Nesmith, Joseph Q., and Dorothy E. Nesmith.
Hallerud, Walter A., Pearl City, Ill. 876,928, pub. 7–1–69. Cl. 22.
Hanes Corp., Winston-Salem, N.C. 877,062, pub. 7–1–69, Cl. 39.
Harleyarts, Inc., New York, N.Y. 876,812, pub. 7–1–69. Cl. 2.
Hartford Publications, Inc., from USA 1 Inc., New York, N.Y. 753,745, canc. Cl. 38.
Harvey, Paul, Ltd. Inc., Arab, Ala. 877,050, pub. 7–1–69. Cl. 39.
Haskon, Inc., Long Island City, N.Y. 877,150, pub. 7–1–69. Cl. 50.
Hatcher, Hughes, Inc., Detroit, Mich., 877,059, pub. 7–1–69. Cl. 39.
Hawthorn-Mellody Farms Dairy of Wisconsin, Inc., Waukesha, Wis. 877,102–4, pub. 7–1–69. Cl. 46.
Hazeltine Corp.: *See*—
Hazeltine Electronics Corp.
Hazeltine Electronics Corp., to Hazeltine Corp., Little Neck, N.Y. 513,583, ren. 9–16–69. Cl. 21.
Headrow Clothes Ltd., Leeds, England. 877,052, pub. 7–1–69. Cl. 39.
Hedison Corp., Providence, R.I. 876,987, pub. 7–1–69. Cl. 28.
Hedwin Corp., New York, N.Y. 877,074, pub. 7–1–69. Cl. 42.
Hemphill Co., Hopedale, Mass. 753,685, canc. Cl. 23.
Henkel & Cie G.m.b.H., Dusseldorf, Germany. 877,169, pub. 7–1–69. Cl. 52.

Henlopen Mfg. Co. Inc., Farmingdale, N.Y. 876,989, pub. 7–1–69. Cl. 29.
Hercules Glue Co., Inc., North Miami, Fla. 876,820, pub. 3–28–67. Cl. 5.
Hewitt Soap Co., Inc., The, Dayton, Ohio. 515,093, ren. 9–16–69. Cl. 52.
Hold-Heet Products Corp., Chicago, Ill. 876,921, pub. 7–1–69. Cl. 21.
Holiday Inns of America, Inc., Memphis, Tenn. 876,819, pub. 7–1–69. Multiple Class (Classes 4, 6, and 52).
Holiday Inns of America, Inc., Memphis, Tenn. 877,202, pub. 7–1–69. Cl. 101.
Holiday Inns of America, Inc., Memphis, Tenn. 877,213, pub. 7–1–69. Cl. 105.
Hollingshead, R. M., Corp., Camden, N.J. 515,810, ren. 9–16–69. Cl. 14.
Holliston Laboratories, Inc., Boston, Mass. 876,839, pub. 7–1–69. Cl. 6.
Holloway, Albert F., d.b.a. Olin Mfg. Co., to Cornnuts, Inc., Oakland, Calif. 515,676, ren. 9–16–69 Cl. 46.
Hollywood Museum Associates, Beverly Hills, Calif. 753,887, canc. Cl. 107.
Hooker Glass & Paint Mfg. Co., Chicago, Ill. 876,874, pub. 7–1–69. Cl. 16.
Hoover Ball & Bearing Co.: *See*—
Tote Engineering Inc.
Horner Sales Corp., Pittsburgh, Pa. 877,118, pub. 7–1–69. Cl. 46.
Horst, E. Clemens, Co., to E. Clemens Horst Co., San Francisco, Calif. 442,962, ren. 9–16–69. Cl. 48.
Houbigan, Inc., New York, N.Y. 877,162, pub. 7–1–69. Cl. 51.
Hunt, C. Howard, Pen Co., Camden, N.J., to Hunt Mfg Co., Philadelphia, Pa. 513,112, ren. 9–16–69. Cl. 23.
Hunt Mfg. Co.: *See*—
Hunt, C. Howard, Pen Co.
Hunt, Philip A. Chemical Corp., Palisades Park, N.J. 877,172, pub. 7–1–69. Cl. 52.
Hurst Mfg. Corp., Princeton, Ind. 876,912, pub. 7–1–69. Cl. 21.
Hynite Corp., Oak Creek, Wis. 877,109, pub. 6–4–68. Cl. 46.
ITT Blackburn Corp.: *See*—
International Telephone & Telegraph Corp.
Ideal Brushes, Inc., North Hollywood, Calif. 876,875, pub. 7–1–69. Cl. 16.
Illinois Tool Works Inc., Chicago, Ill., from Electro Materials Corp., San Diego, Calif. 876,919–20, pub. 4–22–69. Cl. 21.
Immuno (Canada) Ltd., Montreal, Quebec, Canada. 876,879–80, pub. 7–1–69. Cl. 18.
Indian Head Inc.: *See*—
Linen Thread Co., Inc., The.
Industries, Inc., Van Nuys, Calif. 753,709, canc. Cl. 26.
Ingalls, Donald A., d.b.a. Sunset Shoes, Hampstead, N.H. 877,067, pub. 7–1–69. Cl. 39.
Ingersoll-Rand Co., New York, N.Y. 876,970, pub. 7–1–69. Cl. 23.
Institute of Ethical Salesmanship: *See*—
Christensen, Carle A.
Inta-Roto Machine Co., Inc., The, Richmond, Va. 876,957, pub. 7–1–69. Cl. 23.
Interco Inc.: *See*—
International Shoe Co.
International Minerals & Chemical Corp., Skokie, Ill. 753,766, canc. Cl. 46.
International Shoe Co., to Interco Inc., St. Louis, Mo. 513,211, ren. 9–16–69. Cl. 39.
International Telephone & Telegraph Corp., New York, N.Y., from ITT Blackburn Corp., St. Louis, Mo. 876,907, pub. 3–18–69. Cl. 21.
International Telephone & Telegraph Corp., New York, N.Y. 877,200, pub. 7–1–69. Cl. 101.
Izumi Denki Co., Osaka, Japan. 876,911, pub. 7–1–69. Cl. 21.
James, Dick, Music, Inc., New York, N.Y. 877,005, pub. 7–1–69. Cl. 36.
Janitors Supply House Inc., Baltimore, Md. 510,982, ren. 9–16–69. Cl. 29.
Jaska Ltd., Leicester, England. 877,037, pub. 7–1–69. Cl. 39.
Jaska Ltd., Leicester, England. 877,073, pub. 7–1–69. Cl. 42.
Jaymar-Ruby, Inc., Michigan City, Ind. 877,056, pub. 7–1–69. Cl. 39.
Jobst Institute, Inc., The, Toledo, Ohio. 877,096, pub. 7–1–69. Cl. 44.
Johnson & Johnson, New Brunswick, N.J. 877,168, pub. 7–1–69. Cl. 51.
Johnsen & Jorgensen (Trident) Ltd., London, England. 877,153, pub. 7–1–69. Cl. 50.
Johnson, S. C., & Son, Inc., Racine, Wis. 753,520, canc. Cl. 1.
Jointine Products Co. Ltd., Lincoln, England. 872,150, cor. Cl. 35.
Jolen, Inc., Fairfield, Conn. 877,161, pub. 7–1–69. Cl. 51.
KSC Semiconductor Corp., Chelmsford, Mass. 876,914, pub. 7–1–69. Cl. 21.
Kabushiki Kaisha Hattori Tokeiten, Tokyo, Japan. 876,986, pub. 7–1–69. Cl. 27.
Kadin Bros. Inc., New York, N.Y. 519,069, ren. 9–16–69. Cl. 3.
Kanegafuchi Boseki Kabushiki Kaisha, d.b.a. Kanegafuchi Spinning Co., Ltd., Osaka, Japan. 877,075, pub. 7–1–69. Cl. 42.
Kanegafuchi Spinning Co., Ltd.: *See*—
Kanegafuchi Boseki Kabushiki Kaisha.
Karmen, Bernardo H., d.b.a. Food Industry Flavors, Glendale, Calif. 753,807, canc. Cl. 46.
Katz, Matthew, San Francisco, Calif. 877,220, pub. 7–1–69. Cl. 107.
Katzenberg, Sour & Co., New York, N.Y. 877,204, pub. 7–1–69. Cl. 102.
Kaufman, Larry L., Co., Toledo, Ohio. 877,001, pub. 7–1–69. Cl. 34.
Kelco Co., San Diego, Calif. 876,822, pub. 7–1–69. Cl. 6.
Kelco Co., San Diego, Calif. 877,106, pub. 7–1–69. Cl. 46.
Kelco Co., San Diego, Calif. 877,140, pub. 7–1–69. Cl. 48.
Kendall Co., The, Walpole, Mass. 876,886, pub. 7–1–69. Cl. 18.
Kennicott Bros. Co., Chicago, Ill. 509,694, ren. 9–16–69. Cl. 1.
Kentile Floors Inc., Brooklyn, N.Y. 876,899, pub. 7–1–69. Cl. 20.
Kentile Floors Inc., Brooklyn, N.Y. 876,901, pub. 7–1–69. Cl. 20.
Kern County Land Co., San Francisco, Calif. 877,125–6, pub. 7–1–69. Cl. 46.
Kewaunee Scientific Equipment Corp., Adrian, Mich. 876,996, pub. 7–1–69. Cl. 32.
Keystone Floor Products Co., Philadelphia, Pa. 877,080, pub. 7–1–69. Cl. 42.
Kimberly-Clark Corp., Neenah, Wis. 753,738, canc. Cl. 37.
Kimberly-Clark Corp., Neenah, Wis. 877,006, pub. 7–1–69. Cl. 37.
King's Department Stores, Inc., Newton, Mass. 877,049, pub. 7–1–69. Cl. 39.
King Korn Stamp Co., Chicago, Ill. 876,922, pub. 7–18–67. Cl. 22.
Knit Products Corp., Belmont, N.C. 877,063, pub. 7–1–69. Cl. 39.
Koester, E. H., Bakery Co., The, Baltimore, Md. 518,653, ren. 9–16–69. Cl. 46.
Krug Baking Co.: *See*—
Krug, George A., Baking Co.
Krug, George A., Baking Co., d.b.a. Krug Baking Co., Jamaica, N.Y. 753,815, canc. Cl. 46.
La Brecque, John F., d.b.a. The Zug Island All Stars, Warren, Mich. 877,219, pub. 7–1–69. Cl. 107.
Lakeside Laboratories, Inc., Milwaukee, Wis. 753,654, canc. Cl. 18.
Laminating & Coating Corp., Schaumburg, Ill. 877,007, pub. 7–1–69. Cl. 37.
Lancome S.A., Paris, France. 877,164, pub. 7–1–69. Cl. 51.
Land O'Lakes Creameries, Inc., Minneapolis, Minn. 877,099, pub. 7–1–69. Multiple Class (Classes 45 and 46).
Landau Creations: *See*—
Landau, Reuben E.
Landau, Reuben E., d.b.a. Landau Creations, Trenton, N.J. 877,228, Cl. 39.
Lanman & Kemp, Inc., to Lanman & Kemp-Barclay & Co. Inc., Palisades Park, N.J. 261,559, cor. Cl. 6.
Leavell, William A., Jr., d.b.a. Carrara Stone Co., Clearwater, Fla. 753,544, canc. Cl. 4.
Leavell, William A., Jr., d.b.a. Carrara Stone Co., Clearwater, Fla. 753,892, canc. Cl. 4.
Leeds & Northrup Co., North Wales, Pa. 876,983, pub. 7–1–69. Cl. 26.
Leflingwell Chemical Co., Brea, Calif. 876,831, pub. 7–1–69. Cl. 6.
Leland Detroit Mfg. Co., Detroit, Mich. 876,952, pub. 7–1–69. Cl. 23.
Letters, John & Co., Ltd., Glasgow, Scotland. 753,682, canc. Cl. 22.
Levi Strauss & Co., to Levi Strauss & Co., San Francisco, Calif. 516,561, Am. 7(d). Cl. 39.
Levy, Sue G., Seaford, Va., 877,148–9, pub. 7–1–69. Cl. 50.
Lewis, Bryant, Inc., Indianapolis, Ind. 877,035, pub. 7–1–69. Cl. 39.
Liberty Fabrics of New York, Inc., New York, N.Y. 877,088, pub. 7–1–69. Cl. 43.
Lilly, Eli, & Co., Indianapolis, Ind. 876,889, pub. 7–1–69. Cl. 18.
Lindsay Wire Weaving Co., The, Cleveland, Ohio. 512,754, ren. 9–16–69. Cl. 23.
Lindsay Wire Weaving Co., The, Cleveland, Ohio. 512,800–1, ren. 9–16–69. Cl. 23.
Linen Thread Co., Inc., The, to Indian Head Inc., New York, N.Y. 518,908–10, ren. 9–16–69. Cl. 43.
Linen Thread Co., Inc., The, New York, N.Y., to Ludlow Corp., Needham, Mass. 518,929, ren. 9–16–69. Cl. 7.
Lingua-Musica: *See*—
Brown, Clarence B.
Little Pigs of America, Inc., Memphis, Tenn. 753,860, canc. Cl. 100.
Littlesticks Inc., New York, N.Y. 877,066, pub. 7–1–69. Cl. 39.
Lowe, Joe, Co.: *See*—
Consolidated Foods Corp.
Lucien Ferraz & Cie, Lyon (Rhone), France. 876,915, pub. 7–1–69. Cl. 21.
Ludlow Corp.: *See*—
Linen Thread Co., Inc., The.
Lykes Pasco Packing Co.: *See*—
Pasco Packing Co.
MIF Industries, Inc., Branford, Conn. 876,857, pub. 7–1–69. Cl. 14.
MKS Instruments, Inc., Burlington, Mass. 876,976, pub. 7–1–69. Cl. 26.
MacLevy Products Corp., New York, N.Y. 876,936–7, pub. 7–1–69. Cl. 22 .
MacMillan Ring-Free Oil Co., Inc., New York, N.Y. 753,607, canc. Cl. 16.
Madison Chemical Corp., Maywood, Ill. 876,826, pub. 7–1–69. Cl. 6.
Magnetico International, Inc., Dallas, Tex. 877,157, pub. 7–1–69. Cl. 50.
Magnolia Citrus Assn., Porterville, Calif. 517,141, ren. 9–16–69. Cl. 46.
Maidenform, Inc., New York, N.Y. 873,491, cor. Cl. 39.
Maidenform, Inc., New York, N.Y. 877,033, pub. 7–1–69. Cl. 39.

Main Trucking & Rigging Co., Inc., Paterson, N.J. 877,212, pub. 7–1–69. Cl. 105.
Malone & Hyde, Inc., Memphis, Tenn. 877,121, pub. 7–1–69. Cl. 46.
Mandabach, Paul J., Inc., Chicago, Ill. 753,572, canc. Cl. 6.
Manufacture d'Horlogerie Rayville S.A. Montres: *See*—
Bruner, S., Inc.
Margel, Irving, Los Angeles, Calif. 877,036, pub. 7–1–69. Cl. 39.
Marion Laboratories, Inc., Kansas City, Mo. 876,891, pub. 7–1–69. Cl. 18.
Markowski, Robert J., and Ann L. Markowski: *See*—
Exec Air, Inc.
Mars Broadcasting, Inc., Stamford, Conn. 753,889, canc. Cl. 107.
Matsam Corp., New Bedford, Mass. 876,941, pub. 7–1–69. Cl. 22.
Mattel, Inc., Hawthorne, Calif. 876,946, pub. 7–1–69. Cl. 22.
Mavest, Societe Anonyme, Roanne (Loire), France. 741,652, canc. Cl. 39.
McCord Corp., Detroit, Mich. 876,955, pub. 7–1–69. Cl. 23.
Mead Johnson & Co., Evansville, Ind. 876,892, pub. 7–1–69. Cl. 18.
Mecca Ltd., London, England. 877,221, pub. 7–1–69. Cl. 107.
Medical Plastics, Inc., Minneapolis, Minn. 876,916, pub. 7–1–69. Cl. 21.
Medina Agricultural Products Co., Inc., Hondo, Tex. 876,844, pub. 7–1–69. Cl. 10.
Mediterranean Importing Co., Inc., Long Island City, N.Y. 873,584, cor. Cl. 49.
Mediterranee Flowers, Inc., Cambria Heights, N.Y. 753,833, canc. Cl. 50.
Messer Griehsehm G.m.b.H., Frankfurt (Main), Germany. 876,998, pub. 7–1–69. Cl. 34.
Metacomet Inc., Teterboro, N.J. 876,828–9, pub. 7–1–69. Cl. 6.
Metetelic Corp., Milford, Conn. 753,712, canc. Cl. 26.
Miami Products & Chemical Co., The, Dayton, Ohio. 753,553, canc. Cl. 6.
Miavana Wholesale Co., Inc., Miami, Fla. 877,115, pub. 7–1–69. Cl. 46.
Michigan Metal Products Co., Battle Creek, Mich., to St. Regis Paper Co., New York, N.Y. 259,967, ren. 9–16–69. Cl. 2.
Michigan Oven Co., d.b.a. Drying Systems Co., Morton Grove, Ill. 876,992, pub. 7–1–69. Cl. 31.
Michigan Oven Co., d.b.a. Drying Systems Co., Morton Grove, Ill. 876,997, pub. 7–1–69. Cl. 34.
Microdot Inc., South Pasadena, Calif. 876,918, pub. 7–1–69. Cl. 21.
Mid-Continent Screw Products Co., Chicago, Ill. 877,215, pub. 7–1–69. Cl. 106.
Miehle-Goss-Dexter, Inc., Chicago, Ill. 876,967, pub. 7–1–69. Cl. 23.
Miller, Dan F., III, d.b.a. Abusa-Pa-Ya, Columbia, S.C. 877,218, pub. 7–1–69. Cl. 107.
Mini-Products Industries: *See*—
Tittsworth, Ferrell McRee.
Minnesota Mining & Mfg. Co., St. Paul, Minn. 876,949–51, pub. 7–1–69. Cl. 22.
Mission Valley Canning Co. Inc., San Jose, Calif. 753,782, canc. Cl. 46.
Mister-R-OOO Enterprises, Inc., Lancaster, Pa. 876,942, pub. 7–1–69. Cl. 22.
Modern Bridal Shoppe, Inc., Philadelphia, Pa. 877,229, Cl. 39.
Monarch Marking System Co., The, Dayton, Ohio. 876,908, pub. 7–1–69. Multiple Class (Classes 21, 23, and 37).
Monsanto Chemical Co., St. Louis, Mo. 511,037, ren. 9–16–69. Cl. 4.
Monsanto Chemical Co., to Monsanto Co., St. Louis, Mo. 511,581, ren. 9–16–69. Cl. 31.
Monsanto Co.: *See*—
Monsanto Chemical Co.
Montres Nova, Biedermann Freres S.A., Neuveville, Switzerland. 515,542, ren. 9–16–69. Cl. 27.
Montrose Oil & Belting Co., Inc., d.b.a. Montrose Supply & Equipment Co., Brooklyn, N.Y. 876,865, pub. 7–1–69. Cl. 15.
Montrose Supply & Equipment Co.: *See*—
Montrose Oil & Belting Co., Inc.
Moore-Handley Hardware Co., Inc., Birmingham, to Moore-Handley Inc., Pelham, Ala. 513,370, ren. 9–16–69. Cl. 16.
Moore-Handley Inc.: *See*—
Moore-Handley Hardware Co., Inc.
Morgen Mfg. Co., Yankton, S. Dak. 876,963, pub. 7–1–69. Multiple Class (Classes 23 and 50).
Mowbot, Inc., North Tonawanda, N.Y. 876,962, pub. 7–1–69. Cl. 23.
Muirhead, Charles, & Son, Ltd., Edinburgh, Scotland. 517,930, ren. 9–16–69. Cl. 49.
Multi-Line Pen Co.: *See*—
Rogers, May B.
Mupu Citrus Assn., Santa Paula, Calif. 515,090, ren. 9–16–69. Cl. 46.
Nash Engineering Co., The, South Norwalk, Conn. 518,185, ren. 9–16–69. Cl. 23.
Natchez Baking Co.: *See*—
Simon, Leo.
National Cylinder Gas Co., to Chemetron Corp., Chicago, Ill. 511,360, ren. 9–16–69. Cl. 35.
National Distillers & Chemical Corp., New York, N.Y. 876,859, pub. 7–1–69. Cl. 14.
National Institutional Food Distributor Associates, Inc., Smyrna, Ga. 876,856, pub. 7–1–69. Cl. 14.
National Rayon Dyeing Co., Inc., Newark, N.J. 877,089, pub. 7–1–69. Cl. 43.
Neal, Albert D., Pacific Palisades, Calif. 876,931, pub. 7–1–69. Cl. 22.
Nebraska Consolidated Mills Co., Omaha, Nebr. 517,[illegible]74, ren. 9–16–69. Cl. 46.
Nero Investment Co., Inc., d.b.a. Goodie Products, Berkeley, Calif. 877,019, pub. 7–1–69. Cl. 38.
Nesmith, Joseph Q., and Dorothy E. Nesmith, d.b.a. The Hairbenders Wig & Beauty Salon, Orange, Calif. 877,163, pub. 7–1–69. Cl. 51.
Nickles, Alfred, Bakery, Inc.: *See*—
Simon, Leo.
Norcross, Inc., New York, N.Y. 877,021–4, pub. 7–1–69. Cl. 38.
North American Hudson Corp., Nanuet, N.Y. 876,895, pub. 7–1–69. Cl. 19.
Noxell Corp., Baltimore, Md. 877,159–60, pub. 3–26–68. Cl. 51.
OXO (Canada) Ltd., Don Mills, Ontario, Canada. 877,130, pub. 7–1–69. Cl. 46.
Oceanic Instruments, Inc., Houghton, Wash. 753,708, canc. Cl. 26.
Ohio Art Co., The, Bryan, Ohio. 876,940, pub. 7–1–69. Cl. 22.
Ohio Leather Co., The, Girard, Ohio. 260,456, ren. 9–16–69. Cl. 1.
Old Sturbridge, Inc., Sturbridge, Mass. 877,031, pub. 7–1–69. Cl. 39.
Olin Mfg. Co.: *See*—
Holloway, Albert F.
Olin Mathieson Chemical Corp., New York, N.Y. 753,577, canc. Cl. 6.
Olympic Corn Products, Inc., Spokane, Wash. 877,122, pub. 7–1–69. Cl. 46.
Onishi Iryo Kabushiki Kaisha (Onishi Iryo Co., Ltd.), Osaka, Japan. 877,048, pub. 7–1–69. Cl. 39.
Opperman Gears Ltd., Newbury, England. 876,910, pub. 7–1–69. Multiple Class (Classes 21 and 23).
Orca, Inc., Cambridge, Mass. 877,183, pub. 7–1–69. Cl. 100.
Oregon Nut Shellers, Inc., Hillsboro, Oreg. 753,819, canc. Cl. 46.
Organon Inc.: *See*—
Roche-Organon Inc.
Oster, John, Mfg. Co., Racine, Wis. 513,752, ren. 9–16–69. Cl. 23.
Oxford Industries, Inc., Atlanta, Ga. 877,046, pub. 7–1–69. Cl. 39.
Pacific Alaska Fisheries, Inc.: *See*—
Pacific American Fisheries, Inc.
Pacific American Fisheries, Inc., Bellingham, to Pacific Alaska Fisheries, Inc., Seattle, Wash. 518,377, ren. 9–16–69. Cl. 46.
Pacific Industries, Inc., New York, N.Y. 876,845, pub. 7–1–69. Multiple Class (Classes 11 and 37).
Pacific Wood Products Co., Los Angeles, Calif. 876,848, pub. 7–1–69. Cl. 12.
Packaged Products Corp., Brooklyn, N.Y. 753,786, canc. Cl. 46.
Panduit Corp., Tinley Park, Ill. 876,917, pub. 7–1–69. Cl. 21.
Parke, Davis & Co., Detroit, Mich. 753,616, canc. Cl. 18.
Parker Bros., Inc., Salem, Mass., from Products of the Behavioral Sciences, Inc., San Jose, Calif. 876,930, pub. 7–1–69. Cl. 22.
Parker Instrument Corp., Stamford, Conn. 876,981, pub. 7–1–69. Cl. 26.
Pasco Packing Co., Dade, to Lykes Pasco Packing Co., Dade City, Fla. 514,356, ren. 9–16–69. Cl. 46.
Pasco Packing Co., Dade, to Lykes Pasco Packing Co., Dade City, Fla. 518,291, ren. 9–16–69. Cl. 46.
Patten, Lee, Seed Co., Jersey City, N.J. 753,591, canc. Cl. 10.
Paul, K. S., Products Ltd., London, England. 876,863–4, pub. 7–1–69. Cl. 15.
Pauli & Griffin Co., San Francisco, Calif. 876,977, pub. 7–1–69. Cl. 26.
Pearl's, Minnie, Chicken System, Inc.: *See*—
Performance Systems, Inc.
Penn Maid Foods, Inc., Philadelphia, Pa. 877,111, pub. 7–1–69. Cl. 46.
Penney, J. C., Co., to J. C. Penney Co., Inc., New York, N.Y. 254,765, ren. 9–16–69. Cl. 39.
Penney, J. C. Co., to J. C. Penney Co., Inc., New York, N.Y. 254,832, ren. 9–16–69. Cl. 39.
Penney, J. C., Co., to J. C. Penney Co., Inc., New York, N.Y. 254,843, ren. 9–16–69. Cl. 39.
Penney, J. C., Co., Inc.: *See*—
Penney, J. C., Co.
Penney, J. C., Co., Inc., New York, N.Y. 877,065, pub. 7–1–69. Cl. 39.
Penny-Pak Inc., Danville, Ill. 753,838, canc. Cl. 50.
Perfection Bedding Co.: *See*—
Perfection Mattress & Spring Co.
Perfection Mattress & Spring Co., to Perfection Bedding Co., Birmingham, Ala. 518,583, ren. 9–16–69. Cl. 32.
Performance Systems, Inc., from Minnie Pearl's Chicken System, Inc., Nashville, Tenn. 877,116, pub. 7–1–69. Cl. 46.
Perillo, Joseph, & Sons, Inc., New York, N.Y. 877,210, pub. 7–1–69. Cl. 105.
Perkins, Dorothy, Cosmetics, Inc., St. Louis, Mo. 753,845–6, canc. Cl. 51.
Pfizer, Chas., & Co., Inc., New York, N.Y. 753,630, canc. Cl. 18.
Pfizer, Chas., & Co., Inc., New York, N.Y. 753,633–4, canc. Cl. 18.
Pfizer, Chas., & Co., Inc., New York, N.Y. 876,893, pub. 7–1–69. Cl. 18.
Pflueger Corp.: *See*—
Enterprise Mfg. Co., The.
Pictorial Productions, Inc., Mount Vernon, N.Y. 877,151, pub. 7–1–69. Cl. 50.
Plantation Foods Corp., Miami, Fla. 877,113, pub. 7–1–69. Cl. 46.
Polychrome Corp., Yonkers, N.Y. 877,155, pub. 7–1–69. Cl. 50.
Polymer Films Inc., Woodside, N.Y. 876,798, pub. 7–1–69. Cl. 1.

Portable Recording Industries, Inc. 877,003, pub. 7–1–69. Cl. 36.
Powers, Alfred, Los Angeles, Calif. 877,230. Cl. 39.
Powers Taxidermy, Inc., Denver, Colo. 877,207, pub. 7–1–69. Cl. 103.
Precision Steel Warehouse, Inc., Franklin Park, Ill. 876,860, pub. 7–1–69. Cl. 14.
Premier Industrial Corp., Cleveland, Ohio. 877,175, pub. 7–1–69. Cl. 52.
Premier Vacuum Process Corp., Maspeth, N.Y. 877,216, pub. 7–1–69. Cl. 106.
Privette, Harry K., Randolph, Mass. 877,015, pub. 7–1–69. Cl. 38.
Procter & Gamble Co., The, Cincinnati, Ohio. 75,448, ren. 9–16–69. Cl. 46.
Procter & Gamble Co., The, Cincinnati, Ohio. 75,450, ren. 9–16–69. Cl. 46.
Procter & Gamble Co., The, Cincinnati, Ohio. 264,368, ren. 9–16–69. Cl. 52.
Procter & Gamble Co., The, Cincinnati, Ohio. 877,011, pub. 7–1–69. Cl. 37.
Productos Stani Sociedad Anonima Industrial y Comercial, Buenos Aires, Argentina. 877,123, pub. 7–1–69. Cl. 46.
Products of the Behavioral Sciences, Inc.: *See*— Parker Brothers, Inc.
Publishers Supply, Inc., Boston, Mass. 876,821, pub. 7–1–69. Multiple Class (Classes 5 and 15).
Pulitzer, Lilly, Inc., Palm Beach, Fla. 877,040, pub. 7–1–69. Cl. 39.
Purdue Frederick Co., The, Yonkers, N.Y. 876,888, pub. 7–1–69. Cl. 18.
Pure Oil Co., The, Chicago, Ill., to Union Oil Co. of California, Los Angeles, Calif. 513,492, ren. 9–16–69. Cl. 35.
Pure Oil Co., The, Chicago, Ill., to Union Oil Co. of California, Los Angeles, Calif. 513,958, ren. 9–16–69. Cl. 15.
Pure Oil Co., The, Chicago, Ill., to Union Oil Co. of California, Los Angeles, Calif. 514,028, ren. 9–16–69. Cl. 15.
Pure Oil Co., The, Chicago, Ill., to Union Oil Co. of California, Los Angeles, Calif. 514,259, ren. 9–16–69. Cl. 6.
Pure Oil Co., The, Chicago, Ill., to Union Oil Co. of California, Los Angeles, Calif. 515,141, ren. 9–16–69. Cl. 15.
Pure Oil Co., The, Chicago, Ill., to Union Oil Co. of California, Los Angeles, Calif. 515,547, ren. 9–16–69. Cl. 15.
Purepac Corp.: *See*— Purepac Laboratories Corp.
Purepac Laboratories Corp., from Purepac Corp., Elizabeth, N.J. 877,237. Cl. 46.
Puritan Chemical Co., Atlanta, Ga. 876,835, pub. 7–1–69. Cl. 6.
Quaker Oats Co., The, Chicago, Ill. 753,795, canc. Cl. 46.
Qualified Personnel, Inc., Madison, Wis. 877,199, pub. 7–1–69. Cl. 101.
Radiation Instrument Development Laboratory, Inc., Melrose Park, Ill. 753,701, canc. Cl. 26.
Ralston Purina Co., St. Louis, Mo., from Van Camp Sea Food Co., d.b.a. West Coast Packing Corp., Long Beach, Calif. 753,808–9, canc. Cl. 46.
Ramparts Magazine, Inc., San Francisco, Calif. 877,016, pub. 7–1–69. Cl. 38.
Randolph Mfg. Co., Inc., from Randolph Mfg. Co., Inc., Randolph, Mass. 876,925, pub. 7–1–69. Cl. 22.
Receptours Travel Service, Inc., Miami, Fla. 877,211, pub. 7–1–69. Cl. 105.
Rees, L., Product: *See*— Shand, Lonnie Rees.
Reliance Electric Co., from Dodge Mfg. Corp. Mishawaka, Ind. 877,227. Cl. 21.
Republic Seitz Filter Corp., Newark, N.J., to Republic-Seitz Filter Corp., Milldale, Conn. 512,284, ren. 9–16–69. Cl. 31.
Republic-Seitz Filter Corp.: *See*— Republic Seitz Filter Corp.
Reserve Insurance Co., Chicago, Ill. 877,205, pub. 7–1–69. Cl. 102.
Rex Chainbelt Inc., Milwaukee, Wis. 876,973, pub. 7–1–69. Cl. 23.
Robertson Carpet Corp., New York, N.Y. 877,072, pub. 7–1–69. Cl. 42.
Roced Manufacturers Inc., Fayetteville, N.Y. 877,154, pub. 7–1–69. Cl. 50.
Roche-Organon Inc., Nutley, to Organon Inc., West Orange, N.J. 512,910, ren. 9–16–69. Cl. 18.
Rockower Bros., Inc., Philadelphia, Pa. 877,055, pub. 7–1–69. Cl. 39.
Rockwell Mfg. Co., Pittsburgh, Pa. 515,291, ren. 9–16–69. Cl. 23.
Rodana Research Corp., Bethesda, Md. 877,091, pub. 7–1–69. Cl. 44.
Rogers, May B., executrix of the estate of M. K. Rogers, deceased, from M. K. Rogers, d.b.a. Multi-Line Pen Co., Ferguson, Ky. 876,980, pub. 7–1–69. Cl. 26.
Rogers, Murray K.: *See*— Rogers, May B.
Rohto Pharmaceutical Co., Ltd., Osaka, Japan. 876,878, pub. 7–1–69. Cl. 18.
Ronzoni Macaroni Co., Inc., Long Island City, N.Y. 518,709, ren. 9–16–69. Cl. 46.
Ross-Tacony Crucible Co., Philadelphia, Pa. 753,720, canc. Cl. 34.
Rowan, Lee, Co., St. Louis, Mo. 753,836, canc. Cl. 50.
Ruben, James, Silver Spring, Md. 753,718, canc. Cl. 32.
Rubicon Chemicals, Inc., Geismar, La. 876,832, pub. 7–1–69. Cl. 6.
Rykoff, S. E., & Co., Los Angeles, Calif. 877,119, pub. 7–1–69. Cl. 46.
SKF Industries, Inc., Philadelphia, Pa. 518,440–1, ren. 9–16–69, Cl. 21.
Safeco Exterminators, Inc., Marietta, Ga. 877,206, pub. 7–1–69. Cl. 103.
St. Lawrence Sales Inc., Birmingham, Mich. 753,668, canc. Cl. 22.
St. Regis Paper Co.: *See*— Michigan Metal Products Co.
Sarco Lingerie Corp., New York, N.Y. 877,045, pub. 7–1–69. Cl. 39.
Savannah Sugar Refining Corp., Savannah, Ga. 877,232. Cl. 46.
Saxe, Charles W., Worcester, Mass. 753,894, canc. Cl. 34.
Schenley Industries, Inc.: *See*— Asche-Bandor Corp.
Schlitz, Jos., Brewing Co., Milwaukee, Wis. 876,836, pub. 7–1–69. Cl. 6.
Sears, Roebuck & Co., Chicago, Ill. 513,785, ren. 9–16–69. Cl. 39.
Sears, Roebuck & Co., Chicago, Ill. 753,604, canc. Cl. 16.
Service Station Management Corp., Philadelphia, Pa. 877,187, pub. 7–1–69, Cl. 101.
Shand, Lonnie R., d.b.a. L. Rees Product, San Antonio, Tex. 877,240. Cl. 46.
Shell Oil Co., New York, N.Y. 876,861, pub. 7–1–69. Cl. 15.
Sherman Poultry Industries, Gardena, Calif. 753,762, canc. Cl. 46.
Sherwin-Williams Co., The, Cleveland, Ohio. 511,785, ren. 9–16–69, Cl. 1.
Shore Lobster & Shrimp Corp., from Shore Shrimp & Lobster Corp., d.b.a. Shore Lobster & Shrimp Corp., Brooklyn, N.Y. 877,120, pub. 7–1–69, Cl. 46.
Shore Shrimp & Lobster Corp.: *See*— Shore Lobster & Shrimp Corp.
Sierra Citrus Assn.: *See*— Co-operative Citrus Assn.
Sifo Co., Minneapolis, Minn. 876,947, pub. 7–1–69. Cl. 22.
Signode Corp., Chicago, Ill. 876,841, pub. 7–1–69. Cl. 7.
Signode Corp., Chicago, Ill. 876,965, pub. 7–1–69. Cl. 23.
Simon, Leo, d.b.a. Natchez Baking Co., Natchez, Miss., to Alfred Nickles Bakery, Inc., Navarre, Ohio. 257,769, ren. 9–16–69, Cl. 46.
Simoniz Co., Chicago, Ill. 877,171, pub. 7–1–69. Cl. 52.
Singer Co., The: *See*— American Blind Stitch Machine Co.
Singer, Heidi B., Bayonne, N.J. 877,231. Cl. 46.
Sirco Products Co., Inc., Mount Vernon, N.Y. 876,817, pub. 7–1–69. Cl. 3.
Smith, George D., New York, N.Y. 753,666, canc. Cl. 22.
Snyder, Donald H., d.b.a. Snyder Woodcraft Co., Blissfield, Mich. 877,142, pub. 7–1–69. Cl. 50.
Snyder Woodcraft Co.: *See*— Snyder, Donald H.
Soccer Assn. for Youth, U.S.A., The, Cincinnati, Ohio. 877,225, pub. 7–1–69. Cl. 200.
Social Dynamics, Inc., Boston, Mass. 877,177, pub. 7–1–69. Cl. 100.
Sociedade Comercial Dos Vinhos de Mesa de Portugal, Limitada, Porto, Portugal. 517,697, ren. 9–16–69. Cl. 47.
Societe a Responsabilite Limitee-Cottan, Parfumeur, Asnieres, to Cottan Parfumeur Paris, Paris, France. 510,788, ren. 9–16–69. Cl. 51.
Solitest, Inc., Evanston, Ill. 876,979, pub. 7–1–69. Cl. 26.
Soms, J. Frank, Cab Co., Inc., Rutland, Mass. 876,961, pub. 7–1–69. Cl. 23.
Southern Comfort Corp., St. Louis, Mo. 513,317, ren. 9–16–69. Cl. 49.
Southern Comfort Corp., St. Louis, Mo. 513,410, ren. 9–16–69. Cl. 49.
Southland Corp., The, Dallas, Tex. 877,101, pub. 7–1–69. Cl. 46.
Spannhake, Ernst W., d.b.a. ESPA Development Co., Rockford, Ill. 877,178, pub. 7–1–69. Cl. 100.
Spartan Saw Works, Inc., Springfield, Mass. 515,287, ren. 9–16–69. Cl. 23.
Spartans Industries, Inc., New York, N.Y. 877,077, pub. 7–1–69. Cl. 42.
Special Surgical Instruments Co.: *See*— Duff, Elton.
Spencer-Adams Paint Co., Inc., Atlanta, Ga. 509,422, ren. 9–16–69. Cl. 16.
Sport Imports Inc., New York, N.Y. 876,974–5, pub. 7–1–69. Cl. 25.
Spot-O-Gold Corp., Philadelphia, Pa. 877,192, pub. 7–1–69. Cl. 101.
Spot-O-Gold Corp., Philadelphia, Pa. 877,198, pub. 7–1–69. Cl. 101.
Stadium Mfg. Co., Inc., New York, N.Y. 514,391, ren. 9–16–69. Cl. 39.
Standard Oil Co., Flemington, N.J. 876,795, pub. 7–1–69. Multiple Class (Classes 1 and 12).
Star Burst Co., Granite City, Ill. 876,871, pub. 7–1–69. Cl. 16.
Star-D Mfg. Co., Inc., Jersey City, N.J. 876,982, pub. 7–1–69. Cl. 26.
Statler Tissue Corp., Somerville, Mass., to Statler Tissue Corp., Medford, Mass. 513,710, ren. 9–16–69. Cl. 37.
Stauffer Chemical Co., New Pork, N.Y. 876,838, pub. 7–1–69. Cl. 6.
Steiner-Lobman Dry Goods Co., Montgomery, Ala. 877,034, pub. 7–1–69. Cl. 39.
Stendhal, Societe Anonyme, Paris, France. 877,167, pub. 7–1–69. Cl. 51.
Sterling Extruder Corp., Linden, N.J. 876,954, pub. 7–1–69. Cl. 23.
Stevens, J. P., & Co., Inc., New York, N.Y. 877,085, pub. 7–1–69. Cl. 42.
Stop & Shop, Inc., Boston, Mass. 877,193, pub. 7–1–69. Cl. 101.
Store Services, Inc: *See*— Bread Basket Inc.

Stott & Son Corp., Winona, Minn. 511,128, ren. 9–16–69. Cl. 39.
Strategic Materials Corp., New York, N.Y. 753,597, canc. Cl. 14.
Strato Enterprises, Ltd., Ogden, Utah. 876,959, pub. 7–1–69. Cl. 23.
Suburban Management Co., d.b.a. Decorative Adventures, Inc., King of Prussia, Pa. 877,156, pub. 7–1–69. Cl. 50.
Sun Chemical Corp., New York, N.Y. 876,847, pub. 7–1–69. Cl. 11.
Sunset Shoes: *See*— Ingalls, Donald A.
Sutliff Tobacco Co., d.b.a. Sutliff Tobacco Co., Richmond, Va. 876,876, pub. 7–1–69. Cl. 17.
Swartzbaugh Mfg. Co., The, to McGraw-Edison Co., Elgin, Ill. 512,056. Am. 7(d). Cl. 21.
Swedlin, J., Inc., d.b.a. Gund Mfg. Co., Brooklyn, N.Y. 876,923, pub. 2–20–68. Cl. 22.
Sweetheart Plastics, Inc., Wilmington, Mass. 876,810, pub. 7–1–69. Cl. Cl. 2.
Synthes AG, Chru, Switzerland. 877,095, pub. 7–1–69. Cl. 44.
TDK Electronics Co., Ltd., Tokyo, Japan. 876,904, pub. 7–1–69. Multiple Class (Classes 21, 26, and 36).
Tappan Co., The, Mansfield, Ohio. 877,000, pub. 7–1–69. Cl. 34.
Tate, E. H., Co., Boston, Mass. 876,855, pub. 7–1–69, Cl. 13.
Tauber, G. G., Co., Inc., Washington, D.C. 877,152, pub. 7–1–69. Cl. 50.
Taylor Maker, Inc., The, Dalton, Ga. 877,086, pub. 6–24–69. Cl. 42.
Technomic Publishing Co., Inc., Stamford, Conn. 877,013, pub. 7–1–69. Cl. 38.
Temcor, Torrance, Calif. 876,849, pub. 7–1–69. Cl. 12.
Tennessee Corp., Cincinnati, Ohio. 753,589, canc. Cl. 10.
Termohlen, Tom, Cedar Rapids, Iowa. 753,698, canc. Cl. 26.
Teweles, L., Seed Co., Milwaukee, Wis. 876,803–4, pub. 7–1–69. Cl. 1.
Texas Nutrition & Service Co.: *See*— Cummings, A. H.
Texize Chemicals, Inc., d.b.a. Beacon Products Div., Greenville, S. C. 775,185, cor. Cl. 6.
Thermo-Dynamics Corp., Schuylkill Haven, Pa. 876,999, pub. 7–1–69. Cl. 34.
300 Service, Inc., Wooster, Ohio. 876,972, pub. 7–1–69. Cl. 23.
Tiecrafters, Inc., Queens Village, N.Y. 753,878, canc. Cl. 103.
Tiger Fabrics, Inc., New York, N.Y. 877,071, pub. 7–1–69. Cl. 42.
Tilton & Cook Co., Leominster, Mass. 515,806, ren. 9–16–69. Cl. 40.
Titan Metal Mfg. Co., Bellefonte, Pa., to Cerro Corp., New York, N.Y. 517,387, ren. 9–16–69. Cl. 14.
Tittsworth, Ferrell McRee, d.b.a. Mini-Products Industries, Miami, Fla. 876,811, pub. 7–1–69. Cl. 2.
Tote Engineering Inc., Seattle, Wash., to Hoover Ball & Bearing Co., Saline, Mich. 517,618, ren. 9–16–69. Cl. 2.
Tovar Tresses, Inc., New York, N.Y. 877,069, pub. 7–1–69. Cl. 40.
Traveleze Trailer Co., Inc., Sun Valley, Calif. 876,897, pub. 4–1–69. Cl. 19.
Treasure Trader, Inc., St. Petersburg, Fla. 753,866, canc. Cl. 101.
Trend Mills, Inc., Rome, Ga. 877,078, pub. 7–1–69. Cl. 42.
Triple AAA Co.: *See*— Green, Doyle, Carpenter.
Triple "AAA" Co.: *See*— Green Doyle, Carpenter.
True Form Foundations, Inc., Darby, Pa. 877,027, pub. 7–1–69. Cl. 39.
Turner, Sam R., d.b.a. Decorative Arts, Fort Worth, Tex. 877,143, pub. 7–1–69. Cl. 50.
Twin Disc Clutch Co., to Twin Disc, Inc., Racine, Wis. 515,274, ren. 9–16–69. Cl. 23.
Twin Disc, Inc.: *See*— Twin Disc Clutch Co.
Twin Disc, Inc., Racine, Wis. 876,913, pub. 7–1–69. Multiple Class (Classes 21, 23, and 26).
USA 1 Inc.: *See*— Hartford Publications, Inc.
Underwood's of Texas, Inc., Lubbock, Tex. 877,180, pub. 7–1–69. Cl. 100.
Union Carbide Corp.: *See*— Carbide & Carbon Chemicals Corp.
Union Oil Co. of California: *See*— Pure Oil Co., The.
Union Oil Co. of California, Los Angeles, Calif. 515,168, ren. 9–16–69. Cl. 15.
United Candy Co., Boston, Mass., to Warner-Lambert Pharmaceutical Co., Morris Plains, N.J. 261,531, ren. 9–16–69. Cl. 46.
United Merchants & Manufacturers, Inc., New York, N.Y. 877,084, pub. 7–1–69. Cl. 42.
U.F. Chemical Corp., Woodside, N.Y. 876,843, pub. 7–1–69. Cl. 10.
U.S. Golf Corp., Norcross, Ga. 876,935, pub. 7–1–69. Cl. 22.
U.S. Plywood-Champion Papers Inc., New York, N.Y. 876,850, pub. 7–1–69. Cl. 12.
United States Rubber Co., New York, N.Y. 753,579, canc. Cl. 6.
Upjohn Co., The, Kalamazoo, Mich. 753,652, canc. Cl. 18.
Vaberg Co., Grand Forks, N. Dak. 877,002, pub. 7–1–69. Cl. 35.
Vaisey-Bristol Shoe Co., Inc., Rochester, N.Y., to Vaisey-Bristol Shoe Co. Inc., Monett, Mo. 515,459, ren. 9–16–69. Cl. 39.
Van Camp Sea Food Co.: *See*— Ralston Purina Co.
Vanderbilt, R. T., Co., Inc., New York, N.Y. 263,523, ren. 9–16–69. Cl. 16.
Vanderbilt, R. T., Co., Inc., New York, N.Y. 515,162, ren. 9–16–69. Cl. 6.
Vanell, Redding, Calif. 877,064, pub. 7–1–69. Cl. 39.
Van Son Holland Ink Corp. of America, Mineola, N.Y. 876,846, pub. 7–1–69. Cl. 11.
Variety Enterprises, Inc., Marion, Va. 877,182, pub. 7–1–69. Cl. 100.
Variety Mfg. Co., Inc., New York, N.Y. 877,057, pub. 7–1–69. Cl. 39.
Ventron Corp., Beverly, Mass. 876,823, pub. 7–1–69. Cl. 6.
Villager, Inc., The: *See*— Villager Industries, Inc.
Villager Industries, Inc., from The Villager, Inc., Philadelphia, Pa. 877,081, pub. 7–1–69. Cl. 42.
Vitamix Pharmaceuticals, Inc., Philadelphia, Pa. 753,645, canc. Cl. 18.
Vulcan Printing & Lithographing: *See*— Ebsco Industries, Inc.
Wade & Schmidt Inc., Sea Cliff, N.Y. 876,851, pub. 7–1–69. Cl. 12.
Wagner, Billie J., d.b.a. B. J. Wagner Promotions, Glendale, Calif. 877,185, pub. 6–27–67. Cl. 101.
Wagner Promotions: *See*— Wagner, Billie J.
Waldes Kohinoor, Inc., Long Island City, N.Y. 512,382, ren. 9–16–69. Cl. 13.
Walters Enterprises, Springboro, Ohio. 876,929, pub. 7–1–69. Cl. 22.
Wallace-Murray Corp., New York, N.Y. 876,964, pub. 7–1–69. Cl. 23.
Warner-Lambert Pharmaceutical Co.: *See*— United Candy Co.
Warner-Lambert Pharmaceutical Co., Morris Plains, N.J. 877,117, pub. 7–1–69. Cl. 46.
Wash. Mfg. Co., to Wash. Mfg. Co., Nashville, Tenn. 513,561, ren. 9–16–69. Cl. 39.
Water Service Laboratories, Inc., New York, N.Y. 517,799, ren. 9–16–69. Cl. 13.
Watsco, Inc., Hialeah, Fla. 877,173, pub. 7–1–69. Cl. 52.
Weaver, W. R., Co.: *See*— Weaver, William R.
Weaver, William R., d.b.a. W. R. Weaver Co., El Paso, Tex. 753,710, canc. Cl. 26.
Welcome Aboard Vacation Centers, Inc., New York, N.Y. 877,201, pub. 7–1–69. Cl. 101.
Wendt's Cream Top Dairy, Inc., Niagara Falls, N.Y. 753,779, canc. Cl. 46.
West Coast Packing Corp.: *See*— Ralston Purina Co.
West Virginia Pulp & Paper Co., New York, N.Y. 877,083, pub. 7–1–69. Cl. 42.
Western Auto Supply Co., to Western Auto Supply Co., Kansas City, Mo. 518,329, ren. 9–16–69. Cl. 21.
Western Gear Corp., Lynwood, Calif. 877,098, pub. 7–1–69. Cl. 44.
Wham-O-Mfg. Co., San Gabriel, Calif. 876,948, pub. 7–1–69. Cl. 22.
Wilbur Chocolate Co., Inc.: *See*— Wilbur-Suchard Chocolate Co., Inc.
Wilbur-Suchard Chocolate Co., Inc., Borough of Lititz, to Wilbur Chocolate Co., Inc., Lititz, Pa. 511,587, ren. 9–16–69, Cl. 46.
Wile, Julius, Sons & Co., Inc., New York, N.Y. 877,139, pub. 7–1–69, Cl. 47.
Wilson, Larry, Corp., The, Edina, Minn. 877,223, pub. 7–1–69. Cl. 107.
Will & Baumer Candle Co., Inc., Syracuse, N.Y. 259,050, ren. 9–16–69. Cl. 15.
Williams, Edwin K., & Co., Santa Barbara, Calif. 877,191, pub. 7–1–69. Cl. 101.
Willson Products, Inc., Reading, to ESB Inc., Philadelphia, Pa. 514,112, ren. 9–16–69. Cl. 26.
Wolff, John A., Minneapolis, Minn. 753,540, canc. Cl. 3.
Wonder Products Co., Collierville, Tenn. 876,932–4, pub. 7–1–69. Cl. 22.
Wood Flong Corp., Hoosick Falls, N.Y. 877,144–7, pub. 7–1–69. Cl. 50.
Woodstream Corp.: *See*— Animal Trap Co. of America.
Wyandotte Chemicals Corp., Wyandotte, Mich. 876,872, pub. 7–1–69. Cl. 16.
Wyandotte Chemicals Corp., Wyandotte, Mich. 877,174, pub. 7–1–69. Cl. 52.
Wyo-Ben Products Co., d.b.a. Wyotana Sales Co., Billings, Mont. 753,526, canc. Cl. 1.
Wyotana Sales Co.: *See*— Wyo-Ben Products Co.
Zel Chemical Distributing Co. Corp., Portland, Oreg. 876,837, pub. 7–1–69. Cl. 6.
Zug Island All Stars, The: *See*— La Brecque, John F.
Zwicky, Robert H., d.b.a. Canned Foods Forum, Waukesha, Wis. 753,777, canc. Cl. 46.

U.S. GOVERNMENT PRINTING OFFICE: 0—1969

U.S. DEPARTMENT OF COMMERCE
OFFICIAL GAZETTE of the UNITED STATES PATENT OFFICE
September 23, 1969 Volume 866 Number 4

PATENTS

NOTICES

Board of Appeals Decisions Rendered in the Month of August 1969

Examiner affirmed	110
Examiner affirmed in part	7
Examiner reversed	21
Total	138

Orders for Copies of Foreign Patents and/or Published Applications

Some foreign countries are not publishing their patents and/or applications in numerical order. Since the U.S. Patent Office will begin supplying orders for copies of these foreign documents from master microfilm reels made up on weekly or other periodic publishing sequences, effective immediately all orders must include the country, patent or application number, and the publication date (if known) of the ordered document. Reference should be made to Section 901 05(a) of the Manual of Patent Examining Procedure to assist in determining the publication date of the commonly encountered foreign patents and applications.

W. R. ARMSTRONG,
Aug. 21, 1969. *Director, Office of Patent Services.*

Joint U.S.-Swedish Search Exchange

A program for the exchange of search results between the patent offices of Sweden and the United States was initiated in February 1969. The program which is now in full operation involves patent applications filed in one country which are subsequently followed by corresponding applications filed in the other.

The program operates as follows:

The applicant files an application in the U.S. Patent Office which then processes the application in the customary manner and in the usual time sequence.

If the applicant later files an application in Sweden claiming the priority of the U.S. application, the Patent Office of Sweden notifies the U.S. Patent Office of this filing by forwarding a request for a list of the references cited by the U.S. examiner in the first office action on the merits.

Where the application originates in Sweden and is subsequently filed in the U.S. Patent Office, a similar procedure is followed whereby the U.S. office requests and the Swedish office supplies a list of references cited by the Swedish examiner.

This program, which involves only the furnishing of listings of references cited, could improve the quality of the patents granted by each office.

WILLIAM E. SCHUYLER, JR.,
Aug. 26, 1969. *Commissioner of Patents.*

Certificates of Corrections for the Week of Sept. 23, 1969

D. 211,073	3,372,038	3,380,145
3,228,979	3,372,155	3,380,150
3,323,473	3,372,214	3,380,506
3,328,658	3,373,075	3,380,560
3,330,820	3,374,136	3,381,482
3,331,375	3,374,225	3,381,505
3,333,022	3,374,455	3,381,581
3,338,310	3,374,528	3,381,676
3,341,017	3,374,718	3,381,691
3,344,860	3,375,056	3,381,741
3,346,551	3,375,155	3,381,817
3,346,881	3,375,216	3,381,818
3,349,845	3,375,479	3,382,042
3,351,561	3,376,127	3,382,094
3,352,816	3,376,173	3,382,111
3,354,055	3,376,256	3,382,126
3,355,382	3,376,260	3,382,277
3,360,540	3,376,323	3,382,413
3,361,150	3,376,333	3,382,442
3,362,903	3,376,428	3,382,517
3,365,468	3,376,875	3,382,565
3,366,642	3,376,876	3,382,626
3,367,175	3,377,152	3,382,838
3,367,773	3,377,360	3,382,854
3,367,880	3,377,473	3,383,220
3,367,960	3,378,415	3,383,295
3,369,221	3,378,493	3,383,354
3,369,389	3,378,550	3,384,219
3,369,904	3,379,517	3,384,547
3,371,043	3,379,651	3,399,664
3,371,499	3,379,722	

Dedication

3,248,501.—*Charles John Hire,* Mansfield, Ohio. THERMOSTATIC CONTROL HAVING ELECTRICALLY INSULATED HEATER ELEMENT. Patent dated Apr. 26, 1966. Dedication filed Apr. 4, 1969, by the assignee, *Therm-O-Disc, Incorporated.*

Hereby dedicates said entire patent to the Public.

Disclaimer and Dedication

3,050,263.—*Aaron Barkman,* and *Mike S. Fujimoto,* Chicago, and *Burnham R. Orwig,* Crete, Ill. CONTINUOUS SMALL-BALL BALL MILL AND METHOD FOR DISPERSING PIGMENTS IN LIQUID VEHICLES. Patent dated Aug. 21, 1962. Disclaimer and dedication filed Mar. 10, 1969, by the assignee, *The Sherwin-Williams Company.*

Hereby enters this disclaimer to all of the claims of said patent and dedicates the remainder of the term of the said patent to the Public.

New Applications Received During July 1969

Patents	8577
Designs	512
Plant Patents	15
Reissues	9
Total	9113

Issue—September 23, 1969

Patents	1300	No. 3,467,964 to No. 3,469,263, incl.
Designs	139	No. 215,260 to No. 215,398, incl.
Plant Patents	2	No. 2,920 to No. 2,921, incl.
Reissues	1	No. 26,667
Total	1442	

Disclaimers

3,057,896.—*Raymond C. Schlicht,* Hopewell Junction, and *Herman D. Kluge,* Fishkill, N.Y. HYPERBASIC SULFONATES. Patent dated Oct. 9, 1962. Disclaimer filed Apr. 2, 1969, by the assignee, *Texaco Inc.*

Hereby enters this disclaimer to claim 5 of said patent.

3,083,930.—*Byron O. Brekke,* Brooklyn Center, Minn. WINDING FORM. Patent dated Apr. 2, 1963. Disclaimer filed Apr. 21, 1969, by the assignee, *Honeywell Inc.*

Hereby enters this disclaimer to claims 1 through 5 of said patent.

3,131,371.—*Byron O. Brekke,* Brooklyn Center, Minn., and *Roy C. Johnston,* Dallas, Tex. WINDING FORM HAVING MEANS FOR PROTECTING ELECTRICAL COIL LEADS. Patent dated Apr. 28, 1964. Disclaimer filed Apr. 21, 1969, by the assignee, *Honeywell Inc.*

Hereby enters this disclaimer to claims 1 through 3 of said patent.

3,132,090.—*Paul F. Helfrey,* Montebello, *Nicholas L. Kay,* Fullerton, *Bernal Peralta,* Anaheim, and *Cloyd P. Reeg,* Orange, Calif. HYDROCRACKING PROCESS WITH REGULATION OF THE AROMATIC CONTENT OF THE PRODUCT. Patent dated May 5, 1964. Disclaimer filed Aug. 13, 1969, by the assignee, *Union Oil Company of California.*

Hereby enters this disclaimer to claims 14 and 15 of said patent.

3,142,768.—*Melvin M. Kaufman,* Merchantville, N.J. UNIDIRECTIONAL TUNNEL DIODE PULSE CIRCUITS. Patent dated June 28, 1964. Disclaimer filed Feb. 25, 1969, by the assignee, *Radio Corporation of America.*

Hereby enters this disclaimer to claims 1, 2, 4, 5, 6, 7, 9, 10, 11, 13, 14 and 15 of said patent.

3,319,020.—*Howard R. Shaffer,* Glenside, Pa. HANDLE INTERLOCK FOR ELECTRICAL SWITCHING DEVICES. Patent dated May 9, 1967. Disclaimer filed Apr. 1, 1969, by the assignee, *I-T-E Imperial Corporation.*

Hereby enters this disclaimer to claims 1, 2, 4, 5, 7, 8 and 9 of said patent.

3,360,143.—*William A. Allen,* San Bernardino, Calif. FORK-LIFT DUMPING MEANS. Patent dated Dec. 26, 1967. Disclaimer filed Jan. 21, 1969, by the assignee, *Jarke Corporation.*

Hereby disclaims the terminal portion of the term of the patent subsequent to Dec. 19, 1984.

3,428,110.—*James Walker,* Lower Gornal, near Dudley, and *Geoffrey W. Westwood,* Walsall, England. PROCESS FOR THE PRODUCTION OF FOUNDRY CORES AND MOLDS. Patent dated Feb. 18, 1969. Disclaimer filed Apr. 24, 1969, by the assignee, *Foseco-Fordath A.G.*

Hereby enters this disclaimer to claims 1, 6, 7, 8 and 9 of said patent.

3,436,194.—*Giuseppe Ribaldone,* Gallarate, Varese, *Franco Smai,* Novate Milanese, and *Carmine Garbuglio,* Milan, Italy. PROCESS FOR PREPARING NITROSYL HYDROGEN PYROSULFATE. Patent dated Apr. 1, 1969. Disclaimer filed Feb. 24, 1969, by the inventors; the assignee, *Montecatini Edison S.p.A., consenting.*

Hereby disclaims the terminal portion of the term of the patent subsequent to July 29, 1986.

PATENT EXAMINING CORPS

R. A. WAHL, Assistant Commissioner

CONDITION OF PATENT APPLICATIONS AS OF SEPTEMBER 8, 1969

PATENT EXAMINING GROUPS *Denotes oldest new application.	Actual Filing Date of Oldest New Case Awaiting Action
CHEMICAL EXAMINING GROUPS	
GENERAL CHEMISTRY AND PETROLEUM CHEMISTRY, GROUP 110—M. STERMAN, Director Inorganic Compounds; Inorganic Compositions; Organo-Metal and Organo-Metalloid Chemistry; Metallurgy; Metal Stock; Electro Chemistry; Batteries; Hydrocarbons; Mineral Oil Technology; Lubricating Compositions; Gaseous Compositions; Fuel and Igniting Devices.	9-11-67
GENERAL ORGANIC CHEMISTRY, GROUP 120—I. MARCUS, Director Heterocyclic; Amides; Alkaloids; Azo; Sulfur; Misc. Esters; Carbohydrates; Herbicides; Poisons; Medicines; Cosmetics; Steroids; Oxo and Oxy; Quinones; Acids; Carboxylic Acid Esters; Acid Anhydrides; Acid Halides.	12-14-66*
HIGH POLYMER CHEMISTRY, PLASTICS AND MOLDING; GROUP 140—L. J. BERCOVITZ, Director Synthetic Resins; Rubber; Proteins; Macromolecular Carbohydrates; Mixed Synthetic Resin Compositions; Synthetic Resins With Natural Polymers and Resins; Natural Resins; Reclaiming; Pore-Forming; Compositions (Part) e.g.: Coating; Molding; Ink; Adhesive and Abrading Compositions; Molding, Shaping, and Treating Processes.	4-27-67
COATING AND LAMINATING, BLEACHING, DYEING AND PHOTOGRAPHY, GROUP 160—A. P. KENT, Director Coating; Processes and Misc. Products; Laminating Methods and Apparatus; Stock Materials; Adhesive Bonding; Special Chemical Manufactures; Special Utility Compositions; Bleaching; Dyeing and Photography.	2-24-67
SPECIALIZED CHEMICAL INDUSTRIES AND CHEMICAL ENGINEERING, GROUP 170—W. B. KNIGHT, Director Fertilizers; Foods; Fermentation; Analytical Chemistry; Reactors; Sugar and Starch; Paper Making; Glass Manufacture; Gas; Heating and Illuminating; Cleaning Processes; Liquid Purification; Distillation; Preserving; Liquid and Solid Separation; Gas and Liquid Contact Apparatus; Refrigeration; Concentrative Evaporators; Mineral Oils Apparatus; Misc. Physical Processes.	2-13-67
ELECTRICAL EXAMINING GROUPS	
INDUSTRIAL ELECTRONICS AND RELATED ELEMENTS, GROUP 210—W. S. COLE, Director Generation and Utilization; General Applications; Conversion and Distribution; Heating and Related Art Conductors; Switches; Miscellaneous.	1-22-68
SECURITY, GROUP 220—S. BOYD, Director Ordnance, Firearms and Ammunition; Radar, Underwater Signalling, Directional Radio, Torpedoes, Seismic Exploring, Radio-Active Batteries; Nuclear Reactors, Powder Metallurgy, Rocket Fuels; Radio-Active Material.	12-27-66*
INFORMATION TRANSMISSION, STORAGE AND RETRIEVAL, GROUP 230—J. F. COUCH, Director Communications; Multiplexing Techniques; Facsimile; Data Processing, Computation and Conversion; Storage Devices and Related Arts.	1-13-67
ELECTRONIC COMPONENT SYSTEMS AND DEVICES, GROUP 250—W. L. CARLSON, Director Semi-Conductor and Space Discharge Systems and Devices; Electronic Component Circuits; Wave Transmission Lines and Networks; Optics; Radiant Energy; Measuring.	7-17-67
PHYSICS, GROUP 280—R. L. EVANS, Director Photography; Sound and Lighting; Indicators and Optics; Measuring and Testing; Geometrical Instruments.	11-30-67
DESIGNS, GROUP 290—S. BOYD, Director Industrial Arts; Household, Personal and Fine Arts.	12-03-68
MECHANICAL EXAMINING GROUPS	
HANDLING AND TRANSPORTING MEDIA, GROUP 310—A. BERLIN, Director Conveyors; Hoists; Elevators; Article Handling Implements; Store Service; Sheet and Web Feeding; Dispensing; Fluid Sprinkling; Fire Extinguishers; Coin Handling; Check Controlled Apparatus; Classifying and Assorting Solids; Boats; Ships; Aeronautics; Motor and Land Vehicles and Appurtenances; Railways and Railway Equipment; Brakes; Rigid Flexible and Special Receptacles and Packages.	4-04-68
MATERIAL SHAPING, ARTICLE MANUFACTURING, TOOLS, GROUP 320—N. BERGER, Director Manufacturing Processes, Assembling, Combined Machines, Special Article Making; Metal Deforming; Sheet Metal and Wire Working; Metal Fusion—Bonding, Metal Founding; Metallurgical Apparatus; Plastics Working Apparatus; Plastic Block and Earthenware Apparatus; Machine Tools for Shaping or Dividing; Work and Tool Holders Woodworking; Tools; Cutlery; Jacks.	12-05-67*
AMUSEMENT, HUSBANDRY, PERSONAL TREATMENT, INFORMATION, GROUP 330—A. RUEGG, Director Amusement and Exercising Devices; Projectors; Animal and Plant Husbandry; Butchering; Earth Working and Excavating; Fishing, etc.; Tobacco; Artificial Body Members; Dentistry; Jewelry; Surgery; Toiletry; Printing; Typewriters; Stationery; Information Dissemination.	1-03-68
HEAT AND POWER ENGINEERING, GROUP 340—C. F. GAREAU, Director Power Plants; Combustion Engines; Fluid Motors; Pumps; Turbines; Heat Generation and Exchange; Refrigeration; Ventilation; Drying; Vaporizing; Temperature and Humidity Regulation; Machine Elements; Power Transmission.	7-12-68
FIXED CONSTRUCTIONS, SUPPORTS, AND HARDWARE, GROUP 350—T. J. HICKEY, Director Joints; Fasteners; Rod, Pipe and Electrical Connectors; Miscellaneous Hardware; Locks; Building Structures; Closure Operators; Bridges; Closures; Earth Engineering; Drilling; Mining; Furniture; Receptacles; Supports; Cabinet Structures.	6-25-68
TEXTILES, CLEANING AND FLUID HANDLING, GROUP 360—F. H. BRONAUGH, Director Fluid Handling, including Valves; Conduits; Filling Receptacles; Lubrication; Joint Packing; Bathroom Fixtures; Centrifugal Separators; Cleaning; Coating; Pressing; Agitating; Foods; Textiles; Apparel and Shoes and their Manufacture; Sewing Machines; Winding and Reeling.	2-12-68

Total number of pending applications (excluding Designs)	184,774
Total number of Design applications pending	3,050

Expiration of patents: The patents within the range of numbers indicated below expire during September 1969, except those which may have expired earlier due to shortened terms under the provisions of Public Law 690, 79th Congress, approved August 8, 1946 (60 Stat. 940) and Public Law 619, 83rd Congress, approved August 23, 1954 (68 Stat. 764), or which may have had their terms curtailed by disclaimer under the provisions of 35 U.S.C. 253. Other patents, issued after the dates of the range of numbers indicated below, may have expired before the full term of 17 years for the same reasons, or have lapsed under the provisions of 35 U.S.C. 151.

Patents	Numbers 2,608,687 to 2,612,638, inclusive
Plant Patents	Numbers 1,124 to 1,135, inclusive

DECISIONS IN PATENT AND TRADEMARK CASES

U.S. Court of Customs and Patent Appeals

IN RE CHARLES D. PRATER AND JAMES WEI

No. 7987. Decided August 14, 1969

[56 CCPA —; — F.2d —; — USPQ —]

1. APPEAL TO U.S. COURT OF CUSTOMS AND PATENT APPEALS—MATTER BEFORE COURT—GROUND OF REJECTION NOT DISCUSSED BY BOARD—RULE 196(a).

"The Board did not specifically comment in regard to the 101–112 rejection of the process claims, apparently affirming the Examiner. See Rule 196(a), United States Patent Office Rules of Practice."

2. CLAIM—CONSTRUCTION OF CLAIMS—MENTAL PROCESS.

"* * * as we view appellants' position, they do not regard the appealed claims, when read in the light of the specification, as *covering* a purely mental process or a mental process coupled with pencil and paper markings, nor do they seek such claim coverage."

3. PATENTABILITY—PROCESS—MENTAL PROCESS—*In re Abrams* CONSTRUED.

"The court [in *In re Abrams*] referred to Abrams' specification in interpreting the steps of the claims, but Abrams had disclosed no means whatever for performing, without human intervention, two claimed steps of calculation and comparison. No analog device for carrying out the steps was disclosed in the Abrams specification; and at the time Abrams filed (April 28, 1944), general-purpose digital computers were still in the future. Thus, Abrams disclosed and claimed a process which could only be performed in the mind insofar as the teachings of the application were concerned. *Abrams* therefore presents a significant difference from the factual situation in the present case in which the teachings of the specification provide a full disclosure of at least analog apparatus for carrying out the claimed steps *without requiring any steps to be performed in the human mind.*"

4. SAME—SAME—SAME—*In re Yuan* CONSTRUED.

"*Yuan*, decided about a month after *Abrams*, contained the following oft-quoted statement: 'This court has deemed it to have been thoroughly established by decisions of various courts that *purely* mental steps do not form a process which falls within the scope of patentability as defined by statute.' [Emphasis added.] But, as appellants point out. 'Yuan's *disclosure* was the use made of equations by pencil-and-paper with the mind of the operator at work to interpret the results.' Again, as in *Abrams*, insofar as the disclosure was concerned, the process (or the critical step thereof) was one that *required* the use of the human mind—indeed, a *purely* mental process or step."

5. SAME—SAME—*Cochrane* v. *Deener* CONSTRUED.

"[*Cochrane* v. *Deener*] * * * has sometimes been misconstrued as [stating] a 'rule' or 'definition' requiring that all processes, to be patentable, must operate physically upon substances. Such a result misapprehends the nature of the passage quoted as dictum, in its context, and the question being discussed by the author of the opinion. To deduce such a rule from the statement would be contrary to its intendment which was *not to limit* process patentability *but to point out that a process is not limited to the means used in performing it.*"

6. SAME—PROCESS AND APPARATUS—OPERATION OF A PROGRAMMED GENERAL PURPOSE DIGITAL COMPUTER.

"No reason is now apparent to us why, based on the Constitution, statute, or case law, apparatus *and* process claims broad enough to encompass the the operation of a programmed general-purpose digital computer are necessarily unpatentable. In one sense, a general-purpose digital computer may be regarded as but a storeroom of parts and/or electrical components. But once a program has been introduced, the general-purpose digital computer becomes a special-purpose digital computer (i.e., a specific electrical circuit with or without electro-mechanical components) which, along with the process by which it operates, may be patented subject, of course, to the requirements of novelty, utility, and non-obviousness. Based on the present law, we see no other reasonable conclusion."

7. CLAIM—CONSTRUCTION OF CLAIMS—RESORT TO SPECIFICATION.

"* * * appellants urge that claim 9 cannot be read in a vacuum but instead must be read in the light of the specification. We agree."

8. SAME—SAME—SAME—READING LIMITATIONS OF SPECIFICATION INTO CLAIMS.

"* * * 'reading a claim in the light of the specification,' to thereby interpret limitations explicitly recited in the claim, is a quite different thing from 'reading limitations of the specification into a claim,' to thereby narrow the scope of the claim by implicitly adding *disclosed* limitations which have no express basis in the claim. This distinction is difficult to draw and is often confused by courts; but it is even more difficult for attorneys, attempting to work within the framework of the former, not to cross over into the latter."

9. SAME — BROADER THAN DISCLOSURE — PROCESS — DISCLOSURE OF MACHINE-IMPLEMENTED PROCESS—35 U.S.C. 112.

"Inasmuch as claim 9 * * * reads on subject matter for which appellants do not seek coverage [a mental process augmented by pencil and paper markings] and therefore tacitly admit to be beyond that which 'applicant regards as his invention,' we feel that the claim fails to comply with 35 U.S.C. 112 which requires that '[t]he specification shall conclude with one or more claims particularly pointing out and distinctly claiming *the subject matter which the applicant regards as his invention.*' [Emphasis added.] This is true notwithstanding appellants' *disclosure* of a *machine-implemented* process."

10. SAME—SAME—DIFFERENT CONSTRUCTION ACCORDED PATENT AND APPLICATION CLAIMS.

"There are quite sound reasons why, in an infringement suit on an issued patent, courts may sometimes 'interpret patent claims in the light of the specification' so as to protect only that phase of the claimed invention that constitutes patentable subject matter and thus do justice and equity between the parties. However, this court has consistently taken the tack that claims yet unpatented are to be given the broadest reasonable interpretation consistent with the specification *during the examination of a patent application* since the applicant may then *amend* his claims, the thought being to reduce the possibility that, after the patent is granted, the claims may be interpreted as giving broader coverage than is justified. * * * We are not persuaded by any sound reason why, at any time before the patent is granted, an applicant should have limitations of the specification read into a claim where no express statement of the limitation is included in the claim."

11. SAME — CONSTRUCTION OF CLAIMS — BROADER THAN DISCLOSURE — MENTAL PROCESS — WORDS AND PHRASES — "GENERATING PHYSICAL REPRESENTATIONS"—35 U.S.C. 112.

"Having given careful consideration to appellants' additional arguments concerning the proper interpretation to be given to claims 1, 6–8, 12, and 17–21, we feel that the rejection must nevertheless be affirmed. 'Generating physical representations' appears to us to be broad enough, *even* when read in the light of the specification, to encompass pencil and paper markings which a mathematician might make in documenting or recording his mental calculations. Hence, since appellants do not seek such broad coverage * * * we think that claims 1, 6–8, 12, and 17–21 must also fail under 35 U.S.C. 112 for the reasons expressed with regard to claim 9; with respect to those claims also, the Board's decision is *affirmed.*"

12. PATENTABILITY—APPARATUS—OBVIOUSNESS—35 U.S.C. 103.

"Apparatus claim 10 presents quite a different question and, in our view, requires a different answer. As we see it, the underlying statutory basis for the rejection of apparatus claim 10 is 35 U.S.C. 103 which precludes the grant of a patent if and only if 'the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art.' Appellants' discovery * * * is, it seems to us, part of *their contribution to the art.* On that basis, appellants' discovery should be considered as part of *'the subject matter as a whole'* and *not* part of the prior art. It is conceded by the Patent Office that that discovery is both new and unobvious. Thus, *based on the record before us*, we do not perceive any reasonable basis for concluding that 'the subject matter as a whole,' as defined by apparatus claim 10, would have been obvious at the time of appellants' invention."

13. SAME—SAME—SAME—COMPUTER.

"We have carefully considered the basic position of the Patent Office that it would be obvious to program a general-purpose digital computer to practice

appellants' invention and that apparatus claim 10 reads on such a computer, as well as the disclosed analog device. We find that position fatally defective in that it, in effect, assumes the existence *as prior art* of appellants' discovery that the relationship indicative of error amplification 'is related to, and may be expressed in terms of, the determinants of the subsets of equations, the determinant of largest magnitude indicating the subset of equations involving least error amplification.' Perhaps today, *after* reading appellants' disclosure, the public dissemination of which the patent system fosters and encourages, it might be obvious to program a general-purpose digital computer to practice the invention. But 35 U.S.C. 103 requires an analysis of the prior art *at the time the invention was made* to determine whether the invention was obvious. * * * Assuming the existence, at the time of the invention, of general-purpose digital computers as well as typical programming techniques therefor, it is nevertheless plain that appellants' invention, as defined in apparatus claim 10, was not obvious under 35 U.S.C. 103 because one not having knowledge of appellants' discovery simply would not know what to program the computer to do."

14. WORDS AND PHRASES—"MEANS"—MEANS PLUS FUNCTION DOES NOT ENCOMPASS HUMAN BEING.

"We do not perceive of any 'mental steps' issue in regard to apparatus claim 10. It is quite clear that claim 10, in typical means-plus-function language as expressly permitted by the third paragraph of 35 U.S.C. 112, does not encompass the human being as the 'means' or any part thereof. * * * The pencil, paper, and ruler—referred to by the Board in regard to 35 U.S.C. 102—do *not* anticipate the claimed 'means' since the former additionally require human manipulation."

APPEAL from Patent Office. Serial No. 155,236.

MODIFIED.

Woodcock, Phelan & Washburn, Virgil E. Woodcock (*James H. Littlepage, O. G. Hayes, D. Carl Richards, Richard E. Kurtz, James F. Powers, Jr.*, of counsel) for appellants.

Morton C. Jacobs, Jacobs & Cohen, amici curiae.

W. Brown Morton, Jr., amicus curiae.

D. D. Allegretti, Bair, Freeman & Molineare, amicus curiae.

Joseph Schimmel (*Jere W. Sears*, of council) for the Commissioner of Patents.

Before WORLEY, *Chief Judge*, MCGUIRE, *Judge*, sitting by designation, RICH, ALMOND and BALDWIN, *Associate Judges*

BALDWIN, *J.*, delivered the opinion of the court.

This appeal was originally argued [1] before this court [2] on May 9, 1968, and decided [3] on November 20, 1968. On petition of the Commissioner of Patents, a rehearing was granted by this court [4] on January 16, 1969, under the provisions of Rule 7 of this court. Briefs were filed,[5] and the case was reargued [6] before this court [7] on March 3, 1969. This supersedes the decision and opinion of November 20, 1968, although various portions of the latter are repeated herein without specific reference thereto.

[1] In addition to the principal parties' oral arguments and briefs, Bell Telephone Laboratories, Incorporated (Bell Labs), the real party in interest in Patent Appeal No. 8216, filed a brief amicus curiae.

[2] Consisting of Chief Judge Worley and Judges Rich, Smith, Almond, and Kirkpatrick, Senior District Judge, Eastern District of Pennsylvania, sitting by designation.

[3] Reversed, with opinion authored by the late Judge Smith and joined by Judges Rich and Almond. Judge Kirkpatrick concurred in the result, and Chief Judge Worley did not participate in the merits of the decision. *In re Prater*, 56 CCPA —, — F.2d —, 159 USPQ 583 (1968). The decision was handed down the day Judge Smith died.

[4] Consisting of Chief Judge Worley and Judges Rich, Almond, Baldwin, and Kirkpatrick, Judge Rich dissenting with an opinion in which Judge Almond joined. *In re Prater*, 56 CCPA —, — F.2d —, 160 USPQ 230 (1969).

[5] In addition to new briefs of the principal parties and Bell Labs, International Business Machines Corporation (IBM) and Honeywell Inc. (Honeywell) filed briefs amicus curiae, and Applied Data Research, Inc. (Applied Data) and the Association of Independent Software Companies (Software Association) filed a brief amici curiae.

[6] The principal parties argued the appeal. All of the amici curiae, with the exception of Honeywell, presented brief oral arguments.

[7] Consisting of Chief Judge Worley and Judges Rich, Almond, Baldwin, and McGuire, Senior District Judge, District of Columbia, sitting by designation.

This appeal is from the Patent Office Board of Appeals decision affirming the Examiner's rejection of claims 1, 6–10, 12, and 17–21, all of the claims in appellants' application,[8] based solely upon considerations of law and statutory construction.[9] No prior art references have been cited.

THE INVENTION

The invention includes both a method [10] and apparatus [11] for the processing, or analysis, of conventionally obtained spectrographic data to produce a quantitative spectrographic analysis of a qualitatively-known mixture, for example a mixture of gases, by which the unknown component concentrations may be determined with minimum error. The raw spectrographic data is conventionally obtained in the form of a spectrogram, typically a continuous trace having a plurality of peaks. By conventional techniques, there may be derived for each peak an independent first order linear algebraic equation relating the peak height to the unknown component concentrations. Typically however, there are more peaks from which equations may be derived than are required to solve for the unknown component concentrations; that is, a set of equations, greater in number than the number of components, may be derived from the spectrogram.[12] From that set, any subset of equations, equal in number to the number of components, may be selected [13] to solve for the concentrations.[14] The selected subset of equations may then be conventionally solved to produce a quantitative analysis.

Appellants have made a discovery which lies at the heart of their invention. Appellants have discovered: (1) that the different subsets of equations result in varying degrees of undesired "error amplification" in transforming the spectrographic data involving peak heights to the desired concentrations; [15] (2) that there exists a certain relationship indicative of such error amplification; and (3) that that relationship is related to, and may be expressed in terms of, the determinants of the subsets of equations, the determinant of largest magnitude indicating the subset of equations involving least error amplification. "As far as this record shows, this discovery was new and un-

[8] Serial No. 155,236, filed November 20, 1961, for "Reduction of Data from Spectral Analysis," allegedly a continuation-in-part of Serial No. 49,921, filed August 16, 1960, now abandoned. The real party in interest appears to be Mobil Oil Corporation, formerly Socony Mobil Oil Company, Inc.

[9] 35 U.S.C. 101, 102, 103, and 112 are the relevant sections of the statute.

[10] Claims 1, 6–9, 12, and 17–21 are directed to the "method," or "process." See 35 U.S.C. 100(b) and 35 U.S.C. 101.

[11] Claim 10 is directed to the "apparatus," or its statutory counterpart "machine," the terms being synonymous and used interchangeably here. See 35 U.S.C. 101.

[12] The set of equations is of the general form:

$$Y_1 = a_{11}x_1 + a_{12}x_2 + a_{13}x_3 \ldots a_{1m}x_m$$
$$Y_2 = a_{21}x + a_{22}x_2 + a_{23}x_3 \ldots a_{2m}x_m$$
$$\vdots$$
$$Y_n = a_{n1}x_1 + a_{n2}x_2 + a_{n3}x_3 \ldots a_{nm}x_m,$$

where

$Y_1, Y_2 \ldots Y_n$=peak heights of peaks 1, 2 . . . n, respectively, of the spectrogram,
$x_1, x_2, x_3 \ldots x_m$=concentrations of components 1, 2, 3 . . . m, respectively, present in the mixture,
$a_{11}, a_{12}, a_{13} \ldots a_{nm}$=constant coefficients representing the contribution that each component 1, 2, 3 . . . m, respectively, makes to the height of each peak 1, 2 . . . n, and n and m are both integers, n being larger than m.

[13] "For example, [states the specification,] in a spectrogram obtained from the analysis of a 10-component mixture in which there are 20 peaks from which to choose, there are 184,756 possible subsets of 10 equations available."

[14] Of course, if the spectrographic data were error-free, or exactly 100% accurate, then each subset of equations would yield the same concentration values. However, any electrical measuring instrument, including the spectrograph, has some degree of error in it and cannot produce error-free data. Thus, a variety of concentration values may be produced by the different subsets of equations.

[15] "Error *amplification*," which occurs in the data *analysis* is not to be confused with the *measurement* error discussed in n. 14, supra, or the magnitude of the latter. So it is that the mere use of the peaks having the most accurate heights *per se* does not ensure the most accurate concentration values.

obvious." [16] Prior to appellants' work, there was no systematic method for, or means of, selecting the subset of equations generating least error amplification.

Thus, based on their discovery, appellants have invented a method, within the otherwise conventional spectral analysis method, for selecting the optimum peaks providing that particular subset of equations least susceptible to error amplification. The essence of the method is finding the subset of equations having the largest determinant amongst all the possible subsets that might be chosen. Applicants have also disclosed in detail a machine [17] for carrying out their invention. While the disclosed method and apparatus are described by reference to a special-purpose analog device, such device is visualized by appellants as but one device having the inherent capabilities to perform the desired functions; and it is disclosed that a general-purpose digital computer might also be used.[18]

Claims 9 and 17 are typical of the method claims and read:

9. In mass spectrographic analysis where, from a given sample of material there is generated a spectrum function having peaks therein spaced along a mass scale with respect to which the relationship between concentration, contribution factor of each of the m constituents of the mixture and the magnitude of each of the n peaks in said spectrum is represented by a set of m linear algebraic equations and where n is an integer greater than m, *the method of selecting for analysis a set of m peaks least susceptible to error in concentration determination* which comprises

dividing each said *contributing factor* for each peak *by a normalizing function*,

successively generating a determinant function for each said set of peaks,

successively generating output indications of the magnitudes of said determinant functions, and

selecting therefrom the determinant function of greatest magnitude for identification of said peaks least susceptible to error. [Emphasis added.]

17. The *method of determining* with minimum error from the spectra of spectral analysis *the concentration of the components of a mixture* where the components are known and the concentration-determining peaks of the spectral analysis are present in number exceeding the number of said components, which comprises

generating physical representations of the magnitudes of the coefficients of simultaneous linear equations defining the concentrations of said components as functions of the heights of said peaks of said spectral analysis,

generating from said physical representations of the magnitudes of said coefficients *the magnitude of the determinant* of a plurality of sets of said simultaneous equations, the number of equations of each of said sets being equal in number to the number of said components,

comparing said physical representations of *the magnitudes of said determinants* of said sets of equations *for identification of the set* of said equations *whose determinant has the largest magnitude*, and

generating physical representations of the concentration of each said component of said mixture from said physical representations of the magnitudes of said coefficients *of said set* of simultaneous equations *having said determinant of largest magnitude* and from said heights of said peaks included in said last-named set of equations. [Emphasis added.]

[16] So stated the Board after it quoted from the Examiner's answer that:

> Appellants have discovered that those sets of simultaneous equations having the largest determinants are among those sets which can be solved with greatest accuracy. * * *

Indeed, the Solicitor has not controverted the novelty or non-obviousness of appellants' discovery.

[17] As disclosed in the specification, the machine includes a battery-energized motor which drives the armatures of ganged rotary switch sections through a mechanical linkage. The motor is stopped when the solenoid of a relay is energized by the amplified output of a photocell which scans an oscilloscope screen and is responsive to a maximum signal appearing thereon. The signals produced on the oscilloscope screen correspond to the magnitude of the determinants of the several subsets of equations, and are brought together on the screen within the view of the photocell. Movement of the photocell downwardly across the face of the oscilloscope is accomplished by the aforementioned motor via a gear box; and, when the photocell photo-electrically senses the upper end of a determinant trace, its electrical response is amplified and it energizes the relay to stop the motor. At this point, the machine has identified the "determinant of greatest magnitude." Stopping of the motor simultaneously stops operation of the motor-driven rotary switches, and the values of the circuits which are established at that point are displayed on meters. The meter readings reveal the component concentrations.

The various mathematical coefficients to be dealt with in utilizing appellants' method are represented in the disclosed machine by various voltages in various circuits. In this manner, the coefficients of the relevant mathematical equations appear as electro-mechanical elements in appellants' machine.

The specification sets forth in detail the electrical and mechanical components of this machine and their respective functions to relate the constant coefficients inherent in the present invention to a step in the method and to a means in the machine which directly performs the functions which underlie the present invention. The specification describes the operation of the machine in relation to the mathematical content of the invention and points out that, as the motor rotates the armatures of the ganged rotary switch banks through pre-set positions, the values of the determinants for the subsets represented by the positions can be ascertained.

[18] The specification states that "the flexibility of a digital computer lends itself to the solution of problems of the type above described and in most instances represents an instrumentality preferred for the carrying out of the method of the present invention." Nevertheless, no program for a general-purpose digital computer, either in block diagram or machine language form, has been disclosed.

Claim 10, the only machine claim, reads:

10. In spectrographic analysis where, from a given mixture of m constituents, spectral functions having peaks therein are obtained and wherein the relationships between the concentrations of said constituents and the peaks in said function correspond to relationships in a set of linear simultaneous equations, *the system for selecting* from said functions *the combination of m* of the *n peaks* therein *least susceptible to error in concentration determination*, where n is an integer greater than m, which comprises

means for generating a scalar function representative of the determinant for a first set of said equations corresponding with a first set of peaks in number equal to m,

means for generating successive scalar functions each representative of a determinant for sets of equations corresponding with different sets of m of said peaks, and

means for determining that one of said scalar functions of greatest magnitude for identification of said combination of m of the n peaks least susceptible to error. [Emphasis added.]

THE EXAMINER'S REJECTION AND BOARD'S AFFIRMANCE

PROCESS CLAIMS

In his answer, the Examiner restated the rejection of the process claims for failure to comply with 35 U.S.C. 101, 102, and 112. He preliminarily reasoned: (1) that, if the invention is within a statutory class of patentable subject matter under 35 U.S.C. 101, it must be as a "process"; (2) that the appealed process claims are readable upon a *mental* process with the only physical limitation being the generation of physical representations, which may be merely pencil markings on paper; and (3) that processes having only mental novelty are unpatentable because they are outside the statutory "process" class, citing *In re Abrams*, 38 CCPA 945, 188 F.2d 165, 89 USPQ 266 (1951). The answer continued:

> At this point the rejection can take alternative forms, depending upon an apparently unsettled point of law, i.e., whether a claim is unpatentable if it reads on non-statutory subject matter in addition to statutory subject matter. The first form is under 35 U.S.C. 101 and 102, and the second form is under 35 U.S.C. 101 and 112.

Under 35 U.S.C. 101 and 102

The Examiner argued that, if a claim is readable on subject matter outside the statutory classes, then the claim is unpatentable under 35 U.S.C. 101, it being irrelevant that the claim can also be read on subject matter within the statutory classes. The Examiner felt that each of the present process claims can be read on mental calculations with the appropriate mathematics *and*, as the only physical steps, writing on paper. The Examiner held that, to the extent that those claims re-

quire anything physical, they are fully met under 35 U.S.C. 102 by the process of making marks on paper. The Examiner concluded that the only *novel* subject matter recited in the claims must reside in the calculations which are outside the statutory classes of 35 U.S.C. 101 and which, therefore, may not patentably distinguish the claims over the process of marking on paper. Thus, the claims were rejected under 35 U.S.C. 101 and 102.

In regard to the Examiner's 101–102 rejection, the Board held that the process claims "do not fall within the statutory definition of a process as that term has been interpreted by the Courts over the years," citing *In re Yuan*, 38 CCPA 967, 188 F.2d 377, 89 USPQ 324 (1951) and *Cochrane* v. *Deener*, 94 U.S. 780. The Board further stated:

> It * * * [is] beside the point that the solution of the mathematical problem can be done by machine. The claims have set forth nothing which cannot be performed purely as a mental exercise using appellants' discovery that the equations having the largest determinant are the ones to use.

Under 35 U.S.C. 101 and 112

Under the 101–112 rejection, the Examiner assumed that a claim is within the statutory classes of 35 U.S.C. 101 if it is readable on subject matter within that section, even if it can also be read on subject matter outside that section. The Examiner argued, however, that, if a claim covers or reads on subject matter outside the statutory classes, as well as subject matter within the statute, then the claim fails to particularly point out and distinctly claim the invention as required by 35 U.S.C. 112. That is, said the Examiner, a reasonable interpretation of the process claims makes them appear to cover subject matter outside the statutory classes of patentable subject matter under 35 U.S.C. 101, and claims which read literally on unpatentable subject matter do *not* particularly point out and distinctly claim the subject matter which applicants regard as their invention as required by 35 U.S.C. 112.

[1] The Board did not specifically comment in regard to the 101–112 rejection of the process claims, apparently affirming the Examiner. See Rule 196(a), United States Patent Office Rules of Practice.

APPARATUS CLAIM

The rejection of apparatus claim 10 was also in two forms.

Under 35 U.S.C. 101, 102, and 103

The Examiner noted that, in addition to reading on appellants' disclosed analog embodiment, claim 10 may also be read on a properly programmed general-purpose digital computer. He argued that, having the principle of mathematics, which is unpatentable under 35 U.S.C. 101 even though discovered by appellants, it would be obvious under 35 U.S.C. 103 to program a general-purpose digital computer which is old under 35 U.S.C. 102, such a computer having been known and in public use more than a year before appellants filed. Since, in the Examiner's view, a properly programmed digital computer is thus not patentable to appellants, claim 10 was rejected under 35 U.S.C. 101, 102, and 103.

The Board viewed claim 10 as generally an apparatus counterpart of claim 17 and thus considered claim 10 unpatentable, citing *In re Yuan*, supra. That is, so held the Board, the sole novelty in claim 10 resides in the mathematical computations which are themselves nonstatutory subject matter under 35 U.S.C. 101. Furthermore, the Board felt that the physical "means" could be, and are anticipated under 35 U.S.C. 102 by, such commonplace means as pencil, paper, and ruler, since the essential novelty of the claim is in the mathematical calculations.

Moreover, the Board found that the essence of the rejection of claim 10 is that it defines nothing more than a general-purpose digital computer programmed to perform the required mathematical operations and that the programming would be obvious under 35 U.S.C. 103. The Board agreed that such a machine would be obvious.

Under 35 U.S.C. 101, 102, 103, and 112

Here, the Examiner argued that claim 10 does not particularly point out and distinctly claim appellants' invention as required by 35 U.S.C. 112 since, in addition to reading "on a device (the analog embodiment) to which they *are* entitled to coverage" (emphasis added), the claim also covers or reads on a properly programmed general-purpose digital computer on which appellants are *not* entitled to coverage for the reasons set forth above.

The Board did not specifically address itself to the 101–102–103–112 rejection of claim 10, again apparently affirming the Examiner.

THE SOLICITOR'S POSITION

The Solicitor, in his original brief, stated that:

> the Patent Office contends that all of the method claims read on a mathematician's use of pencil and paper, and that the "means" of apparatus claim 10 may correspond to those implements along with a ruler.
>
> * * * Both the Examiner and the Board were concerned over the *breadth of the claims*,[19] while conceding that appellants' discovery was apparently new and unobvious. [Emphasis added.]

APPELLANTS' POSITION

In their original brief under the heading "The Facts Support Patentability," appellants contended that:

> (1) They have made a discovery which has advanced the useful arts, one which the Board found to be "new and unobvious."
> (2) They have developed a process for utilizing their discovery.
> (3) They have invented a machine which makes possible the utilization of their discovery without human intervention.
> (4) They have disclosed that their process, evolved from their discovery, may be practiced by a properly programmed general-purpose computer without human intervention.
> (5) In the absence of prior art—and no references are relied upon by the Examiner or by the Board—all tests of patentability have been met.

Appellants further contended that the decisions relied upon below, namely, *In re Abrams*, supra, *In re Yuan*, supra, and *Cochrane* v. *Deener*, supra, are not here applicable. Appellants have not argued against the soundness of the *results* reached in those cases or of the so-called "mental steps" doctrine (i.e., the non-patentability of mental

[19] Directing himself at rehearing to appellants' allegation that they have *disclosed* a statutory invention, the Solicitor orally stated, "Nobody questions that. The Examiner conceded it, and the Board has conceded [it]. But the question is, what do the claims define?"

processes) as it may be based upon the Constitution,[20] statutes, or case law, as they interpret them; rather they seek to distinguish the present case from the earlier cases and the "mental steps" doctrine, as interpreted by appellants.

Appellants point out that in both *Abrams* and *Yuan*, as contrasted with the present case, there was not disclosed a machine or apparatus for carrying out the invention automatically and without human intervention. Appellants argue that, where no such completely automated machine or apparatus has been disclosed, it is quite reasonable that certain steps of a process might be considered purely mental in nature. On the other hand, appellants urge that their *disclosure* of apparatus for carrying out the invention without human intervention precludes the process or any part thereof from being considered purely mental. In summary, they think that neither *Abrams* nor *Yuan* supports the proposition that a claim, limited to a process performed by apparatus *by construing the claim in the light of the specification*, is unpatentable simply because the process might conceivably also be carried out within the human mind without the apparatus. **[2]** Thus, as we view appellants' position, they do not regard the appealed claims, when read in the light of the specification, as *covering* a purely mental process or a mental process coupled with pencil and paper markings, nor do they seek such claim coverage.[21]

Insofar as *Cochrane* v. *Deener* is concerned, appellants urge that that case represented a reaffirmation or an extension, as opposed to limitation, of the subject matter which may be patented. Appellants feel that *Cochrane* v. *Deener* merely made it clear that a broad area of invention *may* be protected by *process* claims, not limited to any special arrangement of machinery, and that the decision did not set forth the metes and bounds of subject matter for which process claims may be granted.

As to the *apparatus claim*, appellants argue that it matters not whether the claim reads on a general-purpose digital computer, properly programmed to perform their invention. They urge that they are entitled to such protection inasmuch as such a properly programmed general-purpose digital computer was neither old nor obvious at the time of appellants' invention.

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[20] The Solicitor, in his petition for rehearing, argues that "the grant of a patent containing process claims of such breadth as to confer upon a patentee the right to exclude others from thinking in a certain manner" would run afoul of the First, Ninth, and Tenth Amendments to the Constitution. He urges that Article I, Section 8 must be construed in the light of the other constitutionally assured rights and that freedom of mind or thought may not be abridged by the patent laws. However, amicus Bell Labs points out "that a claim may verbally read on that which does not infringe without being itself invalid for that reason alone." Bell Labs notes, first, that the *breadth* of a claim may be judicially restricted so as to be no broader than the actual invention when the claim is read in connection with the specification, suggesting that no court would hold purely mental activity to be an *infringement* even though the claim may "read on" such mental activity; second, that no court would construe purely mental activity to be structure or acts equivalent to the present machine and its function as described in the specification, 35 U.S.C. 112, third paragraph; and, third, that purely mental activity would not be infringement since there would be no harm to the patentee, an essential element for any tort. In Bell Labs' view, *freedom of mind or thought would not necessarily be abridged by the grant of a patent with claims broad enough to read on mental processes.* As will be seen, we find it unnecessary to further discuss this aspect of the case.

[21] In their objections to the grant of the petition for rehearing, appellants stated that this court had not held "that a disclosure of thought processes by way of equations and the like in the absence of any machine, system or apparatus making use of them would be patentable." Appellants go on:

> [T]he mere fact that a claim absent the disclosure is broad enough to read upon a pencil and paper execution is not *per se* a reason why that claim should be rejected. This does not say that a monopoly is in that way granted upon a pencil and paper execution. * * * Infringement is never determined by the language of the claim divorced from the disclosure.

In the same paper, appellants stated that they "have not urged * * * that any claim will be infringed by one sitting at a desk and making mental calculations. There is no such thing as mental infringement." In fact, appellants argue that "Thought Is Still Unpatentable."

Appellants' reply to IBM's amicus brief states that they "have contended all along that the meaning to be deduced from appellants' specification, as well as the dictionary, suggests that the method claims do not cover purely mental operations."

OPINION

PROCESS CLAIMS

We are in agreement with appellants that this case is not *controlled* by *Abrams*, *Yuan*, or *Cochrane* v. *Deener*, as we view those cases. Insofar as we can determine, this is a case of first impression in that the claims in a *mechanical*, as distinguished from chemical, case have been rejected because of their breadth, notwithstanding that no prior art reference has been cited *and* that the claims read on admittedly patentable statutory subject matter disclosed in the specification.

A more exhaustive analysis of *Abrams* may be found in Judge Smith's previous opinion, supra; however, for the present purposes, *Abrams* need not be discussed in such depth. In *Abrams*, no prior art reference was cited in the application entitled "Petroleum Method," the claims being rejected as failing to define subject matter properly within the terms of R.S. 4886, the precursor of 35 U.S.C. 101 and 102, in that "the steps in the claims which constitute the heart of the invention are purely mental in character."

[3] The court referred to Abrams' specification in interpreting the steps of the claims, but Abrams had disclosed no means whatever for performing, without human intervention, two claimed steps of calculation and comparison. No analog device for carrying out the steps was disclosed in the Abrams specification; and at the time Abrams filed (April 28, 1944), general-purpose digital computers were still in the future. Thus, Abrams disclosed and claimed a process which could only be performed in the mind insofar as the teachings of the application were concerned. *Abrams* therefore presents a significant difference from the factual situation in the present case in which the teachings of the specification provide a full disclosure of at least analog apparatus for carrying out the claimed steps *without requiring any steps to be performed in the human mind.*

[4] *Yuan*, decided about a month after *Abrams*, contained the following oft-quoted statement:

> This court has deemed it to have been thoroughly established by decisions of various courts that *purely* mental steps [22] do not form a process which falls within the scope of patentability as defined by statute.[23] [Emphasis added.]

But, as appellants point out, "Yuan's *disclosure* was the use made of equations by pencil-and-paper with the mind of the operator at work to interpret the results." Again, as in *Abrams*, insofar as the disclosure was concerned, the process (or the critical step thereof)

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[22] "*Purely* mental steps" are considered to be steps which may only be performed in, or with the aid of, the human mind. This is quite in contrast to "*purely* physical steps" which may only be performed by physical means, machinery, or apparatus. *Purely* mental steps (e.g., "believing") are quite different from *purely* physical steps (e.g., "heating") in many respects, not the least of which is that the former are much less susceptible to specific definition or delineation. Between the *purely* mental and *purely* physical ends of the spectrum there lies an infinite variety of steps that may be either machine-implemented or performed in, or with the aid of, the human mind (e.g., "comparing" and "determining"). In ascertaining whether a particular step is "mental" or "physical," each case must be decided on its own facts, considering all of the surrounding circumstances, to determine which end of the spectrum that step is nearer. It may well be that the step of "comparing" may be "mental" in one process, yet "physical" in another. *Disclosure* of apparatus for performing the process without human intervention may make out a *prima facie* case that the *disclosed* process is not mental and is, therefore, statutory. See Kayton, Patent Protectability of Software: Background and Current law, in The Law of Software 1968 Proceedings B–25 (1968). Here, of course, the patentability of the *disclosed* process is not in question; but that is not to say that the *claims* delinate a patentable process.

[23] At the time *Abrams* and *Yuan* were decided, the Patent Act of 1952, under which we decide this case, was still in the future. Couched in terms of the present statute, it may well be that today *purely* mental steps are unpatentable because *purely* mental steps may, at present, be too vague and indefinite to comply with 35 U.S.C. 112. See n. 22, supra. Whether or not a sequence of *purely* mental steps comes within the bounds of "process" as used in 35 U.S.C. 100 and 101 is, we feel, an issue which has never been squarely decided.

was one that *required* the use of the human mind—indeed, a *purely* mental process or step.

That a process was an "art" capable of being patented was already considered beyond dispute [24] in *Cochrane* v. *Deener*, involving a process or method of manufacturing flour. The issue was infringement, the defendant performing the process using apparatus of somewhat different construction from that disclosed by the patentee. The Supreme Court found the patent valid and infringed. In the course of its opinion, the Court produced the following, often-quoted passage of dictum:

> A process is a mode of treatment of certain materials to produce a given result. It is an act, or a series of acts, performed upon the subject matter to be transformed and reduced to a different state or thing. If new and useful, it is just as patentable as a piece of machinery. In the language of the patent law, it is an art. The machinery pointed out as suitable to perform the process may or may not be new or patentable; whilst the process itself may be altogether new, and produce an entirely new result. The [Cochrane] process requires that certain things should be done with certain substances, and in a certain order; but the tools to be used in doing this may be of secondary consequence.

[5] This passage has sometimes been misconstrued as a "rule" or "definition" requiring that all processes, to be patentable, must operate physically upon substances. Such a result misapprehends the nature of the passage quoted as dictum, in its context, and the question being discussed by the author of the opinion. To deduce such a rule from the statement would be contrary to its intendment which was *not to limit* process patentability *but to point out that a process is not limited to the means used in performing it.*[25] See *In re Ernst*, 21 CCPA 1235, 71 F.2d 169, 22 USPQ 28 (1934).

Thus, it is clear that this case is not controlled by *Abrams*, *Yuan*, or *Cochrane* v. *Deener*. However, we do not feel that the distinction which appellants have very clearly pointed out is entitled to the significance which they would attribute thereto. Appellants feel that, since they have *disclosed* apparatus for performing the process wholly without human intervention and since they are seeking coverage only for the machine-implemented process,[26] they have avoided the so-called "mental steps" doctrine. Although in view of our decision here we find it unnecessary to analyze and/or review in depth the so-called "mental steps" doctrine, it would appear that the *disclosure* of apparatus for performing the process wholly without human intervention merely shows that the *disclosed* process does not fall within the so-called "mental steps" exclusion.[27] Of course, we have already pointed out that there is no dispute, as between the principal parties, that appellants have *disclosed* a patentable statutory process.

However, that is quite another question from the one before us, namely, whether appellants are entitled to claims of the breadth of those they seek here. As already noted, we view appellants' position to be that they are *not* seeking patent coverage of any purely mental process or any mental process coupled only with pencil and paper markings,[28] but they *are* seeking coverage of the operation of a properly programmed general-purpose digital computer performing their

[24] "That a process may be patentable, irrespective of the particular form of the instrumentalities used, cannot be disputed." *Cochrane* v. *Deener*, 94 U.S. 780, 787. The word "art" appeared in the statute then in force and the word "process" did not. See R.S. 4886.

[25] Further expansion of the law relating to process patentability followed shortly after in *Tilghman* v. *Proctor*, 102 U.S. 707 (1880) and *The Telephone Cases*, 126 U.S. 1, (1887). See also *Smith* v. *Snow*, 294 U.S. 1, 24 USPQ 26 (1935) and *Waxham* v. *Smith*, 294 U.S. 34, 24 USPQ 34 (1935), and the analyses thereof in Judge Smith's previous opinion, supra.

[26] See n. 21, supra.

[27] See Kayton, Patent Protectability of Software: Background and Current Law, in The Law of Software 1968 Proceedings B–25 (1968).

[28] See n. 21, supra, and text associated therewith.

process,[29] as well as that of an analog device of the type disclosed. Appellants feel that they are entitled to a claim of the scope of claim 9 since, *when read in the light of the specification*, claim 9 does not cover a mental process. As to the other method claims, appellants feel "that generation of physical representations is conventional language in a step to be performed by a machine and absent any function of the mind in its performance," "that a physical representation includes more than mental operations," and that "[t]his takes it away from the purely mental concept."

Claim 9

With respect to claim 9, the broadest claim, appellants acknowledged in their original brief that:

> *Viewed apart from appellants' disclosure* this claim is broad enough to cover the method if practiced by the use of pencil and paper by an operator, the operator directing the pencil. Such a person may divide each contributing factor by a normalizing function. He may solve for the value of the determinant for each set of equations. He may compare the results to select the set of equations having the greatest determinant for identification of that set of equations least susceptible to error. [Emphasis added.]

[7] However, appellants urge that claim 9 cannot be read in a vacuum but instead must be read in the light of the specification. We agree.

[8] Nevertheless, "reading a claim in the light of the specification," to thereby interpret limitations explicitly recited in the claim, is a quite different thing from "reading limitations of the specification into a claim," to thereby narrow the scope of the claim by implicitly adding *disclosed* limitations which have no express basis in the claim. This distinction is difficult to draw and is often confused by courts; but it is even more difficult for attorneys, attempting to work within the framework of the former, not to cross over into the latter.

In our view, appellants would really like us to read a limitation of the specification into the claims, not merely interpret the claims in the light of the specification. When read in the light of the specification, claim 9 *does* read on a mental process augmented by pencil and paper markings. We find no express limitation in claim 9 which, even when interpreted in the light of the specification, would support the conclusion that the claim is limited to a "machine process" or "machine-implemented process." This is particularly important in this case since the Board noted that, in their brief before the Board, appellants acknowledged that "[t]hough not practical for most of the needed applications, their method, theoretically, can be practiced by hand."

[9] Inasmuch as claim 9, thus interpreted, reads on subject matter for which appellants do not seek coverage, and therefore tacitly admit to be beyond that which "applicant regards as his invention," we feel that the claim fails to comply with 35 U.S.C. 112 which requires that "[t]he specification shall conclude with one or more claims particularly pointing out and distinctly claiming *the subject matter which*

[6] [29] No reason is now apparent to us why, based on the Constitution, statute, or case law, apparatus *and* process claims broad enough to encompass the operation of a programmed general-purose digital computer are necessarily unpatentable. In one sense, a general-purpose digital computer may be regarded as but a storeroom of parts and/or electrical components. But once a program has been introduced, the general-purpose digital computer becomes a special-purpose digital computer (i.e., a specific electrical circuit with or without electro-mechanical components) which, along with the process by which it operates, may be patented subject, of course, to the requirements of novelty, utility, and non-obviousness. Based on the present law, we see no other reasonable conclusion.

the applicant regards as his invention." [Emphasis added.] This is true notwithstanding appellants' *disclosure* of a *machine-implemented* process. **[10]** There are quite sound reasons why, in an infringement suit on an issued patent, courts may sometimes "interpret patent claims in the light of the specification" so as to protect only that phase of the claimed invention that constitutes patentable subject matter and thus do justice and equity between the parties.[30] However, this court has consistently taken the tack that claims yet unpatented are to be given the broadest reasonable interpretation consistent with the specification *during the examination of a patent application* since the applicant may then *amend* his claims, the thought being to reduce the possibility that, after the patent is granted, the claims may be interpreted as giving broader coverage than is justified.[31] *In re Sweet*, 55 CCPA 1191, 393 F.2d 837, 157 USPQ 495 (1968); *In re Soderquist*, 51 CCPA 969, 326 F.2d 1016, 140 USPQ 387 (1964); *In re Tibbals*, 50 CCPA 1260, 316 F.2d 955, 137 USPQ 565 (1963); *In re Henatsch*, 49 CCPA 915, 298 F.2d 955, 132 USPQ 445 (1962); *In re Lundberg*, 44 CCPA 909, 244 F.2d 543, 113 USPQ 530 (1957); *In re Kebrich*, 40 CCPA 780, 201 F.2d 951, 96 USPQ 411 (1953). We are not persuaded by any sound reason why, at any time before the patent is granted, an applicant should have limitations of the specification read into a claim where no express statement of the limitation is included in the claim.

Thus, with respect to claim 9, appellants have not particularly pointed out and distinctly claimed the subject matter which they regard as their invention as required by 35 U.S.C. 112, it therefore being unnecessary for us to consider 35 U.S.C. 101 or its applicability here. Accordingly, the Board's decision as to claim 9 is *affirmed*.

Claims 1, 6–8, 12, and 17–21

Claim 17, supra, is representative of the claims falling within this group.

In arguing that claims 1, 6–8, 12, and 17–21 do not read on a purely mental process or a mental process coupled with pencil and paper marking, appellants further advise us that: Webster's Third New International Dictionary (1964) defines "physical" in the sense: ". . . of or relating to natural or material things as opposed to things mental, moral, spiritual, or imaginary . . ."

[11] Having given careful consideration to appellants' additional arguments concerning the proper interpretation to be given to claims 1, 6–8, 12, and 17–21, we feel that the rejection must nevertheless be affirmed. "Generating physical representations" appears to us to be broad enough, *even* when read in the light of the specification, to encompass pencil and paper markings which a mathematician might make in documenting or recording his mental calculations. Hence, since appellants do not seek such broad coverage as hereinbefore discussed, we think that claims 1, 6–8, 12, and 17–21 must also fail under 35 U.S.C. 112 for the reasons expressed with regard to claim 9; with respect to those claims also, the Board's decision is *affirmed*.

[30] By construing a claim as covering only patentable subject matter, courts are able, in appropriate cases, to hold claims valid in order to protect the inventive concept or the inventor's contribution to the art. The patentee *at that time* usually may not amend the claims to obtain protection commensurate with his actual contribution to the art.

[31] This thought, in the public interest, is deemed to be paramount to an applicant's interest, since the applicant is not foreclosed from obtaining the proper coverage by express claim language.

APPARATUS CLAIM

[12] Apparatus claim 10 presents quite a different question and, in our view, requires a different answer. As we see it, the underlying statutory basis for the rejection of apparatus claim 10 is 35 U.S.C. 103 which precludes the grant of a patent if and only if "the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art." Appellants' discovery, discussed in the second paragraph under the heading "The Invention," supra, is, it seems to us, part of *their contribution to the art*. On that basis, appellants' discovery should be considered as part of "*the subject matter as a whole*" and *not* part of the prior art. It is conceded by the Patent Office that that discovery is both new and unobvious. Thus, *based on the record before us*, we do not perceive any reasonable basis for concluding that "the subject matter as a whole," as defined by apparatus claim 10, would have been obvious at the time of appellants' invention.

[13] We have carefully considered the basic position of the Patent Office that it would be obvious to program a general-purpose digital computer to practice appellants' invention and that apparatus claim 10 reads on such a computer, as well as the disclosed analog device. We find that position fatally defective in that it, in effect, assumes the existence *as prior art* of appellants' discovery that the relationship indicative of error amplification "is related to, and may be expressed in terms of, the determinants of the subsets of equations, the determinant of largest magnitude indicating the subset of equations involving least error amplification."[32] Perhaps today, *after* reading appellants' disclosure, the public dissemination of which the patent system fosters and encourages, it might be obvious to program a general-purpose digital computer to practice the invention. But 35 U.S.C. 103 requires an analysis of the prior art *at the time the invention was made* to determine whether the invention was obvious. *Graham* v. *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966). Assuming the existence, at the time of the invention, of general-purpose digital computers as well as typical programming techniques therefor, it is nevertheless plain that appellants' invention, as defined in apparatus claim 10, was not obvious under 35 U.S.C. 103 because one not having knowledge of appellants' discovery simply would not know what to program the computer to do. See *Ex parte King*, 146 USPQ 590 (Pat. Off. Bd. App. 1964).

[14] We do not perceive of any "mental steps" issue in regard to apparatus claim 10. It is quite clear that claim 10, in typical means-plus-function language as expressly permitted by the third paragraph of 35 U.S.C. 112, does not encompass the human being as the "means" or any part thereof. Cf. *Brown* v. *Davis*, 116 U.S. 234 (1886); *Republic Iron & Steel Co.* v. *Youngstown Sheet & Tube Co.*, 272 F. 386 (6th Cir. 1921); *Permutit Co.* v. *Village of Poynette*, 61 F. Supp. 305, 66 USPQ 294 (W.D. Wisc. 1945) aff'd per curiam 158 F.2d 799, 72 USPQ 463 (7th Cir. 1947); *Wilcox* v. *Danner*, 19 CCPA 802, 53 F.2d 711, 12 USPQ 16 (1931); *Mabon* v. *Sherman*, 34 CCPA 991, 161 F.2d 255, 73 USPQ 378 (1947). The pencil, paper, and ruler—referred to by the Board in regard to 35 U.S.C. 102—do *not* anticipate

[32] See the second paragraph under the heading "The Invention," supra.

the claimed "means" since the former additionally require human manipulation.

Accordingly, the Board's decision as to claim 10 is *reversed.*

SUMMARY

As to claims 1, 6–9, 12, and 17–21, the Board's decision is *affirmed;* as to claim 10, the Board's decision is *reversed.*

MODIFIED.

WORLEY, *Chief Judge*, concurring.

The court is indebted to counsel for the respective parties and amici curiae for the able and earnest fashion in which they have, in both argument and briefs, presented their understandably diverse positions.

One of the more interesting points raised is how far Congress intended to go in conferring patentable status on mental steps as they are intertwined in computer programs generally. It is questionable whether prior decisions denying patentability of purely mental steps, or the statute, read singly or together, can support a broad rule either sanctioning or prohibiting the patentability of such steps in relation to computer programs. Where the line will be drawn can only be determined on a case by case basis in building, as best we can, sound and intelligible precedent. While I agree here with the results reached by my colleagues I do not necessarily subscribe to all that is said.

Congress, of course, had no way of knowing in 1952 what lay in the test tube then or what would become a reality tomorrow. But it devised a statute—a model of legislative craftsmanship and foresight—broad enough to anticipate and nourish the technological explosion we have witnessed. Our patent system is a delicate balance of interests; it protects the fruits of the extraordinary efforts it demands of inventors compatibly with the public interest. It has largely fostered the favorable climate resulting in the tremendous strides this country has made in reaching the pinnacle in the worldwide competition in the arts and sciences—from atomic energy to antihistamines, computers to catalysts, lasers to lunar landings.[33]

So it is with no little surprise and concern that one learns of proposed patent "reforms." I can appreciate, from my own Congressional experience, the difficulty of enacting legislation acceptable to all concerned. However, after having dealt with the patent statutes, particularly the 1952 Patent Act, for nearly 20 years as a member of this court, I have grave misgivings concerning the desirability or need for any substantive change in a system that has worked so well in following the constitutional mandate "to promote the Progress of Science and useful Arts."

[33] Reminiscent of an old timer's lament that he was just beginning to grasp the principle of the flashlight when along came radio.

U.S. Court of Customs and Patent Appeals

IN RE ROBERT G. WOOLERY

No. 8020. Decided January 16, 1969

[56 CCPA —; 405 F.2d 896; 160 USPQ 331]

1. PATENTABILITY—EVIDENCE—COMPARATIVE TESTS—PRIOR ART PROCESS NOT FOLLOWED—RULE 132.

"Appellant's Rule 132 affidavit *at first glance* appears to show that use of appellant's 'high purity' asbestos in the manufacture of paper gives results superior to those obtained using asbestos prepared according to the Novak process; upon closer scrutiny, however, we find a number of serious defects which render this affidavit totally unpersuasive. The most serious of these defects, and the only one we need discuss, is that the asbestos compared with appellant's 'high purity' asbestos was prepared in a manner *contrary* to Novak's teachings. Whereas Novak makes it abundantly clear that the amount of surface active agent used in his process should be just sufficient to result in the formation of an *unstable* colloidal dispersion of asbestos fibers which will revert to a 'minimal clotted' state, appellant's affidavit expressly refers to the use of an amount of surface active agent sufficient 'to obtain a *stable* dispersion.' [Emphasis added.] Furthermore * * * appellant omitted * * * [Novak's] cleaning step."

2. SAME — PARTICULAR SUBJECT MATTER — "CELLUOSIC PAPER CONTAINING ASBESTOS."

The refusal of certain claims in an application entitled "Cellulosic Paper Containing Asbestos," as unpatentable over the prior art, is affirmed.

APPEAL from Patent Office. Serial No. 432,382.

AFFIRMED.

Lawrence G. Kastriner (*Paul A. Rose*, of counsel) for appellant.

Joseph Schimmel (*Joseph F. Nakamura*, of counsel) for the Commissioner of Patents.

Before WORLEY, *Chief Judge*, RICH, SMITH, ALMOND, and BALDWIN, *Associate Judges*

RICH, *J.*, delivered the opinion of the court.

This appeal is from the decision of the Patent Office Board of Appeals affirming the rejection of claims 1–18 of application Serial No. 432,382, filed February 12, 1965, entitled "Cellulosic Paper Containing Asbestos." No claim has been allowed.

The invention relates to the manufacture of paper comprising primarily cellulosic fiber and using in addition a material which appellant refers to as "high purity" asbestos and defines as "chrysotile asbestos characterized by a specific surface area greater than 60 m.²/gm., a magnetite content less than 0.5 percent, a reflectance greater than 72 percent and a pulpability such that less than 1.0% of the asbestos is retained on a 65 mesh Tyler screen." As discussed in more detail below, use of this "high purity" asbestos in the manufacture of cellulosic paper, as compared to the use of "prior art" asbestos or no asbestos at all, is said to result in a number of improvements in the quality of the paper and in the manufacturing process.

Claim 1 is representative of the claims on appeal:

1. A paper furnish composition suitable for the preparation of non-woven paper sheets comprising:
(*a*) an aqueous dispersion of cellulosic paper-making fibers, and
(*b*) from about 0.5 to 30 percent by weight, based on the weight of the cellulosic fibers, of high purity chrysotile asbestos characterized by a specific surface area greater than 60 m.²/gm., a magnetite content less than 0.5 percent, a reflectance greater than 72 percent, and a pulpability such that less than 1.0 percent of the asbestos is retained on a 65 mesh Tyler screen.

Claims 6 and 14 are also independent claims drawn, respectively, to a process of manufacturing paper using the composition of claim 1 and a paper sheet obtained by this process. Claims 2–5, 7–10 and 15–18 are ultimately dependent on claims 1, 6, and 14, respectively, and recite "sizing," a "rubbery latex binder," or a "non-fibrous inorganic filler" as additional paper-making ingredients. Claims 11 and 12 are independent claims drawn to two preferred embodiments of the process wherein a pre-mixed, "high-purity" asbestos composition containing a dye (claim 11) or containing a nonfibrous inorganic filler (claim 12)

is added to an otherwise conventional paper furnish composition prior to depositing the furnish on a paper-making screen. Claim 13 is dependent on claim 12 and recites a specific filler, titanium dioxide.

The only issue we find it necessary to consider is whether or not the claimed invention is obvious within the meaning of 35 U.S.C. 103 in view of prior art and therefore unpatentable. Four United States patents were relied on by the Examiner:

Greenman et al., 2,698,788, Jan. 4, 1955.
Schur et al., 2,733,720, Feb. 7, 1956.
Poelman et al., 3,034,981, May 15, 1962.
Novak, 3,062,701, Nov. 6, 1962.

The Examiner rejected all claims on Novak *alone*, certain claims were *alternatively* rejected on Schur *alone*, and several claims were further rejected on Novak in view of Poelman or Greenman. We need not discuss Schur because Novak is clearly the more relevant of the two primary references. Since Poelman and Greenman were cited solely to show the use of latex with asbestos fiber compositions, and since appellant, in his application and in his brief, admits that this use of latex was known in the art, it is also unnecessary for us to discuss these two references or the rejections based on their combination with Novak.

The only remaining reference, Novak, discloses a method of opening the tight fiber bundles of milled chrysotile asbestos into unit fibers and discloses the use of these fibers as an additive in cellulosic paper. The milled asbestos is opened by agitation in water containing a controlled amount of a surface active agent. There is obtained a dispersion of unit fibers which, upon standing, reverts to a "minimal clotted" state. Novak states that "Such minimal clotted asbestos fiber body may then be readily diluted to any desired degree in the paper-making process and added at a point in the beater where the paper-making adjuvants, such as alum, sizing, and the like are introduced."
Novak asserts that this method of obtaining unit asbestos fibers is preferred to grinding and beating milled asbestos to very small bits, lengthwise and in diameter, because it provides longer fibers of more uniform diameter.

The Examiner observed that Novak shows the combination of cellulosic fibers and unit asbestos fibers and took the position that it would be obvious to one skilled in the art to substitute other unit asbestos fibers for those used by Novak. The Board affirmed the decision of the Examiner stating, inter alia:

> Since * * * Novak * * * disclose[s] the use of asbestos fibers in papermaking, it would have been obvious to a person of ordinary skill in this art to employ a subsequently discovered or developed improved form of asbestos fibers for the same purpose with the expectation of obtaining improved results.

With reference to a Rule 132 affidavit filed by appellant, the Board said:

> * * * it appears that the advantages urged are those which would be expected to flow from the substitution of a "high purity" asbestos for any of those previously employed.

Appellant acknowledges "that asbestos has long been used as an additive to cellulosic paper * * *." [1] However, he says that attempts

[1] The following definition appears in appellant's application: The term "paper" is used throughout the specification and claims of this disclosure in its generic sense to include any non-woven, felted fibrous sheet, including but not restricted to bond, wrapping, tissue, printing, wall and backing paper, as well as cardboard, wallboard, millboard, and the like.

to use "prior art asbestos" [2] in the better grades of paper, such as white writing paper, have presented a number of problems such as lumping, coarseness, black specks, and gray coloration. The lumping and coarseness, appellant says, are caused by "flakes and bundles of unrefined or unopened asbestos fibers" which "not only give the paper an unsightly appearance, but * * * [give] it a rough uneven surface which causes uneven dye and ink receptivity." This lumping and coarseness is said to prevent the use of prior art asbestos even in brown wrapping paper. With respect to the problems of black specks and gray coloration, resulting from the use of "prior art asbestos," appellant's specification states:

> Prior art asbestos has not been used successfully in the manufacture of white paper, for several reasons, among them being its low (below 70%) reflectance level. * * *
>
> It is to a great extent the presence of magnetite particles that renders prior art asbestos grey rather than white, which is the color of highly purified asbestos. Magnetite occurs in most chrysotile asbestos deposits as a hard black crystalline material. Its presence is highly detrimental in a paper furnish, since it causes black specks to appear in the paper, lowers its reflectance, and due to its abrasiveness causes excessive wear on paper-making screens and printing plates. [3]

Appellant has discovered that all these problems can be avoided by utilizing an asbestos having a higher reflectance, lower magnetite content, higher specific surface area, and lower pulpability than the "prior art" asbestos; the magnitude of the differences between "high purity" asbestos and "[two] types of the closest *commercially available* * * * chrysolite asbestos" (emphasis added) is shown in Table I, infra, from appellant's specification.

TABLE I.—COMPARATIVE PHYSICAL PROPERTIES OF ASBESTOS FIBERS

Type of Asbestos	Percent reflectance	Percent Magnetite	Specific Surface Area, m.²/gm.	Pulpability Percent +65 mesh
Canadian Chrysotile	55–70	3.5–4.8	19–31	10–20
Conventional Coalinga Chrysotile	60–64	1.0–3.0	55–59	10–67
High Purity Coalinga Chrysotile	72–78	0.04–0.5	60–80	0.25–1.0

The higher purity (higher reflectance and lower magnetite content [4]) of "high purity" asbestos eliminates the problems of grayness and black specks; the smaller particle size (higher specific surface area) eliminates coarseness; and the low incidence of unopened fiber bundles (low pulpability) eliminates lumping. Also, examples in appellants' specification demonstrate that, compared to the use of *no asbestos* in the manufacture of paper, "high purity" asbestos improves retention of cellulosic fibers, fillers, and latex as water is eliminated from the paper furnish composition; the asbestos is said to "act like a filter" which catches the other ingredients and is also said to *attract* inorganic fillers such as titanium dioxide.

[2] This expression, as used by appellant and as used herein, refers to "commercially available" asbestos such as that compared with appellant's "high purity" asbestos in Table, I, infra, and does not include asbestos obtained by the Novak process.
[3] It is pertinent to point out that appellant does not assert that the art failed to recognize these causes of lumping, coarseness, black specks, and grayness.
[4] Appellant's brief states:

> Perhaps the Board was misled by the term "high purity" asbestos and assumed from this convenient label that appellant's asbestos product was simply more pure than "prior art" asbestos. Reference to the specific, critical and unique characteristics or limitations will show that only one of the four limitations is related to purity, namely ***magnetite content***. The other three limitations, surface area, reflectance, and pulpability have no direct relationship to purity. [Emphasis quoted.]

Appellant's specification, however, belies these assertions, viz:

> The significantly greater ***purity*** of the asbestos essential in this invention is demonstrated by its improved reflectance ***and*** magnetite content. [Emphasis added.]

Appellant acknowledges that patentability of all of the appealed claims rests only on one ground, the use of "high purity" asbestos. The issue of non-obviousness may therefore be reduced to the following: would one of ordinary skill in the art, at the time appellant's invention was made, have considered it obvious to use an asbestos having the characteristics of "high purity" asbestos in the manufacture of cellulosic paper with the expectation of obtaining improved results which appellant has shown to be possible. In view of the specific teachings of Novak referred to below, we are convinced that he would.

Regarding the desirability of using an asbestos which has a high surface area and is free of unopened fiber bundles, Novak says:

> Surface area determinations have indicated that the area of a given weight of my unit asbestos fibers is at least five times that of milled asbestos fiber. Since the increase in the number of fibers is at least five times the increase in surface area as a bundle of fibers is opened to its unit fibers, there must be at least 25 times as many fibers in a given weight of my fibers as in milled fiber. This is responsible for the much greater smoothness, softness, and uniformity of asbestos papers made from these opened fibers. This also accounts for the much greater efficiency of these fibers in separating cellulose fibers from each other when used with cellulose fibers in cellulose paper making.
>
> The softness and inertness of asbestos fiber has been desired as a modifier of the relatively harsher cellulose fibers, but combinations have been unsatisfactory because of the *same coarseness and ununiform fiber character* that exists in commercial asbestos paper. Bits of *unopened asbestos fiber* that might be tolerated in the latter, *would be fatal to the expected uniformity of cellulose papers.* * * * my opened fiber in slurry form is as smooth and uniform as a well-made cellulose paper making slurry, and can therefore be used therewith in any desired proportion to provide its characteristic properties to the composite of fibers. [Emphasis added.]

Regarding "cleanliness and fineness," Novak also teaches that "undesirable oversize or foreign particle material content" should be removed from the unit asbestos fibers by "screening, straining, centrifuging, etc.," the colloidal suspension. Novak further discloses that unit asbestos fibers aid in the retention of "powdered materials such as pigments, fillers, resins or other modifying agents" because of entanglement of the latter in the former, and further discloses that titanium dioxide particles are strongly *attracted* to unit asbestos fibers when the two materials are in a dispersion.

Comparing the differences between appellant's "high purity" asbestos and the "prior art" asbestos (other than Novak's, note 2 supra) we thus find the desirability of each difference taught in Novak, namely low foreign material particle content (high reflectance and low magnetite content), high surface area, and relative absence of unopened fiber bundles (low pulpability). We also find teachings that unit asbestos fibers aid in the retention of other paper-making ingredients by way of entanglement and even find a teaching that unit asbestos fibers attract titanium dioxide particles.

Appellant maintains that Novak does not render obvious the use of "high purity" asbestos because suspensions of unit asbestos fibers produced by the Novak process contain a surface active agent and because of the final product of the Novak process is in a minimal clotted state. These arguments, however, are not well taken since both of the differences referred to relate only to the Novak process and product and do not in any way detract from the teachings of the importance of using, in cellulose paper making, an asbestos in the unit fiber state, free of unopened fiber bundles, and free of foreign particles. In short, we think that one skilled in the art having used a "prior art" asbestos

in the manufacture of, for example, white writing paper and having obtained a coarse, lumpy, black-speck-containing, gray product, would be led by the Novak teachings to use a cleaner, finer asbestos free of oversize particles and black-speck-causing materials. To us it appears that appellant has at best found that an asbestos of optimum cleanliness, fineness, and uniformity will give the expected results. We appreciate that production of such an asbestos on a commercial scale might be very difficult indeed; but that fact does not render nonobvious the use of that asbestos in paper making.[5]

[1] Appellant's Rule 132 affidavit *at first glance* appears to show that use of appellant's "high purity" asbestos in the manufacture of paper gives results superior to those obtained using asbestos prepared according to the Novak process;[6] upon closer scrutiny, however, we find a number of serious defects which render this affidavit totally unpersuasive. The most serious of these defects, and the only one we need discuss, is that the asbestos compared with appellant's "high purity" asbestos was prepared in a manner *contrary* to Novak's teachings. Whereas Novak makes it abundantly clear that the amount of surface active agent used in his process should be just sufficient to result in the formation of an *unstable* colloidal dispersion of asbestos fibers which will revert to a "minimal clotted" state, appellant's affidavit expressly refers to the use of an amount of surface active agent sufficient "to obtain a *stable* dispersion." [Emphasis added.][7] Furthermore, although Novak teaches that "Bits of unopened asbestos fiber that might be tolerated * * * [asbestos paper], would be fatal to the expected uniformity of cellulose papers * * *" and that "During the evanescent colloidal periods it was possible to clean the fibers by screening, straining, centrifuging, etc., *to remove undesirable oversize or foreign particle material* content, and then allow the slurry to break [revert to the "minimal clotted" state] on further standing or mixing * * *" [emphasis added], appellant omitted this cleaning step. It is therefore no wonder to us that the paper produced from the Novak asbestos (*as prepared by appellant*) was coarse and ununiform and contained dark specks and asbestos fiber agglomerates.

[2] The decision of the Board is affirmed.

AFFIRMED.

WORLEY, *Chief Judge*, took no part in the decision of this case.

Judge Smith participated in the hearing of this case but died before a decision was reached.

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[5] Appellant has not contended that one skilled in the art would have difficulty producing such an asbestos at least on a laboratory scale.

[6] Superior results, of course, are not necessarily unexpected.

[7] Novak discloses that, if a suspension of "minimal clotted" asbestos fibers is diluted with water, there results a "smooth slurry of small, fluffy clots of fiber," whereas, if a colloidal dispersion of asbestos fibers is diluted with water, the fiber form "strings or clots of jellylike character." Such dilution occurs when the suspension or dispersion of asbestos fibers is added to aqueous suspensions of other papermaking ingredients.

U.S. Court of Customs and Patent Appeals

RICHARD C. LOSHBOUGH *v.* KENNETH C. ALLEN

No. 8243. Decided January 9, 1969

[56 CCPA —; 404 F.2d 1400; 160 USPQ 204]

1. APPEAL TO U.S. COURT OF CUSTOMS AND PATENT APPEALS—JURISDICTION—WRIT OF MANDAMUS.

"Thorough consideration of Loshbough's petition and all the arguments made orally and in the briefs leads us to the conclusion that this court is

vested with authority to issue a writ of mandamus in aid of its jurisdiction in appeals from the tribunals of the Patent Office."

2. SAME—SAME—WRITS IN AID OF JURISDICTION—28 U.S.C. 1651(a).

"We * * * observe that 28 U.S.C. 1651(a) * * * applies to this court as to all courts established by Act of Congress, specifically authorizing the issuance of all writs necessary or appropriate in aid of our jurisdiction."

3. SAME—SAME—WRIT OF MANDAMUS—INTERFERENCE—28 U.S.C. 1651(a).

"* * * consideration of the provisions of 28 U.S.C. 1651(a) in the light of the facts compels the conclusion that a writ of mandamus is not appropriate here. More particularly, it is apparent that the writ which Loshbough seeks [requiring that the Commissioner direct supension of the interference and a hearing on patentability of the counts] is not 'necessary or appropriate' in aid of the court's jurisdiction in the priority appeal. Thus the Board's determination on the second remand that the Swedish patent does not amount to a bar to the grant of a patent as to 'at least' count 5 and that a recommendation under Rule 259 is not justified changes the situation from that prevailing prior to that remand. It is now apparent that, on the record before us, the appeal to the court from the Board's priority decision is established as not moot but as involving an issue of priority which now clearly can be determined in a judicial manner. It is further apparent that determination of priority in the interference as at present constituted will be determinative of priority as to any more limited claims supported by the disclosures of both parties, including the substitute count proposed in Allen's motion. *In re Risse*, 54 CCPA 1495, 378 F.2d 948, 154 USPQ 1."

4. SAME—MATTER BEFORE COURT—INTERFERENCE—COURT DOES NOT CONSIDER PATENTABILITY IN INTERFERENCE PROCEEDING.

"That the court does not consider patentability in determining appeals from decisions of the Board of Patent Interferences on priority is firmly established by many decisions, examples being *Glass* v. *De Roo*, 44 CCPA 723, 239 F.2d 402, 112 USPQ 62; *Loukomsky* v. *Gerlich*, 46 CCPA 805, 264 F.2d 907, 121 USPQ 213; *Taylor* v. *Ambrose*, 51 CCPA 1454, 332 F.2d 567,141 USPQ 807, and *Anderson* v. *Scinta*, 54 CCPA 1269, 372 F.2d 523, 152 USPQ 584."

APPEAL from Patent Office. Interference No. 93,427.

DENIED.

Owen & Owen, *Carl F. Schaffer* (*Allen Owen*, *Vincent L. Barker*, *Jr.*, of counsel) for appellant.

Marechal, *Biebel*, *French & Bugg*, *Lawrence B. Biebel* (*Nathaniel R. French*, *Mario A. Martella*, of counsel) for appellee.

Joseph Schimmel for the Commissioner of Patents.

Before WORLEY, *Chief Judge*, RICH, SMITH, ALMOND, and BALDWIN, *Associate Judges*

ALMOND, *J.*, delivered the opinion of the court.

On Petition for Writ of Mandamus

The matter here before us is related to an appeal by Loshbough from the decision of the Board of Patent Interferences awarding priority to Allen in Interference No. 93,427 involving counts 1 through 5. It is not the merits of that appeal which we consider at this time but, instead, a Petition for Writ of Mandamus brought by Loshbough. The request for relief is couched in the following terms:

Richard C. Loshbough, appellant before this Court, hereby petitions that this Honorable Court issue a Writ of Mandamus to the Honorable Commissioner of Patents requiring that the Commissioner direct the appropriate official or tribunal within the Patent Office to suspend proceedings in Interference No. 93,427 and to afford the parties an opportunity to be heard on the question of patentability of present and proposed counts in order that further interference proceedings with respect to priority of invention will be directed to patentable subject matter.

As background, the Board rendered its decision on priority in the present case on October 29, 1965 and, on December 23, 1965, Allen filed before the Board a Motion to Amend and Suspend the Interference, requesting that the interference be amended by canceling therefrom all five counts, on which priority was awarded to him, and substituting a proposed new count. The basis for the motion was "the belief of the party Allen that the present counts do not adequately distinguish the patentable subject matter common to the disclosures of both parties," from Swedish Patent No. 173,332 which has an effective date of November 15, 1960 and is a statutory bar to both parties as to date. Allen stated that the motion was not brought during the motion period because Allen and his attorneys "were not advised of the disclosure of the Swedish patent until after the testimony of both parties had been completed." [1]

On December 27, 1965, Loshbough filed a Notice of Appeal to this court from the Board's decision on priority.

In a decision dated January 6, 1966, the Board stated that it was "bereft of jurisdiction" to consider Allen's motion by reason of the jurisdiction of the interference having been transferred to this court as the result of Loshbough's Notice of Appeal. Loshbough then, on January 21, 1966, petitioned the Commissioner of Patents to request the court to remand the case to the Patent Office for consideration of Allen's motion. The Assistant Commissioner denied the petition on February 3, 1966, holding that Allen had not made an adequate showing to excuse his failure to file the motion earlier [2] and taking the position that reopening the interference on the merits would not be in order for that reason even if the Patent Office did have jurisdiction.

Loshbough next filed a motion before the court for remand of the case to the Patent Office for consideration of Allen's motion on the merits. In a per curiam decision dated May 12, 1966, *Loshbough* v. *Allen*, 53 CCPA 1214, 359 F.2d 910, 149 USPQ 633, the court remanded the appeal to the Board of Patent Interferences "for that board to consider the motion pending before it, which it refused to consider because we had jurisdiction of the case, and to take whatever further action it may deem advisable."

The Board, on August 8, 1966, denied the Allen motion, holding that it had no authority to reform or redeclare the interference. The Board also observed that Loshbough had "filed nothing indicating his views on the merits" of the matters raised by Allen and noted "revelant statements" in the Assistant Commissioner's previous denial of the motion. Allen then filed a paper entitled "Petition to the Commissioner or for Reconsideration by the Board of Interference Examiners" in which he requested "action on Allen's motion to amend by the Commissioner or by the Primary Examiner" and that request was joined by Loshbough. The Assistant Commissioner, on September 19, 1966, denied that petition on the grounds that the Board had given such reconsideration as was required by the court's remand and that the Allen motion was not entitled to consideration on the merits for the reasons given in his previous decision. Loshbough then filed a second appeal to the court.

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[1] Allen has not stated more specifically when he was advised of the Swedish patent. However, the Board states in its first decision on remand, referred to hereinafter, that the records, testimony and exhibits on behalf of both parties were filed on March 1, 1965, at which time the testimony had of course been taken.

[2] The period for bringing motions to dissolve an interference as to existing counts and to add counts is set to expire prior to the time for taking testimony.

On January 3, 1967 Loshbough filed before the court a Motion of Appellant to Reverse and Remand. In *Loshbough* v. *Allen*, 54 CCPA 1113, 373 F.2d 747, 152 USPQ 812, the court denied that motion, but ruled:

> However, since further proceedings under Rule 259 appear necessary to a disposal of the present controversy in a judicial manner, the cases are remanded to the Board with the express direction that it take all necessary and appropriate action consistent with this opinion.

The court's opinion also quoted Rule 259 of the Rules of Practice of the Patent Office, reading:

> *259. Recommendation by Board of Patent Interferences.*—The Board of Patent Interferences may, either before or concurrently with their decision on the question of priority, but independently of such decision, direct the attention of the Commissioner to any matter not relating to priority which may have come to their notice, and which in their opinion establishes the fact that no interference exists, or that there has been irregularity in declaring the same, or which amounts to a bar to the grant of a patent to either of the parties for the claim or claims in interference. The Commissioner may suspend the interference and remand the case to the primary examiner for his consideration of the matters to which attention has been directed if such matters have not been considered before by the examiner, or take other appropriate action. If the case is not so remanded, the primary examiner will, after judgment on priority, consider such matters, unless the same shall have been previously disposed of by the Commissioner.

On May 5, 1967, the Board of Patent Interferences handed down a "Decision on Motion to Remand." There the Board observed that the opinion of the court remanding the case expressly stated that:

> * * * the Board should determine whether, "in their opinion," the Swedish patent "establishes the fact" that it "amounts to a bar to the grant of a patent to either of the parties," Rule 259.

Further observing that Allen has never "forthrightly and unequivocally asserted that the claims corresponding to the present counts are unpatentable to either party because barred by the Swedish patent" or applied the language of the claims to the disclosure of that patent "as would have been required of him in a motion timely filed within the usual motion period under Rule 232," and noting that Loshbough "has expressed no opinion on this matter" of patentability, the Board stated that "consistent with 'the orderly procedure' which the court characterized as 'vitally necessary * * * in the Patent Office,'" it believed "that the parties should have submitted unequivocal statements of their views with respect to the question of patentability of the present counts over the Swedish patent (No. 173,332), to aid us in the determination we are now called upon to make." The Board further stated:

> However, we have considered the case as it is now before us and we have exercised such discretion as the court has stated "must be exercised." We find that the Swedish Patent No. 173,332 does not establish (in the language of Rule 259) "the fact" that it "amounts to a bar to the grant of a patent to either of the parties" on the basis of at least one of the counts in interference, i.e. count 5. Accordingly, we would not be justified in making a recommendation to the Commissioner. The award of priority with respect to a patentable invention remains in effect and is adhered to.
>
> In summary, Allen's motion under consideration is granted to the extent that we have considered the merits thereof and have determined that a recommendation to the Commission under Rule 259 is not justified * * *.

It is at this point that the present Petition for Writ of Mandamus, filed March 29, 1968, appears in the chain of events. Upon being supplied with a copy of the petition by the court, the Commissioner brought a motion to intervene and that motion was granted by the court on April 22, 1968. The court subsequently, on September 3, 1968, set the case for oral argument on the petition, suggesting that the parties, in their briefs and oral arguments, discuss particularly the following questions:

> 1. Is the Writ of Mandamus which appellant seeks "necessary or appropriate" in the aid of the jurisdiction of the Court of Customs and Patent Appeals within the meaning of 28 U.S.C. 1651(a)? If so, what effect, if any, do the provisions of 35 U.S.C. 141–145 have on the issuance of the Writ of Mandamus?
>
> 2. Is the Writ of Mandamus which appellant seeks "agreeable to the usages and principles of law" within the meaning of 28 U.S.C. 1651(a)?
>
> 3. Is the Commissioner of Patents the proper party to whom the Writ of Mandamus should be directed? If so, does the Commissioner of Patents have the authority, by statute or otherwise, to direct the "appropriate official or tribunal within the Patent Office to suspend proceedings" in the subject interference?

The petition itself divides the issue it raises into three parts, urging that (1) the court has power to issue a writ of mandamus, (2) the interference should be suspended and the parties given an opportunity to be heard on the question of patentability of present and proposed counts prior to further proceedings, and (3) disposition of the case in a judicial manner requires that the court issue the requested writ of mandamus. In briefs and oral argument the Commissioner opposes granting the petition as does the party Allen.

Loshbough bases his position that this court has the power to issue a writ of mandamus on 28 U.S.C. 1651(a), which reads:

> The Supreme Court and all courts established by Act of Congress may issue all writs necessary or appropriate in aid of their respective jurisdictions and agreeable to the usages and principles of law.

He further asserts that it is "no longer disputed that this Court is an 'Article III—Constitutional Court' vested with full judicial powers," referring to the Act of Congress of August 25, 1958 (72 Stat. 848, 28 U.S.C. 211) which declares the United States Court of Customs and Patent Appeals "to be a court established under Article III of the Constitution of the United States." Loshbough additionally refers to "the companion case to *Glidden Company* v. *Zdanok*, 370 U.S. 530, 82 S. Ct. 1459 (1962), *Lurk* v. *United States*," and to *Brenner* v. *Manson*, 383 U.S. 519, in support of his position.

In arguing that the parties should be offered a further opportunity to be heard on the question of patentability of the present and proposed counts before the appeal on the board's priority decision is determined, Loshbough asserts that the record on priority is "complex and involved" and that the time of the court required to consider that record must be balanced against the "possible inconvenience" caused the Patent Office by the action he seeks. Loshbough also makes reference to the reasons advanced by the Patent Office for declining to act on the merits of Allen's motion but states that those reasons "ignore the substantive injustice done to the parties."

The Commissioner argues that the court lacks jurisdiction to issue the writ of mandamus *as sought here*. His reasoning is that (1) this court, like the federal circuit courts of appeal "has at most jurisdiction to issue mandamus in aid of its appellate jurisdiction" under 28 U.S.C. 1651(a), (2) the jurisdiction of this court in patent matters under 35 U.S.C. 141 through 144 does not extend to review of decisions *of the Commissioner*, and (3) the writ to the Commissioner requested here is not in aid of the court's appellate jurisdiction. The

Commissioner further argues that no injustice to the interference parties has been shown. He also states that, in view of the Board's holding as to count 5 in its decision on the second remand finding a recommendation under Rule 259 not to be called for, this court "need have no further concern as to moot issues of priority."

At oral hearing, the Solicitor, representing the Commissioner, stated that while the court does have power to issue a writ of mandamus, a writ would be completely improper in this case. He also urged that the court exceeded its power in its directions to the Board in the second remand because Rule 259 does not give the Board authority to make a determination of patentability. However, the Solicitor took the position that the Board had done what it was instructed to do and had definitely held that count 5 defines patentable subject matter.

Allen concedes that the court is "vested with the plenary power to grant all writs necessary or appropriate in the aid of its jurisdiction and agreeable to the usages and principles of law, 28 U.S.C. 1651(a)." However, he urges that the problem which the court's second remand ordered to be solved by the Board "was solved by the exercise of discretion which the Court ordered to be exercised." [3] He states that "a justiciable controversy is now presented in this inter partes appeal."

Allen further states:

> In order that there will be no doubt as to the party Allen's position, Allen states on the record that he is not seeking to have counts 1 to 4 issue as claims to him in a patent, if the award of the Board is affirmed. Allen states unequivocally and without reservation that if the court affirms the Board's award of priority, he will upon return of this case to the Primary Examiner, cancel the claims corresponding to counts 1–4.
>
> We invite petitioner to join in a stipulated dismissal of the inter partes appeal as to counts 1–4.

[1] Thorough consideration of Loshbough's petition and all the arguments made orally and in the briefs leads us to the conclusion that this court is vested with authority to issue a writ of mandamus in aid of its jurisdiction in appeals from the tribunals of the Patent Office. However, that same consideration compels us to conclude that a writ should not issue under the present circumstances.

As we stated in *In re Fischer*, 53 CCPA 1211, 360 F.2d 230, 149 USPQ 631:

> There is no dispute that an appellate court generally possesses, as an inherent power, discretion with respect to the scope and type of the relief which it may grant and may make any proper disposition required. It is part of the judicial function to determine the disposition of cases within its jurisdiction. The judicial nature of the proceedings in this court, no matter at what stage, is no longer in question. *Lurk* v. *United States*, 370 U.S. 530 (1962) and *Brenner* v. *Manson*, 383 U.S. 519 (1966). As stated by the Supreme Court, the bulk of this court's work involves the disposition of cases arising under Article III of the Constitution, that is cases arising under Federal law and cases to which the United States is a party. These cases and controversies are and must be disposed of in a judicial manner.

[2] We not only adhere to that statement but also observe that 28 U.S.C. 1651(a), supra, applies to this court as to all courts established by Act of Congress, specifically authorizing the issuance of all writs necessary or appropriate in aid of our jurisdiction.

[3] It is Allen's position that the Board made three affirmative findings as follows: (1) The Swedish patent does not amount to the bar of a grant of a patent on the basis of *at least* count 5, (2) There was no justification for a recommendation to the Commissioner under Rule 259, and (3) The award of priority with respect to a *patentable invention* remained in effect and was adhered to.

[3] On the other hand, consideration of the provisions of 28 U.S.C. 1651(a) in the light of the facts compels the conclusion that a writ of mandamus is not appropriate here. More particularly, it is apparent that the writ which Loshbough seeks is not "necessary or appropriate" in aid of the court's jurisdiction in the priority appeals.[4] Thus the Board's determination on the second remand that the Swedish patent does not amount to a bar to the grant of a patent as to "at least" count 5 and that a recommendation under Rule 259 is not justified changes the situation from that prevailing prior to that remand. It is now apparent that, on the record before us, the appeal to the court from the Board's priority decision is established as not moot but as involving an issue of priority which now clearly can be determined in a judicial manner. It is further apparent that determination of priority in the interference as at present constituted will be determinative of priority as to any more limited claims supported by the disclosures of both parties, including the substitute count proposed in Allen's motion. *In re Risse*, 54 CCPA 1495, 378 F.2d 948, 154 USPQ 1.

The fact that the Board did not express a view on the patentability of counts 1 through 4 has not been shown to present any problem which makes necessary or appropriate the extraordinary remedy of mandamus. Loshbough does argue that, even if count 5 is patentable, it would not mean that "priority of invention with respect to that one count necessarily results in priority of invention with respect to the others." However, as the Commissioner points out, the Board treated the counts as a group in its findings on priority, although it did consider the question of Allen's right to make count 4. As further observed by the Commissioner, Loshbough treats all the counts as a group in his Notice of Appeal, thus leaving it at least uncertain that he plans to argue the latter matter here. In any event, we find no showing that either the court or Loshbough will be put to any significantly increased burden because of the continued involvement of counts 1 through 4.

Although the Commissioner at oral argument questioned the propriety of the second demand on the basis that the court directed the Board to do more than it has authority to do under the rules of the Patent Office, we find no occasion to discuss that matter. The determination which the Board made seems to us to amount to a specific compliance with what is at least a logical and reasonable interpretation of our instructions as expressed on remand. That determination further appears to be in accordance with the terms of Rule 259 which, as applied here, provides for the Board to direct the attention of the Commissioner to a matter which "*in their opinion* * * * amounts to a bar to the grant of a patent to either of the parties for the claim or claims in interference." [Emphasis ours.] It is only reasonable to conclude that, if the Board had found "in their opinion" that the matter of the Swedish patent did amount to a bar to a patent, it would have followed the instructions of the court and directed the matter to the attention of the Commissioner under Rule 259. The significant factor here is that the remand did accomplish the result that any presumption of mootness which might be urged to arise from the motion of Allen has been overcome and the appeal on priority is established as a controversy subject to determination in a judicial manner.

[4] Accordingly, no specific consideration is necessary here regarding the further requirement of the statute that the writ be "agreeable to the usage and principles of law."

We find no significance in the possibility that the appropriate Patent Office tribunals might, in proceedings subsequent to termination of the interference, hold that claims corresponding to counts 1 through 4 are unpatentable to the winning party.[5] Such possibility is nothing new. An example is found in the decisions in *Kyrides* v. *Anderson*, 28 CCPA 1336, 121 F.2d 514, 50 USPQ 131, and *In re Kyrides*, 34 CCPA 920, 159 F.2d 1019, 73 USPQ 61. In the former case, the court awarded priority to the junior party Kyrides as the first to reduce to practice a species of the invention of the count in issue by reason of an earlier copending application, while declining to consider whether the count was unpatentable to him for want of a generic disclosure in that application. In the later ex parte decision, the court affirmed the rejection of the claim corresponding to the count on a patent issued to Anderson. **[4]** That the court does not consider patentability in determining appeals from decisions of the Board of Patent Interferences on priority is firmly established by many decisions, examples being *Glass* v. *De Roo*, 44 CCPA 723, 239 F.2d 402, 112 USPQ 62; *Loukomsky* v. *Gerlich*, 46 CCPA 805, 264 F.2d 907, 121 USPQ 213; *Taylor* v. *Ambrose*, 51 CCPA 1454, 332 F.2d 567, 141 USPQ 807, and *Anderson* v. *Scinta*, 54 CCPA 1269, 372 F.2d 523, 152 USPQ 584.

We find no support for Loshbough's reference to "the substantive injustice done to the parties." The root of the present matter is a motion brought by Allen which Allen no longer seeks to have considered. Since Allen has stated that he will cancel his claims corresponding to counts 1 through 4, Loshbough has no reason to fear that those claims will issue to his opponent although he himself apparently remains free to urge their patentability before the Patent Office if he prevails on priority. Moreover, Loshbough, if he considers counts 1 through 4 unpatentable, can cancel the corresponding claims from his application on termination of the interference. Or, what appears more appropriate if he has that opinion, he can join Allen in the proposed stipulation for dismissal of the appeal as to those counts and make it unnecessary for the court or the parties to expend any further efforts on them.

Another consideration here is that Loshbough has not himself brought any motion to dissolve as to the present counts or to add any proposed count. Neither has he asserted the unpatentability of the present counts or the patentability of the proposed count, as would be required if he had brought such a motion.[6] With Allen being satisfied that the priority issue can be disposed of on the basis of the present status of the appeal and in effect disclaiming counts 1 through 4, while abandoning any effort to have his proposed new count added to the interference issue, Loshbough is left with no viable motion to support his petition.

In reality, the petition seeks a reopening of the interference, or, in effect, a new trial. Despite that, Loshbough has not shown, or even contended, that the new count proposed in the Allen motion or any other new count would result in a different result on the priority question, either on the basis of the evidence presently of record or

[5] That circumstance could only arise if Loshbough obtained a reversal on appeal since, as already indicated, Allen has renounced any intention to seek such claims if he prevails.

[6] Since Loshbough did not file a motion corresponding to Allen's motion and then did not advance such excuse as he himself might have had for belated filing, it is only a matter of conjecture whether the officials of the Patent Office would have accepted his excuse and taken action on the merits during the first remand. Moreover, no reason is apparent why Loshbough could not have filed any papers he wished for the purpose of answering Patent Office objections, or such petition as he deemed advisable, before or after either remand.

of any new evidence which Loshbough might be in a position to provide. That circumstance itself indicates the absence of an appropriate reason for granting the petition.

Just as the granting of a writ of mandamus is not necessary or appropriate, so also the present circumstances do not warrant any further remand. The petition is denied.

DENIED.

WORLEY, *Chief Judge*, concurs in the result.

Judge Smith participated in the hearing of this case but died before a decision was reached.

U.S. Court of Customs and Patent Appeals

IN RE RALPH E. MIEGEL AND JOHN J. VERBANC

No. 8011. Decided December 5, 1968

[56 CCPA —; 404 F.2d 378; 159 USPQ 716]

1. PATENTABILITY—EVIDENCE—INSUFFICIENT COMPARATIVE TESTS.

"We agree with the Board and Solicitor that the comparative tests, limited to a particular copolymer of butadiene-styrene, are insufficient to establish similar superiority for the accelerator with all copolymers of butadiene-styrene within the scope of the claim and are inadequate to overcome the strong suggestion of obviousness inferred from the references."

2. SAME—OBVIOUSNESS—OBVIOUSNESS DOES NOT REQUIRE ABSOLUTE PREDICTABILITY.

"Moreover, we agree with the Examiner that, inasmuch as the art teaches that the morpholine thiuram monosulfides and disulfides are 'safe' accelerators for vulcanizing rubber and since it would not be unreasonable to expect that individual accelerators would tend to vary in this effect with the same or different rubbers, 'merely testing to determine the relative degrees of processing safety and finding a particular thiuram sulfide exhibiting a higher or lower degree would be expected.' Obviousness does not require absolute predictability."

3. SAME—PARTICULAR SUBJECT MATTER—BUTADIENE-STYRENE COPOLYMER VULCANIZATION ACCELERATOR COMPOSITION.

The refusal of a certain claim to butadiene-styrene copolymer vulcanization accelerator composition, as unpatentable over the prior art, is affirmed.

APPEAL from Patent Office. Serial No. 110,636.

AFFIRMED.

William B. Cridlin, Jr., (*James T. Corle*, of counsel) for appellants.

Joseph Schimmel (*Jack E. Armore*, of counsel) for the Commissioner of Patents.

Before WORLEY, *Chief Judge*, RICH, SMITH, ALMOND, and BALDWIN, *Associate Judges*

ALMOND, *J.*, delivered the opinion of the court.

This is an appeal from the decision of the Board of Appeals affirming the rejection of claim 3, the only claim in appellants' application.[1]

Appellants' invention is a curable composition of butadiene-styrene copolymer and bis (2,6-dimethylmorpholinothiocarbonyl) monosulfide. The monosulfide acts as a vulcanization accelerator for the butadiene-styrene copolymer elastomer and is said to afford fast and effective cures of the butadiene-styrene rubber while exhibiting an exceptional degree of processing safety.

The claim on appeal reads as follows:

3. A composition exhibiting fast curing and improved processing safety comprising a butadiene-styrene copolymer and from about 0.4 to about 1.5 parts by

[1] Serial No. 110,636, filed May 17, 1961, for "Process and Products."

weight of bis (2,6-dimethylmorpholinothiocarbonyl) monosulfide per one hundred parts of said copolymer.

The references are:

Payman et al., 1,859,527, May 24, 1932.
Naunton et al., 1,867,982, July 19, 1932.
Whitby, G. S., Synthetic Rubber, John Wiley and Sons, Inc., New York, 1954, p. 392.

Naunton discloses that morpholine thiuram monosulfides and polysulfides, as well as homologs and derivatives of morpholine, are "safe" super-accelerators for rubber. The patentee states that the homologs and derivatives of morpholine as well as morpholine itself may be prepared in the manner described in the reference patent to Payman.

Payman discloses a method for the manufacture of morpholine, its homologs and derivatives and specifically discloses the preparation of 2,6-dimethylmorpholine. Payman further states that in the reference patent to Naunton there are disclosed processes for converting these morpholine compounds into other compounds which are useful in processes of vulcanizing rubber.

Whitby states that thiuram monosulfides and thiuram polysulfides are very good accelerators for GR–S [2] and can be used in GR–S with less danger of scorching than in natural rubber.

The issue here is obviousness under 35 U.S.C. 103. The Examiner rejected the claim as unpatentable over Naunton in view of Payman and Whitby. Noting that Naunton, with specific reference to Payman, teaches that homologs and derivatives of morpholine thiuram monosulfides "are accelerators for rubber which do not exhibit the tendency to induce scorching as well as having the capacity to activate a rapid cure" and that Payman specifically discloses 2,6-dimethylmorpholine as a precursor for the thiuram monosulfides, the Examiner considered it obvious to convert the precursor to the thiuram monosulfide of the claim "using the same well-known procedures disclosed both by the primary reference and by appellants, to produce a compound which is used to impart fast curing and improved processing safety." Stating that the two reference patents "are directed towards the preparation of vulcanization accelerators" for natural rubber, the Examiner further considered it obvious to employ the claimed monosulfide as an accelerator for butadiene-styrene copolymer (GR–S rubber) in view of the teaching by Whitby that the general class of thiuram monosulfides are good accelerators having less danger of scorching in GR–S rubber than in natural rubber.

The Board, in affirming the rejection, added that since Payman "describes no other specific homolog of morpholine than 2,6-dimethylmorpholine, it would appear that this intermediate was offered as the preferred, or prototype, intermediate for the accelerator."

We agree with the Examiner and the Board that it would be obvious to convert the 2,6-dimethylmorpholine precursor of Payman to the monosulfide of the claim and employ the monosulfide as an accelerator in composition with butadiene-styrene copolymer in view of Naunton's explicit reference to Payman as a source of morpholine compounds for vulcanization accelerators and Whitby's clear teaching that thiuram monosulfides are good accelerators for butadiene-styrene

[2] The Condensed Chemical Dictionary (Reinhold Publishing Corp., New York, sixth edition, 1961) defines "GR–S" as follows: "Abbreviation for government rubber-styrene. • • • Produced by emulsion polymerization of 75 parts butadiene and 25 parts styrene, and also referred to as Buna-S. The more accepted designation now is SBR (styrene-butadiene rubber)." That GR–S refers to butadiene-styrene copolymer is not in dispute here.

copolymer. It is noted that the appellants urge no patentable distinction or critical significance in the claimed proportions.

Appellants argue, however, that their invention is patentable because of unexpectedly improved curing results obtained by their composition. In support of this argument, appellants direct our attention to two Rule 132 affidavits in the record. While the Examiner did not disagree with the affidavits' showing, he felt that relative processing safety of the compared accelerators would be expected and any differences to be differences of degree only. The determination of the best accelerator for one's use was considered to be a matter of routine experimentation. The Board found the comparative tests to "provide uncertain evidence of the superiority of appellants' accelerator as compared with even the arbitrarily selected homologs of the prior art." The appellants' attempt to show that other homologs have a lesser safety was said to appear to "create an artificial problem of selection." The combined affidavits of Dr. Gruber show that appellants' accelerator has a greater scorching time, corresponding to an increase in processing "safety," compared to five other structurally similar accelerators in combination with a *specific* butadiene-styrene copolymer.

[1] We agree with the Board and Solicitor that the comparative tests, limited to a particular copolymer of butadiene-styrene, are insufficient to establish similar superiority for the accelerator with all copolymers of butadiene-styrene within the scope of the claim and are inadequate to overcome the strong suggestion of obviousness inferred from the references.

[2] Moreover, we agree with the Examiner that, inasmuch as the art teaches that the morpholine thiuram monosulfides and disulfides are "safe" accelerators for vulcanizing rubber and since it would not be unreasonable to expect that individual accelerators would tend to vary in this effect with the same or different rubbers, "merely testing to determine the relative degrees of processing safety and finding a particular thiuram sulfide exhibiting a higher or lower degree would be expected." Obviousness does not require absolute predictability. *In re Crounse*, 53 CCPA 1390, 363 F.2d 881, 150 USPQ 554; *In re Sebek*, 52 CCPA 1442, 347 F.2d 632, 146 USPQ 44; *In re Moreton*, 48 CCPA 928, 288 F.2d 940, 129 USPQ 283. We are unable to find "clear and convincing evidence," as required by this court in *In re Lohr*, 50 CCPA 1274, 317 F.2d 388, 137 USPQ 548, that appellants' accelerator possesses unexpected processing safety as compared to the other thiuram monosulfides. *In re Wetterau*, 53 CCPA 916, 356 F.2d 556, 148 USPQ 499.

Appellants urge, also, that the claimed composition is patentable because the reference patents teach the preparation of "hundreds of individual compounds" while not mentioning appellants' specific accelerator. However, we find that the accelerator of the claim is clearly suggested to one of ordinary skill in the art by the combined teachings of the patents since, as urged by the Solicitor, the morpholine homolog, 2,6-dimethylmorpholine, is one of only three precursors specifically described by Payman for use in forming the Naunton accelerators, of which are disclosed substantially only three categories including the morpholine thiuram monosulfides. The use of the thiuram monosulfide thus obtained as an accelerator for butadiene-styrene would not be unobvious in view of the teaching of Whitby that thiuram sulfides are even more effective with the GR–S rubbers

(butadiene-styrene copolymers) than with natural rubber in preventing scorching.

We agree with the conclusion of the Board that the claim on appeal is obvious in view of the cited references.

[3] The decision of the Board is affirmed.

AFFIRMED.

Judge Smith participated in the hearing of this case but died before a decision was reached.

RICH, *J.*, dissenting.

That bis (2,6-dimethylmorpholinothiocarbonyl) monosulfide, appellants' vulcanization accelerator, is *not* specifically disclosed by the references cannot be disputed. That the references, taken in combination, do fairly teach that thiuram sulfides[3] (monosulfides, disulfides, and polysulfides) are in general good vulcanization accelerators for GR–S (butadiene-styrene copolymer) and can be used in GR–S with less danger of "scorching"[4] than in natural rubber, also cannot be disputed.

However, it is urged by appellants that they have demonstrated that their particular vulcanization accelerator has an *unexpectedly* high degree of processing safety. Specifically, appellants compared the processing safety of their accelerator to that of four other closely related thiuram sulfides, *including the most closely related compound specifically disclosed in Naunton.* Five compounded butadiene-styrene copolymer[5] compositions were prepared. The compositions were identical except for the thiuram sulfide included. "Mooney scorch data" were obtained in terms of "minutes to 10-point rise." Appellants have indicated that this is "a standard test in determining the 'safety' of a composition using a particular curing agent," and this has not been disputed.

The values obtained are shown in Table I.

TABLE I

Thiuram sulfide:	Minutes to 10-point rise
R—CS—S—CS—R* where R is—	
1. 2,6-dimethylmorpholino	36
2. Morpholino	20
3. 2,5-dimethylmorpholino	22
4. 3,5-dimethylmorpholino	18
R—CS—S_x—CS—R** where R is—	
5. 2,6-dimethylmorpholino	14

* Thiuram monosulfides.
** Thiuram disulfides.

To compare the rapidity and quality of cure obtained with appellants' accelerator and that obtained with compounds 2, 3 and 4 above, compounded butadiene-styrene compositions prepared in the same manner

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[3] That is, compounds containing the grouping

$$-\overset{\overset{S}{\|}}{C}-(S)_x-\overset{\overset{S}{\|}}{C}-$$

where "*x*" is an integer of one or more.

[4] This term is explained in the following paragraph from appellants' specification:

> Among the technically valuable attributes of an accelerator for the vulcanization of natural and synthetic rubber are (*a*) *delayed action* and (*b*) the capacity to activate a rapid, efficient, and stable curing reaction leading to a high quality vulcanizate. The former attribute is essential to the *avoidance of premature vulcanization or scorching* of rubber stocks during compounding, shaping, and molding operations. The latter is necessary in order to minimize the time required for the curing step of the overall manufacturing process and to produce the highest possible quality in the finished product. [Emphasis added.]

[5] The copolymer employed was identified as "SBR–1500 (previously known as GR–S–1500)" which is said to contain "23.5% bound styrene." Appellants' specification states that "The most commonly used butadiene-styrene copolymers contain about 76.5 percent of butadiene and about 23.5 percent styrene, although other butadiene-styrene copolymers may contain up to about 45 percent styrene."

were "press-cured" and the tensile properties of each sample were measured by an ASTM method. Table II shows the data obtained in this test.

TABLE II

Accelerator	Time of Cure, Min.	Modulus at 300% Elongation, p.s.i.	Tensile Strength at Break, p.s.i.	Elongation at Break, percent
R—CS—S—CS—R where R is:				
1. 2,6-dimethylmorpholino	10	1,300	3,300	580
	20	1,350	3,350	580
	50	1,400	3,250	590
2. Morpholino	10	1,500	3,100	520
	20	1,600	3,100	500
	50	1,650	3,050	460
3. 2,5-dimethylmorpholino	10	450	900	710
	20	600	1,450	750
	50	850	1,950	620
4. 3,5-dimethylmorpholino	10	1,000	2,850	640
	20	1,150	3,100	600
	50	1,100	3,150	600

Appellants' specification asserts that the above data demonstrates the following:

> From Table II it can be seen that the 2,6-dimethyl and 3,5-dimethyl isomers and the morpholino homolog are relatively equivalent in rapidity and quality of cure but that the 2,5-dimethyl isomer gives a slow and unsatisfactory cure. However, as shown in Table I, only the 2,6-dimethyl isomer combines fast action and satisfactory cure with an exceptionally high degree of processing safety.

Note should be taken that the morpholino thiuram monosulfide (compound 2) is the *only* thiuram *mono*sulfide specifically disclosed in Naunton, that compounds 3 and 4 are position isomers of appellants' accelerator, and that compound 5 is the 2,6-dimethyl analog of the *only* thiuram *di*sulfide specifically disclosed in Naunton (morpholine thiuram disulfide). It will be observed also that, compared to compounds 2 through 5, appellants' accelerator provides 80%, 60%, 100% and 150% higher processing safety, respectively.

The Examiner, in his answer, treated appellants' showings as follows:

> While the Examiner does not disagree with the Mooney scorch data comparisons, per se, the relative processing safety of the monosulfides and the disulfide would be expected and *any differences—one of degree only.* It is evident from the applied references, of the obvious use of the thiuram sulfide compounds and it would be a matter of *routine experimentation* to determine the best accelerator for one's use. Since it is quite clear that the claimed bis (2,6-dimethylmorpholinothiocarbonyl) monosulfide would be expected to effect the desired results in a GR–S composition, as taught by Naunton et al. In view of Payman et al. and Whitby, *merely testing* to determine the relative degrees of processing safety and finding a particular thiuram sulfide exhibiting a higher or lower degree would be expected. It is well settled that *obviousness does not require [absolute] predictability; In re Moreton,* 1961 C.D. 330 [48 CCPA 928, 288 F.2d 940, 129 USPQ 288]. [Emphasis added.]

First, in *In re Krazinski,* 52 CCPA 1447, 347 F.2d 656, 146 USPQ 25 (1965), this court, in supporting a unanimous decision, said:

> * * * the rejection is based upon section 103, which says nothing at all about differences in degree and differences in kind, but instead clearly requires us, in determining whether a patentable invention has been made, to consider *the* differences, *whatever their nature,* between the subject matter sought to be patented and the prior art and to determine if the subject matter *as a whole* would have been obvious to one of ordinary skill in the art at the time the invention was made. [Emphasis quoted.]

Likewise, § 103 says nothing about "routine experimentation" or

"mere testing;" it does, however, say something that apparently needs repeating, namely: "Patentability *shall not* be negatived by the manner in which the invention was made." [Emphasis added.] Second, *Moreton* does not, on its facts, support the rejection here. There the art taught that polymerized methacrylic acid esters in which the ester portion contains from 2 to 15 carbon atoms are useful as "viscosity improving agents" in hydraulic fluids; applicant was claiming polymerized decyl methacrylate (10 carbon atoms in the ester portion) in combination with a known hydraulic fluid. Moreton did not purport to show that the polymerized methacrylic acid ester he used was, for his purpose, unexpectedly superior to any of the other polymerized methacrylic acid esters which the art generically disclosed. Instead, he merely argued that certain prior art, not relied on by the Examiner, demonstrated that combinations of known viscosity improving agents and known lubricants and hydraulic fluids had *sometimes* performed unsatisfactorily. It was in this context that we said in *Moreton* at 48 CCPA 933:

> Obviousness does not require absolute predictability. Where, as here, the knowledge of the art clearly suggests a certain class of compounds, materials actually known by the term "viscosity improving agents," as useful to improve the viscosity index of a certain group of hydraulic fluid lubricants, the mere possibility of failure does not render their successful use "unobvious."

With respect to appellants' comparative tests, the Board had this to say:

> * * * [they] provide *uncertain evidence of the superiority* of appellants' accelerator as compared with even the arbitrarily selected homologs of the prior art. The experiments appear to deal with a single butadiene-styrene copolymer, one having 23.5% bound styrene, and have not been shown to have a general significance as applied to the butadiene-styrene copolymers as a group. [Emphasis added.]

Although the Board attacks appellants' choice of thiuram sulfides for comparative tests, no hint is given as to why the choice was thought to be improper or what compounds the Board would have had appellants employ. The Board appears to have overlooked the fact that appellants have compared their accelerator with the *only* thiuram *mono*sulfide specifically disclosed in the cited art and with a thiuram *di*sulfide *more closely related* to their own accelerator than the *only* *di*sulfide specifically disclosed in the cited art. It should also be noted that there are only four non-equivalent ways in which two methyl groups can be introduced onto the four carbon atoms of morpholine, viz, 2,3-, 2,5-, 2,6-, and 3,5- (3,6- and 5,6- being the same as 2,5- and 2,3-, respectively), and that appellants have established that their isomer is superior to two of the remaining three isomers. It would seem, then, that having taken one step in each direction from the accelerator employed in their composition, appellants have done all that can fairly be asked of them in selecting accelerator compounds for comparison.

With respect to the Board's second criticism of appellants' experiments, namely, the specific rubber selected for testing, I find no basis of record for speculating that the superiority which has been shown as to the copolymer used would not have general significance to butadiene-styrene copolymers as a group. The Examiner apparently saw nothing wrong with this aspect of the experiments or, for that matter, appellants' choice of compounds for comparison; in fact, he said, "the Examiner *does not* disagree with the * * * comparisons, per se * * *." [Emphasis added.]

The majority opinion dismisses appellants' showings stating:

> We agree with the Board and Solicitor that the comparative tests, limited to a particular copolymer of butadiene-styrene, are insufficient to establish similar superiority for the accelerator with all copolymers of butadiene-styrene within the scope of the claim and are inadequate to overcome the *strong* suggestion of obviousness *inferred* from the references.
>
> Moreover, we agree with the Examiner that, inasmuch as the art teaches that the morpholine thiuram monosulfides and disulfides are "safe" accelerators for vulcanizing rubber and since *it would not be unreasonable to expect that individual accelerators would tend to vary in this effect* with the same or different rubbers, "*merely testing* to determine the relative degrees of processing safety *and finding* a particular thiuram sulfide exhibiting a higher or lower degree *would be expected.*" Obviousness does not require absolute predictability. * * * We are unable to find "clear and convincing evidence," * * * that appellants' accelerator possesses unexpected processing safety as compared to the other thiuram monosulfides. [Emphasis added.]

Boiled down to its bare bones, the majority's position side-steps a consideration of appellants' invention as a whole by employing, as did the Examiner, the "mere testing" cliche, thereby avoiding even an acknowledgement of the magnitude of the superiority which appellants have shown. While *minor* variations in a given property *are to be expected* as one goes through a homologous series or compares compounds very closely related structurally, for example the type variations shown by the data for compounds 2, 3, and 4 in Table I above, I cannot agree that the 60% to 150% differences which appellants have shown are either minor or suggested by the art. Certainly they are as unobvious as they are unpredictable.

The observation of the Board and the majority that only one copolymer was used in appellants' experiments appears to be nothing more than that, an observation. The Examiner did not urge that the showings were defective in this respect, and, as stated above, there is no basis in the record for speculating that, if appellants' experiments were repeated using a butadiene-styrene copolymer containing a different percentage of bound styrene, the superiority of appellants' accelerator would be demonstrated any less dramatically.

Thus, although the Examiner established a prima facie case of obviousness by citing Naunton, Payman, and Whitby, appellants have satisfactorily rebutted that case by demonstrating that their vulcanization accelerator possesses a degree of processing safety so significantly superior to that possessed by the other closely related compounds specifically and/or generically disclosed by the prior art that that superiority exceeds that which might reasonably be expected by persons of ordinary skill in this art. Appellants have, therefore, made a patentable advance in the art. Considering appellants' invention *as a whole*, I find it to be non-obvious and would reverse.

U.S. Court of Customs and Patent Appeals

IN RE HERSCHEL T. WHITE AND ARTHUR W. LANGER, JR.

No. 8076. Decided January 16, 1969

[56 CCPA —; 405 F.2d 904; 160 USPQ 417]

1. PATENTABILITY—DOUBLE PATENTING—OPTIONAL DIVISON—35 U.S.C. 121.

"Inasmuch as the present application is an optional division (i.e., appellants initiated the filing of the divisional application which was not in response to a requirement for restriction or election of species), 35 U.S.C. 121 has no applicability."

2. SAME—SAME—COPENDING APPLICATIONS.

"Having been copending with the application at bar, appellants' own patent is *not* prior art although it *is* the basis of the double patenting rejection."

3. SAME—SAME—TERMINAL DISCLAIMER—IDENTICAL DISCLOSURES.

"Although in *Eckel* the application contained additional disclosure not in the patent, the * * * statements [therein, relating to the effect of a terminal disclaimer] are equally applicable to this case where the appealed application was copending with and contains a disclosure identical to the patent, as this court recognized in *In re Wright* * * * decided after the present Board decision. It is self-evident that the mere disclosure in an application which happens to mature into a patent, of an invention that may be dominated by claims to another invention, does not necessarily establish that the *inventions* are one and the same. And, as this court stated in *Eckel* * * * 'The sole issue of importance in these double patenting cases is whether the applicant is attempting to twice claim the same invention, or whether he is claiming different inventions.' The analysis of whether one invention has been twice claimed requires a factual inquiry into whether the claims of the application are directed to the *same* subject matter, or invention, as the claims of the patent. If there be any *substantive* difference, and not *merely* a difference in language, then the inventions are not the same no matter how small or how obvious those differences may be."

4. SAME—SAME—DIFFERENT INVENTIONS.

"The appealed claims distinguish from the patent claims in two ways: (1) in reciting in the preamble that it relates to the preparation of a pour point depressant instead of a hydrocarbon oil, and (2) by the additional step of 'separating from the polymerizate an oil-soluble waxy solid having a boiling point of more than 405° C.' These distinctions are sufficient, we believe, to delineate an invention which is at least different from the patented invention."

APPEAL from Patent Office. Serial No. 413,347.

REVERSED.

Whelan, Chasan, Litton, Marx and Wright (*Harold Einhorn*, of counsel) for appellants.

Joseph Schimmel (*S. Wm. Cochran*, of counsel) for the Commissioner of Patents.

Before WORLEY, *Chief Judge*, RICH, ALMOND and BALDWIN, *Associate Judges*

BALDWIN, *J.*, delivered the opinion of the court.

This appeal is from the decision of the Patent Office Board of Appeals affirming the rejection of claims 1–6 in appellants' application [1] on the ground of double patenting [2] over the claims of appellants' Patent,[3] despite the filing of a terminal disclaimer [4] as to the portion of the term of any patent issued on the appealed application beyond the expiration date of said issued patent. No claims have been allowed.

Appellants' patent and appealed application contain identical disclosures in the same sense as in *In re Wright*, 55 CCPA 1106, 393 F.2d 1001, 157 USPQ 519 (1968). **[2]** Having been copending with the application at bar, appellants' own patent is *not* prior art although it *is* the basis of the double patenting rejection. *In re Eckel*, 55 CCPA 1068, 393 F.2d 848, 157 USPQ 415 (1968).

As discussed in *Eckel*, supra, there are three categories into which inventions may fall: Unobvious, obvious, and same invention. Although the "same invention" type "double patenting" is identifiable with a statutory provision, namely, 35 U.S.C. 101, the "obviousness" type "double patenting" is a judicially created doctrine and is certainly not bottomed on section 103. *In re Braithwaite*, 54 CCPA 1589, 379 F.2d 594, 154 USPQ 29 (1967). Of course, if the appealed invention is unobvious, there can be no double patenting. On the other extreme, a terminal disclaimer is ineffective where it is attempted to twice claim the same invention. *In re Knohl*, 55 CCPA 715, 386 F.2d 476, 155 USPQ 586 (1967). However, an "obviousness" type "double patenting" rejection may be obviated by a terminal disclaimer. *In re Wright*, supra; *In re Eckel*, supra; *In re Braithwaite*, supra; *In re Robeson*, 51 CCPA 1271, 331 F.2d 610, 141 USPQ 485 (1964).

Speaking for the majority in *Eckel*, Judge Almond stated:

> The decisions [*Robeson*, *Braithwaite*, and, presumably, *Eckel* itself] have, therefore, in no way enlarged the scope of patent protection available to the inventor. However, they do have the salutary effect of making public the inventor's disclosure at an earlier date than would have been possible under previous practice. While we have explored the possible detrimental effects of this practice, we have found the usual arguments on this point to be lacking in substance. *In re Jentoft*, 55 CCPA 1026, 392 F.2d 633, 157 USPQ 363. We, therefore, feel that the use of terminal disclaimers in such cases results in a clear benefit to the public, but in no substantial offsetting detriment.

[3] Although in *Eckel* the application contained additional disclosure not in the patent, the above-quoted statements are equally applicable to this case where the appealed application was copending with and contains a disclosure identical to the patent, as this court recognized in *In re Wright*, supra, decided after the present Board decision. It is self-evident that the mere disclosure in an application which happens to mature into a patent, of an invention that may be dominated by claims to another invention, does not necessarily establish that the *inventions* are one and the same. And, as this court stated in *Eckel*, supra, "The sole issue of importance in these double patenting cases is whether the applicant is attempting to twice claim the same invention, or whether he is claiming different inventions." The analysis of whether one invention has been twice claimed requires a factual inquiry into whether the claims of the application are directed to the *same* subject matter, or invention, as the claims of the patent. If there be any *substantive* difference, and not *merely* a difference in language, then the inventions are not the same no matter how small or how obvious those differences may be.

Appellants urge that the appealed claims are unobvious and therefore patentable on their face, or, alternatively, that they are only obvious in view of their own patented invention but nevertheless patentable in view of the terminal disclaimer. In support of the Board, the Solicitor argues that there is but one invention involved. We believe that the invention defined by the appealed claims is not the same as that defined by the patent claims; and, in view of the terminal disclaimer, the question of obviousness here is moot.

Appellants' patent discloses and claims a "method of preparing hydrocarbon oils" by "polymerizing ethylene-containing gases to obtain oils having a molecular weight of about 80–2,000." Patent claim 1 is illustrative and reads:

> 1. In a method of preparing a hydrocarbon oil having a molecular weight in the range of 80 to 2000, said oil being suitable for lubricating purposes which comprises polymerizing an ethylene-containing gas in the presence of a catalyst

[1] Serial No. 413,347, filed November 23, 1964, for "Polymerized Ethylene Pour Point Depressants From Alkanol Modified Catalysts," allegedly a division of Serial No. 55,845, filed September 14, 1960, for "Polymerized Ethylene Lubricating Oil From Alkanol Modified Catalysts," now U.S. Patent 3,168,588, issued February 2, 1965.

[1] [2] Inasmuch as the present application is an optional division (i.e., appellants initiated the filing of the divisional application which was not in response to a requirement for restriction or election of species), 35 U.S.C. 121 has no applicability. See *In re Wright*, 55 CCPA 1106, 393 F.2d 1001, 157 USPQ 519 (1968).

[3] U.S. Patent 3,168,588, issued February 2, 1965.

[4] The terminal disclaimer of record here disclaimed "all that portion of any patent to be issued on said application subsequent to February 2, 1982, a period of seventeen years subsequent to the issue of U.S. Patent 3,168,588."

consisting of a halide of a transition metal selected from the group consisting of titanium, zirconium, and vanadium and an aluminum alkyl compound having the formula AlR_nX_{3-n}, n representing a number of at least 1 but less than 2 in the presence of a halogenated aromatic hydrocarbon diluent, at a pressure of 0–50 p.s.i.g., the improvement which comprises utilizing a minor amount of a C_1–C_3 alkanol as a catalyst modifier, said alkanol being present in an amount such that the ratio of alkanol to the alkyl of the aluminum alkyl after reduction of the transition metal halide is not greater than 0.5/1.

As disclosed in the patent specification:

The products of this invention are useful as motor lube base stocks, olefinic synthetic intermediates, hydraulic transmission fluids, pour point depressants, synthetic jet engine oils and bright stocks, among others. These products can also be hydrogenated without any diminution in viscosity index.

Appellants additionally urge that "the oily polymerizate in its unfractionated form has an independent utility in its use as an intermediate in the preparation of lube oils, chemical raw materials, and pour point depressants."

Based upon Example 1, appellants now claim a method of preparing a semi-solid pour point depressant by separating from the aforementioned polymerizate an oil-soluble waxy solid having a boiling point of more than 405° C. Appealed claim 1, from which appealed claims 2–6 depend, is illustrative and reads:

1. A method for preparing a pour point depressant which comprises:

a. polymerizing an ethylene-containing gas by contacting it with a catalyst comprising a halide of a transition metal selected from titanium, zirconium, or vanadium and an aluminum alkyl compound having the formula AlR_nX_{3-n}, n representing a number of at least 1 but less than 2, and X representing a halogen; at a pressure of 0 to 50 p.s.i.g.; in the presence of a halogenated aromatic diluent and a C_1–C_3 alkanol such that the ratio of alkanol to the alkyl of the aluminum alkyl after reduction of the metal halide is not greater than 0.5/1; and

b. separating from the polymerizate an oil-soluble waxy solid having a boiling point of more than 405° C.

As may be readily seen, appealed claim 1 is very similar in organization to patent claim 1 over which the former has been rejected. This case is quite similar to *In re Eckel*, supra, in that respect and in that the patent claims are broader since they merely recite the step of "polymerizing" without requiring any "separating." Also, the patent claims are for a "method of preparing a hydrocarbon oil," and the appealed claims are for a "method of preparing a pour point depressant" which is defined in appealed claim 1 as "an oil-soluble waxy solid." Thus, similar to *Eckel*, the patent claims dominate the invention of the appealed claims.

The patent claims cover a method of producing a polymeric oil which is useful, for example, for lubricating purposes. This oil inherently contains within it a waxy semi-solid which acts as a pour point depressant. Thus, the total polymerizate, without separation, may be used as an easily poured lubricating medium.

In the present application, appellants' invention is a method for the production of a polymeric oil with the further step of separating out the oil-soluble waxy solid which is useful as a pour point depressant. Thus, the isolated solid may be used with oils of a type not embraced by the claims of the issued patent.

[4] The appealed claims distinguish from the patent claims in two ways: (1) in reciting in the preamble that it relates to the preparation of a pour point depressant instead of a hydrocarbon oil, and (2) by the additional step of "separating from the polymerizate an oil-soluble waxy solid having a boiling point of more than 405° C." These distinctions are sufficient, we believe, to delineate an invention which is at least different from the patented invention.

The decision of the Board is reversed.

REVERSED.

WORLEY, *Chief Judge*, and ALMOND, *J.*, concur in the result.

PATENT SUITS

Notices under 35 U.S.C. 290; Patent Act of 1952

2,747,119, Patersen and Zeissler, BINDING OF ROTOR END TURNS, **filed** Feb. 17, 1969, D.C., N.D. Ohio (Cleveland), Doc. C69–124, *General Electric Company* v. *General Motors Corporation*. Notice of dismissal, June 4, 1969.

2,802,257, C. N. Holtzapple, METHOD OF FORMING AN ELECTRICAL CONNECTION; **3,009,503,** same, IMPROVED TOOL FOR MAKING ELECTRICAL CONNECTIONS, **filed** May 6, 1969, D.C., N.D. Ohio (Cleveland), Doc. C69–337, *AMP Incorporated* v. *E.T.C. Incorporated*.

2,831,237, R. F. Bannow, SLIDE LOCKING MECHANISM, **filed** Apr. 21, 1969, D.C., C.D. Calif. (Los Angeles), Doc. 69–752–CC, *Bridgeport Machine Company* v. *Leon Herter, Herter Enterprises, Inc., U.S. Industrial Tools, Inc. and Diversified Tools & Equipment Co.* Consent judgment in favor to plaintiff, patent valid and defendants enjoined, May 14, 1969.

2,897,313, E. S. Burgess, COAXIAL CABLE SWITCH, **filed** July 27, 1966, D.C.N.J. (Newark), Doc. C–756–66, *Edward S. Burgess* v. *Motorola Communications & Electronics, Inc.* Consent order dismissing complaint, May 21, 1969.

2,946,069. (See 3,116,566.)

2,970,861, J. L. Short, LIVESTOCK CARRIER, **filed** June 16, 1969, D.C., S.D. Ohio (Columbus), Doc. 69–183, *Ronald W. Dean* v. *Wilson Trailer Co.*

2,974,432, Warnock and Hubener, PRESS-FREE CREASE RETAINED GARMENTS AND METHOD OF MANUFACTURE THEREOF; **3,268,915,** same, PROCESS OF MANUFACTURE PRESS-FREE GARMENT WITH RETAINED CREASES, **filed** Oct. 22, 1968, D.C., S.D.N.Y. (Foley Square), Doc. 68–C–4184, *Blue Bell, Inc.* v. *Koratron Company, Inc.* Case transferred to Northern District of California, San Francisco, Feb. 28, 1969.

2,990,094, R. F. Reifers, MOLDED PULP EGG CARTON, **filed** Mar. 25, 1969, D.C. Md. (Baltimore), Doc. 14510–C, *Diamond International Corporation* v. *Harry C. Walterhoefer, Jr., William D. Walterhoefer and John A. Walterhoefer, doing business as Harry C. Walterhoefer & Sons, and Packaging Corporation of America.* Final judgment, permanently enjoining defendants; counterclaim dismissed with prejudice, Apr. 10, 1969.

3,004,346, M. Quenot, STEEL TAPE FOR MEASURING INTERNAL DIMENSIONS, **filed** Mar. 27, 1969, D.C. Dist. of Col. (Washington), Doc. 776–69, *Evans-Aristocrat Industries, Inc.* v. *Etablissements Quenot & Cie. and Michael Charles André Quenot.*

3,009,503. (See 2,802,257.)

3,116,566, J. J. Ferreira, INJECTION MOLDED SHOE BOTTOM AND SHOE HAVING SAME; **2,946,069,** J. D. Bozza, METHOD OF MANUFACTURING MOCCASINS; **3,177,598,** J. J. Ferreira, SOLE UNIT OR SHOE BOTTOM, **filed** Apr. 21, 1969, D.C., S.D.N.Y., Doc. 69–1651, *Joseph F. Corcoran Shoe Co., Inc.* v. *Frank Noone Shoe Company Inc. and R. H. Macy & Co.*

3,139,213, B. Edwards, NESTABLE CUP, **filed** Mar. 6, 1969, D.C., N.D. Ill. (Chicago), Doc. 69c483, *Illinois Tool Works Inc.* v. *American Can Company.*

3,154,852, E. D. Westlake, Jr., ONE-PIECE SAFETY RAZOR, **filed** Jan. 31, 1969, D.C., W.D.N.Y. (Buffalo), Doc. C–1969–37, *E. B. Westlake, Jr. and Edzel Company* v. *Intermark Dist. Corp., Lawrence Bussin and Shur-Line Mfg. Co. Inc.* Stipulation and order of dismissal as to defendant Shur-Line Mfg. Co., Inc., May 20, 1969.

3,155,497, Tietig and Pollingue, METHOD OF ADDING SOLID MATERIAL TO MOLTEN METAL, **filed** Mar. 31, 1965, D.C., N.D. Ill. (Chicago), Doc. 65c500, *Sticker Industrial Supply Corp.* v. *Blaw-Knox Co. and A. J. Boynton & Co.* Judgment, Counts II and III of this declaratory judgment dismissed and pursuant to mandate from the Court of Appeals the order of this court denying plaintiff's motion for partial summary judgment as to remaining Count I is vacated. Patent is not infringed by the plaintiff. Defendants enjoined. Dismissed on motion of defendants, Nov. 12, 1965.

3,174,869, Roberts and Faulkner, FLAKED COMESTIBLES AND PROCESS FOR PREPARING SAME, **filed** Apr. 23, 1969, D.C., E.D. Wash. (Spokane), Doc. 3255, *Vacu-Dry Company* v. *Tree Top Inc., Chelan Packing Company, Inc., William R. Dorsey and Sumner I. Strashun.*

3,177,598. (See 3,116,566.)

3,191,412, C. E. Duvall, PRESS BRAKE CONTROL, **filed** Dec. 16, 1968, D.C., N.D. Ill. (Chicago), Doc. 68c2409, *Clarence E. Duvall* v. *Pullman Sheet Metal Works, Inc.* Stipulation dismissing complaint and counterclaim with prejudice, June 13, 1969.

3,191,801, R. P. Standish, BALLOON VENDING MACHINE, **filed** May 23, 1969, D.C., S.D.N.Y., Doc. 69–C–2235, *Miner Industries Inc.* v. *Northwestern Sales & Service Corp.*

3,219,752, L. A. Harris, HIGH FREQUENCY ELECTRICAL LEAD-IN CABLE, **filed** Nov. 29, 1967, D.C.N.J. (Newark), Doc. 1212–67, *Columbia Wire Products Company* v. *Vikoa Inc.* Order granting defendant's motion for summary judgment and dismissing complaint, June 12, 1969.

3,235,180, Graham, Wright and Brauckslek, COMBINATION PRESSURE AND TEMPERATURE CONTROL, **filed** May 22, 1969, D.C., C.D. Calif. (Los Angeles), Doc. 69–1007–F, *Robertshaw Control Company* v. *International Telephone & Telegraph Corporation.*

3,237,436, D. A. Williams, TUMBLER LOCK STRUCTURE, **filed** Sept. 12, 1968, D.C., C.D. Calif. (Los Angeles), Doc. 68–1531–WPG, *Supra Products, Inc.* v. *Joseph Maertz, etc. et al.* Consent decree, patent valid; defendants are enjoined, June 11, 1969.

3,268,915. (See 2,974,432.)

3,273,882, B. A. Pearson, SHEET COLLATING DEVICE, **filed** June 19, 1969, D.C., S.D. Fla. (Miami), Doc. 69–747–C–JE, *Norfin, Inc. and Collator Corp.* v. *Luis Mestre.*

3,282,494, J. W. Tarn, COIN WRAPPER WITH WINDOW THEREIN, **filed** June 9, 1969, D.C., W.D. Pa. (Pittsburgh), Doc. 69–699–CA, *John W. Tarn* v. *Automatic Coinwrap Corp., Cavert Wire Company, Inc. and Herbert Swimmer.*

3,318,629, R. W. Brandt, Jr., TREE-CLAMPING JAWS WITH DEFORMABLE PADS CONTAINING GRANULAR MATERIAL, **filed** Apr. 3, 1969, D.C., E.D. Calif. (Sacramento), Doc. C–S–1155, *Orchard Machinery Corporation* v. *Jack L. Martin.*

3,323,437, J. V. Knab, FILTER SYSTEM, **filed** July 6, 1967, D.C., W.D. Mich. (Grand Rapids), Doc. 5676, *Walter Kidde & Company, Inc.* v. *Westinghouse Electric Corp.* Consent decree, action dismissed with prejudice, June 5, 1969.

3,332,327, S. A. Heenan, PAVEMENT MARKER, **filed** June 10, 1969, D.C., N.D. Tex. (Dallas), Doc. CA–3–3200, *Amerace Esna Corporation* v. *Highway Safety Devices, Inc. et al.*

3,404,068, L. M. Batistoni, COMPOSITION FOR COMPACTING SOIL; **Reg. No. 860,392** (PACZYME), The Larutan Corporation, Soil compaction formulations to be added to water and spread onto soil to be compacted and used in connection with construction of building pads, bases for roads, driveways, racetracks, airport runways, reservoirs, and the like, **filed** Apr. 30, 1969, D.C. Nev. (Las Vegas), Doc. C–LV–1293,

The Larutan Corporation v. *John Batistoni, William E. Hibbard, Nevada Enzymes, Inc.*

3,404,622, R. L. Flanagan, MOBILE VEHICLE PRESS, **filed** June 13, 1969, D.C., S.D. Tex. (Houston), Doc. 69–H–537, *Aspec, Inc.* v. *Earl Robbins.*

3,416,763, A. M. Moreno, DEVICE FOR TENSIONING STRAPS, WIRES, OR LIKE FLEXIBLE ELEMENTS, **filed** June 5, 1969, D.C., M.D. Fla. (Tampa), Doc. 69–234–C–T, *Albert M. Moreno* v. *Dan Sabia and John Jurkowski, doing business as Pro's Specialties, Mfg.*

3,423,643, E. A. Miller, ELECTROLYTIC CELL WITH ELECTROLYTE CONTAINING SILVER SALT; **3,423,644**, M. Mintz, ELECTROLYTIC CELL WITH HOUSING COMPRISING ELECTRODE AND SEAL POSITIONS; **3,423,648**, same, ELECTROLYTIC CELL WITH ELECTRICALLY CONDUCTIVE MASKING SURFACE, **filed** May 5, 1969, D.C., C.D. Calif. (Los Angeles), Doc. 69–855–F, *The Bissett-Berman Corporation* v. *Dekar Industries, Inc.*

3,423,644. (See 3,423,643.)

3,423,648. (See 3,423,643.)

3,430,459, R. R. Hill, ADJUSTABLE ADVANCE LIMITER FOR IGNITION SYSTEMS, **filed** June 19, 1969, D.C., N.D. Calif. (San Francisco), Doc. 51569, *Raymond Roger Hill* v. *Vic Hubbard Speed & Marine Corp.*

Reg. No. 860,392. (See 3,404,068.)

REISSUES

SEPTEMBER 23, 1969

Matter enclosed in heavy brackets [ ] appears in the original patent but forms no part of this reissue specification; matter printed in italics indicates additions made by reissue.

26,667

FOOT COVER AND METHOD OF MANUFACTURING THE SAME

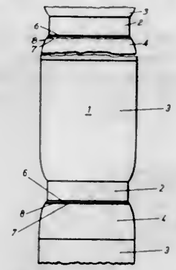
Edgar Gary Sarbo, Vienna, Austria, assignor, by mesne assignments, to Wayne-Gossard Corporation, a corporation of Indiana

Original No. 3,059,458, dated Oct. 23, 1962, Ser. No. 852,442, Nov. 12, 1959. Application for reissue Nov. 12, 1968, Ser. No. 796,625

Int. Cl. D04b *9/46*

U.S. Cl. 66—171 **4 Claims**

A symmetrical pouch-like seamless stretchable foot cover provided with a rim including rubber at the top and a seam across the bottom. The foot cover is adapted to fit in stretched condition around the lower part of the foot completely concealed from view when worn within low cut shoes.



PLANT PATENTS

GRANTED SEPTEMBER 23, 1969

2,920

ACACIA PLANT

Ronald Pecoff, 9200 Pershing Drive, Playa del Rey, Calif. 90291

Filed Sept. 29, 1967, Ser. No. 671,899

Int. Cl. A01h *5/00*

U.S. Cl. Plt.—54 **1 Claim**

1. A new and distinct variety of Acacia plant, substantially as herein shown and described, characterized particularly as to novelty by the unique combination of a prostrate but spreading habit of growth suitable for ground cover and ideal for hillside erosion control, distinctive and attractive Silvery Leek Green colored foliage, profuse production of attractive yellow flowers, usually in the spring and fall seasons in California, a distinctive and pleasing vanilla-like fragrance derived from the leaves, stems and the flowers, the unusual ability to be propagated readily in a true prostrate form by cuttings, good resistance to insects and diseases, good weather tolerance, including good resistance to temperatures as high as 140° F. and as low as 18° F., good resistance to frost and/or occasional snow, and prolonged periods of drought (up to at least 8 months) and rainfall (up to as much as 9 to 14 inches) and the ability to thrive in heavy clay soils and in coastal salt wind conditions while growing in dredged ocean soils, as well as thriving in hot interior regions, with a pH tolerance as high as 9.6.

2,921

MINIATURE ROSE PLANT

Ralph S. Moore, 2519 E. Noble Ave., Visalia, Calif. 93277

Filed Feb. 19, 1968, Ser. No. 706,725

Int. Cl. A01h *5/02*

U.S. Cl. Plt.—8 **1 Claim**

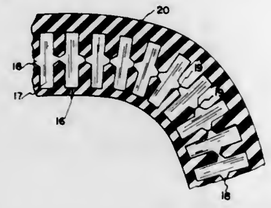
1. A new and distinct variety of miniature rose plant of hardy, dwarf, rounded, much branched, bush type, as illustrated and described, characterized by buds and flowers resembling the Yellow Doll (Plant Patent No. 2,450) miniature rose in general effect but showing fewer and generally broader petals in the open flower, brighter yellow color of both buds and flowers with less tendency to fade, the buds generally smaller and held more erect than Yellow Doll; and further characterized by a plant which is vigorous and yet more compact in growth than Yellow Doll, easy to propagate from cuttings, with small medium green glossy foliage and an abundance of bloom, with flowers borne singly or several to the stem in loose clusters.

PATENTS

GRANTED SEPTEMBER 23, 1969

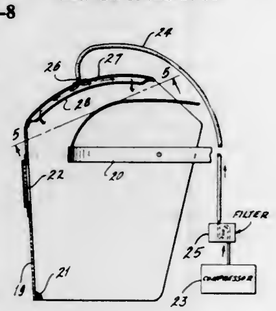
GENERAL AND MECHANICAL

3,467,964
SAFETY HELMET EDGE BEAD
James M. Hannan, Birmingham, Mich.
(21620 Coolidge Highway, Oak Park, Mich. 48237)
Filed July 22, 1968, Ser. No. 746,342
Int. Cl. A42b *1/08, 3/00*
U.S. Cl. 2—3 **2 Claims**



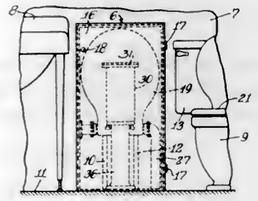
A safety helmet edge bead for trimming and for clamping together the exposed edges of a safety helmet outer shell and inner liner, comprising a resilient, rubber-like channel having a soft, bendable, thin, sheet metal channel completely embedded therein. The metal channel is formed of spaced apart identical U-shaped segments interconnected by bendable and breakable integral narrow tongues so that the bead may be easily bent and curved to conform to the contours of the shell edge and the legs of the bead may be bent together for clamping purposes.

3,467,965
WELDING HOOD VENTILATOR
John D. Murphy, St. Louis, Mo.
(% Chales H. Bryant, Box 14, Campbell, Mo. 63933)
Filed May 29, 1967, Ser. No. 641,831
Int. Cl. A42b *1/00*
U.S. Cl. 2—8 **4 Claims**



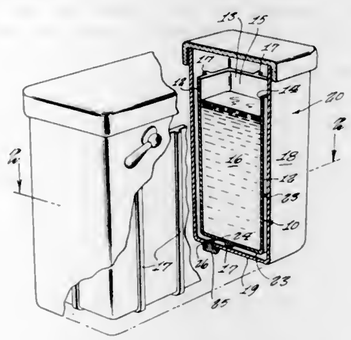
A hood of the type customarily utilized by a skilled worker during performance of a welding operation, which includes means for providing the entrance of fresh air into the hood for ventilating it interiorly. The air is admitted into the hood and encounters a dispersing member that distributes the air proportionately around the periphery of the worker's head, thereby forcing any entrapped odors or smoke contained intermediate the hood and the head, as produced from the welding operation, to be removed, and replenishing the area with a pocket of fresh air which is much more conducive for healthful breathing. The dispersing member is designed for allowing a greater amount of the fresh air to be directed towards the frontal portion of the hood which the face of the worker confronts.

3,467,966
BIDET
Agostino Gregori, Chicago, and Andrew F. Wintercorn, Rockford, Ill., assignors of one-third each to Agostino Gregori and Walter F. Wintercorn, both of Chicago, Ill., and Andrew F. Wintercorn, Rockford, Ill.
Filed Feb. 21, 1966, Ser. No. 528,988
Int. Cl. A47k *3/22, 11/08*
U.S. Cl. 4—7 **11 Claims**



A wall cabinet has a hinged door which when closed conceals the folded bidet pan, its foldable prop, and all of its plumbing connections provided in the wall. With the door open, the bidet pan can be swung down to operative position, the prop therefor being automatically positioned therebeneath to rest on the floor. Hot and cold water valves are then adjustable manually to secure a flow of water in the amount and at the desired temperature, determined by a test nozzle discharging into the rear portion of the bidet pan. A spring pressed valve switches the flow from the test nozzle to the bidet nozzle in the pan when the latter is depressed in sitting upon it, this valve, being operated automatically by a link connection with the pan. The valves, test nozzle and link connection are all compactly arranged to fit in the hollow of the bidet pan when it is folded.

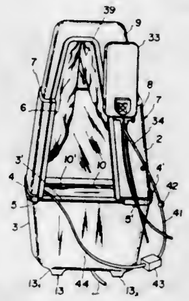
3,467,967
STOP DRIP
Emil G. Steinmann, 5452 W. Warwick, Chicago, Ill. 60641
Filed Oct. 17, 1966, Ser. No. 587,134
Int. Cl. E03d *11/02*
U.S. Cl. 4—68 **5 Claims**



The embodiment of the invention disclosed in this application includes a watertight vessel in the form of an insert mounted within a toilet tank. The insert includes

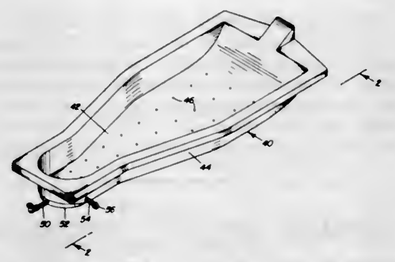
peripheral elements for spacing the wall of the insert from the inner wall of the toilet tank in such a manner as to prevent "sweating" on the outer surface of the toilet tank. Closure means is provided to enable flush water introduced in the space between the insert and the toilet tank to be drained from the bottom portion of the toilet tank.

3,467,968
PORTABLE BATH BOX
Munehisa Tatii, Mito-shi, Japan, assignor to Kabushiki Kaisha Hokusan, Sapporo-shi, Japan, a corporation of Japan
Filed Mar. 16, 1967, Ser. No. 623,584
Int. Cl. A47k *3/22*
U.S. Cl. 4—148 **4 Claims**



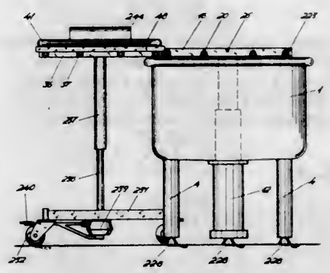
A portable bath box comprises a cabinet divided into an upper portion and a bottom portion and a bathtub is removably disposed in the bottom portion to define a spill gap between it and the bottom portion for accommodating water overflowing from the bathtub. Water contained in the spill gap and bathtub is drained through a duct provided in a leg secured to the bottom surface of the cabinet. For transportation, the upper portion of the cabinet is inverted and inserted in the bathtub thus decreasing the overall height.

3,467,969
BATHING VESSEL, LIQUID AGITATED BY MULTIPLE JETS OF AIR
Edmond Bordeaux Szekely, 3164 Dove St., San Diego, Calif. 92101
Filed Oct. 27, 1966, Ser. No. 590,009
Int. Cl. A47k *3/00;* **A61h** *33/02*
U.S. Cl. 4—180 **4 Claims**



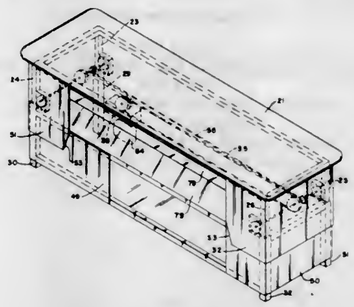
An elongated bathtub, the bottom wall of which is provided with three sets of jet-type air inlet openings, each set being disposed lengthwise.

3,467,970
TRANSPORTING AND LIFTING DEVICE COMBINED WITH A BATHTUB FOR INVALIDS
Curt Adils Ingemansson, Brobysjukhuset, Broby, Sweden
Filed Apr. 26, 1965, Ser. No. 450,827
Claims priority, application Sweden, Apr. 27, 1964, 5,204/64; Nov. 18, 1964, 13,891/64
Int. Cl. A47k *3/12*
U.S. Cl. 4—185 **6 Claims**



The invention relates to bathroom equipment for use by bedridden patients and comprises a carriage which can be moved alongside a bed, a horizontal stretched frame mounted on the top thereon and said stretcher frame being vertically movable, and support means mounted on top of a bathtub so that the carriage can be brought alongside the bathtub and the stretcher moved from the carriage to the bathtub during the washing operation.

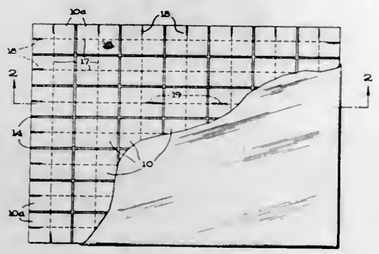
3,467,971
THERAPEUTIC TREATMENT BED
Roman G. Wieland, Grand Forks, N. Dak., assignor to Tri W-G, Inc., Valley City, N. Dak., a corporation of North Dakota
Filed Aug. 10, 1967, Ser. No. 659,642
Int. Cl. A61g *7/00*
U.S. Cl. 5—63 **1 Claim**



The invention comprises a therapeutic treatment bed having an upper and lower frame, a bed mounted on the upper frame, said lower frame having four sleeves with horizontal bars connecting certain of said sleeves together in fixed relation, said sleeves forming corner posts for said frame, said upper frame having four corner posts with horizontal bars connecting said posts together in fixed relation, said corner posts being adapted to telescope into said sleeves, a chain drive extending to opposite ends of said lower frame, a pair of shafts mounted to opposite ends of said lower frame with gears mounted to the opposite ends of said lower frame, a motor mounted to said lower frame and adapted to drive said chain drive with said chain drive driving said gears, said upper frame having rack portions to engage said gears whereby the activa-

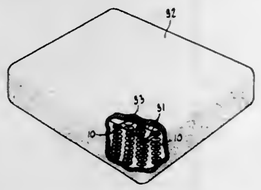
tion of the motor will drive the chains in either direction and will thereby drive the gears in either direction to raise and lower the upper frame and bed relative to the lower frame, an adjustable tension bar extending between said shafts centrally along the lower frame to keep said shafts in axial alignment, L-shaped shielding plates mounted to said sleeves and said posts in telescoping relation to shield the corners of said upper and lower frame.

3,467,972
MATTRESSES
Jose de Aruajo Bastos and Jose Roberto Ribeiro Bastos, both of Rio de Janeiro, Brazil (both of Rua da Consolacao 222, 8° s/803, Sao Paulo, Brazil)
Filed July 10, 1967, Ser. No. 656,621
Claims priority, application Brazil, July 12, 1966, 181,217
Int. Cl. A47c *23/00*
U.S. Cl. 5—91 **8 Claims**



A corrective type mattress which is made of a plurality of individual non-deformable block-like components connected together in longitudinal and transverse rows by resilient tie-rods. The upper and lower planar surfaces of the connected blocks provide body supporting surfaces which are inflexible to forces applied perpendicular thereto while the articulated connection of the individual blocks permits raising the edges of the mattress to facilitate placing bed linens and blankets beneath the mattress when making a bed.

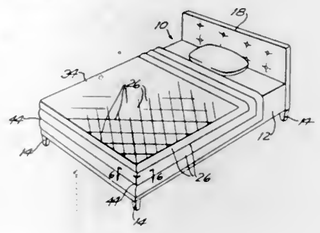
3,467,973
MAGNETIC SPRING OR SHOCK ABSORBER DEVICE
Chris A. Minnick, 844 W. Sunnyside, Chicago, Ill. 60640
Filed Sept. 28, 1967, Ser. No. 671,476
Int. Cl. A47c *23/00, 7/30*
U.S. Cl. 5—351 **10 Claims**



Disclosed is a magnetic spring and/or shock absorber device comprising a number of annular-shaped permanent magnets, magnetized along the major annular central axis and mounted one atop on collapsible guide means. The central axis of all the magnets generally are aligned and the magnets are so oriented as to present like polarity surfaces to the adjoining magnets so as to repel the adjacent annulus. The guide means consists of a pair of telescoping nylon tubes that pass through the holes formed by the annulus and have provision for preventing the extreme annuli from leaving the array, and means for preventing the tubes from becoming disengaged from each other in normal use. The magnetic spring and/or shock absorber device resists compression and returns to its unloaded state after the removal of a load.

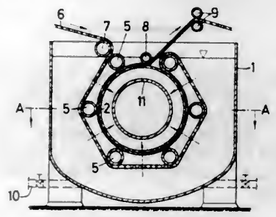
Also disclosed is one application of the spring: a magnetic spring mattress employing a large number of the magnetic springs mounted parallel and adjacent to one another.

3,467,974
COMFORTER CONSTRUCTION
Irving Deutsch, Tenafly, N.J., assignor to Sumergrade & Sons, Inc., Jersey City, N.J., a corporation of New Jersey
Filed Nov. 25, 1966, Ser. No. 596,842
Int. Cl. A47g *9/02*
U.S. Cl. 5—334 **1 Claim**



This application describes comforters formed of two fabric-like outer plies stitched together about an inner filler material. Two corners are cut out and the thus exposed edges are secured together to form a portion of the structure into a box-like configuration.

3,467,975
PROCESS AND APPARATUS FOR THE WET-TREATMENT OF MATERIALS
Heinz Fleissner, Egelsbach, near Frankfurt am Main, Germany, assignor to Vepa AG, Basel, Switzerland
Filed July 25, 1967, Ser. No. 660,554
Int. Cl. D06c *1/06*
U.S. Cl. 8—151.2 **23 Claims**

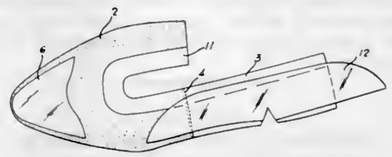


The present disclosure relates to a process and apparatus for the wet-treatment of materials, for example, textile materials. More particularly, the present disclosure is directed to conveying a continuous length of textile materials through a treatment bath on the surface of conveying means such that there are at least two rows of the material length continuously exposed to the treatment medium.

3,467,976
METHOD OF STIFFENING SELECTED AREAS OF APPAREL COMPONENTS
Gilbert F. Jonas, Nashville, Tenn., assignor to Genesco, Inc., Nashville, Tenn., a corporation of Tennessee
Filed Feb. 18, 1966, Ser. No. 528,619
Int. Cl. A43d *7/02;* **A43b** *13/42;* **A43c** *13/14*
U.S. Cl. 12—146 **12 Claims**

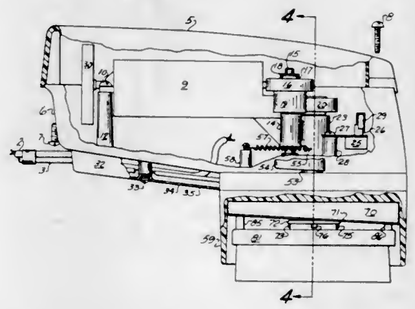
Improving the physical properties of selected areas of porous apparel parts by applying to the selected parts

an integument of thermo-softenable plastic under heat sufficient to render it flowable, and pressing it into the



pores of the apparel material whereby to mechanically interlock the integument with the porous material.

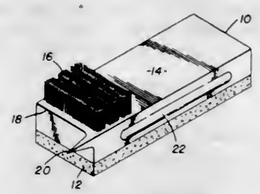
3,467,977
FOAM GENERATOR FOR SCRUBBING DEVICES
Mark W. Helm, Canton, Ohio, assignor to The Hoover Company, North Canton, Ohio, a corporation of Ohio
Filed Dec. 28, 1964, Ser. No. 421,321
Int. Cl. A47l *13/00*
U.S. Cl. 15—29 **7 Claims**



1. In a shampooing and scrubbing device including:
(a) a first element comprising a casing,
(b) a shaft rotatably mounted on said casing,
(c) power means for rotating said shaft,
(d) a second element comprising scrubbing means mounted on said shaft,
(e) said scrubbing means being spaced axially along said shaft from said casing to define a space between said scrubbing means and said casing axially of said shaft,
(f) a sponge positioned on one of said first and second elements in said space,
(g) contact means on the other of said first and second elements projecting into said space, and
(h) wear means comprising a flat rigid disc member positioned between said sponge and said contact means,
(i) whereby when said scrubbing means is rotated by said shaft there is relative movement between said sponge and said contact means causing said sponge to be alternately compressed and expanded.

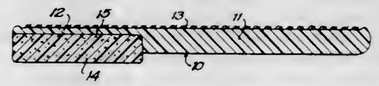
3,467,978
SURGICAL SCRUBBING DEVICE
Dorothy L. Golden, 2684 Nottingham Road, Columbus, Ohio 43221
Continuation-in-part of application Ser. No. 618,092, Feb. 23, 1967. This application Dec. 4, 1967, Ser. No. 687,929
Int. Cl. A47l *13/10, 13/16;* **A45d** *29/18*
U.S. Cl. 15—111 **2 Claims**

A surgical scrubbing device is provided with a sponge, bristles, and a fingernail cleaner positioned relative to each other in a manner such that all functions of the device can be carried out without putting the device down on a potentially contaminated surface and without the shifting of one's grip on the device. In one embodiment, for example, the sponge comprises the bottom surface;



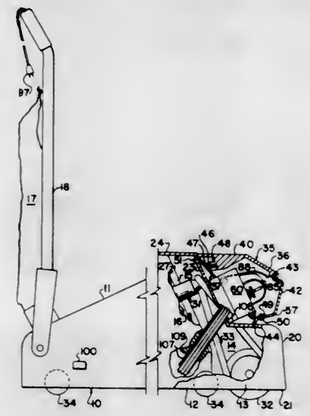
the bristles are positioned on the top surface near one end, and the fingernail cleaner projects horizontally outwardly from the end near the bristles.

3,467,979
DISPOSABLE TOOTH CLEANING IMPLEMENT AND METHOD OF MAKING SAME
Edward H. Bohlmann, 12585 Venice Blvd., Los Angeles, Calif. 90066
Filed Oct. 23, 1967, Ser. No. 677,289
Int. Cl. A47k *7/02;* **A47l** *13/46;* **A46b** *5/02*
U.S. Cl. 15—244 **5 Claims**



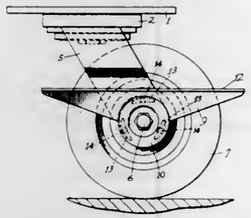
A tooth-cleaning implement of inexpensive construction intended to be used once and then discarded. It comprises a body fabricated of molded plastic material, which may be reinforced by fabric, and a facing of foamed plastic sponge material bonded to the body and providing a yieldable rubbing surface generally like the bristles of a toothbrush.

3,467,980
SUCTION CLEANERS
William O. Golloway, Jr., Ardmore, Okla., assignor to The Hoover Company, North Canton, Ohio, a corporation of Delaware
Filed Dec. 13, 1967, Ser. No. 690,155
Int. Cl. A47l *5/32, 11/20*
U.S. Cl. 15—324 **7 Claims**



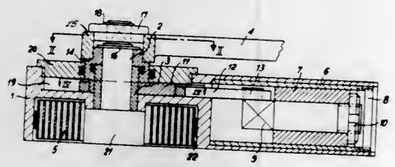
In an upright suction cleaner removable attachment of the cover for the converter port controls operation of the suction creating motor-fan unit and the dirt finder lamp for cleaning surfaces on and off-the-floor.

3,467,981
CASTER BRAKE MECHANISM
Joseph E. Peter, Cincinnati, Ohio, assignor to The Hamilton Caster & Mfg. Co., Hamilton, Ohio, a corporation of Ohio
Filed Sept. 21, 1967, Ser. No. 669,484
Int. Cl. B60b *33/00;* **F16d** *55/00*
U.S. Cl. 16—35 **9 Claims**



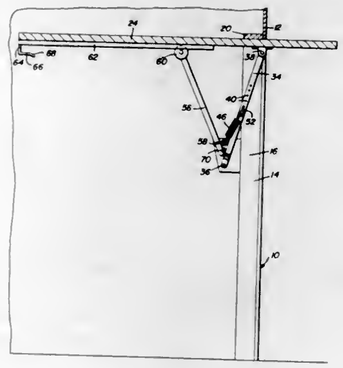
A caster provided with a normally horizontally disposed brake treadle having a centrally disposed hub pivotally mounted on the caster axle bolt, the hub of the treadle being provided with spaced apart tapered raceways defining cam surfaces which contact ball bearings received in bores in one leg of the caster yoke, the ball bearings contacting steel plungers slidably received in the bores. When the treadle is rocked in either direction, the ball bearings ride inwardly along the tapered surfaces of the raceways, thereby displacing the plungers inwardly where they contact a washer to effect axial displacement of the caster wheel, causing it to frictionally engage the opposite leg of the caster fork. When the brake arm is rocked in the opposite direction, the clamping pressure on the caster wheel is released. In an alternative embodiment of the invention, the ball bearings and plungers are replaced by plungers having rounded heads which engage the raceways.

3,467,982
HYDRAULICALLY DAMPED ACTUATOR FOR SELF-CLOSING DOORS
Günter Pracht, Solingen, Germany, assignor to C. Eisen Grossmann- und Stahlwerk AG., Solingen-Wald, Germany, a firm
Filed Mar. 10, 1967, Ser. No. 622,134
Claims priority, application Germany, Sept. 21, 1966, G 47,953
Int. Cl. E05f *3/06*
U.S. Cl. 16—55 **3 Claims**



This invention provides a hydraulically damped actuator for self-closing doors. The actuator includes a bearing means supporting a rotatable shaft which projects from a housing. A spring encircles the end of the shaft inside the housing to effect the closing of a door. A damper means is located inside the said housing and includes a reciprocally movable piston located in a cylinder which is disposed perpendicularly to the shaft axis. One end of the connecting rod is attached to the piston while the other end of the connecting rod has a large open circular end slidably mounted over an eccentric member. A bearing means is provided to mount the eccentric member independently of the shaft. A door-closing arm is coupled to the eccentric member for effectively utilizing the actuator.

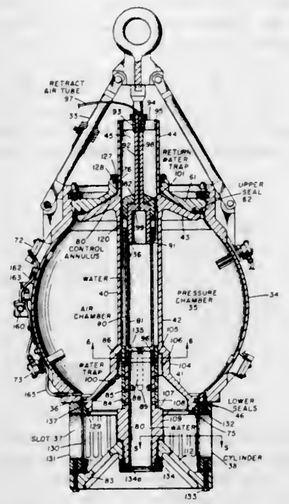
3,467,983
OVERHEAD GARAGE DOOR HINGE
Henry P. Lipking, 4987 E. Tulare St., Fresno, Calif. 93702
Filed Feb. 23, 1966, Ser. No. 529,448
Int. Cl. E05d *15/40, 3/08*
U.S. Cl. 16—163 **8 Claims**



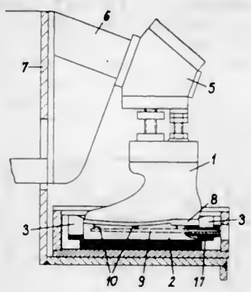
A mounting bracket for an overhead door of the type swingable from a lowered vertical position to a raised horizontally disposed position and adapted to be supported from a door opening framing member spaced above and below the lower and upper portions of the opening. The bracket is provided with upper and lower upstanding guide and hinge arms with their lower and upper ends pivotally secured to the mounting bracket and the free end of the guide arm is pivotally secured to a lower portion of the door while the upper free end of the guide arm includes roller means rollingly engaged with the upper portion of the corresponding upstanding side marginal edge portion of the door, means being provided to limit swinging movement of the upper end of the guide arm away from the door opening.

3,467,984
REPETITIVE PNEUMATIC ACOUSTIC SOURCE FOR MARINE SEISMIC SURVEYING
Bernard Otto, Arlington, Tex., assignor to Mobil Oil Corporation, a corporation of New York
Filed Aug. 28, 1967, Ser. No. 663,676
Int. Cl. G10k *11/00*
U.S. Cl. 181—.5 **27 Claims**

The specification discloses a repetitive marine acoustic source formed by a rigid chamber for confining high pressure gases and having a controllable spool-shaped valve for rapidly releasing the high pressure gases into the water to generate an acoustic pulse. The valve has an aperture extending axially therethrough which is open to the water and in addition has valve retract and deceleration mechanisms located therein. The high pressure gases may be formed by burning a combustible mixture in the chamber. In this embodiment the member connecting the two rims of the spool-shaped valve is cooled by direct contact with the water in the aperture. The lower rim also is cooled by water while the upper rim is cooled by the air injected into the chamber to form the combustible mixture.

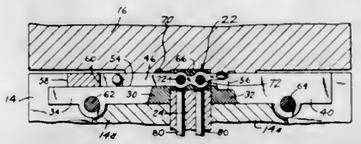


3,467,985
APPARATUS FOR INJECTION MOLDING OF SOLES ONTO THE BODIES OF FOOTWEAR
Karl Heinz Wessel, Vlotho (Weser), Germany, assignor to Friedrich Stubbe, Vlotho (Weser), Germany
Filed Nov. 10, 1966, Ser. No. 593,545
Claims priority, application Germany, Nov. 25, 1965, St 24,689
Int. Cl. B29f *1/00;* **A43d** *65/02*
U.S. Cl. 18—30 **7 Claims**



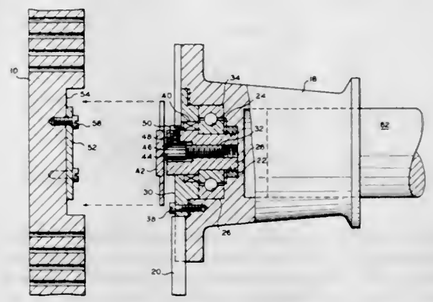
Apparatus for injection molding of soles of resilient material longitudinally of a footwear body optionally from heel and toe ends by means of a multi-part mold including a sole plate, a last and side walls movable to embrace and laterally surround the sole plate. The sole plate longitudinally and directly has a sprue gate and sprue passage means with bores to a sole-defining chamber being supplied with injection material. An opening coaxial with the sprue gate and sprue passage means is formed by the side walls in a parting line therebetween and a tubular means fits into this coaxial opening for receipt of the injection material from a nozzle complementary thereto. A yieldable means biases the tubular means axially of the opening in the side walls in a direction toward the engageable nozzle and away from the sprue gate and sprue passage means.

3,467,986
MOLD FOR MOUNTING SWITCH BLADES AND THE LIKE
Edgar P. Canty, Elmhurst, and Thedore J. Obszarny, Chicago, Ill., assignors to Guardian Electric Manufacturing Co., Chicago, Ill., a corporation of Illinois
Continuation-in-part of application Ser. No. 439,534, Mar. 15, 1965. This application Feb. 16, 1967, Ser. No. 628,197
Int. Cl. B29d *3/00*
U.S. Cl. 18—36 **20 Claims**



A special mold for mounting relay switch blades and the like, provided with pivoted fingers to support the switch blades in proper position for the mounting to be molded around specific portions of the blades including liners for certain openings through the switch blades, and after the mold is opened the fingers are operable to elevate the assembly of switch blades and mounting to a position for extraction from the mold. Means are provided for accurately positioning the switch blades with respect to the mold and core pins thereof which extend through the openings of the switch blades to form the liners.

3,467,987
EXTRUDER-PELLETIZER APPARATUS
Billy J. Foster, Pasadena, Tex., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed July 26, 1967, Ser. No. 656,127
Int. Cl. B29f *3/01*
U.S. Cl. 18—12 **6 Claims**

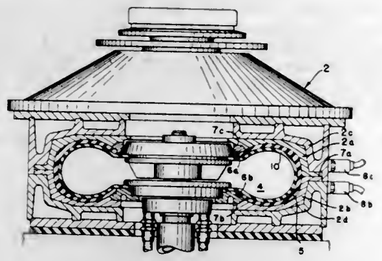


A device for an extruder-pelletizer for controlling the clearance between the cutting means and the extrusion die face so that the cutting means will not contact the die face which permits this clearance to be adjusted without removal of the cutting head.

3,467,988
VIBRATION VENTED TIRE MOLD
Peter P. Zaffaroni, Detroit, and Leonard C. Youngblood, Grosse Pointe Park, Mich., assignors to Uniroyal, Inc., New York, N.Y., a corporation of New Jersey
Filed Apr. 13, 1967, Ser. No. 630,593
Int. Cl. B29h *5/02;* **B28b** *1/08;* **B06b** *3/00*
U.S. Cl. 18—38 **9 Claims**

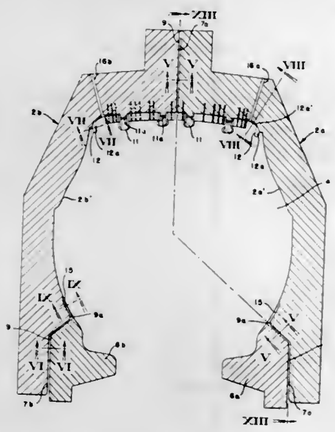
A tire vulcanizing mold whose independent, cavity-defining mold sections have vents provided at their interfaces to which air trapped between the tire and mold sur-

faces is led and through which such air is expelled by vibrating the mold inner and the tire outer surfaces with



respect to each other during the tire shaping stage and final closing of the mold for curing of the tire therein.

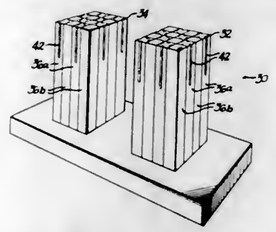
3,467,989
VENTING OF TIRE MOLDS
Leonard C. Youngblood, Grosse Pointe Park, and Peter P. Zaffaroni and Casmer S. Jablonski, Detroit, Mich., assignors to Uniroyal, Inc., New York, N.Y., a corporation of New Jersey
Filed Apr. 13, 1967, Ser. No. 630,594
Int. Cl. B29h *5/02*
U.S. Cl. 18—38 **13 Claims**



A tire vulcanizing mold whose independent, cavity-defining, mold sections have vent grooves provided at their interfaces and a pair of diametrically opposite through conduits in the tread-forming region, through which air, trapped between the tire and the mold surfaces can escape to the exterior of the mold, said through-conduits and said grooves constituting the sole escape paths to the exterior of the mold for air trapped between the tire outer surface and the mold inner surface, thereby eliminating the need for literally hundreds of through-vents and the vent-rubber trimming operation necessarily required as a result thereof.

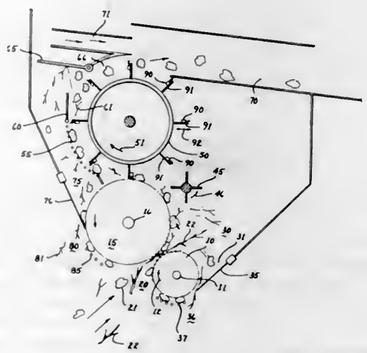
3,467,990
MOLD APPARATUS FOR BRISTLED PRODUCTS
Louis F. Kutik, 5601 SW. 56th St. 33314, and Erich W. Gronemeyer, 3430 Galt Ocean Drive 33308, both of Fort Lauderdale, Fla.
Filed Feb. 16, 1967, Ser. No. 616,670
Int. Cl. A46b *1/00;* **A47g** *27/02*
U.S. Cl. 18—42 **11 Claims**

A mold assembly and a method of molding bristled products such as brushes and floor mats is provided. Also, novel bristle configurations are proposed. The mold assembly includes a group of elongated members or "pins" retained in parallel, lateral abutting, cantilevered relation with the free end faces of said members flush with each other. Bristle-forming cavities are formed between pins by grooves or especially configured concave surfaces formed at the sides of the members, such grooves or surfaces opening onto and extending longitudinally from the flush end faces. The bristle-forming cavities open onto a second cavity which defines the backing element joining the bristles into a brush or similar product. Plasticized material is injected into the backing-defining



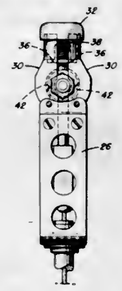
cavity and from there into the bristle-forming cavities, any air being vented from the latter cavities between the pins as the plasticized material enters. During molding, the pins are held together at the bristle-forming ends thereof by cams which apply force to at least two sides of the group of members in directions normal to each other. When the cams are released, the elongated members can spread apart slightly, and thus release bristles in the cavities to facilitate removal of the bristles from the cavities. The completed bristled product is then withdrawn from the mold assembly.

3,467,991
COTTON CLEANER
James H. Gray, Phoenix, Ariz., assignor to William E. Rood, Jr., Phoenix, Ariz.
Continuation of application Ser. No. 439,544, Mar. 15, 1965. This application July 28, 1967, Ser. No. 660,160
Int. Cl. D01b *1/08*
U.S. Cl. 19—203 **5 Claims**



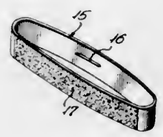
A pair of rotating drum saws mounted adjacent each other having their respective surfaces at a point opposite each other moving in the same tangential direction; the surface speed of one saw exceeds that of the other to permit cotton to be snagged and carried upwardly into the cleaner. The cotton feed area adjacent the space between the two drum saws is angled and is unobstructed to permit sticks to be rolled between the saws and be thrown tangentially upwardly away from the saws without breaking the sticks.

3,467,992
RELEASABLE FASTENER
David W. Rabenhorst, Silver Spring, Md., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Original application Aug. 4, 1967, Ser. No. 658,988. Divided and this application Aug. 7, 1968, Ser. No. 750,838
Int. Cl. B65d *67/02*
U.S. Cl. 24—19 **5 Claims**



The present invention is a self-releasing mechanical bolt fastener which initially clamps aligned bolts under considerable tension and which, upon the application of a nominal operating force, will release the bolts without prior art explosive techniques. The invention finds particular use as a connector between a satellite and a launching vehicle. The unique self-releasing clamp of the present invention may find wide use in a variety of aerospace applications. Additionally, the device, being completely mechanical in operation, may be repeatedly tested without destruction of its parts as a result of such testing.

3,467,993
NECKTIE HOLDER
James A. Smith, 500 N. Wilson St., Metairie, La. 70003
Filed Oct. 30, 1967, Ser. No. 679,134
Int. Cl. A41d *25/04*
U.S. Cl. 24—50 **1 Claim**



A flexible non-bulky extremely inexpensive holder or positioner for neckties adapted for connection with a shirt button and being entirely concealed from view by the necktie during use.

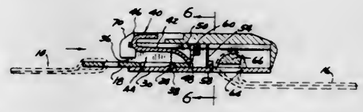
3,467,994
TIGHTENING DEVICE FOR ROPE AND THE LIKE
Norval T. Evans, 691 NE. Meadow, Roseburg, Oreg. 97470
Filed Aug. 1, 1967, Ser. No. 657,635
Int. Cl. A44b *21/00*
U.S. Cl. 24—71.2 **3 Claims**

A rod-like device for taking up slack and having a positionable sleeve slidably mounted relative to a fixed arm and adjustably carrying a companion arm for engagement with a rope or other flexible element. The positionable sleeve and its arm may be temporarily located at



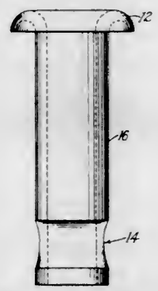
widely varying distances from the fixed arm for the precise tensioning of the flexible element.

3,467,995
SEAT BELT BUCKLE
Thomas Hopka, Belleville, Mich., assignor to Jim Robbins Seat Belt Co., Troy, Mich., a corporation of Michigan
Continuation of application Ser. No. 557,717, June 15, 1966. This application Dec. 20, 1967, Ser. No. 697,549
Int. Cl. A44b *11/28*
U.S. Cl. 24—77 **11 Claims**



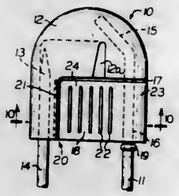
A channel-shaped buckle housing with a flat base is open at one end to receive an apertured tongue. An upturned lug in the flat base engages the apertured tongue when they are in face to face relationship. A slidable locking member in the housing is movable along an axis toward and away from the open end of the housing between a locking position preventing separation of the tongue away from the base and the lug, and a released position permitting the tongue to be separated from the base.

3,467,996
GROOVED EYELETS
Terence W. Voice, Birmingham, England, assignor to USM Corporation, Flemington, N.J., a corporation of New Jersey
Filed Sept. 11, 1967, Ser. No. 666,729
Claims priority, application Great Britain, Sept. 15, 1966, 41,252/66
Int. Cl. A43c *5/00*
U.S. Cl. 24—141 **3 Claims**



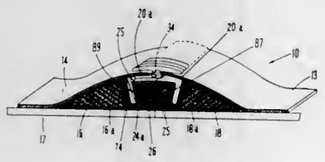
An eyelet of relatively small diameter and long barrel length made from tubing with a spun flange and an annular groove cut in the exterior of the barrel to improve setting under minimal axial force.

3,467,997
SAFETY PIN
Bernhard Nysten, Aachen, Germany, assignor to William Prym-Werke, KG, Rhineland, Germany, a corporation of Germany
Continuation-in-part of application Ser. No. 637,209, May 9, 1967. This application June 26, 1968, Ser. No. 740,211
Claims priority, application Germany, May 13, 1966, P 39,440
Int. Cl. A44b *9/18*
U.S. Cl. 24—157 **10 Claims**



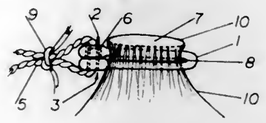
A safety pin which comprises a first limb in the form of a needle and a second limb on which there is rigidly mounted a guard of injection molded material containing a generally U-shaped channel bounded by side walls for releasably receiving the first limb when introduced through a lateral insert opening in the guard. A pivot is disposed on the second limb immediately adjacent the guard, and a locking lever of injection molded material is arranged for blocking withdrawal of the first limb from the channel when the locking lever is in a locking position with respect to the guard. The locking lever comprises a hinged portion frictionally mounted for swinging movement about the pivot portion of the second limb against the friction and including a blocking portion. The blocking portion has means thereon, which snappingly engage an edge of an associated side wall of the guard to frictionally retain the locking lever in its locked position.

3,467,998
CLOSURE MEANS
Edward D. Kittredge, Wentworth Road, Portsmouth, N.H. 03801
Filed Mar. 9, 1967, Ser. No. 621,954
Int. Cl. A44b *19/00*
U.S. Cl. 24—205.1 **8 Claims**



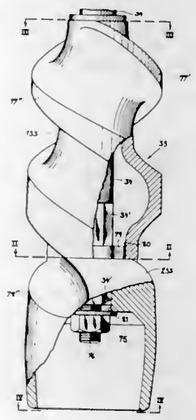
A closure means or slide fastener is provided which acts as a seal between opposed elongated edges to be joined together. Preferably, demistaples are used which are interengaged to provide a hinge action about a center line with base portions of keeps provided by the demistaples pressing against a resilient material to join faces of the closure means in good sealing engagement under all conditions of use when the closure means is closed. A slide acts to open and close the closure means by interlocking or disengaging a plurality of the demistaples. The closure means permits rapid and efficient sealing resistant to gas and liquid passage.

3,467,999
MEANS AND SYSTEM FOR TIE-DOWN
Johan A. Bjorksten, Fitchburg, Wis., and William A. Kaufman, Alvin, Tex., assignors to Griffolyn Company, Inc., a corporation of Delaware
Filed Oct. 5, 1967, Ser. No. 673,122
Int. Cl. A44b *21/00;* **A45f** *1/16, 1/18*
U.S. Cl. 24—245 **11 Claims**



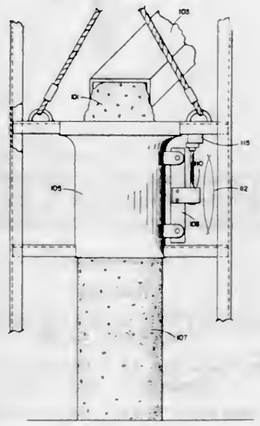
Tie down system typically comprising a flexible U formed member with holes in both ends which may be aligned and fastened together by binding means; and a separate spreading means, typically a plastic disc for spreading the sheet material to be tied down, so that it can be clamped and tied from the said U-formed member.

3,468,000
PACKING TOOL FOR MAKING CHANNELED CONCRETE BODIES
Howard Bergesen, Valley Stream, and Innis O'Rourke, Jr., Upper Brookville, N.Y.
Original application May 26, 1966, Ser. No. 553,146. Divided and this application Mar. 21, 1968, Ser. No. 734,509
Int. Cl. B28b *1/44*
U.S. Cl. 25—1 **2 Claims**



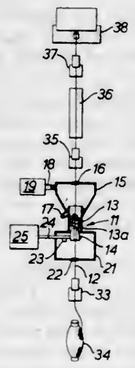
A packing tool for making concrete conduit which has a cylindrical troweling head at the end of its shaft. A plurality of interleaved helical blades of like pitch on the shaft immediately adjoining the head define helical flutes. A transverse surface of the head confronts the blades and has a like number of recesses, each communicating with the respective flute, and is flared outwardly into the periphery of the head with a helicoidal pitch substantially corresponding to that of the blades.

3,468,001
APPARATUS INCLUDING AN ORBITING-MASS SONIC OSCILLATOR FOR SLIP-FORMING CONCRETE
Albert G. Bodine, Jr., 7778 Woodley Ave., Van Nuys, Calif. 91406
Original application May 10, 1965, Ser. No. 454,335. Divided and this application July 24, 1967, Ser. No. 655,612
Int. Cl. B28b *1/10;* **B22d** *11/04*
U.S. Cl. 25—41 **4 Claims**



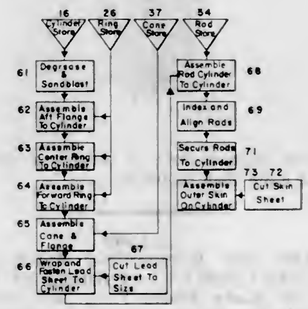
The mold used for slip-forming concrete is resonantly vibrated as part of a resonant elastic vibration system as the concrete casting is being formed, thereby lowering the friction at the interface between the casting and the mold and improving the characteristics of the casting.

3,468,002
YARN BULKING APPARATUS
Walter Parker, Wilmslow, England, assignor to Ernest Scragg & Sons Limited
Filed Mar. 23, 1967, Ser. No. 625,343
Claims priority, application Great Britain, Mar. 25, 1966, 13,225/66
Int. Cl. D02g *3/24*
U.S. Cl. 28—1.6 **8 Claims**



A yarn bulking apparatus having a passage including an inlet and outlet end, an expansion chamber communicating with the outlet end, a steam chamber communicating with the inlet end having an intake remote from but aligned with the inlet end, and a steam nozzle communicating with the inlet end. Steam is supplied to the nozzle from a main supply duct and to the steam chamber from a secondary duct communicating with the main supply duct. The various elements are vertically aligned with yarn passing through the steam chamber, being propelled through the nozzle into the expansion chamber for bulking therein.

3,468,003
MANUFACTURING PROCESS
Samuel N. Bishop, Riverdale, and Edward W. Grayson, Lanham, Md., assignors to Singer-General Precision, Inc., a corporation of Delaware
Filed Apr. 21, 1966, Ser. No. 544,279
Int. Cl. B21k *21/06*
U.S. Cl. 29—1.2 **7 Claims**

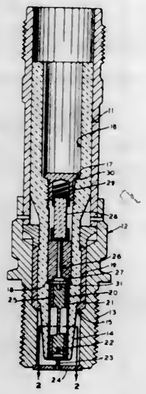


The method for forming cylinders of warhead rods was developed so that the cylinders can be assembled on the warhead without reducing the efficiency of the device. Rod stock is cut to the length of a fold, and pairs of the cut rods are welded together at one end. When a number of pairs of rods are thus formed, several pairs are welded together facing each other with one free end of one pair welded to a free end of each adjacent pair. In this manner a double thickness mat of rods is formed, which mat is then formed into a cylinder of rods. Each other subassembly is made separately, and the entire warhead is later assembled from the separate subassemblies.

3,468,004
SPARK PLUG
Michael A. Bretsch, Toledo, Ohio, assignor to Champion Spark Plug Company, Toledo, Ohio, a corporation of Delaware
Original application July 13, 1961, Ser. No. 123,878, now Patent No. 3,256,457, dated June 14, 1966. Divided and this application Nov. 16, 1965, Ser. No. 508,111
Int. Cl. H01t *13/00*
U.S. Cl. 29—25.12 **2 Claims**

A method for manufacturing an improved center electrode for spark plugs used in high performance internal combustion engines. A hollow, split sleeve of a metal having a low thermal conductivity and a low coefficient of expansion is compressed and inserted into the nose bore of a spark plug insulator. A corrosion resistant spark tip is inserted into the end of the sleeve and a metal having a high thermal conductivity and a coef-

ficient of expansion greater than that of the metal of the sleeve is cast into the sleeve. Upon cooling, the electrode



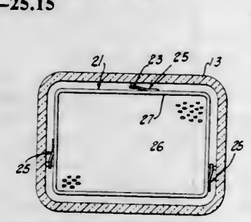
contracts in the nose bore to provide a cylindrical air gap of not more than 0.001 inch.

3,468,005

PROCESS FOR IMPROVING MASK-SCREEN REGISTRATION IN CATHODE RAY TUBES

George R. Kautz, Seneca Falls, N.Y., assignor to Sylvania Electric Products Inc., a corporation of Delaware

Filed Sept. 20, 1966, Ser. No. 580,756
Int. Cl. H01j *9/20*
U.S. Cl. 29—25.15 **2 Claims**



A process for providing improved mask-screen registration in a shadow-mask cathode ray tube by effecting a partial reduction of the residual stress in the resilient mask support means relative to the panel. Such is accomplished prior to screen formation by baking the panel with the mask positioned therein at a temperature sufficient to resolve the force vectors of the mask-to-panel support means to provide a consistency of mask orientation whereby the mask-screen registration utilized during screen fabrication is maintained in the finished tube.

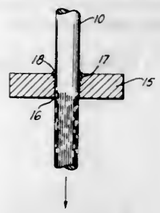
3,468,006

ELECTRIC LAMP FILAMENT

Nils Bertil Agdur, Danderyd, Florian Sellberg, Djursholm, Kurt Goran Rafael Boling, Taby, and Karl Yngve Ohman, Stockholm, Sweden, assignors to Kooperativa Forbundet Ekonomisk Forening, Stockholm, Sweden, a corporation of Sweden

Original application Mar. 16, 1964, Ser. No. 352,121, now Patent No. 3,361,924, dated Jan. 2, 1968. Divided and this application May 1, 1967, Ser. No. 645,087
Claims priority, application Sweden, Mar. 21, 1963, 3,069/63
Int. Cl. H01j *9/16, 9/44*
U.S. Cl. 29—25.18 **6 Claims**

The method for forming a light producing element for incandescent electric lamps and the like and having a roughened and textured light-emitting surface, in which an electrically conductive elongated element is formed with a surface having protrusions and/or depressions wherein the differential surface height and/or the spaces



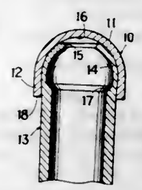
between the protrusions and/or depressions, is generally of the same order of magnitude as the wave length of visible light radiation produced upon energization of said element.

3,468,007

INTEGRAL PUSH ROD AND METHOD OF MAKING SAME

Masanobu Nakamura, 22–8 Matsubara-cho, 5-chome, Setagaya-ku, Tokyo, Japan

Filed Sept. 19, 1967, Ser. No. 668,807
Claims priority, application Japan, Sept. 22, 1966, 41/62,311; Mar. 23, 1967, 42/17,707
Int. Cl. B23p *13/00;* **B21k** *1/20*
U.S. Cl. 29—156.7 **3 Claims**



A method of making an integral push rod from a separate end member and stem member comprised of the steps of shaping the end member to provide a curved contacting surface and a tubular socket-like opening, forming an axially elongated tubular stem member with outside dimensions at one end sufficient to fit closely within the tubular socket-like opening of the end member, inserting the stem member into the end member and applying pressure to the stem member and the end member whereby the stem member is axially compressed and expands radially into intimate binding contact with the end member.

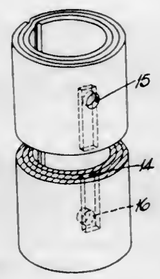
An integral push rod comprised of an axially elongated tubular stem member having a reduced wall thickness at one end, and an end member fitted in intimate binding contact onto the end of the stem member. The end member has cylindrical side walls closed at one end by a curved wall section and open at the other end to receive the end of the stem member. The wall thickness of the stem member for approximately its length inserted into the end member is reduced by increasing its inside diameter. The end member is preferably hardened and its closed wall section may be spherical in shape with its outer surface having either a concave or convex form.

3,468,008

METHOD OF FORMING A TUBULAR PART HAVING A PASSAGEWAY FORMED IN THE WALL THEREOF

Stanley Frederick Barber, Pinner, England, assignor to C.A.V. Limited, London, England, a British company

Filed Feb. 16, 1967, Ser. No. 616,709
Int. Cl. B21d *53/00;* **B21k** *29/00*
U.S. Cl. 29—157 **2 Claims**



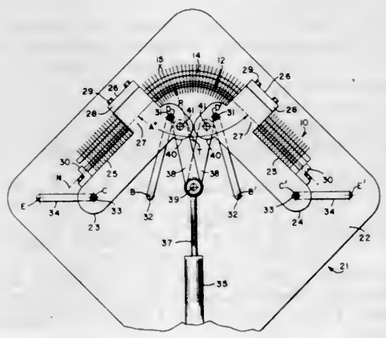
A tubular part having a passage formed in the wall, the part being formed by rolling a sheet blank having a slot **14** formed therein, so that at least the major portion of the slot is overlapped both internally and externally by imperferate portions of the sheet blank.

3,468,009

METHOD FOR CONSTRUCTING A FIN-AND-TUBE HEAT EXCHANGER HAVING A BEND FORMED THEREIN

Dale R. Clausing, La Crescent, Minn., assignor to The Trane Company, La Crosse, Wis., a corporation of Wisconsin

Filed May 29, 1967, Ser. No. 641,940
Int. Cl. B21d *53/00;* **B23p** *15/26*
U.S. Cl. 29—157.3 **10 Claims**



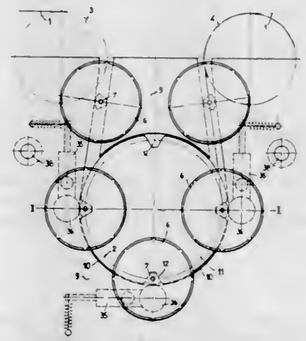
A method and apparatus for constructing a fin-and-tube heat exchanger having a bend formed therein by bending the heat exchanger with apparatus which does not support or contact the heat exchanger fins at the situs of the bend, and a method for constructing a multirow fin-and-tube heat exchanger having a bend formed therein to facilitate the bending operation by initially expanding the tubes of only one row to fix the spacial relation of the fins during the bending step and allowing the tubes of the other rows to move freely relative to the fins during the bending operation, to thereby eliminate adverse distortion of the fins especially in the bend area.

3,468,010

MACHINE FOR WORKING A SEQUENTIAL ASSEMBLY OF SIMILAR SMALL-SIZED APPARATUSES

Ernst Stauber, Lengnau, near Biel, Switzerland, assignor to Langendorf Watch Co., Langendorf, Switzerland, a body corporate of Switzerland

Filed Dec. 13, 1966, Ser. No. 601,450
Claims priority, application Switzerland, Dec. 14, 1965, 17,273/65
Int. Cl. B23p *19/00*
U.S. Cl. 29—200 **11 Claims**



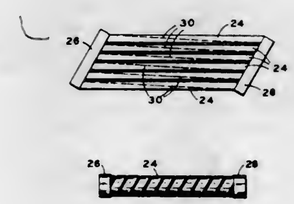
A machine for enabling a sequential assembly of similar small-sized apparatuses including a conveying means carrying piece holders in intermittent steps to a work area. Positioning means are provided at the work area, independent of the conveying means, for locating each piece holder in a predetermined position so that an operation can be performed on the piece carried thereby, and so that exactly the same operation can be performed at exactly the same place on each succeeding piece moved to the work area.

3,468,011

METHOD OF FORMING AN ELECTRICAL RESISTANCE ELEMENT

John G. Curtis, Raleigh, N.C., assignor to Corning Glass Works, Corning, N.Y., a corporation of New York

Original application June 27, 1963, Ser. No. 291,190, now Patent No. 3,248,682, dated Apr. 26, 1966. Divided and this application Aug. 16, 1965, Ser. No. 479,794
Int. Cl. H01c *17/00*
U.S. Cl. 29—620 **2 Claims**

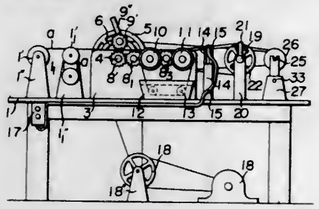


A method of forming the film path of an electrically conductive film resistor. The film is formed into a plurality of paths which when unfolded flat form long narrow rhomboids of such size that the length of the long diagonals thereof are not substantially greater than that of the short diagonals, whereby current density at the ends of the film paths will be significantly reduced.

3,468,012
METHOD OF MAKING A LINEAR WEIGHT MEMBER

Hiromasa Hara, Gamagori-shi, Japan, assignor to Tokyo Rope Manufacturing Co., Ltd., Tokyo, Japan, a corporation of Japan

Filed June 8, 1966, Ser. No. 555,997
Int. Cl. B23p *11/02, 17/00*
U.S. Cl. 29—400 **3 Claims**

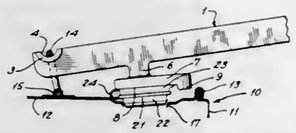


A continuous linear weight is covered by a heat shrinkable tube to form a linear body. The linear body is then introduced under tension between press cutting gears to sever only the linear weight into pieces of short length, the linear body then being heated to cause the tube to undergo heat shrinkage to firmly hold the severed weight pieces in position.

3,468,013
METHOD AND APPARATUS FOR APPLYING CLOSURE TO CONTAINERS

Philip A. Sciamonte, St. Catharines, Ontario, and Peter Rezner, Beamsville, Ontario, Canada, assignors to American Flange & Manufacturing Co. Inc., New York, N.Y., a corporation of Delaware

Filed Oct. 3, 1967, Ser. No. 672,541
Int. Cl. B23p *19/00*
U.S. Cl. 27—451 **11 Claims**

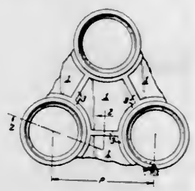


A method and apparatus for applying plug like closure members formed of resilient plastic material to pail heads which heads have a centrally positioned carrying handle secured thereto. The container handle is employed to effect a force fit engagement of the closure member within an opening adjacent the periphery of the pail head.

3,468,014
ASSEMBLY METHOD

Paul Seeley Monroe, Chatham, N.J., assignor to Halcon International, Inc., a corporation of Delaware

Filed Mar. 29, 1966, Ser. No. 538,336
Int. Cl. B23k *31/02*
U.S. Cl. 29—472.1 **3 Claims**

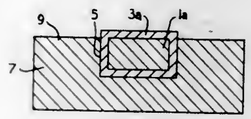


The present invention relates to a new method for assembling a sheet and tube apparatus by inserting sheet metal insert slugs between adjacent tubing and welding these insert slugs to each other and the tube ends.

3,468,015
PROCESS OF MANUFACTURING STRIP CONTACT MATERIAL BY INLAYING PERIPHERALLY CLAD NOBLE-METAL STRIP

Teuvo J. Santala, Attleboro, Mass., assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware

Filed Oct. 31, 1966, Ser. No. 590,835
Int. Cl. B23k *31/02*
U.S. Cl. 29—481 **2 Claims**



A round core rod or wire of a noble metal is clad with a metallic diffusion barrier material. The clad rod is worked into a substantially rectangular configuration, then fitted and bonded into a substantially rectangular groove of a base strip composed of a base metal so as to form a composite of the strips with a barrier layer located therebetween. The dimensions are selected such that the bonded strip including a substantially U-shaped part of the barrier layer fills the groove but its outer clad portion forms a protrusion. Then the protrusion is machined to remove the outer portion of the cladding and expose the noble metal in the form of an inlaid surface flush with the surface of the base strip, the cladding forming a substantially U-shaped diffusion-barrier between the strips.

3,468,016
METHOD AND COMPOSITION FOR IMPROVED WELDING OF LIGHT METAL OR LIGHT ALLOYS

Roger Lorain, Issoire, and Albert Trompier, Paris, France, assignors to Compagnie Generale du Duralumin et du Cuivere "Cegedur," Paris, France

No Drawing. Filed Apr. 5, 1966, Ser. No. 540,205
Claims priority, application France, Apr. 7, 1965, 12,243
Int. Cl. B23k *31/02, 29/00*
U.S. Cl. 29—488 **8 Claims**

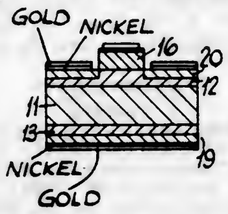
The invention relates to a process for producing carbon-free joints preparatory to welding light metal members which are initially coated with a polymer capable of depolymerization to produce a gaseous monomer at welding temperature and thereafter heating the members to a welding temperature in an atmosphere free of oxygen and finally welding the members while heated in the atmosphere.

3,468,017
METHOD OF MANUFACTURING GATE CONTROLLED SWITCHES

Michael Albert Stacey, Kenilworth, and David Everitt Millington, Henley-in-Arden, England, assignors to Joseph Lucas (Industries) Limited, Birmingham, England

Filed Nov. 15, 1966, Ser. No. 594,559
Claims priority, application Great Britain, Dec. 6, 1965, 51,621/65
Int. Cl. H01h *11/00;* **B01j** *17/00*
U.S. Cl. 29—571 **4 Claims**

A gate controlled switch is formed by diffusing a p-type impurity into opposite faces of an n-type slice to form a p-n-p wafer with the p-layers acting as the anode and the gate, and then forming a diffused n-type region in the gate region to act as the cathode, the exposed portions of the gate and cathode regions being plated to provide electrodes. The initial diffusion of the p-type impurity is carried out in a reducing atmosphere, and after the formation of the cathode region further p-type impurity is diffused into the gate region to increase the concentration of the p-type impurity. In addition, the p-n junction is subjected to an etching process to increase the breakdown voltage

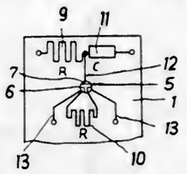


of the junction, all these factors contributing to the performance of the gate controlled switch.

3,468,018
PRODUCTION OF CIRCUITS

Georg Lutz, Nuremberg, Germany, assignor to Telefunken Patentverwertungsgesellschaft m.b.H., Ulm (Danube), Germany

Filed July 28, 1965, Ser. No. 475,357
Claims priority, application Germany, Aug. 1, 1964, T 26,716
Int. Cl. B01j *17/00;* **H05k** *3/30*
U.S. Cl. 29—577 **6 Claims**

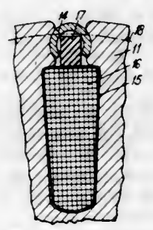


A method for joining microelectric components into microelectric circuit units by soldering. According to the method, circuit units are prepared wherein conducting paths are provided on an insulated base and meet at a junction. The junction is then divided to separate the conducting paths and form contact surfaces. Thereafter, a component is located at the divided junction, the contact points of which coincide with the contact surfaces of the conducting paths. The component is then joined to the contact surfaces of the conducting paths by being glued or soldered into place.

3,468,019
METHOD OF MAKING SLOT CLOSERS FOR SMALL MOTORS

Kenneth Robson Brown, Kirknewton, Midlothian, and Bernard Colin McDermott, Edinburgh, Scotland, assignors to Ferranti, Limited, Hollinwood, Lancashire, England, a company of Great Britain and Northern Ireland

Filed Apr. 20, 1967, Ser. No. 632,404
Claims priority, application Great Britain, Apr. 20, 1966, 17,213/66
Int. Cl. H02k *15/00*
U.S. Cl. 29—596 **2 Claims**

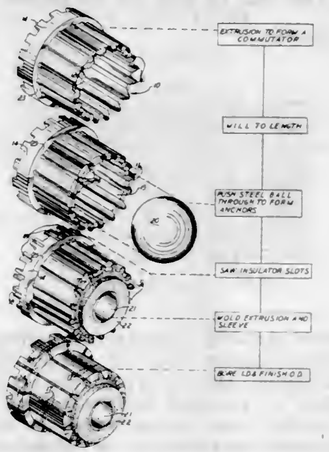


Means for reducing the width of the mouth of a winding slot in the rotor or stator of a dynamo-electric machine comprises closing the slot with an arcuate member of magnetic material and subsequently removing the crown of the arcuate member to form a slot mouth of the required width.

3,468,020
METHOD OF ANCHORING A METALLIC MEMBER TO PLASTIC

Donald W. Carlson and Phillip E. Eller, Belleville, Mich., assignors to Ford Motor Company, Dearborn, Mich., a corporation of Delaware

Filed Dec. 12, 1966, Ser. No. 600,932
Int. Cl. H01r *39/04*
U.S. Cl. 29—597 **4 Claims**

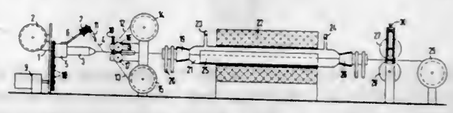


This disclosure relates specifically to a method of anchoring copper commutator segments to a plastic dielectric member by the following steps. First, a plurality of ribs are formed longitudinally along the interior surface and inwardly toward the central axis of the commutator. Each rib subsequently forms an individual commutator segment. Second, a surface on an object is moved along the ribs such that a portion of the metal forming each of the ribs is deformed both toward the interior surface of the commutator and outwardly with respect to the original configuration of each of the ribs whereby each original rib assumes a generally T-shaped configuration. Plastic is then flowed into engagement with the T-shaped rib and allowed to solidify whereby the T-shape of each of the ribs provides anchoring surfaces for insuring the retention of the individual commutator segments in close physical association with the plastic.

3,468,021
METHOD FOR MANUFACTURING SUPERCONDUCTIVE CONDUCTORS

Richard Maier, Erlangen, Germany, assignor to Siemens Aktiengesellschaft, Erlangen, Germany, a corporation of Germany

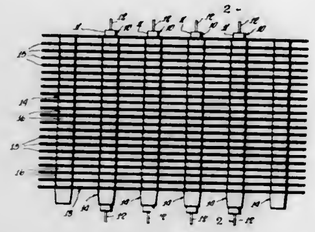
Filed Apr. 21, 1966, Ser. No. 544,130
Claims priority, application Germany, May 10, 1965, S 97,015
Int. Cl. B23k *31/02;* **B23p** *25/00*
U.S. Cl. 29—599 **7 Claims**



A method of manufacturing superconductive bands which have layers of a superconductive intermetallic com-

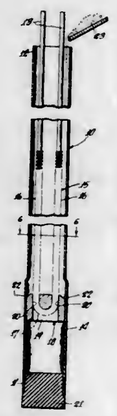
pound of niobium-tin. A pair of niobium bands of tin with a layer of tin situated therebetween is heated to a temperature between approximately 950° to 1200° C. to place the tin in molten condition while maintaining a distance of from 5 to 10μ between the niobium bands so that the molten tin does not flow out of the space between the niobium bands while at the same time reacting with and diffusing into the niobium bands to form layers of niobium-tin therewith.

3,468,022
METHOD OF MAKING RAPID HEAT DISSIPATING ELECTRIC HEATERS
Harry C. Fischer, Royal Oak, Md., assignor to Edwin L. Wiegand Company, Pittsburgh, Pa.
Filed Mar. 15, 1966, Ser. No. 534,486
Int. Cl. B23p *15/26*
U.S. Cl. 29—611 **8 Claims**



The method of making a finned electric heating element, and the article produced thereby, by stacking the tapered tubular portions of a plurality of metal fins, one within the next to form an elongated tube, positioning a metal-sheathed tubular heating element within the tube, filling the space between the exterior of the element and the interior of the tube with heat-conducting material in a fluid state, and solidifying such material.

3,468,023
METHOD OF MAKING ELECTRIC RESISTANCE HEATING UNITS
Joseph McOrlly, Pittsburgh, Pa., assignor to Edwin L. Wiegand Company, Pittsburgh, Pa.
Filed Nov. 1, 1966, Ser. No. 591,147
Int. Cl. H01c *17/00*
U.S. Cl. 29—615 **8 Claims**



An electric strip heater, made by disposing a pair of elongated, resistor conductor legs lengthwise within an elongated, cylindrical metal sheath and maintaining the legs in spaced, parallel relation, out of contact with the inner periphery of the sheath and in a diametrical plane extending longitudinally of the sheath, filling the sheath with finely divided refractory material, and flattening the sheath transverse to the diametrical plane to compact the refractory material and to form the sheath to oblong shape.

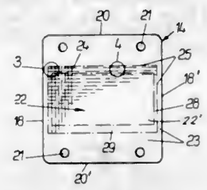
3,468,024
METHOD AND APPARATUS FOR ORIENTING AND ASSEMBLING SMALL PARTS
John L. Yonkers, 2030 Sunset Ridge Road, Northbrook, Ill. 60062
Filed Oct. 20, 1965, Ser. No. 498,710
Int. Cl. B23p *19/00;* **B23q** *17/00*
U.S. Cl. 29—629 **3 Claims**



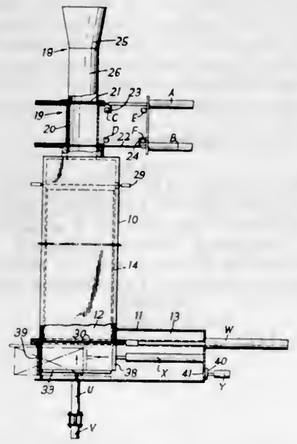
There is provided a method and apparatus for assembling connectors of the type formed of a shell-shaped connector member closed at one end and open at the other, provided with an outer insulated jacket. For this purpose there is provided an orienting plate having a plurality of chamfered openings assembled with a gage plate having a plurality of gage pins with one gage pin extending through a respective one of the openings in the orienting plate. The plate assembly is vibrated to simultaneously orient and gage a majority of the holes with connector members assembled over the gage pins. The gage pin rejects any of the connector members which are undersize. Subsequently the orienting plate is removed and the connectors are inserted over suitable holders along with insulating jackets. The insulating jackets are heat shrunk over the connectors with a tapered portion of the holder shaping an outwardly flanged opening to the jacket.

3,468,025
FLEXIBLE SCREEN FOIL
Werner Messinger, Frankfurt am Main, Germany, assignor to Braun Aktiengesellschaft, Frankfurt am Main, Germany
Filed Sept. 9, 1966, Ser. No. 578,231
Claims priority, application Germany, Oct. 22, 1965, B 84,220
Int. Cl. B26b *19/04*
U.S. Cl. 30—346.51 **4 Claims**

A flexible screen foil for dry shaves comprises a central perforated field having an unperforated marginal area around the field. In order to provide a cutting foil surface of great mechanical strength and having high cutting quality, the perforated field is formed with a plurality of holes of substantially uniform size and spacing in a central zone and includes a marginal transition zone around the central zone with holes which are dimensioned progressively smaller toward the outer boundary of the transition zone so that the web portion between the holes becomes wider from the inner boundary of the transition zone towards the outer boundary thereof. The transition zone comprises a very narrow marginal area on one side of the perforated field and a somewhat wider marginal area on each end of the perforated field.



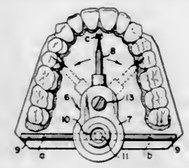
3,468,026
CONTINUOUS CHEESEMAKING PROCESS
George M. Robertson and George K. Charles, Guildford, Surrey, England, assignors to Cow & Gate Limited, Guildford, Surrey, England
Filed May 15, 1967, Ser. No. 638,236
Claims priority, application Great Britain, May 17, 1966, 21,940/66
Int. Cl. A01j *25/12, 25/00, 27/00*
U.S. Cl. 31—89 **18 Claims**



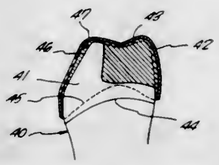
A method of continuously making cheese in which a stream of crumbled curd is fed into a chamber to form a pillar or rod of curd which is passed through the chamber, the curd being compressed in the pillar or rod, and blocks of cheese are severed from the pillar or rod as it emerges from the chamber. The chamber is preferably maintained at a sub-atmospheric pressure to extract air from the crumbled curd fed into the chamber. The curd may be compressed either by the weight of superimposed curd in a pillar of the curd, or by forcing the curd into a duct leading to an extrusion nozzle which is blanked off during the compression of the curd in the duct.

3,468,027
INSTRUMENT FOR ORIENTATING DENTAL CASTS
Stephen F. Dobranski, 5 Cornell Road, Cranford, N.J. 07016, and Raymond J. Curcio, 1036 Ambay Ave., Edison, N.J. 08817
Filed Apr. 15, 1966, Ser. No. 542,802
Int. Cl. A61c *19/00*
U.S. Cl. 32—1 **4 Claims**

An apparatus for accurately orientating oral anatomical models on the ideal plane of occlusion having in the same plane a first arm positioned to locate the two hamular notches, a second arm, which is adjusted to be positioned to locate the midpoint of the incisal papilla, and means to indicate when the three points formed by the two hamular notches and the midpoint of the incisal papilla are in a horizontal plane; and the method of using the apparatus to determine the ideal plane of occlusion for said oral anatomical models.

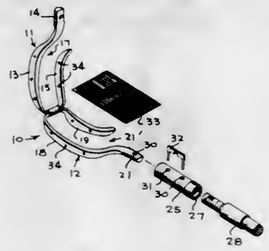


3,468,028
ARTIFICIAL CROWNS FOR TEETH
Robert A. Sunter, Glendora, Calif., assignor to Unitek Corporation, Monrovia, Calif., a corporation of California
Filed Oct. 9, 1964, Ser. No. 402,854
Int. Cl. A61c *5/08*
U.S. Cl. 32—12 **8 Claims**



A preformed artificial crown for restoring a damaged tooth, the crown having an occlusal surface with cuspal planes oriented at cuspal angles substantially smaller than the cuspal angles of the natural tooth being restored. The height of the crown and contour of the crown gingival edge are selected to position the crown edge between the gingival and cervical lines of the damaged tooth with little or no custom trimming by the dentist. A broadened occlusal table on the crown minimizes the removal of health structure from the tooth being restored.

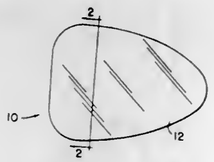
3,468,029
DENTAL IMPRESSION FRAME AND DISPOSABLE TRAY
Charles E. Moore, 420 Magazine St., Tupelo, Miss. 38801
Continuation-in-part of application Ser. No. 390,963, Aug. 20, 1964. This application Jan. 20, 1967, Ser. No. 610,530
Int. Cl. A61c *9/00*
U.S. Cl. 32—17 **8 Claims**



A dental impression instrument for holding dental impression materials on a flexible supporting material such as gauze between upper and lower frames, each frame having a buccal and a lingual section. The upper and

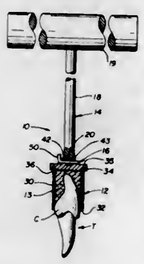
lower frames are interconnected at the posterior end by a hinge including a bearing member which may be deformable. The anterior ends of the upper and lower buccal frame sections are releasably connected as by a threaded handle to provide a tight gripping means therebetween for the supporting material. The upper and lower lingual frame sections are pivotally fixed at the posterior end by hinge and free at the anterior end to provide therebetween a loose gripping action for the supporting material in order to permit necessary slippage of the supporting material at occlusion to conform to the various acclusal planes of the patient.

3,468,030
DENTAL DEVICE
Henry A. Peyser, 573 Shelden Road, Grosse Pointe Shores, Mich. 48236, and David J. Nivison, 17120 E. Warren, Detroit, Mich. 48224
Filed Oct. 1, 1965, Ser. No. 492,117
Int. Cl. A61c *5/14*
U.S. Cl. 32—34 **10 Claims**



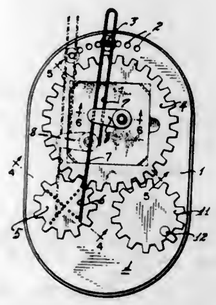
The invention relates to a dental device adapted to be placed in the mouth of a dental patient to serve as a mouth prop blocking the parotid gland and to provide absorption. The device is of generally triangular shape with rounded corners and comprises at least one layer of thin absorbent material. The triangular device is of a size to fit into the mouth between teeth and cheek with one of the surfaces of the absorbent material contacting with the inner surface of the cheek to protect the same and also to provide absorption. In the preferred form, the device also is provided with a thin layer of metal foil on the exposed surface which reflects available light thereby brightening posterior areas. The foil also produces mere images in hard-to-reach spots.

3,468,031
TOOTH EXTRACTOR AND METHOD
Everett D. Mumaw, 2717 Edgehill Road, Cleveland Heights, Ohio 44106
Filed July 21, 1967, Ser. No. 655,015
Int. Cl. A61c *3/14*
U.S. Cl. 32—61 **9 Claims**



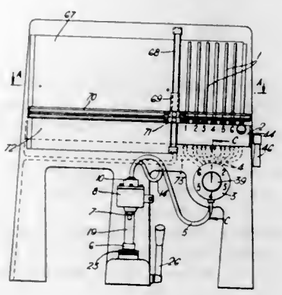
Teeth are extracted by imbedding and adhering an exposed portion of a tooth in a potting compound within a container that fits over the tooth, and then applying forces to the tooth through the compound.

3,468,032
GEOMETRIC DESIGN INSTRUMENT
Dan Vernon Smith, 210—03 43rd St., Bayside, N.Y. 11361
Filed May 24, 1968, Ser. No. 731,839
Int. Cl. B43l *11/04*
U.S. Cl. 33—27 **1 Claim**



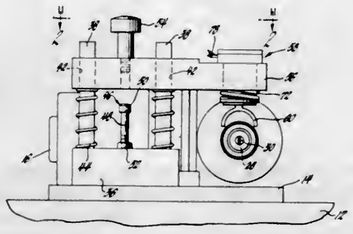
The device has, first, the provision of a novel marker holder longitudinally adjustable in a novel form of carrier therefor, the provision of arcuately arranged holes directly in the base member which thus eliminate the fence of pegs, and the provision of special shouldered stud-shafts integral with the gears and having bearings both on the top of the base member and laterally against annular depending surfaces of the base member integrally therewith.

3,468,033
MEASURING AND CALCULATING MEANS FOR GAUGING OR MEASURING DEVICES
John Alfred Walter Ives, 31 Braemar Road, Brentford, Middlesex, England
Filed Dec. 19, 1966, Ser. No. 602,655
Claims priority, application Great Britain, Jan. 11, 1966, 1,261/66
Int. Cl. G01b *5/00*
U.S. Cl. 33—147 **15 Claims**



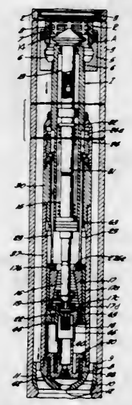
For use with gauging or measuring equipment display or calculating means comprise a plurality of indicating means in which representations of successive measurements can be separately set up and held for subsequent comparison with one another. Means may be provided to obtain an indication of the average value of the different individual indications. The indicating means may comprise liquid columns in an array of side-by-side tubes, each having a valve for opening to communicate with measuring means and for closing to hold the liquid column in set position. The measuring means may communicate with the tubes by fluid pressure.

3,468,034
ROUNDNESS GAUGE
William Blinder, Newington, Conn., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Sept. 28, 1966, Ser. No. 582,568
Int. Cl. G01b *5/24*
U.S. Cl. 33—174 **6 Claims**



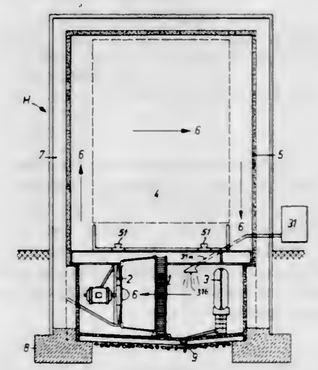
A roundness gauge uses a semi-circular shoe which rides on the test part. The shoe has a diameter equal to one tolerance limit of the test part and is sufficiently resilient to accommodate a test part having a diameter at the other tolerance limit. Roundness is indicated by measuring the deviation of the test part from the shoe.

3,468,035
HIGH OR LOW FLUID FLOW SIGNALLING APPARATUS
Raymond G. Taylor, Jr., Santa Monica, Calif., assignor to Byron Jackson, Inc., Long Beach, Calif., a corporation of Delaware
Filed June 18, 1968, Ser. No. 737,960
Int. Cl. E21b *47/02;* **G01c** *9/02*
U.S. Cl. 33—205 **9 Claims**



Signalling apparatus for producing pressure pulses in the stream of well drilling fluid in which the fluid flows through a pulse ring assembly having axially spaced rings cooperative with a knob reciprocable through said rings to provide restricted flow paths productive of the fluid pressure pulses in the drilling fluid stream in a number representative of the disposition of the well drilling string in the well bore in the vicinity of the drill bit, and in which a replaceable flow bushing is employed to provide a selected flow area between the pulse ring and the knob when the knob is in its normal position responsive to the influence of drilling fluid pressure thereon, so that movement of the knob to said position is assured under the prevailing flow rate. Such apparatus in which a gravity responsive pendulum system is utilized to determine the extent of movement of said knob and releasable latch means connect the gravity responsive means to the knob.

3,468,036
METHOD AND APPARATUS FOR DRYING OF MATERIALS
Josef Blaettler, Zurich, Switzerland, assignor to Ineta Establishment, Balzers, Liechtenstein, a corporation of Liechtenstein
Filed Jan. 9, 1968, Ser. No. 696,549
Claims priority, application Switzerland, Jan. 13, 1967, 480/67
Int. Cl. F26b *3/04, 21/08*
U.S. Cl. 34—22 **16 Claims**



A method and apparatus for drying materials by means of circulating air condensation systems wherein the moisture content of the circulating air contacting the material to be dried is intermittently increased and subsequently decreased. The actual value of moisture content in the circulating air is simultaneously compared with the reference value of moisture content throughout the intermittent increase and decrease thereof. If, during an intermittent increase of the moisture content of the circulating air, the actual value of moisture content fails to reach a predetermined reference value of moisture content within a predetermined time interval, a signal is generated and delivered to a control apparatus which is effective to decrease or lower the reference value of the moisture content. The above operation is continued until the material is sufficiently dried.

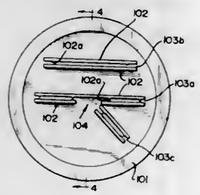
3,468,037
TEACHING DEVICE
Richard J. Warneke, 3824 Grand Ave., Western Springs, Ill. 60558
Filed Nov. 25, 1966, Ser. No. 597,047
Int. Cl. G09b *3/02, 19/00*
U.S. Cl. 35—9 **11 Claims**



A self-contained, hand manipulated teaching device which preferably is in the form of two concentrically oriented, rotatable discs. The discs have openings therein

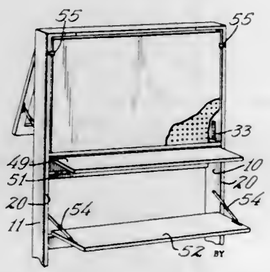
and informational material arranged thereon which, by proper rotation of the discs, provides a unique learning program format for the user.

3,468,038
MATHEMATICAL MODEL
Joseph W. Kennedy, Oxford, Ohio, assignor to LaPine Scientific Company, a corporation of Illinois
Filed Mar. 30, 1967, Ser. No. 627,069
Int. Cl. G09b *23/04*
U.S. Cl. 35—34 **6 Claims**



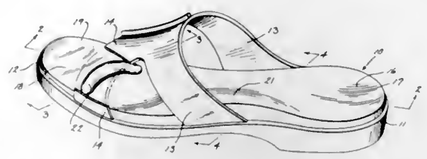
A set of construction members for student use for constructing and studying terminology, volume and dimensions of forms encountered in solid geometry. Each form is constructed from a base member and a cover which completes the basic form. Partitions are provided which can be mounted within the form and the cover member is a transparent shell so that the partitions can be observed by the student.

3,468,039
MULTI-PURPOSE STAND
Karl E. Dubbert, 920 10th St. SE., Rochester, Minn. 55901
Filed Sept. 22, 1967, Ser. No. 669,781
Int. Cl. A47b *41/04;* **B43l** *5/02*
U.S. Cl. 35—60 **7 Claims**



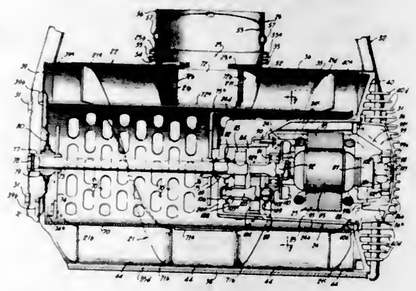
This invention relates to a multi-purpose stand designed for use by kindergarten and lower primary grade teachers. The device includes a pair of standards connected by cross-members to form a rectangular frame. A chart board is hingedly connected along its upper edge to the top cross-member of the frame, and means are provided for holding the frame in inclined position when desired. A composite panel is removably supported in the frame and includes an apertured panel known as a "Pegboard," a flannel covered panel, and a frame holding these panels in spaced parallel relation. A shelf is pivotally supported between the standards to extend horizontally below the composite panel. A lower shelf is pivotally supported between the standards beneath the first shelf to form a low level table in horizontal position and a partition panel in vertical position.

3,468,040
SANDALS
Tatuo Fukuoka, 21, 3-chome, Minami, Fukushima-cho, Tokushima, Japan
Filed Dec. 13, 1967, Ser. No. 690,121
Int. Cl. A43b *3/12*
U.S. Cl. 36—11.5 **1 Claim**



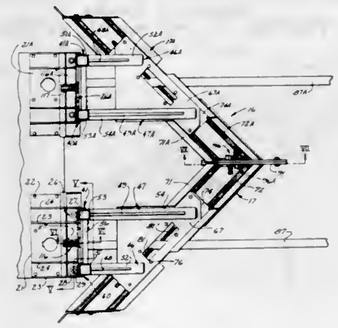
A low-cost plastic sandal having a novel sole provided with specially-formed depressions, ridges, and raised edges on its top surface conforming to the contour of a wearer's foot, said sole design providing support to improve the posture and comfort of the wearer, as well as ensuring that the sandal is maintained securely on the wearer's foot and does not come off during walking or running.

3,468,041
ELECTRIC MOTOR-DRIVEN SNOW BLOWER
Charles A. Mattson, Oak Park, and Alvin Romin, Jr., Oak Lawn, Ill., assignors to Sunbeam Corporation, Chicago, Ill., a corporation of Illinois
Filed Apr. 4, 1966, Ser. No. 539,706
Int. Cl. E01b *5/09, 5/08*
U.S. Cl. 37—43 **22 Claims**



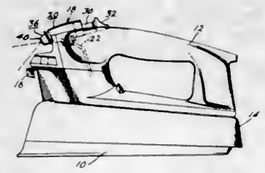
Apparatus for removing snow wherein an impeller housing, having a large inlet opening along the front side to receive snow and a discharge outlet adjacent the upper center for the discharge of snow, houses therein an impeller with an electric motor concentrically disposed within the impeller. By this arrangement a unit is provided which has a very low center of gravity and provides a unit having a better balance than units heretofore provided. Moreover, the snow, and air cooled by the snow comes in direct contact with the motor casing within the impeller to provide the necessary cooling. The motor casing projects inwardly from an end wall of the impeller housing, and due to the close proximity of the motor and the impeller, belt and chain drives are not required, as well as protective guards for such belt and chain drives. By having the casing project inwardly from one end of the housing access to the motor and gear train is readily possible through a removable end plate. With this arrangement the motor is located where the work to be done is required. By the use of the center discharge a larger auger can be employed and the snow has a shorter distance to travel to reach the discharge opening.

3,468,042
RAILWAY ROADBED PLOW
Calvin L. Coy, Gun Plain Township, Allegan County, Mich., assignor to Kalamazoo Manufacturing Company, Kalamazoo, Mich., a corporation of Michigan
Filed Dec. 21, 1966, Ser. No. 603,596
Int. Cl. E01b *27/02*
U.S. Cl. 37—104 **9 Claims**



A railway roadbed plow for a railway vehicle for spreading ballast along the banks of a railroad railway wherein the plow is V-shaped and each one of the blades is supported for vertical movement independent of the other with means being provided for separately raising and lowering the blades independently of each other. Clamping means are provided for holding the blades together in the area of their adjacent ends to prevent a separation thereof but still allowing the blades to be raised and lowered independent of each other.

3,468,043
NOZZLE FOR SPRAY PUMP
Charles Roger Turner, Philadelphia, Pa., assignor to Proctor-Silex Incorporated, Philadelphia, Pa., a corporation of New York
Filed Nov. 15, 1966, Ser. No. 594,457
Int. Cl. D06f *75/06*
U.S. Cl. 38—77.1 **16 Claims**

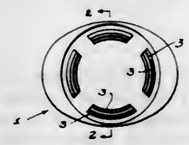


In a nozzle for a spray pump particularly useful for an electric iron water has access to the nozzle orifice through at least one passage in a sealing member of deformable resilient material capable of withstanding fluid pressures without materially deforming but distorting under mechanical pressure selectively applied by piston means within the pump chamber. The same sealing member may be provided with a self seal hole through which a pin on the piston means may pass and, in turn, pass through and clean the nozzle orifice. Furthermore, the same sealing means may be capable of slight movement away from the orifice as air tends to be drawn into the cylinder when the piston means is retracted, which movement causes the sealing means to move against and close the opening of the cylinder through which water passes in order to seal the cylinder against entry of air.

3,468,044
METHOD FOR PRECONDITIONING POLYPROPYLENE FABRICS FOR IRONING
George Lopatin and Carl W. Schroeder, Orinda, Calif., assignors to Shell Oil Company, New York, N.Y., a corporation of New York
No Drawing. Filed Nov. 26, 1965, Ser. No. 510,026
Int. Cl. D06f *73/00*
U.S. Cl. 38—144 **4 Claims**

The ironing temperature at which polypropylene-containing fabrics can be ironed without becoming hard and shiny is increased by giving the fabric a preliminary heat treatment at a temperature at which the fabric becomes crinkled but below that at which the untreated fabric becomes hard and shiny.

3,468,045
SNAP-ON MEDALLIONS
Ted G. Keller, New York, N.Y., and William Stelzer, Bloomfield Hills, Mich., assignors to Stoffel Seals Corporation, Tuckahoe, N.Y.
Filed Sept. 12, 1966, Ser. No. 578,799
Int. Cl. A44c *3/00;* **A44b** *1/04, 1/14*
U.S. Cl. 40—1.5 **1 Claim**



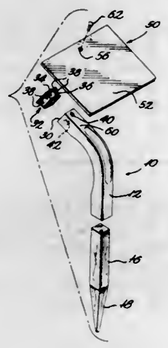
A medallion comprising a molded body portion having prongs in the back for gripping a button of a garment or the like, a rim in the front having recesses to receive a piece of sheet material for carrying desired markings, where the said recesses are obtained by molded openings in the back, and the prongs are formed by molded openings in the front, the latter openings being then covered by the piece of sheet material.

3,468,046
CARD SYSTEM OF IDENTIFICATION
Shoji Makishima, Tokyo-to, Japan, assignor, by mesne assignments, to Eizo Komiyama, Ichikawa-shi, Chiba-ken, Japan
Filed Apr. 4, 1967, Ser. No. 628,482
Claims priority, application Japan, Sept. 5, 1966, 66/58,195
Int. Cl. G09f *3/02, 13/32*
U.S. Cl. 40—2.2 **10 Claims**



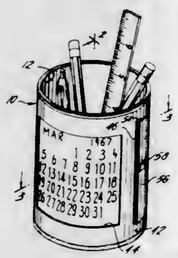
An identification system for identifying an individual to whom a card such as a credit card is issued. The card has the form of a fluorescent screen carrying thereon nonfluorescent identifying indicia. An ultraviolet filter which is of the same color as the identifying indicia is located on the fluorescent screen covering the identifying indicia thereon so as to render this indicia invisible in the visible spectrum. When exposed to ultraviolet light, however, this latter light passes through the ultraviolet filter to provide fluorescence of the screen, whereas the nonfluorescent identifying indicia does not fluoresce so that it contrasts with the fluorescent screen, thus enabling this identifying indicia to become visible when exposed to ultraviolet light.

3,468,047
ALL-WEATHER MARKER DEVICE
Huston M. Beatty, P.O. Box 127, Sturgeon, Mo. 65284
Filed June 22, 1967, Ser. No. 648,087
Int. Cl. G09f *3/18, 7/18*
U.S. Cl. 40—10 **5 Claims**



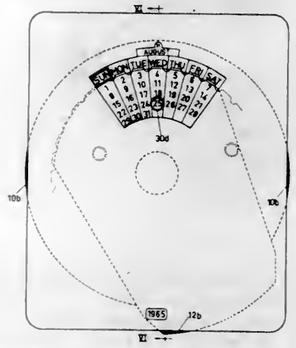
A tubular support portion is open at the upper and lower ends thereof, a stake being received in the lower end thereof and a cap closing off the upper end thereof. Reinforcing ribs are formed in opposite sides of the tubular support portion for rigidifying the support portion, the support portion including upper and lower portions joined by an integral arcuate portion and defining an included angle of approximately 120°. A marker portion comprises a flat plate defining a flat marker surface, the marker portion being formed of Fiberglas and adapted to receive on the marker surface thereof a suitable marking substance such as marking ink or grease from a grease pencil and the like.

3,468,048
COMBINED DESK ORGANIZER AND CALENDAR
Irving Smith, Flushing, N.Y. (% Arrow Art Finishers, 1201 Evergreen Ave., Bronx, N.Y. 10472)
Filed Mar. 22, 1967, Ser. No. 625,168
Int. Cl. G09d *3/02;* **B42d** *19/00*
U.S. Cl. 40—107 **7 Claims**



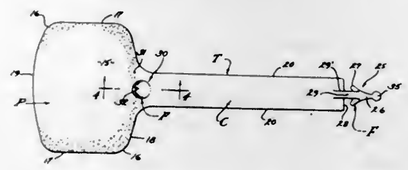
A combined desk organizer and calendar composed of an open top, closed bottom can around which a colored paper strip is rotatably supported with successive months of successive years imprinted seriatim thereon. Ensheathing the can and stirp is a fixed tube having an opening through which a single month of the calendar can be viewed at one time. The tube is slitted to permit the calendar strip to be withdrawn therethrough. A serrated metal tearing edge is provided on the slit. The slit constitutes one edge of a flap whereby the tearing edge can be swung back to expose the free end of the strip at such time as it is desired to grasp and pull said end in order to advance the month of the calendar viewed through the opening.

3,468,049
CALENDAR
Bengt Anders Benson, Styckjunkargatan 5, Stockholm, Sweden
Filed Feb. 21, 1967, Ser. No. 617,525
Int. Cl. G09d *3/08*
U.S. Cl. 40—115 **12 Claims**



A calendar, useful for a series of years, which shows automatically, for any year within its range, the weekdays of every month with the correct dates, comprising two concentric rotatable members, provided with scales indicating months, weekdays, dates and years, arranged behind a front plate provided with openings or windows revealing the relevant date variables. The members are preferably mounted on a back piece joined with the front plate. The calendar may be provided with a transparent disk, disposed between the members and the front plate, having markings, such as red circles, to indicate "today's" date.

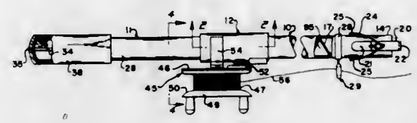
3,468,050
CATTLE TAG
Clarence Pool, 8321 Passons Blvd., Pico Rivera, Calif. 90660
Filed Mar. 28, 1967, Ser. No. 626,558
Int. Cl. G09f *3/06*
U.S. Cl. 40—302 **4 Claims**



This invention relates to the identification of cattle and the like and is particularly concerned with tags that are insertable through animal tissue and adapted to retain and make readily available that information which is pertinent to that animal, and provides a one-piece article of supple material in the form of a tag and which includes a coupling portion for embracement of an animal part and with fastener features that facilitate installation and which are reinforced so as to assure a reliably permanent connection to said animal part.

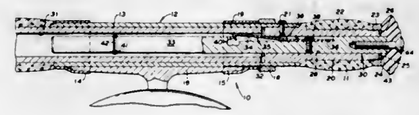
3,468,051
FISHING LINE CASTING DEVICE
Wilfred J. Duperron, 7243 Kingsway, Burnaby, British Columbia, Canada
Filed July 3, 1967, Ser. No. 650,824
Int. Cl. A01k *91/02*
U.S. Cl. 43—19 **8 Claims**

A device having a barrel and a reel-wound fishing line attached to a projectile which can be fired from the barrel by compressed air. The projectile having a plug end sealingly receivable in the outer portion of the barrel. A latch



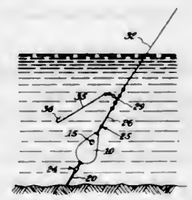
on the outer portion of the barrel releasably holds the projectile against the air pressure within the barrel.

3,468,052
BUTT EXTENSION FOR A FISHING ROD
Benjamin T. Hardesty and Thomas F. Sarah, Akron, Ohio, assignors to Pflueger Corporation, Akron, Ohio, a corporation of Ohio
Filed Jan. 3, 1967, Ser. No. 606,969
Int. Cl. A01k *87/02*
U.S. Cl. 43—23 **2 Claims**



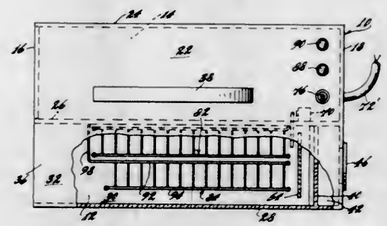
An extender which is slidably received within the handle of a fishing rod. In the forward position the extender is retracted inobtrusively within the handle where it is held by a retaining means. Selectively, the extender may be protracted axially rearwardly of the handle and locked to extend the effective handle length.

3,468,053
SOUND PRODUCING DEVICE FOR FISHING
Edward Lux, 74 Pearl St., Springville, N.Y. 14141
Filed Sept. 21, 1966, Ser. No. 581,423
Int. Cl. A01k *97/00*
U.S. Cl. 43—42.31 **1 Claim**



A sound producing device for use during fishing, the device comprising a unit secured to the lower end of a fishing line and including a hollow receptacle disposed upon a shaft, the lower end of which rides upon the ocean floor. Pellets are placed within the receptacle which moves about to produce a rattling sound for attracting fish in deep water trolling.

3,468,054
ELECTRICAL RODENT EXTERMINATOR
Irvin Levine, 509 Burghley Ave., Ventnor, N.J. 08406
Filed Aug. 15, 1967, Ser. No. 660,792
Int. Cl. A01m *19/00*
U.S. Cl. 43—98 **1 Claim**



An electrical rodent exterminator including a pair of high voltage grids affixed to the floor of a compartmented bait holding enclosure. A swinging baffle is rearwardly positioned within the enclosure to activate a timed cycle of high voltage current flow through the grids upon movement of the baffle by a rodent.

3,468,055
FOLDING PUPPET, MARIONETTE, OR DOLL, HEAD
Waldo H. Hunt, Scarsdale, N.Y., assignor to Graphics International, Inc., New York, N.Y.
Filed Apr. 27, 1966, Ser. No. 545,630
Claims priority, application Japan, Oct. 15, 1965, 40/28,408; Oct. 28, 1965, 40/87,117
Int. Cl. A63h *3/36, 9/00*
U.S. Cl. 46—126 **5 Claims**

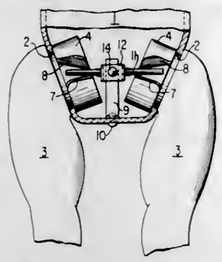


A folding puppet, marionette, or doll, head. More particularly, it relates to a puppet, marionette, or doll, head formed of paper, cardboard, plastic sheet, or the like, that may be folded flat for shipping and storage and may be erected quickly and easily for use in an animated display. The folding puppet has a body portion characterizing a human figure.

3,468,056
DOLL WALKING MECHANISM

Robert Gardel, New York, and Egon Gorsky, Brooklyn, N.Y., assignors to Lettam, Inc., New York, N.Y., a corporation of New York

Filed Feb. 16, 1967, Ser. No. 616,643
Int. Cl. A63h *11/14, 1/20*
U.S. Cl. 46—149 **4 Claims**

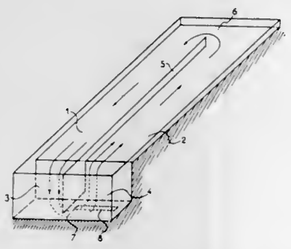


A doll walking mechanism of great simplicity in which doll legs, rotatably mounted in circular leg openings of the body (torso) are interconnected for reciprocal movement through the provision of a cross bar or rocker pivotally supported on a bracket fixed to the body for rocking movement about a substantially horizontal axis, the ends of the cross bar being engaged in channels formed in the upper ends of the legs and being releasable from the channels to permit moving the legs to sitting position.

3,468,057
PROCESS FOR THE CULTURE OF ALGAE AND APPARATUS THEREFOR

Andre Buisson and Pierre Trambouze, Versailles, France, Hugo Van Landeghem, Anvers, Belgium, and Michel Rebeller, L'Etan-la-Ville, France, assignors to Institut Francais du Petrole des Carburants et Lubrifiants, Rueil-Malmaison, France

Filed May 10, 1967, Ser. No. 637,534
Claims priority, application France, May 31, 1966, 63,606; Mar. 3, 1967, 97,483
Int. Cl. A01g *7/02*
U.S. Cl. 47—1.4 **14 Claims**



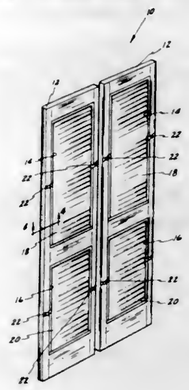
Apparatus and method of cultivating algae which involves the use of carbon dioxide as a nutrient as well as a means to propel the algae throughout a culture basin.

3,468,058
REMOVABLE SHUTTER CONSTRUCTION WITH PIVOTAL SLATS

Allyn L. La Fontaine, 2451 Camel Drive, Warren, Mich. 48092

Filed Dec. 4, 1967, Ser. No. 687,749
Int. Cl. E04f *7/08*
U.S. Cl. 49—75 **9 Claims**

A plywood panel has a pair of rectangular openings for receiving a pair of removable, wooden, shutter inserts to form a door-wall. Each shutter insert is anchored in position by spring clips having one end attached to the panel

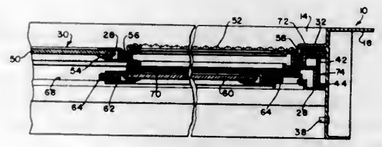


and an opposite end formed with integral teeth for biting into the frame of the insert.

3,468,059
TILTING SASH WITH SLIDING PANEL

John P. Malmrose and Bulow A. Peterson, Kewanee, Ill., assignors to Kewanee Mfg. Co., Kewanee, Ill., a corporation of Illinois

Filed May 6, 1968, Ser. No. 726,912
Int. Cl. E05d *15/48, 15/22*
U.S. Cl. 49—164 **1 Claim**



A tilting sash carried by a frame and including a pair of glazed panels occupying the total area of the sash, one of the panels being fixed and the other being slidable to an open position and a screen selectively covered and uncovered by the sliding panel. Besides being tiltable to a partly open position, the entire sash is easily removable from its frame.

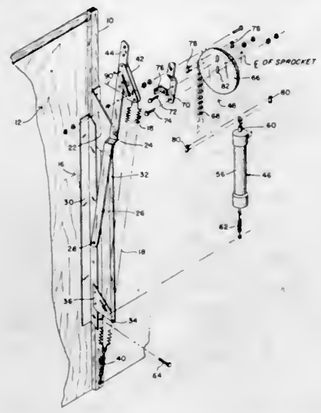
3,468,060
CLOSURE MEMBER OPERATING MECHANISM

Richard C. Mursinna, San Diego, Calif., assignor, by mesne assignments, to Ametek, Inc., New York, N.Y., a corporation of Delaware

Filed June 20, 1967, Ser. No. 647,456
Int. Cl. E05f *15/00*
U.S. Cl. 49—200 **14 Claims**

Operating mechanism for closure members such as garage doors and the like including a spring arrangement for biasing the door from one to the other of two positions and a hydraulic type operating mechanism for moving the door from the second to the first of these positions

and for maintaining it in the first position. Two actuators are preferably provided so that the hydraulic mechanism

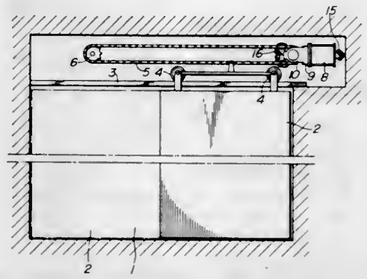


can be actuated from inside or outside the structure with which the closure member is associated.

3,468,061
ELECTRIC ACTUATOR FOR AUTOMATIC DOORS

Kazuyoshi Ozaki, Suita-shi, Japan (Kokudo Bldg., 23–2 chome, Sonezaki-kami, Kita-ku, Osaka, Japan)

Filed Oct. 23, 1967, Ser. No. 677,163
Claims priority, application Japan, Nov. 11, 1966 (utility model), 41/107,233
Int. Cl. E01f *13/00*
U.S. Cl. 49—360 **1 Claim**



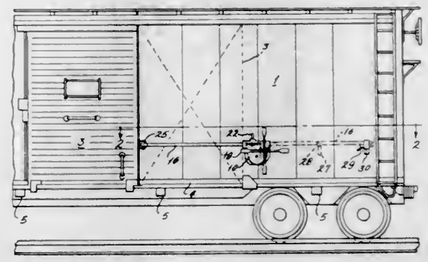
A compact, neat and cheap electric actuator for an automatic door is provided by an integral structure of a motor, reduction gear box and a set of bevel gears which change the axis of rotation of a drive shaft arranged parallel to the wall of a building by ninety degrees so that a sprocket wheel carrying an endless chain arranged parallel to the wall and connected to a sliding door can be simply driven.

3,468,062
BOXCAR DOOR CONTROL

George M. Custer, Lancaster, Pa., assignor to Hennessy Products, Inc., Chambersburg, Pa., a corporation of Delaware

Filed July 19, 1967, Ser. No. 654,563
Int. Cl. E05f *11/34, 11/40*
U.S. Cl. 49—362 **4 Claims**

Railway car side wall with a door opening provided with a sliding door for closing the opening and a gear mounted on the car wall and operating a rack connected to the door to move the door to full open and closed positions and to hold the door at a selected position. The rack has a main part, and a separate portion pivoted to the main part, and automatically folded under the main

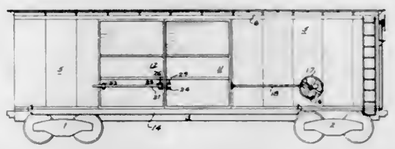


part, as the door is opened, to clear a ladder or other car wall part. A bracket on the car wall supports the outer end of the rack when the door is in wide open position.

3,468,063
DOUBLE SLIDING DOOR ACTUATOR

James J. Hennessy, Jr., Chambersburg, Pa., assignor to Hennessy Products, Inc., Chambersburg, Pa., a corporation of Delaware

Filed Apr. 19, 1968, Ser. No. 722,606
Int. Cl. E05f *11/34, 17/00*
U.S. Cl. 49—362 **10 Claims**



Structure for sliding double doors in the same general plane and comprising a mechanical device attachable to one of said doors by which a manually applied force to reciprocate the same is multiplied, and an elongated member attachable to opposing portions of both of said doors to hold them in spaced relation to each other whereby the mechanical device may be selectively operated to move the first-mentioned door independently of the other door or to move both of the doors as a unit in spaced relation to each other; also the combination of such structure with double doors particularly on the side wall of a railway house car.

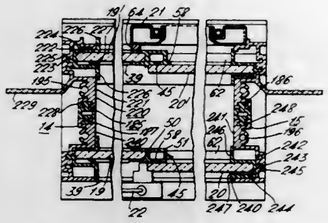
3,468,064
SASHLESS WINDOW WITH MEETING RAIL

William P. Fraleigh, Hamilton, Ontario, and Alcide Melanson, Montreal, Quebec, Canada, assignors to H & A Supply Company Limited, Burlington, Ontario, Canada

Filed Jan. 3, 1968, Ser. No. 695,454
Claims priority, application Canada, Jan. 4, 1967, 979,555
Int. Cl. E05d *15/06*
U.S. Cl. 49—413 **15 Claims**

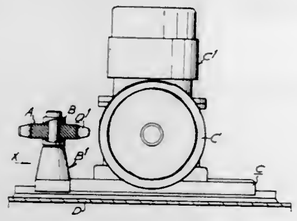
An improvement in a window structure is provided for relatively movable window panes, such as a sashless window having two slidable panes or a semi-sashless window having one fixed pane. The window structure is provided with a separating and meeting strip or U-shaped rail associated with one such pane of glass, the strip or rail having a sealing member thereon disposed between the two

panes of glass for sealingly engaging one of the panes of glass. There is thereby provided sealing between the two



panes of glass irrespective of the relative position of the two panes of glass in the window.

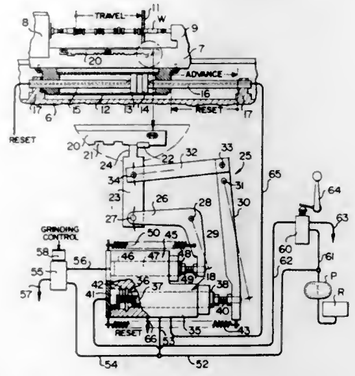
3,468,065
MACHINES FOR SHARPENING ROTARY CUTTERS
Alan Stamford Rowley, The White Cottage, Castle Hill, Prestbury, Chester, England
Filed Sept. 12, 1966, Ser. No. 578,527
Claims priority, application Great Britain, Sept. 30, 1965, 41,500/65
Int. Cl. B24b *7/00, 9/00, 5/00*
U.S. Cl. 51—37 **5 Claims**



A machine for grinding and sharpening the cutting faces of the teeth of milling and similar cutters having integral cutting teeth comprises a frame, a pedestal slidably adjustably mounted on the frame and carrying a rotatable arbour mounting the cutter to be ground, a one-tooth mechanism mounted on the frame for rotating the arbour to reposition the cutter after each tooth grinding operation, a driven grinding wheel head mounted on a reciprocating table and moved back and forth to dispose the grinding wheel in operative engagement with the cutter by a pivoted quadrant in timed relation with the rotational positioning of the cutter, and a positive lock for holding the cutter stationary during the grinding operation.

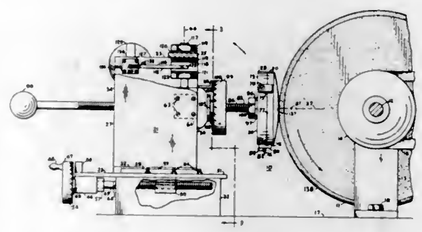
3,468,066
INDEXING MECHANISM FOR MACHINE TOOLS
Ralph E. Price and Robert E. Bricker, Waynesboro, Pa., assignors, by mesne assignments, to Landis Tool Company, Waynesboro, Pa., a corporation of Delaware
Filed Oct. 18, 1966, Ser. No. 587,500
Int. Cl. B24b *5/42, 17/02, 9/04*
U.S. Cl. 51—72 **10 Claims**

This disclosure relates to a spacing bar and plunger arrangement in a machine tool for indexing the movement of the work support or tool support between successive operative positions. The plunger is mounted for movement transverse to the spacing bar. Two pivoted members are differently spaced from the spacing bar and pivotally connected to the plunger at points also differently spaced from the spacing bar. The movements of the plunger are guided entirely by the spaced pivotal connections with the two pivoted members without the need for close fitting vertical and horizontal guide mem-



bers so that the movements of the plunger are completely unrestricted by sliding friction and the indexing operation is performed quickly and with a minimum of frictional resistance.

3,468,067
APPARATUS FOR USE IN GRINDING LENSES
Lawrence H. Larson, 1612 Don San George Court, Orlando, Fla. 32806
Filed Feb. 13, 1967, Ser. No. 615,698
Int. Cl. B24b *9/14*
U.S. Cl. 51—96 **10 Claims**



An apparatus for use in grinding opthalmic lens is provided. It includes a grinding wheel and a machine used for orienting and manipulating a refractive body with respect to the cutting surface of the wheel. In the process of developing an optical surface through use of the apparatus, a plurality of narrow, adjacently arranged cuts are made in the surface of the refractive body. The respective cuts are made in parallel planes and the machine is provided with certain mechanisms that are adjustable and enable development through use of the apparatus of optical surfaces that provide a progressively varying dioptric power in the finished lens.

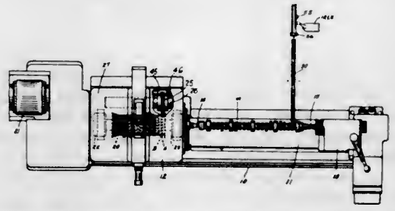
Featured in the machine is a carriage supported lens holder which is pivotally moved about one axis when the cut is made in the refractive body and which is rotatably adjustable about another axis to facilitate adjustment of the refractive body relative to the grinding surface between successive cuts. Also provided are mechanisms for precisely adjusting the location of the lens with respect to the pivot axis and for moving the carriage toward and away from the grinding surface al lto facilitate attainment of cuts having different radii of curvature.

3,468,068
FISHHOOK SHARPENER
Jerry R. Spruell, Amsterdam, Mo. 64723
Filed Mar. 2, 1966, Ser. No. 531,310
Int. Cl. B24b *9/04;* **B24d** *7/02*
U.S. Cl. 51—71 **2 Claims**



A fishhook sharpener comprising an elongated handle adapted to be manually rotated about its axis, and a block of abrasive material carried fixedly at one end of said handle and having a conical socket formed therein for receiving the point portion of a fishhook therein, the axis of said socket being parallel to but eccentrically offset from the axis of said handle.

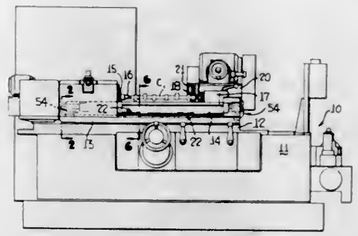
3,468,069
MULTIPLE MASTER CAMS FOR CAM GRINDING MACHINES
John R. Fries and Ralph E. Price, Waynesboro, Pa., and John A. Boller, Thurmont, Md., assignors, by mesne assignments, to Landis Tool Company, Waynesboro, Pa., a corporation of Delaware
Continuation-in-part of application Ser. No. 390,916, Aug. 20, 1964. This application Feb. 3, 1967, Ser. No. 613,794
Int. Cl. B24b *7/00*
U.S. Cl. 51—101 **9 Claims**



This subject has to do with a cam grinding machine and particularly relates to the construction of the master cam and the shifting of a cam follower relative thereto. For each cam component to be ground, the master cam has a plurality of master components so that the cam grinding machine is adapted to effect the grinding of a plurality of different cam components. The machine is not only provided with the conventional means for shifting the cam follower between master cam components in one set of master cams, but also with power means to shift the cam follower from a master cam component in one set of master cams to a master cam component in another set of master cams without in any way disassembling the drive mechanism.

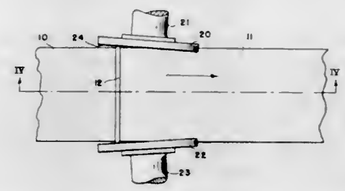
3,468,070
METAL REED SUPPORT FOR OSCILLATING CRADLE
John R. Fries and Ralph E. Price, Waynesboro, Pa., assignors to Landis Tool Company, Waynesboro, Pa., a corporation of Delaware
Filed May 16, 1967, Ser. No. 638,993
Int. Cl. B24b *19/12, 47/02*
U.S. Cl. 51—101 **19 Claims**

This disclosure involves an improvement in cam grinder construction, particularly in the means for supporting the oscillating cradle. The invention particularly relates to the providing of metal reed hinges in place of the customary bearings for the end portions of the cradle. It also consists of placing similar hinges to connect the cradle and work carriage at one or more intermediate points at or between the headstock and footstock carried by the cradle. The reed hinges for supporting the end portions of the cradle prevent radial displacement of the cradle more effectively than the conventional pre-



loaded roller bearings now customarily used and with substantially less friction. The intermediate hinge or hinges supplement the end hinges and provide the additional result of damping resonance and vibration in the cradle.

3,468,071
SIDE EDGE TRIMMING OF WELDED STRIP
Foster R. Woodward, Warren, Ohio, assignor to The Taylor-Winfield Corporation, Warren, Ohio, a corporation of Ohio
Filed Mar. 14, 1966, Ser. No. 534,173
Int. Cl. B24b *9/04, 21/06*
U.S. Cl. 51—110 **5 Claims**

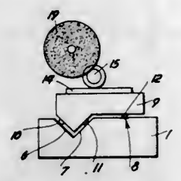


Apparatus for removing side edge burrs from metal strip advancing longitudinally in its own plane. Carriers are provided on opposite sides of the strip and on which are mounted abrasive means driven at high speed, such as an abrasive belt entrained about closely spaced rollers. The flat reaches of the abrasive belts are splayed outwardly at a small angle to the edges of the strip opposite to the direction of movement thereof and are canted relative to the plane of the strip. Thus the strip can vary in width. Rotating discs of abrasive material may be substituted for the abrasive belts.

3,468,072
ARRANGEMENT FOR HIGH PRECISION CYLINDRICAL OR PLANE GRINDING
Bernard Marcel Bernelin, Paris, Sebastien Frindel, Annecy, Haute-Savole, and Claude Benezech, La Bretonnier par St. Germain-les-Arpajon, France, assignors to Societe Anonyme: Societe Alsacienne de Constructions Atomiques, de Telecommunications et d'Electronique "Alcatel," Paris, France, a corporation of France
Continuation-in-part of application Ser. No. 319,744, Oct. 29, 1963. This application Sept. 7, 1966, Ser. No. 577,740
Claims priority, application France, Nov. 2, 1962, 914,229; May 6, 1966, 60,661
Int. Cl. B24b *5/04, 49/00*
U.S. Cl. 51—165 **14 Claims**

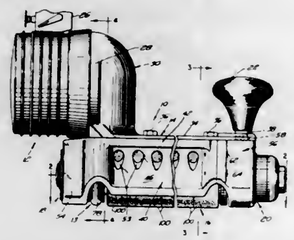
A cylindrical grinding machine having a stationary base with five bearing surfaces. Two of the surfaces are on

one side of the V-shaped guide, two on the other side and a fifth is parallel to the edge where the base of



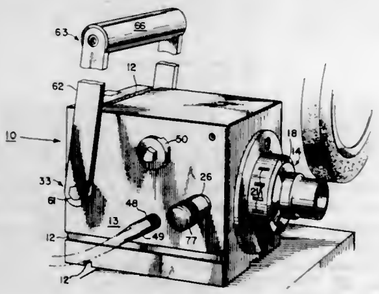
the V-shaped guide meets. A slide is mounted on the base, the slide having a grinding wheel.

3,468,073
ROTARY TOOL
Michael Del Vecchio, Providence, R.I., assignor of fifty percent to Peter Gigliotti, Providence, R.I.
Filed Oct. 20, 1966, Ser. No. 588,688
Int. Cl. B24b *23/00;* **B24d** *9/02*
U.S. Cl. 51—170 **3 Claims**



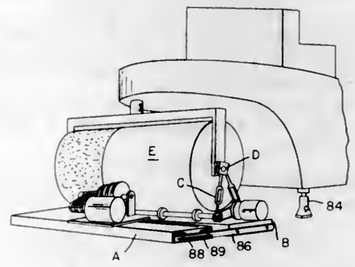
A rotary tool for grinding or sanding having application in automobile body repair work and including a barrel formed of flexible material on which a grinding or sanding sleeve is mounted, the flexible barrel being expanded by pressure exerted on the ends thereof by internal sleeves for frictionally retaining the sanding and grinding sleeve in place thereon.

3,468,074
ROTATABLE FIXTURE AND EXPANDING MANDREL
Theodore B. Eddy, R.R. 1, Erickson Road, New Milford, Conn. 06776
Filed Aug. 25, 1966, Ser. No. 575,031
Int. Cl. B24b *45/00, 47/12*
U.S. Cl. 51—216 **11 Claims**



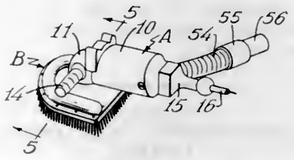
A machine tool fixture designed to be clamped to a machine tool worktable for supporting a workpiece in rotatable and indexable orientation relative to the worktable, incorporating a casing having a bore extending therethrough, a collet-receiving spindle sleeve rotatably mounted in the bore, a compressed gas motor within the casing producing rotation of the spindle sleeve, and collet-clamping drawbar means cooperating with the spindle sleeve and providing workpiece-clamping and collet-release actuation. Indexing notches and resiliently biased index-latching devices cooperate with the spindle sleeve. The compressed gas motor includes a rotor having radially movable vanes eccentrically journaled in a motor chamber whose end walls are provided with comparatively deep central grooves and comparatively shallow peripheral grooves, supplying compressed gas at a predetermined pressure beneath and between the rotor vanes to rotate the compressed gas motor.

3,468,075
ROLLING MACHINE ROLLER FINISHING APPARATUS
Elton C. Armstrong, Fresno, Calif., assignor to Fix-A-Roll Co., Fresno, Calif.
Filed Apr. 14, 1967, Ser. No. 631,093
Int. Cl. B24b *19/00;* **E01c** *19/26*
U.S. Cl. 51—254 **3 Claims**



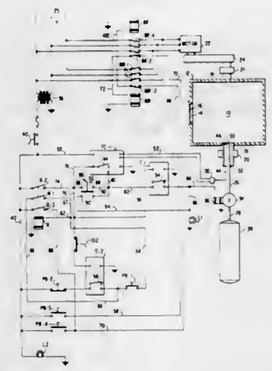
An apparatus for grinding the surface of a rolling machine roller drum while the drum remains mounted on the rolling machine and which includes adjustable supports for supporting the rolling machine in an elevated position during grinding, and drive rolls for rotating the drum to be ground. A multi-faced grinder on the apparatus is positioned to grind the roller drum surface by traversing the drum surface parallel to the axis of rotation of the roller drum.

3,468,076
DUST COLLECTOR FOR GRINDERS
Robert J. Jones, 9042 12th Ave. S., Minneapolis, Minn. 55420
Filed Oct. 10, 1966, Ser. No. 585,679
Int. Cl. B24b *55/06, 23/00*
U.S. Cl. 51—273 **8 Claims**



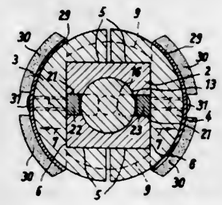
The dust collector includes a transparent body adapted to overlie a grinding disc the shaft of the grinder extending through the body. A wall of bustles encloses the grinding disc which allows air to pass but which inhibits the passage of dust. A generally U-shaped manifold is built into the body, and has a closed end and an open end to which a vacuum hose may be attached. Apertures which are spaced longitudinally of the manifold connect the interior of the manifold with the portion of the body within the bristle wall.

3,468,077
LOW TEMPERATURE PROCESSES FOR DEFLASHING MOLDED ARTICLES
Robert D. Jones, Allentown, and David J. Klee, Emmaus, Pa., assignors to Air Products and Chemicals, Inc., Allentown, Pa., a corporation of Delaware
Filed Oct. 25, 1966, Ser. No. 589,457
Int. Cl. B24b *1/00;* **B24c** *1/00*
U.S. Cl. 51—314 **8 Claims**



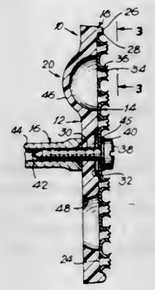
A process of deflashing resilient articles by placing the articles in a chamber and cooling the chamber to a sub-embrittlement temperature, applying deflashing forces to the articles in the chamber while maintaining the chamber at the sub-embrittlement temperature for a first predetermined time interval, allowing the temperature of the chamber to increase toward the embrittlement temperature during an ensuing second predetermined time interval and completing removal of the flash from the articles during the second predetermined time interval. The temperature of the chamber may be maintained at a higher sub-embrittlement temperature during the second predetermined time interval and the chamber is cooled and maintained at the sub-embrittlement temperatures by introducing cold liquid, such as liquid nitrogen, into the chamber under control of a device which functions responsively to the temperature of the chamber.

3,468,078
HONING TOOLS
Peter Nagel, Hindenburgstrasse 58, Nuertingen, Wurttemberg, and Gerhard Wagner, Zizishausen, Wurttemberg, Germany
Filed May 10, 1967, Ser. No. 637,428
Int. Cl. B24b *9/02*
U.S. Cl. 51—346 **5 Claims**



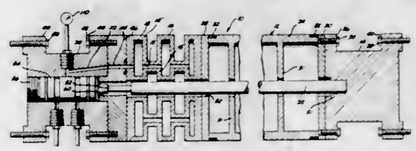
An improved adjustable honing tool embodying segmented cups that carry honing linings and which are supported for radial movement upon a tool body. The tool body has a rectangular cross-section that is received in complementary shaped portions of the cups for transmitting rotary movement from the tool body to the cups. A cone type adjusting mechanism is carried in the tool body for adjusting the radial position of the cups.

3,468,079
ABRASIVE-LIKE TOOL DEVICE
Jack William Kaufman, 357 Frankel Blvd., Merrick, N.Y. 11566
Filed Sept. 21, 1966, Ser. No. 584,314
Int. Cl. B24d *17/00, 3/00*
U.S. Cl. 51—378 **5 Claims**



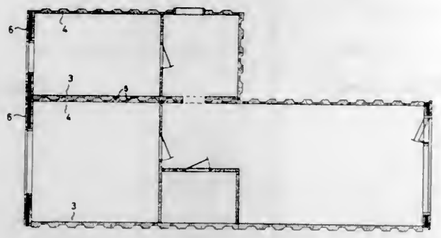
Rotary file having perforate abrasive means and a backing disc provided with air scoops for directing a flow of air through the perforations of the abrasive.

3,468,080
DIMENSION REGULATED STRUCTURAL STRUT
Siegfried Hansen, Los Angeles, Calif., assignor to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware
Filed Dec. 19, 1967, Ser. No. 691,776
Int. Cl. E04c *3/32;* **G04b** *17/20;* **G01b** *19/00*
U.S. Cl. 52—1 **18 Claims**



A structural strut having a particular dimension subject to dimensional variation due to changes in mechanical and wind loading, and temperature; a dimension standard element structurally embodied within the strut; and a hydraulic, electrical and/or heat or mechanically operated control system responsive to variatons of the particular dimension of the strut to regulate the length of an extensible and compressible portion of the strut whereby proportional relationship is maintained between the particular dimension of the strut and a reference dimension of the dimension standard element. The hydraulic embodiments responsive to dimension changes actuate a valve to unblock and block flow paths for fluid **14** under pressure to regulate the extensible and compressible portion length. The electrical embodiments employ a servo loop comprising a strain gage, controller and a heating unit or a mechanical screw advance assembly to regulate the extensible and compressible portion.

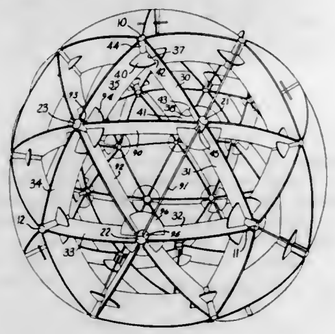
3,468,081
PREFABRICATED BUILDING ELEMENTS
Aulis Saarinen, Helakallionkatu 18, Tampere, Finland
Filed Dec. 20, 1967, Ser. No. 692,221
Claims priority, application Finland, Dec. 22, 1966, 3,408/66
Int. Cl. E04b *1/12;* **E04b** *1/04;* **E04c** *1/30*
U.S. Cl. 52—79 **8 Claims**



Prefabricated, cast building elements to be used in erecting houses, comprising room units constituted by floor, ceiling and side-wall slabs, preferably plane and finished inside, and provided with a relatively coarse-pitched toothing outside, so as to provide load-bearing, thickened beam-like portions therebetween. The profiles or beam-like portions between upper and lower room units overlap and interengage when the room units are assembled into a house.

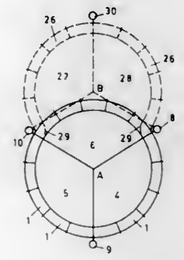
The profiles of adjoining wall portions or slabs, and superposed floor and ceiling portions, are preferably set off in horizontal direction by half a pitch. In a preferred embodiment, the floor and ceiling slabs have relatively thin intermediate portions between the beam-like portions, with the latter being recessed in, for example, the ceiling slabs, and the intermediate portions being conversely recessed, in turn, in the floor slabs.

3,468,082
SPHERE SHAPED STRUCTURE
Emerson E. Hadley, deceased, late of Eau Gallie, Fla.; Doris J. Hadley, 601 on the Causeway, Eau Gallie, Fla., Emerson Rea Hadley, Titusville, Fla., and Joanne B. Long, 711 Unity Drive, Eau Gallie, Fla., heirs of said Emerson E. Hadley
Filed July 19, 1966, Ser. No. 566,320
Int. Cl. E04b *1/32, 7/08;* **E04h** *12/00*
U.S. Cl. 52—81 **1 Claim**



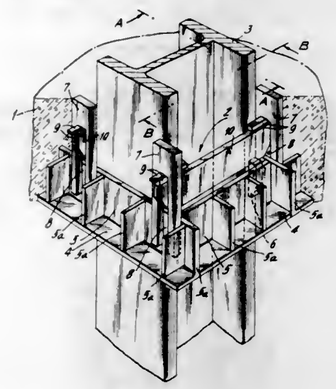
Spheres and sphere shaped structures are constructed by utilizing, as the main structural members, flat frame members which may be stamped or cut from sheets of material such as metal, wood, fiberglass or plastic. These flat frame structural members are arranged to form spherical regular polyhedrons.

3,468,083
COMPOUNDLY CURVED, SECTIONAL STRUCTURE
Bruno Camoletti, Geneva, Switzerland, and Pascal Hausermann, Minzier, France, assignors to Societe Sciper S.A., Geneva, Switzerland
Filed July 20, 1966, Ser. No. 566,508
Claims priority, application Switzerland, July 22, 1965, 10,548/65
Int. Cl. E04c *1/24*
U.S. Cl. 52—81 **1 Claim**



A prefabricated modular building construction is in the form of a vertically flattened ellipsoid of revolution comprising at least three pillars disposed at the apices of an equilateral triangle. Beams interconnect the pillars in star formation, and floor units are mounted one between each pair of adjacent beams. The sides of the building are convex lunes, and convex sectors cap the assembly.

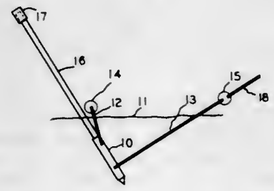
3,468,084
LIFT SLAB SUPPORT ASSEMBLY
Franz Vaessen, Essen, Germany, assignor to Firma Hochtief A.G. fur Hoch-und Tiefbauten vorm. Gebr. Helfmann, Essen, Germany
Filed May 31, 1967, Ser. No. 642,493
Claims priority, application Germany, July 23, 1966, H 60,056
Int. Cl. E04b *1/35, 1/34, 1/18*
U.S. Cl. 52—126 **5 Claims**



An assembly for supporting a lift slab on a column where the slab has an opening through it so that it can be moved upwardly along the column to its support position. Support brackets are integrally secured to the column and arranged thereon so that the slab will pass over the brackets when being lifted and will rest on them when in its support position. A frame member forms the opening

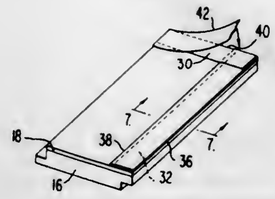
through the slab, and slotted slab support plates are attached to the frame member and extend above the support brackets when the slab is in its support position on the column. A support device bears on the support brackets and supports the support plates of the frame for transferring the slab load to the column. The support device has adjustable means such as wedge-like shims for accurately locating the slab in its support position, the wedge-like shims are self-locking when the slab is set in position.

3,468,085
MULTIPURPOSE GUY STAKE
Thomas T. Jones, Jr., 856 Magarian Road, Fallbrook, Calif. 92028
Filed Sept. 14, 1967, Ser. No. 668,304
Int. Cl. E02d *5/80*
U.S. Cl. 52—155 **3 Claims**



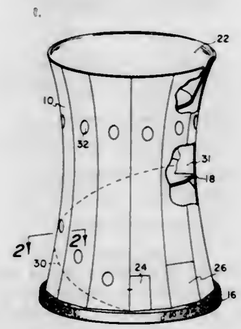
There is provided herein an improved multipurpose guy stake incorporating therein a W-shaped cross-sectional construction having a V tip and a spindle of cylindrical cross-section mounted on the body which incorporates therein a plurality of devices for driving the stake into the ground and for removing it.

3,468,086
PREFABRICATED ROOFING CONSTRUCTION AND METHOD
Walter J. Warner, Westford, Vt., assignor to The A.C. Hathorne Company, South Burlington, Vt., a corporation of Vermont
Filed Apr. 9, 1968, Ser. No. 719,947
Int. Cl. E04d *3/24*
U.S. Cl. 52—173 **10 Claims**



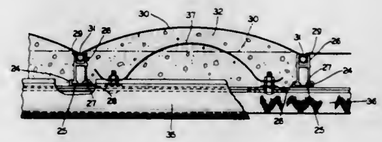
The present invention provides a prefabricated roofing panel having a panel core and sheet material adhered to one face of the panel core to form the weather surface of the panel. Each panel is generally rectangular and two adjacent edges of the sheet extend beyond corresponding panel core edges to form flaps. To protect the flaps, the long flap is folded back and taped to the outer face of the sheet material, the tape covering the preapplied adhesive disposed on the underface of the flap. The second flap, including the end portions of the first folded flap, is also folded back and taped to the outer face of the sheet material. When installing the roof panels, the tapes are released and the flaps are unfolded to overlie adjacent roof panels to form a complete weather surface for the entire roof structure with the flaps adhered to adjacent panels.

3,468,087
BUILDING STRUCTURE
Floyd S. Stancliffe, 5584 Sunny Oaks Drive, San Jose, Calif. 95123
Filed Sept. 29, 1967, Ser. No. 671,859
Int. Cl. E04f *11/00;* **E04h** *1/00, 12/00*
U.S. Cl. 52—187 **3 Claims**



A building structure generally having the form of a concavely-distorted cylinder whose wall-sections are formed by a group of slightly dished panels joined at their edges and at least partially held in their assembled relationship by the floor structure of the building, thus providing a simple yet strong and weather-resistant arrangement.

3,468,088
WALL CONSTRUCTION
Clarence J. Miller, 1822 28th St. NW., Canton, Ohio 44709
Filed Apr. 14, 1966, Ser. No. 542,542
Int. Cl. E04b *1/00, 2/00*
U.S. Cl. 52—250 **10 Claims**

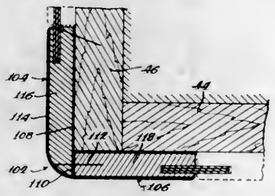


Wall construction and form means therefor in which a semi-rigid wall panel member is provided with a series of spaced retaining members. A relatively flexible continuous sheet-like form means extends between and is retained by the retaining means. The panel, retaining means and flexible member define a cavity which is filled with a reinforcing material such as cement to provide a wall which includes the panel retaining means and reinforcing material as an integral unit.

3,468,089
WALL AND CORNER PANELING SYSTEM
Myron G. Saunders and Frank D. Steinke, Wisconsin Rapids, Wis., assignors to Consoweld Corporation, Wisconsin Rapids, Wis., a corporation of Wisconsin
Filed July 11, 1966, Ser. No. 564,373
Int. Cl. E04b *2/08;* **E04c** *2/24, 1/10*
U.S. Cl. 52—275 **2 Claims**

An interior wall paneling system of a type utilizing a plurality of vertical interior wall panels each comprised

of a core having a thin decorative face sheet secured thereto, the system including an improved outside corner con-

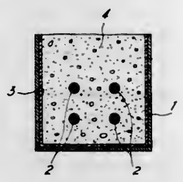


struction for such paneling system and also improved means for interconnecting adjacent panels to one another.

ERRATUM

For Class 52—309 see:
Patent No. 3,468,771

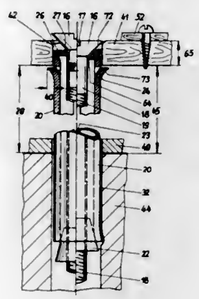
3,468,090
CONSTRUCTIONAL ELEMENT AND METHOD OF MAKING THE SAME
Robert L'Hermite, 4–6 Boulevard Maillot, Paris, France
Filed Nov. 24, 1965, Ser. No. 511,582
Claims priority, application France, Nov. 25, 1964, 996,179
Int. Cl. E04b *1/04;* **B29c** *1/00*
U.S. Cl. 52—309 **8 Claims**



A reinforced concrete structure is provided which comprises a central core of concrete and at least one external continuous metal reinforcement. An adhesive of high strength having in hardened state a modulus of elasticity greater than 20,000 kg./cm.^{2} and an elongation on rupture less than 1% is interposed between the adjacent surfaces of the concrete core and the external metal reinforcement and adheres the core and the metal reinforcement to each other along substantially the entire adjacent surfaces thereof.

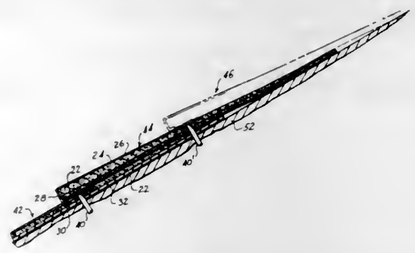
3,468,091
WALL FASTENERS
Anton Gerhard, 37 Peyerstrasse, 8500 Nuremberg, Germany
Filed Dec. 12, 1967, Ser. No. 689,978
Claims priority, application Germany, Dec. 14, 1966, G 48,733
Int. Cl. E04b *1/16;* **F16b** *13/04, 33/04*
U.S. Cl. 52—378 **9 Claims**

Wall fasteners for fastening structures to masonry walls, for example. The fastener includes an elongated bolt having a shank which is threaded at least in the region of one end of the bolt and having an enlarged head at the opposite end of this shank, the shank being surrounded by an elongated sleeve which is longitudinally slotted along at least part of its length and which terminates in one end face which is directed toward and adjacent the bolt head and in an opposed end which is in the region of the threaded end of the shank. This threaded end of the shank carries a nut provided with a tapered exterior surface extending into the sleeve. The outer diameter of the sleeve is greater than the largest outer diameter of the nut, while the diameter of the bolt head is greater than the outer diameter of the sleeve. The sleeve has at least one projection extending outwardly beyond its exterior surface and terminating in an end face which is directed toward the bolt head, so that this projection may engage the inner surface of a structural



element whose outer surface is engaged by the bolt head, with the nut together with the shank portion and sleeve adjacent thereto received in a bore of a masonry wall with the part of the sleeve which extends forwardly beyond the projection thereof toward the bolt head extending into an opening in the structural element which is to be carried by the masonry wall.

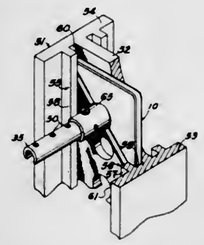
3,468,092
COMPOSITE STRIP SHINGLE
Alexander A. Chalmers, Caldwell, N.J., assignor to Alcan Aluminum Corporation, Cleveland, Ohio, a corporation of New York
Filed Dec. 5, 1967, Ser. No. 688,195
Int. Cl. E04d *1/22, 1/28, 1/34*
U.S. Cl. 52—543 **11 Claims**



The strip shingle has a single layer of asphalt saturated felt which is substantially longer than high. A novel and defined composition which is both adhesive and fire retardant is applied over the base to a thickness which, at the lower edge of the shingle is very much greater than the saturated felt, but which tapers in thickness from the lower edge to very little at the upper edge. A thin aluminum sheath is disposed over the lower approximately half of the base, and the lower metal edge is bent around the thick lower edge of the base and then reversely, to form a thick butt edge which is say one-quarter inch thick. The sheet metal is strongly secured to the base because of the highly adhesive character of the composition. The metal sheath and the base are somewhat indented on transverse lines at intervals, and the indentations are darkened in color to simulate the edges of adjacent individual shingles. Both the metal sheath and the base are upwardly notched at the lower

ends of these darkened indentations, to break up the continuity of the shadow line at the thick lower edge of the strip. These notches are well rounded or semicircular in outline to avoid sharp inside corners. The bottom of the shingle is coated with thin aluminum foil or paper backed foil which is strongly adhered to the felt, and the lower edge of which is received and clamped beneath the reversely folded edge of the metal sheath. The foil provides heat reflection and a moisture seal. When the shingle strips are applied to a roof deck the lower butt edge of an upper row overlies the upper portion of the metal sheath of the next lower row. The bottom surface of the upper row rests directly on and is adhered to the exposed adhesive composition area of the lower row, thereby adhesively securing the upper row against wind lift.

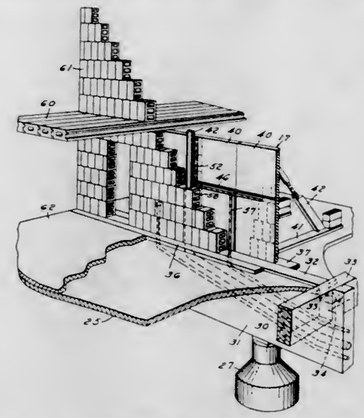
3,468,093
STRUCTURAL BRIDGING
James B. Fuss, 3245 Enon Road, College Park, Ga. 30022, and John S. Frye, 3098 Trafalgar, Chamblee, Ga. 30005
Filed Feb. 20, 1967, Ser. No. 617,250
Int. Cl. E04g *7/14*
U.S. Cl. 52—665 **6 Claims**



Bridging for structural shapes, especially I-beams, wherein the beams are arranged in parallel disposition in a first plane and bridging bars extend between the beams in a direction generally normal to the beams and in the same plane with the beams. The beams include a central web and holding members disposed on both sides of the center-line of the central web, and the bridging includes a bridging bar which extends between the central webs of the beams and a bridging clip which partially surrounds the bridging bar and is retained adjacent the beams by the holding members.

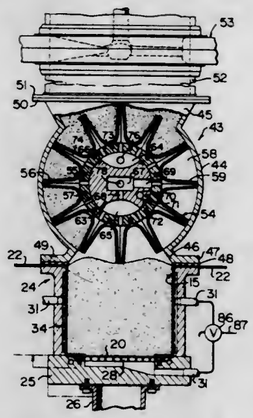
3,468,094
BUILDING ERECTION SYSTEM
Henry Fred Campbell, Belleville, Mich., assignor to Campbell Research Corporation, Detroit, Mich., a corporation of Michigan
Filed Feb. 5, 1968, Ser. No. 702,922
Int. Cl. E04b *1/35*
U.S. Cl. 52—742 **13 Claims**

The building system disclosed herein comprises laying a layer of material such as asphalt on the ground at the building site, cutting through the asphaltic material and excavating at the areas of the foundation. Footings are placed in the areas of the foundations and concrete is poured for the footings. Precast concrete foundation beams are then inserted through the cut areas of the asphaltic material, set on the footings and leveled with the upper edge of each beam extending above the top surface of the asphaltic material. Modular erection panels are erected in side-by-side relation on the asphaltic material adjacent the upper edges of the concrete beams and are aligned and plumbed. Each of the erection panels has color coded indicia thereon corresponding to utility lines and connections and block positions. Blocks are then erected on the foundation beams in accordance with the layout of the indicia means on the panels and simultaneously utility lines and connections are made during the erection of the blocks. Finally, the erection panels are removed. If



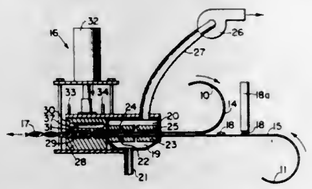
the terrain of the building site is undisturbed, the footings may be omitted and the foundation can be poured directly into the excavation, the erection panels and blocks being then erected on the poured foundation members.

3,468,095
METHOD OF AND APPARATUS FOR FILLING PREFORMED CARTONS WITH PREDETERMINED PORTIONS OF MATERIALS
Clarence W. Vogt, Box 232, Westport, Conn. 06880
Filed Oct. 18, 1966, Ser. No. 587,541
Int. Cl. B65b *63/02, 1/20, 13/20*
U.S. Cl. 53—24 **15 Claims**



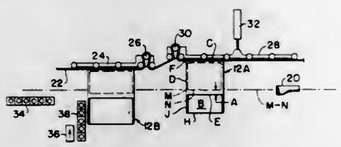
This disclosure relates to an apparatus and method for filling cartons with a finely divided pulverulent material. A somewhat conventional carton is placed within a shroud in overlying relation to a filter after which the filter is bonded to the carton and a vacuum drawn down through the carton through the filter. The upper part of the carton is presented to an outlet of a filler in sealed relation thereto. The filler includes a plurality of pockets mounted for rotation and for sequential presentation to an inlet having associated therewith a supply of the material, and the outlet. The material is drawn into the pockets by drawing a vacuum therein when the pockets are aligned with the inlet. When the pockets are aligned with the outlet, the pockets are vented and the vacuum drawn within the carton effects the discharge of the product from the pocket into the carton.

3,468,096
METHOD OF INTERPOSING A WASHING COMPOUND BETWEEN SUPERPOSED LAYERS OF NONWOVEN FIBROUS MATERIAL AND SEALING SAID LAYERS
Norman J. Franz, Colerain Township, Hamilton County, Ohio, assignor to The Procter & Gamble Company, Cincinnati, Ohio, a corporation of Ohio
Filed Feb. 8, 1966, Ser. No. 525,947
Int. Cl. B65b *9/04*
U.S. Cl. 53—28 3 Claims



Scouring pads or like articles are made by interposing a washing compound between superposed layers of nonwoven fibrous material. At least the surface fibers of the fibrous material are coated with a heat sealable resin. A hot gas is passed transversely through the superposed layers in a desired sealing pattern surrounding the washing compound. The hot gas raises the temperature of the resin in the sealing pattern beyond its fusion temperature whereupon the area is compressed until the resin coalesces thereby forming a seal joining the two layers.

3,468,097
METHOD AND APPARATUS FOR PACKAGING ARTICLES OF VARYING SIZE SERIALLY
Clifford R. Mack, 25 Lockwood Drive, Old Greenwich, Conn. 06870
Filed Apr. 21, 1967, Ser. No. 632,818
Int. Cl. B65b *1/04, 3/04, 7/04*
U.S. Cl. 53—37 7 Claims

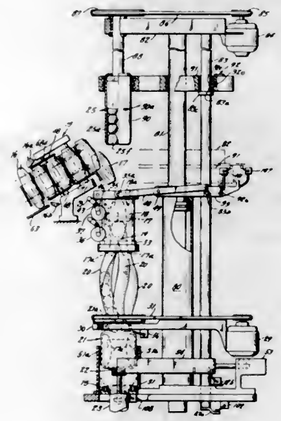


A method and apparatus for the serial packaging of articles of different dimensions in random order. Each article is first loaded in a special bag. The bag has one face wall projecting beyond the inserted article a distance which is uniform for all sizes of articles, and a parallel face wall projecting a variable distance, as required by the size of the article sufficient to overlap the first projection when they are folded to form the bag closure.

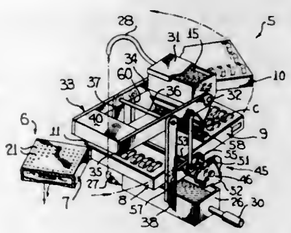
The first face wall of a bag of any size is located in a fixed plane, and the bottom is located a distance equal to the width of the inserted article from a fixed plane perpendicular to the first plane. The first and second projections are then folded onto the second plane to overlap one another, and sealed.

3,468,098
SPEAR PACKING APPARATUS
Bernard C. Eisenberg, Rockaway, N.J., assignor to Solbern Corp., Fairfield, N.J., a corporation of Delaware
Filed July 21, 1967. Ser. No. 655,157
Int. Cl. B65b *55/00, 35/56, 19/34*
U.S. Cl. 53—123 10 Claims

There is disclosed herein apparatus for receiving a whole cucumber, cutting off the ends thereof so that a predetermined length remains, feeding this predetermined length to knife means that slits the cucumber longitudinally into spears of segmental cross-section, and feeding the spears through a guide means into a jar so that the spears are oriented to rest against the jar wall with the cut surfaces, rather than the skin or uncut surfaces, of the spears viewable from the exterior of the jar. The guide means is in the form of individual chutes for each of the spears with each chute having a twist therein so that the angular orientation of the spear changes in a controlled manner as the spear passes through the chute. The segmentizing knife means, the chutes and the jar are all rotated during the cutting process, during the period when the spears pass through the chutes and during the period when the spears are fed into the jar. The mouth of the jar is smaller than the diameter of the jar body and the centrifugal force generated by rotation of the chutes and jar forces and spears outwardly as they enter the jar so that one or more layers of spears build up against the jar wall and spears within the jar will not interfere with additional spears entering the jar.

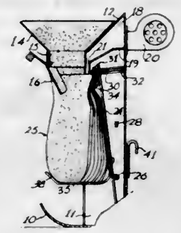


3,468,099
CURTAIN DEPOSITING APPARATUS
Clarence W. Vogt, Box 232, Westport, Conn. 06880
Filed Jan. 25, 1966, Ser. No. 522,895
Int. Cl. B65b *37/04*
U.S. Cl. 53—140 14 Claims



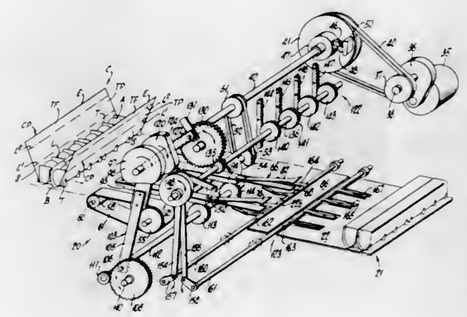
In curtain coating apparatus, the length of the falling curtain of coating material is kept constant by moving the curtain forming orifice up or down in accordance with the variations in the contour of the article being coated as the article moves through the falling curtain.

3,468,100
BAGGING MACHINE
Jay E. Rubel, Atlanta, Ga., assignor to Atlantic Company, Atlanta, Ga., a corporation of Georgia
Filed Sept. 24, 1965, Ser. No. 489,857
Int. Cl. B65b *5/02, 1/02, 3/02*
U.S. Cl. 53—189 10 Claims



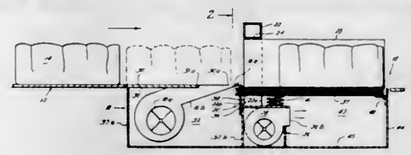
Bagging machine having a filling chute which receives material and directs it through a counterbalanced gate. When depressed by the material, the gate holds a bag open, the bag being initially opened by a blast of air from a blower mounted adjacent the filling chute. Upon removal of the filled bag, a subsequent bag is brought into position. The bags are supported to one side of the chute in such a position that the subsequent bag is blown open by a blast of air, each time the forewardmost bag, which is filled, has been removed. The bagging machine also includes a support for the bottom of the bag.

3,468,101
CARTON CLOSING MACHINE
Raymond Vahle, Tappan, N.Y., assignor to Continental Can Company, Inc., New York, N.Y., a corporation of New York
Filed Nov. 29, 1965, Ser. No. 526,317
Int. Cl. B65b *7/26*
U.S. Cl. 53—376 21 Claims



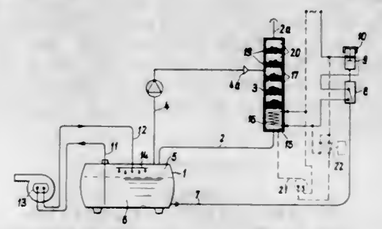
This disclosure relates to an egg carton closing machine in which a pair of pivotal arms swing a pair of closure panels to a generally vertical position, a downwardly descendible plate having a generally inverted W-shaped configuration thereafter progressively folds a pair of tuck panels toward each other, and another descendible plate having a generally inverted U-shaped guide surface completes the closing of the carton during which time the tuck panels are guided to one side of a longitudinal partition of the egg carton by the apex of the inverted W-shaped guiding edge.

3,468,102
PACKAGING APPARATUS
Malone H. Farrar, 5763 Reed Road 77033, and Robert W. Pitts, 7710 Barberton 77036, both of Houston, Tex.
Filed Jan. 23, 1967, Ser. No. 611,116
Int. Cl. B65b *43/36*
U.S. Cl. 53—385 10 Claims



This preferred embodiment provides an air stream which blows open the top bag of a plurality of bags folded on one another and the upper portion of the perimeter of the partially opened bag is seized to fully open the bag by an encircling member using vacuum suction to engage the bag, whereby goods are inserted through the open end of the bag.

3,468,103
METHOD AND APPARATUS FOR CORROSION PREVENTION
Martin Hergt, 21 Bruderstrasse, 497 Bad Oeynhausen, Germany
Filed Nov. 28, 1966, Ser. No. 597,493
Claims priority, application Germany, Nov. 29, 1965, H 57,805
Int. Cl. B01d *53/14*
U.S. Cl. 55—33 13 Claims

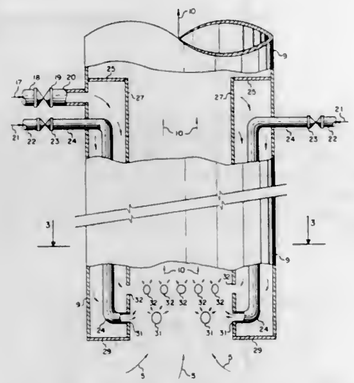


A receptacle defines an enclosed space and contains a confined body of gaseous desiccant. Means is provided for admitting into the enclosed space a liquid containing an evaporable fraction, and for showering such liquid through the body of gaseous desiccant whereby at least a portion of the evaporable fraction is retained in the gaseous desiccant which becomes enriched therewith. A container containing a quantity of an additional desiccant is arranged adjacent the receptacle, and means is provided which is associated with both the receptacle and the container and is operative for at least intermittently passing the enriched gaseous desiccant from the enclosed space of the receptacle into contact with the additional desiccant in the container to thereby withdraw the retained evaporable fraction from the gaseous desiccant and to regenerate the latter.

3,468,104
APPARATUS FOR REMOVAL OF EXPLOSIVE GAS FROM FURNACES
Howard P. Willett, Darien, Conn., assignor to Chemical Construction Corporation, New York, N.Y., a corporation of Delaware
Filed Sept. 20, 1967, Ser. No. 669,010
Int. Cl. B01d *47/00*
U.S. Cl. 55—222 11 Claims

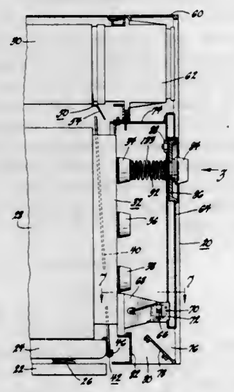
An explosive gas is removed from the hood of a furnace such as an oxygen steel converter, by inserting an off-

gas removal duct into the hood and injecting an inert gas into the off-gas portion drawn off through the duct. The inert gas is injected into the off-gas at the inlet of the duct, together with a quench liquid, and the inert gas serves to dilute the explosive off-gas below the range of explosive mixture with air. The inert gas and quench liquid are introduced at the duct inlet by passing these streams through annular passages or pipes between the off-gas removal duct and external, coaxial or concentric



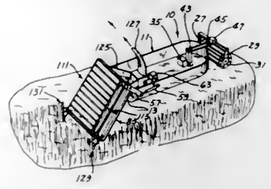
ducts. In a cyclic furnace operation such as an oxygen steel converter, the duct assemblage is retracted from the hood during the pour and charge periods, and is reinserted during the oxygen blow period. The flow of inert gas may be terminated after the onset of the blow period, so as to remove off-gas undiluted with inert gas. The inert gas flow begins again towards the end of the blow period, when the duct assemblage is retracted from the hood, so as to prevent the induction of an explosive gas mixture into the duct.

3,468,105
REFRIGERATING APPARATUS
Carl E. Cline, Dayton, Ohio, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Dec. 28, 1964, Ser. No. 421,527
Int. Cl. B01d *46/42*
U.S. Cl. 55—269 **2 Claims**



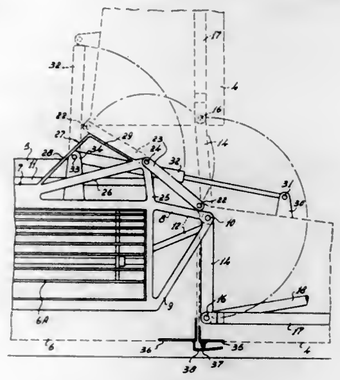
An air conditioner having an impervious inlet panel spaced therefrom and pivotally mounted along one edge thereof, a control mechanism mounted behind the panel, control knob rotatably mounted on the panel and detachably connected to said control mechanism.

3,468,106
AQUATIC WEED HARVESTER
Robert R. Myers, 904 NE. 2nd St. and Fay A. Hayes, 144 NW. 7th St., both of Boca Raton, Fla. 33432
Filed Sept. 8, 1966, Ser. No. 578,071
Int. Cl. A01d *45/08*
U.S. Cl. 56—9 **5 Claims**



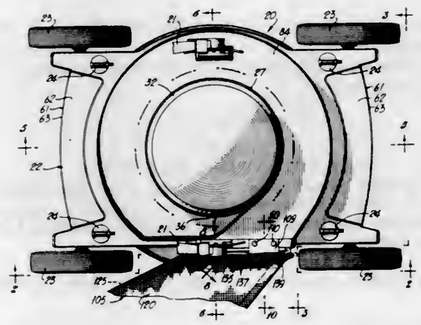
An aquatic weed harvester comprising a boat means having a propulsion means at its rearward end and a weed picking means at its forward end. The weed picking means includes opposing conveyor means which are adjustably movable with respect to the boat means and are movable with respect to each other. The weeds are grasped between the opposing conveyors and are pulled from the area being harvested.

3,468,107
HARVESTING MACHINES
Cornelis van der Lely, 7 Bruschenrain, Zug, Switzerland
Filed Nov. 23, 1965, Ser. No. 517,203
Claims priority, application Netherlands, Dec. 5, 1964, 6414183
Int. Cl. A01d *43/06*
U.S. Cl. 56—23 **28 Claims**



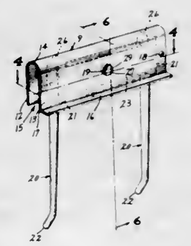
A harvester having a mowing table with a central and two side portions, each having a forward cutter bar and an auger to move cut crop, the two side portions being foldable to a transport portion above the central portion by a pair of pivots, one spaced higher than the other, connected relative to the central portion which are linked through bars to a pair of further pivots on each of the side portions; the higher of such bars slanting downward from the central portion at 45° more or less and lower bar being about vertical and twice as long as the higher bar whereby a rotation of about 180° of the bars by means of a hydraulic ram causes the side portion to rotate outward and upward over the central portion to a transport position of about 90° displaced relative to their operative position.

3,468,108
LAWN MOWER
Charles A. Mattson, Oak Park, Ill., assignor to Sunbeam Corporation, Chicago, Ill., a corporation of Illinois
Filed July 5, 1966, Ser. No. 562,666
Int. Cl. A01d *35/26*
U.S. Cl. 56—25.4 **12 Claims**



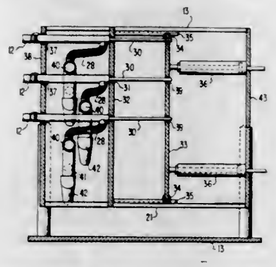
A rotary lawn mower having a housing formed with outer and inner downwardly extending walls which are spaced apart to form a circular channel therebetween. Supported by the housing is a motor provided with a drive shaft to which is secured a cutter having a cutting edge rotatable in the channel and having fan means for forcing grass laden air through a discharge opening defined by the housing. A vertically disposed housing baffle extends across the channel adjacent to the discharge opening for directing the grass laden air therethrough.

3,468,109
PICK-UP FINGER AND REEL BATT CONSTRUCTION
Victor W. Reimer, Winnipeg, Manitoba, Canada, assignor to Killbery Industries, Ltd., Winnipeg, Manitoba, Canada, a corporation of Canada
Filed June 8, 1966, Ser. No. 556,034
Int. Cl. A01d *57/00, 77/00, 19/00*
U.S. Cl. 56—220 **3 Claims**



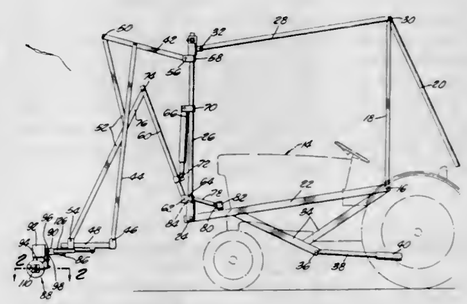
An elongated, cross sectionally U-shaped bar defining a channel, and a plurality of fingers projecting transversely from said channel, the fingers of each pair having heads received in the channel, the heads of each pair being connected by a resilient arm. Detent means operatively associated with said bar and with each pair of connected fingers provides for releasably locking each pair of fingers in the channel independently of the other of said pairs of fingers.

3,468,110
HARVESTING MACHINE
Joseph W. Newman, 351 Azalea Road, Apt. D26, Mobile, Ala. 36609
Filed May 31, 1966, Ser. No. 554,114
Int. Cl. A01g *19/08*
U.S. Cl. 56—328 **13 Claims**



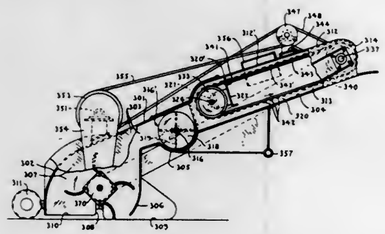
A harvesting device for removing fruit, berries, and the like from trees, vines and bushes. A plurality of hollow head members arranged in horizontal rows defining a generally concave boundary conforming to the perimeter of a tree are advanced toward the articles to be picked. Each hollow head is provided with a source of vacuum and is connected to a hollow receiving member with a flexible coupling means, such as a plastic bellows. A semi-annular collar spans the flexible coupling means, said collar being provided with a source of pressurized fluid. After the article being picked has entered the hollow head by reason of the vacuum, the pressurized fluid is applied to the collar to flex the head member in a direction transverse to its longitudinal axis to snap the article being picked from its limb or vine.

3,468,111
FRUIT PICKER
Russell C. Hanscom, Jr., Berkeley, Calif. (1793 Grand Ave., Fillmore, Calif. 93015)
Filed Oct. 23, 1965, Ser. No. 503,111
Int. Cl. A01g *19/08*
U.S. Cl. 56—328 **6 Claims**



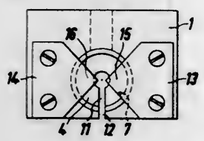
A fruit picker having an orbital picker head with a picker comb with an adjustable orbital radius, and cutter means and cutter actuating means on the picker head, the cutter means being movable into and out of operative association with the cutter actuating means, it being movable into operative association with said cutter means upon pressure of the picker comb against the fruit to be picked.

3,468,112
COMBINE
George P. Landgrebe, R.R. 4, Box 211, Valparaiso, Ind. 46383
Filed June 9, 1966, Ser. No. 556,478
Int. Cl. A01d *43/02*
U.S. Cl. 56—364 **8 Claims**



The invention is directed to a harvester comprising a tapered chute having an enlarged lower extremity for travel along the ground, with a rotatable pickup disposed in this extremity for lifting and directing stalks or stems of fallen grain plants to a transverse screw, which in turn causes medial flow of the plants to a conveyor in an upper smaller extremity of the chute for longitudinal discharge to a thresher.

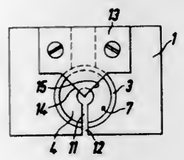
3,468,113
INTERLACING METHOD AND APPARATUS
Francis E. Jackson, Lancaster, England, assignor to Nelsons Silk Limited, Lancaster, England, a British company
Filed June 18, 1968, Ser. No. 738,051
Claims priority, application Great Britain, July 13, 1967, 32,230/67
Int. Cl. D01h *13/26;* **D02g** *3/02, 3/00*
U.S. Cl. 57—34 **6 Claims**



A process for the manufacture of a continuously interlaced yarn from a running multifilament bundle, comprising plucking the bundle at intervals of at most 5 cms. of bundle length whilst the bundle is under a tension sufficient to prevent crunodal loops developing in the individual filaments. The interlacing of the filaments may be augmented by passing the bundle laterally into and out of contact with a jet of fluid. Apparatus for performing the process comprises at least one plectrum arranged to pluck the running multifilament bundle at intervals of at most 5 cms. of bundle length.

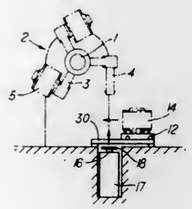
3,468,114
METHOD OF AND APPARATUS FOR MAKING AN INTERLACED YARN
Francis E. Jackson, Lancaster, England, assignor to Nelsons Silk Limited, Lancaster, England, a British company
Filed June 18, 1968, Ser. No. 738,034
Claims priority, application Great Britain, July 13, 1967, 32,229/67
Int. Cl. D01h *13/26;* **D02g** *3/02, 3/00*
U.S. Cl. 57—34 **7 Claims**

A method of making a yarn by interlacing a running multifilament bundle comprising moving the bundle laterally into and out of contact with a lateral jet of fluid adapted to interlace the filaments, the frequency and duration of the contact of the bundle and the jet being selected to cause continuous interlacing of the yarn and the bundle being under a tension sufficient to prevent



crunodal loops forming in the individual filaments. The bundle may be subjected to a sudden intermittent relaxation of tension synchronised with the bundle coming into contact with the jet.

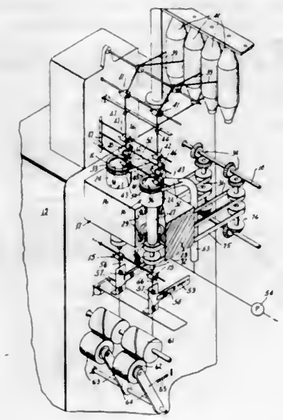
3,468,115
WIRE-STRANDING MACHINES
David Sydney Goodfellow, Nesscliffe, near Shrewsbury, and Ian David Gilbertson, Gosport, England, assignors to British Insulated Callender's Cables Limited, London, England
Filed Apr. 5, 1968, Ser. No. 719,127
Claims priority, application Great Britain, Apr. 7, 1967, 15,993/67
Int. Cl. D01h *9/02*
U.S. Cl. 57—52 **14 Claims**



In unloading and loading a wire-stranding or wire-armouring machine of the kind in which the wires are drawn off from bobbins rotatably supported on cantilevered arbors which are carried on a frame rotating about the machine axis and which, as the frame rotates, are successively each brought into a dependent position, full bobbins are moved in an upended position by conveyor to a loading station for the frame. Means is located at the loading station movable in a rectilinear path parallel to the bobbin axes for lowering an empty bobbin from a dependent arbor on the frame onto the conveyor and for raising a full bobbin from the conveyor onto the dependent arbor. Conveying means is also provided for moving empty bobbins from the loading station for rewinding with wire.

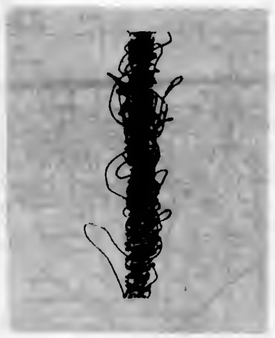
3,468,116
METHOD AND APPARATUS FOR OPEN END SPINNING
Charles B. Crandall and Franklin L. Townsend, Rockford, Ill., assignors to Barber-Colman Company, Rockford, Ill., a corporation of Illinois
Filed Feb. 26, 1968, Ser. No. 708,145
Int. Cl. D01d *7/00*
U.S. Cl. 57—58.89 **24 Claims**

A method of open-end spinning of yarn in which fibers separated from each other by conventional drafting are delivered in a continuous stream into an air current entering a rapidly rotating annular chamber and, under centrifugal force and suction, are further detached from each other and distributed in more or less parallel relation around the interior of the perforated outer peripheral wall of the chamber and, in a multiplicity of revolutions, build up into the form of a band. A nipping element comprising a spring arm rotates with the wall but at a slightly different speed and bears against the band of fibers to define the point at which the band is drawn away from



the wall and led inwardly at a substantial angle and then out of the chamber through an axially extending tube by the action of take-up rolls. The latter hold the advancing band of fibers against turning so that the length of the traveling band between the nipping element and the rolls is twisted uniformly in the rotation of the perforated wall and the nipping element.

3,468,117
CONTINUOUS FILAMENT YARNS
Cyril G. Cannon, Usk, Barrie L. Davies, Langstone, Alan Selwood, Llanyravon, Cwmbran, and Roy A. Williams, Llansapley, England, assignors to British Nylon Spinners Limited, Pontypool, Monmouthshire, England
Filed June 18, 1965, Ser. No. 465,080
Claims priority, application Great Britain, June 19, 1964, 25,416/64
Int. Cl. D02g *3/02, 3/36*
U.S. Cl. 57—140 **3 Claims**



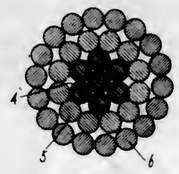
A continuous filament yarn comprising a multiplicity of interconnected loops longitudinally arranged to form a core around which is wrapped stray loops which emerge from the core.

3,468,118
BULKED YARN
Barrie Daniels and William Edward Whale, Pontypool, England, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain
Filed Mar. 13, 1967, Ser. No. 622,804
Claims priority, application Great Britain, Mar. 22, 1966, 12,575/66
Int. Cl. D02g *3/02*
U.S. Cl. 57—140 **4 Claims**



Bulked yarn comprises filaments which have a combination of different sinusoidal crimp frequencies superimposed one on another as by means of a sequence of gear-crimping assemblies.

3,468,119
STEEL-CORED ROD AS A COMPONENT OF AN ALUMINUM CABLE, THE CABLE AND PROCESS OF MAKING THE ROD
Tatsuo Kuratomi, Chigasaki-shi, Japan, assignor to Takeo Kagitani, Minato-ku, Tokyo, Japan
Filed May 31, 1967, Ser. No. 642,423
Claims priority, application Japan, Dec. 27, 1966, 41/85,354
Int. Cl. D07b *1/06;* **C23c** *11/10, 11/14*
U.S. Cl. 57—145 **9 Claims**

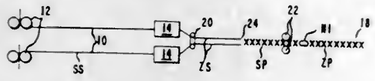


In an aluminum cable at least one steel wire having the core comprising a steel rod, a film of ferric sulphuric oxide surrounding said rod and integrally bonded therewith and as an outer conductor an aluminum layer covering the outer periphery of said film.

An aluminum cable comprising at least one of said steel wires and a plurality of aluminum wires covering the outer periphery of said at least one steel wire.

A process for producing the steel wire mentioned above comprising the steps of heating the rod to a temperature of about 700° C. in air, oxygen or steam until a film of ferric ferrous oxides is formed on the rod providing an outer aluminum layer over said film.

3,468,120
METHOD OF PRODUCING ALTERNATE TWIST YARN
Cleveland L. Hildebrand, Nanticoke Acres, Seaford, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed July 30, 1968, Ser. No. 748,847
Int. Cl. D02g 3/02; D01h 7/92, 7/46
U.S. Cl. 57—157 4 Claims

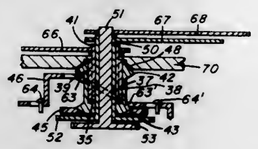


Alternate-twist plied yarns are made by separately false twisting running textile strands alternately in opposite directions then converging the twisted strands and letting them partially untwist and thereby ply. An improvement in this method is provided by converging the twisted strands without snubbing, and snubbing at a point downstream of the twisting point a distance less than the distance between nodes and downstream of the convergence point a distance greater than ½ the distance between nodes.

3,468,121
METHOD OF PRODUCING SPRINKLY COLORED FIBROUS MATERIAL
Hirotaka Nakashima, Katsunosuke Maeda, Togo Fukunaga, Satoru Suzuki, and Kenichiro Matsuoka, Mishima-shi, Japan, assignors to Toyo Rayon Kabushiki Kaisha, Tokyo, Japan, a corporation of Japan
No Drawing. Filed Aug. 7, 1967, Ser. No. 658,660
Claims priority, application Japan, Aug. 9, 1966, 41/51,980; Nov. 17, 1966, 41/75,614
Int. Cl. D02g 3/36, 3/02
U.S. Cl. 57—164 6 Claims

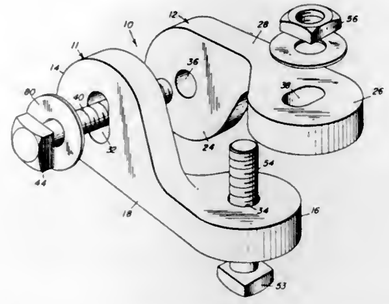
Methods of producing sprinkly colored yarns or yarns capable of being so dyed, which comprises gathering together, drawing and twisting together yarns (A) and (B) wherein yarn (B) is one which either has been dope-dyed or has a higher dyeability than yarn (A), with the proviso that the yarns (A) and (B) are those which, upon being drawn, possess the properties that the elongation of the latter is 3–9% greater than that of the former and the denier ratio of the former to the latter ranges between 1:1 and 3:1.

3,468,122
SEPARABLE HOUR-SLEEVE FOR THE WORLD TRAVEL WATCH
Shaotang Lee, 25 Chi-Kuang St., Taichung, Taiwan
Continuation-in-part of application Ser. No. 417,841, Dec. 11, 1964. This application Aug. 29, 1966, Ser. No. 576,506
Int. Cl. G04b 19/22
U.S. Cl. 58—43 3 Claims



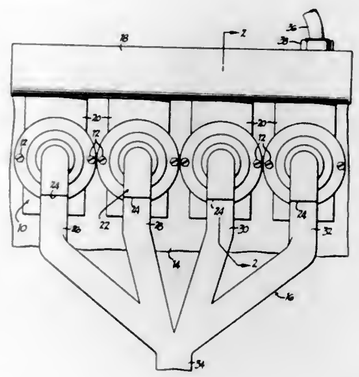
Construction associated with a multi-time zone watch for enabling a selective locking of the hour hand into a central Greenwich time dial for adjustment of both the hour hand and the time dial simultaneously to maintain the relationship therebetween while setting the hour hand to a different local time. A sliding sleeve or tube is provided on the hour hand shaft and selectively slid longitudinally therealong by a camming separator which engages collars fixed on the tube and effects a movement of the tube for the selective locking of the hour hand shaft to the Greenwich dial or alternatively locking the hour hand shaft to the drive gear therefor.

3,468,123
ADJUSTABLE SHACKLE
Irvin S. Frye, Washington, D.C., assignor to Ocean Science & Engineering, Inc., Washington, D.C., a corporation of Delaware
Filed Aug. 1, 1967, Ser. No. 657,668
Int. Cl. F16g 13/06
U.S. Cl. 59—86 9 Claims



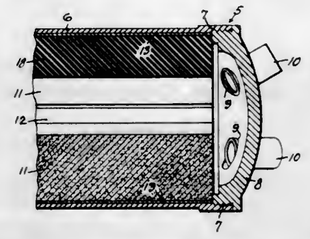
First and second links, each having a pair of apertured ears extending angularly therefrom, first and second clamping bolts inserted through opposing ears of the respective links and through an opening in the members to be connected and at least one of the apertures of said ears being elongated in a direction normal to the plane of the member of which it is not engaged.

3,468,124
METHOD AND APPARATUS FOR CONSUMING COMBUSTIBLE GASES IN ENGINE EXHAUST GASES
Mykola Hrabowecky, Livonia, Mich. (12312 Beech Daly Road, Taylor, Mich. 48180)
Continuation-in-part of application Ser. No. 473,351, July 20, 1965. This application Apr. 25, 1967, Ser. No. 642,990
Int. Cl. F01n 1/14, 3/10
U.S. Cl. 60—30 6 Claims



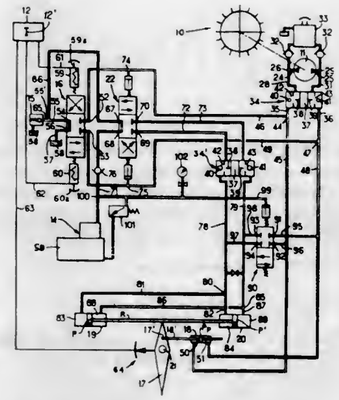
A system for burning the combustibles of exhaust gases by using the heat content of the gases and before releasing the exhaust gases to the atmosphere. The exhaust gases are ignited in a burner chamber at the exit of each cylinder of an internal combustion engine. The reburned exhaust gases are passed through individual circulating chambers and then isolated chambers having a volume approximately equal to the volume of the exhaust gases emanating from each cylinder during an exhaust stroke. The exhaust gases from each cylinder are merged according to the order of firing of the cylinders into an exhaust tube to prevent back-pressure in the isolated chamber.

3,468,125
SEGMENTAL PROPELLANT GRAIN
William F. Cramer, Jr., Oak Park, Ill., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Army
Filed Oct. 29, 1953, Ser. No. 389,183
Int. Cl. F02k 9/04; F02c 3/26
U.S. Cl. 60—39.47 4 Claims



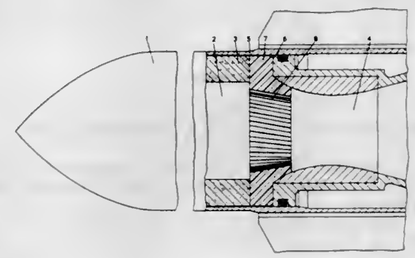
1. In a rocket motor, a tubular casing, a plurality of spaced apart propellant grains fitting within said casing, each said grain being generally in the form of a sector in cross section transversely of said casing, each said grain being truncated at its apex whereby said grains conjointly define a central longitudinal star shaped flash passage symmetrical about the axes of said casing, inhibitor means bonding each said grain to the contiguous wall of said casing independently of the others, and resilient inert material filling said spaces to inhibit and cushion said grains.

3,468,126
POSITION CONTROL SYSTEM
Jean Mercier, 501 Bloomfield Ave., Caldwell, N.J. 07006
Filed Mar. 18, 1968, Ser. No. 713,580
Claims priority, application France, Mar. 24, 1967, 100,158
Int. Cl. F15b 15/18, 13/16
U.S. Cl. 60—52 14 Claims



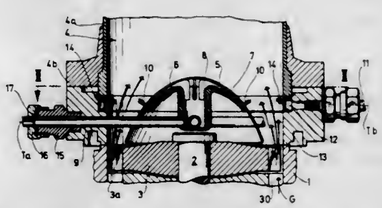
This invention relates to a hydraulic system for controlling the position of a movable member such as a rudder shaft, by either manual or electrical control means which automatically connects a high pressure source to operate the movable member and which, in the event of failure of the high pressure source, will permit operation of the movable member by the manual control means.

3,468,127
ROCKET PROJECTILES
Reginald John Rosser, Falmouth, Cornwall, England, assignor to the Secretary of State for Defense in Her Britannic Majesty's Government of the United Kingdom of Great Britain and Northern Ireland, Whitehall, London, England
Filed Sept. 9, 1966, Ser. No. 578,934
Claims priority, application Great Britain, Sept. 10, 1965, 38,846/65
Int. Cl. F02k 1/00; F42b 31/00; F03h 5/00
U.S. Cl. 60—201 10 Claims



A rocket projectile having a group of inclined vanes symmetrically disposed in the propellant gas stream just upstream of the venturi for imparting spin to the rocket. The vanes are made of a consumable material, so that spin is imparted during the early stages of propulsion before the vanes are consumed, and may consist of helical ribs on the bore surface of an annular body fitted into the rocket body just forward of the venturi throat.

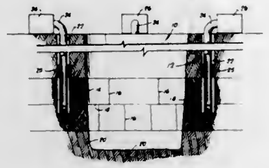
3,468,128
ROCKET COMBUSTION CHAMBER CONSTRUCTION
Manfred Schutz, Ottobrunn, Germany, assignor to Bolkow Gesellschaft mit beschrankter Haftung, Munich, Germany
Filed Nov. 3, 1967, Ser. No. 680,414
Claims priority, application Germany, Nov. 11, 1966, B 89,775
Int. Cl. F02k 9/02, 5/00
U.S. Cl. 60—261 14 Claims



A liquid fuel rocket engine combustion chamber includes a turbine rotatable at the inner normally closed end of the chamber in a position to receive propulsion gases which are generated by combustion in a pre-combustion chamber. The turbine is arranged to rotate a

shaft for driving various auxiliary units such as fuel pumps. A feature of the construction is that the end of the turbine inside the blades is protected by a curved heat shield which projects into the combustion chamber. The heat shield includes a curved wall spaced from the outer wall of the combustion chamber through which a fuel component is directed in a direction substantially obliquely outwardly toward the combustion chamber wall and toward the nozzle discharge at the opposite end of the combustion chamber. An additional or second fuel component is introduced into the combustion chamber through nozzles or orifices in an annular member formed into the wall of the combustion chamber adjacent the heat shield at which the first fuel component nozzles are located. This fuel component is directed in a direction obliquely toward the heat shield and toward the nozzle discharge end of the combustion chamber. The gases which are utilized to drive the turbine and which have been generated in the pre-combustion chamber are directed around each end of the heat shield so that they move through a path between the two annular sets of fuel discharge nozzles.

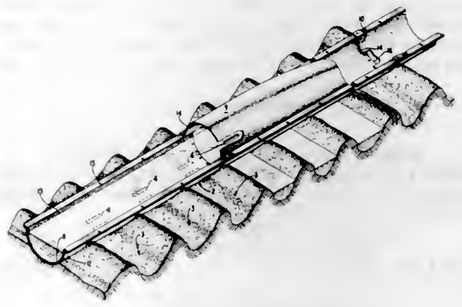
3.468,129
METHOD OF SEALING UNDERGROUND CAVITIES
Carroll F. Knutson, Ponca City, Okla., assignor to Continental Oil Company, Ponca City, Okla., a corporation of Delaware
Filed July 21, 1966, Ser. No. 566,809
Int. Cl. B65g *5/00;* **E21f** *17/16;* **E21b** *33/13*
U.S. Cl. 61—.5 **9 Claims**



Method of reducing the flow of liquids through the earth immediately adjacent a subterranean cavity comprising drilling at least one well into this portion of the earth and injecting via this well at a depth at or below the area through which fluid flow occurs, a gas at a pressure sufficient to displace at least a portion of these liquids.

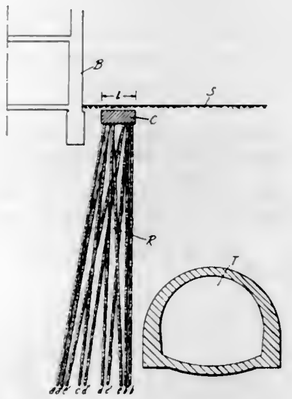
3.468,130
SURFACE IRRIGATION DEVICE
Warren O. Gibson, Kaneohe, Hawaii, assignor to Hawaiian Sugar Planters Association, Honolulu, Hawaii, a voluntary non-profit agricultural organization
Filed Nov. 9, 1967, Ser. No. 681,769
Int. Cl. E02b *13/00*
U.S. Cl. 61—12 **8 Claims**

A flow controlling irrigation apparatus includes a conduit normally adapted to convey water therealong. A plurality of ports are spaced along the conduit for directing liquid outwardly therefrom. A plurality of flexible diaphragms positioned within the conduit normally overlying and closing said ports are provided. Each diaphragm includes upstream and downstream edges extending generally transversely of the conduit so positioned that each diaphragm normally overlies and closes at least an adjacent one of the ports to prevent passage of liquid through the closed port. Means so connect portions of each diaphragm to the conduit as to permit at least a portion of each diaphragm to be separately, selectively flexed away from the adjacent interior portions of the conduit out of closing relation with an associated port to permit liquid



to flow between the upstream edge of the flexed diaphragm and the conduit, thence outwardly through the associated port.

3,468,131
RETAINING STRUCTURES PLACED INTO THE GROUND AND THEIR PROCEDURES OF EXECUTION
Jacques Seidenberg, 77 Rue de Longchamp, Paris 16e, France
Filed Dec. 13, 1966, Ser. No. 601,392
Claims priority, application France, Nov. 29, 1966, 85,468
Int. Cl. E02d *3/08, 31/08, 27/30*
U.S. Cl. 61—35 **8 Claims**

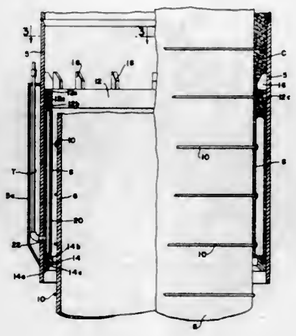


A soil retaining structure and method of forming same adapted for use in preventing lateral sliding of a ground formation adjacent an excavation, which structure includes a plurality of spaced apart, long, slender pile elements arranged in a three-dimensional network.

3,468,132
PLATFORM LEG PACKER
Glen H. Harris, Arlington, Tex., assignor to Oil States Rubber Co., a corporation of Texas
Filed Mar. 1, 1967, Ser. No. 619,749
Int. Cl. E02b *17/00;* **B63b** *21/50*
U.S. Cl. 61—63 **7 Claims**

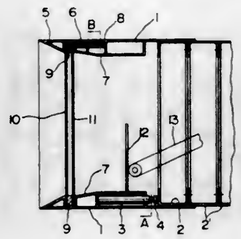
A packer assembly for sealing the annulus between driven pilings and skirt guides through which they pass,

the guides being located at the bottoms of marine drilling platforms secured by means of the pilings to the floor



of the sea, and the annulus between the skirt guides and the pilings being poured full of grout above the packers when the latter are set after the pilings have been driven.

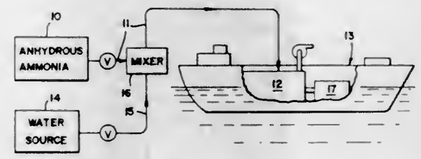
3,468,133
EXCAVATION TYPE SHIELD WITH NO ROTARY CUTTERS
Kunijiro Matsushita, Nagoya, Japan, assignor to Kumagai Gumi Company Limited, Chuo, Fukui, Japan
Filed July 19, 1967, Ser. No. 654,445
Claims priority, application Japan, July 29, 1966, 41/49,701
Int. Cl. E01g *3/02;* **E21c** *29/00*
U.S. Cl. 61—85 **5 Claims**



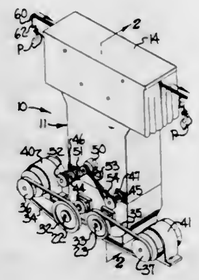
An excavation type shield comprising a shield operatively connected through an elastic rubber ring to an annular cutting member, a main oil jack and a second oil jack adapted to forward move the shield and the annular cutting member, respectively. The forward movement of the annular cutting member is allowed within the elastic limit of the elastic rubber ring.

3,468,134
TWO-STAGE METHOD OF CONVERTING ANHYDROUS TO AQUA AMMONIA
Jonathan Garst, 676 Santa Barbara Road, Berkeley, Calif. 94707
Filed Aug. 4, 1967, Ser. No. 658,535
Int. Cl. F17c *11/00*
U.S. Cl. 62—48 **3 Claims**

The method of adding a relatively small amount of water to anhydrous ammonia to form an initial ammonia-water solution which is refrigerated to hold the solution in liquid form at atmospheric pressure, the initial solution being then transported to a desired destination and there unloaded directly and without external cooling into a non-refrigerated and unpressurized container with sufficient water at ambient temperature being mixed with the initial solution as it is unloaded to produce aqua ammonia having a desired nitrogen content, and in which the initial solution absorbs sufficient of the heat of solution generated by the subsequent addition of water so that the vapor pressure of the resultant aqua ammonia is maintained below one atmosphere.



3,468,135
FOOD CHILLING USING CARBON DIOXIDE REFRIGERANT
Brendan L. Doll and Gregory W. Doll, both of Patterson, N.C. 28661
Filed Jan. 2, 1968, Ser. No. 695,122
Int. Cl. F25d *3/12*
U.S. Cl. 62—63 **16 Claims**

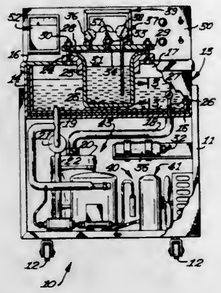


Apparatus for and method of chilling food products utilizing finely divided particles of solid refrigerant wherein a plurality of rotors in the lower portion of a vertically extending housing are rotated in such directions and at such speeds as to impart substantially continuous motion to the refrigerant particles and to form a bed of such moving refrigerant particles through which the food products are moved for chilling while preventing agglomeration of the refrigerant particles.

3,468,136
METHOD FOR MAINTAINING ORGANS IN A COMPLETELY VIABLE STATE
Emil S. Swenson, 247 106th Ave. NW., Coon Rapids, Minn. 55433, and William L. Koski, 3905 Halifax Ave. N., Minneapolis, Minn. 55422
Original application Aug. 25, 1964, Ser. No. 391,931, now Patent No. 3,406,531, dated Oct. 22, 1968. Divided and this application July 16, 1968, Ser. No. 753,025
Int. Cl. A61b *19/00;* **F25d** *17/02*
U.S. Cl. 62—64 **3 Claims**

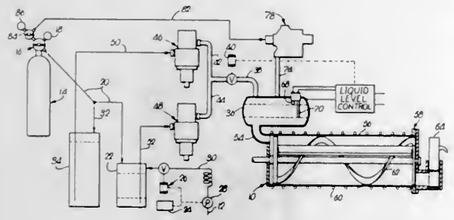
The invention is concerned with providing a process for storing body organs in a viable state preparatory to transplanting and consists of a sealed pressure tight container in which preserving liquid and the organ are stored. The

container is kept at an optimum temperature range of 0° C. to 4° C. by an indirect refrigeration system in which holdover liquid such as alcohol solution transfers heat



from the container to the evaporator of a refrigeration system. Oxygen under pressure is admitted to the container so as to keep the organ in a viable condition.

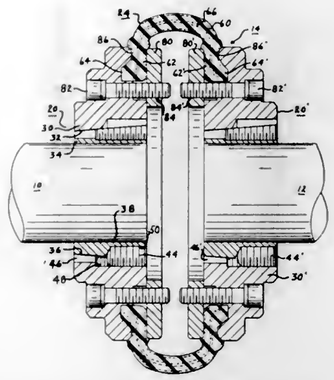
3,468,137
METHOD AND APPARATUS FOR FREEZING AND DISPENSING SLUSH CARBONATED BEVERAGES
Frank Welty, Kansas City, Mo., assignor to The Vendo Company, Kansas City, Mo., a corporation of Missouri
Filed Oct. 30, 1967, Ser. No. 678,999
Int. Cl. F25c *7/16;* **F04f** *1/18;* **B01f** *5/04*
U.S. Cl. 62—69 **7 Claims**



A method and apparatus for producing a slush carbonated beverage of sufficiently high carborination to present a highly palatable and flavorful liquid refreshment. Carbonated water and a flavoring syrup are supplied under CO_2 pressure from respective storage tanks through corresponding flow controls to a common mixing and mix storage area, and thence to a freezer where the slush product is formed. Provision is made to maintain a sufficient CO_2 pressure on the mix in the storage area to prevent escape of a significant amount of carbonation therefrom at the particular regulated temperature. Since the flow controls require maintenance of a minimum differential between inlet and outlet pressures for proper operation, valve means is provided to vent the mix storage area to atmosphere during the filling thereof to prevent the pressure on the outlet side of the flow controls from approaching the magnitude of the inlet pressures.

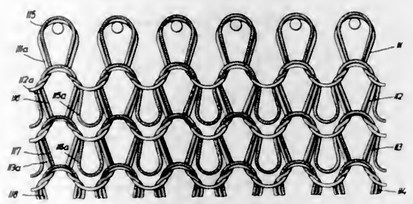
3,468,138
COUPLING WITH REINFORCED FLEXIBLE ELEMENT
Holmes A. Downey, Bremen, Ind., assignor to Reliance Electric Company, a corporation of Delaware
Filed Oct. 19, 1967, Ser. No. 676,464
Int. Cl. F16d *3/52, 3/19, 3/28*
U.S. Cl. 64—11 **7 Claims**

A flexible coupling for connecting to rotating shafts in end-to-end relation in which flanges are mounted on each of the shafts and are connected to one another by a split torsion element of rubber or rubber-like material. Reinforcing strands are superficially embedded in the external



and/or in the internal covering of the element adjacent the split, the strands extending generally parallel with the axis of the coupling.

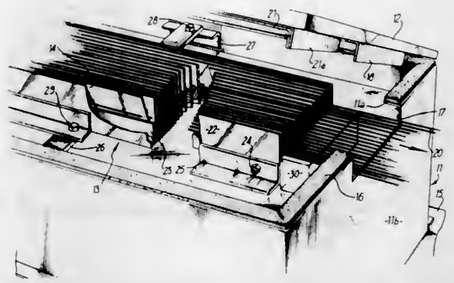
3,468,139
KNITTED PILE FABRIC AND METHOD OF MAKING THE SAME
Roland Bitzer, Tailfingen, Wurttemberg, Germany
Continuation-in-part of application Ser. No. 433,627, Feb. 18, 1965. This application Mar. 6, 1968, Ser. No. 710,921
Int. Cl. D04b *11/08*
U.S. Cl. 66—194 **11 Claims**



Pile stitches are knitted together with the stitches of a base fabric to be firmly attached to the same, and have sinker loops turned from the front to the back of the base fabric for forming a pile on the same, and held on the back of the base fabric by sinker loops of the base stitches. The pile forming sinker loops are turned from the front to the back of the fabric by jets of air.

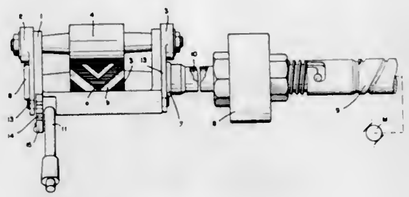
3,468,140
LAMINATED TUBE SECTIONS
Raymond Victor Evans, Blackburn, and John Edward Hibbitt, Darwen, England, assignors to Singer-Cobble Limited, Blackburn, Lancashire, England, a company of Great Britain and Northern Ireland
Filed Feb. 9, 1967, Ser. No. 614,845
Claims priority, application Great Britain, Feb. 9, 1966, 5,590/66
Int. Cl. D06p *1/00;* **D06m** *1/00*
U.S. Cl. 68—175 **6 Claims**

This disclosure relates to apparatus for the treatment of yarn. The apparatus disclosed herein provides for individual yarn passages for each yarn end passing therethrough such that treatment may be applied individually to each yarn end without affecting the treatment of an



adjacent yarn end as it passes through an adjacent treatment passage. Closure means may be provided such that each treatment passage may be closed except for ingress and egress openings for the yarns to be treated therein.

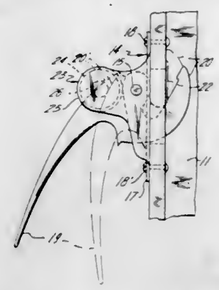
3,468,141
DEPILATING APPARATUS
Vladimir Soleanicov, Laurentiu Ion Pop, and Erich Breicher, Bucharest, Rumania, assignors to Ministerul Industriei Alimentare, Bucharest, Rumania, a corporation of Rumania
Filed July 25, 1966, Ser. No. 567,744
Int. Cl. C14b *1/02*
U.S. Cl. 69—20 **3 Claims**



A portable apparatus for removing animal hair of hides of skinned and of slaughtered animals having a pair of parallel working rollers in contact with the hair and adapted to be drawn over the hide, one of the rollers being smooth and elastic while the other is provided with longitudinal corrugations formed in generally helicoidal bands with corrugation-free bands flanking the corrugated band, and an eccentric shaft for urging the rollers against one another, the corrugated band tearing the hair passing between the two rollers as the noncorrugated bands move over the hide.

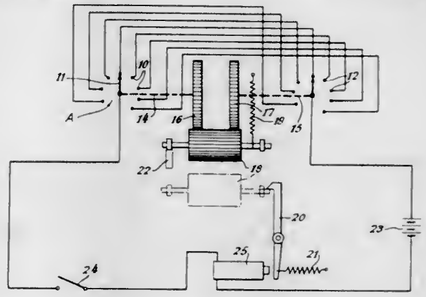
3,468,142
KEY-ACTUATED LATCH FOR CASEMENT WINDOWS
Abraham Sprung, 2200 Central Road, Fort Lee, N.J. 07024
Filed Dec. 6, 1967, Ser. No. 688,597
Int. Cl. E05c *1/10, 19/12*
U.S. Cl. 70—89 **3 Claims**

A casement window latch with a key-operated lock preventing the operation of the handle of the latch. The lock is an integral part of the mounting of the latch and



the bolt of the lock extends in the locked position across the upper part of the handle.

3,468,143
RANDOM SELECTION ELECTRICAL COMBINATION LOCKS
Clifford G. Douglas, London, and George H. G. Guttridge, Hertford Heath, England, assignors, by mesne assignments, to Bambino Electronics Limited, London, England, a British company
Filed Oct. 20, 1967, Ser. No. 676,830
Claims priority, application Great Britain, Oct. 21, 1966, 47,139/66
Int. Cl. E05b *47/00, 49/00*
U.S. Cl. 70—277 **12 Claims**

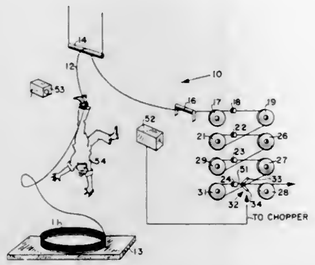


An electrical combination lock comprising at least one manually operable member connectible by drive means to at least one driven member and releasable therefrom for independent movement, and electrical contacts associated with the manually operable member and driven member so as to complete an electrical circuit when the two members are in predetermined relative positions, so that the driven member can be set to any desired position by setting the manually operable member to the same position with the drive means engaged, the drive means being then disengaged to allow the manually operable member to be moved to another position leaving the setting "stored" in the driven member so that the circuit can be re-made by moving the manually operable member back to the said set position.

3,468,144
SAFETY STOP FOR WIRE DRAWING MACHINE
Frederic E. Hoeltzel and Richard H. Ott, Muskegon, Mich., assignors to Anaconda Wire and Cable Company, a corporation of Delaware
Filed June 9, 1966, Ser. No. 556,460
Int. Cl. B21d *55/00;* **B21c** *51/00*
U.S. Cl. 72—5 **3 Claims**

In a wire drawing apparatus where rod is payed from an overhead guide and an operator who became entangled

in the rod might be dropped and injured if the rod were cut by a safety mechanism, the wire is cut only after passing through two or more dies, so that it cannot pull back.



3,468,145

BILLET MILL WHEREIN THE ROLLING GAP IS CONTROLLED DURING THE PENULTIMATE PASS AND FIXED DURING THE FINAL PASS

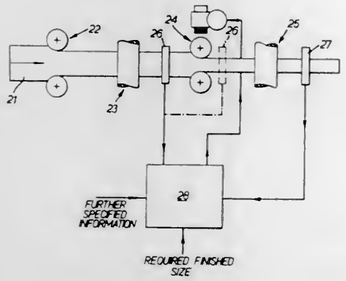
Kenneth Alfred Yeomans, Stoneleigh, England, assignor to The British Iron and Steel Research Association

Filed June 16, 1966, Ser. No. 558,071

Claims priority, application Great Britain, June 16, 1965, 25,437/65

Int. Cl. B21b *37/02, 13/08, 41/06*

U.S. Cl. 72—12 **9 Claims**



A mill for producing stock having a desired cross-section in at least two passes. The roll gap of a mill stand is maintained substantially at a predetermined value during the final pass and the roll gap is controlled during the penultimate pass to produce stock of an intermediate cross-section which bears a predetermined relationship to the roll gap of the final pass whereby stock of the desired cross-section is produced.

3,468,146

BAR SCREW STRAIGHTENER

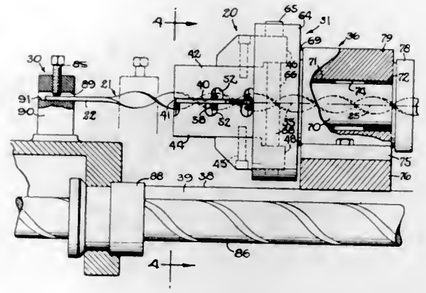
William G. Newman, Oak Park, Leo F. Doran, Clawson, and Irving J. Ezyk, Utica, Mich., assignors to Beaver Precision Products, Inc., Clawson, Mich., a corporation of Delaware

Filed Feb. 2, 1967, Ser. No. 613,670

Int. Cl. B21d *3/02, 3/16, 11/14*

U.S. Cl. 72—64 **11 Claims**

Apparatus for correcting the lead of a previously formed bar screw wherein the screw is drawn through two pairs of opposed rollers with the rollers inclined relative to the screw at an angle equal to the desired helix angle of the screw and the spacing of one pair of rollers equal to the desired pitch distance of the screw thread.



3,468,147

PIPE-FITTING TOOLS

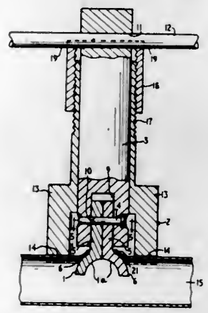
Fred Davies, 72 Maxwell Ave., Orange, New South Wales, Australia

Filed Oct. 16, 1967, Ser. No. 675,494

Claims priority, application Australia, Oct. 18, 1966, 12,699/66

Int. Cl. B21d *19/08, 39/04*

U.S. Cl. 72—112 **9 Claims**



The disclosure provides a tool for outwardly deforming a hole in a metal tube to provide an annular flange on the tube, around the hole, so as to provide a greater area for securing a branch pipe to the tube than is provided merely by drilling a hole in the tube.

3,468,148

MACHINES FOR MANUFACTURING SPRING WASHER

Ichizo Tsurumoto, 68 Koshien guchi, 5-chome, Hyogo Prefecture, Ni hinomiya. Japan

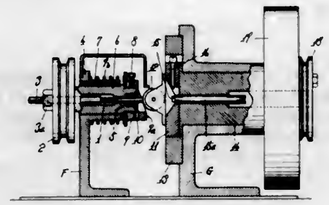
Filed Dec. 17, 1965, Ser. No. 514,619

Claims priority, application Japan, Dec. 18, 1964, 39/71,615

Int. Cl. B21d *53/22;* **B21f** *11/00, 3/04*

U.S. Cl. 72—132 **4 Claims**

A machine for manufacturing flat spring washers that includes a rotatable and axially reciprocable spindle having a cylindrical portion and a tapered end portion, a feeding member around and movable axially with the spindle and having a helical surface facing the tapered end portion of the spindle for pushing the flat wire to be wound continuously along the spindle to and over the tapered end portion as the spindle rotates, and a cutting mechanism including an anvil adapted to have the coil pushed thereover upon forward movement of the spindle and a cutter movable toward and away from the anvil in timed relation to the axial reciprocation of the spindle so as to cut the coil into spring washers as the spindle moves forward and the retraction of the spindle allowing the cut washers to fall free of the spindle and anvil.



3,468,149

PLATE STRAIGHTENING MACHINE

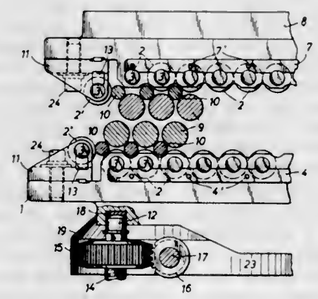
Fritz Ungerer, deceased, late of Pforzheim, Germany, by Irma Ungerer, widow and sole heiress, 6 Arlinger Str., 753 Pforzheim, Germany

Filed Sept. 13, 1966, Ser. No. 579,178

Claims priority, application Germany, Sept. 23, 1965, U 12,048

Int. Cl. B21d *1/02, 3/02*

U.S. Cl. 72—165 **8 Claims**



A plate straightening machine includes straightening rolls arranged serially in the direction of work movement, intermediate rolls supporting the straightening rolls and vertically adjustable supporting rollers supporting the intermediate rolls. The supporting rollers are arranged in a series of rows each including plural coaxial supporting rollers coaxially adjoining each other, the rows extending parallel to the axes of the straightening rolls and the intermediate rolls. The supporting rollers are arranged in respective series of supporting rollers, as viewed in the direction of motion of the work, with their medial diametric planes aligned along the respective series. The circumferential peripheries of supporting rollers in adjacent rows are spaced slightly from each other whereby the supporting rollers of adjacent rows constitute pairs of rollers forming a saddle mounting an intermediate roll.

3,468,150

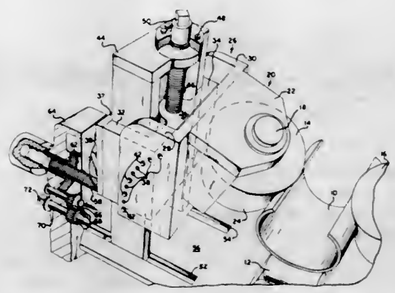
CLUSTER ROLL ASSEMBLY FOR TUBE MILLS

Lewis H. Ruple, Toledo, Ohio, assignor to The Abbey-Etna Machine Company, Perrysburg, Ohio, a corporation of Ohio

Filed Apr. 13, 1967, Ser. No. 630,656

Int. Cl. B21d *5/08*

U.S. Cl. 72—178 **1 Claim**



Tube forming apparatus for manufacturing metal tubing from a source of strip stock which is caused to pass through a series of forming stages, the initially flat strip of stock is gradually formed into a tubular shape. The final forming stage comprises cooperating forming rolls which are contoured to contact only a relatively small portion of the under surface of the strip stock being formed and may be adjusted horizontally, vertically, and angularly in a vertical plane transverse to the longitudinal axis of the tubing being formed.

3,468,151

ROLLING MILL

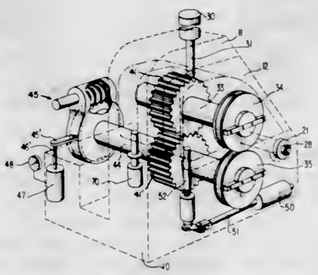
Lucien Diolot, Neuilly-sur-Seine, France, assignor to Societe Nouvelle Spidem, Paris, France, a corporation of France

Filed Sept. 17, 1965, Ser. No. 488,175

Claims priority, application France, Feb. 26, 1965, 7,197

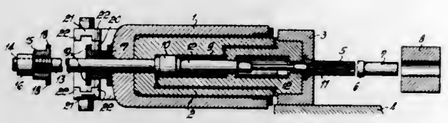
Int. Cl. B21b *13/08, 31/20, 31/32*

U.S. Cl. 72—234 **9 Claims**



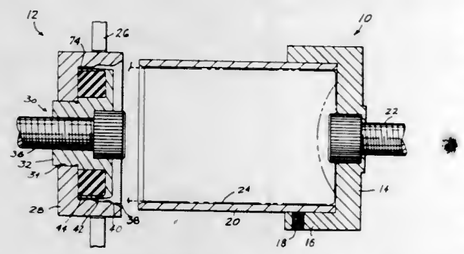
This invention relates to a rolling mill for continuously reducing running lengths of metallic wire products which pass between spaced rolls. One roll is revoluble in a fixed housing and another is revoluble in a pivotal housing. A plurality of power cylinders are arranged to not only adjust the size of the pass between the rollers, but also to maintain the size of the pass constant during the rolling operation as well as reduce rolling pressure where required.

3,468,152
HYDRAULIC METAL TUBE PRESS
Hans-Henning Croseck, Duisburg-Rahm, and August Grohmann, Duisburg, Germany, assignors to Hydraulik G.m.b.H., Duisburg, Germany
Filed May 3, 1966, Ser. No. 547,374
Claims priority, application Germany, May 28, 1965, H 56,162
Int. Cl. B21c *23/20;* **B21j** *9/18*
U.S. Cl. 72—265 **5 Claims**



A hydraulic metal tube extrusion press comprises a stationary press cylinder having a driving piston which is slidable therein. A mandrel is slidable in the driving piston and includes the usual stroke limiting stop means permitting it to be moved between two extreme positions. The mandrel includes a rear portion extending out through the driving piston and the press cylinder. In order to absorb the reaction force or back pressure which is formed in the press when the mandrel has pierced the workpiece in a pressing position the mandrel is braced to the main cylinder by a lock. In the embodiment shown, the lock comprises a power operated latch or coupling member which moves in vertical guides and engages around abutting flanges of the mandrel.

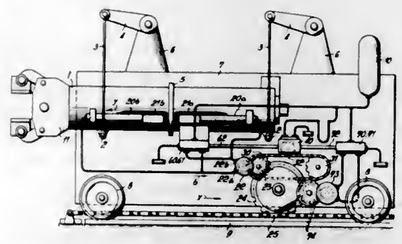
3,468,153
DIE SET UNIT AND METHOD FOR CAN MANUFACTURE
Leon M. Patarini, Chicago, Elmer M. Montgomery, Glen Ellyn, and Louis A. Major, Chicago, Ill., assignors to National Can Corporation, Chicago, Ill., a corporation of Delaware
Filed Nov. 20, 1967, Ser. No. 684,244
Int. Cl. B21b *17/02, 25/00;* **B21d** *51/00*
U.S. Cl. 72—370 **6 Claims**



An apparatus and method for necking in the upper and lower end portions of a cylindrical metal container so that the seam resulting from attaching an end to the can body is flush with the side walls of the can body. The apparatus comprises an outer die which has the necked-in contour desired in the finished can, and an inner or backup die which comprises a head element, and a skirt member connected thereto by a smooth head radius, wherein the skirt member has a continuous cylindrical extent at the upper portion thereof, and has the lower portion thereof divided into a plurality of segments, each separated from the other by a slot extending vertically toward the top of the skirt unit, and in which the entire skirt unit is backed up on the radially interior portions thereof, by a hard but resilient rubber ring member. The method comprises forming one or more necked-in portions on the can body by forcing the end of the can body into the die set. In a preferred construction, the skirt member is constructed separately from the head member, but is tightly attached thereto in position of use.

Although the described apparatus is useful for necking in the ends of can of all types, it is particularly useful when used with cans which have a side seam which is either interlocked or overlapped, thereby presenting a double metal thickness, at the side seam portion thereof, to the die set.

3,468,154
MANIPULATOR FOR FORGING PRESS
Albert Hertl, Duisburg, Germany, assignor to Firma Hydraulik G.m.b.H., Duisburg, Germany
Filed Sept. 8, 1965, Ser. No. 485,756
Int. Cl. B21d *43/02*
U.S. Cl. 72—421 **17 Claims**

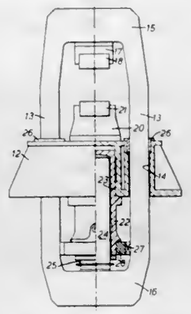


A method and apparatus for manipulating a workpiece relative to a forging press involves an undercarriage mounted for movement longitudinally relative to the forging press and supporting a tong holder movable longitudinally on the undercarriage and relative to the forging press. The undercarriage is provided with a stationary reference base which, during movement of the undercarriage relative to the forging press, remains fixed and stationary at a fixed distance from the forging press. This reference base serves for positioning the tong holder relative to the forging press and the work. Means are provided whereby the reference base may be stepwise adjusted, a preselected amount, longitudinally relative to the forging press and, responsive to this adjustment of the reference base, the tong holder is adjusted, relative to the undercarriage, a corresponding amount so that the tong holder remains at a fixed distance from the reference base. Also, and simultaneously with adjustment of the tong holder, the undercarriage is moved the preselected distance or amount so that the reference base remains fixed with respect to the forging press. The means for moving the tong holder exert a direct force on the latter which results in a reaction on driving means for the undercarriage, and this reaction is absorbed by an equal reaction force so that there is no resultant reaction on the undercarriage during relative adjustment of the tong holder. The undercarriage may be moved relative to the press either continuously or stepwise, and either regularly or irregularly, and in each case the reference base remains fixed relative to the forging press.

Means are also provided for adjusting the tong holder angularly through preselected angles of adjustment.

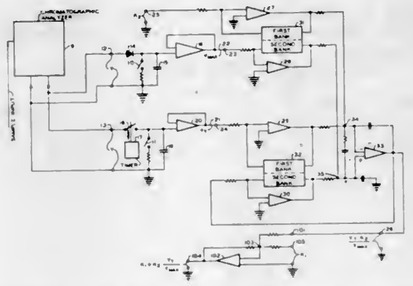
3,468,155
FORGING PRESS
Keith Ross, Sheffield, England, assignor to Davy and United Engineering Company Limited, Sheffield, Yorkshire, England
Filed Nov. 1, 1966, Ser. No. 591,238
Int. Cl. B21j *13/04;* **B21d** *37/10;* **B30b** *1/32*
U.S. Cl. 72—456 **8 Claims**

A forging press, particularly that type of press known as a "draw-down" press, has a fixed base and a frame comprising at least two columns extending through the base and slidably movable relative thereto, with a pair of crossheads located on opposite sides of the base connecting the columns together. At least one hydraulic piston and cylinder assembly acts between the base and one



crosshead to drive the other crosshead towards the base and, in order to resist distortion of the frame when the frame is subjected to eccentric loading, guide means for the columns are carried by at least one of the assemblies at a position spaced from the base.

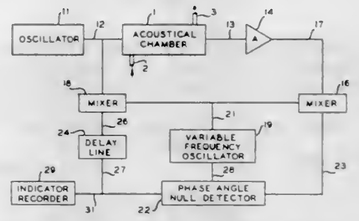
3,468,156
METHOD AND APPARATUS FOR CHROMATOGRAPHIC ANALYSIS OF A BINARY MIXTURE WITHOUT PEAK SEPARATION
Edwin K. Clardy, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed Nov. 17, 1966, Ser. No. 595,178
Int. Cl. G01n *31/08*
U.S. Cl. 73—23.1 **7 Claims**



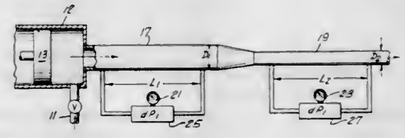
In order to analyze binary gases rapidly without separation of the chromatographic peaks or to accurately analyze a pair of inseparable chromatographic peaks, the characteristic analyzer response, as determined by experimental analysis using samples of known composition, is used to determine the composition of an unknown sample.

3,468,157
ACOUSTICAL APPARATUS FOR DETECTING THE COMPOSITION OF A GAS
Marvin C. Burk and Lewis B. Roof, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware
Filed Mar. 3, 1966, Ser. No. 531,531
Int. Cl. G01n *31/00*
U.S. Cl. 73—24 **5 Claims**

Apparatus for detecting the composition of gas comprising an acoustical chamber with a pair of spaced transducers, an oscillator for passing the signal to one of the transducers, variable frequency oscillator for establishing a second signal and means to mix the output of the variable frequency oscillator with the output of the first oscillator and with the output of the second transducer and a phase angle null detector between the mixed signals for adjusting the variable frequency oscillator.

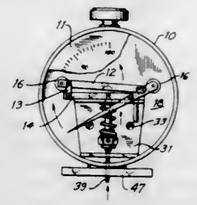


3,468,158
METHOD OF AND APPARATUS FOR DETERMINING RHEOLOGICAL PROPERTIES OF NON-NEWTONIAN FLUIDS SUCH AS DRILLING FLUIDS OR THE LIKE
Sze-Foo Chien, Houston, Tex., assignor to Texaco Inc., New York, N.Y., a corporation of Delaware
Continuation-in-part of application Ser. No. 481,195, Aug. 20, 1965. This application Mar. 26, 1968, Ser. No. 716,202
Int. Cl. G01n *11/04*
U.S. Cl. 73—55 **19 Claims**



A method and apparatus for determining the yield stress and plastic viscosity of a non-Newtonian fluid which consists of pumping the fluid through a tube of known diameter at a known flow rate and measuring the pressure drop for a given length. The procedure is then repeated for a different set of conditions and the yield stress and plastic viscosity are calculated from formulas for laminar flow. Similar measurements are used to obtain the two constants characterizing the rheological properties of power law fluids.

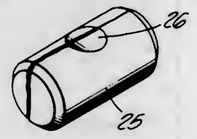
3,468,159
DUROMETER
Edward R. Loomie, 3904 Fulton Ave., Seaford, N.Y. 11783
Filed May 10, 1967, Ser. No. 637,385
Int. Cl. G01n *3/48*
U.S. Cl. 73—81 **1 Claim**



In abstract form, this invention relates to a lever operated durometer using a power beam having an indentor pin which is linked to co-act with a hinged compensating beam having a forked free end slidably engaging a pin on a dial painter. The durometer of this invention avoids the

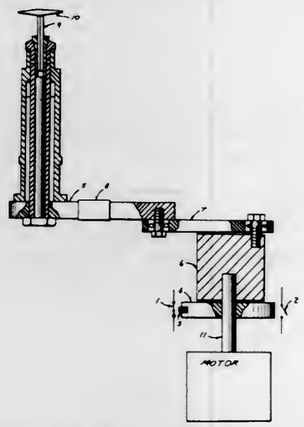
use of a gear train to magnify the movement of the indentor pin and thus exhibits a quick response to the testing of the specimen being investigated.

3,468,160
STRESS EMBRITTLEMENT TESTING
Harley Eugene Bush, Houston, Tex., assignor to National Lead Company, New York, N.Y., a corporation of New Jersey
Filed Mar. 8, 1967, Ser. No. 621,686
Int. Cl. G01n *17/00*
U.S. Cl. 73—86 **10 Claims**



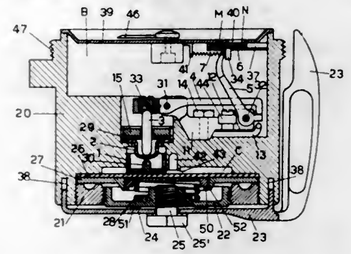
This invention provides a novel steel test coupon for rapid and highly reproducible testing of fluids for the determination of the liability to stress corrosion cracking and embrittlement for high-strength steels in the test fluid; and also provides a method for producing the test coupon in quantity, whereby slight variations in the stock used for the purpose of the test coupon are largely equalized out. The coupons are prepared by mutual compression at right angles of cylindrical bearing rollers, so as to produce high-stressed, generally circular depressions on the cylinder sides thereof.

3,468,161
METHOD AND DEVICE FOR MEASURING MECHANICAL STRESS AT PREDETERMINED STRAIN
Raleigh Warren Wise, Akron, Ohio, assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware
Filed Apr. 27, 1967, Ser. No. 634,257
Int. Cl. G01b *7/16*
U.S. Cl. 73—101 **8 Claims**



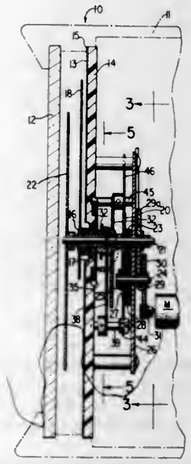
This invention is a device and method for measuring mechanical stress at a predetermined strain of a plastic sample. The device is comprised of a system of switches operated by the strain-testing instrument for plastic materials. The system of switches is positioned so that the switches are activated by the testing instrument at the peak starin of a plastic sample subject to cyclic deformation in the instrument. The electrical signal obtained from the output of a force transducer connected to the instrument is rectified with the aid of a capacitor-switch combination to a signal suitable for recording a smooth curve on a recorder.

3,468,162
PRESSURE EQUALIZER FOR DUAL TYRES OF LANDCRAFT OR AIRCRAFT
Giovanni Dall'Olio Contri, Via Appollonio 48, Brescia, Italy
Filed Nov. 9, 1967, Ser. No. 681,840
Claims priority, application Italy, Nov. 15, 1966, 29,977/66
Int. Cl. B60c *23/10*
U.S. Cl. 73—146.3 **3 Claims**



A pressure equalizing device for dual tyres of vehicles is disclosed, in which a flexible diaphragm is provided, which can be deflected in one direction by the pressure obtaining in the tyres and in the opposite direction under the bias of a spring, the movements of said diaphragm being displayed through a window which shows differently coloured areas of plate according to the inflation conditions of said tyres, means being provided to measure the pressure obtaining in said tyres and for preadjusting it to a preselected value, signalling means of an electrical nature being further provided to give a warning signal to the vehicle's driver.

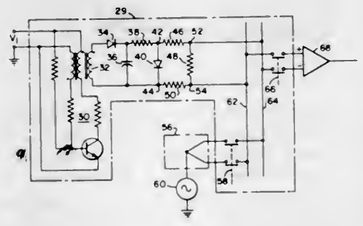
3,468,163
SPEEDOMETER FOR BOATS AND OTHER VEHICLES
Theodore W. Kenyon, Old Lyme, Conn., assignor to The Eastern Company, Naugatuck, Conn., a corporation of Connecticut
Filed Mar. 29, 1968, Ser. No. 717,121
Int. Cl. G01c *21/10*
U.S. Cl. 73—186 **10 Claims**



A speedometer for boats and other vehicles involving two pointers not necessarily concentric, one showing speed in knots and the second auxiliary pointer with multiple points rotating at higher gear ratio to indicate small differences in speed with a large enough motion to be visible by an observer from a distance of many feet from

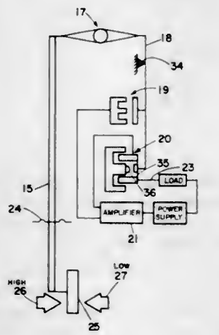
the instrument, the system being virtually independent of voltage supply operations and including an electrical circuit embodying a transducer whose output which is proportional to the square of the speed of the vessel is corrected by a mechanical system to give equidivisional indication to an observer, i.e. the same indicator motion for a change from 1 to 2 knots or from 11 to 12 knots or any change in knot speed.

3,468,164
OPEN THERMOCOUPLE DETECTION APPARATUS
James F. Sutherland, Pittsburgh, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Aug. 26, 1966, Ser. No. 575,454
Int. Cl. G01k *7/00*
U.S. Cl. 73—343 **3 Claims**



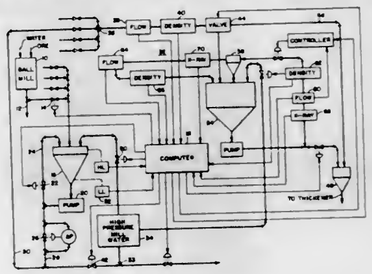
There is disclosed an open thermocouple detection circuit which provides a continuous test signal to selected thermocouples to be tested. In the case of a faulty or open thermocouple the full test signal, having an opposite polarity compared to the normal thermocouple output signal, is applied to the output signal sensing device. A decoupling circuit is operative with a test signal oscillator transformer to prevent common mode voltage and offset current flow through the test signal supply to ground.

3,468,165
OVERRANGE LINK
Philip H. Sanford, Walpole, Mass., assignor to The Foxboro Company, Foxboro, Mass., a corporation of Massachusetts
Filed Nov. 9, 1967, Ser. No. 681,713
Int. Cl. G01l *7/02*
U.S. Cl. 73—398 **7 Claims**



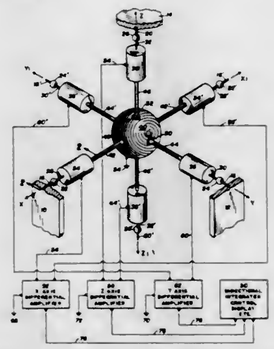
An elongate mechanical link for use in measurement or control instruments or systems, normally operated under end tension but set to flexibly buckle under overrange end compression, the link comprising a set of flexible strips and a strip separating member transversely of the link, with the strips over and under the separating member in weaving fashion.

3,468,166
MATERIAL SAMPLE TRANSFER SYSTEM
Richard E. J. Putman, Penn Hills, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Dec. 26, 1967, Ser. No. 693,568
Int. Cl. G01n *1/10*
U.S. Cl. 73—421 **4 Claims**



In the operation of many material treatment plants, such as a minerals benefication plant including a mill group producing a slurry from ore supplied to the mill group, it is desirable to remove a sample of the output product for analysis, for example in regard to particle size classification and desired X-ray studies. The present invention provides a fluid slurry sample transfer system operated by a computer such that a controlled product sample providing a transfer system for removing a product sample from the output production of the treatment plant is effective and then the system is operative to transfer that product sample as a separate entity to a remotely located analysis apparatus to enable the latter analysis apparatus to be centrally positioned and commonly shared by a plurality of such material sampling units and perhaps even a plurality of similar treatment plants.

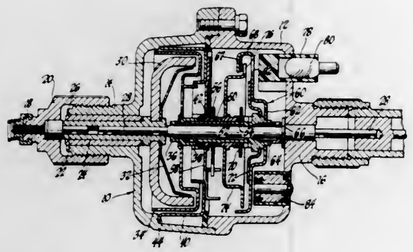
3,468,167
INERTIALLY RESPONSIVE DEVICE
Donald L. Klass, Barrington, and Thomas W. Martinek, Danville, Ill., and Robert M. Haines, Placentia, Calif., assignors to Union Oil Company of California, Los Angeles, Calif., a corporation of California
Filed Sept. 12, 1966, Ser. No. 578,635
Int. Cl. G01p *15/02*
U.S. Cl. 73—516 **18 Claims**



The motion of a mass in space is monitored by disposing that mass along at least one line of force by a system comprising at least one shear responsive fluid cell con-

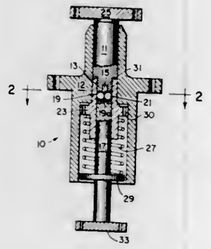
taining a shear responsive fluid subject to change in an electrokinetic property proportional to shear and monitoring the value of that property of fluid containing in the shear responsive fluid cell.

3,468,168
PHOTOELECTRIC ERROR DETECTOR
Ronald L. Colling, Davison, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Aug. 10, 1965, Ser. No. 478,664
Int. Cl. G01p *3/22*
U.S. Cl. 73—519 **11 Claims**



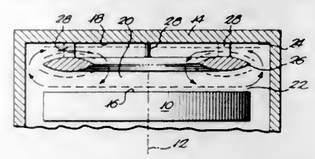
A photoelectric speed error detector is disclosed and includes rotatably mounted carrier and shutter elements movable through an arcuate path proportional to actual vehicle speed. The carrier element mounts a photocell in the path of radiant energy emitted from a light source. The shutter element is positioned between the light source and the photocell and is adapted to reduce the light impinging on the photocell in response to any relative movement between the two elements. An electromagnet energizable by the vehicle operator is adapted to arrest movement of the carrier so that an output signal developed by the photocell is indicative of the difference between the actual speed of the vehicle and the vehicle speed prevailing at the time of energization of the electromagnet.

3,468,169
QUICK RELEASE COUPLING
Edmund F. Welch, Kansas City, Mo., assignor to the United States of America as represented by the United States Atomic Energy Commission
Filed Jan. 26, 1968, Ser. No. 701,008
Int. Cl. F16d *1/10*
U.S. Cl. 74—2 **3 Claims**



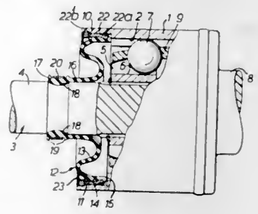
A coupling for transmitting rotary and longitudinal movement between separable aligned members having overlapping end portions in combination with one or more locking members disposed in passageways within said end portions, a retaining means for maintaining the locking members in locking disposition with the end portions, and means to release the locking members for quick and forceful separation of the aligned members.

3,468,170
APPARATUS FOR REDUCING GAS COUPLING BETWEEN THE STATOR AND ROTOR OF GYROSCOPES
John L. Evans, Oakland, N.J., assignor to Singer-General Precision, Inc., Little Falls, N.J., a corporation of Delaware
Filed Dec. 29, 1966, Ser. No. 605,851
Int. Cl. G01c *19/02*
U.S. Cl. 74—5 **5 Claims**



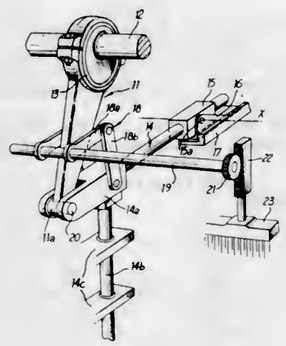
This disclosure includes drawings and a description of two forms of apparatus for reducing the gas coupling restraint between the rotor and stator of a free rotor gyroscope by minimizing pressure buildup near the outer edge of the rotor that ordinarily occurs because of the centrifugal pumping effect of the rotor. In one embodiment, the pressure buildup is reduced by an annular flow divider in the stator-rotor gap to effect uniform radial circulation of gas or air in the gap. In the other embodiment, annular baffles are mounted on the stator to project into the gap to inhibit outward movement of gas. The drawing also includes graphs showing performance curves for the respective embodiments.

3,468,171
FLEXIBLE SEALS
Jerzy Witold Macielinski, Birmingham, England, assignor to Birfield Engineering Limited, London, England
Filed Sept. 11, 1967, Ser. No. 666,599
Claims priority, application Great Britain, Sept. 16, 1966, 41,383/66
Int. Cl. F16j *15/50*
U.S. Cl. 74—18.1 **11 Claims**



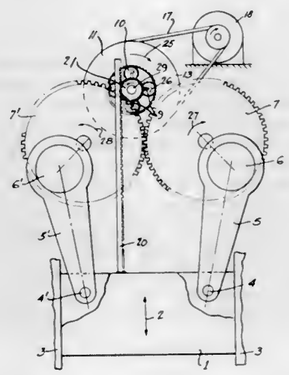
A flexible seal for fitting to an inner shaft member and an external member by which the shaft member is surrounded, these members conveniently being components of a universal joint. When fitted the seal retains lubricant and prevents dirt entering between the members with the flexibility of the seal accommodating relative movement of the members. The seal comprises a flexible wall with an inner periphery formed for attachment around the shaft member, and an outer periphery with a thickened rim portion which fits within and seals against the member. A metal reinforcing ring is partially embedded in the outer rim and projects therefrom for engagement with the member and/or an axially-locating surface.

3,468,172
DRIVE TRANSMISSION MECHANISM
William Sandford Hasler, 16 Queens Road, Blackburn, England
Filed May 22, 1967, Ser. No. 640,103
Claims priority, application Great Britain, May 22, 1966, 22,745/66
Int. Cl. F16h *19/04, 19/08*
U.S. Cl. 74—33 **5 Claims**



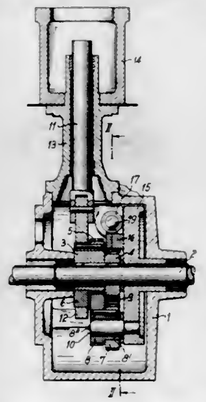
This disclosure relates to tufting machines and in particular to means for varying the tuft or pile height. The disclosure sets forth a relatively simple and effective means for effecting changes in the needle stroke relative to the working material which is to be penetrated by the needles for depositing tufts therein.

3,468,173
MACHINE TOOL WITH DIFFERENT SPEEDS ON FORWARD AND RETURN STROKE
Karl Christoph Fracke, Ottawa, Ontario, Canada, assignor to U.S. Industries, Inc., New York, N.Y., a corporation of Delaware
Filed May 1, 1967, Ser. No. 635,069
Int. Cl. F16h *37/12, 19/02*
U.S. Cl. 74—52 **10 Claims**



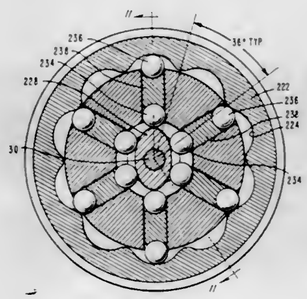
An apparatus for converting a rotating motion to a linear motion as described in which a wheel performs the rotating motion and is driven by a planetary gear system. A prime mover drives one of the elements of the planetary gear, a second element drives the wheel and the third element is driven in accordance with the linear motion in such a direction to decrease the rate of rotation of the wheel when the linear motion is in one direction and increase the rate of rotation when the linear motion is in the opposite direction.

3,468,174
GEARING DEVICE
Gerhard Friedrich Müller, Asperg, Germany, assignor to Werner & Pfleiderer, Stuttgart-Feuerbach, Germany, a company of Germany
Filed Oct. 6, 1967, Ser. No. 673,327
Claims priority, application Germany, Nov. 18, 1966, W 42,820
Int. Cl. F16h *25/16;* **G05g** *3/00*
U.S. Cl. 74—55 **9 Claims**



A compact, reliable and conveniently serviceable gearing device for converting a rotary movement into a rectilinear reciprocating movement by means of two rotary eccentric members encompassing each other and in which the length of the stroke of the rectilinear movement can be varied by changing the mutual position of the two eccentric members.

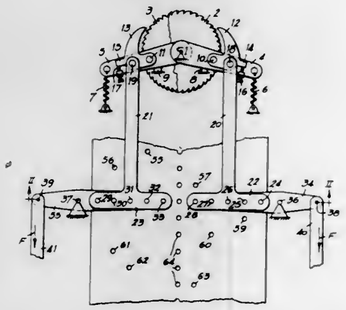
3,468,175
TRANSMISSION
Jan W. Rabek, 2150 Patricia Ave., Los Angeles, Calif. 90025
Filed Aug. 15, 1967, Ser. No. 660,814
Int. Cl. F16h *21/12, 25/18*
U.S. Cl. 74—63 **11 Claims**



A transmission is disclosed which includes a pair of wave gears coupled together by a carrier-supported, harmonic motion oscillator means traversing the undulating surfaces of the wave gears. Either one of the wave gears

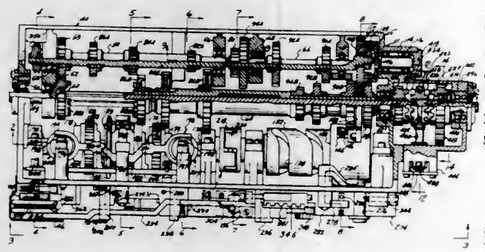
or the oscillator means carrier may function as the input driving element, the output being derived from one or both of the remaining elements, the velocity ratio obtained being determined by the ratio of the number of waves on one gear to the number of waves on the other gear.

3,468,176
DEVICE FOR STEPWISE DISPLACEMENT OF WORKPIECES, TOOLS AND SUCHLIKE
Gerard Benoni Boucherie, Potaardestraat 1, Rumbeke, Belgium
Filed Apr. 25, 1967, Ser. No. 638,179
Claims priority, application Belgium, Oct. 20, 1966, 46,157
Int. Cl. F16h *27/02, 31/00;* **G05g** *1/00*
U.S. Cl. 74—142 **15 Claims**



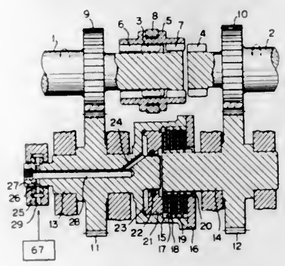
Workpieces, tools and the like are moved stepwise and correctly positioned by means of a perforated tape which actuates a workpiece driving shaft by means of ratchet wheels connected with the shaft. Pawls engage the ratchet wheels and are pivoted to linking arms provided with holes adapted to receive selective pins carried by rocking levers located close to the linking arms, whereby the perforations of the tape receive pins causing the required turning of the shaft.

3,468,177
POSITIVE DRIVE CONTINUOUS GEAR-MESH SHIFTING MULTISPEED TRANSMISSION SYSTEM
Laszlo J. Kiss, 7044 Paige, Warren, Mich. 48091
Filed Feb. 21, 1967, Ser. No. 617,546
Int. Cl. F16b *3/38*
U.S. Cl. 74—339 **37 Claims**



Various embodiments of continuous gear-mesh shifting multispeed transmissions, including gear driven positive clutch devices, have permanently synchronized input shaft driven automatic shifter devices which, when selectively actuated, automatically drivingly shift from one constant speed gear train to the gear train of an input shaft driven ratio alternater, then to another constant speed gear train, or to a declutched condition in the case of a positive clutch device, the ratio alternater operating to drivingly alternate the gear ratio appropriately from one constant speed gear ratio to the next and to maintain the positive gear-mesh continuously while shifting whereby delivering uninterrupted full torque from input to output shaft even while shifting.

3,468,178
INTERLOCKING ARRANGEMENT FOR ROTATING SHAFTS
Shiro Yamate and Noboru Araikawa, Nagasaki-shi, Japan, assignors to Mitsubishi Jukogyo Kabushiki Kaisha, Tokyo, Japan
Filed Oct. 23, 1967, Ser. No. 677,115
Claims priority, application Japan, Oct. 26, 1966, 41/70,255
Int. Cl. F16h *3/38*
U.S. Cl. 74—339 **5 Claims**

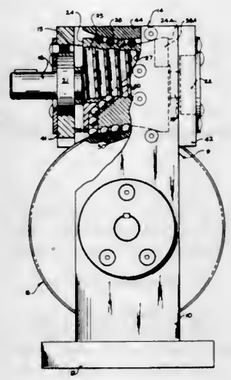


An apparatus for synchronizing a second shaft with a continuously rotating first shaft while the first shaft is rotating includes a first synchronizing shaft which is driven by the first shaft through gearing and a second synchronizing shaft which is geared to the second shaft and which may be connecting for driving by the first synchronizing shaft through a clutch defined between the ends of the first and second synchronizing shafts. The gearing between the first shaft and the first synchronizing shaft and between the second synchronizing shaft and the second shaft is such that the second shaft is driven at a speed slightly different from the first shaft when the clutch between the two synchronizing shafts is engaged. The mechanism includes means for automatically engaging the clutch elements between the two synchronizing shafts and maintaining the clutch element under pressure contacting engagement and, after the second shaft is driven by the clutching arrangement at a speed which varies from the speed of the first shaft by 5 r.p.m., for example, coupling of the first and second shafts together. The slight difference of rotational speeds of the first and second shafts permits the interengagement of a claw coupling to connect the shafts together for direct driving and when this is accomplished pressure is removed from the clutch elements driving between from the first synchronizing shaft to the second synchronizing shaft.

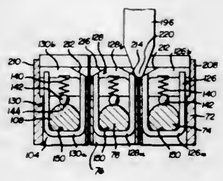
3,468,179
RECIRCULATING BALL WORM DRIVE
Robert K. Sedgwick, Brookfield, and John J. Hughes, Greendale, Wis., assignors to Kearney & Trecker Corporation, West Allis, Wis., a corporation of Wisconsin
Filed Mar. 26, 1968, Ser. No. 716,133
Int. Cl. F16h *1/16, 55/24*
U.S. Cl. 74—425 **8 Claims**

A recirculating ball worm drive utilizes a worm with a concave contour having a helical groove cut along its concave surface with the groove so oriented that the locus

of ball centers that travel in the groove forms an hyperboloid of revolution. Because the worm groove is shaped so that the ball centers form a hyperboloid of revolution, parallelism of the grooves in the worm and wheel is maintained and the lead is allowed to vary while still maintaining contact of the balls in both worm grooves and wheel grooves. With this arrangement a plurality of balls in a plurality of rows will simultaneously operate to transmit driving torque.



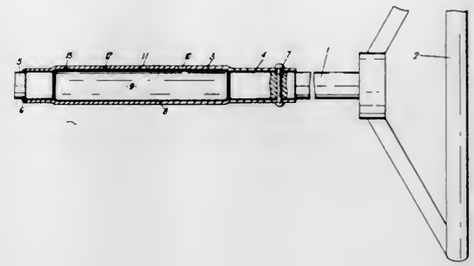
3,468,180
SHIFTING MECHANISM FOR TRANSMISSION
Vance H. Mays, Racine, and James H. Lemke, Sturtevant, Wis., assignors to J. I. Case Company, Racine, Wis., a corporation of Wisconsin
Filed Oct. 25, 1967, Ser. No. 678,007
Int. Cl. G05g *9/00, 13/00*
U.S. Cl. 74—475 **5 Claims**



A transmission including gear shifter forks which are operated by rotatable and axially movable control mechanism. A pair of the mechanism selectively engages a fork and a locking device carried thereby to release the locking device and to shift the fork with ease without disturbing other forks and their locking devices.

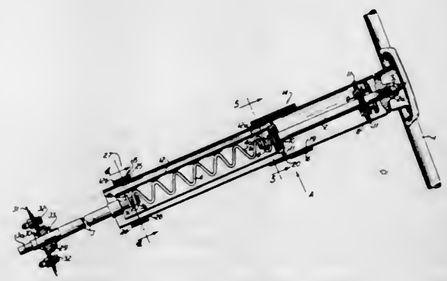
3,468,181
MOTOR VEHICLE STEERING ASSEMBLIES
Clive C. Millar, Romford, England, assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed Apr. 5, 1967, Ser. No. 628,772
Claims priority, application Great Britain, July 7, 1966, 30,530/66
Int. Cl. B62d *1/18*
U.S. Cl. 74—492 **1 Claim**

An energy absorbing motor vehicle steering assembly in which a steering column is adapted to collapse telescopically under an applied axial force above a predetermined value comprising a tubular steering shaft part



containing a liquid in a closed bag. A second steering shaft part is constructed to collapse the bag upon impact whereby the liquid is permitted to escape through control orifices in the tubular part.

3,468,182
COLLAPSIBLE STEERING COLUMN
Shalom Shwartzberg, Ilford, England, assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed Sept. 25, 1967, Ser. No. 670,203
Claims priority, application Great Britain, Mar. 23, 1967, 10,129/67
Int. Cl. B62d *1/16, 1/18*
U.S. Cl. 74—492 **14 Claims**

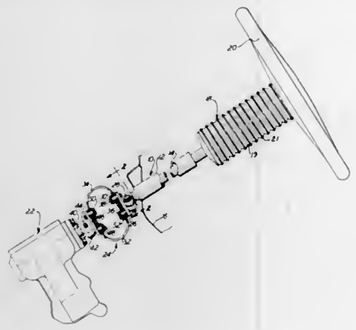


An energy absorbing steering column for a motor vehicle having a corrugated metal strip connecting two steering shaft portions and designed to collapse at a controlled rate under a predetermined load imposed upon the steering wheel.

3,468,183
STEERING COLUMN FOR MOTOR VEHICLE
Shalom Shwartzberg, Ilford, Essex, England, assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed Nov. 7, 1967, Ser. No. 681,262
Claims priority, application Great Britain, Mar. 3, 1967, 10,132/67
Int. Cl. B62b *1/18*
U.S. Cl. 74—492 **7 Claims**

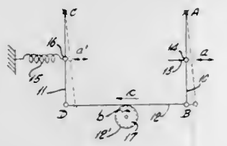
An energy absorbing steering column for a motor vehicle having a collapsible connector at the lower end of the steering shaft to permit the steering gear to be dis-

placed rearwardly without displacing the steering shaft rearwardly. In the preferred embodiment of the invention,



the connector is formed of a pair of U-shaped yieldable metal strips that join the shaft to the gear.

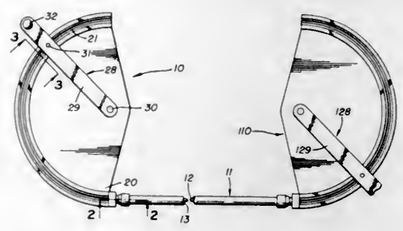
3,468,184
MOTION-TRANSMITTING MECHANISM WITH MECHANICAL AMPLIFIER
Hans Maschmann, West Orange, N.J., assignor to G. M. Pfaff AG., Kaiserslautern, Pfalz, Germany, a corporation of Germany
Filed June 19, 1967, Ser. No. 646,870
Int. Cl. F16c *1/12;* **G05g** *1/00*
U.S. Cl. 74—501.5 **9 Claims**



In motion-transmitting mechanism including an intermediate link pivotally connected to a controlling lever and a controlled lever, respectively, the link consist of a flexible elastic tape having a portion thereof spirally wound around a rotary drum having a stationary axis. A return spring acting on the controlled lever and urging the tape in a predetermined direction enables the controlled lever to follow the deflections of the controlling lever, while the drum is rotated by an electric motor in a direction to frictionally engage and urge the tape in a direction opposite to said first direction.

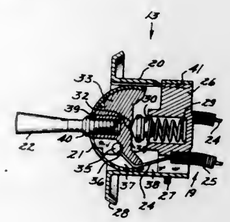
3,468,185
CONTROL FOR PROVIDING LONG TRAVEL TO THE CORE OF A PUSH-PULL CABLE
Richard D. Houk, Stow, Ohio, assignor, by mesne assignments, to North American Rockwell Corporation, Pittsburgh, Pa., a corporation of Delaware
Filed July 18, 1967, Ser. No. 654,183
U.S. Cl. F16c *1/20*
U.S. Cl. 74—501 **4 Claims**

A control for a push-pull cable. The housing of the control is provided with a curvilinear guide slot in which the core of the push-pull cable is received. A pair of opposed tracking grooves, which lie within the plane of the curve formed by the guide slot, are presented within the guide slot. A handle means is attached to the end of the core laterally of the tracking grooves, and guide slot, for selectively reciprocating it along the guide slot. The tracking grooves are preferably provided in low friction core guides rigidly supported within the guide slot. By using one such device as a control station and connecting



it, through a push-pull cable, to a second such device at a remote controlled station, a system capable of utilizing considerable core displacement is provided.

3,468,186
REMOTE CONTROL REARVIEW MIRROR
Matthew McIntyre, Madison County, Tenn., Harry Edwin Goodfellow, Kent County, Mich., and Herbert Roy Jaffe, Nassau County, N.Y., assignors to Jervis Corporation, Grandville, Mich., a corporation of Michigan
Filed Aug. 14, 1967, Ser. No. 660,410
Int. Cl. F16c *1/20*
U.S. Cl. 74—501 **6 Claims**

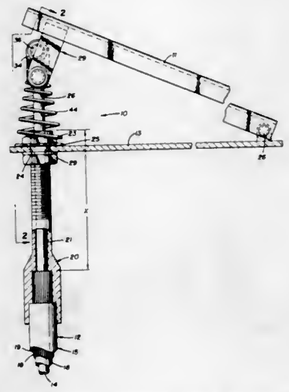


An improvement in remote control wire or cable operated rearview mirrors in which a single piece mirror housing incorporates pedestal and guide posts cooperating with a snap-in resin mirror support, and at the manual remote actuator end the pivotal element is allowed to float in a tubular escutcheon housing thereby adjusting by lineal and axial positioning of the ball to accommodate mounting variables arising from the random length of the wires or cables while extending angle adjustment range or throw of the control knobs.

3,468,187
FOOT PEDAL CONNECTOR FOR PUSH-PULL CONTROL CABLE
Frank S. Payerle, Akron, Ohio, assignor, by mesne assignments, to North American Rockwell Corporation, Pittsburgh, Pa., a corporation of Delaware
Filed Aug. 25, 1967, Ser. No. 663,303
Int. Cl. G05g *1/14;* **F16c** *1/20*
U.S. Cl. 74—512 **4 Claims**

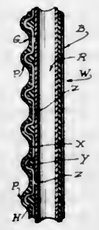
A connector for operatively joining a pivotal foot pedal to the core of a push-pull control cable through a floor board. A fitting is secured to the casing of the push-pull cable and rigidly fixed through the floor board. A push rod is slidably received in the fitting with one end of the push rod being attached to the core of a push-pull cable, and the other end of the push rod is attached to a connector bar extending generally transversely thereof. The connector bar is swingingly mounted on a yoke affixed to the pedal. The

swinging mount comprises a pair of links which extend between the connector bar and the yoke and are pivotally



attached to both. Spring means bias the connector bar to its outermost position.

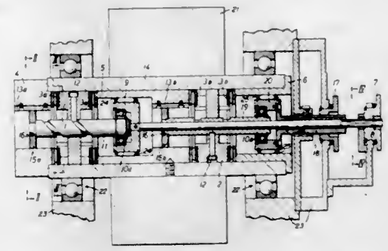
3,468,188
HAND ENGAGEABLE PLASTIC COATED PART
Richard P. MacCoon, % Grant Industries, 241 N. Westmoreland, Los Angeles, Calif. 90004
Filed July 26, 1967, Ser. No. 656,275
Int. Cl. G05g *1/10;* **B62d** *1/04*
U.S. Cl. 74—552 **8 Claims**



A hand engageable part such as a steering wheel rim having an elongate metal core cylindrical in cross-section, an elongate heat-sink metal strip fixed to and extending longitudinally along one side of the core and having a plurality of longitudinally spaced portions projecting radially outward from said side of the core and a hot-dip coating of polyvinyl chloride on and about said core and heat sink, said coating, by virtue of the heat sink, being substantially ovoid in cross-section with its major cross-sectional axis intersecting said one side of the core and having a plurality of longitudinally spaced, radially, outwardly-projecting, substantially semi-ovoid, finger-engaging protuberances adjacent said one side of the core.

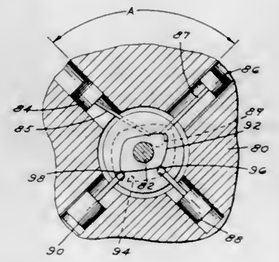
3,468.189
APPARATUS FOR STATICALLY BALANCING MACHINES FOR DRIVING ROTARY COMPONENTS
Volker Gosche, Kornelimunster, near Aachen, Germany, assignor to Schumag Schumacher Metallwerke Gesellschaft mit beschrankter Haftung, Aachen, Germany, a corporation of Germany
Filed Oct. 26, 1967, Ser. No. 678,372
Claims priority, application Germany, Nov. 5, 1966, Sch 39,788
Int. Cl. F16f *15/22*
U.S. Cl. 74—573 **10 Claims**

Apparatus for statically balancing machines driving rotary components and having a hollow drive shaft containing an unbalanced weight includes an externally threaded elongated cylindrical body extending through the weight. Received in the thread is a projection fixed to the weight and having a profile matching that of the



thread. The thread has a pitch large enough to effect rotary movement of the weight in response to axial movement of the cylindrical body. Also provided are means for axially shifting the cylindrical body to change the angular position of the weight relative to the drive shaft.

3,468,190
MECHANISM FOR BALANCING RECIPROCATING MASSES OF INTERNAL COMBUSTION ENGINES
Achille C. Sampietro, Bloomfield Hills, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed June 5, 1967, Ser. No. 643,622
Int. Cl. G05g *3/00, 1/00;* **F02b** *75/06*
U.S. Cl. 74—604 **8 Claims**

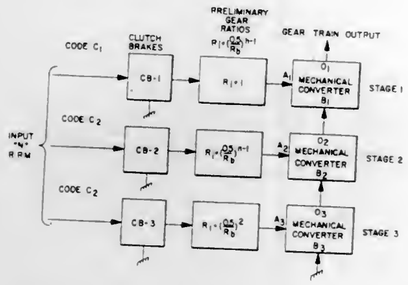


This mechanism balances the inertia forces of reciprocating pistons and connecting rods in an internal combustion engine. A balancing mass slidable in the engine block in the plane of the reciprocating piston is moved by two followers riding on separate cam surfaces formed on the cheeks of the crankshaft. One cam surface accelerates the balancing mass outward while the other decelerates outward motion of the mass and accelerates the balancing mass inward. After inward acceleration, the first cam surface takes over again to decelerate the inward motion. The cam surfaces are designed so they will move the balancing mass to produce inertia forces balancing the primary and/or secondary or higher harmonic inertia forces acting on the reciprocating pistons and connecting rods of the engine.

3,468,191
GEAR TRAIN
Gaines Morton Crook, 7568 Chaminade Ave., Canoga Park, Calif. 91304
Filed Aug. 17, 1967, Ser. No. 661,263
Int. Cl. F16h *37/06*
U.S. Cl. 74—681 **10 Claims**

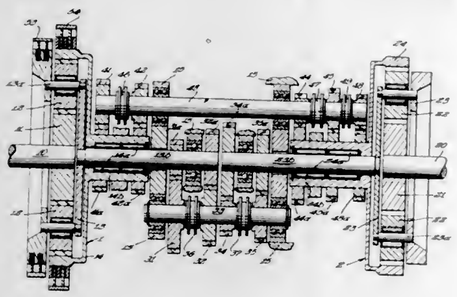
This is a gear train for producing an infinitely variable number of discrete angles, angular velocities or torques

in fully controllable increments. The apparatus includes a plurality of stages having converting elements controlled



by appropriate clutches and brakes to incorporate into or isolate the converting elements from operability in the system. This gear train is ideally suited for binary coding.

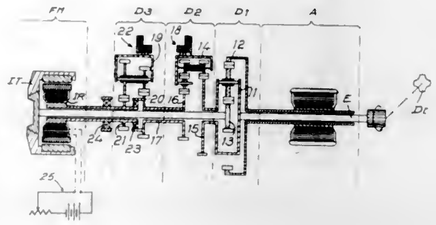
3,468,192
TRANSMISSION
Algirdas L. Nasvytis, 10823 Magnolia Drive, Cleveland, Ohio 44106
Filed Oct. 3, 1966, Ser. No. 583,830
Int. Cl. F16h *37/06, 57/10*
U.S. Cl. 74—682 **28 Claims**



A shiftable planetary transmission providing a plurality of power paths selectively shiftable during a stationary condition, and incorporating means for rendering, selectively, one of the power paths stationary for shifting purposes.

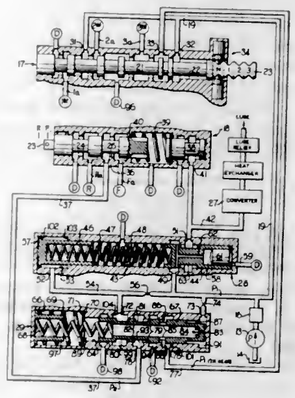
3,468,193
ELECTRO-MECHANICAL SYSTEM FOR DRIVING AT CONSTANT SPEED
Gérard M. P. L. O'Mahony, Ville d'Avray, France, assignor to Societe anonyme dite: Auxilec, Colombes (Hauts-de-Seine), France, a French society
Filed Dec. 18, 1967, Ser. No. 691,541
Claims priority, application France, Jan. 6, 1967, 90.228
Int. Cl. F16h *37/06*
U.S. Cl. 74—686 **3 Claims**

The present invention relates to electro-mechanical systems for driving a device at a constant speed and of the kind that comprises a variable-speed input shaft, a first differential having a satellite holder rotated by the input shaft, an output shaft rotated by a planet wheel of said first differential, an electromagnetic brake constituted by a first rotor rotated by a second planet wheel of the first differential and by a second rotor securely connected to a shaft mounted on a framework with the interposition of a free wheel: a second differential is provided that has an input planet wheel securely connected to the satellite holder of the first differential, the output planet wheel of which is rotatable in a direction opposite that of the input planet wheel and the satellite holder of which can be immobilised by a first electro-brake and a suitable electrical circuit for controlling the variable slip of the electro-magnetic brake in order to obtain a constant speed of rotation of the output shaft.



The invention seeks to reduce the losses associated with the slip of the brake by keeping this slip at a small value, and consists in interposing, between the output planet wheel of the second differential and the shaft securely connected to the second rotor of the electro-magnetic brake, a change-speed device in such a way that the rotor retains, for the shaft of the second rotor of the electro-magnetic brake, whatever the speed of rotation of the output planet wheel of the second differential, a speed of rotation with respect to the shaft of the first rotor that is lower than a predetermined slip speed of the electro-magnetic brake.

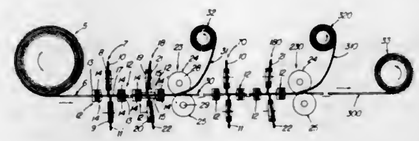
3,468,194
HYDRAULIC PRESSURE MODULATING TRANSMISSION CONTROL SYSTEM
Joachim Horsch, Wood Dale, and David S. Ohaver, Farmington, Ill., assignors to Caterpillar Tractor Co., Peoria, Ill., a corporation of California
Filed May 10, 1967, Ser. No. 637,459
Int. Cl. F16h *57/10*
U.S. Cl. 74—753 **16 Claims**



A hydraulic transmission control system, having speed selector valves for providing hydraulic fluid to selectively

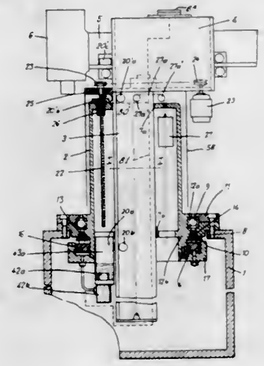
actuate speed and directional gear clutches and a pressure modulating valve for modulating pressure rise of hydraulic fluid, to control fluid pressure and fluid flow. A differential valve associated therein and having differential fluid pressure regulator means to provide fluid to the directional selector valve at a differentially constant lower pressure compared with main rail fluid pressure, the differential valve also having: a safety reset valve and safety reset delay orifice for preventing actuation of a directional gear clutch after a startup with the controls inadvertently out of neutral gear; quick dumping check valve means for insuring proper operation of the pressure modulation valve; modulating valve means for eliminating or reducing hydraulic fluid pressure peaks; and throttle means for reducing refilling time for the directional gear clutches.

3,468,195
METHOD OF MAKING NARROW RIBBON BLADES
George A. La Cas, Staunton, Va., assignor to Philip Morris Incorporated, New York, N.Y., a corporation of Virginia
Filed Dec. 27, 1965, Ser. No. 516,496
Int. Cl. B21k *11/00*
U.S. Cl. 76—104 **1 Claim**



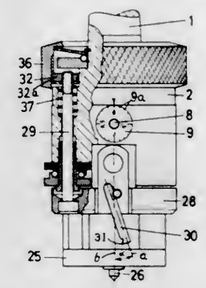
This invention pertains to a method of making narrow ribbon blades of coilable type having a single cutting edge and which is of a width and such high flexibility as to make it very difficult for an unsharpened blank therefor to be guided securely and accurately through edge shaping and sharpening means. This method includes successively the following steps. A continuous supply strip of metallic blade material is provided in a width appreciably wider than the intended coilable narrow ribbon blade to be obtained therefrom, and preferably in a width at least a multiple of such desired ribbon blade width. This width of the supply strip is sufficient to assure secure and accurate guidance progressively through edge shaping and sharpening means for sharpening one longitudinal edge thereof. This continuous supply strip is continuously passed longitudinally through such shaping and sharpening means with progressive sharpening of one longitudinal edge thereof. The resulting sharpened supply strip is continuously and progressively severed longitudinally along the line generally parallel to and spaced a short distance from the sharpened edge as the progressive longitudinal passing of this supply strip is continued, so as to sever therefrom the desired sharpened ribbon blade. Preferably the remainder base strip after severing such sharpened ribbon blade from the supply strip is continuously passed longitudinally through additional edge shaping and sharpening means progressive to sharpen a longitudinal edge of this remainder base strip; and thereafter this base strip is continuously severed longitudinally along a line generally parallel to and spaced a short distance from the sharpened edge of this remainder base strip during the continuance of the progressive longitudinal passing thereof so as to sever another desired sharpened ribbon blade from the remainder base strip. Other features of the invention appear in the following specification and accompanying drawing.

3,468,196
DRILLING HEAD MOVABLE HORIZONTALLY AND VERTICALLY
Hellmut Müller, 91 Esslinger Str., 731 Plochingen (Neckar), Germany
Filed Nov. 30, 1966, Ser. No. 597,923
Claims priority, application Germany, Dec. 1, 1965, M 67,482
Int. Cl. B23b *39/12, 47/26*
U.S. Cl. 77—28 **25 Claims**



A drilling machine has an under-frame, a turning carriage mounted in the under-frame to turn about a vertical axis, a column vertically slidable in the turning carriage, and a beam carrying a drilling tool horizontally slidable in the top of the column with the tool at one side of the column. The column is hollow and of substantially rectangular cross-section with the longer axis extending in the direction of the projection of the beam. The column has at least three plane guide surfaces engaged by rollers on the column.

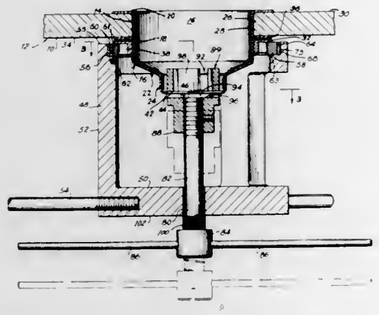
3,468,197
APPARATUS FOR THE PRODUCTION OF ROUND OPENINGS IN WORKPIECES
George Val, Dallikon, Switzerland
Filed Dec. 22, 1966, Ser. No. 603,956
Claims priority, application Switzerland, Dec. 24, 1965, 17,829/65; Apr. 15, 1966, 5,499/66
Int. Cl. B23b *41/00*
U.S. Cl. 77—79 **17 Claims**



An apparatus for the formation of round holes or openings in workpieces wherein the tool holder supports a cutting tool at a desired inclination with respect to the working direction of rotation and the cutting angle of

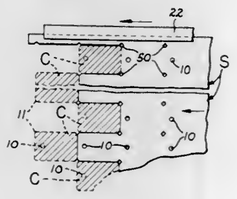
such cutting tool is positive. The tool holder is selectively positionable for proper accommodation of the cutting tool and mechanism is provided for this purpose. Also, the apparatus incorporates a specially resiliently mounted hold-down or press pad, and such apparatus can carry out different machining operations, as desired.

3,468,198
PLUMBING TOOLS
Peter De Maio, 142 Bay 7 St., Brooklyn, N.Y. 11228
Filed July 27, 1966, Ser. No. 568,240
Int. Cl. B65b *27/00;* **B23p** *19/06*
U.S. Cl. 81—55 **11 Claims**



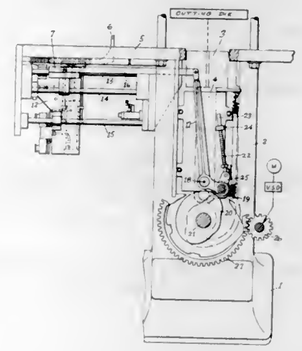
A single tool is utilized for securing in place in an opening, as, for instance, the drain opening of a basin, the fitting which is to supply the connection to a pipe, such as the drain pipe for the basin. The tool is capable of manipulation by a single operative from a single position without the necessity of someone else holding the fitting against rotation. One part of the tool positively retains the fitting not only against rotation but also against vertical movement, while another part of the tool is manipulated by the same operative to move into place an element positively to secure the fitting in place in the opening.

3,468,199
CONVERSION OF SHEET MATERIAL INTO SMALLER PIECES
Charles F. Hautau, Oxford, Ohio, assignor to The Black Clawson Company, Hamilton, Ohio, a corporation of Ohio
Filed Feb. 6, 1967, Ser. No. 614,271
Int. Cl. B26d *3/00, 7/00*
U.S. Cl. 83—15 **5 Claims**



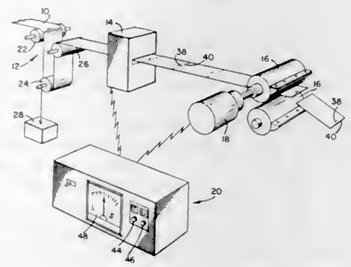
Process for efficiently converting a sheet of material directly into smaller pieces of predetermined size by progressively shearing the sheet along laterally and longitudinally extending lines alternately connected to form a series of notches along the leading edge portion of the sheet with each notch conforming to the configuration of a piece.

3,468,200
LABEL DIE CUTTING MACHINE
Clarence C. Brestel, Cincinnati, Ohio, and Howard R. Maschinot, Erlander, Ky., assignors to The Printing Machinery Company, Cincinnati, Ohio, a corporation of Ohio
Filed Apr. 14, 1967, Ser. No. 630,989
Int. Cl. B26d *5/00, 5/20, 7/06*
U.S. Cl. 83—62 **3 Claims**



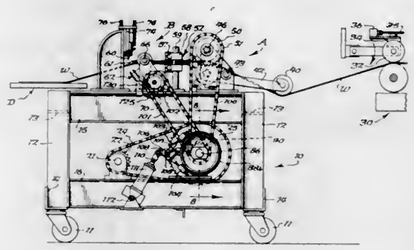
A label die cutting machine having a label feed mechanism including a pusher which drops below the level of the feed table prior to its return to pushing position and then projects into pushing position for the start of a succeeding pushing stroke. Mechanism is provided to increase the length and speed of the stroke of the pushing device and the machine is equipped with a variable speed drive so that the machine can operate at a speed appropriate to the type of labels being cut.

3,468,201
DIGITALIZED PRINT-TO-CUTOFF REGISTER SYSTEM
Robert G. Adamson and Paul W. Thiede, Danville, Ill., assignors to Hurletron Incorporated, Danville, Ill., a corporation of Delaware
Filed Mar. 9, 1967, Ser. No. 621,943
Int. Cl. B26d *5/00;* **B65h** *23/18*
U.S. Cl. 83—74 **16 Claims**



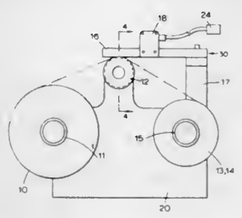
Apparatus for measuring the distance between a first and second point on a moving media by measuring a smaller distance between the second of these points and an intermediate point, comprising: a presettable encoder of a digitalized train of pulses which measures the optimal value of the smaller distance, a scanner which notes the actual position of the second point, digitalized and polarized comparator circuitry which calculates the relative positions of the optimal and actual second points, and a bidirectionally digitalized meter coupled to the comparator circuit.

3,468,202
MACHINE FOR CUTTING FLAT FLEXIBLE MULTIWALL TUBING
Clinton R. Hollis, Camden, Ark., assignor to International Paper Company, New York, N.Y., a corporation of New York
Filed Oct. 5, 1966, Ser. No. 584,425
Int. Cl. B26d *5/08, 7/00*
U.S. Cl. 83—175 **7 Claims**



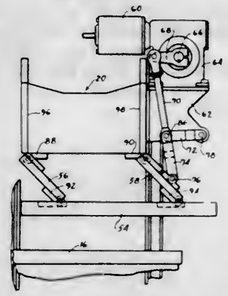
Apparatus for feeding, in predetermined lengths, a flat flexible multiwall tube, continuously received from a source at a first speed, into a cutter for cutting into predetermined lengths, comprising draw rolls running at a higher second speed which receive the tube and feed it to the cutter, the draw rolls being controlled by a metering station which stops the draw rolls and initiates cutting at predetermined intervals, the draw rolls, by virtue of their higher speed, being capable of taking up the slack caused by continuous feeding from the source during the cutting operation, the rolls being further controlled by a sensing roller to slip on the tube when the slack has been taken out, the cutter being adapted to flex the walls of the tube as the tube cuts to prevent friction between the sides of the cutter blade and the previously cut walls of the tube.

3,468,203
KNIVES
Edouard Roger Armelin, London, and Arthur Frederick George Plaskett, Orpington, England, assignors to Societe d'Etudes de Machines Speciales, a French company
Filed Apr. 3, 1967, Ser. No. 627,978
Claims priority, application Great Britain, Apr. 15, 1966, 16,668/66
Int. Cl. B26d *4/48*
U.S. Cl. 83—433 **5 Claims**



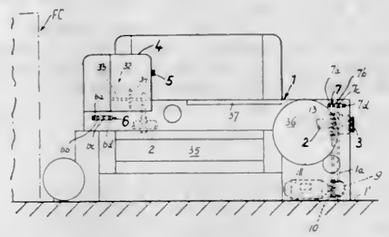
Apparatus for slitting flexible web material in which a knife resiliently bears against the web material as the latter is continuously advanced. A means is provided for vibrating the knife in the sonic or ultrasonic range in order to improve its cutting effect.

3,468,204
PRESS WITH RETRACTABLE PLATEN
Edgar Haas, New York, N.Y., and Edward Kottsieper, Dresden Mills, Maine, assignors to Herman Schwabe, Inc., Brooklyn, N.Y., a corporation of New York
Filed Apr. 6, 1967, Ser. No. 628,933
Int. Cl. B26d *5/06*
U.S. Cl. 83—533 **19 Claims**



This press, typically a die cutting press of the four poster type, has a long bed to support wide continuous material, and a long head thereover. Dies are moved manually over the material. For hand safety and for better visibility, the platen is carried beneath the head by front and back upright hinge plates which are so hinged at their top and bottom that they can fold rearward and upward to retract the platen out of the way. An auxiliary motor means and linkage are connected to the hinged assembly to pull the platen to its retracted position when the head is raised.

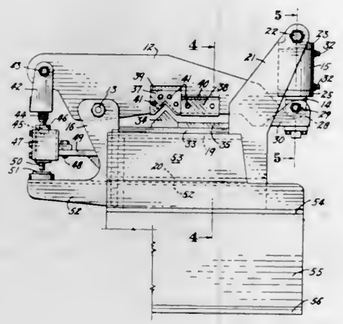
3,468,205
DRIVING ARRANGEMENT FOR TOBACCO PROCESSING MACHINES
Kurt Körber, Pfingstberg 10, Hamburg-Bergedorf, Germany
Filed Nov. 25, 1963, Ser. No. 326,290
Claims priority, application Great Britain, Nov. 26, 1962, 44,587/62
Int. Cl. B26d *5/08;* **F16d** *67/00, 23/00*
U.S. Cl. 83—543 **13 Claims**



1. In a tobacco processing machine, particularly in a rod cigarette machine, a combination comprising a driven element; a multispeed driving arrangement for rotating said driven element, said arrangement comprising a rotary output member and a power train connecting said output member with said driven element, said power train comprising an automatic coupling arranged to rotate said driven element at a plurality of speeds; and a plurality of groups of control elements operatively connected with and arranged to control the operation of said driving arrangement, said groups of control elements being located at

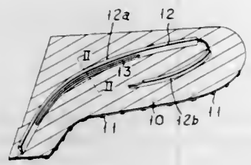
spaced points of said machine and each of said groups including a first control element arranged to initiate rotation of said driven element at a first speed, a second control element arranged to initiate rotation of said driven element at a second speed, and a third element arranged to initiate stoppage of said driven element.

3,468,206
COMBINATION METAL PUNCH AND SHEAR
Walter M. Bakula, 3770 S. Jason St., Englewood, Colo. 80110
Filed Dec. 14, 1966, Ser. No. 601,667
Int. Cl. B26d *5/08, 5/12*
U.S. Cl. 83—599 **2 Claims**



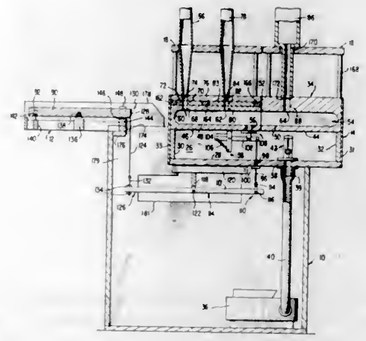
A single elongated lever-beam which is pivotally-mounted adjacent its one extremity so that it may be swung in a vertical plane by means of a hydraulic piston acting against its other extremity. Shearing blades, punches, dies and other tools are mounted on the lever-beam at selected distances from and upon opposite sides of the pivot axis of the lever-beam so that the tools will move upwardly and downwardly in consequence of the vertical swing of the single lever beam.

3,468,207
BRIDGES FOR PIANO
Tsuneo Suzuka and Haruhisa Noda, Hamamatsu-shi, Japan, assignors to Nippon Gakki Seizo Kabushiki Kaisha, Hamamatsu-shi, Japan
Filed Dec. 23, 1966, Ser. No. 604,205
Claims priority, application Japan, all Dec. 29, 1965 (utility models), 40/108,243, 40/108,244, and 40/108,245; Feb. 11, 1966, 41/8,014
Int. Cl. G10c *3/04*
U.S. Cl. 84—209 **4 Claims**



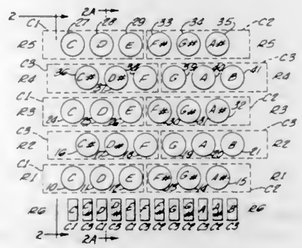
A piano bridge secured on a sounding board supports strings, and the vibrations of the strings generated by striking piano keys are transmitted to the sounding board through the bridge. The bridge is provided with longitudinal grooves on each side so that vibrations of the strings may be transmitted to the sounding board with a slight attenuation by the bridge. Such an arrangement in the vibration transmitting characteristic gives a remarkable effect in the generation of beautiful sounds of the gamut of the piano musical sounds.

3,468,208
PIPE ORGANS
Don Marshall Stone, 4 Potomac Court, Alexandria, Va. 22314
Filed Mar. 17, 1967, Ser. No. 623,965
Int. Cl. G10b *3/00*
U.S. Cl. 84—332 **10 Claims**



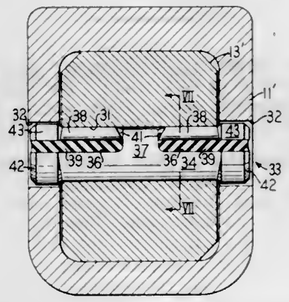
Simplified pipe organs include a feeder chest comprising at least one elongated slab of homogeneous material in which pipe feeder channels are formed. Sliding members are disclosed, provided above the feeder chest for selectively providing communication between the feeder channels and the organ pipes. An arrangement in which the pipes are disposed above the feeder chest and the wind chest disposed below the feeder chest is disclosed. A simplified mechanical action is disclosed, as is an arrangement whereby the wind chest assembly can be removed from the undercarriage, and a keyboard can be folded to an upright disposition for passage through narrow spaces. In another embodiment, a complete pipe organ can be installed and removed from a larger, fixed organ assembly which includes an improved coupler mechanism.

3,468,209
APPARATUS FOR FACILITATING THE PLAYING OF MUSICAL INSTRUMENTS
Clodoveo Guillermo Gonzalez Barreto, Caldas 484, Quito, Ecuador
Filed Feb. 14, 1966, Ser. No. 527,198
Int. Cl. G10c *3/12;* **G10d** *11/00*
U.S. Cl. 84—423 **5 Claims**



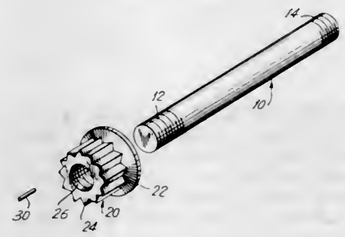
A symmetrical keyboard to facilitate the fingering of the keys by providing staggered rows of keys which correspond to a scale of six sounds which are between themselves at equal ascendent intervals of one tone, from left to right. The diameter of the keys and the distances between them are approximately the same as on a common typewriter, in order to make the keys easy to reach over for small hands in simple scales or by octaves, in chords and arpeggi.

3,468,210
CYLINDRICAL RETAINING PIN OF RIGID CONSTRUCTION
Loyal O. Watts, Peoria, Ill., assignor to Caterpillar Tractor Co., Peoria, Ill., a corporation of California
Filed Dec. 6, 1967, Ser. No. 688,474
Int. Cl. F16b *19/02, 21/18*
U.S. Cl. 85—8.3 **2 Claims**



A cylindrical retaining pin of the type having three elongated pin segments with resilient spreader means interposed therebetween. One pin segment forms substantially more than one-half of the rigid cross-section of the pin assembly along its length for greater pin strength and is provided with a transverse lug intermediate its ends. The other two pin segments may be formed from relatively thin metal. The two thin pin segments and the one substantial pin segment have generally normal surfaces which are in positively opposing relation in the pin assembly, and one end of each of the thin pin segments abuts opposed sides of the lug.

3,468,211
MULTI-PIECE BOLT
Robin K. Suan, Bryn Mawr, Pa., assignor to Standard Pressed Steel Co., Jenkintown, Pa., a corporation of Pennsylvania
Filed Dec. 20, 1967, Ser. No. 692,131
Int. Cl. F16b *23/00, 39/04;* **B23g** *9/00*
U.S. Cl. 85—9 **5 Claims**



Headed male fasteners fabricated by turning an internally threaded member onto a threaded stud, drilling a blind hole into the threaded joint formed by the stud and nut, and inserting an oversized pin into the blind hole.

3,468,212
COMPOSITE FASTENER
George A. Tinnerman, 17864 Beach Road, Lakewood, Ohio 44107
Continuation-in-part of applications Ser. No. 591,244, June 13, 1956, Ser. No. 8.546, Feb. 15, 1960, and Ser. No. 387,261, July 17, 1964. This application May 13, 1966, Ser. No. 549,880
Int. Cl. F16b *37/02, 27/00, 39/24*
U.S. Cl. 85—32 **8 Claims**



1. A composite fastener comprising a nut body of essentially rigid synthetic resinous plastic material having an opening therethrough for threaded engagement with a threaded member to constitute a threaded fastening means and having flat surfaces for tool engagement and opposite end faces transverse to the axis of said opening, in combination with a thin sheet metal nut element molded in said nut body extending transversely of said opening and spaced substantially greater distances from said opposite end faces than the thickness of said element, said element having an opening at least as large and axially aligned with the opening in said nut body for engagement with the threaded member, the area of said sheet metal element being substantially less than the cross sectional area of of said nut body and said metal element having apertures therethrough spaced from said opening so that portions of said nut body on opposite sides of said sheet metal element are connected through said apertures and on the sides of said metal element to form said nut body and engage said metal element to prevent relative rotation, said composite fastener being symmetrical about a transverse median plane, said plastic nut body in contact with the faces of said sheet metal nut element limiting distortion of said sheet metal nut element to maintain said sheet metal nut element in engagement with the threads of said threaded member and said metal nut element exerting compressive force on said plastic nut body to increase the engagement between said plastic nut body and the threads of the threaded member, so as to increase the resistance of said fastener to the torque produced on relative rotation to tighten said fastener on the threaded member.

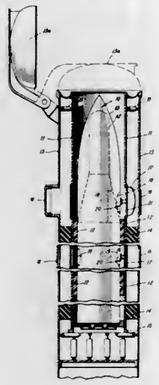
3,468,213
MISSILE CUTTING DEVICE
Sidney Hersh, Bethesda, and Maurice H. Baller, Chevy Chase, Md., assignors to the United States of America as represented by the Secretary of the Navy
Filed Aug. 18, 1966, Ser. No. 574,866
Int. Cl. F41f *3/00;* **F42b** *15/10*
U.S. Cl. 89—1.8 **7 Claims**

1. A missile-cutting device in combination with a missile mounted within an inner launch tube and an outer launch tube, each of said tubes having a pair of axially aligned access doors in the vicinity of the first and second stages, respectively, of said missile, said device comprising:

an access door adapter plate disposed within each opening of said inner tube access doors;

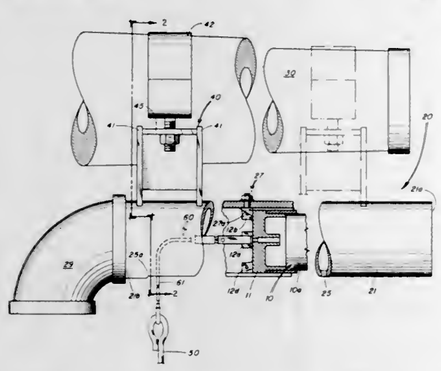
missile penetrating means operatively mounted on each of said plates in the proximity of said missiles; and

means for actuating said penetrating means to move said penetrating means into said missile as it moves upwardly out of said launch tubes after inadvertent



ignition takes place, said penetrating means thereafter cutting said missile upon continued movement thereof.

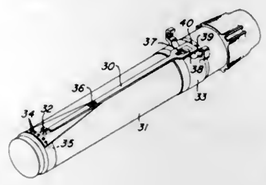
3,468, 214
ROCKET-TYPE LINE-THROWING APPARATUS
Francis J. Worcester, La Plata, Michael D. Shapiro, Oxon Hill, and James L. Duda, Indian Head, Md., assignors to the United States of America as represented by the Secretary of the Navy
Filed Dec. 26, 1967, Ser. No. 693,397
Int. Cl. F41f *1/04*
U.S. Cl. 89—1.8 **6 Claims**



A line-throwing apparatus where a line is coupled to the rear of a rocket in a manner permitting relative in-flight movement of the rocket in only a vertical plane thereby maintaining flight stability by inhibiting any yawing movement of the rocket relative to the cable. An open breech, single-slotted launching tube provides support for the rocket over most of its length, the slot and a separate guide member assuring proper orientation of the rocket within the tube prior to launch.

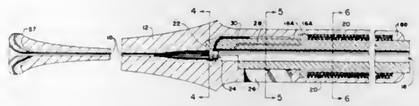
3,468,215
DETENT RIB
Louis Alpert, China Lake, Calif., assignor to the United States of America as represented by the Secretary of the Navy
Filed May 31, 1968, Ser. No. 733,455
Int. Cl. F41f *3/04*
U.S. Cl. 89—1.8 **1 Claim**

A removable steel rail which is adapted to be fastened to the forward motor skirt and to the rear ejection boss of a missile motor. The rail has a machined recess to



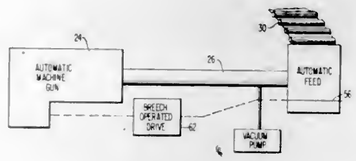
accept the launcher forward detent and another recess near the aft end which accepts the ejection kicker.

3,468,216
HYPERVELOCITY GUN HAVING A HYDRAULIC STAGE FOR VELOCITY CONVERSION
Jean F. Charpentier, Akron, Ohio, assignor to Goodyear Aerospace Corporation, Akron, Ohio, a corporation of Delaware
Filed May 13, 1968, Ser. No. 728,605
Int. Cl. F41f *1/00*
U.S. Cl. 89—8 **10 Claims**



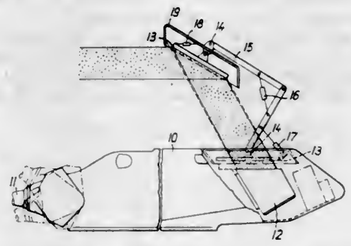
This invention relates to a high velocity gun utilizing a hydraulic accelerator stage which converts the limited velocity transmitted by a heavy large caliber projectile into a hypervelocity motion transmitted to a light subprojectile.

3,468,217
HYPERVELOCITY JET SYSTEM
William C. Cooley, Bethesda, Md., assignor to Exotech Incorporated, Rockville, Md.
Continuation-in-part of application Ser. No. 688,266, Dec. 5, 1967. This application Apr. 24, 1968, Ser. No. 723,857
Int. Cl. F41f *1/00;* **F41c** *21/02;* **F41d** *9/00*
U.S. Cl. 89—8 **8 Claims**



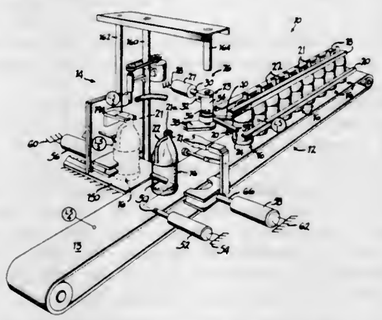
An apparatus for repetitively producing a hypervelocity fluid jet utilizing a machine gun for firing a series of projectiles along its barrel and an automatic feeding means positioned adjacent the muzzle end of the barrel for feeding a series of tubes of non-explosive booster material, such that a single tube is presented in registry with the bore of the barrel each time a projectile is fired from the machine gun. The projectile impacts the tube of booster material and generates a shock wave therein converting the same into a fluid jet along the axis of the barrel.

3,468,218
SEARCHLIGHT ASSEMBLY FOR WEAPONS CARRIERS, PARTICULARLY FOR ARMORED VEHICLES
Peter Schimmelpfennig, Wedel, Germany, assignor to Licentia Patent-Verwaltungs-G.m.b.H., Frankfurt am Main, Germany
Filed June 5, 1967, Ser. No. 643,585
Claims priority, application Germany, June 7, 1966, L 53,781
Int. Cl. G02b *5/08;* **F41h** *5/26*
U.S. Cl. 89—36 **2 Claims**



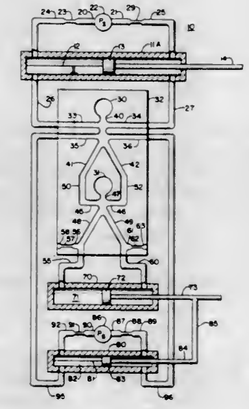
A searchlight is mounted within the housing of an armored vehicle, and a mirror is retractably coupled to the housing for movement between a retracted position within the housing and an extended position outside of the housing, the mirror being positioned to receive and to reflect light from the light source in its extended position. Means are provided for varying the orientation of the mirror in its extended position to vary the direction of the light beam reflected therefrom. The mirror is mounted on a telescoping mast in Cardanic suspension and is coupled to the optical alignment system of the weapons carrier so as to follow the alignment movements of the weapon carried thereby.

3,468,219
METHOD OF AND APPARATUS FOR FACING A CONTAINER SEALING SURFACE
Lawrence D. Ninneman and Wallace W. Wolford, Toledo, Ohio, assignors to Owens-Illinois, Inc., a corporation of Ohio
Filed Apr. 12, 1965, Ser. No. 447,175
Int. Cl. B23c *3/00;* **B26d** *3/00*
U.S. Cl. 90—14 **15 Claims**



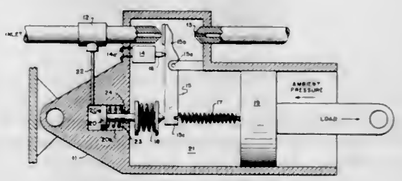
The method and apparatus of the disclosure to remove wste material from a finish portion of a plastic container and face the end of the finish to provide a sealing surface. In the method, containers are transported to a facing station, intercepted at the facing station, and engaged by a fixture at the facing station, and engaged by a fixture at the facing station to a position the container body vertically. The fixture and container are displaced to a position in alignment with a facing mechanism, the container is engaged to rotatably locate the finish thereof, and the finish is engaged to locate the final finish opening at a predetermined level. Then the container and facing mechanism are relatively displaced to remove the waste portion from the finish and provide an even sealing surface. The container is removed from the fixture and transported away for subsequent processing. The apparatus accomplishes the foregoing steps and has a conveyor, an openable-closable fixture to receive a container from the conveyor and position the container vertically, abutments for rotationally orienting the container, finish engaging members for locating the finish in a predetermined position, and a finishing tool for removing the waste material from the finish along a plane referenced to the finish portion of the container.

3,468,220
CONTROL SYSTEMS
Jeffrey M. Lazar, Rosemount, Minn., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware
Filed Jan. 25, 1967, Ser. No. 611,604
Int. Cl. F15b *13/02*
U.S. Cl. 91—3 **11 Claims**



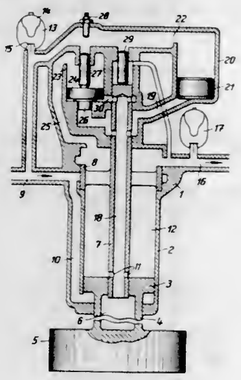
A control system for obtaining closed loop position control having a bistable amplifier that can be driven into a stable or an unstable state for supplying a control fluid to the apparatus to be controlled.

3,468,221
SINGLE STAGE SERVO ACTUATOR
Guy L. Johnson, Annapolis, Md., assignor to the United States of America as represented by the Secretary of the Navy
Filed Sept. 29, 1967, Ser. No. 671,888
Int. Cl. F15b *13/042, 13/16*
U.S. Cl. 91—52 **2 Claims**



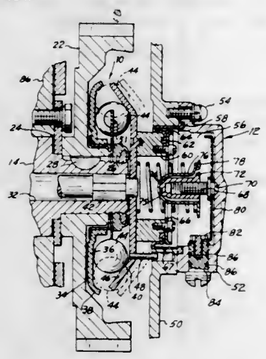
A single stage servo actuator utilizing a single solenoid actuated flapper nozzle valve and a feedback spring adjusted by actuator piston displacement to control hydraulic fluid flow through the actuator.

3,468,222
CONTROL FOR A RAMMING HAMMER WITH HYDRAULIC DRIVE
Hugo H. Cordes, 7 Rulantweg, Hamburg 50, Germany, and Hans A. Kröger, Hamburg, Germany; said Kröger assignor to said Cordes
Filed June 30, 1967, Ser. No. 650,411
Claims priority, application Germany, July 6, 1966, C 39,536
Int. Cl. F01l *21/04*
U.S. Cl. 91—222 **8 Claims**



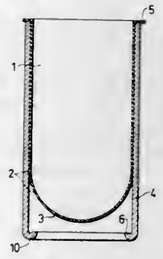
The ram consists of a ram block rigidly connected with a working piston displaceable in a hydraulic cylinder. The displacement of piston and block results from supply of pressure fluid into the cylinder at the one or the other side of the working piston. A valve spool automatically controls and reverses the fluid flow so that both sides of the working piston are alternately biased. The automatic reversal makes possible a great frequence of strokes.

3,468,223
HYDRAULIC GOVERNOR FOR INTERNAL COMBUSTION ENGINES
Oaklan R. Senf, Muskegon, Mich., assignor to Continental Motors Corporation, Muskegon, Mich., a corporation of Virginia
Filed Dec. 26, 1967, Ser. No. 693,293
Int. Cl. F15b *7/00, 7/08*
U.S. Cl. 91—458 **7 Claims**



A governor having a master piston and mountable on the cam shaft of an internal combustion engine is hydraulically connected to a slave unit having a slave piston connectable to a fuel control member and speed-sensing means cause both pistons to move in response to variations in speed of the cam shaft. The speed-sensing means comprises a series of balls supported by a pair of races mounted on the cam shaft, one race being axially fixed and the second race being axially movable and adapted so that radial movement of the balls caused by a change in centrifugal forces acting on the balls causes an axial displacement of the movable race. The movable race forms the master piston in the master cylinder so that the radial motion of the balls is reflected through the master cylinder to the slave piston.

3,468,224
METHOD OF FORMING A CONTAINER
Anders Ruben Rausing, Blentarp, and Rolf Lennart Ignell, Lund, Sweden, assignors to Sobrefina SA, Friebourg, Switzerland, a company of Switzerland
Original application Feb. 28, 1966, Ser. No. 530,525, now Patent No. 3,355,080, dated Nov. 28, 1967. Divided and this application Aug. 29, 1967, Ser. No. 664,202
Claims priority, application Sweden, Mar. 18, 1965, 3,493/65
Int. Cl. B31b *7/00;* **B65d** *3/04, 3/22*
U.S. Cl. 93—36.01 **1 Claim**



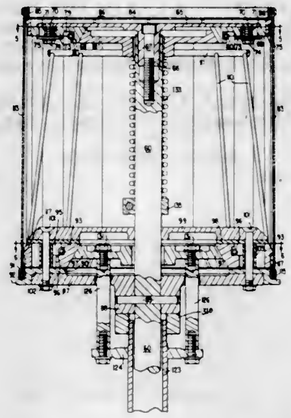
A composite container for goods and particularly goods having a high fat content comprises an outer cylindrical cardboard sleeve the bottom raw edge of which is turned inwardly and upwardly to space the edge from the supporting surface to minimize wicking, and a preformed cylindrical liner produced from a plastic film such as polyvinylchloride having close contact with the inner wall of the outer cardboard sleeve, the upper edge of the liner including an outwardly turned flange overlying the upper edge of the cardboard sleeve. The bottom of the liner may be dome-shaped or flat, and if flat must be made thicker than the side wall so as to resist deformation due to the weight of goods. The composite container is closed at the top by a cover which may be in the form of a flat disc, or the cover may be domed to provide an opening substantially smaller than the diameter of the liner, and which opening is then closed by a cap.

In assembling the cylindrical portion of the liner within the sleeve, which have essentially the same external and internal diameters, respectively, the sleeve is first moistened and since it is made from cardboard, absorption of moisture into the body of the sleeve causes it to expand and effect a temporary increase in its internal diameter sufficient to permit easy insertion of the preformed plastic liner. Following insertion of the liner, the sleeve is dried thus shrinking the same to its original size and simultaneously establishing a snug fit with the liner.

3,468,225
CONTAINER ASSEMBLING MACHINE
Herman Pesch and George Z. Angell, Fulton, N.Y., assignors to Phillips Petroleum Company, a corporation of Delaware
Filed Dec. 30, 1966, Ser. No. 606,079
Int. Cl. B31b *17/74*
U.S. Cl. 93—36.5 **7 Claims**

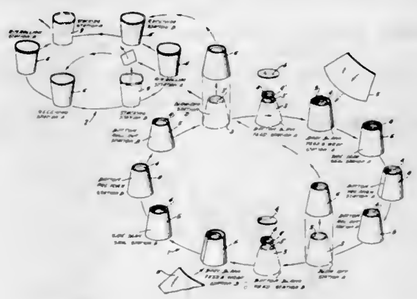
A machine for simultaneously fixedly crimping a reinforcing ring to the top edge of a paper container and affixing a bottom closure to the container by a crimped

ring. The container barrel is sleeved over upper and lower chuck members, the lower chuck supporting a ring member. Jaws in both chucks are moved radially outwardly to round up the container barrel for insertion to the ring positioned in the lower chuck and for the reception



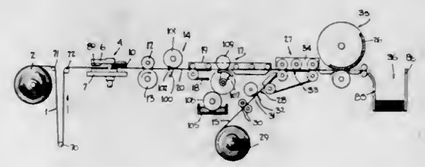
of the bottom closure and ring member in the upper chuck. A conical cage member is carried by the lower chuck for guiding the container barrel thereon. The lower chuck acts as a back-up member for the lower ring while it is engaged by the lower crimping roll.

3,468,226
CUP-MAKING METHOD AND APPARATUS
Wilbur B. England, 51 Prentiss Lane, Belmont, Mass. 02178; John P. Pero III, Mendota Ave., Rye, N.Y. 10580; Gasparo P. Siciliano, East St., Middletown, Conn. 06457; and Victor T. Takata, P.O. Box 59, Cambridge, Mass. 02101
Filed Mar. 8, 1967, Ser. No. 621,567
Int. Cl. B31b *17/74, 3/74*
U.S. Cl. 93—39.3 **3 Claims**



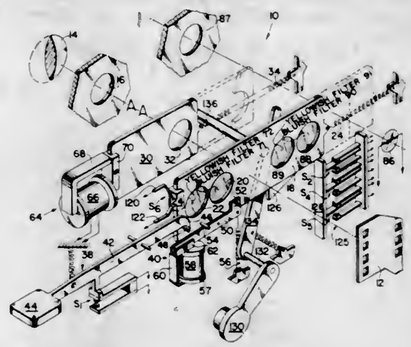
A cup-making apparatus and method which performs the same cup-making operation simultaneously at a plurality of locations so as to progressively form and finish a plurality of cups simultaneously. A plurality of identical sets of stationary cup-making stations are arranged about the periphery of a primary turntable unit which rotates in a step-wise fashion, each cup-making station in each set of stations being occupied by a cup-forming mandrel carried on the primary turntable at equal angular distances apart, the mandrels being each independently rotatable about a vertical axis parallel to the axis of rotation of the turntable. The entire circular row of mandrels rotates as a unit, each mandrel being indexed progressively into and through all of the cup-making stations during one complete revolution of the turntable. Each set of cup-making stations includes: a bottom blank feed; a body blank feed and wrap; a side seam seal and pre-heat; a bottom pre-form; a bottom roll-out; and a blow-off station. The cups are semi-finished at the primary turntable and are blown through conduits to a secondary turntable unit where they are simultaneously received, rim-rolled, and blown to a finished cup stacking station.

3,468,227
ENVELOPE BLANK FORMING MACHINE
Herbert Volks, New York, N.Y., and Clarence P. Ouellette, Springfield, Mass., assignors to En Mail Machine Corporation, New York, N.Y., a corporation of Delaware
Filed Oct. 25, 1966, Ser. No. 589,415
Int. Cl. B31b *19/14, 19/74*
U.S. Cl. 93—63 **1 Claim**



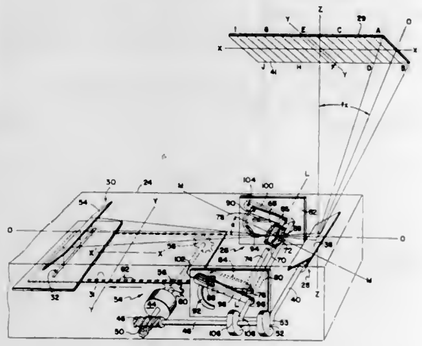
The present invention relates to an envelope forming machine and more particularly for an automatic envelope blank forming machine.

3,468,228
COLOR COMPENSATED SHUTTER
Howard G. Rogers, Weston, Mass., assignor to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware
Filed Sept. 2, 1966, Ser. No. 576,886
Int. Cl. G03b *33/00, 27/02, 27/78*
U.S. Cl. 95—12.20 **7 Claims**



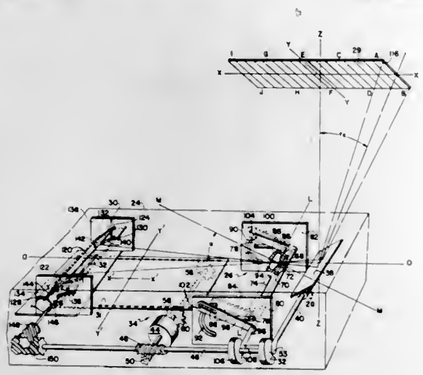
An automatic shutter mechanism which incorporates a selection of color compensating filters. The filters are selected for transmitting light in a broad band of frequencies in different portions of the visible spectrum. During an exposure, each filter is positioned simultaneously over both the photosensor of an exposure timing system and the taking aperture of the shutter for an interval inversely related to the intensity of light transmitted by that filter. With the arrangement, a balanced spectral distribution of light admitted through the exposure aperture to a photosensitive material behind the aperture is produced.

3,468,229
PHOTOGRAPHIC CAMERA INCLUDING A SCANNING EXPOSURE SYSTEM WITH COMPENSATION FOR CYLINDRICAL PERSPECTIVE DISTORTION BY OPTICAL PATH LENGTH CHANGES
Alfred H. Bellows, Cambridge, Mass., assignor to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware
Filed May 17, 1967, Ser. No. 639,202
Int. Cl. G03b 37/02
U.S. Cl. 95—15 14 Claims



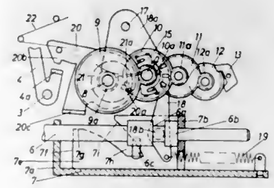
This disclosure depicts a compact hand-held photographic camera with a scanning exposure system having a folded optical path. Compensation means are disclosed by which the magnification of elemental images formed successively by the exposure system may be altered during a scan of the object by varying the optical path length of exposure light in image space.

3,468,230
PHOTOGRAPHIC CAMERA HAVING A SCANNING EXPOSURE SYSTEM WITH DISTORTION COMPENSATION
Alfred H. Bellows, Cambridge, Mass., assignor to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware
Filed July 21, 1967, Ser. No. 655,192
Int. Cl. G03b 37/02
U.S. Cl. 95—15 10 Claims



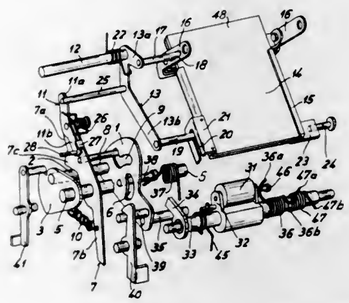
This disclosure depicts a compact hand-held photographic camera with a scanning exposure system having a folded optical path. Compensation means are disclosed by which the magnification and angular attitude of the focal surface of elemental images formed successively by the exposure system are altered during a scan of the object to produce substantially undistorted images.

3,468,231
PHOTOGRAPHIC CAMERA WITH A FEED MECHANISM BUILT INTO THE HOUSING
Franz W. R. Starp, Calmbach, Black Forest, Germany, assignor to Prontor-Werk Alfred Gauthier G.m.b.H., Calmbach, Black Forest, Germany, a corporation of Germany
Filed Apr. 4, 1967, Ser. No. 628,386
Claims priority, application Germany, Apr. 6, 1966, P 39,145
Int. Cl. G03b 19/04
U.S. Cl. 95—31 10 Claims



A photographic camera having a spring driven feed mechanism in the form of a delayed action device or self timing mechanism arranged as a separate unit in the camera housing which can be brought into cocking position by means of an operating member. In addition, the camera is provided with a release part which releases the shutter at the end of the run of the feed mechanism. The operating member is in the form of an operating bar guided in the camera housing for longitudinal and rotational movement and gear connected with the feed mechanism. The feed mechanism is cockable by displacement of the operating bar, and by corresponding turning of the operating bar, the mechanism is either lockable or releasable.

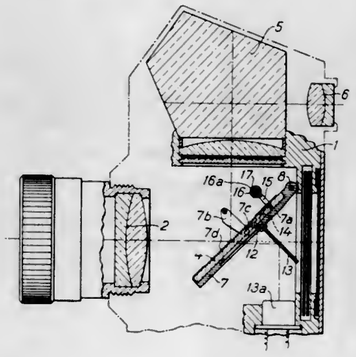
3,468,232
CONTROL DEVICE FOR A SINGLE-LENS REFLEX CAMERA
Helmut Knapp, 41 Kleiststrasse, 1 Berlin 30, Germany
Filed July 20, 1966, Ser. No. 566,657
Claims priority, application Germany, July 21, 1965, J 28,616
Int. Cl. G03b 19/12
U.S. Cl. 95—42 4 Claims



A single-lens reflex camera having a reflex mirror of increased dimensions. When the mirror is moved between its viewing and exposure positions, it is initially moved in a substantially vertical direction. This enables the mirror

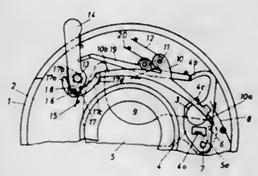
to clear the rear lens of the objective system. The mirror is then pivoted in an angular direction to its exposure position adjacent the image entrance wall of the viewfinder. The entire mechanism consists of linkages, levers and pins without the use of gears.

3,468,233
EXPOSURE MEASURING DEVICE FOR SINGLE LENS REFLEX CAMERAS
Ewald Schmidt, Braunfels, Germany, assignor to Ernst Leitz, G.m.b.H., Wetzlar, Germany
Filed Dec. 12, 1966, Ser. No. 601,157
Claims priority, application Germany, Jan. 20, 1966, L 52,640
Int. Cl. G03b 19/12
U.S. Cl. 95—42 4 Claims



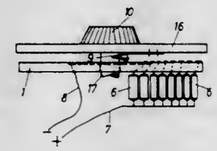
A single lens reflex camera comprising an exposure measuring device which receives its light through a semi-transparent spot on the reflex mirror. A second mirror is rotatably connected to the rear of the mounting frame of the reflex mirror. Also a four bar linkage system can be used to swing the second mirror in the direction of the mounting frame when the reflex mirror is removed from the path of the light travelling to the film.

3,468,234
PHOTOGRAPHIC SELF-COCKING SHUTTER
Erwin Weller, Calmbach, Black Forest, Germany, assignor to Prontor-Werk Alfred Gauthier, G.m.b.H., Calmbach, Black Forest, Germany, a corporation of Germany
Filed June 2, 1966, Ser. No. 554,855
Claims priority, application Germany, June 3, 1965, P 36,960
Int. Cl. G03b 9/08
U.S. Cl. 95—53 7 Claims



A photographic self-cocking shutter is provided having shutter blades with open and closed positions and a cocking and release lever. In addition, a driving lever is provided which is conveyable into the cocked position by means of the cocking and release lever. An actuating member is engageable with the driving lever for driving the shutter blades, and a locking member is provided for securing the actuating member in a starting position corresponding to the closed position of the shutter blade. A driver is carried by the cocking and release lever and acts upon the driving lever during the cocking process; the driver being disengaged from the driving lever upon reaching the cocked position. The driving lever acts upon the driver in the starting phase of the motion in which the driving lever returns to its original position so that the locking member is moved out of its locking position and the shutter is thereby released.

3,468,235
TIMING DEVICE FOR SETTING THE EXPOSURE TIME FOR A PHOTOGRAPHIC CAMERA EQUIPPED WITH AN ELECTRONIC TIMING DEVICE
Dieter Rittman, Calmbach, Germany, assignor to Prontor-Werk Alfred Gauthier, G.m.b.H., Calmbach, Black Forest, Germany, a corporation of Germany
Filed May 8, 1967, Ser. No. 636,935
Claims priority, application Germany, May 14, 1966, P 39,450
Int. Cl. G03b 9/58
U.S. Cl. 95—53 8 Claims

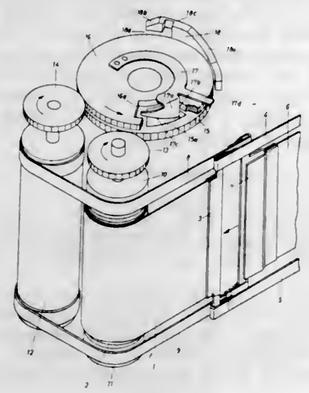


A timing device for setting the exposure time for a photographic camera with an electronic timing device. The timing device has a plurality of contact plates and a plurality of gradated time regulating resistors connected to the contact plates. A conductive slide path is provided which is connectable to the electronic timing device of the camera by means of a cable. A contact bridge provided which is movable to scan the contact plates and the slide path. The contact bridge is mounted on a time setter for engagement of the contact bridge with one of the contact plates in order to include in the circuit of the electronic timing device of the camera the respective regulating resistor corresponding to the set time. Further, a series resistor is provided which is connectable in series to the regulating resistor. Finally, the timing device has a slide contact which is connected to the series resistor and is movable synchronously with the contact bridge for engagement with one of the contact plates to connect the series resistor in series with the regulating resistors.

3,468,236
PHOTOGRAPHIC SLIT-TYPE SHUTTER
Waldemar T. Rentschler and Franz W. R. Starp, Calmbach, Black Forest, Germany, assignors to Prontor-Werk Alfred Gauthier, G.m.b.H., Calmbach, Black Forest, Germany, a corporation of Germany
Filed May 26, 1966, Ser. No. 553,119
Claims priority, application Germany, May 26, 1965, P 36,891
Int. Cl. G03b 9/28
U.S. Cl. 95—57 11 Claims

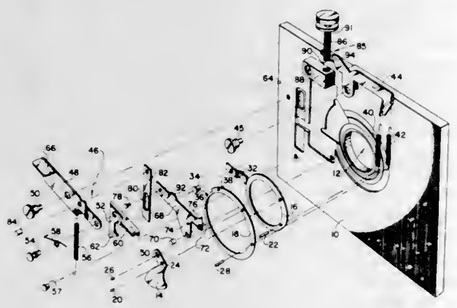
A photographic slit-type shutter that provides a leading curtain and a lagging curtain following the leading curtain with the same speed after a specific slit width

corresponding to the preset exposure time has been reached. The shutter provides for reliably maintaining during the entire exposure process the minimum slit width required for obtaining an extremely short exposure time.



A locking device is provided which becomes automatically operative after the minimum slit width required for the shortest exposure time has been formed.

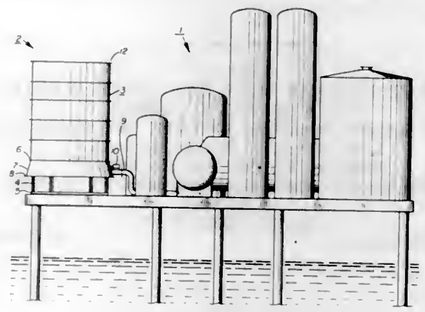
3,468,237
EXPOSURE CONTROL APPARATUS
Ezio D. Cotta, Dorchester, and Vernon E. Ford, West Hanover, Mass., assignors to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware
Continuation of application Ser. No. 429,988, Feb. 3, 1965. This application Jan. 4, 1968, Ser. No. 695,803
Int. Cl. G03b *9/14*
U.S. Cl. 95—63 **6 Claims**



This disclosure depicts an exposure control mechanism for a photographic camera, and more particularly, an iris-type mechanism capable of performing conjointly the functions of a shutter and a variable diaphragm.

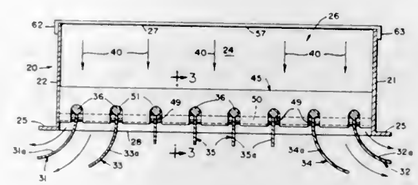
3,468,238
METHOD AND MEANS FOR DISPOSAL OF WASTE GAS
Joseph L. Maher, Tulsa, Okla., assignor to Crest Engineering, Inc., Tulsa, Okla., a corporation of Oklahoma
Filed Oct. 19, 1967, Ser. No. 676,416
Int. Cl. F24f *7/00, 11/00*
U.S. Cl. 98—I **5 Claims**

A stack is disclosed with a fan mounted at its lower end. Waste gas to be disposed of is ejected from conduits branching from a manifold below the fan. Flow diverters



and valves are mounted on the ends of the branch conduits to control the gas passed up into the fan.

3,468,239
RECTANGULAR AIR DIFFUSERS
Marvin L. De Hart, Waterloo, and Harold E. Straub, Cedar Falls, Iowa, assignors to Titus Manufacturing Corporation, Waterloo, Iowa, a corporation of Iowa
Filed May 16, 1968, Ser. No. 729,647
Int. Cl. F24f *13/08, 13/14*
U.S. Cl. 98—40 **17 Claims**

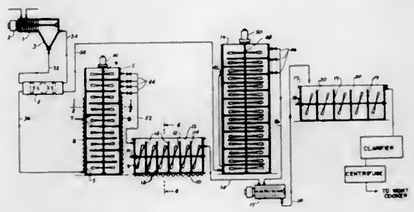


Substantially rectangular, elongated air diffusers having substantially rectangular, elongated air passage, a plurality of pivotable vanes extending longitudinally along the discharge face of the passage, the outermost vane or vanes having laterally directed downstream edge portions, and blank off members extending across the passage at spaced intervals along the length thereof and upstream of the vanes, preferably across the rear face of the diffuser.

3,468,240
PLANT FOR THE CONTINUOUS PREPARATION OF BREWER'S MASH AND FOR THE COOKING OF WORT
Fritz Huppmann, 88 Eckrkamp, 2 Hamburg 64, Germany
Filed Sept. 20, 1967, Ser. No. 669,090
Int. Cl. C12c *7/10, 7/18*
U.S. Cl. 99—276 **18 Claims**

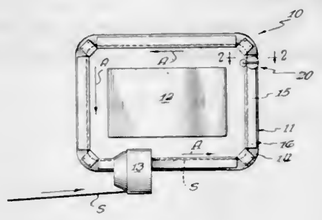
The present apparatus is for the brewing of beer by a continuous process, instead of using large fixed vats. There is a vertical vessel or column with a mash inlet at the bottom and an outlet at the top. The vessel is divided into treatment zones by horizontal partitions with offset openings. An upright shaft extending all the way through the vessel carries stirrer blades between the partitions for each zone. In order to adjust the effective height of the vessel from inlet to outlet there are multiple

outlets at somewhat different levels provided with valves so that one or another outlet may be selected for use. This vessel may be followed by a horizontal vat with vertical partitions having offset passages, and also having



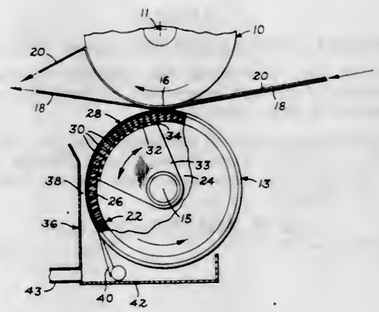
stirrers on a horizontal shaft. Two vertical vessels may be provided, one for thick mash and one for thin mash, and after treatment these mashes are recombined in desired proportion.

3,468,241
FEED CHUTE BOOSTER FOR FLEXIBLE STRAP
John H. Leslie, Winnetka, Ill., and Otis E. Hubbard, White Bear Lake, Minn., assignors to Signode Corporation, a corporation of Delaware
Filed Feb. 19, 1968, Ser. No. 706,298
Int. Cl. B65b *13/04*
U.S. Cl. 100—26 **13 Claims**



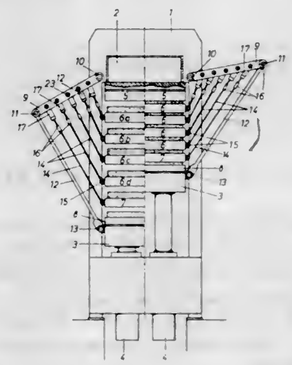
Booster mechanisms are disclosed to assist the push-feeding of flexible strap through strap chutes. Thin flexible strap of plastic or steel is fed through longer chutes by locating one or more boosters at spaced locations along the chute to subdivide the strap chute travel path into successive regions, each region being a substantial fraction of the total path. These different booster mechanisms are shown. In one form, a fixed motor drives a traction wheel that is nested within the chute and a cooperating idler wheel is mounted for movement between a feed position confronting the chute and a retracted position that allows clearance for stripping of the strap from the chute. In another form, a motor and a multilobed traction wheel are mounted for joint movement between a feed position wherein the traction wheel is in confronting relation to the chute and a clearance position. The multilobed wheel loads the strap directly against the chute and produces an intermittent feeding action tending to vibrate and shake the strap so as to reduce friction. In a third embodiment, a pair of power-driven traction wheels cooperate to drive the strap, these wheels being of rubber, to permit a certain amount of skidding against the strap when tending to overdrive the strap. The booster traction wheels operate at slightly greater speed than the feed rate of the strapping machine.

3,468,242
PAPER MACHINERY
Paul M. Schaffrath, Watertown, N.Y., assignor to The Black-Clawson Company, Hamilton, Ohio, a corporation of Ohio
Filed Mar. 30, 1966, Ser. No. 538,640
Int. Cl. B30b *9/20*
U.S. Cl. 100—121 **8 Claims**



Liquid is removed from a paper web by carrying the web on a felt through a pressure nip defined by a web contacting roll and a hollow perforated felt contacting roll defining a cylindrical chamber. A flexible seal member is positioned within the chamber in sliding contact with an arcuate section of the roll wall and extends from adjacent the nip in the direction of rotation of the roll. The seal member is rotatably adjustable, and water is removed from the perforations either by pressurizing the chamber or by producing suction adjacent the outer surface of the roll.

3,468,243
DEVICE FOR COMPENSATING THE WEIGHT OF THE HEATING PLATES IN MULTISTAGE PRESSES WITH SIMULTANEOUS CLOSING MECHANISM
Fritz Schneider, Krefeld, Germany, assignor to Niederrheinische Maschinenfabrik Backer & van Hullen, Krefeld, Germany
Filed Dec. 29, 1966, Ser. No. 605,642
Claims priority, application Germany, Jan. 3, 1966, N 27.840
Int. Cl. B30b *7/02;* **B29c** *3/00;* **B27d** *3/00*
U.S. Cl. 100—200 **2 Claims**



A device for compensating the weight of the heating plates in a multi-stage press with a simultaneous closing

mechanism comprising a plurality of press plates vertically displaceable in the frame, a pair of fork-like arms, each pivoted to the frame, and rods pivoted to the arms and to the press table. Tension members are pivoted to the arms and to the press plates. The tension members are constituted by pneumatic work-cylinders having enlarged and reduced cylinder portions. Supply conduits for the pressure medium and adjusting valves are provided.

3,468,244

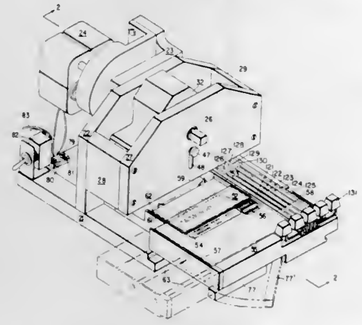
VARIABLE CHARACTER PRINTING APPARATUS

Yow-Jiun Hu, Alexandria, Va., assignor to Farrington Business Machines Corporation, Springfield, Va., a corporation of Massachusetts

Continuation-in-part of application Ser. No. 401,273, Oct. 2, 1964, now Patent No. 3,280,739, dated Oct. 25, 1966. This application Oct. 13, 1966, Ser. No. 586,421

Int. Cl. B41f *3/20, 3/04, 1/04*

U.S. Cl. 101—90 **13 Claims**



An apparatus in a printing machine comprising a tray or printing bed which is movable into printing and non-printing positions relative to a printing path traversed by a platen mounted on the printing machine. The movable tray includes type bars which are selectively positionable through a printing station on the tray. The tray in the non-printing position is loaded with a printing plate and document and the individual type bars are selectively positioned according to the particular transaction being accomplished. An alignment mechanism for the type bars comes into play when the tray is moved in the printing position. The tray is locked in the printing position until an imprint is made and then the tray is released for return to the non-printing position. One of several further features provides for an arrangement to automatically return the type bars to a reference datum position on the tray when the tray itself is returned to the non-printing position.

3,468,245

APPARATUS FOR PRINTING AND RECORDING ON CARDS

Gerhard Ritzerfeld, Franzensbader Strasse 21, Berlin-Grunewald, Germany

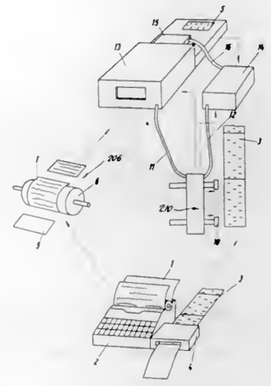
Filed Apr. 24, 1967, Ser. No. 633,041

Claims priority, application Germany, Apr. 29, 1966, R 43,162; July 22, 1966, R 43,751

Int. Cl. B41l *47/46;* **B41j** *11/00*

U.S. Cl. 101—91 **25 Claims**

The transporting means of a record carrier having sections corresponding to text sections of a printing master, shift the record carrier to the next section whenever a printing machine is set to print different text sections of the printing master on successively supplied cards which



are then punched under the control of a read-out device reading out the record carrier.

3,468,246

PRINT HAMMERS WITH ELECTROMAGNETIC ACTUATING MEANS

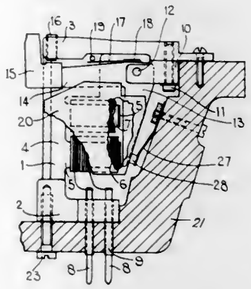
Ronald Henry Lee, Stevenage, and Albert John Keen, Letchworth, England, assignors to International Computers and Tabulators Limited, London, England, a British company

Filed Mar. 9, 1967, Ser. No. 621,885

Claims priority, application Great Britain, Jan. 6, 1967, 906/67

Int. Cl. B41j *1/48*

U.S. Cl. 101—93 **3 Claims**



A print hammer assembly, for use in a printing apparatus employing a transfer medium to print characters from a type carrier onto a document or other record, is secured to the armature of an electromagnet. The armature is spring-biassed to an unoperated position and in this position it rests on a resilient backstop. The backstop consists of a resilient finger with a resilient pad, preferably of high hysteresis rubber, interposed between the finger and the armature. The backstops for a row of hammers may have their resilient fingers formed from a single strip of resilient material, such as Phosphor bronze.

3,468,247

CONTINUOUS PRINTER WITH MEANS TO MAINTAIN A MOVING WEB LATERALLY TAUT

Michael Vasilantone, 401 John St., Roselle, N.J. 07203

Filed Dec. 30, 1966, Ser. No. 606,373

Int. Cl. B41f *15/26*

U.S. Cl. 101—115 **7 Claims**



A wire screen printing apparatus which includes means for maintaining two longitudinally oppositely moving webs of textile material laterally taut as insignia are continuously printed thereon. A pair of endless resilient locking strips circumscribe a plurality of drum printing assemblies located between two platen belts. As each textile is received on its respective platen belt, the locking strips engage the textile edges which overhang the said platen belts and wedge them against the edges of the platen belts to stretch them and render them laterally taut.

3,468,248

APPARATUS FOR REMOVING INK FROM THE SURFACE OF WIPING CYLINDERS USED IN DIRECT STEEL PLATE PRINTING

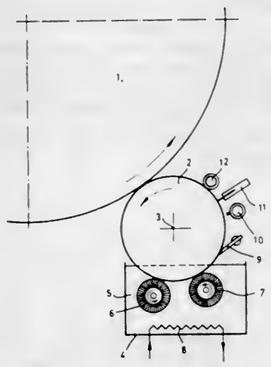
Gualtiero Giori, 4 Rue de la Paix, Lausanne, Switzerland

Continuation-in-part of applications Ser. No. 411,807, Nov. 17, 1964, and Ser. No. 504,492, Oct. 24, 1965. This application Feb. 27, 1967, Ser. No. 618,746

Claims priority, application Switzerland, Feb. 23, 1967, 1,644/67

Int. Cl. B41f *35/04;* **B41l** *41/04*

U.S. Cl. 101—167 **3 Claims**



Apparatus for removing ink from the surface of wiping cylinders used in direct steel plate printing which puts the cylinder in contact with an aqueous cleaning solution, with at least one brush in contact with the region of the wiping cylinder wet by the solution, with a first resilient scraping blade for removing the film of cleaning solution adhering to the cylinder, with a water jet for rinsing off the cleaning solution from the surface of the cylinder, with a second scraper blade for removing the rinse water, with a felt member for removing possible traces of ink pigments from the cylinder. Aqueous cleaning solution for use with the apparatus.

3,468,249

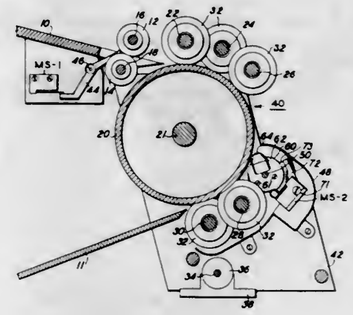
ARTICLE CONTROLLED DOCUMENT MARKING APPARATUS FOR COPYING MACHINES

Gu-Din Tseo, Rochester, N.Y., assignor to Xerox Corporation, Rochester, N.Y., a corporation of New York

Filed Feb. 3, 1967, Ser. No. 613,785

Int. Cl. B41f *13/24*

U.S. Cl. 101—235 **10 Claims**



Apparatus for placing identifying information on copied documents in which a porous ink impregnated marker is rotated to contact a document on the conveyor member of a copying machine by a friction roll in engagement with the conveyor member. Rotation of the marker is implemented by an electrically actuated magnetic clutch connecting the drive roll and the marker through a pair of switches one of which senses the position of a document on the conveyor member and the second of which senses the position of the marker. The switch arrangement insures marking only on a document and not on the conveyor member which is utilized as a platen for the marker.

3,468,250

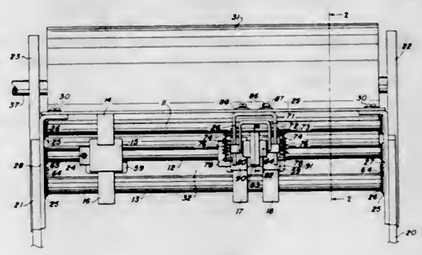
DOCUMENT MARKING DEVICE

Charles E. Smith, Webster, N.Y., assignor to Xerox Corporation, Rochester, N.Y., a corporation of New York

Filed Jan. 3, 1967, Ser. No. 606,877

Int. Cl. B41f *13/24, 31/00*

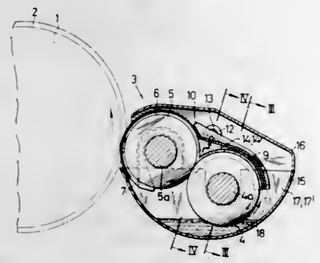
U.S. Cl. 101—232 **6 Claims**



Apparatus adapted for use in copying machines and the like for placing identifying information on a document after being scanned at a scanning station. A document after being advanced past the scanning station by an endless conveyor member is deflected into the bite formed between engaged pairs of axially spaced roller members which are driven in timed relation with the conveyor member. As the document is advanced between the engaged pairs of roller members it is supported in the

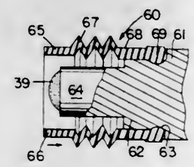
transverse direction by suspension between the engaged spaced pairs of roller members. A marking member is connected between one of the spaced pairs of roller members to rotate therewith and contact a document while suspended by the engaged roller pairs.

3,468,251
INKING SYSTEM PROVIDED WITH A TUB FOR HIGH-SPEED FLEXOGRAPHIC PRINTING MACHINES
Friedrich Franz Brockmüller, Lengerich, Westphalia, Germany, assignor to Windmoller & Holscher, Westphalia, Germany
Filed June 13, 1967, Ser. No. 645,785
Claims priority, application Germany, June 29, 1966, W 41,897
Int. Cl. B41f *31/00*
U.S. Cl. 101—350 **2 Claims**



An immersion roller rotates to feed ink carried along from the ink tub from above into the nip between the immersion and ink-applying rollers. Surplus ink which has been fed into the nip is recirculated by means of an inclined plate, which is disposed over the immersion roller and extends beyond the nip towards the ink-applying roller so as to leave a gap for the passage of ink between its free edge and the peripheral surface of the ink-applying roller. The recirculating plate has at least over the nip the same width as the inking system and is provided at its side edges with elevations and connected on both sides to limiting plates, which engage the two rollers and retain the ink in the nip.

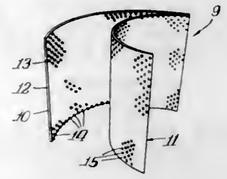
3,468,252
PRINTING DEVICE
Jerome H. Lemelson, 85 Rector St., Metuchen, N.J. 08840
Original application Aug. 25, 1964, Ser. No. 391,882. Divided and this application Aug. 8, 1967, Ser. No. 660,566
Int. Cl. B41f *17/00*
U.S. Cl. 101—379 **8 Claims**



A printing device is provided which includes a printing cut or stamp preferably of the self-inking type, and a protective housing which is open at one end and surrounds the printing cut so as to protect same and normally prevent its contact with surfaces surrounding the device. The housing or jacket, in one form of the invention, is made of a resilient plastic material and is longitudinally displaceable when the front end thereof is engaged against a surface so as to permit the printing device supported within said housing to engage said surface. As a result, the ink wetted surface of the printing device will not normally rub or make contact with surfaces surrounding the printing device when it is not in use so as to prevent soiling objects in the vicinity of the printing device.

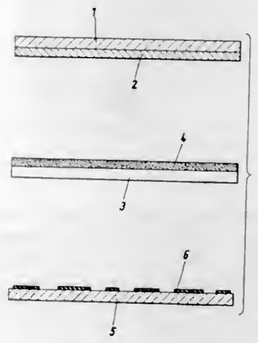
In another form, the printing device is supported on a member which is movable within a cavity or opening in a housing so as to permit the printing cut to be projected therethrough against the surface disposed immediately adjacent the end of the printing device either by the momentum of the support for the printing device or other means.

3,468,253
PRINTING PLATE ASSEMBLY
Bruce L. Waterhouse, Niles, Mich., Fred M. Jernt, Chicago, Ill., and Edwin E. Mallory, Niles, Mich., assignors to National-Standard Company, Niles, Mich., a corporation of Delaware
Filed Jan. 9, 1967, Ser. No. 608,008
Int. Cl. B41n *1/08*
U.S. Cl. 101—395 **6 Claims**



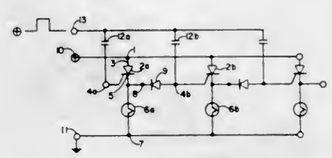
A printing plate assembly defined by a rigid perforated saddle component and a body component of thermoplastic material having preformed integral projections fitting into the perforations of the saddle component for attaching the body component to the saddle component.

3,468,254
ELECTROSTATICALLY CHARGEABLE PRINTING FORM
Gerhard Ritzerfeld, Franzensbader Strasse 21, Berlin-Grunewald, Germany
Filed May 21, 1965, Ser. No. 457,672
Claims priority, application Germany, May 28, 1964, R 37,982
Int. Cl. B41n *1/04;* **B41c** *1/00*
U.S. Cl. 101—401.1 **4 Claims**



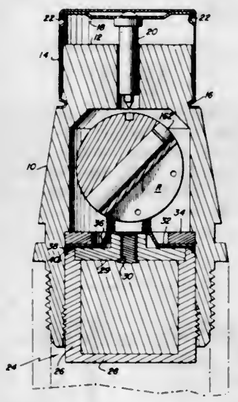
An electrostatically chargeable printing form is produced by contacting an electrically conductive surface layer of a printing form blank with a surface layer of dielectric material having a melting point above ambient temperature, preferably in the vicinity of 80° C., and applying heat to selected portions of the layer of dielectric material, preferably by infrared radiation, so as to sufficiently heat the contacting surface of the selected portions of the layer of dielectric material to make the same actively adhesive and thereby to adhere the selected portions of the dielectric layer to the contacting electrically conductive surface layer, thereby forming a printing form having an operative surface consisting of the electrically conductive surface layer with the selected portions of dielectric material adhering thereto.

3,468,255
INTERVALOMETER
Edwin M. Stryker, Jr., New Brighton, Minn., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware
Filed Feb. 19, 1968, Ser. No. 706,233
Int. Cl. F42c *13/00*
U.S. Cl. 102—70.2 **8 Claims**



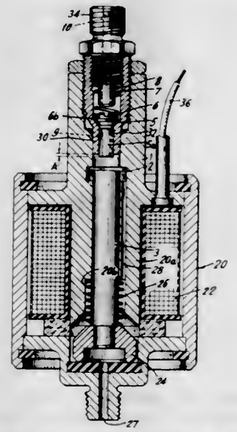
A solid state intervalometer circuit utilizing silicon controlled rectifiers to activate a series of explosive squibs sequentially at predetermined intervals or singly in response to a pulse input. The intervalometer stages are interdependent with diode coupling.

3,468,256
IMPACT FUSE ASSEMBLY
James L. Vanover, China Lake, Calif., assignor to the United States of America as represented by the Secretary of the Navy
Filed Dec. 4, 1967, Ser. No. 687,856
Int. Cl. F42c *1/00*
U.S. Cl. 102—73 **2 Claims**



An improved acceleration arming fuze for rockets operable at low angles of obliquity to soft targets such as water or marshes wherein the improvement comprises a newly shaped fuze housing and a deformable cup shaped member having a flat forward surface of considerably increased area which is readily crushable, thus rendering the firing pin operable.

3,468,257
LIQUID PUMP VALVE ACTUATING ARRANGEMENT
Siegfried Kofink, Zell (Neckar), Germany, assignor to J. Eberspacher, Esslingen, Germany
Continuation-in-part of application Ser. No. 627,713, Apr. 3, 1967. This application Sept. 18, 1967, Ser. No. 668,542
Claims priority, application Germany, Apr. 2, 1966, E 31,377
Int. Cl. F04b *17/04, 7/02*
U.S. Cl. 103—53 **7 Claims**

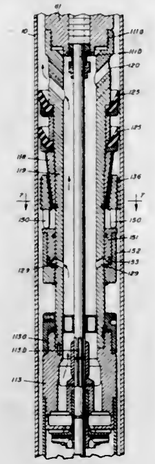


A liquid pump of a type which includes a reciprocable pump piston which is actuated by means such as an electromagnet includes a pumping space into which the liquid is pumped by movement of the piston to pump the liquid either through a bore defined in the piston itself or a bore defined in the cylinder walls. The liquid which moves into the pumping space will be discharged from this space upon the lifting of a discharge valve to permit passage of the liquid from the space through a discharge opening. The invention concerns the construction of a valve which closes off the passage from the pumping chamber to the discharge and which is biased downwardly to close off a valve seat formed between the pumping chamber and the discharge. The valve construction in one embodiment is made such that its stem portion extends into the pumping chamber at a location where it will be contacted by the piston near the end of each pumping stroke. The piston moves through a stroke which causes it to lift the valve upwardly and to cause the fluid flow through a passage defined in the valve stem and out to the discharge. Thus, the control of the valve is accomplished directly by the movement of the pump piston. In a further embodiment, the valve comprises a ball which is adapted to close the valve seat and which will be moved upwardly upon contact of an extension of the piston therewith which pushes the ball upwardly against the downward holding force of a valve spring.

3,468,258
WIRE-LINE SUSPENDED ELECTRIC PUMP INSTALLATION IN WELL CASING
Armasis Arutunoff, Bartlesville, Okla., assignor to Reda Pump Company, Bartlesville, Okla., a corporation of Delaware
Continuation-in-part of application Ser. No. 621,924, Mar. 9, 1967. This application July 30, 1968, Ser. No. 748,677
Int. Cl. F04d *13/10;* **F04b** *47/06;* **E21b** *23/06*
U.S. Cl. 103—87 **2 Claims**

A wire-line suspended electric pump installation for use in a well casing, including a motor supported at its upper

end by said wire-line, which is also provided with electrical conductors. A pump unit is suspended concentrically from the lower end of the motor by a vertical discharge tube which opens into the casing. A packer embraces the discharge tube below its discharge opening

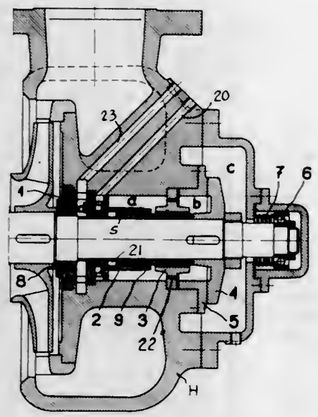


and seals against the casing. A slip unit having expandible slip members is fixed to the tube between the packer and pump, and includes means responsive to fluid pressure for expanding the slip members to support the weight of the pump and a column of fluid above the packer relieving longitudinal stress on the cable.

3,468,259
AXIAL RELIEVING ARRANGEMENT FOR IMPELLER-TYPE PUMPS

Stanislaw Morzynski, Zamenhofa 13/6. Zabrze, Poland, and Jerzy Kostyrko, Zwyciestwa 32/21, Gilwice, Poland

Filed Nov. 6, 1967, Ser. No. 680,846
Claims priority, application Poland, Nov. 12, 1966, P 117,322
Int. Cl. F04d *29/00, 29/66*
U.S. Cl. 103—111 **6 Claims**

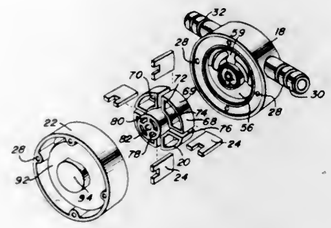


An impeller-type pump equipped with an arrangement for axial relief consisting of a relieving disk operating under the pressure of oil or other working liquid fed at a suitable pressure, higher than that of the pumped liquid, from a separate oil system. An auxiliary oil pump of the relieving arrangement is driven directly from the pump shaft. The space, through which the oil flows in acting against the relieving disk, is separated from the flow space of the pump by means of a packing. The relieving arrangement is also equipped with a device furnishing protection against shifting of the shaft.

3,468,260
ROTARY PUMP WITH AXIALLY MOVABLE RADIAL VANES

William Perry Belden, 310 E. Pine St., Millville, N.J.; Katherine Arnel Belden, executrix of said William Perry Belden, also known as Perry Belden, deceased

Filed Dec. 1, 1967, Ser. No. 687,368
Int. Cl. F04c *1/16, 3/00;* **F01c** *3/04*
U.S. Cl. 103—139 **8 Claims**

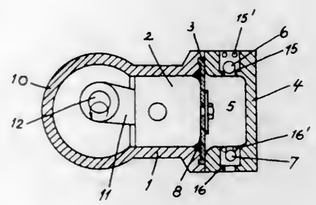


A pump vane assembly including four radially positioned vanes in a rotating assembly, each vane including a U-shaped notch through one traverse edge thereof for pressure balancing. The vanes move in an axial direction in accordance with complementing camming surfaces which sandwich the transverse edges of the vanes. As the vanes rotate, they move axially thereby causing a cyclical decrease in the volume and commensurate increase in pressure between adjacent vanes and an associated camming surface. An outlet port is provided at the point of minimum volume (maximum pressure). Likewise, an inlet port is provided at the point of maximum volume (minimum pressure).

3,468,261
PUMP

Heinz Schmierer, Maichingen, Wurttemberg, Germany, assignor to Altec Gesellschaft fur Allgemeine Landtechnik m.b.H., Hailfingen, Wurttemberg, Germany

Filed Jan. 23, 1967, Ser. No. 611,119
Int. Cl. F04b *43/02;* **F01b** *19/00*
U.S. Cl. 103—150 **9 Claims**

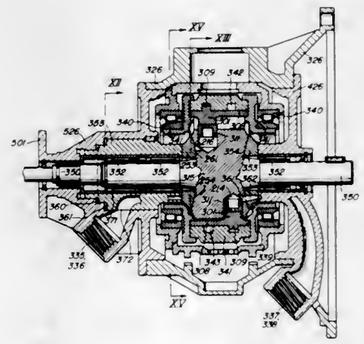


A pump including a cylinder which defines a chamber having an end portion bounded by an internal surface, a flexible diaphragm extending across the end portion and secured to the cylinder, and a piston reciprocably received in the chamber and having an external peripheral surface and an end portion adjacent to and fixed with the diaphragm. At least one of the aforementioned end portions defines with the adjacent surface of the other end portion an annular space adjacent to the diaphragm. An annular insert of elastically yieldable material is received in the annular space thus defined.

3,468,262
PISTON SHOES, GUIDE MEANS AND COMPACT ROTOR MEANS IN RADIAL PISTON MACHINES

Karl Eickmann, 2420 Isshiki, Hayama-machi, Kanagawa-ken, Japan

Continuation-in-part of application Ser. No. 389,130, Aug. 12, 1964. This application Nov. 3, 1966, Ser. No. 591,796
Claims priority, application Germany, Aug. 14, 1963, B 73,121
Int. Cl. F04b *1/10*
U.S. Cl. 103—161 **5 Claims**



A radial piston machine wherein in a fluid handling body cylinders are arranged in pairs of multiple radial cylinder groups, the cylinder in each pair alternately located radially with respect to each other; pistons oscillating radially in said cylinders; piston shoes associated to said pistons and guided on an axially extended guide surface on the guide ring displaced an axially distance from the piston shoe with an extension guide in another axially extended guide surface on the guide ring displaced an axial distance from and approximately equal to the axial spacing dimension of an adjacent axial group of radially disposed cylinders, the structure resulting in a compound rotor with maximum effective power concentration, and extraordinary large piston stroke, and closely oriented cylinder groups.

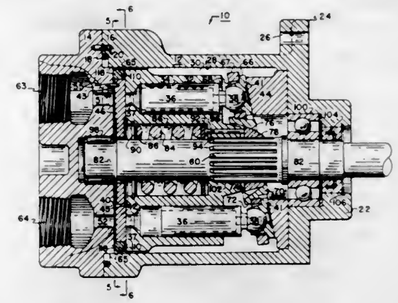
3,468,263
POWER TRANSMISSION

Albin J. Niemiec, Warren, Mich., assignor to Sperry Rand Corporation, Troy, Mich., a corporation of Delaware

Filed Sept. 27, 1967, Ser. No. 671,051
Int. Cl. F04b *1/02*
U.S. Cl. 103—162 **10 Claims**

A fluid pressure energy translating device having in combination a rotatable cylinder barrel member, a supporting plate member, and a valve plate member disposed between them; a plurality of piston disposed for reciprocation within cylinders in the barrel and cylinder

ports communicating each cylinder successively with an inlet and an outlet port in the valve plate, and a bearing

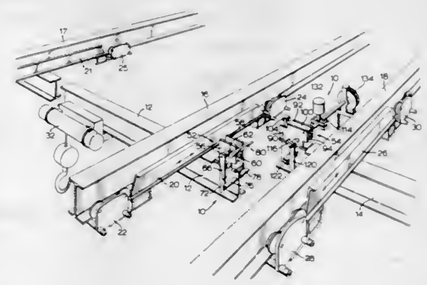


ring circumscribing the valve plate and disposed between the cylinder barrel and supporting plate for independent rotary motion relative to the said members.

3,468,264
LOCKING MECHANISM

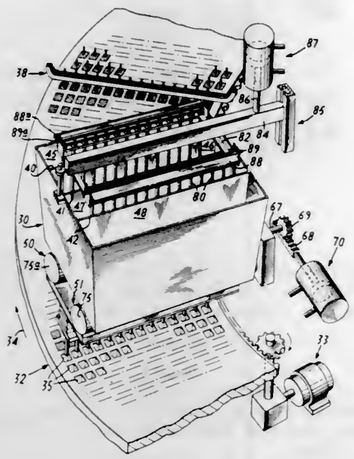
Erno Horompo, Toronto, Ontario, Canada, assignor to Demag Industrial Equipment Limited, Clarkson, Ontario, Canada

Filed Sept. 28, 1967, Ser. No. 671,262
Int. Cl. E01b *25/26;* **B61j** *1/10;* **B61b** *3/00*
U.S. Cl. 104—98 **4 Claims**



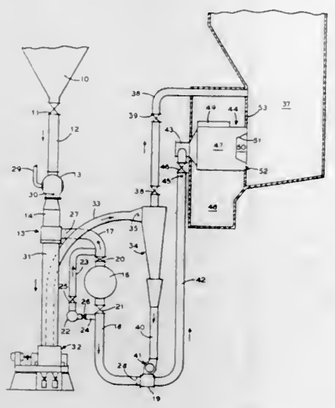
A crane comprises first and second tracks, means for supporting the tracks in spaced apart relationship for movement with respect to each other, one of the tracks having movably mounted thereon a hoist, and means for interlocking the tracks whereby the hoist can be transferred from one of the tracks to the other of the tracks. The means for interlocking comprises first and second members, the first member being attached to the first track and the second member being attached to the second track, a third member carried by one of the first and second members and movable into interlocking relationship with the other of the first and second members, a cam surface carried by one of the first and second members and a cam follower carried by the other of the first and second members, and means carried by one of the cam surface and cam follower normally restraining movement of the third member into the interlocking relationship and adapted to release the third member when the tracks are brought into end-to-end aligned relationship with each other and the cam follower moves over the cam surface.

3,468,265
APPARATUS FOR MAKING FROZEN COMESTIBLES
Edwin J. Otken, North Brunswick, N.J., assignor to Good Humor Corporation, Brooklyn, N.Y., a corporation of Delaware
Filed July 15, 1966, Ser. No. 565,620
Int. Cl. A23g *5/02*
U.S. Cl. 107—1 **6 Claims**



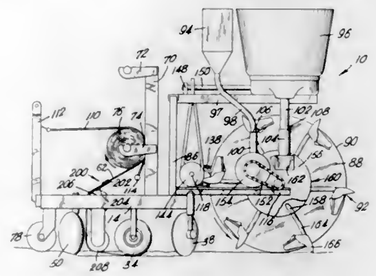
A system for simultaneously making a plurality of different frozen comestibles by simultaneously placing a different one of a plurality of different edible ingredients in a plurality of molds to be frozen in the molds.

3,468,266
FUEL FIRING
James B. Walker, Jr., Barberton, Ohio, assignor to The Babcock & Wilcox Company, New York, N.Y., a corporation of New Jersey
Filed Apr. 23, 1968, Ser. No. 723,467
Int. Cl. F23k *1/00*
U.S. Cl. 110—106 **6 Claims**



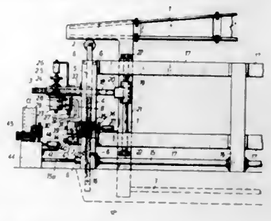
A fuel firing system capable of succesfully burning high moisture content, low heat value lignitic fuels. The system includes a centrifugal mechanical collector located between a coal crusher and a cyclone furnace combustion chamber. Preheated air is mixed with the fuel stream ahead of the crusher to effect evaporation of a portion of the moisture in the fuel ahead of the mechanical collector. The fuel-air mixture is separated, with the moisture-laden air being vented directly to the secondary furnace of the steam generating unit associated with the system, while the partially dried fuel is fed to the cyclone furnace. This results in a substantial increase in the adiabatic gas temperature within the cyclone furnace chamber thus helping to maintain the normal mean gas temperature in the chamber substantially above the fuel ash fusion temperature as required for good slag tapping conditions.

3,468,267
MULCHING AND SEEDING APPARATUS
Robert L. Morris, Decatur, and John F. Kinney, Atlanta, Ga., assignors, by mesne assignments, to Union Carbide Corporation, New York, N.Y., a corporation of New York
Filed Aug. 2, 1966, Ser. No. 569,609
Int. Cl. A01c *7/18, 5/00*
U.S. Cl. 111—73 **24 Claims**



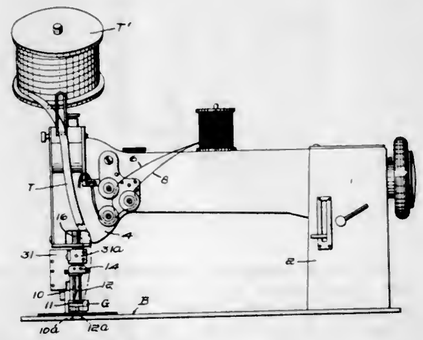
A mulcher-seeding apparatus adapted to prepare a seed bed, to apply a plastic mulch film to the seed bed, to secure and anchor the mulch to the longitudinal edges of the seed bed, and to open the mulch film to permit insertion of seeds and seed covering material therethrough into the soil prior to or during the seeding operation.

3,468,268
EMBROIDERY FRAME ADJUSTING ARRANGEMENT
Hans Rolauffs, Krefeld, Germany, assignor to Maschinenfabrik Carl Zangs Aktiengesellschaft, Krefeld, Germany
Filed Aug. 2, 1967, Ser. No. 657,874
Claims priority, application Germany, Aug. 4, 1966, M 70,457
Int. Cl. D05c *5/00, 7/04*
U.S. Cl. 112—86 **10 Claims**



A drive system for an embroidery machine having an embroidery frame movable in two angularly related directions and respective directional drive means for the embroidery frame for each direction of movement thereof in combination including hydraulically operable motor means connected mechanically to the embroidery frame, electrohydraulic control valves for the hydraulically operable motor means, and an electric amplifier connected to each of the electrohydraulic control valves. The embroidery frame is movable on a support provided by the embroidery machine and has direction, magnitude and time of adjustment determined by electrohydraulic valve control of the hydraulically operable motor means. The drive system combination further includes an embroidery-determining-program control means receiving a perforated strip portion and mechanically connected to a desired-required point-setting emitter means which produces the desired-required point-setting analog electric values transferred electrically to a comparator means connected to the electric amplifier and also receiving point-setting actual values returned electrically from an emitter mechanically joined to the embroidery frame driven by the hydraulically operable motor means.

3,468,269
METHOD AND APPARATUS FOR CUTTING TAPE IN SEWING MACHINE
John A. Des Ormeaux, Bradford, and Joseph R. Paradis Wayland, Mass., assignors to Frederic P. Worthen
Continuation-in-part of application Ser. No. 384,929, July 24, 1964. This application May 1, 1967, Ser. No. 635,127
Int. Cl. D05b *37/04, 53/00*
U.S. Cl. 112—130 **3 Claims**

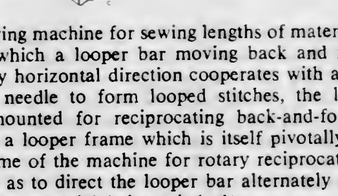


A method and apparatus for cutting thread, tape and other fastening materials used in sewing machines of the travelling needle bar type characterized by a vertically reciprocating sensing mechanism attached to the sewing machine needle bar and cooperating with an aperture in the sewing machine table to selectively actuate a cutter mechanism. A stationary presser foot bar resiliently supports the cutter mechanism in a position to be selectively actuated by the sensing mechanism when the aperture is uncovered.

3,468,270
SEWING MACHINE FOR STRAIGHT OR ZIGZAG SEWING
Antonio Moro, Milan, Italy, assignor to Soc. per Azioni Fratelli Borletti. Milan, Italy, an Italian company
Filed Feb. 27, 1967, Ser. No. 618,830
Claims priority, application Italy, Mar. 1, 1966, 15,048/66
Int. Cl. D05b *3/02*
U.S. Cl. 112—158 **3 Claims**

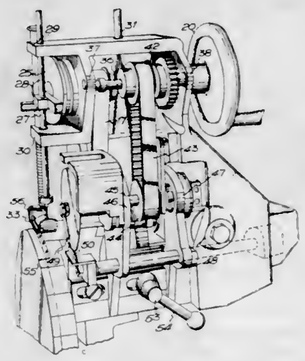
A sewing machine for domestic use, of the type adapted to produce straight zigzag stitching and having an oscillating pendulum, a needle bar slidably mounted in the pendulum, a cam for imparting the oscillation, a transmission rod associated at one end with the pendulum and at the other end with an oscillating lever driven by the cam to reciprocate the transmission rod, is improved in two respects:

(1) An operating knob and an eccentric pin fast therewith shift the axis of oscillation of the lever so as to stitch to the right or to the left or on center or in any other intermediate position; and



(2) Another operating knob and eccentric pin fast therewith transversely shift the transmission rod so that its driven end moves toward or away from the axis of the oscillating lever thereby to change the amplitude of pendulum oscillation.

3,468,271
SEWING MACHINES
David Johnson, Ramsbottom, via Bury, England, assignor to William Birch (Engineers) Limited
Filed Aug. 30, 1967, Ser. No. 664,317
Claims priority, application Great Britain, Sept. 2, 1966, 39,237/66
Int. Cl. D05b *1/10, 23/00, 57/32*
U.S. Cl. 112—199 **9 Claims**

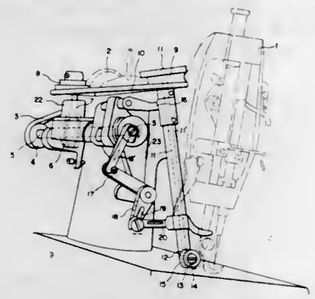


A sewing machine for sewing lengths of material end-to-end in which a looper bar moving back and forth in a generally horizontal direction cooperates with a vertically moving needle to form looped stitches, the looper bar being mounted for reciprocating back-and-forth movement in a looper frame which is itself pivotally mounted in a frame of the machine for rotary reciprocating movement so as to direct the looper bar alternately above and below the material being stitched.

3,468,272
FEED MECHANISM IN SEWING MACHINE
Shoji Shimobayashi, Kyoto, Japan, assignor to Aisin Seiki Kabushiki Kaisha, Kariya, Aichi Prefecture, Japan
Filed Nov. 9, 1967, Ser. No. 681,617
Claims priority, application Japan, Nov. 14, 1966, 41/74,812
Int. Cl. D05b *27/12*
U.S. Cl. 112—212 **1 Claim**

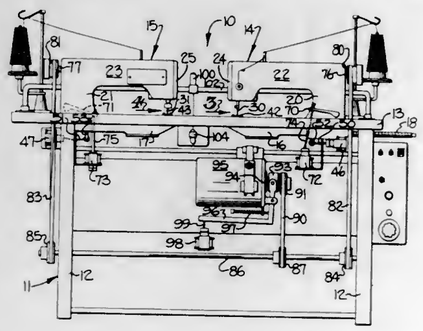
This invention relates to a mechanism for feeding fabric in a sewing machine, comprising a rotary vertical shaft driven from a conventional driving means in the sewing machine and mounted with its lower end being

oscillated frontwardly and rearwardly by said driving means, and a rotatable feed roller on the lower end of said rotatable and oscillatable vertical shaft, the axis of which feed roller being reciprocated frontwardly and



rearwardly while the feed roller is rotated in one direction around its axis at a position adjacent the presser foot of the sewing machine to provide an intermittent feeding of the workpiece.

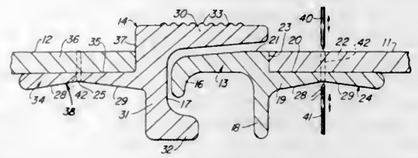
3,468,273
APPARATUS AND METHOD OF SEWING NON-RAVELING SEAMS IN ARTICLES
Claude E. Lester, Fuquay-Varina, N.C., assignor to The Kendall Company, Boston, Mass., a corporation of Massachusetts
Filed Mar. 7, 1966, Ser. No. 532,447
Int. Cl. D05b *25/00, 27/00*
U.S. Cl. 112—262 **12 Claims**



Apparatus for sewing non-raveling back-tack seams in articles, such as diapers, including at least one sewing machine having stitch forming means and reversible feed means, sensing means disposed in the path of articles presented to the sewing machine for sensing an edge of the article so presented and control means for reversing said feed means in timed relation to actuation of the sensing means to reverse the direction of feed of the article being sewn for a predetermined time interval to form reverse stitching in the article adjacent the edge thereof sensed by said sensing means.

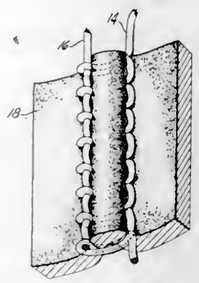
3,468,274
PROCESS FOR STITCHING METAL STRIP TO EDGE PORTION OF LUGGAGE SHELL
Sol Koffler, 600 Blackstone Blvd., Providence, R.I. 02906
Filed Sept. 27, 1967, Ser. No. 670,887
Int. Cl. D05b *15/00*
U.S. Cl. 112—262 **3 Claims**

Manufacture of luggage, with frame valance comprising male and female interfitting, metal, shell-edging strips, each with a rearwardly extending web portion having a shallow V groove for maintaining alignment of



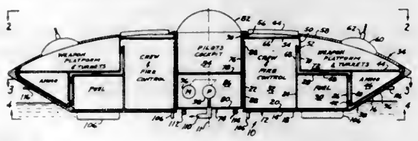
needle and awl of a stitching machine and valance and luggage shell sewed thereto.

3,468,275
ORNAMENTAL MOCCASIN TYPE SEAMS
Harry B. Fake, South Weymouth, Mass., assignor to United Shoe Machinery Corporation, Flemington, N.J., and Boston, Mass., a corporation of New Jersey
Original application Feb. 1, 1963, Ser. No. 255,634, now Patent No. 3,333,558, dated Aug. 1, 1967. Divided and this application May 11, 1967, Ser. No. 637,818
Int. Cl. D05b *1/24*
U.S. Cl. 112—424 **3 Claims**



A two thread ornamental moccasin type seam in which a first thread enters and emerges twice in each stitch from an exposed surface of the work piece and in which two parallel thread portions are disposed in a shallow trough on the surface and in which a second thread passes through bights of the first thread at the concealed side of the work piece.

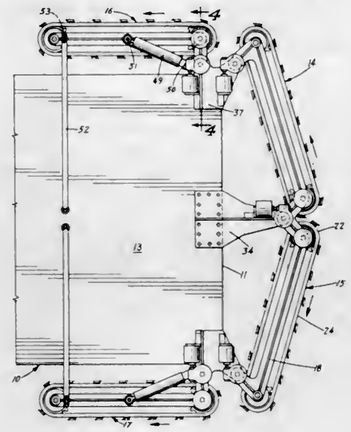
3,468,276
MARINE VEHICLES
Frank Bowles Pollard, 2722 Ardmore Ave., Manhattan Beach, Calif. 90266, and Jack Harold Arnold, Jr., 8035–6 Canby Ave., Reseda, Calif. 91335
Filed Mar. 25, 1968, Ser. No. 715,852
Int. Cl. B63g *1/00*
U.S. Cl. 114—1 **6 Claims**



This disclosure relates to marine vessels, and particularly to omnidirectional marine vessels adapted for fast

motion and superior maneuverability in shallow waters. A machine vessel according to the present disclosure comprises a hull which is circular in plan view. Drive means is mounted to said hull for driving the vessel, the drive means being independently rotatable with respect to the hull to drive the hull in any desired direction. It is adaptable to carrying a wide range of armament on an independently rotatable body, and to carrying still additional drive means for exerting lateral thrust through the central axis to aid the vessel in escaping from perilous circumstances.

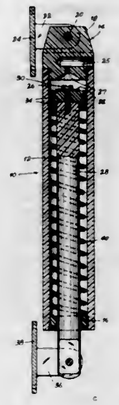
3,468,277
ICE CHANNEL CUTTER
Michael W. Rosner, 1344 Midway Parkway, St. Paul, Minn. 55108, Louis D. Bolleau, Grant Drive, Rte. 3, Stillwater, Minn. 55082, and Frank J. Greipel, 49 Larpenteur Ave., St. Paul, Minn. 55107
Filed Oct. 9, 1967, Ser. No. 673,785
Int. Cl. B63b *35/08*
U.S. Cl. 114—42 **10 Claims**



An ice channel cutter for opening and maintaining channels for winter navigation in streams otherwise frozen over. The cutter is a marine vessel whose prow is fitted with a plurality of ice engaging units each presenting an array of ice-chopping blades or cutters disposed in a generally vertically extending plane. The ice choppers may be horizontally movable in the direction toward the sides of the channel and stern of the vessel to chop the ice into relatively small chunks and carry them sideways and rearwardly, or they may be vertically movable in a downward direction to chop the ice and carry it downwardly so the vessel may pass over it. The ice engaging units are desirably movable vertically for positioning for optimum efficiency. Optionally, additional ice-engaging units are pivotally mounted on opposite sides of the vessel adjacent the prow and adapted to be swung outwardly from the vessel for widening the channel initially cut.

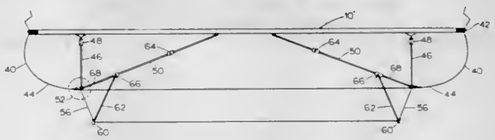
3,468,278
BOAT LEVELER MECHANISM PISTON CONSTRUCTION
Frank T. Kercheval, 530 N. Hills Drive, St. Louis, Mo. 63121
Filed May 18, 1967, Ser. No. 639,531
Int. Cl. B63b *1/18, 39/06*
U.S. Cl. 114—66.5 **2 Claims**

An improved piston construction for a boat leveler mechanism comprising a cylinder, a piston, and a piston rod of filled nylon material designated Nylatron GS, and



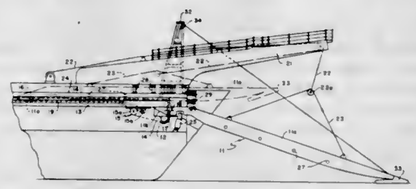
the like, and a stainless steel return spring for moving the piston in one direction.

3,468,279
FLOTATION APPARATUS
Robert D. Hawkins, 115 Stony Hollow Road, Greenlawn, N.Y. 11740
Original application Dec. 29, 1965, Ser. No. 517,349, now Patent No. 3,370,562, dated Feb. 27, 1968. Divided and this application Jan. 2, 1968, Ser. No. 694,612
Int. Cl. B63b *1/38;* **B60v** *1/04*
U.S. Cl. 114—67 **12 Claims**



An air supported vessel for use in water is described as having an open bottomed hull from which there is extended a movable partition or skirt member secured about the opening in the hull. This partition when extended upward gives the vessel desirable properties for mobility and when extended downward gives the vessel desirable properties for station keeping.

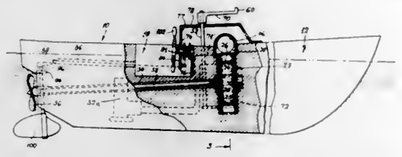
3,468,280
RAMP FOR LST
Ira E. Williams, Washington, D.C., assignor to the United States of America as represented by the Secretary of the Navy
Filed Sept. 26, 1967, Ser. No. 670,811
Int. Cl. B63b *27/14*
U.S. Cl. 114—72 **6 Claims**



An extensible one piece ramp which is mounted at the bow end of a ship on cantilevered supporting arms and

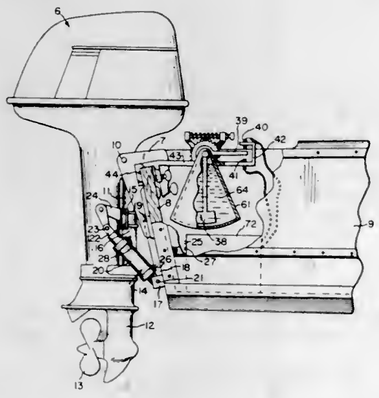
arranged to be extended or retracted for use in landing or retrieving large vehicles.

3,468,281
SHIP PROPULSION INCLUDING INTERNAL PADDLE WHEEL
John Krynicki, 417 E. 70th St., New York, N.Y. 10021
Filed Oct. 6, 1967, Ser. No. 673,322
Int. Cl. B63h *13/00, 25/50*
U.S. Cl. 115—34 **3 Claims**



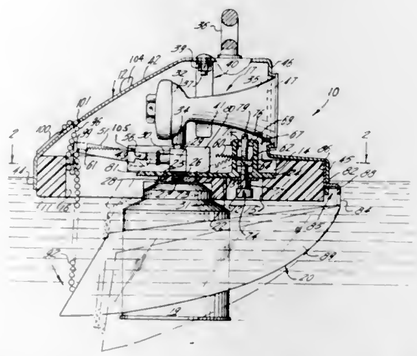
Mechanism for propelling a ship including a paddle wheel adapted to be rotated by rushing water admitted from the bottom of the hull of the ship at both sides of the wheel. The water strikes the paddles of the wheel at a tangent on each side thereof, whereby the wheel is adapted to be rotated selectively in desired directions. An internal pump drives water at high speed and pressure against the paddle wheel. Water is discharged centrifugally from the top of the wheel. The ship can be propelled by wind power and the paddle wheel will serve as braking means.

3,468,282
CONTINUOUS OPERATION MOTOR TILT CONTROL MECHANISM
Andrew F. Wintercorn, 2449 Clinton Road, Rockford, Ill. 61103
Filed Oct. 9, 1967, Ser. No. 673,735
Int. Cl. B63h *5/06*
U.S. Cl. 115—41 **14 Claims**



This mechanism combines power operable hydraulic means for tilting an outborad motor to different angles in relation to the transom of a boat with means responsive to any change in the angle of elevation of the boat in relation to the surface of the water for causing the aforesaid motor tilt mechanism to function, whereby always to keep the outboard motor operating at the most favorable angle in relation to the transom of the boat. The invention, although illustrated as applied to an outboard motor, is applicable also to inboard-outboard drives. A pendulum operated switch functions to decrease the motor angle when necessary or increase it under the reverse conditions, and includes a contact arm substantially at right angles to the pendulum to engage one or the other of two vertically spaced contacts above and below the arm that are connected in circuit with solenoids of relays that control electrical connection between a pump drive motor and a battery to set the electric motor into operation each time the outboard motor requires a change in its angle. A valve controlling the delivery of fluid from the pump to either end of cylinders in which pistons operate that are connected with the outboard motor to raise or lower it relative to the stern of the boat, is shifted by electrical control one way or the other in accordance with which relay is energized. A manually operable switch is so connectible with the relays and valve operating solenoids to enable manually tilting the motor to an extreme raised position and returning it again independently of the pendulum operated switch.

3,468,283
POOL ALARM
Leonard P. Tetrault, Northport, N.Y., assignor to Aerodyne Controls Corporation, Farmingdale, N.Y., a corporation of New York
Filed May 3, 1967, Ser. No. 635,910
Int. Cl. G08b *3/02, 3/06*
U.S. Cl. 116—67 **14 Claims**

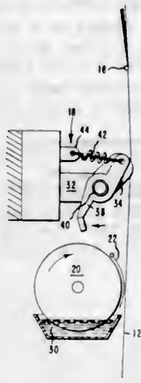


The pool alarm of the invention comprises a buoyant body adapted to float on the surface of the water in the pool, there being a vane member, which is immersed in the water, having a broad generally horizontal surface connected to and supported by the body. The vane member, because of the water above it, tends to remain behind when the buoyant body rises either as a whole or locally as a result of a disturbance in the water. Means is provided on the alarm to detect relative movement between the body and the vane member, such means operating a signal means which is preferably mounted on the alarm. In the illustrative embodiment the signal means is gas-powered, and when energized remains in operation until reset.

3,468,284
MEANS TO SPLAY AND COAT FILAMENTARY YARN
Castulo Chaban, Jr., Hixson, Tenn., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Aug. 27, 1968, Ser. No. 755,680
Int. Cl. B05c *1/10;* **D02g** *3/36*
U.S. Cl. 118—44 **2 Claims**

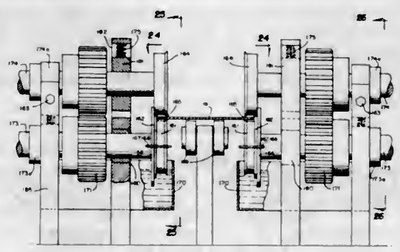
An apparatus for diverting and splaying an advancing filamentary yarn in contact with a driven finish applicator roll. A guide with a convex surface is mounted centrally

behind the yarn path for swinging outward and inward movement about an axis parallel to the axis of the finish



roll to divert the yarn from the roll and splay the yarn into a uniform width then release the yarn to the roll.

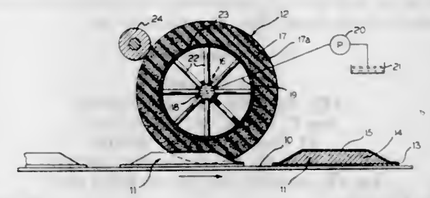
3,468,285
APPARATUS FOR COATING A STRIP
Harvey L. Patry, 71 Prospect St.; Francis J. Patry, Old Lisbon Road; and Ernest Patry, 49 Mower Ave., all of Lewiston, Maine 04240; and Harold Blair Lamont, Lincolnville, Maine 04849
Original application Feb. 5, 1964, Ser. No. 342,766, now Patent No. 3,319,330. Divided and this application Sept. 19, 1966, Ser. No. 580,451
Int. Cl. B44d *1/02*
U.S. Cl. 118—221 **6 Claims**



The disclosure describes a machine and a method of producing an expansion joint cover. In particular, the disclosure describes an apparatus for coating both sides of a strip of material. The strip is passed between two pairs of co-acting coating rollers to adhesively coat limited portions adjacent the edges of the strip, with one of the co-acting pair coating one edge of the strip and the second co-acting pair coating the other edge. Transfer means are mounted on one roller of each pair of co-acting rollers to transfer the adhesive from an adhesive bath to the other coating roller.

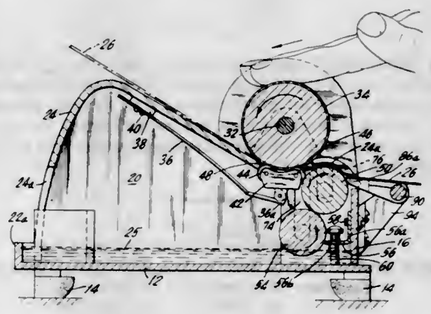
3,468,286
ROLL COATER
Anthony R. Nugarus, Chicago, Ill., assignor to Crompton & Knowles Corporation, Worcester, Mass., a corporation of Massachusetts
Filed June 14, 1965, Ser. No. 463,668
Int. Cl. B05c *1/08, 1/06;* **B65d** *85/00*
U.S. Cl. 118—239 **3 Claims**

Roll coater for packaging articles conveyed along a rectilinear path by coating the articles with a molten material that thereafter hardens. The coating roller has a periphery of resilient sponge material which deforms on contact with articles moving along to apply coating to all of the upper surfaces and connecting vertical surfaces of each article. The coating material is supplied to the



periphery of roller either through internal passageways or by means of a transfer roller. The transfer roller may have coating material supplied to its periphery by internal passageways or by rotation into and out of a tank of coating material.

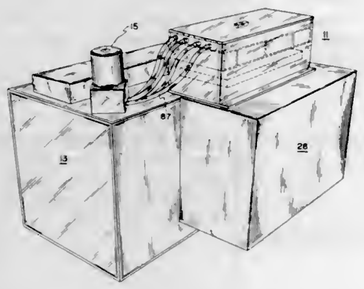
3,468,287
LIQUID APPLICATOR FOR STRIP MATERIAL
Oscar K. Hill, Agincourt, Ontario, Canada, assignor to Better Packages, Inc., Shelton, Conn.
Filed Nov. 9, 1967, Ser. No. 681,654
Int. Cl. B05c *1/00, 1/04*
U.S. Cl. 118—246 **15 Claims**



A label gluing or moistening device includes a housing forming a reservior or well for the liquid such as glue. The housing is closed by a cover defining an inclined wall for the reception of a label to be moistened and which may be fed between a rotatable rubber-coated roller and a pair of biasing rollers which are mounted on the interior of the cover and biased upwardly against the rubber-coated roller. Labels are fed downwardly from the inclined wall by rotation of the rubber roller which through gearing causes rotation of a reservoir roller or pick-up roller and an applicator roller to pick up the liquid from the reservoir and transfer it to the applicator roller over which the label is fed by the movement of the rubber roller. The pick-up roller and the applicator roller are mounted such that end shaft portions may be slipped into or removed from vertical grooves defined in the housing, and they include a tongue formation on the shafts on one side which engages into a groove or recess formation formed as shaft projections of rotatable gears mounted on the exterior of the sidewall of the housing. In a similar manner, the shaft for the rubber feed roller is mounted so that it may be engaged or disengaged with an extension of its associated gear for driving the applicator and transfer roller gears, the whole arrangement being such that the cover with the feed roller and the two separate pick-up rollers and applicator rollers may be easily removed from the housing for cleaning or

adjustment of the parts as necessary. The device also includes an extension supporting a bar upon which is carried a plurality of rotatable fingers which may be arranged so that they abut against the surface of the applicator roller and insure that the label which is fed thereover is picked off at the exit end of the housing and delivered over the surface of the fingers for removal and use.

3,468,288
AQUARIUM CONDITIONER
Jim C. Cassil, 2027 Key Blvd., El Cerrito, Calif. 94530
Filed May 22, 1967, Ser. No. 640,115
Int. Cl. A01k *63/00, 64/00;* **B01d** *23/02*
U.S. Cl. 119—5 **18 Claims**



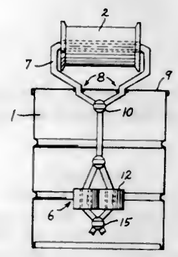
A filter, aeration, heater-cooler unit for processing aquarium water through elonagted vertically stacked and nested chambers by inletting water to the top chamber and passing it downward in horizontal passes through a filter chamber and a heating-cooling chamber and spilling it back into the aquarium.

3,468,289
INSECT TRANSPORTING PACKAGE
Daniel Broida, Ladue, Mo., assignor to Sigma Chemical Company, a corporation of Missouri
Filed Apr. 21, 1967, Ser. No. 632,764
Int. Cl. A01k *1/00, 97/04;* **B65d** *25/00*
U.S. Cl. 119—15 **10 Claims**



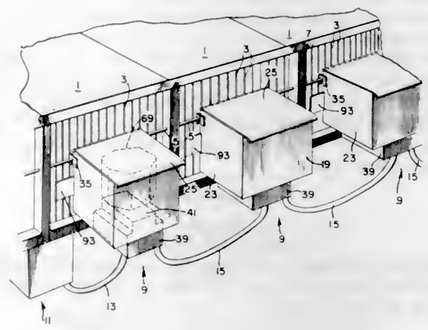
An insect package in the form of a shipping container having an open-topped can body, a foraminous basket in the can body defining an insect receiving basket and, between the basket and the can bottom a desiccant chamber containing a desiccant, and a tight lid closure for the open top. A pre-addressed mailing label in the basket when the container is distributed and insects in the basket when the package is shipped to a processing center. A method of processing fireflies which includes catching them, refrigerating them without freezing them, putting them into the container described, sealing the container and shipping the package to a processing center.

3,468,290
DOG RATTLE
Mintie P. Elliott, Rte. 1, Glen Rose, Tex. 76043
Filed Aug. 21, 1967, Ser. No. 661,990
Int. Cl. A01k *29/00*
U.S. Cl. 119—29 **6 Claims**



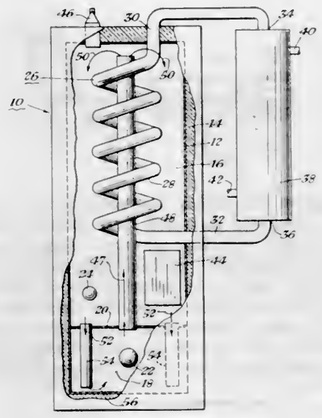
A dog rattle comprising a hollow cylindrical shell of resilient metal with one end of the shell open while the other end is closed by an end wall having two perforations therein, a cylindrical body of wood or bone with an axial bore therethrough positioned across the outside of the perforated end wall, a freely swinging striker in the shell, and a flexible strand threaded through the cylindrical body, through the two perforations and connected at its free end to the striker.

3,468,291
AUTOMATIC FEEDER FOR ANIMAL CAGES
Maurice B. Allen, 14510 Old Columbia Road, Burtonsville, Md. 20730
Filed Jan. 17, 1967, Ser. No. 609,902
Int. Cl. A01k *5/02*
U.S. Cl. 119—51.12 **11 Claims**



A muliple rotating bin, for dispensing or presenting feed to small animals in cages. The bins are indexed at predetermined time intervals to successively present feed for consumption.

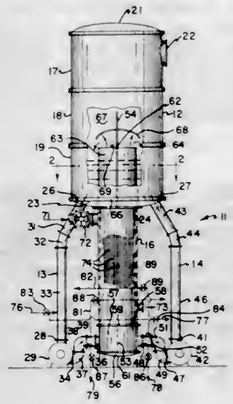
3,468,292
DOMESTIC HOT WATER HEATER
Emanuel Ferraro, Oliver Ferraro, James Ferraro, and Paul Ferraro, all of 916 Baldwin St., Pittsburgh, Pa. 15234
Filed Sept. 22, 1967, Ser. No. 669,898
Int. Cl. F22b *1/02*
U.S. Cl. 122—33 **10 Claims**



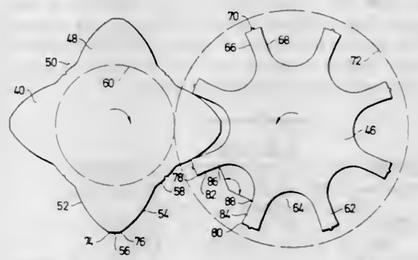
The subject of the invention is an efficient hot water heater for domestic use and the like wherein the tank is divided into an upper heat exchanger compartment and a lower heating compartment. Heat exchange water is circulated in a closed circuit, including riser and return conduits between the two compartments. A heating element is mounted in the lower compartment and desirably a second or auxiliary heating element is mounted in the lower portion of the upper heat exchange compartment to prevent the heat exchange water from being returned to the heating compartment at too low a temperature. Heat exchange means such as a helical conduit for output water is mounted in the heat exchange compartment. Desirably the volume of the helical compartment is made substantially equal to the volume of the heating compartments for improved efficiency. For maximum efficiency the aforementioned auxiliary heater and the equal volumes are both utilized.

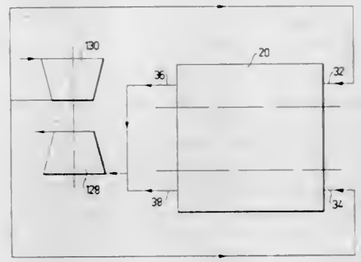
3,468,293
MULTI-STAGE FORCED CIRCULATION EVAPORATOR AND METHOD
Ralph E. Bergstrom, Chicago, Ill., assignor to Whiting Corporation, a corporation of Illinois
Filed May 10, 1968, Ser. No. 728,123
Int. Cl. F22b *1/16, 37/10*
U.S. Cl. 122—34 **14 Claims**

A multi-stage forced circulation evaporator wherein a plurality of recycle circuits individually communicate with separate liquid containing compartments in the evaporating chamber. The evaporator is particularly intended for use in the concentrating of liquids containing dissolved solids which tend to produce a scale formation on the process side of the heat exchanger component thereof. Cross-piping means is provided whereby less concentrated liquids can be circulated through the respective recycle circuits without shutting down the evaporator in order to reduce and control the formation of scale therein.



3,468,294
ROTARY INTERNAL COMBUSTION ENGINE
Hans Robert Nilsson, Extorp, Sweden, assignor to Svenska Rotor Maskiner Aktiebolag, Nacka, Sweden, a corporation of Sweden
Continuation of application Ser. No. 597,900, Nov. 30, 1966. This application June 12, 1968, Ser. No. 739,899
Claims priority, application Great Britain, Dec. 6, 1965, 51,573/65; May 9, 1966, 20,447/66
Int. Cl. F02b *53/00;* **F01c** *1/26*
U.S. Cl. 123—12 **37 Claims**

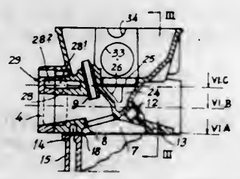




A rotary internal combustion engine comprising a housing providing a working space composed of two intersecting bores, two intermeshing rotors of dissimilar profile,

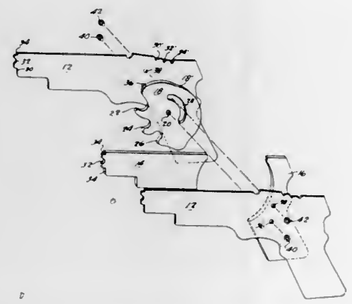
each mounted in one of said bores, and means for supply of a combustible mixture or constituents thereof to and for exhaust of the combusted remains of the mixture from said working space, said rotors being shaped to provide together with the housing, periodically and sequentially, two separate sealed inlet chambers, subsequently brought together to form a single and sealed operation chamber, which first continuously diminishes in volume, thereafter continuously increases in volume and finally diverges into two separate outlet chambers.

3,468,295
CYLINDER HEADS OF INTERNAL COMBUSTION ENGINES
Armand M. Castarede, Billancourt, France, assignor to Regie Nationale des Usines Renault, Billancourt, France, and Societe Industrielle et Commerciale des Automobiles Peugeot, Paris, France
Filed Oct. 16, 1967, Ser. No. 675,407
Claims priority, application France, Nov. 8, 1966, 82,893
Int. Cl. F02b *75/20;* **F02f** *1/36*
U.S. Cl. 123—41.74 **3 Claims**



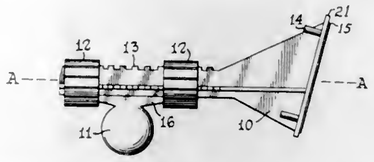
A metal die-cast cylinder head for a water-cooled, overhead camshaft internal combustion engine having the valves disposed on either side of the longitudinal plane containing the axes of the engine cylinders, said valves being inclined in relation to said axes, and combustion chambers of semi-spherical configuration into which open the inlet and exhaust ports leading to the cylinder head side adjacent to the corresponding valves, characterised in that the valves of same combustion chamber have their centers disposed on a line forming an angle of 40° to 60° with said longitudinal plane.

3,468,296
RUBBER BAND PROJECTING PISTOL
Wenceslau Ramirez Duval, 1229 de Bullion, Montreal, Quebec, Canada
Filed Feb. 3, 1967, Ser. No. 613,837
Int. Cl. F41b *7/02;* **F41f** *13/02*
U.S. Cl. 124—19 **1 Claim**



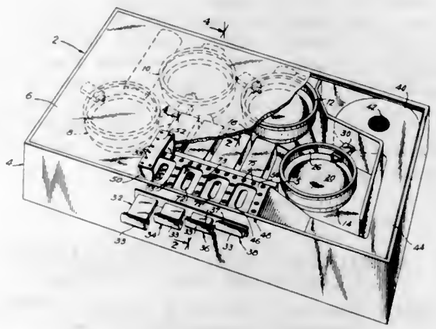
A rubber band-projecting toy pistol made up of elements die cut from cardboard comprising exterior elements outlining a pistol; inner spacing elements conforming to said outer elements in areas of overlap; rubber band retaining means at front and rear of said exterior elements and a trigger element rotatable between said exterior elements for consecutively releasing rubber bands retained by said exterior elements.

3,468,297
ARCHERY BOW TORQUE REDUCING DEVICE
Keith E. Cress, 122 Hollywood Ave., Santa Cruz, Calif. 95060
Filed July 14, 1965, Ser. No. 472,407
Int. Cl. F41b *5/00, 15/00*
U.S. Cl. 124—24 **2 Claims**



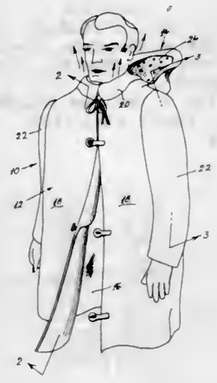
1. An oscillation dampening unit comprising a rectangular base, an elongated threaded shaft fixedly mounted upon one face of said base, four pins upstanding from said one face, one pin positioned adjacent each corner of said base, a resilent pad secured to the other face of said base, two internally threaded sleeves threaded onto said shaft, and a weight having a base means adapted to be positioned between said two sleeves and to be wedged against said shaft by movement of the sleeves toward each other.

3,468,298
GAS STOVE
Walter Dorwin Teague, Jr., Nyack, and Anthony P. Montalbano, Fresh Meadow, N.Y., and Charles W. Fromm, Teaneck, N.J., assignors to Columbia Gas System Service Corporation, New York, N.Y., a corporation of Delaware
Filed Jan. 23, 1967, Ser. No. 610,980
Int. Cl. F24c *3/00;* **F23d** *13/12*
U.S. Cl. 126—39 **9 Claims**



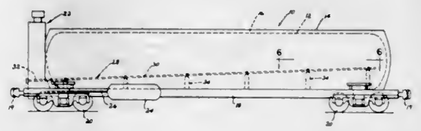
A gas range or flat-top stove is disclosed wherein the gas and air are supplied to infrared burner units under pressure. The pressurized air flows through an air control valve for each burner unit and thence to a venturi unit where the gas is mixed with the air. The flow of gas is controlled in accordance with the pressure of the air flowing to the venturi unit so as to insure the proper air-gas ratio. A special gas valve is provided which cuts off the supply of gas when the air control valve is closed, the products of combustion are confined to an exhaust path.

3,468,299
AIR-CONDITIONED GARMENT
Carl D'Amato, 8784 23rd Ave., Brooklyn, N.Y. 11214
Filed Dec. 20, 1967, Ser. No. 692,067
Int. Cl. F25d *31/00;* **A41d** *27/00*
U.S. Cl. 126—204 **8 Claims**



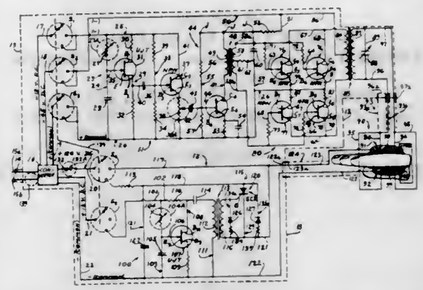
A protective garment that air-conditions the wearer, thereby protecting the wearer against surrounding atmosphere and promoting the comfort of the wearer. The garment has an air space therein and is provided with perforations permitting the air to escape. Air is supplied by a portable air-circulating device carried by the hand of the wearer of the garment. The air-circulating device has a motor operated fan forcing air through an outlet into a flexible hose connected to the air space in the garment.

3,468,300
HEAT TRANSFER MEANS FOR A RAILWAY TANK CAR
Wallace T. Geyer, Des Peres, and Edward L. Coyle, St. Charles, Mo., assignors to ACF Industries, Incorporated, New York, N.Y., a corporation of New Jersey
Continuation-in-part of application Ser. No. 663,342, Aug. 25, 1967. This application Nov. 13, 1968, Ser. No. 777,998
Int. Cl. B61d *5/04;* **E01c** *19/45*
U.S. Cl. 126—343.5 **20 Claims**



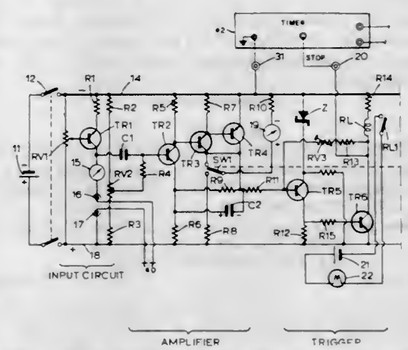
A railway tank car for the transport of lading adapted to be maintained at a predetermined temperature, particularly during transit. A heat transfer pipe mounted on the tank car has an inner end portion extending within the tank shell and an outer end portion extending outwardly of the tank shell. The heat transfer pipe includes a porous wick and a vaporizable or volatile fluid moving between ends of the pipe by a capillary action, the fluid being vaporized along the length of one end portion of the pipe and condensing along the length of the other end portion of the pipe. Means are mounted on the railway car to either heat or cool the outer end portion of the heat pipe for the transfer of heat between the inner and outer end portions to provide a predetermined temperature for the outer end portion. A plurality of spaced parallel plates are mounted about the outer end portion for the transfer of heat therebetween.

3,468,301
MAGNETO-SONIC DISINTEGRATOR OF DIAMAGNETIC MATERIAL
Fred D. Holland, Houston, Tex., assignor to Calcium Removal, Inc., Houston, Tex., a corporation of Texas
Filed Nov. 14, 1966, Ser. No. 594,248
Int. Cl. A61b *17/52*
U.S. Cl. 128—1.5 **10 Claims**



The disclosure applies treatment pads, having magnetic means therein, in opposition across a body member to dislodge diamagnetic particles therein; opposed transformer outputs being connected to the respective magnetic and sonic means, with respective transformer inputs being supplied current through sonic and magnetic circuitry.

3,468,302
SKIN RESISTANCE REACTION TIME TESTING APPARATUS
Terence K. Cowell, Woking, Surrey, England, assignor to Godfrey Brooke, Ilford, Essex, England
Filed May 20, 1966, Ser. No. 551,733
Int. Cl. A61b *5/04*
U.S. Cl. 128—2.1 **11 Claims**

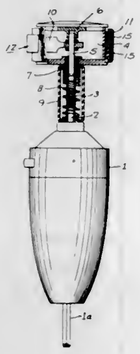


Described is apparatus for testing the reaction time, following a stimulus, of a subject by measurement of skin resistance. A pair of electrodes is attached to separate areas of the subject's skin. The electrodes are connected via an input circuit and coupling means to an amplifier. The couping means passes only changes in voltage between the electrodes. A timer measures the "latency period" (reaction time) in response to a start pulse which occurs at the instant when the subject receives the stimulus. A trigger circuit is connected to the amplifier output and produces a stop pulse for the timer in response to a substantial voltage change in the inpt circuit, due to change in skin resistance.

3,468,303
PLATED ELECTRODES
Benjamin Mosier, Houston, Tex., assignor to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration
Filed Jan. 5, 1967, Ser. No. 607,484
Int. Cl. A61b *5/04*
U.S. Cl. 128—2.1 **8 Claims**

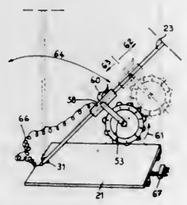
In biopotential electrodes, the preferred embodiment including a silver member and a silver salt and a hydrophilic protein colloid electrolytically deposited in the structural matrix at the surface of the silver electrode.

3,468,304
ELECTRIC MASSAGER
Akihiko Teranishi, 8 3-chome, Yamawakimachi, Showa-ku, Nagoya, Japan
Filed Apr. 17, 1967, Ser. No. 631,410
Claims priority, application Japan, May 19, 1966, 41/46,914
Int. Cl. A61h *23/00*
U.S. Cl. 128—36 **1 Claim**



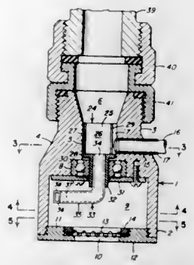
The present invention is concerned with an electrically driven massager having a hollow head in which rotates an eccentric weight for producing a vibration in said head and a resiliently and detachably mounted collar with knobs extending therefrom which may have various shapes and are for being pressed against the body or the like to be massaged.

3,468,305
ELECTRO-MECHANICAL MASSAGE APPARATUS
Raymond Collomp and Suzanne Collomp, both of 63 La Canebiere, Bouches-du-Rhone, Marseille, France
Filed Mar. 14, 1966, Ser. No. 534,039
Claims priority, application France, Mar. 17, 1965, 20,925; Dec. 22, 1965, 21,246
Int. Cl. A61h *15/00, 29/00*
U.S. Cl. 128—57 **3 Claims**



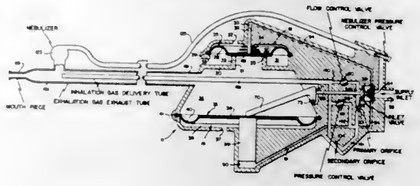
An electro-mechanical massage device enabling a person to massage any part of his body with an adjustable pressure and including a stand, a rod mounted on the stand and adjustable in all directions, a rotary massaging drum carried by the rod, a plurality of massaging devices on the drum and an electric motor for rotating the drum, the drum being mounted on the rod selectively in two positions serving for treatment of vertical and horizontal surfaces of the body.

3,468,306
HYDRAULIC ORAL HYGIENE APPARATUS
Charles J. Heitzman, Honolulu, Hawaii, assignor to R & H Molding, Inc., Honolulu, Hawaii, a corporation of Hawaii
Filed Dec. 9, 1966, Ser. No. 600,473
Int. Cl. A61h *13/00*
U.S. Cl. 128—66 **10 Claims**



Hydraulic oral hygiene apparatus attachable to a water outlet and having a turbine-driven rotary valve for producing at a manually manipulatable nozzle a water jet pulsated by the valve.

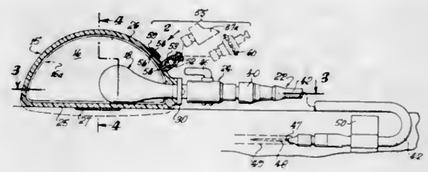
3,468,307
INTERMITTENT POSITIVE PRESSURE BREATHING APPARATUS
Richard D. Cummins, Hamburg, N.Y., assignor to Carleton Controls Corporation, East Aurora, N.Y., a corporation of New York
Filed Oct. 26, 1966, Ser. No. 589,688
Int. Cl. A62b *7/00*
U.S. Cl. 128—145.5 **5 Claims**



An intermittent positive pressure breathing apparatus including a chamber having an inlet and an outlet, this chamber in part being defined by an inhalation diaphragm and an exhalation diaphragm normally closing the chamber outlet, movement of the inhalation diaphragm being initiated by inhalation on the chamber inlet to cause a supply valve for pressurized gas to open, gas passed by said valve being utilized to produce a self-energizing action in opening said valve fully and holding said exhalation diaphragm in its position closing said outlet, the gas flowing at a predetermined rate for inhalation until a predetermined peak pressure is reached in said chamber causing retrograde movement of said inhalation diaphragm thereby initiating a self-denergizing action for the diaphragms and consequent quick opening of said

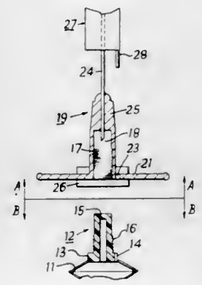
chamber outlet to permit exhalation. The apparatus also has adjustable control valves for selectively varying the inhalation gas flow rate and peak pressure.

3,468,308
PRESSURE INFUSION DEVICE FOR AMBULATORY PATIENTS WITH PRESSURE CONTROL MEANS
Howard R. Bierman, 152 N. Robertson Blvd., Beverly Hills, Calif. 90211
Filed Jan. 17, 1966, Ser. No. 521,208
Int. Cl. A61m *5/14, 1/00;* **B65d** *35/54*
U.S. Cl. 128—214 **12 Claims**



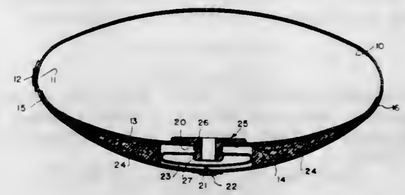
A device for expelling a liquid from a bladder member at an extremely slow rate over an extended period of time with the pressure on the liquid being accurately controlled and maintained substantially constant by a pressure regulator or other pressure-control means acting directly on the liquid being expelled or acting indirectly thereon by control of pressure applied to the exterior of the bladder member to control its rate of collapse. The device is particularly suited to the slow and prolonged infusion of medicaments into the body while the recipient is ambulatory.

3,468,309
HYPODERMIC SYRINGE WITH LOCKABLE NEEDLE HOLDER
John Drewe, Sandon, Buntingford, England, assignor to Globampoule A.G., Chur, Switzerland
Filed Apr. 4, 1967, Ser. No. 628,461
Claims priority, application Great Britain, Apr. 15, 1966, 16,680/66
Int. Cl. A61m *5/16, 5/32*
U.S. Cl. 128—216 **4 Claims**



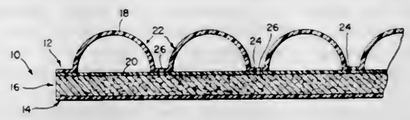
A hypodermic syringe of the kind comprising a collapsible container with closed-ended nozzle at one end. A needle holder with fixed, double pointed needle is screw threaded onto the nozzle for the purpose of displacing the needle toward the container in order that the needle may pierce the closed end of the nozzle. A needle cover is push fit over the needle holder and has at least one projection which projects, through a slot in a laterally projecting part of the needle holder, into engagement with part of the container, thus serving as locking means to prevent axial displacement of the needle.

3,468,310
OSTOMY GARMENT
Betty M. Kimball, 5904 Cecil Ave., Baltimore, Md. 21207
Filed Nov. 25, 1966, Ser. No. 597,033
Int. Cl. A61f *5/44*
U.S. Cl. 128—283 **2 Claims**



An ostomy garment in the form of a body encircling band similar to a girdle adapted to encircle the abdomen of a wearer and having inner and outer panel portions forming a pocket for containing a receptacle or bag like member for receiving the discharge from the stoma of the wearer and tapered padding on each side of the bag like member decreasing in thickness from adjacent the latter to the outer margins of the pocket to simulate the natural contour of the abdomen of the wearer.

3,468,311
ABSORBENT PAD
John P. Gallagher, 2415 Foxhall Road NW., Washington, D.C. 20007
Filed June 7, 1967, Ser. No. 644,345
Int. Cl. A61l *15/00*
U.S. Cl. 128—296 **3 Claims**

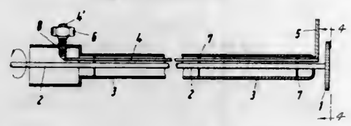


An absorbent pad comprising a pneumatic cellular cushion top layer, a liquid absorbent layer and a bottom liquid impervious layer.

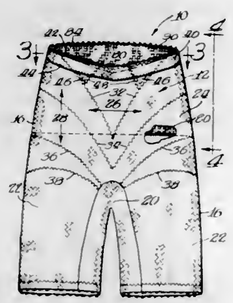
3,468,312
METHOD AND INSTRUMENT FOR CUTTING OR SEVERING A BONE FROM THE BONE'S INSIDE
Gerhard Küntscher, Hamburg-Blankenese, Germany, assignor, by mesne assignments, to The Orthopedic Equipment Company, Inc., Bourbon, Ind., a corporation of Indiana
Continuation of application Ser. No. 348,406, Mar. 2, 1964. This application May 29, 1968, Ser. No. 751,633
Claims priority, application Germany, Mar. 27, 1963, O 9,320
Int. Cl. A61b *16/14, 17/32;* **B23d** *21/06*
U.S. Cl. 128—317 **7 Claims**

1. An instrument for cutting or severing a bone from inside the bone, comprising an elongated tube adapted to be inserted longitudinally into a prepared, generally axial cavity in the bone, first and second shafts extending lengthwise within said tube, spaced guide means in

said tube for maintaining said shafts in parallel relation, a portion of said first shaft extending beyond the end of said tube and carrying a cutting tool, and radially displaceable means connected for positioned control by said second shaft for controllably urging said cutting tool against the internal bone surface to cut the same.

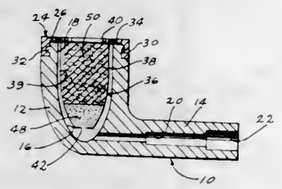


3,468,313
UNDERGARMENT WITH BACK SUPPORT
Ronald L. Blair and Aileen S. Carlson, Chicago, Ill., assignors to Blair Fashions, Inc., a corporation of Illinois
Filed Apr. 11, 1967, Ser. No. 630,789
Int. Cl. A41c *1/00*
U.S. Cl. 128—520 **10 Claims**



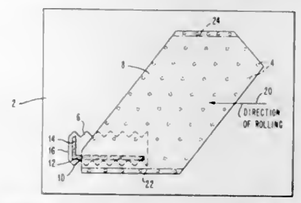
An undergarment having an elastic band secured inside the rear of the undergarment and extending across the back portion of the undergarment and of a substantial height to extend to substantially the upper portion of the seat of the undergarment, with the band secured along certain lines of securement so that portions of the band are secured to the back portion while other portions of the band are unsecured, and with the upper rear portion of the undergarment and elastic band extending above the height of the front waistline of the wearer to eliminate back fatigue, reduce back strain and provide an upward and inward pull on the abdomen of the wearer.

3,468,314
PIPE CARTRIDGE
Charles E. Palmer, Turnpike Road, Somers, Conn. 06071
Filed Oct. 5, 1967, Ser. No. 673,060
Int. Cl. A24d *1/14;* **A29f** *5/50*
U.S. Cl. 131—3 **8 Claims**



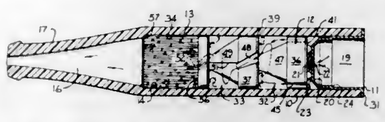
Cartridges which are preloaded with tobacco and insertable into the bowl of a pipe, and smoking pipes especially designed for use in combination therewith. The cartridges are arranged to be supported within the bowls by means of upper horizontal flanges having pressure sensitive or other adhesive material on the lower surfaces thereof for engaging the upper rims of the bowls, and peripheral ribs for spacing the outer walls of the cartridges from the inner walls and the bottoms of the bowls. The upper mouth of each cartridge has a removable closure thereon and the lower end has a removable closure covering a smoke passing aperture, the closures being removed before the cartridge is ignited in the bowl of a pipe.

3,468,315
METHOD FOR REINFORCING THE HEAD END OF A CIGAR
Hans C. Dreher, Dallas, Pa., assignor to General Cigar Co., Inc., New York, N.Y., a corporation of New York
Filed Nov. 9, 1966, Ser. No. 593,069
Int. Cl. A24f *7/00;* **A24d** *1/04;* **A24c** *3/00*
U.S. Cl. 131—20 **2 Claims**



This invention relates to a method for reinforcing the head end of a cigar. It is particularly suited for the manufacture of cigars wherein filler tobaccos are enclosed in a reconstituted tobacco sheet binder to form a bunch with a small reinforcing strip placed around the head end before a wrapper is rolled onto the bunch. Essentially, the invention comprises striping an elongated line of paste or adhesive near the outermost edge of the inner face of a reinforcing strip substantially over the entire length of the strip before the binder is laid thereover. After the bunch is formed on a rolling table and then crimped and trimmed, a controlled amount of paste or adhesive is then applied to the outer face of the reinforcing strip by injecting a drop of paste into a header block of a cigar machine for application on the head end of the cigar bunch. When the head of the cigar bunch is placed in the header block and the cigar bunch is rotated simultaneously with the helical application of a wrapper, the drop of paste is smeared over the outside surface of the head of the bunch. By this method, both the inner and outer folds of the cigar bunch binder and reinforcing strip become welded together and form bonds with the contiguous filler and wrapper to form a pliable, but firm headed cigar.

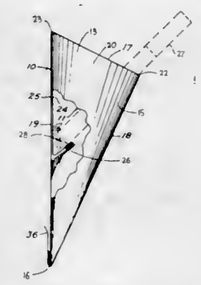
3,468,316
TOBACCO SMOKE FILTER
Leo Baum, Oakland, and Robert E. Krueger, Lafayette, Calif., assignors to Nixotene Corporation, Piedmont, Calif., a corporation of California
Filed Nov. 15, 1965, Ser. No. 507,914
Int. Cl. A24f *13/04, 7/04*
U.S. Cl. 131—187 **9 Claims**



A filter for tobacco smoke in which a plug member is inserted in a tubular bore. The plug is provided with a plurality of cylindrical portions defining a pair of

chambers therebetween, with such portions having peripheral smoke passages. The chambers have a toroidal shape of increasing cross-sectional extent downstream of the smoke inlet.

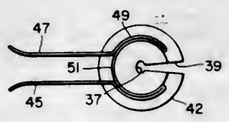
3,468,317
COLLAPSIBLE AND STACKABLE PAPER ASH RECEPTACLE FOR CIGARETTES
David L. Rowland, 49 W. 55th St., New York, N.Y. 10019
Filed Feb. 13, 1967, Ser. No. 615,814
Int. Cl. A24f *13/00*
U.S. Cl. 131—235 **10 Claims**



The receptacle resembles some paper drinking cups but is made from a paper-metal foil laminate or otherwise is rendered nonflammable. It has a perforated ledge projecting away from its rear wall inside the receptacle, so that a lighted cigarette can rest on it, with support from the front wall's upper edge, and still burn. The ledge extends up and out from the rear wall at between 32° and 64° and from a position below the upper edge of the front wall by between one and two-fifths of the length of the cigarette. The ledge is stiff enough to enable manual snuffing and relatively short so that a cigarette left lying across it and the upper edge of the front wall ultimately burns to the point where its ash on the ledge fails to support it and then the butt falls down into the bottom of the receptacle and is suffocated.

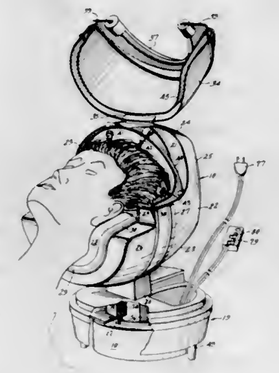
When stacked, the receptacles are generally removed from the bottom, the ledges fold in flat, but upon removal of the bottom cup a free flap near the bottom of the next cup thereabove catches the ledge of the bottom cup and pulls it out and up into its correct operative position.

3,468,318
TIPPING GUARD FOR USE WITH A PERFORATED HEAD COVERING
Loveda Cook, Warsaw, Ind. 46580, and Victor N. Farhi, 4701 Tacoma Ave., Fort Wayne, Ind. 46807
Original application Mar. 4, 1963, Ser. No. 262,713, now Patent No. 3,270,753, dated Sept. 6, 1966. Divided and this application May 23, 1966, Ser. No. 552,266
The portion of the term of the patent subsequent to Sept. 6, 1983, has been disclaimed and dedicated to the Public
Int. Cl. A45d *19/18*
U.S. Cl. 132—9 **4 Claims**



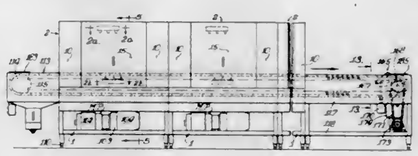
A tipping guard for use with a perforated head covering in connection with the bleaching and dyeing of strands of hair. The tipping guard being constructed of resilient material having a center hole with a radial slot to provide an aperture adapted to be opened and closed by a spring constructed in a single unitized piece of material shaped to form actuating levers which terminates in an arcuate clamp secured to the resilient material.

3,468,319
HAIR TREATING APPARATUS
Donald K. Harmon, Monroe, Conn., assignor to General Electric Company, a corporation of New York
Filed Nov. 14, 1966, Ser. No. 594,238
Int. Cl. A45d *1/00*
U.S. Cl. 132—9 **8 Claims**



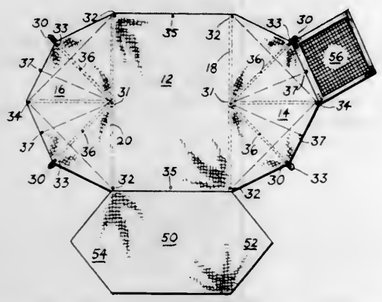
This disclosure concerns apparatus for applying hair treating fluid to the hair and scalp of a user. The apparatus includes a head receiving chamber having nozzles for distributing fluid to the hair and a motor driven pump for pumping the treating fluid to the nozzles. A portable container is also provided that is removably mounted in fluid flow communication with the pump in such a manner that the fluid is recirculated through the container and pump.

3,468,320
SECTIONAL DISHWASHING MACHINE AND STRUCTURAL UNITS
John Cumming, Oak Park, Ill., assignor to G. S. Blakeslee & Co., Cicero, Ill., a corporation of Delaware
Filed Aug. 23, 1966. Ser. No. 574,427
Int. Cl. B08b *3/02*
U.S. Cl. 134—46 **4 Claims**



A dishwashing machine comprising one or more modules, removably mounted track sections in the modules, and removably mounted upper and lower spray boxes in the modules. In a flight conveyor type machine, there is provided conveyor emergency stop means at the unloading end of the conveyor. In a rack conveyor type machine, there are provided pawl bar conveyor means comprising a readily removable and reversible pawl bar and supporting means therefor, and final rinse actuating means at the delivery end of the machine.

3,468,321
CONVERTIBLE TENT STRUCTURE
Joseph Charles Thompson, 2804 N. Jefferson, Arlington, Va. 22207
Filed Aug. 17, 1967, Ser. No. 661,281
Int. Cl. A45f *1/00*
U.S. Cl. 135—1 **8 Claims**

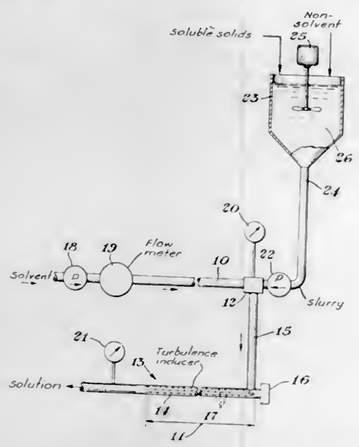


A tent constructed so that various of the panels may be oriented in different positions to enable the tent to be converted to alternative arrangements while retaining the same basic orientation of tent pegs and tent poles or such other support device, such as an outside frame, as may be used to support the tent in its various configurations.

ERRATUM

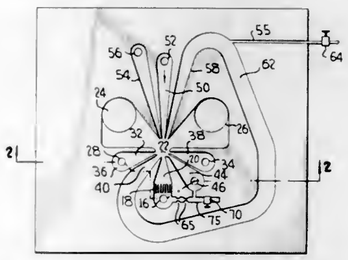
For Class 137—1 see:
Patent No. 3,468,809

3,468,322
DISSOLVING SOLIDS IN SOLVENTS
Melvin F. Katzer, Danville, Calif., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
Filed July 24, 1967, Ser. No. 655,491
Int. Cl. E03b *1/00;* **B67d** *5/08;* **F15d** *1/02*
U.S. Cl. 137—1 **5 Claims**



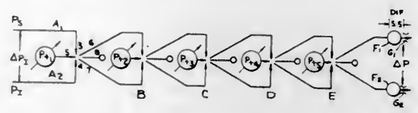
A method is provided for continuously metering and rapidly dissolving a soluble solid in a solvent. The solid material to be dissolved is mixed with a liquid, which is a non-solvent for the solid, to form a liquid slurry. The slurry then is metered into a flowing stream of the solvent, usually on a proportionate basis. The solvent slurry mixture is then forced through a turbulence inducer comprising a conduit in which there is at least one extended length of chain. Preferably, the number of chain lengths is sufficient to loosely fill the conduit. Good dispersion and solution rates are achieved with chains at least about 6 inches long, but longer chains can be used with advantage.

3,468,323
METHOD AND APPARATUS FOR LINEARIZING FLUID AMPLIFIER GAIN
Donnie R. Jones, Silver Spring, Md., assignor to Bowles Engineering Corporation, Silver Spring, Md., a corporation of Maryland
Filed Nov. 23, 1964, Ser. No. 413,267
Int. Cl. F17d *1/16;* **F15c** *1/10*
U.S. Cl. 137—13 **19 Claims**



A pure fluid amplifier having a linear characteristic and the method for linearizing such characteristic wherein positive feedback of power stream fluid is employed to modify power stream deflection so as to compensate for non-linearities in the velocity profile of the power stream.

3,468,324
LIMITING AMPLIFIER
Gerald R. Schrader, Adelphi, Md., assignor to Bowles Engineering Corporation, Silver Spring, Md., a corporation of Maryland
Filed Oct. 23, 1965, Ser. No. 503,787
Int. Cl. F15c *1/12*
U.S. Cl. 137—81.5 **10 Claims**

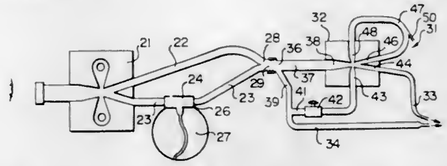


A multi-stage pure fluid amplifier having a gain characteristic with a linear high grain portion and a sharply defined flat saturation portion, the amplifier comprising a plurality of cascaded pure fluid amplifier stages wherein the power stream pressures of each stage are individually adjusted such that the non-linear portions of the gain characteristic of each individual stage occur at input signal levels corresponding to low gain regions of the gain characteristic of the next succeeding stage whereby nonlinearities are substantially attenuated in the overall gain characteristic for the multi-stage amplifier.

3,468,325
SELECTIVE SOAPER-RINSER APPARATUS
David E. Bowles, 12712 Meadowood Drive, Silver Spring, Md. 20904
Filed Apr. 4, 1967, Ser. No. 628,496
Int. Cl. F15c *1/14*
U.S. Cl. 137—81.5 **17 Claims**

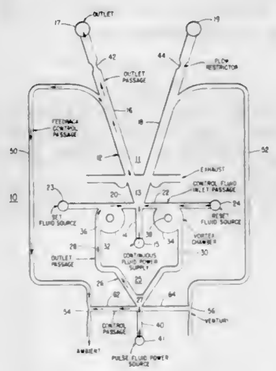
The soaper-rinser relates to garden hose attachments for controlling alternate flow of clear or soapy water and employs fluidic flip-flops and oscillators. The flip-flop permits ease of selection of soapy or rinse water while maintaining good stream characteristics. The use of the oscil-

lator causes the stream to be swept over the surface to be washed.



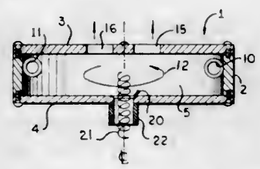
The same water sweeping arrangement can be used in a water pick.

3,468,326
TRIGGERABLE FLIP-FLOP FLUID DEVICE
Kenneth W. Cohen, Chesterland, Ohio, assignor to Bailey Meter Company, a corporation of Delaware
Filed Oct. 19, 1967, Ser. No. 676,472
Int. Cl. F15c *1/10*
U.S. Cl. 137—81.5 **4 Claims**



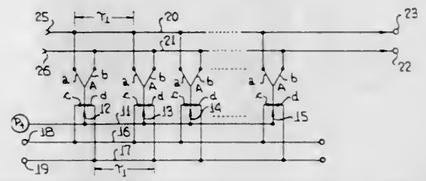
A pure fluid device having a first bistable fluid element triggered by pulses supplied to the control inlets by the power outlets of a second bistable fluid element. Venturi sections are incorporated in feedback passages connected between the outlet passages of the first element and the control inlets of the second element. The venturis create a negative pressure in said control inlets when fluid is flowing in the feedback passages. Negative pressure diverts a pulsed power stream of the second element to a control inlet of the first element causing the first power stream to switch. The switching rate is determined by the rate at which fluid power pulses are emitted by the second bistable element.

3,468,327
CORE BLEED FOR VORTEX READOUT DEVICE
Donnie Roland Jones and Edwin U. Sowers III, Silver Spring, Md., assignors to Bowles Engineering Corporation, Silver Spring, Md., a corporation of Maryland
Filed July 29, 1965, Ser. No. 475,816
Int. Cl. F15c *1/16*
U.S. Cl. 137—81.5 **12 Claims**



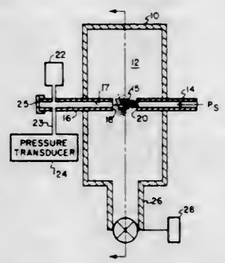
The fluid core at the egress orifice of a vortex amplifier is diverted from the readout channel to improve signal-to-noise ratio and reduce signal averaging.

3,468,328
DISTRIBUTED AMPLIFIER
Eric E. Metzger, Silver Spring, Md., assignor to Bowles Engineering Corp., Silver Spring, Md., a corporation of Maryland
Filed Oct. 15, 1965, Ser. No. 496,401
Int. Cl. F15c *1/08;* **G06m** *1/12*
U.S. Cl. 137—81.5 **19 Claims**



In a distributed fluidic amplifier circuit, a plurality of spatially distributed fluidic amplifier elements are connected in parallel by fluid transmission lines. The interstage time delays between application of an input signal to each element equal the corresponding interstage time delays required to combine the output signals from each element. The output signals from each element are thus co-phasal and additive. In one embodiment, a single input signal transmission line is connected to an input port of each element, and a single output signal transmission line is connected to an output port of each element, the signal delay time between successive elements along the input transmission line being equal to the signal delay time between the same successive elements along the output transmission line.

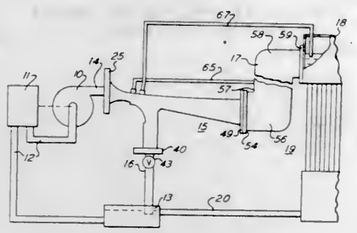
3,468,329
PRESSURE AMPLIFIER
Endre A. Mayer, Birmingham, Mich., assignor to The Bendix Corporation, a corporation of Delaware
Filed Mar. 28, 1966, Ser. No. 537,861
Int. Cl. F15c *1/08*
U.S. Cl. 137—81.5 **8 Claims**



A pressure amplifier having an input tube and an axially aligned output tube extending into a housing in combination with means for varying the pressure in the housing to control the amount of flow from the input tube which enters the output tube.

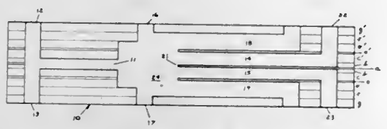
3,468,330
DIVERTING VALVE
Coleman B. Moore, Uwchland, and Robert B. Adams, Tredyffrin Township, Chester County, Pa., assignors to Moore Products Co., Spring House, Pa., a corporation of Pennsylvania
Filed Mar. 27, 1967, Ser. No. 626,027
Int. Cl. F15c *1/14*
U.S. Cl. 137—81.5 **1 Claim**

A diverting valve is provided having no moving parts in contact with the fluid, and flow at a lower flow level



wall and is delivered through another passageway, together with provisions for unlocking from the wall upon decrease of flow.

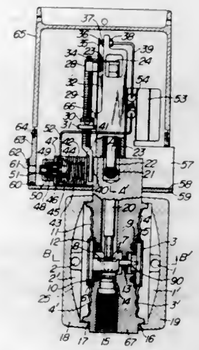
3,468,331
STACKED PORT FLUIDIC AMPLIFIER
Charles D. O'Neal, Winter Park, Fla., assignor to Martin Marietta Corporation, New York, N.Y., a corporation of Maryland
Filed July 3, 1967, Ser. No. 650,817
Int. Cl. F15c *1/08*
U.S. Cl. 137—81.5 **6 Claims**



This invention teaches an improvement in the application of laminate techniques to the construction of fluidic devices, in that it makes possible the use of aligned apertures in a plurality of stacked planes for creating a fluidic device of desired configuration, and significantly enables the creation of a splitter which is not only desirably very thin, but also retains structural integrity by being supported at both ends.

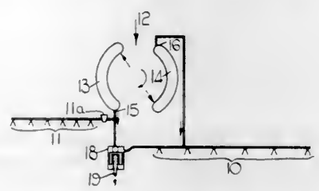
3,468,332
DEVICE OPERATIVE IN ACCORDANCE WITH DIFFERENTIAL PRESSURE
Ichiro Kimura and Takeo Nagata, Hitachi-shi, Japan, assignors to Hitachi, Ltd., Tokyo, Japan
Continuation of application Ser. No. 440,255, Mar. 16, 1965. This application Sept. 11, 1968, Ser. No. 766,363
Claims priority, application Japan, Mar. 16, 1964, (Utility model), 39/20,009; May 21, 1964, 39/28,505
Int. Cl. F15b *5/00;* **G05d** *16/00*
U.S. Cl. 137—85 **3 Claims**

The present disclosure relates to a device operative in accordance with differential pressure which can accurately measure differential pressure without being accompanied by static pressure errors and change of zero point. Devices operative in accordance with differential pressure are mostly employed in industrial fields to measure flow, pressure, liquid level, etc., and to convert measured differential pressures into equivalent air pressure values to thereby make suitable indicators, recorders or controlling means function. The mechanical motion between a fluid pressure-mechanical movement transducer and a mechanical movement-air pressure transducer is transmitted through a sealed pivot shaft that is securely supported to prevent movement due to fluid pressure in the direction of its motion transmitting arms that would produce an error in the indicator. The mechanical movement-



air pressure transducer has a feed-back bellows containing therein a zero adjustment screw.

3,468,333
FUEL SYSTEM FOR A GAS TURBINE ENGINE
Robert Thomas John Skinner, Kenilworth, England, assignor to Joseph Lucas (Industries) Limited, Birmingham, England
Filed May 1, 1967, Ser. No. 634,965
Int. Cl. G05d *11/00;* **F02c** *7/26;* **F02g** *3/00*
U.S. Cl. 137—110 **2 Claims**

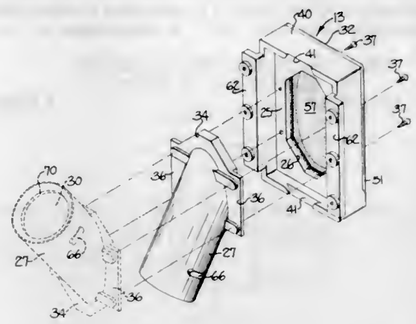


A fuel system, for a gas turbine engine, of the kind including a main burner manifold, a starter burner manifold, and a fuel pump for supplying fuel to said manifolds wherein the pump includes a body having therein a cavity housing a peripherally bladed rotor, an inlet through which fuel can enter the cavity, a pair of pumping zones defined within the cavity and a pair of outlet passages associated with said zones respectively through which fuel is pumped from said zones in response to rotation of the rotor, one of the outlet passages of the pump being connected to the main burner manifold, while the other outlet passage is connected to the starter burner manifold and to the main burner manifold through a valve which permits fuel to flow from said other passage to said main burner manifold only when the fuel pressure in said other outlet passage exceeds a predetermined value.

3,468,334
OUTLET RECEPTACLE FOR CENTRALIZED VACUUM CLEANING SYSTEM
James C. Hamrick, Matthews, N.C., assignor, by mesne assignments, to Jet Line Products Inc., a corporation of North Carolina
Continuation-in-part of application Ser. No. 573,707, Aug. 19, 1966. This application Aug. 9, 1967, Ser. No. 659,516
Int. Cl. F16l *3/16;* **A47l** *5/31*
U.S. Cl. 137—355.23 **12 Claims**

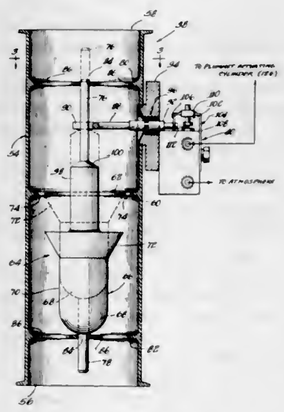
An outlet receptacle adapted for mounting in a building wall and having an angularly extending receptacle

body for telescopically receiving therein a vacuum hose extending into a conduit within the building wall, and



wherein the body is arranged for selective positioning to vary its angular attitude to facilitate connecting the same to the conduit.

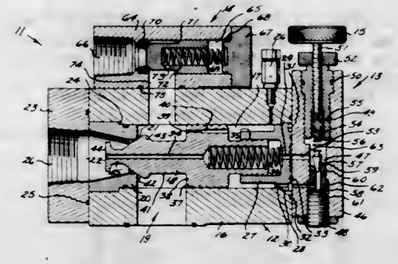
3,468,335
FLOW LIMIT DEVICE
Eugene A. Skoli, Harwood Heights, Chester J. Witt, Deerfield, Sigmund P. Skoli, Elmwood Park, and Harry G. Mojonnier, River Forest, Ill., assignors to Mojonnier Bros. Co., Chicago, Ill., a corporation of Illinois
Filed Dec. 22, 1967, Ser. No. 692,871
Int. Cl. F16k *17/28;* **G01f** *1/00*
U.S. Cl. 137—486 **10 Claims**



Apparatus for throttling fluid flow at rates above a selected maximum in which a fluid-transmitting duct has a partition with a flow-control orifice and surge-responsive plummet is situated in the duct for selectively reducing flow through the orifice, and a sensing member is disposed in the duct to respond to the presence of the plummet in its flow-reducing position for developing a corresponding control signal.

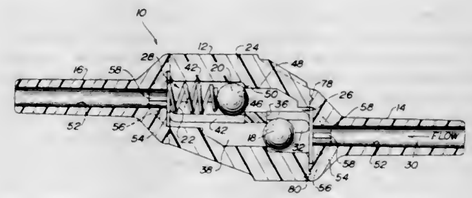
3,468,336
HYDRAULIC CONTROL VALVE FOR HIGH PRESSURE HYDRAULIC APPLICATIONS
Cedric A. Barrett, Grand Rapids, and William Phillips, Wyoming, Mich., assignors to Grand Valley Machine & Tool Co., Grand Rapids, Mich., a corporation of Michigan
Filed Mar. 9, 1967, Ser. No. 621,912
Int. Cl. F16k *15/18, 31/163*
U.S. Cl. 137—489 **9 Claims**

A valve for principal use in association with press actuated hydraulic cylinders and including a pilot section, an unloading section and a check valve section wherein the pilot responsive unloading valve includes a new and improved relieved snubber or buffer and controlled



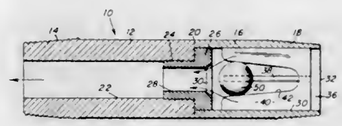
through-flow to pilot and wherein the modular relation of valve elements admits of simple assembly, disassembly and manufacture while providing a wider range of capacity in a given valve size.

3,468,337
FLOW CONTROL VALVE ASSEMBLY
Richard L. Smirl, La Grange Park, Ill., assignor to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois
Filed Dec. 6, 1965, Ser. No. 511,772
Int. Cl. F16k *17/26, 15/00;* **B21d** *53/00*
U.S. Cl. 137—493.8 **7 Claims**



A two stage control valve adapted to allow fluid flow through such valve at a predetermined low rate of flow in one direction when the fluid is below a predetermined pressure and to allow fluid flow at a predetermined higher rate of flow in the same direction when the fluid is above said predetermined pressure, the valve further being adapted to allow unrestricted flow in the opposite direction.

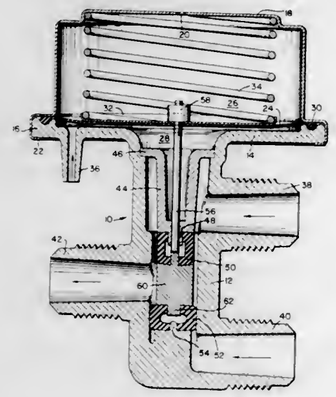
3,468,338
FLOW REGULATOR
Arch Patterson, 1303 Boxwood Drive, Sea Girt, N.J. 08750
Filed Aug. 22, 1967, Ser. No. 662,410
Int. Cl. F16k *31/08, 15/04*
U.S. Cl. 137—517 **5 Claims**



A safety shut-off valve within a flow passageway having a magnetic flow-through valve seat along said passageway, a magnetic closure, and said seat and closure being located so their polarities are in repelling relation-

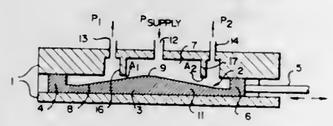
ship with one another to maintain said passageway open unless a downstream loss of pressure occurs.

3,468,339
PNEUMATICALLY OPERATED MIXING VALVE
Robert A. Gray, Goshen, Ind., assignor to Robertshaw Controls Company, Richmond, Va., a corporation of Delaware
Filed Mar. 3, 1967, Ser. No. 620,486
Int. Cl. F16k *11/02, 31/145, 25/00*
U.S. Cl. 137—625.4 **10 Claims**



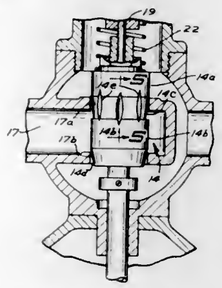
A control device including a pneumatically operated pressure regulator assembly, a valve assembly having a body member with a plurality of fluid inlets and a common outlet, a plurality of deformable, resilient plugs disposed between the fluid inlets and the discharge outlet, a force-transmitting mechanism interconnects the pressure regulator and the plugs to exert axial forces upon the plugs and deform same, thus varying the mixture of the fluids passing through the body member in accordance with a pressure signal applied to the regulator assembly.

3,468,340
MECHANICAL-TO-FLUID INTERFACE
Carmine V. Di Camillo, Silver Spring, Md., assignor to Bowles Engineering Corporation, Silver Spring, Md., a corporation of Maryland
Filed June 13, 1966, Ser. No. 557,146
Int. Cl. F15 *1/10*
U.S. Cl. 137—625.48 **5 Claims**



A mechanical-to-fluid interface for converting linear motion to a pair of differentially varying fluid pressure signals is achieved by differentially varying the areas of two fluid passages in response to the linear motion. One side of each passage is defined by the sloping surface of a respective one of a pair of back-to-back wedges, the wedges being jointly slidable perpendicular to the planes of the variable areas in response to the linear motion. Pressurized fluid flow divides between the passages in proprtion to the passage areas to provide the differentially variable pressure signals.

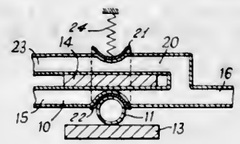
3,468,341
PRECISION VACUUM CONTROLLER
Douglas H. Newcomb, Hudson Falls, and Charles B. Nicholson, Jr., Glen Falls, N.Y., assignors to Broughton Corporation, Glen Falls, N.Y., a corporation of New York
Filed Nov. 19, 1964, Ser. No. 412,370
Int. Cl. F16k *31/145, 31/365*
U.S. Cl. 137—625.3 **1 Claim**



1. A vacuum control valve including:
(a) a housing defining a chamber therein;
(b) a suction conduit having a sealed end communicating with said chamber and having a generally arcuate diametrically aligned passage through the walls thereof to provide valve seats and to provide communication between the interior thereof and said chamber;
(c) an inlet communicating with said chamber;
(d) a valve member arranged for sealing with said seats including:
(1) a pair of longitudinally spaced generally arcuate sealing portions receivably into said seats for sealing therewith against the outer periphery thereof;
(2) an opening portion adjacent each of said sealing portions being tapered to provide progressively increasing communication between the inlet and said chamber;
(3) a plurality of slots extending longitudinally of said valve member arranged on one of said arcuate sealing portions and extending therefrom onto the adjacent tapered portion, the ends of at least certain of the slots on the arcuate portion being spaced longitudinally of the valve to provide a plurality of progressively increasing and successively opening communication passages as the valve is moved through said seats such that the ends of the slots may be arranged respectively on either side of the wall of the suction conduit affording the only communication between the suction conduit and the chamber;
(e) a control chamber defined by said housing and having a pressure responsive diaphragm member therein, said diaphragm being connected to said valve member for actuation thereby; and
(f) means for applying valve positioning pressure to said diaphragm for initially opening the same.

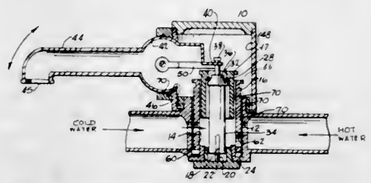
3,468,342
FLUID CONTROL DEVICES
David John Craft, Taplow, England, assignor to British Telecommunications Research Limited, Taplow, England, a British company
Filed Oct. 18, 1965, Ser. No. 497,031
Claims priority, application Great Britain, Nov. 10, 1964, 45,805/64
Int. Cl. F16l *55/14;* **F15d** *1/02*
U.S. Cl. 137—625.66 **7 Claims**

The invention disclosed relates to a fluid control device suitable for use in a fluid logic system and comprises the provision of two inter-engaging flexible tubes so arranged that the distention of either tube by fluid will involve the constriction and possible complete closure of the other,



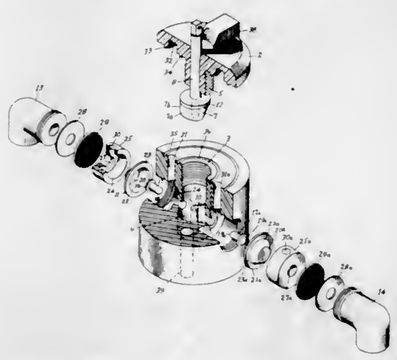
thereby controlling fluid flow therein. It is shown applied to a two-state logical element, an OR gate, and a bistable device or toggle.

3,468,343
SPOUT OPERATED MIXING VALVE
Violet Siano, 264 Milton Ave., Ballston Spa, N.Y. 12020
Filed Oct. 5, 1967, Ser. No. 673,178
Int. Cl. F16k *19/00*
U.S. Cl. 137—636.2 **5 Claims**



A swinging spout faucet or valve adapted to be connected to hot and cold sources wherein the volume of water flow is controlled by manually pivoting the spout about one end in a vertical plane and the temperature of the water is controlled by manually pivoting the spout about the same end in a horizontal plane.

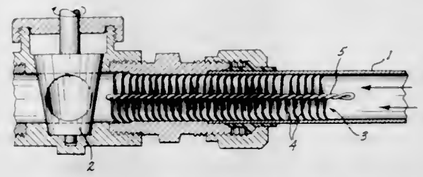
3,468,344
SINGLE CONTROL DUAL FLOW VALVE
Ross C. Sanford, 102 Cleveland Ave., Milford, Ohio 45150
Filed June 16, 1966, Ser. No. 558,060
Int. Cl. F16k *7/06, 19/00*
U.S. Cl. 137—636.4 **9 Claims**



The valve structure particularly suited for water faucets which is of simple and inexpensive construction and is devoid of springs and packing glands, the flow of water through the valve being controlled by a displaceable diaphragm movable by a cam actuated plunger to a closed position in which it seals the inlet passageway of the valve,

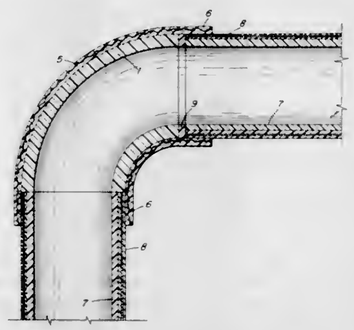
the diaphragm being movable to an open position by water pressure in the inlet passageway upon movement of the cam to release the plunger for inward movement, the diaphragm also serving to seal the cam and the plunger from contact by water flowing through the valve, the construction being particularly adapted for use in a single control dual flow valve wherein the flow of both hot and cold water is controlled using a single cam to control an opposing pair of plungers and coacting diaphragms.

3,468,345
MEANS FOR LIMITING TEMPERATURE RISE DUE TO ABRUPT ALTERATION OF THE FLOW RATE OF GAS UNDER HIGH PRESSURE THROUGH A CONDUIT
Thomas K. Tam and James M. Lea, Seattle, Wash., assignors, by mesne assignments, to "Automatic" Sprinkler Corporation of America, Cleveland, Ohio, a corporation of Ohio
Filed May 31, 1966, Ser. No. 553,915
Int. Cl. F15d *1/02;* **F16k** *47/00;* **F16l** *55/00*
U.S. Cl. 138—38 **3 Claims**



A metallic wire brush is positioned in a flow line conducting a gas which is either combustible or capable of supporting combustion. This brush is mounted closely adjacent a point of blockage, e.g., a valve, upstream in said flow line and is in heat transfer contact with the walls of said flow line. The brush functions to dissipate any shock wave and its attendant heat of compression which will be developed when any sudden pressure surges occur upstream of said point of blockage.

3,468,346
PIPE FITTINGS HAVING AN INNER THERMOPLASTIC SURFACE AND AN OUTER THERMOSET SURFACE
Michael John Onifer, Jr., Elkton, and Arthur Alfred Smith, Chesapeake City, Md., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine
Filed Mar. 1, 1966, Ser. No. 530,831
Int. Cl. F16l *9/00, 11/00, 11/12*
U.S. Cl. 138—109 **5 Claims**



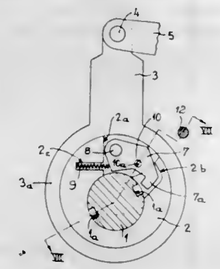
This invention relates to a plastic pipe fitting having a thermoplastic inner liner and a fiber reinforced thermo-

set outer layer extending beyond the openings of the fitting so that pipes may be joined with a continuous thermoplastic inner liner.

3,468,347
HEDDLE FRAME ACTUATING GEARING FOR LOOMS

Joseph Fumat, Lyon, France, assignor to Societe des Mecaniques Verdol, Lyon, Rhone, France, a French limited liability company

Filed Sept. 15, 1967, Ser. No. 668,041
Claims priority, application France, Oct. 5, 1966, 47,784
Int. Cl. D03c *1/00;* **G05g** *3/00, 1/00*
U.S. Cl. 139—66 **6 Claims**

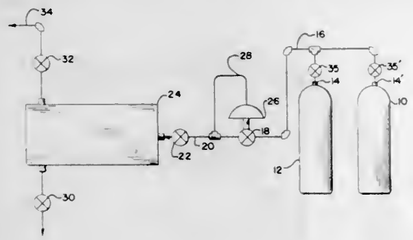


In a heddle frame actuating gearing eccentrics are provided which are selectively connectable either with an intermittently rotated grooved shaft or with a stationary part. Each eccentric carries a pivoted pawl which carries a pin-like member adapted to cooperate with the stationary part and with a movable circular cam surface having notches or grooves which may either register to permit the pin-like member to move outwardly, so that the pawl may be disengaged from the shaft and engaged with the stationary part, or may become disaligned to depress the pin-like member, and whereby the pawl may be disengaged from the stationary part and engaged with the shaft.

3,468,348
METHOD OF INFLATING ELASTOMERIC CHAMBERS WITH NITROGEN GAS

Lawrence R. Sperberg, Box 12308, El Paso, Tex. 79912

Filed Jan. 9, 1967, Ser. No. 608,173
Int. Cl. B65h *31/04;* **F17d** *1/04;* **F17c** *7/02*
U.S. Cl. 141—1 **13 Claims**

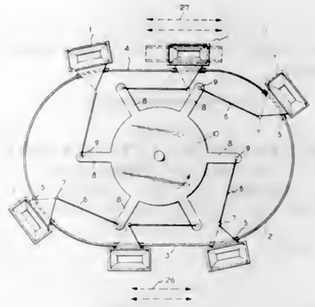


A source of nitrogen gas, provided with a manifold, is substituted for the air compressor in a conventional air compressor system for inflating pneumatic air chambers. The source of nitrogen gas may include a liquid nitrogen reservoir and suitable pressure regulating valves for maintaining the storage tank and the container in safe operating condition.

3,468,349
SACK FILLING

Frederick George Davis, Holbrook, and Robert Dean, Felixstowe, England, assignors to Fisons Fertilizers Limited, Felixstowe, Suffolk, England

Filed Jan. 24, 1967, Ser. No. 611,312
Claims priority, application Great Britain, Jan. 28, 1966, 3,863/66; Apr. 21, 1966, 17,435/66
Int. Cl. B65b *1/22, 1/28, 3/18*
U.S. Cl. 141—75 **7 Claims**

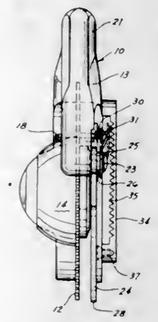


An arrangement for filling sacks wherein the sacks are attached to a movable hopper remote from the filling station and the hopper with attached sack is transported to the sack filling station. Special means are provided for opening the mouth of the sack at the sack filling station.

3,468,350
COMBINED BLADE GUARD AND DEPTH GAGE FOR A PORTABLE RADIAL SAW

Richard W. Logan, York, Maine, assignor to Packers Development Corporation, Rochester, N.H.

Filed Mar. 9, 1967, Ser. No. 621,955
Int. Cl. B27b *9/02, 5/28*
U.S. Cl. 143—43 **1 Claim**

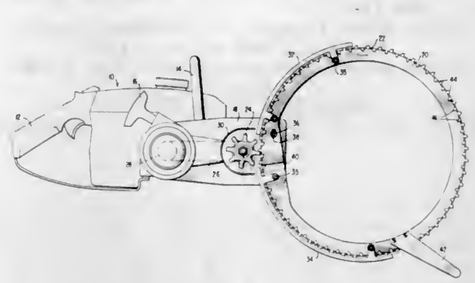


There is provided in a hand-held power saw having a blade of the circular type for making cuts to varying depths in a single sawing operation, a blade-guarding and depth-gaging member pivotally supported on a frame and spring urged in a direction to extend beyond the blade and a control lever, cooperating with said member, also pivoted to the frame for swinging movement to determine the extent of exposure of the blade and operable by the operator's thumb during a sawing operation to vary the depth of the cut.

3,468,351
POWER DRIVEN CONTINUOUS CUTTING STRIP

Jack W. Ehlen, Torrance, Calif., assignor to McCulloch Corporation, Los Angeles, Calif., a corporation of Wisconsin

Filed Dec. 28, 1966, Ser. No. 605,371
Int. Cl. B27b *5/14, 17/08, 33/08*
U.S. Cl. 143—44 **8 Claims**

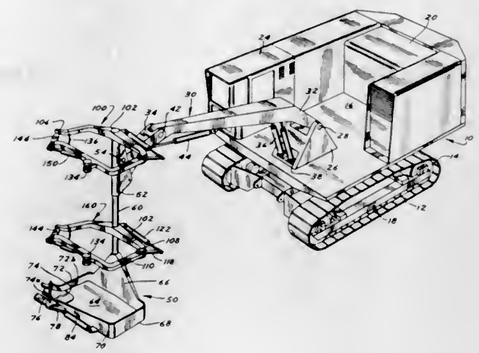


A portable, power driven saw having a radially flexible continuous cutting strip driven about a rigid support defining a substantially circular and continuous travel path to prevent flexing of the cutting strip. The cutting strip is driven about the rigid support by a rotating sprocket which drivingly engages portions of the cutting strip.

3,468,352
TREE SHEAR AND ACCUMULATOR APPARATUS

Robert W. Larson, Port Arthur, Ontario, Canada, Joseph C. Jam, Gilbert, Minn., and John P. Lundberg, Washburn, Wis., assignors to Beloit Corporation, Beloit, Wis., a corporation of Wisconsin

Filed Jan. 10, 1968, Ser. No. 696,863
Int. Cl. A01g *23/08;* **B27c** *9/00*
U.S. Cl. 144—34 **14 Claims**

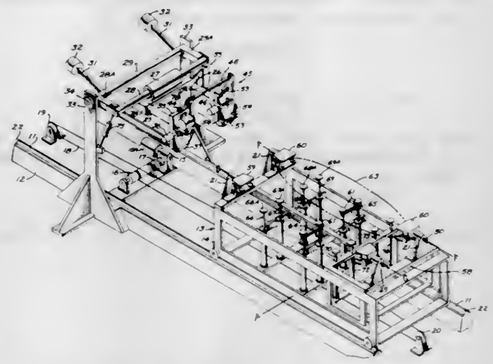


A hydraulically actuated reach boom on a vehicle pivotally mounts a boom arm that in turn pivotally mounts a shear and accumulator assembly. Hydraulic actuators are connected to said reach boom and to said arm and assembly for moving said assembly between vertical tree severing and horizontally dumping positions. The assembly includes a base subassembly having tree severing means for supporting holding the lower ends of the severed trees and a pair of accumulator subassemblies above the base subassembly for receiving each severed tree and retaining one or more severed trees in an upright condition on the base subassembly, the accumulator subassemblies being operable to facilitate emptying the trees.

3,468,353
DUPLICATING APPARATUS

Donald C. Okey, 1027 Pearl St., La Jolla, Calif. 92037

Filed Dec. 20, 1966, Ser. No. 602,750
Int. Cl. B27c *5/00;* **B23c** *1/16;* **B26d** *5/08*
U.S. Cl. 144—144 **2 Claims**

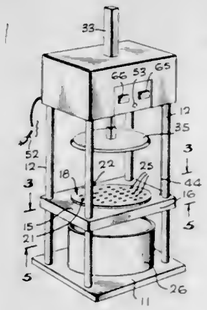


A surfboard duplicating machine having a first clamping means for clamping a surfboard pattern thereto; a second clamping means for clamping a blank to be shaped to the contour of the surfboard pattern; a pattern distorting means coupled to the surfboard pattern and a blank distorting means coupled to the blank for distorting the natural contour of the blank; cam follower means mounted in slidable and rotatable relationship with the surfboard pattern for allowing the cam follower to come into physical contact with the entire surface area of the surfboard pattern, and a cutting means mounted in slidable and rotatable relationship with said blank and coupled to said cam follower means for cutting said blank according to the movements of the cam follower means thereby resulting in shaping the blank according to the contour and shape of the surfboard pattern.

3,468,354
FOOD-EXTRUDING MACHINE

Donald R. Reachert, 227 S. Turner, Fullerton, Calif. 92633

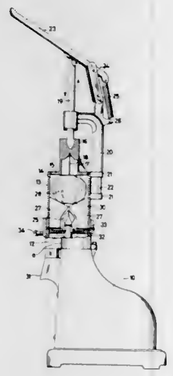
Filed Feb. 21, 1967, Ser. No. 617,520
Int. Cl. A01f *29/00, 35/22;* **A01d** *55/02*
U.S. Cl. 146—78 **5 Claims**



A reversible motor is connected through a drive train to advance a ram-mounted piston within a smooth walled container having a plurality of openings in one of its ends. The container is seated on an extrusion plate provided with a plurality of shaped orifices registering with the

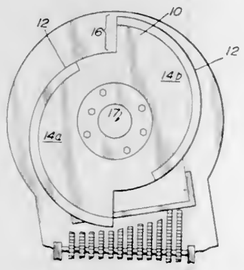
openings in the end of the container. Switch means start and stop the motor, thereby determining the duration of each extrusion sequence and, thus, the length of the extruded elements. A cutter mounted below the extrusion plate is adapted to severe the extruded elements when its actuating mechanism is activated by the motor stop switch. A motor reversing switch is actuated by a ram limit control to withdraw the piston from the container at the completion of the extrusion cycle.

3,468,355
DEVICE IN MACHINES FOR CUTTING FOODSTUFF
Ernst Otto Sigfrid Häll, Stockholm, Sweden, assignor to AB Halldemaskiner, Stockholm, Sweden, a corporation of Sweden
Filed Mar. 6, 1967, Ser. No. 620,688
Int. Cl. A01f *31/00;* **A23n** *3/00*
U.S. Cl. 146—78 **1 Claim**



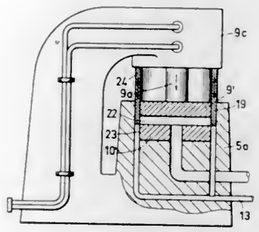
A device for cutting up vegetables and the like, which comprises a housing having angular radially extending knives. A shaft carries a cutter located in the lower portion of the housing while a piston is movably mounted in the top of the housing and is used to press downwardly the vegetable being cut. A manual lever is used to operate the piston and also to turn the housing.

3,468,356
MULTI-EDGE ROTARY BLADE
Kenneth V. Brauns, Parkville, Mo., assignor to Armour and Company, Chicago, Ill., a corporation of Delaware
Filed Feb. 8, 1967, Ser. No. 614,575
Int. Cl. B26d *4/34*
U.S. Cl. 146—95 **2 Claims**



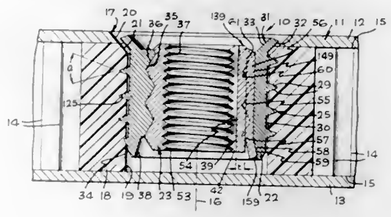
This invention relates to a multi-edge rotary blade for cutting any type product including meat and the like, and more particularly to a rotary blade having a plurality of cutting edges eccentrically disposed along the circumference of the blade to thereby make more than one slice per revolution.

3,468,357
METHOD AND APPARATUS FOR MAKING ARTIFICIAL SAUSAGE CASINGS AND THE LIKE
Walter Becker, Uferstrasse 46, Heidelberg, Germany
Filed Jan. 3, 1966, Ser. No. 518,361
Claims priority, application Germany, Sept. 1, 1965, B 8,356
Int. Cl. B29d *23/04;* **B30b** *9/02*
U.S. Cl. 146—237 **6 Claims**



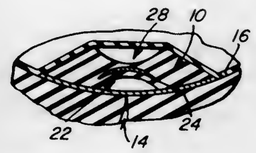
Artificial sausage casing is produced by extrusion of fibrous waste skin material from an apparatus in which the coarsely divided material in swelled condition is passed between pairs of parallel platens which move toward and away from each other to separate the fibers from each other before the latter are extruded through an annular shaping nozzle.

3,468,358
INSERT HAVING REMOVABLE LINER
Robert Neuschotz, 1162 Angelo Drive, Beverly Hills, Calif. 90210
Filed Aug. 28, 1967, Ser. No. 663,869
Int. Cl. F16b *39/06, 39/24*
U.S. Cl. 151—8 **8 Claims**



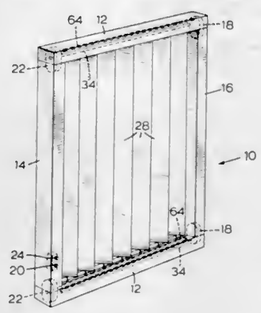
A threaded insert assembly having an externally threaded outer sleeve and an internally threaded liner, with the sleeve and liner having engaging threads, and being retained against separation by a key extending axially within opposed grooves in the sleeve and liner. The key is formed of an elongated element doubled back to a U-shaped configuration having a radially inner leg which is straight and a radially outer leg with a first straight portion and a radially outwardly flared end. The key is removed from the grooves by a tool which engages the extremity of the radially inner straight leg of the key, and which extends into and is located by a slit formed in the sleeve in communication with the grooves.

3,468,359
TIRE BOOT
Seth E. Rutledge, Tampa, Fla., assignor to Small Business Administration
Filed Nov. 17, 1966, Ser. No. 595,197
Int. Cl. B60c *21/02*
U.S. Cl. 152—367 **5 Claims**



A tire boot secured to the inner wall of a tire in overlying and sealing relation to a puncture in the tire, which boot comprises a relatively rigid resilient member having a generally conical upper surface and a generally planar lower surface provided with a concavity for reducing the pressure exerted by the fluid within the tire against the wall of the tire contiguous with the puncture.

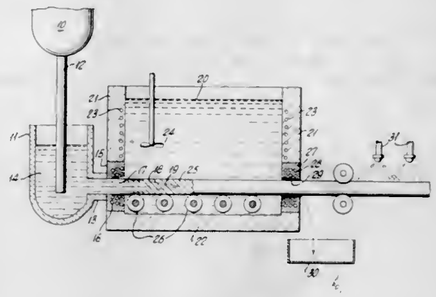
3,468,360
VENETIAN BLIND
Harold A. Payne, 252 Bering Ave., Toronto, Ontario, Canada
Filed July 18, 1968, Ser. No. 745,761
Int. Cl. E06b *9/36*
U.S. Cl. 160—172 **6 Claims**



This invention is a Venetian blind assembly wherein a series of carriages each adapted to support a Venetian blind slat, are interconnected along a track by means of rigid links, the free ends of which slidably engage in inclined slots in the carriages as the carriages are actuated towards and away from each other. The lead carriage is a driven carriage and is actuated along the track as it threadedly engages with a threaded shaft. The slats are adapted to be tilted by means of a splined shaft that extends through each of the carriages and cooperates with a gear ring carried by the base of the slat. The assembly is simple and compact.

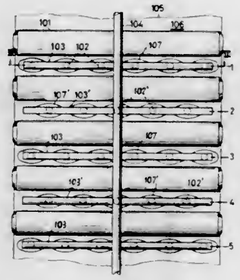
3,468,361
CONTINUOUS METAL CASTING METHOD
Howard A. Fromson, Rogues Ridge Road, Weston, Conn. 06880
Filed Nov. 22, 1966, Ser. No. 596,292
Int. Cl. B22d *11/12*
U.S. Cl. 164—89 **4 Claims**

The disclosure relates to a method of continuously casting metal in which a molten metal is cast continuously by introducing molten metal under pressure through a mold to form a partially solidified casting with a solid shell. The casting so formed is advanced horizontally directly into contact with a bath of liquid coolant and at a depth at which the pressure acting on the periphery of the solid casting shell sufficiently counteracts the pressure



of the molten core in this casting to prevent rupture. The casting is maintained substantially at this depth until the casting is sufficiently solidified in the coolant to prevent outbreak of the molten core, and the casting so sufficiently solidified is discharged continuously from the coolant bath.

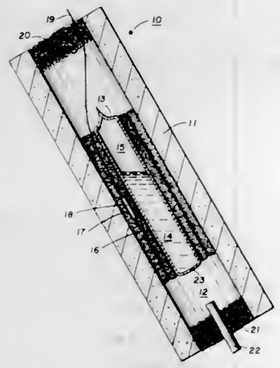
3,468,362
METHOD OF COOLING CAST MEMBERS FROM A CONTINUOUS CASTING OPERATION
Max Eduard Burkhardt, Zurich, and Alfred Ernst Zehnder, Baden, Switzerland, assignors to Concast A.G., Zurich, Switzerland
Filed May 29, 1967, Ser. No. 641,806
Claims priority, application Switzerland, May 31, 1966, 7,880/66
Int. Cl. B22d *11/12;* **B05b** *1/20*
U.S. Cl. 164—89 **7 Claims**



A method of cooling a cast member from a continuous casting operation including the steps of moving the cast member along a path of travel, arranging a multiplicity of spray locations in a plurality of rows disposed across the path of travel, positioning the spray locations in adjacent rows in staggered relationship in the direction of the path of travel, and spraying coolant fluid onto the surface of the cast member whereby the spray from each location is deposited in an individual area on the surface and the distribution of the coolant fluid in the areas in each row is non-uniform and the sum of the distribution of the coolant fluid in a selected number of rows having the staggered spray locations provides a uniform distribution of the coolant fluid across the surface of the cast

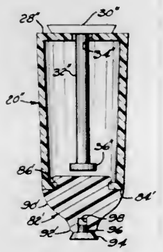
member for achieving a uniform cooling effect for the cast member.

3,468,363
METHOD OF PRODUCING HOMOGENEOUS INGOTS OF MERCURY CADMIUM TELLURIDE
Sidney G. Parker, Dallas, and Herbert Kraus, Richardson, Tex., assignors to Texas Instruments Incorporated, Dallas, Texas, a corporation of Delaware
Filed Oct. 10, 1967, Ser. No. 674,288
Int. Cl. B22d *27/04;* **C22c** *7/00, 17/50*
U.S. Cl. 164—125 **3 Claims**



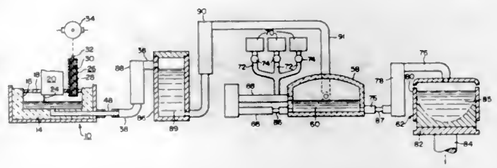
A method of producing homogeneous ingots of mercury cadmium telluride by quenching a quartz ampoule containing a homogeneous mercury cadmium telluride liquid by directing a stream of cool gas against the bottom of the ampoule to cool the liquid to the solid state within less than about 40 seconds while the ampoule is positioned within the furnace used to heat the elemental mercury, cadmium and tellurium to a reaction temperature.

3,468,364
RISER FORMER
Gerald R. Rusk, Naumee, and Marshal W. Wical, Sydney, Ohio, assignors to The Freeman Supply Company, Toledo, Ohio, a corporation of Ohio
Filed Oct. 20, 1966, Ser. No. 588,149
Int. Cl. B22c *7/00;* **B28b** *7/28;* **B29b** *1/06*
U.S. Cl. 164—235 **9 Claims**



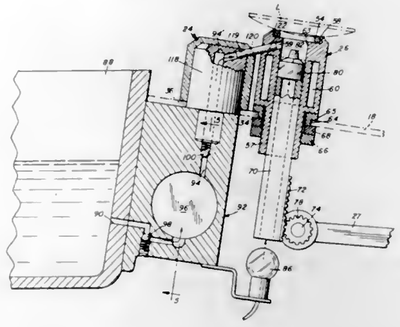
A riser form which can be placed on a pattern, and sand tamped thereabout, following which the riser form can be raised part way out of the tamped sand and additional sand tamped thereabout, and the process repeated as desired to produce an opening in packed sand that is longer than the riser form without sand falling into the cavity thus formed.

3,468,365
ALUMINUM PRODUCTION APPARATUS
Paul H. Scheffler, Jr., Lima, Ohio, assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Sept. 1, 1967, Ser. No. 665,012
Int. Cl. B22d *1/00;* **B22c** *19/04*
U.S. Cl. 164—266 **9 Claims**



Apparatus for the continuous production of light metals such as aluminum including an electrolytic reduction cell for producing a liquid metal bath having a surface at an optimum distance below the cell electrode, an alloy holding furnace having upper and lower bath level limits, a conduit with pump for conveying metal to the alloy holding furnace and responsive to the liquid metal bath level in the electrolytic cell, and a conduit with a pump for conveying liquid metal to a casting mold.

3,468,366
LENS BLOCKER
Jack M. Suddarth, Muskogee, Okla., assignor to Coburn Manufacturing Company, Inc., Muskogee, Okla., a corporation of Oklahoma
Filed Feb. 20, 1967, Ser. No. 617,213
Int. Cl. B22d *19/00*
U.S. Cl. 164—332 **1 Claim**

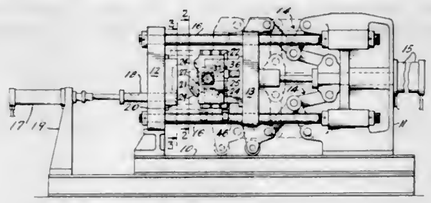


A lens blocking apparatus having a heated container for low melting temperature alloys, a chuck for holding a lens blank over a blocking chamber and pump means for delivering the fluid alloy to the chamber.

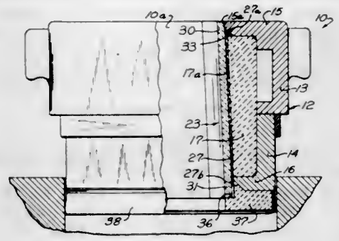
3,468,367
SIDE CORE LOCKING MECHANISM FOR DIE CASTING MACHINE
Alfred F. Bauer, Toledo, Ohio, assignor to National Lead Company, New York, N.Y., a corporation of New Jersey
Filed Aug. 12, 1966, Ser. No. 572,106
Int. Cl. B22d *33/04;* **B29c** *1/16*
U.S. Cl. 164—340 **5 Claims**

A core operating mechanism for a die casting machine having a stationary plate and a sliding plate. A rigid frame having opposed receiving seats is mounted on the sliding plate between the stationary and sliding plates.

A core slide is mounted on the frame and is reciprocated by a cylinder which is operatively connected between the frame and the core slide. A lock arm having opposed outer ends is pivotally mounted on the core slide. A cylinder driven rack and pinion is connected to the lock arm and is effective to move the outer ends of the lock arm into and out of locking engagement with the frame receiving seats.



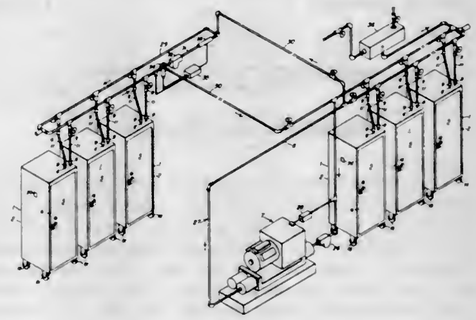
3,468,368
HOT TOPS
Walter M. Charman, Jr., Shaker Heights, and James H. Borden, Cleveland, Ohio, assignors to Oglebay Norton Company, Cleveland, Ohio, a corporation of Delaware
Application Oct. 7, 1966, Ser. No. 598,554, which is a continuation-in-part of application Ser. No. 398,664, Sept. 23, 1964. Divided and this application Sept. 5, 1968, Ser. No. 757,684
Int. Cl. B22d *7/10;* **B22c** *1/26;* **C04b** *35/14*
U.S. Cl. 164—359 **7 Claims**



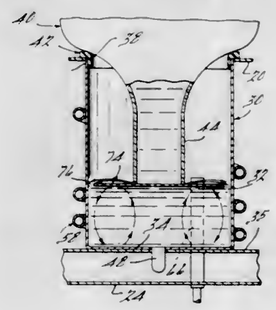
A hot top refractory member comprises a body having a surface adapted to contact molten metal. The body is constructed of a material including 15 to 85 parts by weight of a cellular granular clay material having a density of approximately 25 to 35 lbs. per cu. ft., 15 to 85 parts by weight of sand, 3 to 20 parts by weight of a binder, and 0 to 6 parts by weight of a cereal binder.

3,468,369
PROCESS AND APPARATUS FOR HANDLING PERISHABLE MATERIALS
Harlan M. Tetrick, McLean, and Charles E. Reed, Falls Church, Va., assignors, by direct and mesne assignments, to Freez-Porter Systems, Inc., Falls Church, Va., a corporation of Virginia
Filed Apr. 10, 1967, Ser. No. 629,653
Int. Cl. F25b *13/00, 29/00;* **F28d** *15/00*
U.S. Cl. 165—2 **9 Claims**

A process and apparatus for handling frozen foods or other perishable materials under controlled temperature conditions in which the perishable materials required at any given destination are delivered thereto from a distribution center in one or more portable, insulated containers, individually piped for circulation therethrough of a liquid heat transfer medium for controlling their internal temperatures but unequipped with individual primary heat exchangers, the materials are loaded into the containers at the distribution center and remain therein until removed at the destination, the containers when empty are returned to the center for reuse, and the piping of each container is quick connectible to any of a plurality of conveniently located primary heat exchangers, each adapted to supply the liquid medium at a selected temperature to a plurality of containers for producing in the containers the internal temperatures required at source, destination or during delivery.

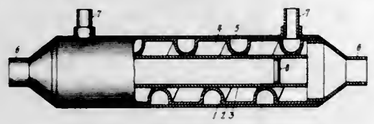


3,468,370
WATER COOLER
Herman B. Castillo, Clawson, Mich., assignor to Temprite Products Corporation, Troy, Mich., a corporation of Michigan.
Filed Nov. 13, 1967, Ser. No. 682,424
Int. Cl. A23c *3/04;* **B67d** *5/08, 5/14*
U.S. Cl. 165—66 **10 Claims**



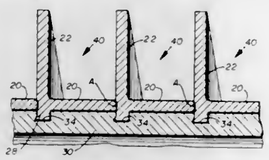
A fluid dispensing unit comprising a generally upright cabinet having means therein defining a fluid reservoir; an inverted fluid bottle supported on the cabinet and having a fluid discharge neck portion projecting downwardly into the reservoir; a heat exchanging assembly disposed within the cabinet and including heat transfer means adjacent the reservoir for changing the temperature of fluid contained therein; and a generally flat, smooth baffle member disposed within the reservoir and adapted to float on the surface of the fluid contained therein, the baffle member thereby always being directly below the bottle so as to effectively deflect fluid flowing out of the neck portion thereof outwardly toward the heat transfer means, regardless of the fluid level within the reservoir.

3,468,371
HEAT EXCHANGERS
Diedrich Menze, 30 Jackson Ave., Box Hill North, Victoria, Australia
Filed Sept. 8, 1967, Ser. No. 666,423
Claims priority, application Australia, Nov. 11, 1966, 13,829/66
Int. Cl. F28d *7/10, 7/02*
U.S. Cl. 165—156 **6 Claims**



The present invention provides a novel heat exchanger which comprises three concentric tubular members, the middle one of which has a spiral corrugation therein which provides walls defining two separate passageways between the inner tube and the outer tube. The corrugation may extend into the inner tube, which is open at both ends, so that fluid flowing through the inner tube contacts a relatively large heat exchanging surface therein. Fluid inlet and outlet connections are provided for the passageways at the ends of the heat exchanger. The invention also provides a method of manufacture of the heat exchanger wherein the inner tube is supported on a mandrel and the middle tube has the spiral corrugation rolled therein to a depth so as to at least contact the inner tube, the contact being such that no further sealing between the tubes is required. The heat exchanger of the present invention is exceedingly economical to manufacture and may be made any desired length or of any suitable diameter tube.

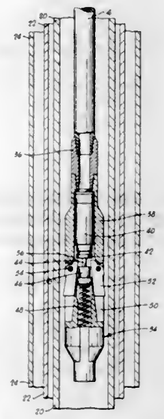
3,468,372
HEAT TRANSFER FINNED TUBING
Arvid C. K. Niblen, Wooster, Ohio, and Walter Dorsey, Tulsa, Okla., assignors to The Happy Company, Tulsa, Okla., a corporation of Oklahoma
Filed May 22, 1967, Ser. No. 640,114
Int. Cl. F28b *1/36;* **B21d** *53/02*
U.S. Cl. 165—184 **4 Claims**



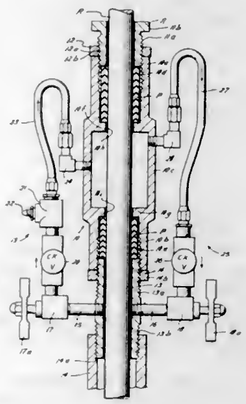
This invention relates to a heat transfer tubing provided with a fin strip having an upstanding radial portion, a foot portion perpendicular to the radial portion and a boss portion extending downwardly into a helical groove of the tubing in metal to metal interlocking relationship. The foot portion of the strip is equal to the lead of said spiral groove to afford metal to metal contact with the back of the radial portion of the strip.

3,468,373
APPARATUS FOR SEVERING WELL CASING IN A SUBMARINE ENVIRONMENT
Samuel H. Smith, 2224 NW. 52nd St., Oklahoma City, Okla. 73112
Original application Sept. 9, 1966, Ser. No. 578,326, now Patent No. 3,378,072, dated Apr. 16, 1968. Divided and this application Jan. 2, 1968, Ser. No. 705,589
Int. Cl. E21b *29/00, 43/112*
U.S. Cl. 166—55.8 **3 Claims**

Apparatus for cutting submerged multi-tubular well casing which includes an elongated tubing string dimensioned for passage into the innermost casing string and carrying a rotary casing cutting tool similarly dimensioned. The tool includes a plurality of elongated cutting members detachably and pivotally secured to the body of the tool for pivotation about a horizontal axis into cutting engagement with the innermost casing string, and shorter than required to contact the internal wall of the outermost casing string. A piston mechanism is provided in the cutting tool for pivoting the cutting members into cutting position, and a plurality of longer cutting members are provided for interchanging with those pivotally secured to the body of the cutting tool for the purpose of cutting through one or more casing strings located outwardly of the innermost casing string after the latter casing string has been severed. A plurality of variable length connecting subs are provided for insertion in the elongated tubing string in order to adjust the position of the cutting tool in the innermost casing string.

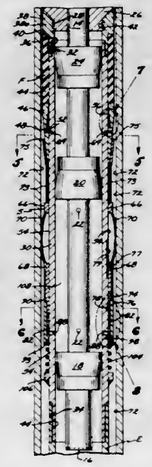


3,468,374
SELF-COOLED OIL WELL POLISH ROD STUFFING BOX
Louie E. Reeves, 113 W. Berry, Hobbs, N. Mex. 88240
Filed June 13, 1967, Ser. No. 645,719
Int. Cl. F01p *3/12, 5/10;* **F16j** *15/02*
U.S. Cl. 166—84 **7 Claims**



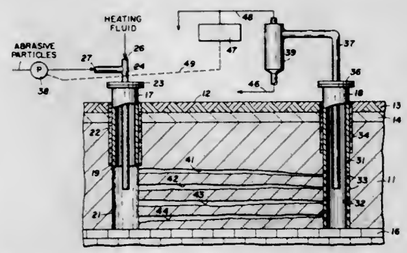
A cooling chamber is disposed coaxially between two packing chambers to form a housing adapted to receive a moving polish rod. Input and output supply lines having oppositely opening one-way valves communicate between the cooling chamber and the interior of the production tubing in an oil well to circulate the production fluid through the cooling chamber as the pressure in the production tubing is altered by the pumping motion of the polish rod.

3,468,375
OIL WELL LINER HANGER
William H. States, Garden Grove, Calif., assignor to Midway Fishing Tool Company, Long Beach, Calif., a corporation of California
Filed Feb. 15, 1968, Ser. No. 705,853
Int. Cl. E21b *33/126, 33/129*
U.S. Cl. 166—120 **11 Claims**



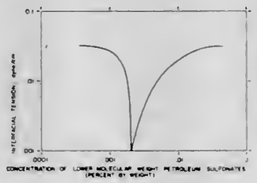
An oil well hanger adapted to be readily run into a cased well bore by a tubular setting tool to a desired depth, placed in a setting position by hydraulic fluid under pressure, set by downward movement of said setting tool, with the setting tool thereafter being disengaged from the liner hanger for withdrawal from the well bore. The well hanger is of such structure that it may be set and reset at various depths in a cased well bore.

3,468,376
THERMAL CONVERSION OF OIL SHALE INTO RECOVERABLE HYDROCARBONS
Marion L. Slusser, Arlington, and William E. Bramhall, Dallas, Tex., assignors to Mobil Oil Corporation, a corporation of New York
Filed Feb. 10, 1967, Ser. No. 615,099
Int. Cl. E21b *43/24, 43/26*
U.S. Cl. 166—272 **5 Claims**



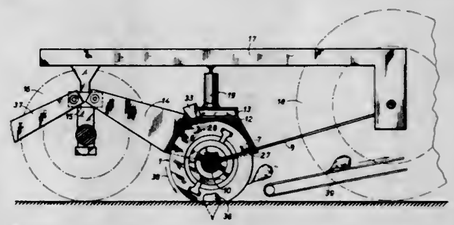
The production of hydrocarbons by pyrolysis of oil shale with controlled removal of the resulting layer of spent oil shale residue. More particularly, a procedure is described for the in situ thermal conversion of oil shale wherein fluidized abrasive particles are employed to foster improved hydrocarbon production, in amount and kind, by a controlled partial removal of the layer of spent oil shale which results from application of flowing fluids to heat exposed surfaces of the oil shale to release hydrocarbons.

3,468,377
WATERFLOODING EMPLOYING SURFACTANT SOLUTION
Peggy M. Dunlap and William R. Foster, Dallas, Tex., assignors to Mobil Oil Corporation, a corporation of New York
Filed Oct. 9, 1967, Ser. No. 673,686
Int. Cl. E21b *43/20*
U.S. Cl. 166—274 **19 Claims**



This specification discloses a method of waterflooding to recover oil from a subterranean formation. The method comprises injecting into the formation a solution of a mixture of petroleum sulfonates having a median molecular weight of from about 375 to about 430, having molecular weights from 290 to 590, no more than 10 percent by weight thereof having an average molecular weight less than 290, and no more than 15 percent by weight thereof having an average molecular weight greater than 590. It is particularly preferred to employ a restricted mixture of petroleum sulfonates having a median molecular weight of from about 400 to about 430, and having a smooth monomodal curve of molecular weight distribution between average molecular weights of about 290 and 590. The solution may be aqueous or hydrocarbonaceous. Preferably, the mixture of petroleum sulfonates is injected in an aqueous solution which also contains sodium chloride, sodium carbonate, and inorganic polyphosphates.

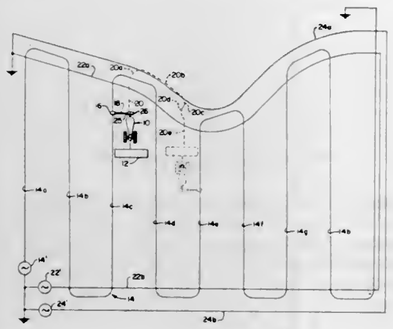
3,468,378
LIFTER FOR BEET AND OTHER ROOT PLANTS
Emile Balligand, Jemeppe-sur-Meuse, Belgium, assignor to Société Anonyme Societer, Orp-le-Grand, Belgium, a company of Belgium
Filed Oct. 20, 1965, Ser. No. 498,249
Claims priority, application Belgium, Oct. 26, 1964, 4,581
Int. Cl. A01d *25/04*
U.S. Cl. 171—58 **3 Claims**



Apparatus as disclosed for the harvesting of beet and similar plants from which the leaves and stems have been previously cut and removed. According to the preferred embodiment, a single pair, or groups of pairs, of

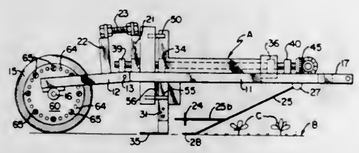
circular discs are fixed to a rotatable shaft and inclined by guide means to form a V-arrangement whereby the lower periphery of the discs penetrates the earth and dislodges and lifts beet roots for subsequent conveying. Each of the pairs of discs is mounted on the shaft by a Cardan-type arrangement so that the rotating discs are maintained in oblique planes.

3,468,379
AUTOMATIC FARMING APPARATUS
Karl Rushing and John Clarence Allen, Jr., Indianola, Miss.; said Rushing assignor to said John C. Allen, Jr., and Roy R. Brashier, Indianola, Miss.
Filed Mar. 3, 1966, Ser. No. 531,603
Int. Cl. A01b *69/04*
U.S. Cl. 172—2 **4 Claims**



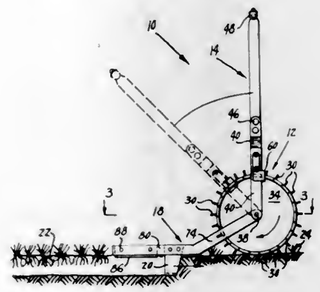
Automatic farming apparatus wherein a tractor pulling a plow or the like is adapted to trace a part defined by buried conductors and wherein a separate conductor is buried along the edges of the field for the purpose of controlling the turning of the vehicle, includes a digital control system in which the operation of the vehicle steering means, the vehicle throttle, the implement positioning means, etc. is controlled by preselected combinations of control pulses which may be generated upon crossing of the control wire or by a radio receiver responsive to a plurality of separate frequencies. The construction is such that the same control system may be used when tracing the buried conductor, or in controlling the tractor in response to remote radio signals.

3,468,380
PROBE-TYPE WEEDER AND THINNER APPARATUS FOR ROW CROPS
Daryl Herman Gompert, Mitchell, Nebr. 69357
Filed June 8, 1966, Ser. No. 556,015
Int. Cl. A01b *63/16, 33/00*
U.S. Cl. 172—6 **13 Claims**



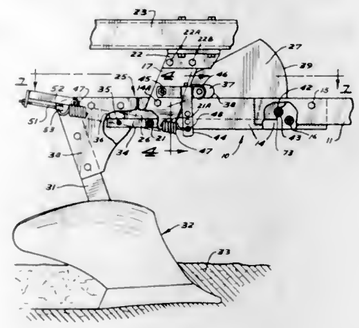
Row crop thinner apparatus having a horizontal frame wheel supported at its rear and means attached to the frame for moving the apparatus along a plant row, a plant-contacting probe carried along the row, a cutter member pivotally supported on the frame rearwardly of the probe in a normal cutting position adjacent the row surface, drive means responsive to vehicular movement for swinging the cutter about its pivotal axis out of contact with plants in the row and including a hollow drum on a horizontal shaft and a shoe supported adjacent the inner surface of the drum connected to a solenoid directing cutter movement, and control means directed by probe contact with a growing plant for energizing the solenoid to swing the cutter out of row contact and to return the cutter to its normal position after a predetermined time interval.

3,468,381
TURFING TOOL
Marvin A. Olson, 7655 Manorside Drive, Sacramento, Calif. 95832
Filed Apr. 1, 1966, Ser. No. 539,565
Int. Cl. A01b *45/04, 1/00, 3/02*
U.S. Cl. 172—19 **3 Claims**



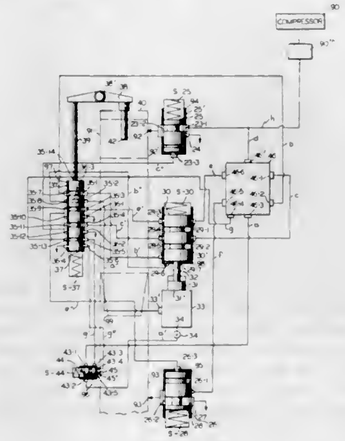
A hand driven turfing tool for cutting sod in which the opposite side edges of the band of a wheel are provided with ratchet teeth engaged by pawls on a handle yoke for driving the wheel to pull the turf cutter through the turf.

3,468,382
TRIP BEAM FOR IMPLEMENT
Sherman H. Quanbeck, Aneta, N. Dak. 58212
Filed Oct. 21, 1965, Ser. No. 499,805
Int. Cl. A01b *61/04*
U.S. Cl. 172—264 **15 Claims**



An earth working tool pivoting support beam which trips when obstructions are encountered. The support frame for the beam permits the beam to trip to give high clearance. And still holds the trip beam in rigid assembly. Springs are used for resetting the earth working tool to a working position.

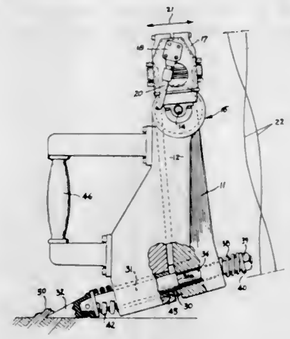
3,468,383
CONTROL OF AIR SUPPLY FOR PNEUMATIC IMPACT HAMMERS
Elmatsu Kotone, 4 Aza-Nishiyama 193, Kobayashi, Takarazuka-shi, Hyoga-ken, Japan
Filed Mar. 22, 1968, Ser. No. 715,275
Int. Cl. B23q *15/00;* **B25d** *9/14;* **B21j** *7/24*
U.S. Cl. 173—1 **6 Claims**



Method for controlling the supply of air from an air compressor to a pneumatic impact hammer by way of an air reservoir by intermitting, decreasing, or bypassing the flow intermediate the reservoir and the hammer piston to suspend the reciprocations of piston intermittently, to retard the piston during the return stroke, or to cause a time lag prior to the return stroke of the piston, so as to provide continuous alternation of an air consuming cycle and an air saving cycle for the compressed air during the operation of the hammer.

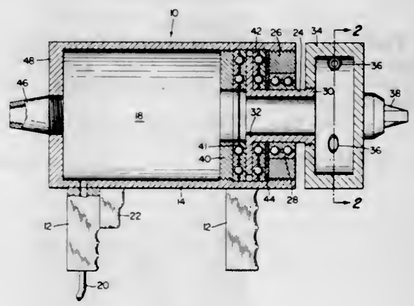
3,468,384
SONIC HAND CUTTING TOOL UTILIZING SONIC RECTIFICATION IN CONJUNCTION WITH DOUBLE ACTING SPRING BIASING
Albert G. Bodine, 7877 Woodley, Ave., Van Nuys, Calif. 91406
Continuation-in-part of application Ser. No. 627,390, Mar. 31, 1967. This application Feb. 5, 1968, Ser. No. 703,178
Int. Cl. B26b *7/00*
U.S. Cl. 173—49 **4 Claims**

A hand operated cutting tool has a cutter member which is driven by unidirectional pulses of sonic energy. These unidirectional sonic pulses are provided from a resonant vibration system which is coupled through a sonic rectifier device to the cutter member. Double acting spring means is utilized to resiliently urge the resonant vibration system against the cutter member and to simultaneously provide a resilient force against the cutter member acting in a direction away from the resonant vibration system, thereby providing optimum coupling between the vibration system and the cutter member under various



cutter member load conditions and enabling high Q operation of the vibration system.

3,468,385
UNDERWATER POWER TOOL
Salvatore J. Penza, 2430 S. M St., Oxnard, Calif. 93030
Filed May 29, 1968, Ser. No. 732,923
Int. Cl. E21c *1/02;* **B23q** *5/06;* **F03b** *1/04*
U.S. Cl. 173—159 **7 Claims**

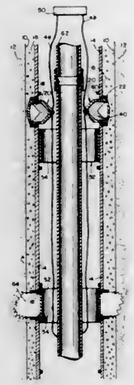


A device for transforming energy from a high pressure fluid source into tool manipulating movement at an underwater location. It includes a fluid receiving body to which the fluid is admitted by a manually controllable fluid flow valve and a movable tool supporting member which is driven by the reaction force of the fluid as it is discharged into the ambient water. Means is provided to also utilize the high pressure fluid reaction force to urge the tool into contact with the work.

3,468,386
FORMATION PERFORATOR
Harold E. Johnson, 4318 Harvard, Midland, Tex. 79701
Filed Sept. 5, 1967, Ser. No. 665,640
Int. Cl. E21b *43/117, 33/12*
U.S. Cl. 175—4.6 **9 Claims**

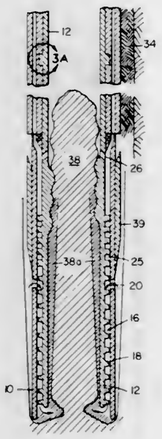
A formation perforating apparatus is secured sealingly in an opening of a casing sub in a manner that the face of the perforator is unobstructed by the casing shell so that a shaped charge or perforating bullet contained with-

in the perforator does not have to penetrate the casing upon detonation. The perforator is detonated by Primacord or detonating wire from the surface. The perforator may be in the form of a conical section, or it may be toroidal, or it may be elongatedly trapezoidal. If conical, the perforator occupies a circular opening in the casing.



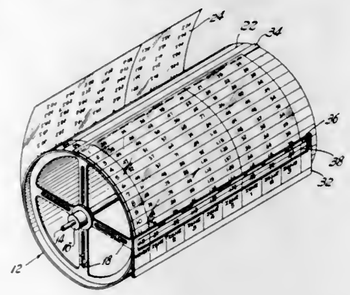
If toroidal, the perforator encircles the casing. If elongatedly trapezoidal, the perforator is positioned longitudinally on the casing. The perforating apparatus includes a sliding sleeve valve which is remotely controlled to cover the opening left in the casing wall after explosion of the perforator.

3,468,387
THERMAL CORING METHOD AND DEVICE
Glendon M. Benson, Danville, Calif., assignor to New Process Industries, Inc., Minneapolis, Minn., a corporation of Minnesota
Filed Apr. 17, 1967, Ser. No. 631,233
Int. Cl. E21b *7/18, 49/02*
U.S. Cl. 175—16 **14 Claims**



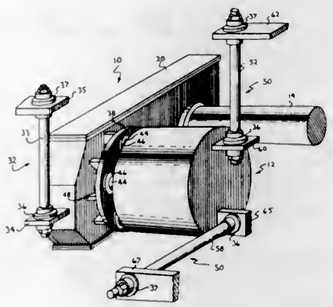
A thermal drilling device for isolating and recovering an elongated core segment from within the earth's crust. The device includes a pair of concentric, tubular members that define an annular fluid path therebetween for directing molten lava against the earth's crust for thermal erosion thereof. Heat-generating means are included along said fluid path to raise the temperature of the molten lava.

3,468,388
SCALE CHART
Walter T. Labore, Stamford, and Jack C. Fuog, Fairfield, Conn., assignors to Pitney-Bowes, Inc., Stamford, Conn., a corporation of Delaware
Filed May 22, 1968, Ser. No. 731,171
Int. Cl. G01g *19/04, 23/22;* **G09f** *11/02*
U.S. Cl. 177—37 **3 Claims**



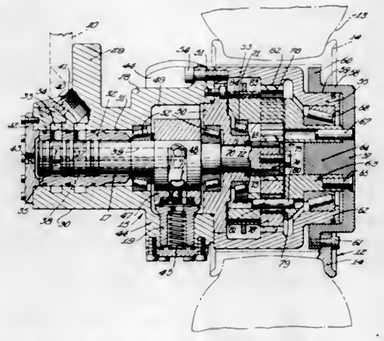
A weighing scale having a rotating drum which indicates weight and other information relating to the article being weighed, the weigh indicia being permanently printed on the drum surface along with permanent guide lines, and the other, variable, information being on a transparent overlay removably secured about the drum and aligned with permanent information on the drum.

3,468,389
PROPULSION UNITS FOR USE WITH ELECTRIC DRIVE VEHICLES
James A. Nelson, Erie, Pa., assignor to General Electric Company, a corporation of New York
Filed May 9, 1967, Ser. No. 637,182
Int. Cl. B60k *1/00;* **B61c** *9/24*
U.S. Cl. 180—65 **8 Claims**



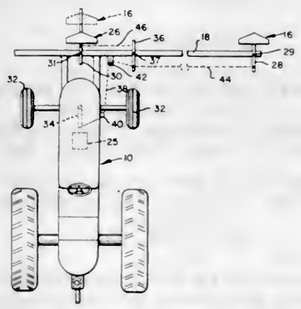
An electric vehicle propulsion unit wherein an axle drive gear unit is arranged about the axle of the vehicle and solidly couples driving power to the axle from gearing driven by an electric traction motor resiliently mounted at one end to the housing of the gear drive unit to provide a resilient mounting to support and take the torque reaction of the motor. A torque arm resiliently connectable between the gear unit and the vehicle frame takes the torque reaction of the gear unit and a resiliently connectable linkage means, which may include a vertically disposed link and a horizontally disposed link, is provided between the other end of the traction motor and the frame of the vehicle. When a vertical and horizontal link is utilized one link is arranged to exhibit stiffness in the vertical direction and flexibility in the horizontal plane and the other link is arranged to exhibit stiffness in a horizontal direction and flexibility in the vertical plane.

3,468,390
DIRECT DRIVE VEHICLE WHEEL MOUNT
John C. Schultz, Buffalo, N.Y., assignor to Houdaille Industries, Inc., Buffalo, N.Y., a corporation of Michigan
Filed Aug. 29, 1967, Ser. No. 664,140
Int. Cl. B60k *7/00, 3/00*
U.S. Cl. 180—66 **8 Claims**



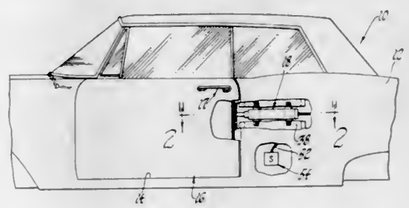
A hydraulic wheel drive operates in a wheel housing having therein a high torque, low speed, radial piston hydraulic motor the shaft of which is coupled through a planetary gearing with a rotary wheel support supported rotatably on the housing. A mechanical brake within the housing is operative on the rotary wheel support.

3,468,391
SENSING DEVICE FOR USE WITH A VEHICLE ADAPTED TO TRACE A PATH DEFINED BY A CONDUCTOR
Karl Rushing, 101 N. Sunflower Ave., and John Clarence Allen, Jr., P.O. Box 87, both of Indianola, Miss. 38751
Continuation-in-part of application Ser. No. 531,603, Mar. 3, 1966. This application Apr. 5, 1967, Ser. No. 628,616
Int. Cl. B60k *33/00*
U.S. Cl. 180—98 **4 Claims**



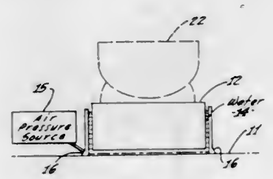
Apparatus for causing a vehicle to trace a path defined by a wire having an audio frequency signal impressed thereon comprises two coils connected in series opposing relationship, said coils being disposed at an angle with respect to each other such that the orientation of the coils with respect to the wire and the proximity of the respective coils to the wire determine which of the coils is to produce the overriding control signal. A reference voltage derived from a third coil is then compared with the combined output of the two first mentioned coils to produce a digital control signal dependent upon the phase relationship of the reference and combined output voltages.

3,468,392
VEHICLE SAFETY DOOR LATCH RESPONSIVE TO CRASH CONDITIONS
David P. Hass, Detroit, Mich., assignor to Eaton Yale & Towne Inc., Cleveland, Ohio, a corporation of Ohio
Filed June 27, 1967, Ser. No. 649,250
Int. Cl. B60r *21/00;* **E05c** *1/06*
U.S. Cl. 180—112 **7 Claims**



A vehicle is provided with a safety door latch mechanism in addition to the normal door latch mechanism. The vehicle safety door latch mechanism holds the vehicle door in a position blocking the door opening so that the occupant of the vehicle is not thrown therefrom when the vehicle encounters a crash condition. The safety door latch mechanism includes a latch member carried by the vehicle body and which moves into latching engagement with the door of the vehicle. A sensing means is provided for sensing when the vehicle encounters a crash condition and the sensing means actviates an explosive which effects movement of the latch member. The latch member has a metal piercing end which pierces the metal of the door upon movement thereof and is operable to engage and hold the door in a position blocking the opening, even though the door and body is moved relatively due to the crash and the door is ajar.

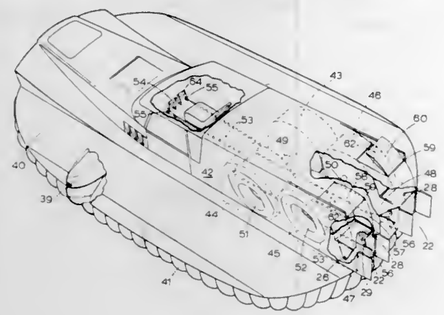
3,468,393
AIR CUSHION TRANSPORTING SYSTEM FOR HEAVY DUTY PALLET
William M. Harrison, 6937 Essex Ave., Springfield, Va. 22150
Filed May 26, 1967, Ser. No. 641,558
Int. Cl. B60n *1/00;* **B63c** *1/02;* **B63b** *43/06*
U.S. Cl. 180—116 **8 Claims**



An article handling and transporting system capable of transporting large objects over a surface by hydrofloatation of the objects including a floatable pallet to support the

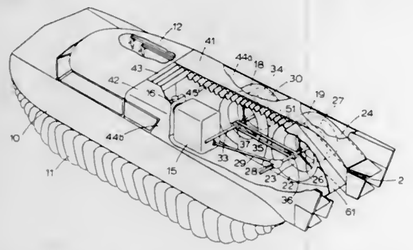
object and a peripheral curtain wall about the pallet and object for containing the floatation fluid and being sealed about its base with respect to the surface.

3,468,394
CENTRIFUGAL FANS AND AIR CUSHION VEHICLES INCORPORATING SUCH FANS
Peter H. Winter, Cowes, Isle of Wight, England, assignor to Britten-Norman Limited, Helens, Isle of Wight, England, a corporation of Great Britain
Filed Feb. 28, 1967, Ser. No. 619,425
Claims priority, application Great Britain, Mar. 1, 1966, 9,050/66
Int. Cl. B60n *1/00;* **F04d** *27/00;* **F02k** *1/00*
U.S. Cl. 180—117 **4 Claims**



A centrifugal fan having a volute-shaped casing with a tangential outlet and a circumferential extension of the volute terminating in a second outlet, and means to shut off either outlet and deliver air through the other outlet. The invention is also shown as applied to an air cushion vehicle, in which the pressure air from the tangential outlet is used for forward propulsion of the vehicle, and pressure air from the circumferential outlet is used for braking or directional control of the vehicle.

3,468,395
AIR CUSHION VEHICLES WITH CENTRIFUGAL FANS PROVIDING AIR FOR SUSTENTION AND PROPULSION
Peter Heron Winter, Cowes, Isle of Wight, England, assignor to Britten-Norman Limited, St. Helens, Isle of Wight, England, a corporation of Great Britain
Filed Feb. 24, 1967, Ser. No. 618,527
Claims priority, application Great Britain, Feb. 24, 1966, 8,282/66
Int. Cl. B60v *1/00*
U.S. Cl. 180—117 **7 Claims**

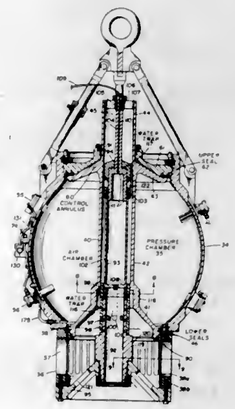


An air cushion vehicle having at least two centrifugal fans providing pressure air and located on each side of a central chamber at the after end of the vehicle with their inlets confronting one another and drawing their air supply only from the relatively still air in the chamber, the roof of which has valves arranged to admit air into the chamber.

ERRATUM

For Class 181—5 see:
Patent No. 3,467,984

3,468,396
SEAL FOR PNEUMATIC ACOUSTIC SOURCE
Ellis M. Brown, Dallas, George B. Loper, Duncanville, and Bernard Otto, Arlington, Tex., assignors to Mobil Oil Corporation, a corporation of New York
Filed Aug. 28, 1967, Ser. No. 663,664
Int. Cl. G10k *11/00*
U.S. Cl. 181—.5 **13 Claims**

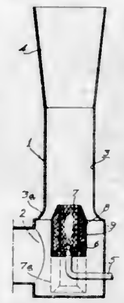


The specification discloses coopearting elastomer and metal seal rings in a pneumatic acoustic source which are used in the control of a quick-acting valve employed to release pressurized gas from a chamber to generate an acoustic pulse in water. The metal ring is supported to contact the valve to form a control region when the valve is closed. The chamber may be pressurized by igniting combustible fluid injected therein. The elastomer ring is protected from heat by the metal ring and by way of cooling channels formed in the chamber structure for cooling the pressurized gas from the chamber before it is applied to one side of the elastomer ring for pressure sealing purposes.

3,468,397
GAS EJECTOR WITH BUILT-IN SOUND ATTENUATING MEANS
Anders Vegeby, Bandhagen, Sweden, assignor to Aktiebolaget Svenska Flaktfabriken, Stockholm, Sweden
Filed Oct. 24, 1967, Ser. No. 677,597
Claims priority, application Sweden, Oct. 26, 1966, 14,707/66
Int. Cl. F01n *3/06*
U.S. Cl. 181—36 **5 Claims**

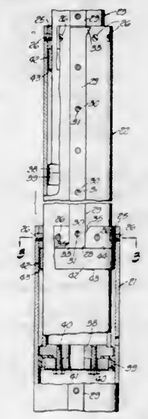
A sound attenuator for an ejector using high-pressure gaseous medium from an outflow nozzle comprising a substantially cylindrical tube surrounding the nozzle and having an external lining of sound absorbing material, the tube being at least partially perforated. The external lining of the tube is enclosed in a casing of perforated

metal and the tube extends from the inlet throat of the ejector rearwardly around the nozzle. The tube may terminate immediately beyond the nozzle, may be extended



substantially therebeyond, or may project outside of the ejector and communicate with the surrounding atmosphere.

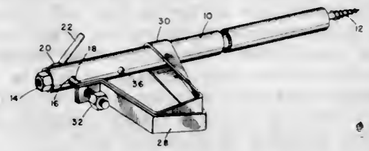
3,468,398
MULTISTAGE LINEAR MOTOR WITH MEANS FOR LOCKING THE STAGES THEREOF AGAINST RELATIVE ROTARY MOVEMENT
George W. Galloway, Arcadia, and Albert E. Blanchard, Temple City, Calif., assignors to G. W. Galloway Company, Baldwin Park, Calif., a corporation of California
Filed Jan. 8, 1968, Ser. No. 696,432
Int. Cl. E04g *1/22;* **F01b** *7/20*
U.S. Cl. 182—141 **12 Claims**



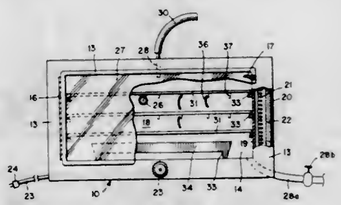
A multistage linear motor particularly suited for use to support a vertically adjustable mast for a workmen's station and having simple lock means for locking the components of the mast against relative rotary movement when stages thereof are extended or retracted. In one typical application, the motor assembly is mounted rigidly upright on a mobile frame for use by a workman while supported at the top of the mast in different extended positions thereof.

3,468,399
SCAFFOLD LEDGER SUPPORT
Harold Lloyd, 515 Palm, National City, Calif. 92050
Filed Apr. 10, 1967, Ser. No. 629,603
Int. Cl. E04g *1/00*
U.S. Cl. 182—229 **3 Claims**

The support member has a self-penetrating screw type element at one end for attachment to building structure without the need for brackets or separate fittings, the other end having bolted securing means adaptable to wooden or metal uprights, the securing bolt being manually tightened and having the added function of a lever to rotate the support member for screwing the self-penetrating end into supporting structure without additional tools.

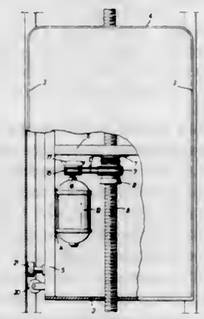


3,468,400
LUBRICATION OF INSTRUMENTS
Milton Yusem, 1653 E. 55th St., Chicago, Ill. 60615
Filed May 9, 1967, Ser. No. 637,278
Int. Cl. F16n *1/00;* **F01m** *11/00*
U.S. Cl. 184—1 **11 Claims**



Re-lubrication of watches and other mechanisms without disassembling and cleaning of such mechanisms. A mechanism is sealed in a closed chamber containing a supply of treatment oil compatible with the original lubricant of the mechanism and capable of vaporizing and dissolving in the original lubricant at the various lubrication points of the mechanism to dilute and thereby renew the original lubricant. Heat is preferably supplied to promote the evaporating, dissolving, and diluting processes.

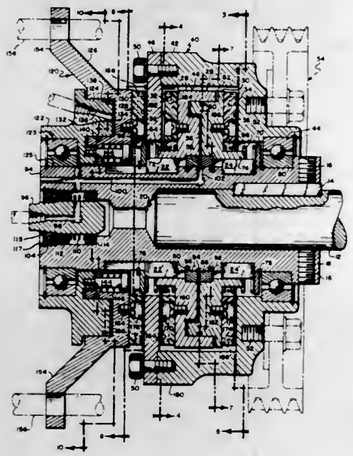
3,468,401
SCREW-DRIVEN ELEVATOR
Emile Guillaume Joseph Letz, Schaerbeck, Brussels, Belgium, assignor to Letz-Aufzug Etablissement, Vaduz, Liechtenstein
Filed Dec. 5, 1966, Ser. No. 599,196
Claims priority, application Belgium, Dec. 13, 1965, 21,477
Int. Cl. B66b *11/04, 7/02*
U.S. Cl. 187—25 **8 Claims**



An elevator comprising elevator shaft means defining a vertical elevator shaft, a cabin including at least one vertical wall position to move up and down said elevator

shaft, a plurality of guide rails fixed vertically on said elevator shaft means, guide rollers arranged perpendicularly fixed to said cabin and riding on said guide rails, a screw vertically mounted on said elevator shaft means adjacent the center of the vertical wall of said cabin, beam means mounted to the exterior of said vertical wall in the plane of said screw and provided with an opening through which the screw passes, a nut fixed on said beam means and threadedly engaging said screw, and a motor rigidly fixed relative to said nut and operatively connected to drive said nut up and down said screw.

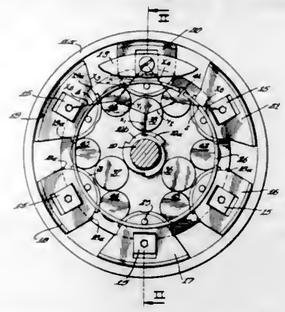
3,468,402
CLUTCH AND BRAKE
Francis P. Edwards, 7345 SW. 19th Street Road, Miami, Fla. 33155
Filed Apr. 4, 1968, Ser. No. 718,705
Int. Cl. F16d *11/06, 13/16*
U.S. Cl. 192—18 **10 Claims**



A clutch on a rotating shaft to selectively drive a secondary mechanism; the clutch includes axially moveable members on the shaft arranged to expand into engagement with a rotatable cage circumposed about the axially moveable members to rotate the cage and in so doing transmit motion thereto; additionally, brake means are provided to engage the cage to quickly stop it and the transmission of power on disengagement of the clutch.

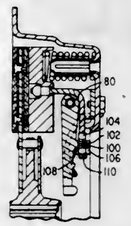
3,468,403
MULTIROLLER BRAKE AND CLUTCH CONSTRUCTION
Algirdas L. Nasvytis, Cleveland, Ohio, assignor to TRW Inc., Cleveland, Ohio, a corporation of Ohio
Filed Nov. 20, 1967, Ser. No. 684,456
Int. Cl. F16d *11/06, 13/04, 43/00*
U.S. Cl. 192—41 **10 Claims**

A radially acting toggle-action brake or clutch employing friction shoes directed generally radially against the internal surface of a ring via generally balanced sets of roller type toggles simultaneously energized by a centrally located cam element. The apparatus herein described provides a simple, extremely effective clutch or brake apparatus providing extremely high load transmission and adaptable to either one-way or bidirectional brake or clutch actuation upon relative movement of the central member from a neutral condition. Another embodiment of the invention provides a normally engaged clutch or brake system operable to disengage upon the attainment of a predetermined excessive load or torque transmission. The apparatus automatically operates and provides a wedge action which substantially instantly comes into play



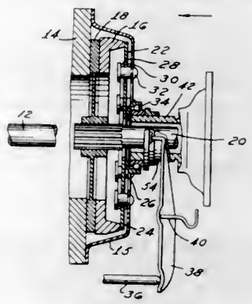
upon relative movement between the input and output elements of the system.

3,468,404
CLUTCH WITH CABLE OPERATOR
Jack W. Armstrong, Baldwinsville, David L. Moore, Dewitt, and Frederick C. Schmidt, Syracuse, N.Y., assignors to Lipe-Rollway Corporation, Syracuse, N.Y., a corporation of New York
Filed Sept. 11, 1967, Ser. No. 666,885
Int. Cl. F16d *23/12, 13/38*
U.S. Cl. 192—99 **1 Claim**



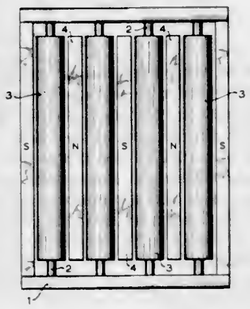
A clutch release mechanism wherein flexible means connect the clutch release levers to the clutch pressure plate to effect movement of the pressure plate upon movement of the clutch release levers to disengage the driving connection through the clutch.

3,468,405
SELF-ADJUSTING CLUTCH ASSEMBLY
Brian George Gardner, Rayleigh, and David John Runchman, Leigh-on-Sea, England, assignors to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed May 5, 1967, Ser. No. 636,314
Int. Cl. F16d *11/00, 13/60, 65/38*
U.S. Cl. 192—111 **3 Claims**



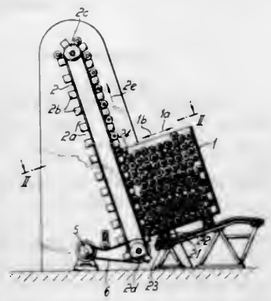
A clutch assembly having a frictionally retained release bearing stop member that limits the travel of the release bearing upon clutch engagement and that moves relative to its support member as the increased displacement of the release bearing caused by clutch disc wear overcomes its frictional resistance, thus effecting automatic adjustment of the clutch.

3,468,406
CONVEYOR ARRANGEMENT
Heinrich Spodig, 84 Netteberge, 4711 Bork, Germany
Filed May 11, 1967, Ser. No. 637,695
Claims priority, application Germany, May 13, 1966, S 103,786
Int. Cl. B65g *47/22, 13/02, 17/46*
U.S. Cl. 198—41 **9 Claims**



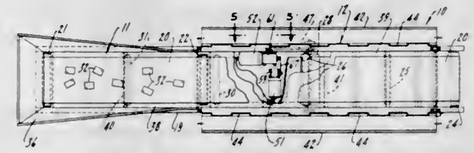
A conveyor constructed for the purpose of conveying ferromagnetic material. A series of rollers are mounted across the width of the conveyor, and along the path travelled by the ferromagnetic material to be conveyed. The rollers mounted in axles extending across the conveyor are separated by an air gap. Mounted within these gaps and interposed between the rollers are magnetic sources which combine to produce a magnetic field. The magnetic field acts upon the ferromagnetic material being conveyed, and causes the latter to bear firmly against the rollers of the conveyor. The construction of the rollers and the arrangement of the magnetic sources may be accomplished in a variety of embodiments to realize the desired results.

3,468,407
DEVICE FOR UNLOADING A TRANSFER CASE CONTAINING TEXTILE COILS
Stefan Fürst, Monchen-Gladbach, Germany, assignor to Walter Reiners, Monchen-Gladbach, Germany
Filed May 2, 1967, Ser. No. 635,452
Claims priority, application Germany, May 4, 1966, R 43,193
Int. Cl. B65g *47/18;* **B65h** *3/36;* **G07f** *11/26*
U.S. Cl. 198—53 **7 Claims**



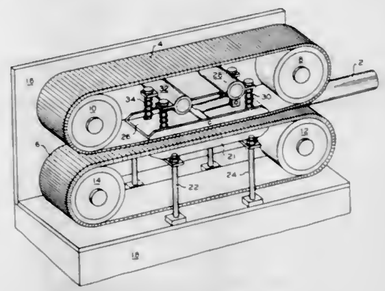
Device for unloading a transfer case having an opening through which textile coils contained therein are removed therefrom, including a conveyor having a travel direction substantially along a side of the transfer case past the opening thereof, the conveyor being provided with a plurality of coil-receiving troughs periodically disposed in the transfer case as the conveyor travels, the conveyor and the transfer case being mounted so as to be yieldable relative to one another in a direction transverse to the travel direction of the conveyor.

3,468,408
MULTI-SPEED CONVEYOR
Theodore A. Hammond and John D. Summers, Grand Haven, Mich., assignors to Ermanco Incorporated, Grand Haven, Mich., a corporation of Michigan
Filed Sept. 11, 1967, Ser. No. 666,728
Int. Cl. B65g *23/30;* **F16h** *37/08*
U.S. Cl. 198—110 **5 Claims**



A sorting speed conveyor having a multiple motor drive including a low speed motor which drives the conveyor at a predetermined slow speed through two successive gear boxes and a high speed motor which drives the conveyor at a predetermined higher speed through only the second gear box. An over-running clutch connection is interposed between the two gear boxes in order to permit the high speed motor to be energized intermittently to drive the conveyor at high speeds without de-energizing or disengaging the low speed motor from the drive system.

3,468,409
PULLER
Lawrence J. Ball, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed Oct. 23, 1967, Ser. No. 677,252
Int. Cl. B65g *15/14*
U.S. Cl. 198—165 **3 Claims**



In an apparatus for conveying structural forms, such as pipes, away from a source, such as an extruder, in which the apparatus comprises a lower conveying means, an upper conveying means superimposed over the lower conveying means and aligned in parallel relationship therewith, and a means to drive at least one of the conveying means to carry the structural forms away from the source, there is provided a planar substantially rigid support means for one of the conveying means, a planar support means for the other of the conveying means, and a means to apply pressure to the last mentioned planar support so that structural forms between the upper and lower convey-

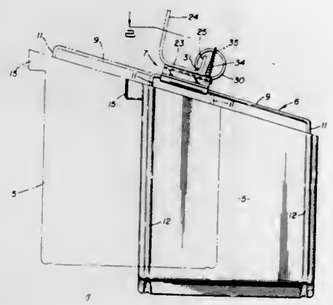
ing means have applied thereto continuous pressure along the length between the upper and lower conveying means. Additional means can be employed to prevent the rotation of the last mentioned planar support about a longitudinal axis.

3,468,410
CONVEYOR
Hugh D. Kelley, Enterprise, Kans., assignor, by mesne assignments, to Ehrsam Company, Abilene, Kans., a corporation of Delaware
Filed Apr. 18, 1967, Ser. No. 631,644
Int. Cl. B65g *19/00*
U.S. Cl. 198—173 **5 Claims**



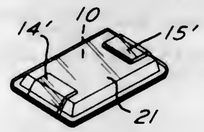
Material moving apparatus is provided with an endless conveyor having flights which extend entirely across the bottom of a material-receiving trough. The trough is provided with vertical sides and has a transversely V-shaped bottom, the flights being complementally V-shaped and in wiping engagement with the bottom. The material in the trough is advanced as a moving stream and may have a depth substantially greater than the height of the flights, thereby providing the apparatus with materially increased capacity limited only by the frictional forces developed by the moving material at the interior surfaces of the sides of the trough.

3,468,411
LITTER CONTAINER
John R. Russell, Cuyahoga Falls, Ohio, assignor to Steere Enterprises Inc., Tallmadge, Ohio, a corporation of Ohio
Filed June 22, 1967, Ser. No. 647,973
Int. Cl. B60n *3/08, 3/12*
U.S. Cl. 206—19.5 **3 Claims**



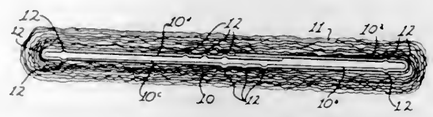
A litter container for an automobile is hung from parallel rods which are slidably supported in grooves in under the dashboard. Their ends are turned abruptly down into the four corners of the receptacle portion of the container assembly. This receptacle portion is preferably slid out from under the dashboard on the sloping portions of the rods, for use, and after use it can be slid back under a bracket fastened to the dashboard. The rods slope down formed of plastic which is adhered to or attached to the turned-down portions of the rods. The receptacle can be the dashboard where it is held by gravity.

3,468,412
SHRINK FILM PACKAGES AND PACKAGING METHODS
Harold M. Forman, 2510 Grant Road, Broomall, Pa. 19008
Filed June 8, 1966, Ser. No. 556,041
Int. Cl. B65d *85/00*
U.S. Cl. 206—46 **2 Claims**



A method of wrapping and a wrapped package are disclosed which involve the use of a sleeve of mono-axially oriented thermoplastic film (i.e. shrink film). It is critical that the major shrink axis of the film be transverse to the longitudinal extent of the sleeve. An item to be encased is placed within the sleeve with enough excess of sleeve to form ends and the entirety of the overwrapped item is uniformly heated to cause the intermediate portion of the sleeve to shrink tightly about the item and the ends to shrink transversely. The ends may be left as they are; simultaneously cut off and heat sealed; or tucked under the item and heat sealed to the sleeve.

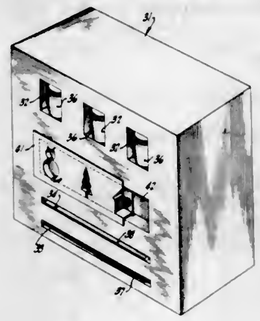
3,468,413
SHIRRED TUBULAR MATERIAL PACKAGE
Allen G. McMillan, Rte. 1, Munford, Ala. 36268
Original application July 15, 1966, Ser. No. 565,625. Divided and this application Mar. 27, 1968, Ser. No. 716,589
Int. Cl. B65d *85/14*
U.S. Cl. 206—46 **2 Claims**



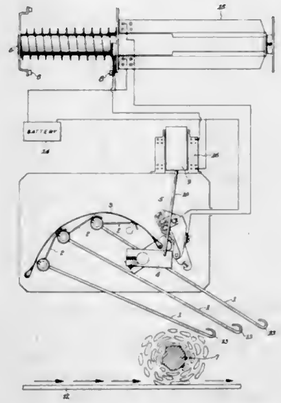
A package embodying a tube-like member having substantially rigid side walls connected by longitudinally extending flexible areas with a length of shirred tubular material surrounding the side walls and extending perpendicular to the flexible areas. The side walls are movable from a collapsed position to an extended position with the perimeter of the tube-like member remaining substantially constant.

3,468,414
INSTANT PAPER-MACHE
Fritz B. Harris, Los Gatos, Calif., assignor to Activa Corporation, San Francisco, Calif., a corporation of California
Filed Mar. 10, 1967, Ser. No. 622,253
Int. Cl. B69 *79/00*
U.S. Cl. 206—47 **9 Claims**

The invention disclosed and claimed hereto pertains to a mixture of materials such as ground newspaper, starch perservative and plaster of paris, or the like, having different particle sizes and densities which are uniformly dispersed through a dry mixture thereof, and so maintained by pressure in a solid form for storage and shipping. The mixture of materials is adapted with the addition of water to form a soft, clay-like substance that may be formed or molded by hand or machine into any desired shape, and which, upon drying, will harden into a strong, tough material that may be further operated on or directly utilized in molded form. The invention is particularly directed to the maintenance of an even dispersion of dry materials throughout the mixture maintained in a solid, brick-like form prior to the addition of water, so as to facilitate storage and shipping of the material without settling or separation of the constituents thereof.

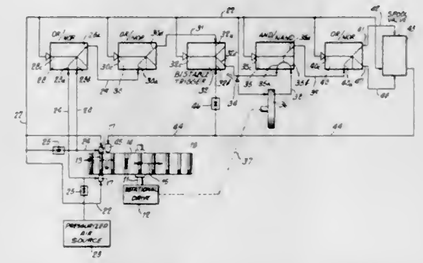


3,468,415
APPARATUS FOR SORTING IRREGULARLY SHAPED ITEMS
Junior G. Sarver, % Budding Inrow Weeder Co., Inc., Dutton, Mich. 49511
Filed Nov. 20, 1967, Ser. No. 684,288
Int. Cl. B07c *5/04, 9/00, 5/34*
U.S. Cl. 209—74 **5 Claims**



Apparatus for sorting various irregular objects according to size, in particular articles marketed in bunches, bundles, stalks, etc. or in containers where a certain number of bunches, bundles, or stalks having a specified size are required. The grading or sizing of vegetables into standard market sizes for packing into crates or other containers is the primary application. The size determining factor being the girth at some point or several points with irregular shapes, i.e. flat, square, round, triangle, open center, separated stems, etc. making actual size difficult to determine.

3,468,416
PNEUMATIC METHOD AND APPARATUS FOR TESTING CIGARETTES TO DETECT LOOSE ENDS AND MISSING FILTER TIPS
Benny Lee Hester, Winston-Salem, N.C., assignor to R. J. Reynolds Tobacco Company, Winston-Salem, N.C., a corporation of New Jersey
Filed Dec. 5, 1967, Ser. No. 688,182
Int. Cl. B07c *1/10, 1/14*
U.S. Cl. 209—74 **15 Claims**

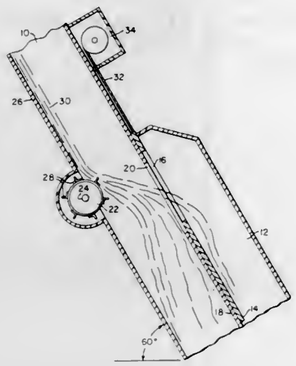


The apparatus and method shown and described tests cigarettes for loose packing at one end or the absence of a filter tip at the other end. Stationary nozzles are positioned at the ends of cigarettes moving on a conveyor at constant velocity, and each nozzle directs toward the adjacent end of the cigarette both an air jet flowing at a relatively high pressure and an adjacent jet flowing at a lower pressure. The pressure of the lower-pressure air jet is indicative of the acceptability or non-acceptability of the end textural fabrication of the cigarette (i.e. whether the tobacco packing in the end texture is loose or tight or whether a filter tip is present or absent). A substantial change of pressure of the low-pressure jet indicates a defective or non-acceptable end textural fabrication and effects storage of a defect indication. Within the elapsed time interval between movement of successive cigarettes to the test position, and preferably at approximately the center of such interval, a stored defect indication is used to identify a cigarette producing such indication as by ejecting the cigarette from the conveyor.

3,468,417
COMPOST SEPARATOR APPARATUS
Howard A. Zollinger, Williamsville, N.Y., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed June 29, 1967, Ser. No. 650,096
Int. Cl. B07b *13/04*
U.S. Cl. 209—120 **6 Claims**

In accordance with the present invention, a compost separator is provided to ballistically separate the output product compost of a refuse reclamation system to yield a desired compost product suitable for bagged sales and the garden nursery market as a consistent product, with the removal of undesired pieces of plastic, wood, metal and significant sized pieces of glass. The output product compost from the system is supplied to drop by gravity down an inclined first chute, with a paddle wheel type of rotating ballistic separator apparatus being provided to rotate within this first chute and about an axis located a predetermined distance from the bottom of the first chute such that desired low mass and low density compost particles travel through and past the separator apparatus to the end of the first chute where output loading or bagging equipment is located. On the other hand, undesired high mass and high density particles are rejected into a second chute and are thereby separated from the compost material leaving the end of the first chute. The

rotational speed, the diameter of the involved cylindrical drum, the size of the attached flinger members and the location of the ballistic separator apparatus in relation to



the depth of the compost material passing down the inclined first chute are selected to improve the objective operation of the compost particle ballistic separator apparatus.

3,468,418

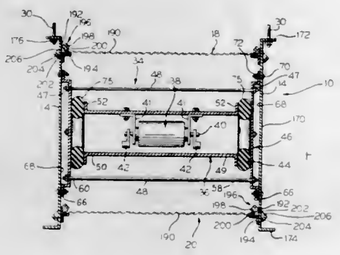
NATURAL FREQUENCY VIBRATING SCREEN

Elmer J. Renner, Aurora, Ill., assignor to Stephens-Adamson Mfg. Co., a corporation of Illinois

Filed June 21, 1967, Ser. No. 647,714

Int. Cl. B07b *1/34, 1/28*

U.S. Cl. 209—315 **24 Claims**



A vibratory material handling apparatus provided with one or more exciters each independently resiliently suspended from the apparatus, and the specific forms disclosed relate to a natural frequency vibrating screen involving a screen supporting frame that is equipped with one or more special rotating eccentric type exciter units that are arranged in subassembly form, in which each unit includes a hollow or tubular structural support member in which the motor is mounted for rotating its eccentrics about an axis aligned with that of the structural support, with the structural support member being supported from the screen frame through annular shear springs that are compressed against the support structure by clamping members that are in turn secured to the screen frame, and with the motor being run at a speed approximating the resonancy of the spring system of which it forms a part.

3,468,419

PROCESS AND MEANS FOR FILTRATION OF YEAST OR OTHER PLANT CELLULAR MATERIAL

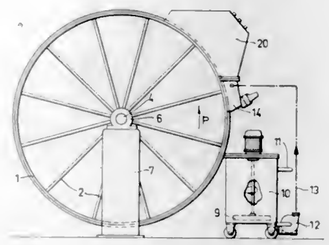
Ingvar Oskar Wallentin Lundin, Norrviken, and Sven Axel Eriksson, Sodertalje, Sweden, assignors to Svenska Jastfabriksaktiebolaget, Stockholm, Sweden, a Swedish corporation

Filed June 8, 1966, Ser. No. 556,170

Claims priority, application Sweden, June 8, 1965, 7,527/65

Int. Cl. B01d *37/00*

U.S. Cl. 210—67 **7 Claims**



Yeast or other plant cellular material in suspension on a rotating drum suction filter is applied to the drum immediately above a doctor knife. The drum turns one full revolution to bring the suspension to the knife, thus utilizing substantially the entire peripheral surface of the drum for filtering.

3,468,420

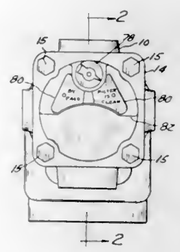
FLUID FILTER

Nils O. Rosaen, Bloomfield Hills, Mich., assignor, by mesne assignments, to Parker-Hannifin Corporation, Cleveland, Ohio, a corporation of Ohio

Filed Aug. 17, 1966, Ser. No. 573,079

Int. Cl. B01d *35/06, 35/00, 27/06*

U.S. Cl. 210—90 **3 Claims**



A filter device is provided with a filter assembly including a flat flexible filter element which can be rolled into a cylinder, a clip for securing the side edges of the filter element together, a cylinder encompassing the rolled element and a cap at each end of the cylinder to hold the element together.

3,468,421

SEPARATOR FOR IMMISCIBLE LIQUIDS

Beverly S. Hazel, Chagrin Falls, and Lubertus Bakker, Cleveland Heights, Ohio, assignors to Midland-Ross Corporation, Cleveland, Ohio, a corporation of Ohio

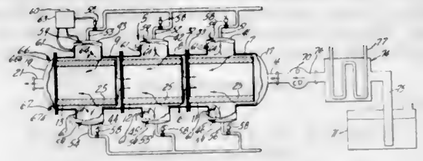
Filed July 3, 1967, Ser. No. 650,747

Int. Cl. B01d *29/04*

U.S. Cl. 210—96 **1 Claim**

A horizontal-flow liquid separator especially constructed for separating immiscible liquids in the form of

an emulsion wherein the dispersed liquid comprises one or more compounds having specific gravities slightly



above, below, or approximately equal to that of the carrier liquid.

3,468,422

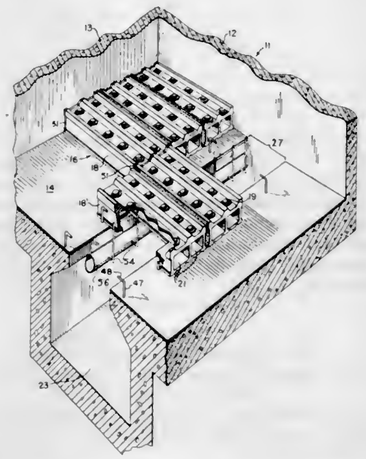
CERAMIC FILTER BOTTOM DIRECTLY SUPPORTING MEDIA

Thomas R. Camp, Boston, Mass., assignor to Chicago Bridge & Iron Company, Oak Brook, Ill., a corporation of Illinois

Filed Feb. 3, 1967, Ser. No. 615,293

Int. Cl. B01d *23/18, 29/38;* **C02b** *1/20*

U.S. Cl. 210—274 **5 Claims**



A line of blocks forms a single channel extending transversely of a flume into which the channel opens downwardly. Each block has along its top several many-slitted dispersion nozzles arranged in protective and water-directing depressions. The nozzles open downwardly through stems which aid in uniform distribution of air for backwash scouring by limiting air flow to small holes. Air can be admitted without adding water for preliminary scouring. All cement surfaces not covered by ceramic tile are coated or sealed to protect the grout from attack by acids and alkalies which may be used in the backwash water for cleaning.

3,468,423

APPARATUS FOR THE TREATMENT OF SUSPENSIONS

Guy Le Pechon, Sceaux, France, assignor to Rhone-Poulenc S.A., Paris, France, a French body corporate

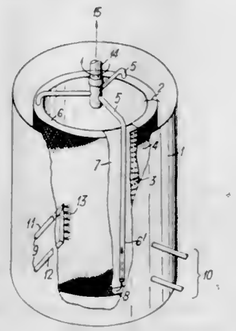
Filed July 15, 1968, Ser. No. 744,883

Claims priority, application France, July 20, 1967, 114,998

Int. Cl. B01d *33/06*

U.S. Cl. 210—360 **3 Claims**

A treatment apparatus wherein the suspension is fed to a tank having a cylindrical rotating filtering element therein and liquid is projected onto the exterior of the filtering element so that the jets detach the solid products



from the filtering element, and at the same time liquor is extracted from the interior of the filtering element.

3,468,424

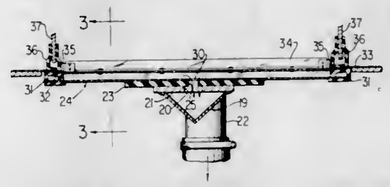
STRAIGHT-LINE FILTER WITH WATER BOX

Roland L. Laugel, Moline, Ill., assignor to Ametek, Inc., New York, N.Y., a corporation of Delaware

Filed Mar. 7, 1968, Ser. No. 711,351

Int. Cl. B01d *33/04*

U.S. Cl. 210—401 **6 Claims**



A horizontal endless belt filter arrangement having a grid means with a filter medium carried on the grid means. Transverse barriers are mounted on the filter medium with the ends of the barriers having resilient seals to engage stationary longitudinally extending sealing strips so that a plurality of pans are formed on the filter medium.

3,468,425

FLUID FILTER ELEMENT

Arthur H. Engstrom, Indianapolis, Ind., assignor to Purolator Products, Inc., Rahway, N.J., a corporation of Delaware

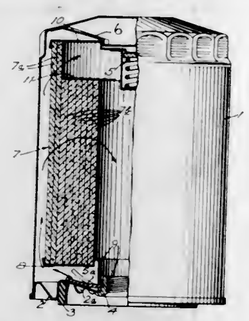
Filed Feb. 16, 1967, Ser. No. 616,535

Int. Cl. B01d *25/24, 25/20*

U.S. Cl. 210—490 **8 Claims**

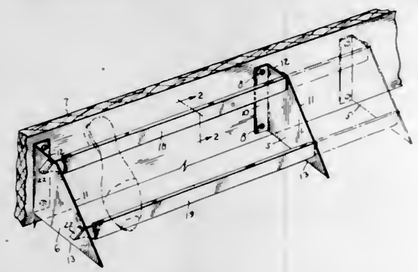
A fluid filter element of the substantially cylindrical radial flow type used in automobile filters comprising a hollow cylinder formed of fibrous filter media in web form coiled on itself. Certain of the convolutions of the filter media are axially longer than the other convolutions of the media. In order to provide two stage filtration the entire filter element is impregnated with resin which is cured providing rigidity both radially and longitudinally. In one embodiment the axially longer convolutions are formed from one coil of filter media and the other convo-

lutions are formed from a separate coil of media. In another embodiment a single length of filter media is used



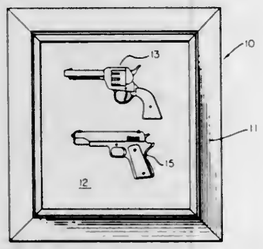
the width of a portion of the length being greater than the remaining length of the media.

3,468,426
COMBINATION SHOE RACK AND CURTAIN HANGER
Albert T. Loewy, 2400 S. Ocean Drive, Hollywood, Fla. 33020
Filed Sept. 12, 1967, Ser. No. 667,148
Int. Cl. A47f *7/08*
U.S. Cl. 211—35 **4 Claims**



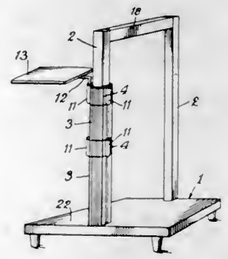
A shoe rack for supporting shoes on a pair of spaced parallel rods. Each rod is supported at its end in a slot in a pair of opposed brackets. The opposed slots have different inclinations so that the rods have a twist lengthwise of the rod.

3,468,427
PISTOL DISPLAY AND DEVICE THEREFOR
Frazier J. Leslie, 20 Sioux Way, Portola Valley, Calif. 94025
Filed May 22, 1967, Ser. No. 640,037
Int. Cl. A47f *7/00;* **B65d** *73/00*
U.S. Cl. 211—64 **2 Claims**



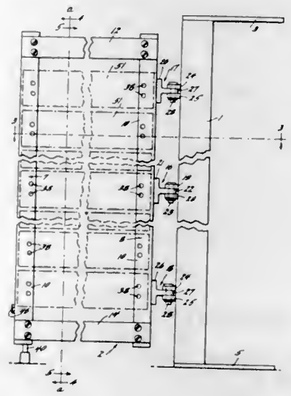
A pistol display wherein a U-shaped, swiveled, element is supported by a bracket to the back panel of a shadow box. One leg of the U-shaped element is disposed in counter-bored relation into a chamber of a revolver magazine, or into its bore so as to support the pistol without exposure of any apparent supporting elements. A flexible sleeve, slidably positioned over the supporting arm of the U-shaped element accommodates a different caliber pistol.

3,468,428
TUBULAR SECTION FOR ROTATABLE DISPLAY UNITS
Elmer L. Reibold, 1020 Harrison St., Park Ridge, Ill. 60068
Filed June 20, 1967, Ser. No. 647,373
Int. Cl. A47f *5/02;* **F16m** *13/02;* **A47b** *11/00*
U.S. Cl. 211—144 **6 Claims**



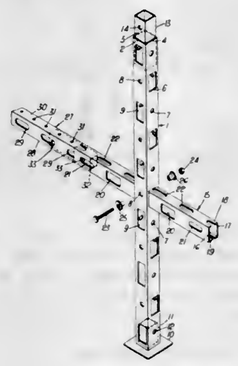
In this specification, the gist of the technical disclosure resides in a section of tubing having one or more sleeves on the exterior of its wall portion, the pivot post of rotatable display units being insertable in the sleeves, and one or more sections of such tubing being mountable in spaced apart relationship on a structural bar member of a conventional store fixture to convert it into a rotatable display unit.

3,468,429
TELEPHONIC EQUIPMENT RACK
King B. Drake, 14307 Bessemer St., Van Nuys, Calif. 91401
Filed Apr. 27, 1967, Ser. No. 634,313
Int. Cl. A47f *7/00*
U.S. Cl. 211—169 **3 Claims**



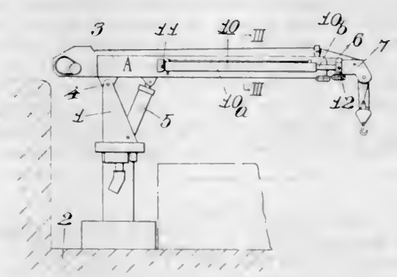
A telephonic instrument rack which is adapted to support a plurality of telephone outlet and distribution panels for swinging movement out of and into a closet, in which it is located, through the doorway thereof.

3,468,430
STRUCTURAL ELEMENTS TO FORM RACKS
William E. Lawman, Kenton, Newcastle-upon-Tyne, England, assignor to Welinlok Limited, Newcastle-upon-Tyne, England, a company of Great Britain
Continuation-in-part of application Ser. No. 369,917, May 25, 1964. This application June 6, 1967, Ser. No. 643,963
Int. Cl. A47f *5/10, 5/00*
U.S. Cl. 211—182 **8 Claims**



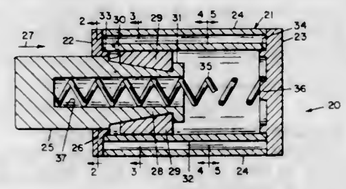
A structural means to form racks comprising a first hollow post element rectangular in cross-section having apertures in opposed pair of the walls and a second element dimensioned to fit into the apertures and be held therein by bolt means extending through bolt holes located in a median plane transverse to the apertures in the walls. The structural means may further comprise a second post element having elongated apertures spaced along one side wall into which is fitted a plate secured to an end fitting on the second element and means to secure together said second element and said second post element.

3,468,431
EXPANSION MEANS OF TREBLE BOOMS FOR USE WITH A CRANE TRUCK
Shinitsu Shinohara and Masatosi Hanada, Takamatsu, Japan, assignors to Kabushiki Kaisha Tadano Tekkosho, Takamatsu, Japan
Filed July 19, 1967, Ser. No. 654,529
Int. Cl. B66c *23/06*
U.S. Cl. 212—55 **1 Claim**



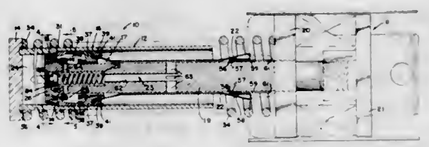
This invention discloses treble booms consisting of three boom members which are telescopically inserted one after another, and having a primary hydraulic hoist provided outside the booms and connecting the first two boom members to extend or telescope them and a secondary hydraulic hoist provided inside the booms and connecting the last two boom members to extend or telescope them. Said primary and secondary boom members are hydraulically interconnected each other by a single hydraulic fluid system connecting the chambers of the primary hydraulic hoist, two fluid passages provided in a piston rod of said hoist and respectively opened to one of said chambers, two fluid passages provided between the first two boom members and respectively communicating with one of the firstly-mentioned fluid passages of the piston rod of the primary hydraulic hoist, and two chambers of the secondary hydraulic hoist respectively communicating with one of the secondly-mentioned fluid passages.

3,468,432
CONTROLLED FORCE FRICTION DRAFT GEAR
Douglas J. Baillie, 1470 Calidonia Ave., Mount Royal, Quebec, Canada
Filed Nov. 6, 1967, Ser. No. 680,733
Int. Cl. B61g *11/02, 9/10*
U.S. Cl. 213—37 **14 Claims**



Longitudinally split tubular spring means positioned in a case which has a slidable plunger extending thereinto. Shoes actuated by the plunger during its inward movement are urged radially outwardly into frictional engagement with the spring means, so that the spring means are radially expanded against resilient bias thereof to a contracted position. Relatively weak resilient means are used for sliding the plunger outwardly when application of inward force on the plunger is discontinued.

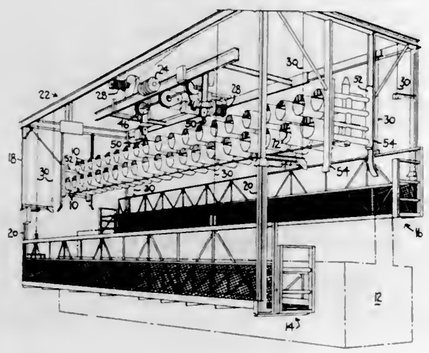
3,468,433
DOUBLE ACTING HYDRAULIC CUSHION
William H. Peterson, Homewood, Ill., assignor to Pullman Incorporated, Chicago, Ill., a corporation of Delaware
Filed Aug. 7, 1967, Ser. No. 658,782
Int. Cl. B61g *9/02, 9/12, 9/06*
U.S. Cl. 213—43 **12 Claims**



A double acting hydraulic cushion device for relieving buff and draft impacts imposed on the couplers of a railway car. The cushion device comprises a cylinder having a closed end and an open end and a piston assembly reciprocal therein including a piston head and a piston rod extending from one face thereof through said open end of the cylinder, and an intermediate cylinder head assembly mounted in the cylinder inwardly of the open end thereof. Connected between the intermediate cylinder head and the piston rod is a flexible accumulator which closes off the open end of the cylinder so that the

cylinder may be filled with hydraulic fluid. Bore means is formed in the piston head assembly and provides communication between the flexible accumulator and a first chamber in the cylinder defined by the intermediate cylinder head assembly and one face of the piston head. A second chamber is defined by the closed end of the cylinder and the opposite face of the piston head assembly. Communication to the second chamber and the accumulator is provided by the bore means and a pressure relief valve disposed in the bore means. A slide valve assembly responsive to fluid pressure forces is disposed on the piston head assembly so as to selectively provide communication between the first chamber and the accumulator during relative movement of the cylinder and piston head assembly. To achieve a predetermined force travel characteristic as the piston head assembly and the cylinder move relative to each other, there are provided metering opening means which are arranged to meter the flow of hydraulic fluid past the piston head between the first and the second chambers in a manner achieving the desired force travel characteristic. A flap valve means is disposed adjacent the intermediate cylinder head assembly so as to selectively close and open communication between the accumulator and the second chamber.

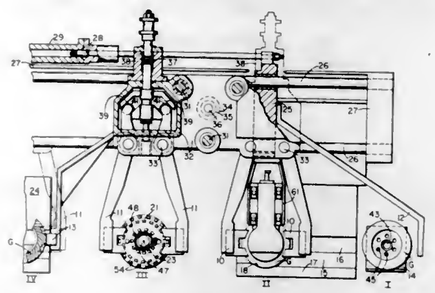
3,468,434
HANDLING FIBER PACKAGES
George B. Zurheide and Frank E. Harvey, Pittsburgh, Pa., assignors to PPG Industries, Inc., Pittsburgh, Pa., a corporation of Pennsylvania
Filed Oct. 2, 1967, Ser. No. 672,211
Int. Cl. B65g *1/02;* **B66c** *17/00*
U.S. Cl. 214—1 **2 Claims**



A crane movable along selected paths and with platforms is used to pull up storage racks on which are stored tubular fiber packages and to convey the racks to twist frames for loading with the packages. The platforms are movable vertically, adjustably and independently to positions for use of handling the packages from the storage rack to the twist frame spindles.

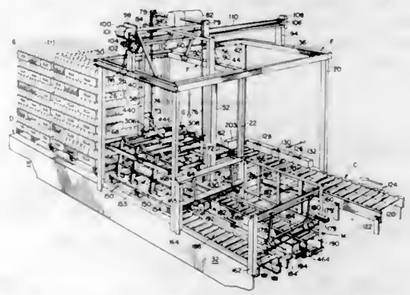
3,468,435
TRANSFER MECHANISM WITH WORK ROTATING DEVICE
Charles G. Ellwanger, Howard I. Huscher, and Robert J. Payment, Rochester, N.Y., assignors to The Gleason Works, Rochester, N.Y., a corporation of New York
Filed Apr. 18, 1968, Ser. No. 722,317
Int. Cl. B23p *15/14;* **B23q** *7/00*
U.S. Cl. 214—1 **11 Claims**

A transfer mechanism for loading gear blanks onto the workholder of a gear cutting machine has a device to rotate the blank to bring a bolt hole thereof into register with a torque-bearing key on the workholder, with the surface of the hole in abutment with the key. The device includes a piston-operated rotary driver carrying a spring-backed drive pin which during rotation in one direction drops into a bolt hole in the blank and turns the blank



to a position on the mechanism in which another of bolt hole thereof will register with the key. After the mechanism has placed the blank on the workholder, reverse rotation of the driver brings the surface of the hole against the key.

3,468,436
MACHINE FOR PALLETIZING SOFT DRINK CASES
Charles P. Nanney and Ollis O. Moore, Gastonia, N.C., assignors to Sun Drop Bottling Co., Inc., Gastonia, N.C., a corporation of North Carolina
Filed July 7, 1967, Ser. No. 651,765
Int. Cl. B65g *57/00*
U.S. Cl. 214—6 **6 Claims**

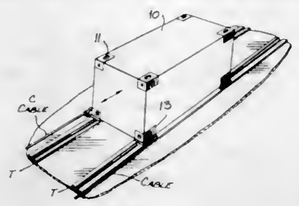


This invention pertains to the handling of cases of uniform dimension such as used in the soft drink industry for conveying a plurality of bottles, and more particularly to a machine for sequentially receiving the cases or other uniformly dimensioned articles on an incoming conveyor, removing the cases from the conveyor, transferring them to a storage pallet, ejecting a loaded pallet from the loading area, and positioning a new pallet therein.

3,468,437
SYSTEM FOR HANDLING CARGO CONTAINERS
George Reynolds Miller, Highlands, N.J., assignor to American Export Isbrandtsen Lines, Inc., New York, N.Y., a corporation of New York
Filed Aug. 14, 1968, Ser. No. 752,688
Int. Cl. B63b *27/00*
U.S. Cl. 214—15 **10 Claims**

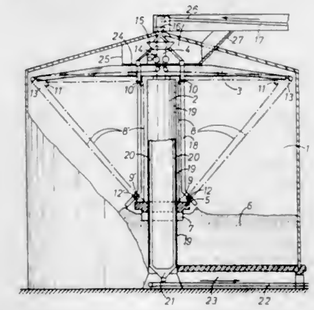
A system for handling standard cargo containers making it possible to stow such containers in freighters and other vessels lacking cellular compartments for this purpose, the system including slide fixtures and rails. The slide fixture is formed by a skid plate having a top crown which is receivable in the base hole of a bottom corner

fitting of the container, and a follower plug which projects into the channel of a track. By coupling four such



slide fixtures to the bottom corner fittings of a container, one may slide the container along a trackway to desired locations in the vessel.

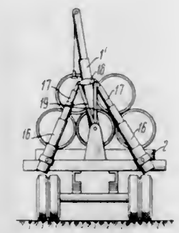
3,468,438
SILO FOR BULK MATERIAL
Jean Florent Marie Ghislain Ladmirant, Zetrud-Lumay, Belgium, assignor to A-B-R Ateliers Belges Reunis S.A., Petit-Enghien, Belgium, a Belgian company
Filed Sept. 19, 1967, Ser. No. 668,774
Claims priority, application Belgium, Sept. 20, 1966, 33,564
Int. Cl. A01f *25/16;* **B65g** *65/30*
U.S. Cl. 214—17 **2 Claims**



There is provided a silo for bulk material having a central column for use in filling and emptying the silo, and having a spreading or feeding assembly for moving material stored in the silo, said assembly comprising an upper beam and a lower beam which are rotatably mounted on said column and extending diametrally of the silo, the lower beam being height-adjustable, cable and pulley systems connecting the lower beam to the upper beam and adapted and arranged so that they may effect height-adjustment of the lower beam and so that, when the upper beam is rotated, the lower beam is also rotated and lies substantially at an angle of 90° to the upper beam, and means on the lower beam for effecting movement of material outwardly away from or inwardly towards the central column dependent upon the direction of rotation of the beams.

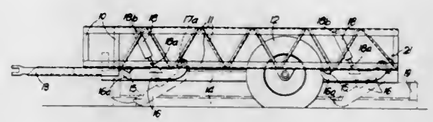
3,468,439
DEVICE FOR HANDLING LENGTHY LOADS, MAINLY INSULATION-COATED PIPES, TRANSPORTED BY TRUCK TRAINS
Vladimir Samsonovich Olitsky, Lesnaya ulitsa 8/12, kv. 1, Anatoly Zakharovich Mirkin, Ulitsa Svobody 4, kv. 68, and Nikolai Borisovich Shirokov, Zelenodolskaya 45, korpus 2, kv. 25, all of Moscow, U.S.S.R.
Filed May 25, 1967, Ser. No. 641,289
Int. Cl. B60p *1/48*
U.S. Cl. 214—77 **2 Claims**

Apparatus for the handling of insulation-coated pipes transported by truck trains in which rotatable load-lifting booms provided with a load-gripping means attached to the free end thereof are mounted on bolsters adjacent the ends of the truck train. Each of the booms is capable



of rotation mainly in a vertical plane normal to the longitudinal axis of the truck train and each boom includes a stationary member and a member slidable into and out of the stationary member with the load-gripping means being carried by the slidable member.

3,468,440
VEHICLES
Harold George Poole, Aspenden House, Aspenden, near Buntingford, Hertfordshire, England
Filed May 17, 1967, Ser. No. 639,223
Int. Cl. B60p *3/60*
U.S. Cl. 214—390 **26 Claims**

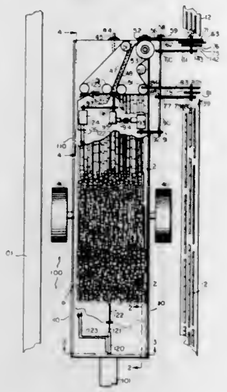


The invention comprises a U-shaped vehicle chassis which provides an unobstructed space between the limbs of the U into which a load supporting floor may be lifted from the ground by lifting means on the chassis. Interengaging means on the floor and chassis stiffen the latter. The floor may be locked in position by sliding bolts or by an automatically engaging lock. The chassis may comprise a trailer having a tow bar for connection to a tractor. The lifting means may comprise arms pivoted to the limbs which engage trunnions on the floor and which are swung upwardly by hydraulic rams.

3,468,441
AUTOMATIC SUGARCANE PLANTER
Sidney E. Longman, R.F.D. Box 195B, Franklin, La. 70538
Filed Aug. 14, 1967, Ser. No. 660,443
Int. Cl. A01c *19/00*
U.S. Cl. 214—519 **12 Claims**

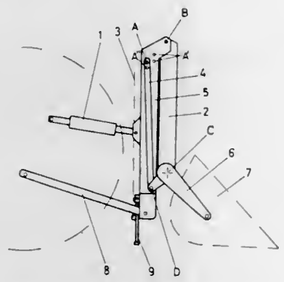
A sugarcane planter which cheaply and efficiently plants seed cane is disclosed. The planter has a metal bin with two outwardly sloping sides and a deck extending transversely between the sides. Transverse bulkhead means mounted for longitudinal movement in the bin is provided for delivering an inclined mass of cane stalks to differential conveyor means which seizes the cane stalks from the inclined mass and maneuvers them individually to a programming means. The programming means includes means having preselected stalk receiving apertures

as blank spaces, thereby programming the individually delivered stalks for planting and passing them to an



elongated mechanical discharging conveyor which centers them in a furrow.

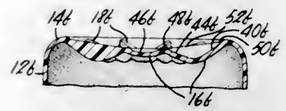
3,468,442
REAR LOADER FOR TRACTOR ATTACHMENT
Vilho Juhani Sarvela, Otsolahdentie 15, Tapiola, and Jaakko Hermanni Sarvela, Itikka, Iisalmi, Finland
Filed May 31, 1967, Ser. No. 642,601
Int. Cl. E02f *3/00*
U.S. Cl. 214—766 **3 Claims**



A rear loader which is adapted to be attached to a tractor, comprises a body having the shape of an inverted T, a jib having an upper portion rotatably connected to the upper portion of the body and a lower portion rotatably supporting a transverse shaft to which the loading implement is attached. A power cylinder drive has one end attached to the lower portion of the body and another end attached to the upper portion of the jib spaced from the upper end of the jib. A linkage rod has one end pivoted to the upper portion of the body and another end pivoted to a lug carried by the transverse shaft.

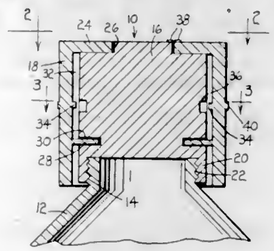
3,468,443
BASE OF PLASTIC CONTAINER FOR STORING FLUIDS UNDER PRESSURE
Paul Marcus, Pearl River, N.Y., assignor to APL Corporation, Brooklyn, N.Y., a corporation of New York
Filed Oct. 6, 1967, Ser. No. 673,450
Int. Cl. B65d *23/00*
U.S. Cl. 215—1 **8 Claims**

A base for a disposable bottle formed of relatively flexible plastic material for storing beverages and the like under pressure has a bottom web at least in part generally concave as viewed from outside the bottle. The bottom web is formed with ribs to rigidify it so that outward flexing of the bottom web under pressure is re-



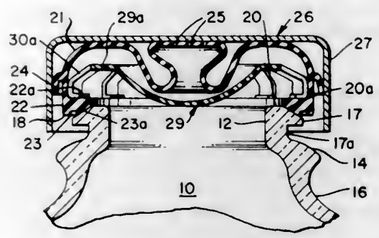
duced. The tendency of the beverage to cause a rocker condition is thus overcome, notwithstanding the flexibility of the plastic material.

3,468,444
SAFETY CLOSURE FOR CONTAINERS
Jerome Martin, Jr., 2748 NE. 9th Ave., Portland, Oreg. 97212
Filed Dec. 4, 1967, Ser. No. 687,683
Int. Cl. B65d *55/02*
U.S. Cl. 215—9 **2 Claims**



The invention is concerned with a closure for containers which is impossible for young children to remove so that they cannot get to the contents. The closure comprises an inner cap member arranged to be securely mounted on a container and an outer cap member which encloses the inner cap member. The outer cap member is freely rotatable on the inner cap member but has inwardly directed projections adapted to engage sockets in the inner cap member only when the sides of the outer cap member are compressed to cause engagement of the projections with the sockets so that the inner cap member can be rotated or otherwise manipulated for removal from the outer cap member. The closure has alignment means to locate the two cap members in a position of engagement of the projections and recesses.

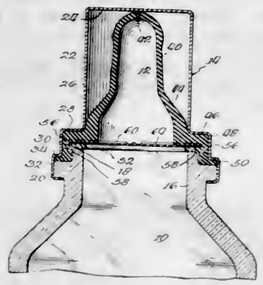
3,468,445
INFANT-FEEDING CONTAINER AND CAP ASSEMBLY
Gene Ballin, 3045 Shore Drive, Merrick, N.Y. 11566
Continuation-in-part of application Ser. No. 550,809, May 17, 1966. This application Aug. 7, 1967, Ser. No. 658,933
Int. Cl. A61j *9/08*
U.S. Cl. 215—11 **16 Claims**



An infant feeding container having an insert located inside the nipple to seal the bottle when in the closed

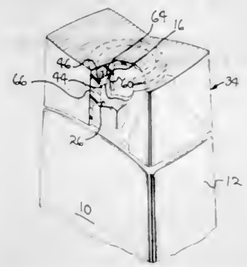
condition. The insert has downwardly depending legs around its periphery which rest on a flange at the base of the nipple. In the closed condition the imperforate center of the insert seals the bottle and the legs compress the flange so that when the exterior cap is removed the insert moves upwardly from the bottle mouth to permit the bottle contents to flow.

3,468,446
INFANT FEEDING DEVICE
William H. Welch, Columbus, Ohio, assignor to Abbott Laboratories, a corporation of Illinois
Filed Aug. 18, 1967, Ser. No. 661,709
Int. Cl. A61j *9/16, 9/00*
U.S. Cl. 215—11 **2 Claims**



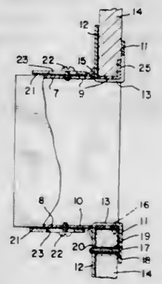
An infant feeding device assembly including a nipple having air vent holes therein adjacent the finish of the container and provided with flapper valves to seal the vent holes to prevent leakage of the fluid contained within the feeding unit assembly. The assembly also includes a protective cap or shroud structure including a retaining ring which clamps and secures the assembly together. The protective cap covers the nipple during the storage period and is fitted to the assembly in such a manner that it compresses the portion of the nipple containing the vents to positively close them and seal the assembly until it is to be used.

3,468,447
UNITARY CAM-OFF CLOSURE
Ned J. Smalley, St. Charles, Ill., assignor to Owens-Illinois, Inc., a corporation of Ohio
Filed Jan. 30, 1967, Ser. No. 612,717
Int. Cl. B65d *51/08, 55/08*
U.S. Cl. 215—41 **6 Claims**



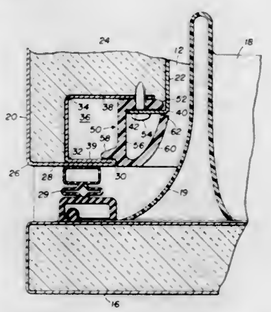
An article of manufacture, comprising a closure-container combination having features for easily removing said closure which are functionally independent of the means by which the closure is attached to the container. The closure is of the elastically yieldable type having, either jointly or severally, snap cap and stopper sealing characteristics associated therewith, and includes integral means which coact with means on the container to produce an upward axial displacement of said closure upon rotating the closure in a plane normal to the container axis.

3,468,448
OUTLET BOX WITH CLIPS FOR MOUNTING IT IN A WALL STRUCTURE
James A. McHollan, 19 Old Bridge Drive, Lakewood, N.J. 08701, and Anthony J. Borucki, 4 Essex Place, Dumont, N.J. 07628
Filed Jan. 5, 1968, Ser. No. 695,970
Int. Cl. H02g *3/12;* **G12b** *9/10*
U.S. Cl. 220—3.6 **2 Claims**



Switch boxes and other forms of outlet boxes adapted to be supported in a wall opening by means of U-shaped clips having parallel leg portions spaced apart approximately the thickness of the wallboard or other wall material in which the box is mounted and disposed in the box with the rear leg portion extending out through a slot in the box, over the inner face of the wall structure and the front leg extending over the front edge of the box and over the front face of the wall; latch forming lugs may be struck out of the rear leg portion to snap over the box wall when this leg is pushed out through the slot and a protuberance may be provided on the front leg to snap over the edge of the box to lock the clip in place on the box and for additional securement, a clamping screw may be passed through the front leg and the intervening wall material into the rear leg.

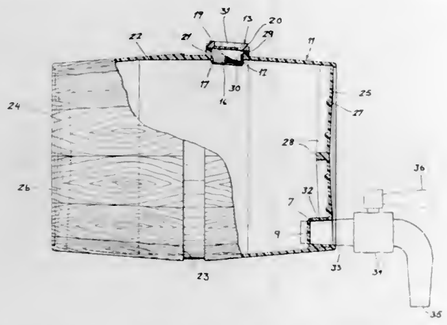
3,468,449
BREAKER STRIP CONSTRUCTION
M. Fillmore Harty, Jr., Bloomfield Hills, Mich., assignor to Amana Refrigeration, Inc., Amana, Iowa, a corporation of Delaware
Filed Sept. 15, 1967, Ser. No. 668,138
Int. Cl. B05d *25/18*
U.S. Cl. 220—9 **4 Claims**



A breaker strip for foamed insulated freezer and refrigerator cabinets characterized by being formed of a pliable material such as a vinyl and secured along only one

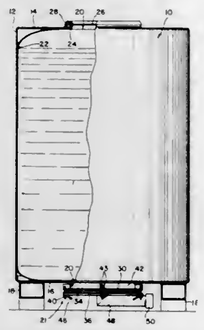
of its sides to the cabinet. The breaker strip includes a short flap forming substantially its entire exposed surface and hiding the fasteners fixing the strip to the cabinet. Additionally, the forward edges of the cabinet are so formed as to provide an open sided channel just behind the breaker strip for various circuitry employed in connection with the unit which channel is closed by the breaker strip and immediately accessable without removing the breaker strip when the unsecured side of the latter is simply flexed away from the channel.

3,468,450
NO-RETURN CONTAINER FOR BEER AND OTHER LIQUIDS
Edmund Webel, Krkelingheide 24, Essen-Heisingen, Germany
Filed Aug. 18, 1967, Ser. No. 661,589
Claims priority, application Germany, Aug. 20, 1966, St 25,782; June 6, 1967, St 26,976
Int. Cl. B65d *17/08, 39/12, 7/42*
U.S. Cl. 220—27 **9 Claims**



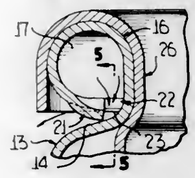
A one-way, no-return beer container consisting of a barrel-shaped receptacle of synthetic resin, one end wall of which is formed with an inwardly extending socket having a weakened zone at the base thereof for rupture upon insertion of a dispensing cock while the annular wall of the container has a reinforced edge defining a bunghole which receives a hollow stopper containing a removable plug threaded or forced into this hole.

3,468,451
CONTAINER WITH DISPOSABLE LINER
Clarence B. Coleman, Oakland, Calif. (2401 Merced St., San Leandro, Calif. 94577)
Filed Apr. 1, 1968, Ser. No. 717,525
Int. Cl. B65d *25/16, 33/16*
U.S. Cl. 220—63 **10 Claims**



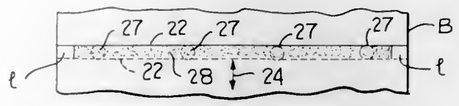
A container with axially spaced end walls and a flexible tubular liner disposed therein for storing and transporting fluid material. At least one end of the liner is gathered and projects through one of the openings. The liner is sealed relative to the container to prevent seepage of the fluid material into the space between the liner and the walls of the container. The projecting end of the liner extends radially outward from the opening through which it projects to the exterior of the container. Means including a resilient sealant material and a closure for closing the one opening are biased toward the adjacent end wall and the radially extending portion of the liner to establish a seal between the sealant material and the liner and prevent fluid from escaping from the container or entering the space between the liner and walls of the container.

3,468,452
AEROSOL CAN END WITH REINFORCED CURL
Nick S. Khoury, Chicago, Ill., assignor to Continental Can Company, Inc., New York, N.Y., a corporation of New York
Filed Nov. 27, 1967, Ser. No. 685,865
Int. Cl. B65d *7/42*
U.S. Cl. 220—67 **7 Claims**



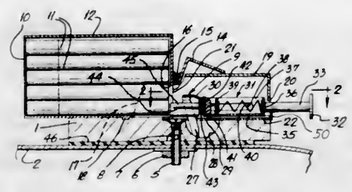
This invention is directed to an aerosol can end defined by an end panel terminating in a radially outwardly, downwardly directed curl which is reinforced in a manner to prevent distortion thereof when a conventional valve cup is crimpingly secured thereto. The reinforcing means is a plurality of reinforcing beads spaced along the periphery of the curl which imparts a wave-like configuration thereto defined by alternating lands and valleys. The lands further function as means for venting propellant which might otherwise be entrapped within the curl to atmosphere after a charging operation.

3,468,453
WELDED CAN BODY AND METHOD OF FORMING THE SAME
Paul M. Erlandson, Palos Park, Ill., assignor to Continental Can Company, Inc., New York, N.Y., a corporation of New York
Filed Apr. 4, 1967, Ser. No. 628,388
Int. Cl. B65d *7/34, 7/38*
U.S. Cl. 220—75 **19 Claims**



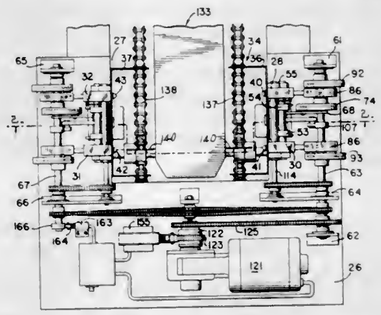
This disclosure has to do with a can body wherein the side seam thereof is welded. A specific feature of the side seam is that it terminates short of the ends of the can body whereby flanging of the welded seam can body may be accomplished without the cracking of the can body along the welded seam.

3,468,454
CIGARETTE LIGHTER AND DISPENSER
Armand Joncas, St. Francois-de-Salle, Roberval, Quebec, Canada
Filed Aug. 18, 1967, Ser. No. 661,707
Claims priority, application Canada, Aug. 23, 1966, 968,576
Int. Cl. A24f *15/10*
U.S. Cl. 221—147 **2 Claims**



This invention concerns a cigarette lighter and dispenser in which a lighter of the push-in type have means to hold the end of a cigarette against the heating element whereby the lighter can be used to bring the lighted cigarette to the user's mouth.

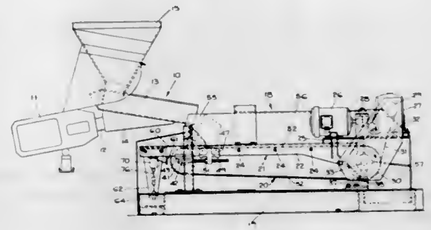
3,468,455
CARTON DISPENSER MACHINE
Harold W. Voorhis, Upper Nyack, N.Y., assignor to Continental Can Company, Inc., New York, N.Y., a corporation of New York
Filed Nov. 14, 1967, Ser. No. 682,901
Int. Cl. G07f *11/16*
U.S. Cl. 221—225 **21 Claims**



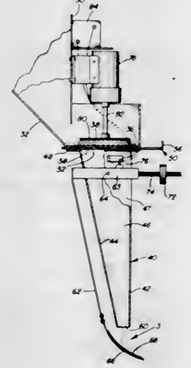
This disclosure relates to an apparatus for dispensing nested cartons from a hopper. The apparatus includes finger-like plunger members which are movable transversely to a nested stack of cartons in a hopper and which wedgingly separate the bottom carton from the remainder of the stack so that paddles can propel it downward upon removal of support members from beneath the stack. Pivotally mounted restraining means are brought into engagement with the sides of the stack of cartons upon removal of the lower support members so as to restrain the force of the stack from being applied to the finger-like plungers.

3,468,456
CONVEYING MEANS FOR DELIVERING MATERIAL AT A SUBSTANTIALLY CONSTANT RATE
Jerome F. Cline, Columbus, Ohio, assignor to Jeffrey Galion Manufacturing Company, a corporation of Ohio
Filed May 19, 1967, Ser. No. 639,811
Int. Cl. B67d *5/08*
U.S. Cl. 222—55 **4 Claims**

A first conveying means feeds material to a second conveying means. The first conveying means is adjustable in order to vary the rate of feed of material from the first conveying means to the second conveying means, and the latter is yieldable in response to the load of material. The second conveying means is connected to a load responsive element, which modifies a control signal to the first conveying means, thereby to control and adjust the rate of feed of material in order to maintain the rate of feed substantially constant.



3,468,457
DISPENSER FOR FERTILIZER
Ernest N. Martin, 1141 High St., Escondido, Calif. 92025
Filed Dec. 18, 1967, Ser. No. 691,255
Int. Cl. B67d *5/08;* **B65d** *47/00*
U.S. Cl. 222—55 **6 Claims**

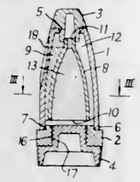


A dispensing apparatus for material, such as granular fertilizer, some of which are irregular in configuration. The apparatus comprises a hopper having a controlled outlet leading to a chute. The material flowing from the outlet of the chute is subjected to a sensing device which controls the operation of a wiper at the outlet of the hopper to prevent clogging of the latter outlet.

3,468,458
DEVICES FOR DISPENSING PASTE-LIKE MATERIALS
Steven Leigh, 9 Emanuel Ave., London, W.3, England
Filed Apr. 17, 1967, Ser. No. 631,406
Claims priority, application Great Britain, Apr. 28, 1966, 18,699/66
Int. Cl. B65d *35/22*
U.S. Cl. 222—94 **8 Claims**

An attachment for a dispensing tube of paste, for delivering two paste materials, the one forming a core inside the other. The attachment fits the nozzle of a

tube dispensing the outer paste material, has an inner, open-ended, chamber containing the core paste material and a passage surrounding the inner chamber. When paste



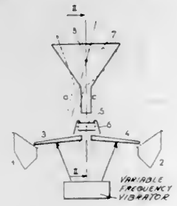
is expressed from the tube, it flows around the chamber and out of an orifice, at the same time expelling a fine stream of material from the inner chamber as a core.

3,468,459

DEVICE FOR DELIVERING A PRECISE QUANTITY OF DIVIDED TOBACCO OR LIKE MATERIAL

Francis Bonnéric, Fleury-les-Aubrais, France, assignor to Service d'Exploitation Industrielle des Tabacs et des Allumettes, Paris, France, a French public establishment

Filed Mar. 22, 1967, Ser. No. 625,147
Int. Cl. B65g *3/12, 65/70*
U.S. Cl. 222—196 **3 Claims**



A device for metering exact amounts of finely distributed material such as shredded tobacco from a continuous flow of this material for further processing in batches or for packaging. A mechanism for dividing the flow alternatingly into two deliveries of precise quantities.

ERRATUM

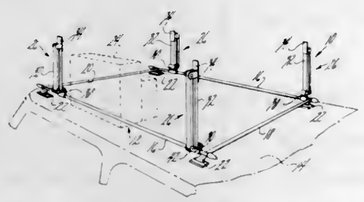
For Class 223—66 see:
Patent No. 3,468,539

3,468,460

ADJUSTABLE SKI RACKS

Jane A. Wright and John C. Wright, both of 64 Wylls St., Manchester, Conn. 06040

Filed June 19, 1967, Ser. No. 646,828
Int. Cl. B60r *7/00, 9/04*
U.S. Cl. 224—42.1 **17 Claims**



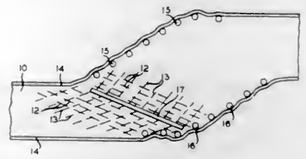
An adjustable ski rack for attachment to an automobile mounted luggage carrier and having adjustable means for supporting skis in generally parallel side-by-side relation and clamping means for detachably securing the skis to the supporting means. The supporting means is adjustable relative to the luggage carrier through a range of positions between a lowered position wherein the skis are supported generally adjacent the luggage carrier and an elevated position wherein the skis are supported in spaced relation thereto so that maximum luggage carrying space is available and readily accessible.

3,468,461

FIBER PRODUCT HAVING A BRANCHED RETICULAR OR NETLIKE STRUCTURE AND A METHOD AND APPARATUS FOR THE PRODUCTION THEREOF

Ole-Bendt Rasmussen, Copenhagen, Denmark, assignor to Phillips Petroleum Company, a corporation of Delaware

Original application Sept. 3, 1963, Ser. No. 306,078, now Patent No. 3,345,242. Divided and this application Aug. 10, 1967, Ser. No. 659,630
Claims priority, application Denmark, Sept. 7, 1962, 3,916/62
Int. Cl. B26f *3/02, 3/00;* **B65h** *35/00*
U.S. Cl. 225—3 **6 Claims**



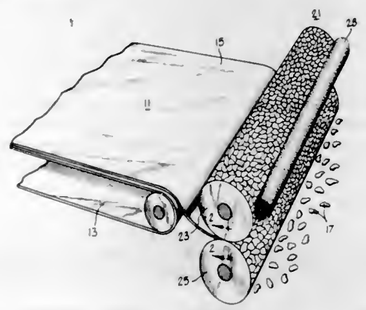
An apparatus and method for producing fiber products, having a uniform, branched, netlike structure by partially splitting an oriented film of a thermoplastic resin. The oriented film is sandwiched between elastic bands and said bands are distended at right angles to the orienting direction of the film and simultaneously with the distending, dislocating said bands from point to point across their width.

3,468,462

APPARATUS FOR FORMING PORTION SIZED FOOD PRODUCTS

Joseph J. Porada, Norridge, Ill., assignor to National Dairy Products Corporation, New York, N.Y., a corporation of Delaware

Filed Apr. 18, 1967, Ser. No. 631,728
Int. Cl. B26f *3/00, 3/02;* **B65h** *35/00*
U.S. Cl. 225—97 **1 Claim**



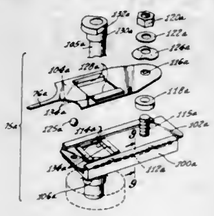
An apparatus is provided for cutting a moving sheet of dough into portion sized pieces. First and second counter rotating rolls with mating male and female patterns are provided.

3,468,463

MOTION PICTURE PROJECTOR

Carlos J. Cardona, North Hollywood, Calif., assignor to Cardona Company, North Hollywood, Calif., a corporation of California

Filed Sept. 22, 1966, Ser. No. 581,364
Int. Cl. G03b *1/22*
U.S. Cl. 226—64 **14 Claims**



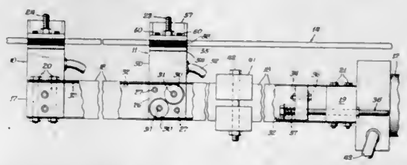
A motion picture projector which will accept cartridges of films of varying formats interchangeably. The film advancing mechanism is located in the cartridge and is adjustable to accept varying film formats.

3,468,464

STOCK FEED MECHANISM

Raymond G. Olson, Niles, and Edward L. Benno, Grayslake, Ill., assignors, by mesne assignments, to Standard International Corporation, Andover, Mass., a corporation of Ohio

Filed Oct. 24, 1967, Ser. No. 677,553
Int. Cl. B65h *17/42*
U.S. Cl. 226—141 **10 Claims**



The invention is concerned with strip or sheet feeding devices and particularly such feed mechanisms adapted for feeding relatively wide sheets in increments to another machine for further work on the stock. The present embodiment includes a pair of spaced apart stationary or holding jaws or grippers for gripping the opposite edges of the sheet or stock to be fed, and an assembly of a pair of moving grippers carried in an opposed spaced apart relationship by a pair of channel members to also grip opposite edges of the stock. The opposite ends of the assembly for the moving jaws are supported by a rolamite arrangement disposed in the channel members. A motor is connected to the moving jaw assembly to reciprocatingly move the moving jaws toward and away from the holding jaws. By a proper operation of the holding and moving jaws relative to the reciprocating movements of the moving jaws, the stock will be incrementally advanced by the feed mechanism.

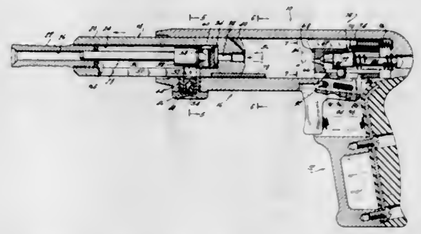
3,468,465

POWER ACTUATED TOOL

Lester F. Mulno, Newburgh, N.Y., assignor to Star Expansion Industries Corporation, Mountainville, N.Y., a corporation of Delaware

Filed Mar. 24, 1966, Ser. No. 537,045
Int. Cl. B25c *1/16*
U.S. Cl. 227—10 **7 Claims**

The invention is directed to an explosively-actuated power tool having a housing and a barrel axially movable relative to the housing, characterized by improved means for controlling the relative position of the barrel with respect to the housing; said barrel having an internal bore and a piston axially movable within said bore, characterized by improved means for controlling the relative position of the piston with respect to the barrel; said tool being further characterized by having improved means for extracting and ejecting spent cartridges therefrom and by an improved firing mechanism.

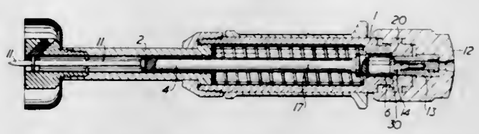


3,468,466

EXPLOSIVE-ACTUATED TOOLS

Roger David Wackrow, Redditch, England, assignor to The Birmingham Small Arms Company Limited, Birmingham, England, a British company

Filed Nov. 21, 1966, Ser. No. 595,682
Int. Cl. B25c *1/14*
U.S. Cl. 227—10 **1 Claim**



An explosive-actuated tool for driving anchor members into hard materials comprising a body having a movably mounted barrel receiving a slidable piston. A chamber is formed in the rearward end of the body and receives a rearward head portion of the piston. The firing piston has a terminal annular shoulder, with a bore in the body extending from the shoulder through the end of the body. A locking cap is releasably secured to the end of the body for axial movement relative to the body, with the cap supporting a cartridge loading insert slidably received within the bore. When the locking cap is displaced forwardly to fire the cartridge against the piston head, the rear face of the firing chamber is defined by the annular shoulder and the end face of the cartridge holding insert which, at the time of firing, lie substantially in a common plane.

3,468,467

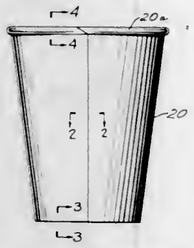
TWO-PIECE PLASTIC CONTAINER HAVING FOAMED THERMOPLASTIC SIDE WALL

Stephen W. Amberg, St. James, N.Y., assignor, by mesne assignments, to Owens-Illinois, Inc., Toledo, Ohio, a corporation of Ohio

Filed May 9, 1967, Ser. No. 637,304
Int. Cl. B65d *3/00, 7/42, 21/02*
U.S. Cl. 229—1.5 **5 Claims**

A two-piece fabricated plastic container comprising a side wall shell consisting of a circumferentially folded sheet of foamed plastic having overlapping marginal edges solvent sealed together to form a side seam and a bottom member, said side wall shell consisting of external liquid impervious surface films of a relatively high density

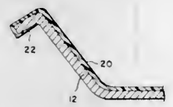
plastic and an intermediate layer of foamed material having a low density of about 13–14 lbs./cu. ft. extending throughout the entire circumference and the entire axial extent of said shell, said bottom member preferably consisting of a high impact polystyrene having a downwardly extending peripheral skirt flange, said flange being solvent sealed to the lower end of said side wall shell by a solvent for said plastic, said solvent sealed areas providing liquid-tight seals; and method of producing the same.



3,468,468
CONTAINER

James E. Foote, Westport, Conn., assignor to Diamond International Corporation, New York, N.Y., a corporation of Delaware

Filed Aug. 14, 1967, Ser. No. 660,312
Int. Cl. B65d *5/56, 25/14*
U.S. Cl. 229—14 **7 Claims**

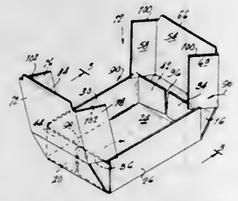


The present disclosure relates to a plastic foam lined food tray formed by laminating a foam plastic liner to a molded pulp tray. The plastic lining is impervious to the penetration of liquid, but may be provided with apertures extending therethrough so that liquid exuded from the contained material can pass into the molded pulp tray if desired. An effective sealing is accomplished by wrapping the foamed liner around the lip of the tray and applying heat and pressure to the bottom side of the lip. By using a foamed liner, the material weight of the liner can be drastically reduced without inhibiting the thermoformability of the liner into the tray without the development of pinholes.

3,468,469
DOUBLE-WALL FOLDING BOX WITH A LOCKING CLOSURE THEREFOR

Arnold H. Kossoff and Irwin I. Kossoff, both of 67 Metropolitan, Ave., Brooklyn, N.Y. 11211

Filed Dec. 16, 1965, Ser. No. 514,198
Int. Cl. B65d *5/22*
U.S. Cl. 229—33 **1 Claim**

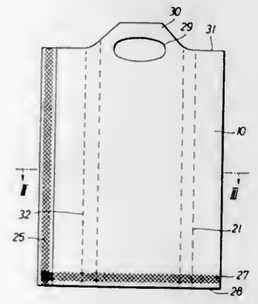


The invention is concerned with providing a double-wall folding box having hinged cooperating cover means and means to wedge said cover means against each other to secure said cover means in releasably locked position.

3,468,470
CARRIER BAG

Karl H. Sengewald, % Dr. K. H. Sengewald, 4801 Kunsebeck, Westphalia, Germany

Filed Nov. 24, 1967, Ser. No. 685,668
Claims priority, application Germany, Nov. 23, 1966, S 107,086; Sept. 30, 1967, S 112,234
Int. Cl. B65d *33/08, 33/10*
U.S. Cl. 229—54 **8 Claims**

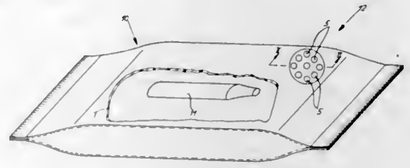


A carrier bag made of synthetic thermoplastic material, having a closed bottom, an open top, and two opposite sides which are collapsible. The other two sides of the carrier bag having strips attached thereto and running the entire height of the carrier bag for reinforcing those sides. The open end of the carrier bag having grip apertures in each of the other two reinforced sides. The bottom closure being a weld seam and there being one other longitudinal weld seam running the entire height of the bag.

3,468,471
BACTERIAPROOF PLASTIC BAG FOR ARTICLES TO BE STERILIZED

Fritz Linder, Skarhamn, Sweden

Filed June 24, 1966, Ser. No. 560,181
Claims priority, application Germany, June 24, 1965, L 50,973
Int. Cl. B65d *31/14*
U.S. Cl. 229—62.5 **10 Claims**

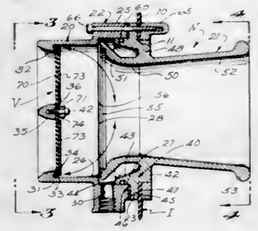


A bacteriaproof plastic bag for articles to be sterilized is provided with a valve opening and a bacteria filter device which covers the valve opening and acts as a valve. The bacteria filter device consists of a gas-permeable layer of material and an adhesive coating secured thereto. The adhesive coating when heated to a predetermined temperature becomes a gas-permeable liquid permitting the passage of steam into the bag through the valve opening. When cooled, the adhesive coating solidifies thus closing the valve opening. A cover provided with passages for the steam through the filter device is secured to the bag by a heat-resistant adhesive.

3,468,472
FLOW AUGMENTED NOZZLE

Richard H. Hahn, Burbank, Calif., assignor to Global Systems, Inc., Sun Valley, Calif., a corporation of Delaware

Filed Sept. 15, 1967, Ser. No. 668,002
Int. Cl. F04f *5/16, 5/48;* **F16k** *15/20*
U.S. Cl. 230—95 **8 Claims**

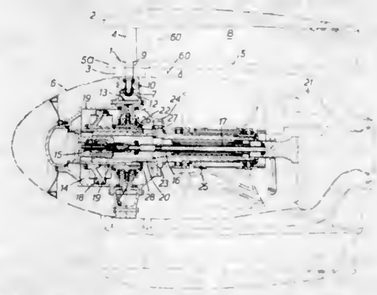


A flow augmented Coanda nozzle for engagement in an opening in a wall of an inflatable structure and connection with a supply of high pressure gas comprising an elongate sectional construction having front and rear ends and defining an elongate forwardly opening cylindrical air inlet flow passage with a rear end terminating in the forward portion of the construction, a cylindrical throat of lesser diametric extent than the air inlet flow passage spaced rearward of and concentric with said air inlet flow passage and having a forwardly and radially outwardly projecting bell portion, the forward outer portion of which is greater in diametric extent than the air inlet passage and terminates in predetermined spaced relationship rearward of the rear ends of the air passage and defining an annular radially inwardly opening gas inlet flow passage, an annular plenum chamber radially outward of the throat and communicating with said gas inlet passage and an elongate, cylindrical, rearwardly divergent and rearwardly opening defuser flow passage extending rearwardly from the throat, annular coupling means about the exterior of the nozzle, forward of the rear end of the defuser flow passage to engage in and seal with an opening in a wall of an inflatable structure and connecting means to connect with a supply of high pressure gas and communicating with the plenum chamber.

3,468,473
GAS TURBINE ENGINES

Stuart Duncan Davies and John Alfred Chilman, Painswick, England, assignors to Dowty Rotol Limited, Gloucester, England

Filed Apr. 12, 1967, Ser. No. 630,256
Claims priority, application Great Britain, May 25, 1966, 23,429/66; Feb. 3, 1967, 5,267/67
Int. Cl. F04d *27/00;* **F02k** *3/02, 1/02*
U.S. Cl. 230—114 **19 Claims**

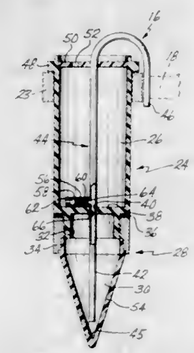


A gas turbine engine of the ducted-fan by-pass type includes a fan assembly rotatable in a by-pass duct and having flow-varying blading tiered to provide two annular flow paths the inner of which charges the engine compressor while the outer charges the duct. The pitch of one of the tiers of blading is adjustable under the control of a pitch-changing mechanism housed within a hub of the fan assembly. The outer tier of blading is conveniently of adjustable pitch, with the inner tier of blades of fixed pitch and hollow for the passage of radial transmission shafts which effect pitch changing of the outer tier of blades through reduction gearing at the outer ends of the transmission shafts.

3,468,474
CENTRIFUGE ACCESSORY

Arvid W. Shoblom, 5408 Melody Ave., and Enar E. Shoblom, Rte. 6, Box 279, both of Olympia, Wash. 98501

Filed July 7, 1966, Ser. No. 563,585
Int. Cl. b04b *5/02, 11/02*
U.S. Cl. 233—27 **8 Claims**



A tube structure comprising an upper housing and a lower housing detachably joined together and defining upper and lower chambers. The chambers are separated by a partition having an orifice therein, and a fluid delivery passage having a one-way check valve disposed therein extends through the orifice and communicates with both chambers for delivering clean wash solution from the upper chamber to the lower chamber. A fluid exhaust passage also communicates with the lower chamber for removing contaminated wash solution therefrom. In one embodiment the delivery and exhaust passage are defined by a single tube, while in an alternative embodiment separate delivery and exhaust tubes are provided.

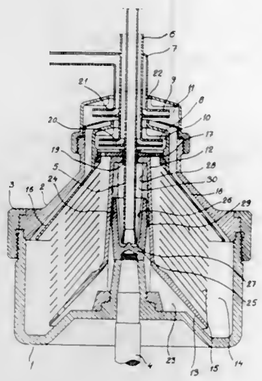
3,468,475
METHOD AND APPARATUS FOR SHOCKLESS FEEDING OF LIQUID TO THE SEPARATING CHAMBER OF A CENTRIFUGE

Henric Wilhelm Thylefors, Stockholm, Sweden, assignor to Alfa-Laval AB, Tumba, Sweden, a corporation of Sweden

Filed May 17, 1967, Ser. No. 639,203
Claims priority, application Sweden, May 23, 1966, 7,003/66
Int. Cl. B04b *1/08, 11/02*
U.S. Cl. 233—29 **4 Claims**

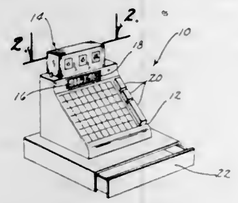
The liquid is fed continuously from a supply source in the form of a stationary feed pipe coaxial with the centrifugal rotor, and means rotatable with the rotor form a hollow body having an end wall closely opposing the discharge end of the feed pipe, this body also having a smooth inner surface which is a generally conical surface of revolution concentrically surrounding the feed pipe in spaced relation thereto. Liquid is directed without impact

from the stationary pipe to the opposing rotating end wall and thence in an annular layer flowing radially outward and generally axially of the rotor along the smooth surface of revolution, which gradually increases the rotational speed of the liquid. From the latter surface, the



liquid passes to the separating chamber of the rotor, preferably by way of another generally conical and smooth surface of revolution surrounding the first one and which effects a further gradual increase in the rotational speed of the liquid.

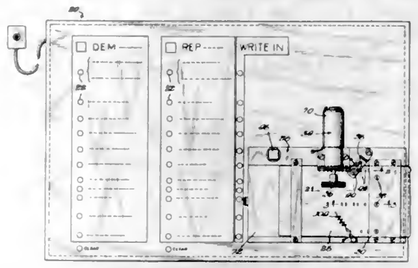
3,468,476
SALES CONTROL INDICATOR
Robert J. Keegan, 1761 W. 12th St., Davenport, Iowa 52804
Filed June 6, 1967, Ser. No. 643,966
Int. Cl. G07g *1/04*
U.S. Cl. 235—23 **10 Claims**



A cash register having a sales control means actuated by operation of the cash register which is connected to a signalling device which operates a series of movable indicia which when stopped at a predetermined position exposes a predetermined indicia pattern and may case an audio unit to be activated.

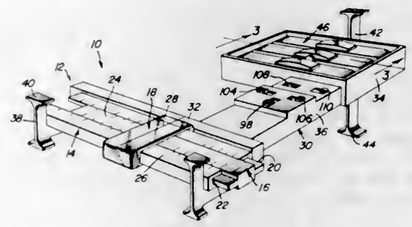
3,468,477
VOTING MACHINE
James Gray, Jr., Wheaton, Ill., assignor to Gray Controls Corporation, Wheaton, Ill., a corporation of Illinois
Filed Mar. 17, 1967, Ser. No. 624,074
Int. Cl. G07c *13/00*
U.S. Cl. 235—50 **9 Claims**

A portable voting machine in which the voter makes a switch selection of candidates, which selection is data punched into an individual punched card ballot in a conventional punched pattern with registry tabulatable with standard computer equipment. The punch plurally,



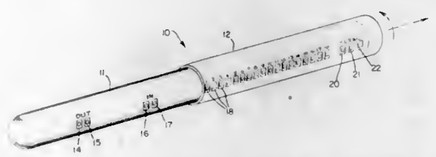
electrically punches the card while it is moving using registration indicia associated with the card.

3,468,478
PRECISION SLIDE RULE COMPUTING MECHANISM
Edward D. Dunn, Jr., 508 Partridge Lane, Albany, Ga. 31705
Filed Jan. 12, 1968, Ser. No. 697,372
Int. Cl. G06c *27/00*
U.S. Cl. 235—71 **13 Claims**



A conventional type slide rule is rendered more accurate by translating relative movement between the slide and body into proportional movements of flexible tapes substantially longer than the slide and body so as to display expanded scales corresponding to those on the slide and body of the slide rule. The slide and indicator components of the slide rule are drivingly connected through speed increasing gearing to the tapes at an overdrive ratio for this purpose. Each tape is stored in a magazine or container for movement past a readout lens when actuated by the slide, indicator or a manual adjustment knob.

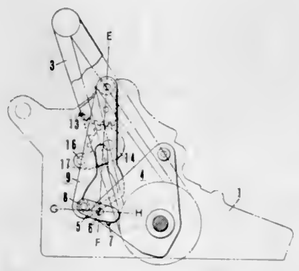
3,468,479
GOLF SCORING DEVICE
Charles Frank Sauter, 1620 Shepard Drive, Maple Glen, Pa. 19002
Filed Dec. 28, 1967, Ser. No. 694,228
Int. Cl. G06c *27/00*
U.S. Cl. 235—117 **20 Claims**



A scoring device is provided, particularly adapted for use with the game of golf, having means for individuallly indicating the score attained in each hole played, also including means for continuously indicating the total score

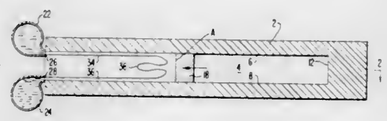
attained throughout the game, means further being included for indicating a sub-total score for the "out" nine holes, and means for indicating a sub-total score for the "in" nine holes. The scores indicated for the "out" and "in" nine holes are representative of the respective cumulative score at any given point of play for holes so grouped, as is the total score means for all holes played. The device is generally of tubular construction, comprising a pair of telescopically movable tubes, one of which is rotated about the other for driving the various mechanisms which set the scores.

3,468,480
CALCULATING MACHINE
Makoto Okuda, Osaka, and Akira Fujishima, Nara, Japan, assignors to Maruzen Sewing Machine Co. Ltd., Osaka, Japan
Filed Feb. 16, 1967, Ser. No. 616,525
Int. Cl. G06c *7/10*
U.S. Cl. 235—137 **5 Claims**



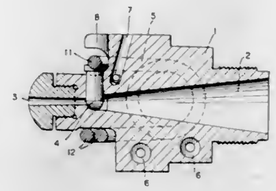
Means in a calculating machine controlling the movement of the restoring bail rod during the initial portion of an operating cycle so that the type segments and sector gears are permitted to move a sufficient distance to effect resetting of the transfer pawls to normal position.

3,468,481
HYPERVELOCITY JET PRODUCING SYSTEM EMPLOYING AN IMPACT CUMULATION PROCESS
William C. Cooley, Bethesda, Md., assignor to Exotech Incorporated, Rockville, Md.
Filed May 10, 1968, Ser. No. 728,273
Int. Cl. B05b *3/08;* **F41f** *1/04*
U.S. Cl. 239—101 **9 Claims**



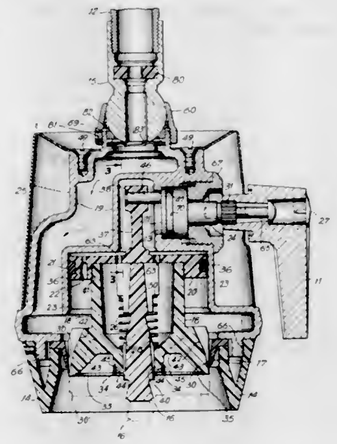
A device for discharging pulsed fluid jets utilizing an elongated housing having an axially extending slot. A rotor assembly is mounted adjacent to the slot, the latter having radially extending arms with impact heads thereon. A nozzle means is provided for feeding sheet-like jets of liquid along the inner wall surfaces of the slot while at the same time the rotor assembly is driven for bringing successively the impact heads mounted thereon through the slot for impacting the liquid sheets and converting the same to pulsed fluid jets along the axis of the slot.

3,468,482
SHUTOFF NOZZLE FOR INJECTION MOLDING MACHINES
Edmund Lindner, Ludwigshafen (Rhine), and Arnulf Knoll, Lindenberg uber Enustadt, Germany, assignors to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany
Filed Apr. 27, 1967, Ser. No. 634,163
Claims priority, application Germany, May 4, 1966, B 66,213
Int. Cl. B05b *1/32, 1/30;* **F16k** *15/00*
U.S. Cl. 239—453 **4 Claims**



A shutoff nozzle for injection molding machines having a nozzle-closing element arranged radially to the longitudinal axis of the nozzle and opening automatically as the pressure of the injection molding material increases; also the spring which loads the nozzle closure element.

3,468,483
ADJUSTABLE SHOWER HEAD
Richard G. Parkison, Louisville, Ky., assignor to American Standard Inc., a corporation of Delaware
Filed May 2, 1967, Ser. No. 635,465
Int. Cl. B05b *1/32, 1/26*
U.S. Cl. 239—460 **9 Claims**



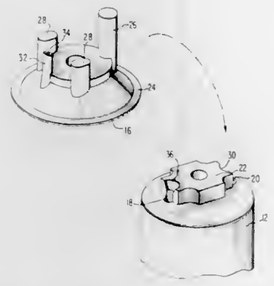
An adjustable shower head for the distribution of liquids having a control handle for regulating the flow of the spray. The control handle is counterbalanced against the forward pressure of the liquid on the shower head nozzle for all line pressures by utilizing a balance piston coupled to the control handle and communicative to the liquid to counteract the forward pressure of the fluid.

3,468,484

SPRINKLER HEAD

Edwin James Hunter, Riverside, Calif., assignor to Toro Manufacturing Corporation, Minneapolis, Minn., a corporation of Minnesota

Filed Mar. 15, 1967, Ser. No. 623,282
Int. Cl. B05b *15/10, 1/26*
U.S. Cl. 239—204 **5 Claims**



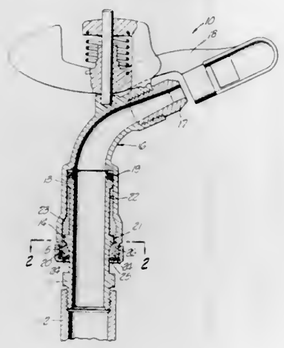
A sprinkler head for forming a spray pattern, preferably a long narrow rectangle, which utilizes a partially shrouded orifice and a deflector pin of the same diameter as the orifice which has one end slanted and beveled and positioned directly above the orifice facing the shrouded portion. The water stream issuing from the orifice coacts with both the shrouded portion and the deflector pin to form the desired spray pattern.

3,468,485

SPRINKLER

Frank H. Sully, Buena Park, Calif., assignor to Western Brass Works, Los Angeles, Calif., a corporation of California

Filed July 10, 1967, Ser. No. 652,063
Int. Cl. B05b *3/02, 3/14, 3/06*
U.S. Cl. 239—230 **5 Claims**



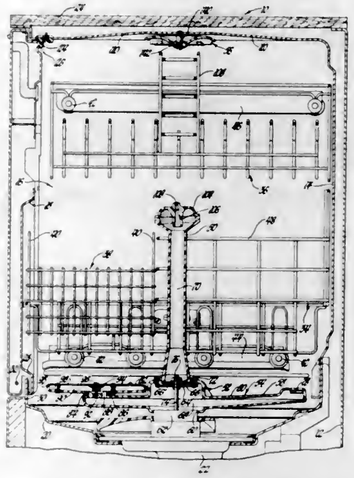
A rotatable sprinkler in which the head and housing are in one piece and are mounted on the spindle which is in turn mounted on the pipe riser. The spindle is provided with a conical bearing which serves as a thrust and friction surface and which is lubricated from an adjoining lubrication chamber.

3,468,486

DISHWASHER WITH MULTIPLE SPRAY ARM

Robert L. Mercer, Dayton, Ohio, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Feb. 2, 1967, Ser. No. 613,495
Int. Cl. B05b *3/06, 3/08;* **B08b** *3/04*
U.S. Cl. 239—251 **3 Claims**



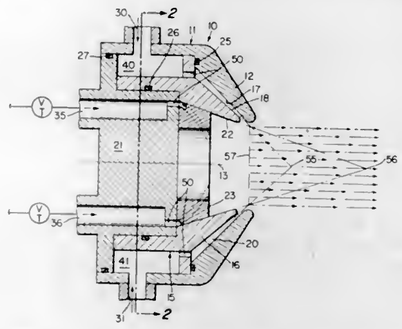
A domestic dishwasher fluid distributing system including a cleaning chamber in which are located a pair of oppositely rotating lower spray arms driven to produce a high velocity, generally upwardly directed, continually varying spray pattern. The system further includes a vertical spray tube on one of the lower arms with an output nozzle that shoots a fluid stream against an improved, nonsymmetrical wobble type deflector that produces a nonrepeating, high velocity downward spray pattern that cooperates with the upwardly directed spray pattern for producting an improved distribution of cleaning fluid throughout the cleaning chamber.

3,468,487

VARIABLE THRUST INJECTOR

Tom C. Warren, Sunnyvale, Calif., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy

Filed Feb. 28, 1966, Ser. No. 532,530
Int. Cl. B05b *7/10*
U.S. Cl. 239—403 **6 Claims**



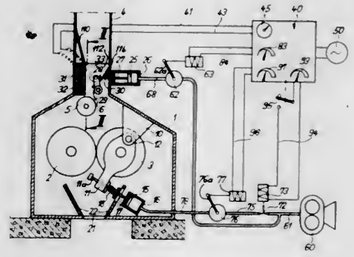
A method of, and apparatus for, injecting liquid propellant into a reaction motor in the form of liquid sheets of ingredients such as fuel and oxidizer, respectively, each sheet being of conical configuration and arranged to converge at different points along a common axis, the mixing of the fuel and oxidizer occurring at the intersection of the two sheets. Each sheet so formed may optionally be swirled in the same or opposite directions, and by employing a plurality of injector manifolds for each liquid ingredient the propellant flow rate may be reduced when the motor is operated at low thrust ranges.

3,468,488

AUTOMATIC CONTROL OF FEED MATERIAL IN A COMMINUTING MILL

Karl Karrer, Wil, and Robert Linzberger, Bruggen, St. Gall, Switzerland, assignors to Gebruder Buhler, Uzwil, Switzerland

Filed Nov. 30, 1965, Ser. No. 510,626
Int. Cl. B02c *4/32, 7/14, 9/04*
U.S. Cl. 241—34 **11 Claims**



A device for feeding material in a roller mill includes a mill frame housing with a relatively wide feeding portion and with a relatively narrow cross infeed conduit arranged centrally of the housing to feed material down into the housing between a pair of cooperative grinding rollers which are located below the infeed conduit. The rollers may be displaced outwardly relative to each other in order to provide for more rapid feeding therebetween as one means of feed regulation. In addition, a feed roller is mounted in said housing between the grinding rollers and the infeed conduit and it may be moved backwardly and forwardly in respect to a gate valve for varying the feed opening therebetween. A feature of the construction is that spaced capacitor plates are located in the infeed conduit and they are electrically connected for continuously sensing the material being fed therepast in the infeed conduit. The plates are electrically connected in a control circuit either to the grinding rollers for the purposes of displacing the grinding rollers are apart or moving them inwardly toward each other in response to change in feed conditions in the feed conduit, or to either the feed roller or the gate valve for varying the spacing therebetween. A further or an independent variation of feed control may be effected by changing the speed of the gate valve feed roller or the grinding rollers.

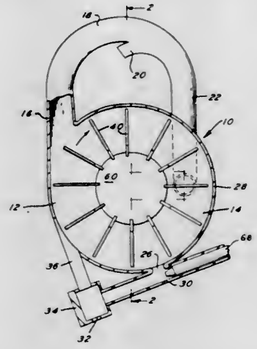
3,468,489

COMMINUTING APPARATUS

Norwood H. Andrews, P.O. Box 68, Moorestown, N.J. 08057

Continuation-in-part of application Ser. No. 417,932, Dec. 14, 1964. This application Oct. 22, 1965, Ser. No. 509,251
Int. Cl. B02b *13/04*
U.S. Cl. 241—39 **12 Claims**

The present invention relates to a comminuting apparatus wherein a rotary impact device is combined with a high pressure jet impact device and wherein the jet device is so placed with respect to the rotary device that a maximum acceleration of the impacted material is gained for impacting and classification thereof.

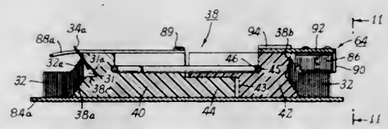


3,468,490

CONTINUOUS LOOP RECORDING TAPE CARTRIDGE

Austin A. Knox, 143 Crystal Lake Road, Stamford, Conn. 06905

Filed Mar. 16, 1966, Ser. No. 534,796
Int. Cl. B65h *17/48;* **G11b** *5/00*
U.S. Cl. 242—55.19 **8 Claims**



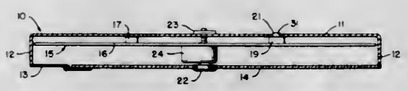
The disclosure is of a continuous tape recording cartridge having means for reducing the friction in the wound tape mass. There is provided a sloping lower sidewall of the cartridge hub which is at a greater angle from the vertical than the slope of the upper portion of the hub, permitting the inner turns of tape to ride up into a truncated cone to accommodate variations in tape length and to reduce friction. There is also disclosed tape cartridge hubs having variable diameters to accommodate changes in the tape length and to reduce friction. These embodiments disclosed have hub segments which are either radially movable in response to tightening or loosening of the tape to change the effective hub diameter in response thereto.

3,468,491

TAPE SUPPLY CABINET

Philip H. Barry, Elk Grove Village, and Richard F. Vee, Chicago, Ill., assignors to Teletype Corporation, Skokie, Ill., a corporation of Delaware

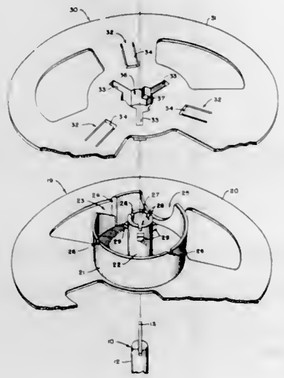
Filed Apr. 29, 1968, Ser. No. 725,061
Int. Cl. G03b *1/04;* **B65h** *75/14*
U.S. Cl. 242—71.1 **11 Claims**



A tape cabinet having a hinged door and a plate that can be positioned in two planes parallel to the door for

supporting tapes of several widths. The tape-supporting hub includes a tape roll engaging surface to prevent the rolls from rocking during unwinding.

3,468,492
WINDING REEL
Richard E. Cragg, Winnetka, Ill., assignor to Teletype Corporation, Skokie, Ill., a corporation of Delaware
Filed Nov. 8, 1967, Ser. No. 681,545
Int. Cl. B65h *75/18*
U.S. Cl. 242—71.8 6 Claims



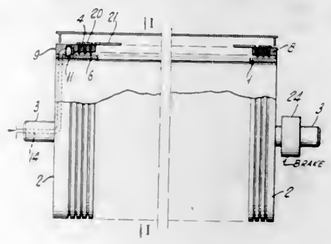
A winding drum and two non-similar flanges, one of the flanges having a hub thereon which is received by the second flange, detents in one flange engaging detent notches in the other flange to prevent relative rotation. Lugs on the hub are received in surfaces provided in the second flange and prevent flange separation.

3,468,493
TAPE TAB
Clifford E. Ives, 1630 Washington Ave., Wilmette, Ill. 60091
Filed Sept. 27, 1967, Ser. No. 670,952
Int. Cl. B65h *75/28*
U.S. Cl. 242—74 11 Claims



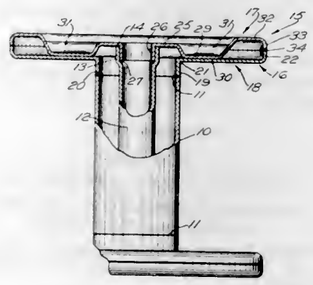
A tab attached adjacent each end of a magnetic tape and having flexible wing portions extending laterally beyond the edges of the tape preferably provided with pressure sensitive adhesive on the side facing the hub of the reel to flex radially outwardly with the adhesive contacting the facing sides of the reel flanges to hold the tape end portion against radial movement.

3,468,494
BRAKING DEVICE FOR USE IN THE WINDING OF A NUMBER OF STRIPS UPON A COMMON MANDREL
Jean Gaudin, Montigny les Cormeilles, France, assignor to Societe de Constructions Mecaniques de Creil, Creil, Oise, France, a corporation of France
Filed Sept. 18, 1967, Ser. No. 668,422
Claims priority, application France, Sept. 20, 1966, 76,901
Int. Cl. B65h *23/10*
U.S. Cl. 242—75.2 10 Claims



In winding juxtaposed strips upon a common mandrel, varying tensions of the strips are equalized by a braking device comprising a multiplicity of juxtaposed braking rings freely rotatively mounted upon a drum. The juxtaposed strips to be wound are applied to engage an arc-shaped area of the cylindrical surface formed by the edges of the rings and the strips are maintained in intimate friction contact with said surface by fluid pressure. The braking rings are spaced by intervening spacing rings of lesser diameter and mounted upon the drum to move freely axially but being locked against rotation. The resultant composite stack of alternate braking and spacing rings is held under predetermined axial pressure by an inflatable fluid pressure chamber.

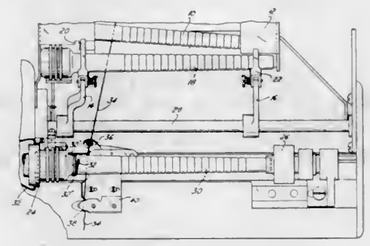
3,468,495
HEAVY DUTY METALLIC REEL
Everett O. Starratt, Cumberland, R.I., assignor to Wanskuck Company, a corporation of Rhode Island
Filed Dec. 26, 1967, Ser. No. 693,610
Int. Cl. B65h *75/14*
U.S. Cl. 242—118.8 5 Claims



A metal reel having a barrel and center tube with heads at each end, the heads being formed of two parts

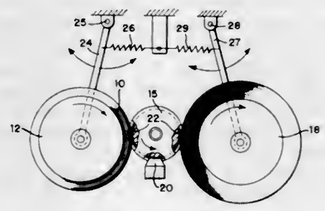
with the inner part having a neck to abut the ends of the barrel and the outer part shaped to stiffen the head and be secured to the center tube of the barrel.

3,468,496
BOBBIN WITH STRAND ENGAGING MEANS
Julio Limantour, Durham, Pa. 18037
Filed May 26, 1967, Ser. No. 641,643
Int. Cl. B65h *75/28*
U.S. Cl. 242—125.1 3 Claims



A bobbin for use in an automatic winding machine comprising a body portion and resilient wire wound as a helix mounted on said body with at least two full turns of the wire, and held in tight adjacently by the resilience of the wire, said wire serving as a yarn end attaching means.

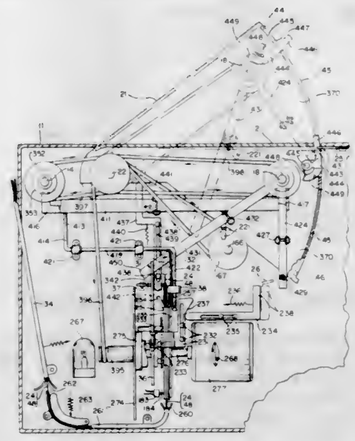
3,468,497
ROLLER OR CAPSTAN FOR TAPE HANDLING SYSTEM
Jerry O. Kelley, Columbus, Ind., assignor to Arvin Industries, Inc., Columbus, Ind., a corporation of Indiana
Filed Feb. 14, 1968, Ser. No. 705,405
Int. Cl. G11b *15/44*; B65h *27/00*
U.S. Cl. 242—192 7 Claims



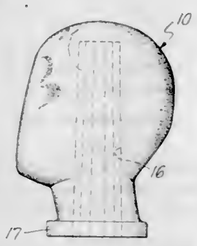
A tape handling system includes a roller or capstan having a rigid guide flange at one end and a guide flange at the other end having independently flexible fingers each separately engageable with an edge of the tape to urge the tape against the rigid flange.

3,468,498
SUPPLY ROLL SPINDLE ASSEMBLY FOR CINEMATOGRAPHIC PROJECTORS
Leslie J. Bunting, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed Nov. 24, 1967, Ser. No. 685,577
Int. Cl. G03b *1/12*; B65h *17/02*
U.S. Cl. 242—207 5 Claims

A supply roll spindle assembly for use in a cinematographic projector is selectively adjustable to allow free rotation of a film supply roll mounted thereon or to establish between said supply roll and a rotating power input member a selected one of three different modes of torque transmitting cooperation.



3,468,499
WIG STAND
Peter A. Rodgers, 1125 E. Redondo Blvd., Inglewood, Calif. 90302
Filed June 5, 1967, Ser. No. 643,602
Int. Cl. A45d *44/14*
U.S. Cl. 223—66 3 Claims



A wig stand made of rigid expanded polystyrene foam material. The wig stand is formed in a three-part mold which includes an elongated plug. The plug forms a spindle receiving opening in the wig stand, which opening extends vertically upwardly from the base to adjacent the top of the stand. The central portion of the opening is dimensioned and adapted to fit around a conventional circular spindle, but the overall cross-section of the opening is substantially larger.

3,468,500
ARRESTING GEAR FOR AIRCRAFT AND OTHER VEHICLES
Sixten Einar Carlsson, Norrkoping, Sweden, assignor to Borgs Fabriks AB., Norrkoping, Sweden
Filed Dec. 1, 1966, Ser. No. 598,456
Claims priority, application Sweden, Dec. 1, 1965, 15,584/65
Int. Cl. B64c *25/68*; B64f *1/02*
U.S. Cl. 244—110 3 Claims

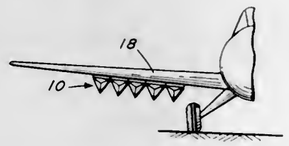
This disclosure provides an arresting device for aircraft and other vehicles comprising a net having upper

and lower cables. The upper cable consists of a plurality of separate lines or strands. Vertical lines connect the



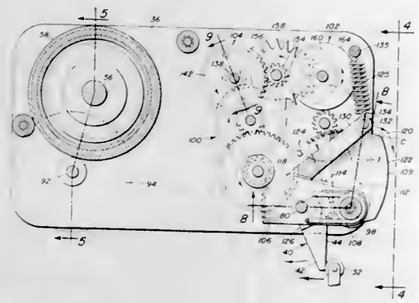
upper and lower cables. Each of these vertical lines is connected at one end to a single one of the strands of the upper cable.

3,468,501
COMPATIBLE MISSILE/AIRCRAFT CONFIGURATION
Cleophas Philemon Baum, Bethesda, Md., assignor to the United States of America as represented by the Secretary of the Navy
Filed Aug. 29, 1967, Ser. No. 664,215
Int. Cl. B64d *7/00;* **F42b** *19/46, 22/44*
U.S. Cl. 244—137 **2 Claims**



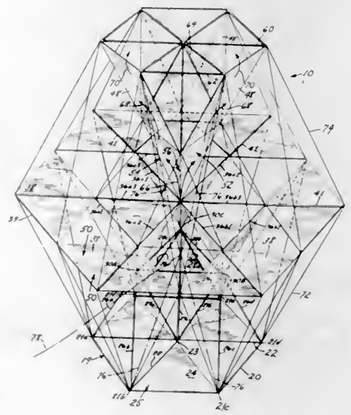
A configuration to improve the aerodynamic and structural efficiency of stores such as missiles, fuel tanks, etc., which are appended externally on high performance aircraft. By making the stores triangular in cross section, with a pointed nose and tail fins, and attaching them closely to an airframe, not only is air turbulence and drag reduced, but an added uplift is given to the aircraft by the action of the wedge shaped stores in causing an air compression area under the wing.

3,468,502
PARACHUTE RELEASE DEVICE
Richard J. Kinngy, Springfield, Va., assignor to Halliburton Company, Duncan, Okla., a corporation of Delaware
Filed May 8, 1967, Ser. No. 637,001
Int. Cl. B64d *17/58;* **B64c** *13/04;* **F16h** *5/74*
U.S. Cl. 244—150 **18 Claims**



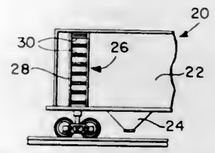
In a parachute release device including a piston, a parachute release cable connected to the piston, spring means biasing said piston to a release position and a release mechanism to hold the piston in a retracted position against the force of the spring means and to release the piston responsive to a predetermined time lapse, the improvement comprising said release mechanism including a timing cam mounted relative to a fixed axis, said timing cam including a cam surface terminating in a breakaway edge, a lever pivotally mounted on said fixed axis, a cam follower to engage the cam surface and pivotally mounted on said lever with the pivot axis being spaced from said fixed axis so that pivoting of said lever advances the cam follower toward the breakaway edge, timing means to govern pivoting of said lever, and a trigger coupled to said cam follower and adapted to hold the piston retracted while said cam follower engages said cam surface and to release same responsive to the cam follower overriding the breakaway edge.

3,468,503
KITE CONSTRUCTION
Paul Snibbe, 312 W. 90th St., New York, N.Y. 10024
Filed June 5, 1967, Ser. No. 643,588
Int. Cl. B64c *31/06;* **A63h** *27/08;* **F41j** *19/08*
U.S. Cl. 244—153 **4 Claims**



A kite construction with high efficiency lift characteristics. The main element comprises a tetrahedron shaped element having an apex at its lowest point, the three sides extending upwardly from the apex being covered, and the top side being uncovered. Extending upwardly and outwardly from the covered sides are generally rectangular flaps. Air currents are accelerated first passing up the leading sides (facing into the current) and then again passing up and over the vanes creating unusually high efficiency lift characteristics.

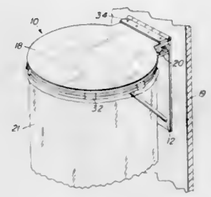
3,468,504
DIVERGING BAR TYPE VIBRATOR MOUNT
Carl G. Matson, 401 E. Central Ave., Kewanee, Ill. 61443
Filed Oct. 30, 1967, Ser. No. 678,845
Int. Cl. F16m *1/00*
U.S. Cl. 248—14 **7 Claims**



A mount for attaching a vibrator to the structure of an object to be vibrated, featuring at least a pair of bar-like members arranged in divergent relation so as to be

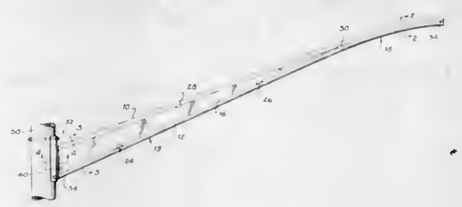
receivable of the convergent opposed clamp jaws of a vibrator, the bars being maintained rigidly in spaced apart and divergent relationship by means spanning them and the whole being securable to and/or capable of being incorporated into the structure of the object to be vibrated.

3,468,505
BAG HOLDER
William J. Reilly, 2725 Oakcrest Drive, Dubuque, Iowa 52001
Filed May 22, 1967, Ser. No. 640,101
Int. Cl. B65b *67/04, 67/12*
U.S. Cl. 248—101 **4 Claims**



A bag holder which has a flat supporting plate to be secured to a wall has a horizontal circular lower ring rigidly supported by the plate. An upper ring of the same diameter as the lower ring is pivotally mounted on the plate. The upper ring carries a plurality of spring clips so that when moved to the horizontal position directly on top of the lower ring the rings will be clamped together against the peripheral edge of the bag to support it along a continuous line.

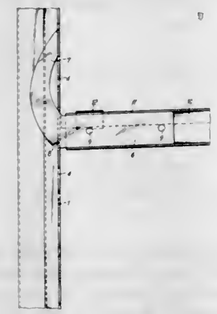
3,468,506
BRACKET
Sandy T. Curlee, Cary, N.C., assignor to Curlee Machinery Company, Inc., Cary, N.C.
Filed Apr. 26, 1967, Ser. No. 633,815
Int. Cl. F16m *13/02;* **F21v** *33/00*
U.S. Cl. 248—221 **2 Claims**



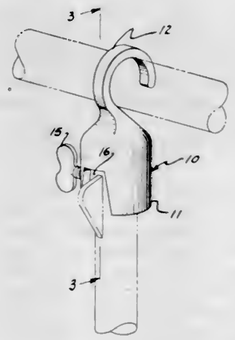
A bracket for holding a street light or sign is composed of upper and lower members connected by triangular side plates spot welded at spaced points to the upper and lower members to form a tapered structure adapted to be secured to a post.

3,468,507
UPRIGHT FOR SHELVES
Sven Konrad Gerdman, Box 61, Lomma, Sweden
Filed Dec. 9, 1966, Ser. No. 600,440
Int. Cl. A47g *29/02*
U.S. Cl. 248—243 **1 Claim**

The combination of an U-profile upright hollow bracket support bar and a bracket engaged in a slot in the web of said support, characterized in that each side portion of said support comprises two shoulders perpendicular to the web and two shoulders parallel with the web, each shoulder surface provided with plural attachment and support points; and said bracket comprising a first arm extending normal to the support and a second arm inserted within a slot in said support and extending upward over the adjacent slot along a convex curve and with its end abutting the inside of the web at a point above said adjacent slot.



3,468,508
GUN HANGER
Ben Huver, 620 W. Main St., Laurel, Mont. 59044
Filed June 20, 1967, Ser. No. 647,437
Int. Cl. A47f *5/00;* **A47h** *1/10*
U.S. Cl. 248—314 **2 Claims**

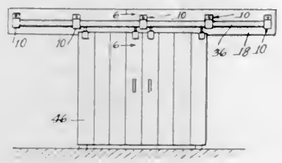


The gun hanger has a tubular member terminate in a hook at its upper end and has a plastic sleeve received within the member. The lower end of the hanger is open and receives the end of a gun barrel. A thumbscrew threads through the side of the tubular member and extends through the sleeve to engage and retain the end of the gun barrel within the tubular member. A downwardly opening slot is formed through registering sides of the tubular member and sleeve to receive the front sight of the gun barrel.

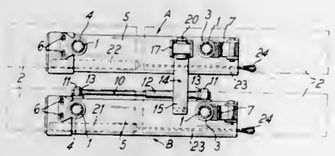
3,468,509
TRACK MOUNTING BRACKET
Robert E. Foltz, Sterling, Ill., assignor to Lawrence Brothers, Inc., Sterling, Ill., a corporation of Illinois
Filed Sept. 6, 1967, Ser. No. 665,782
Int. Cl. E05d *15/06;* **A47h** *1/124*
U.S. Cl. 248—316 **7 Claims**

This invention relates generally to an improved device or bracket means for mounting tracks of the type commonly

employed to slidably support doors depending therefrom. The present application discloses bracket means including a pair of bracket members, one of said bracket members being in the form of a substantially flat plate adapted for application to a conventional door frame. The other bracket member is pivotally coupled with the upper margin of the first-mentioned bracket member and has laterally and downwardly extending portions cooperating with its companion bracket member to provide a track accommodating chamber. Means in the form of a screw member serves to clamp the bracket members against a track and also contemporaneously to clamp the bracket members against the door frame.

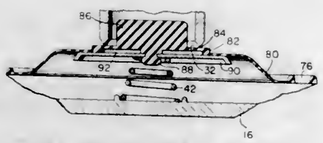


3,468,510
MINE ROOF SUPPORT UNITS
Karl-Heinz Wehner, 42 Waldstrasse, 462 Castrop-Rauxel 2, Germany
Filed Feb. 28, 1968, Ser. No. 708,842
Claims priority, application Germany, Mar. 7, 1967, K 61,621
Int. Cl. E21d *15/14, 15/50, 11/14*
U.S. Cl. 248—357 **9 Claims**



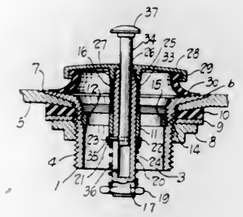
The specification describes a mine roof support unit comprising two advancing support frames. In order to limit relative movement between the frames they are connected by means of a transverse strap sliding along a rod fixed on top of the frames. The strap has a heel part to limit rotation about the axis of the rod and its end remote from the frame with the rod is wedged in a pocket structure on the other of the frames.

3,468,511
ANTI-HUNTING DIAPHRAGM VALVES
Lauren D. Haskins, Long Beach, Calif., assignor to Robertshaw Controls Company, Richmond, Va., a corporation of Delaware
Filed Dec. 19, 1966, Ser. No. 602,853
Int. Cl. F16k *7/17*
U.S. Cl. 251—61.1 **9 Claims**



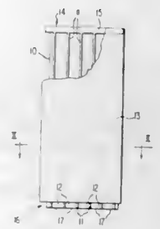
A diaphragm type valve member for a pressure regulator movable relative to a fixed valve seat for regulating the pressure of a fluid flow therethrough in order to maintain deliver the fluid flow at a constant pressure for designed. A central portion of the valve member is integrally formed with an enlarged rib spaced inwardly of the seating contact portion to stabilize the movement of the diaphragm valve element and eliminate hunting or oscillation thereof at low pressure ranges.

3,468,512
SELF-CONTAINED DRAINPLUG
William E. Politz, Delphi, Ind., assignor to Stephen A. Young, Monticello, Ind.
Filed Apr. 24, 1967, Ser. No. 633,039
Int. Cl. F16k *31/56;* **E03c** *1/23*
U.S. Cl. 251—74 **5 Claims**



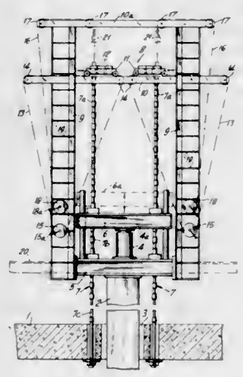
This invention involves a device adapted to be removably mounted in the outlet of a bath tub or similar liquid container and includes a body which supports a closure member movable upwardly and downwardly by the toes of the user for example, with a locking arrangement provided to lock and/or release the closure which is normally biased into an open position the releasing arrangement being positioned about centrally of the closure member itself for ready manipulation and a locking device being a part of the locking arrangement and described as a tilting washer.

3,468,513
COOLED ROTOR BLADE
Christian Schmitz, Engelberg, Post Schorndorf, Germany, assignor to Daimler-Benz Aktiengesellschaft, Stuttgart-Unterturkheim, Germany
Filed June 8, 1967, Ser. No. 644,725
Claims priority, application Germany, June 11, 1966, D 50,302
Int. Cl. F01d *5/18*
U.S. Cl. 253—39.15 **7 Claims**



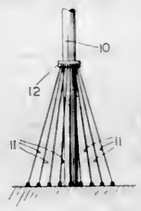
A cooled rotor blade, especially for internal combustion turbines, in which the inner body is provided with elongated ribs forming channels for the cooling medium and a shirt surrounding the inner body is formed by a sheet-metal-like jacket secured to the inner body and provided with discharge apertures, whereby the discharge apertures are so distributed as to assure substantial temperature uniformity in the blade structure.

3,468,514
LIFTING ASSEMBLY FOR LIFT-SLAB-TYPE BUILDING CONSTRUCTION
Franz Vaessen, Essen, Germany, assignor to Hochtief AG. fur Hoch-und Tiefbauten vorm. Gebr. Helfmann, Essen, Germany
Filed May 23, 1967, Ser. No. 640,591
Claims priority, application Germany, June 4, 1966, H 59,598
Int. Cl. B66f *1/00*
U.S. Cl. 254—106 **12 Claims**



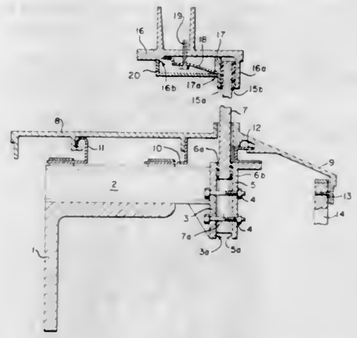
Apparatus including sectional lifting rods is arranged for positioning a lift slab on a vertical support column. A lifting device, such as a hydraulic jack, is located on the column for raising the slab using the sectional lifting rods. The lifting rods extend from the slab to the lifting device and when the slab is raised the rods extend above the lifting device. A frame structure is provided above the lifting device to support and store individual rod sections after they have been disconnected in the course of raising the slab. The frame member contains a support beam upon which a moving member is located for holding and supporting the disconnected sectional lifting rods. Additionally, the frame contains a winch-like member for lowering portions of the sectional lifting rods into position prior to commencing the slab lifting operation.

3,468,515
VEHICULAR SAFETY GUARD
Anthony H. Lamb, 66 King St., Hillside, N.J. 07205
Filed Feb. 15, 1968, Ser. No. 705,705
Int. Cl. E04h *17/10;* **E01f** *15/00*
U.S. Cl. 256—1 **2 Claims**



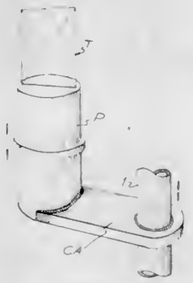
One or more steel cables forming a safety guard for an immovable object located in a position where it is likely to be struck by a vehicle traveling on a highway, the cables being arranged to absorb the impact force of the vehicle.

3,468,516
BALUSTRADE AND THE LIKE
Theodore Jounot, Melun, France, assignor to Sandvik Steel, Inc., Fair Lawn, N.J.
Filed Nov. 13, 1967, Ser. No. 682,266
Claims priority, application France, Nov. 24, 1966, 84,851
Int. Cl. E06b *3/60;* **E04h** *17/16*
U.S. Cl. 256—24 **5 Claims**



A balustrade construction is disclosed formed by a transparent or translucent panel which is self-carrying and is clamped at the top and bottom by a frame construction.

3,468,517
MEANS FOR APPLYING A SONIC OR ULTRASONIC TRANSDUCER SYSTEM TO A SURFACE TO PREVENT DEPOSITION OF MATERIALS THEREON
John E. Goodman, Rawdon, and Arthur Grange, Ilkley, England, assignors to Ultrasonics Limited Shipley, England
Filed Oct. 10, 1967, Ser. No. 674,242
Claims priority, application Great Britain, Oct. 13, 1966, 45,752/66
Int. Cl. B01f *11/02, 15/06;* **B06b** *3/00*
U.S. Cl. 259—2 **4 Claims**



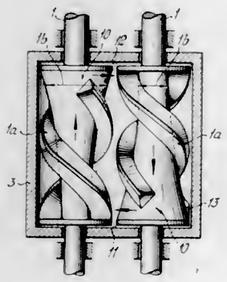
An apparatus for transmitting sonic and ultrasonic vibrations to a pipe or container carrying a fluid to prevent deposition of the fluid on the inner surface of the pipe or container, the apparatus comprising a transducer and probe mounted together coaxially in abutting, end-to-end relationship, the probe consisting of a resonant member of substantial mass and having secured to its side over a minimal area near the end furthest from the transducer one end of a rigid coupling member which extends from the probe at least initially in a direction at right angles to the longitudinal axis of the transducer-probe assembly,

the other end of the coupling member being secured to the surface preferably at right angles to the longitudinal axis of the pipe or container at the point of securing. A plurality of transducer-probe assemblies may be secured to the surface by a common coupling member, or the assembly and coupling member may be located inside a container.

3,468,518
KNEADING AND MIXING DEVICE FOR PROCESSING MATERIAL IN PASTY CONDITION

Heinz Koch, Ludwigsburg, Germany, assignor to Werner & Pfleiderer, Stuttgart-Freuerbach, Germany, a company of Germany

Filed Feb. 28, 1968, Ser. No. 709,095
Claims priority, application Germany, May 3, 1967, W 43,905
Int. Cl. B01f *7/08;* B29h *1/00*
U.S. Cl. 259—6 10 Claims

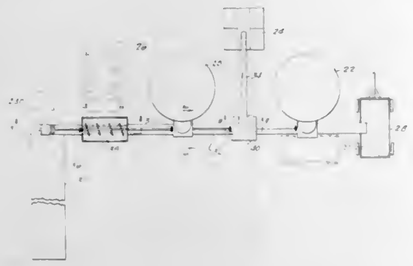


A kneading and mixing device for processing material in pasty condition, particularly highly viscous material, in which the material is processed in a chamber closed at opposite ends by end walls and including mutually parallel, rotary mixing shafts cross-sectionally enlarged toward opposite ends. An elongate kneading cam spirally encompasses each of said shafts, material fed into the chamber being conveyed by the cams toward the enlarged ends of the shafts, that is, in the opposite directions.

3,468,519
SILAGE AND FEED GRAIN MIXING AND CONVEYING SYSTEM

Glenn R. Lorenzen, Arthur, Iowa 61431

Filed Oct. 12, 1967, Ser. No. 674,902
Int. Cl. B01f *7/08, 15/02;* A01k *5/00*
U.S. Cl. 259—9 4 Claims

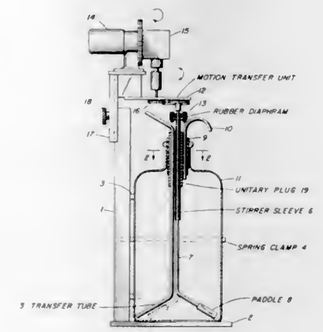


A feed storage, mixing, conveying, and dispensing system comprising a pair of silos, each equipped with distributing means for alternatively mixing and metering, or directly discharging, feed therefrom; and open-top hopper for mixing and metering pit silage; a storage building feeding into a double compartment mixing and metering hopper for grain and protein feed; all said mixing and metering means being connected at spaced points to an elongated, horizontal, reversing mixer and conveyor. A second conveyor discharging into an animal feed bunk is provided at one end of the mixer conveyor so that the latter may selectively discharge thereinto, or, by reversing the direction of the conveyed material, discharge in the opposite direction into a feed wagon or the like.

3,468,520
COMBINATION AGITATION AND TRANSFER UNIT FOR SUSPENDED CELLS

William James Duryea, Warwick, N.Y., and George Spencer Bott, Westwood, N.J., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

Filed May 12, 1967, Ser. No. 644,733
Int. Cl. B01f *11/00, 7/16;* B01l *3/00*
U.S. Cl. 259—39 3 Claims



A combined transfer tube and reciprocating paddle stirrer is mounted as a unit in a stopper which can be introduced into a bottle or other container. A vent is provided through the same stopper. The transfer tube and paddle are both bent so that when moved closely together the whole assembly can be inserted into a bottle without disassembly. After insertion, the paddle shaft is connected through a rubber sealing diaphragm to an eccentric drive from a suitable power source, such as a motor. The motor turns the shaft and eccentric connections cause the paddle stirrer to reciprocate slowly through an arc slightly less than 180°.

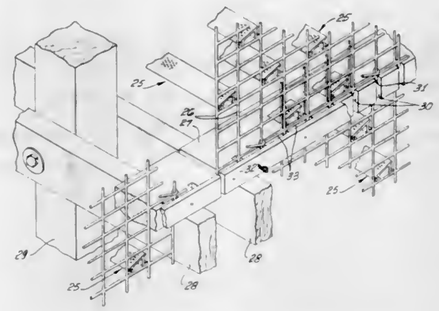
The transfer tube is bent so that it extends substantially to the bottom of the container, which permits transferring substantially all of its contents. The slow reciprocation of the stirrer produces a uniform suspension without cell lysis, a suspension of which is to be transferred. At the same time, the stirrer and unitary transfer tube assembly can be easily removed from the container and conveniently sterilized.

3,468,521
SPLASH DIRECTING FILL FOR COOLING TOWERS

Donn B. Furlong, Glenn F. Hallett, and Warren F. Kane, Santa Rosa, Calif., assignors to Fluor Products Company, Inc., Santa Rosa, Calif., a corporation of California

Filed Oct. 27, 1967, Ser. No. 678,709
Int. Cl. F28c *1/00*
U.S. Cl. 261—111 11 Claims

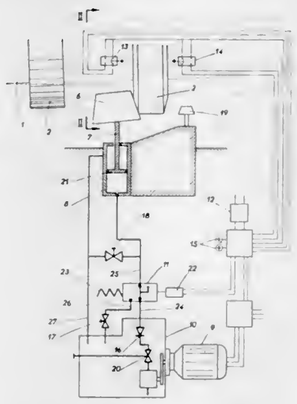
The disclosed fill, which is easily installable in a cooling tower, includes a strip adapted to extend endwise with horizontal elongation in the tower in a transverse direction substantially normal to the lateral air flow direction. The strip has an elongated edge that is convex in vertical lateral planes and that faces laterally toward the oncoming air flow. The strip also has an upper surface the major extent of which slopes downwardly and laterally to terminate at the convex edge in such relation that the upper surface which receives dropping liquid directs splash travel of such liquid upwardly and laterally countercurrently into the oncoming lateral air flow, and at the same time the bulk of the water filmed on the upper surface drains toward the convex edge.



3,468,522
ROTATABLE APPARATUS, MORE PARTICULARLY A ROTATABLE KILN, FOR THE TREATMENT OF MATERIALS

René Bovagne, 2 Rue Jules Chevrier, Chalon-sur-Saone, Saone-et-Loire, France

Filed Nov. 8, 1967, Ser. No. 681,484
Claims priority, application France, Dec. 5, 1966, 86,194
Int. Cl. F27b *7/22*
U.S. Cl. 263—33 7 Claims

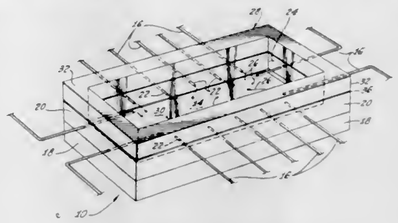


A rotatable apparatus, more particularly a rotatable kiln, for the treatment of materials, comprising an enclosure rotatable around an axis which is substantially horizontal or at a slight inclination to the horizontal, a support, and rolling means between the support and the enclosure, characterised in that the apparatus comprises: an outer band borne by, and perpendicular to the axis of, the enclosure, and at least one roller whose surface has a shape of revolution, and/or each roller being in contact with the band flank, being disposed on the support and having its axis extending towards the axis of rotation of the enclosure. Means are provided to reciprocate the roller in a direction extending through the enclosure axis.

3,468,523
APPARATUS FOR HEATING A MICROMODULAR PACKAGE

Sydney Dix, Costa Mesa, Calif., assignor, by mesne assignments, to GTI Corporation, Providence, R.I., a corporation of Rhode Island

Original application Jan. 10, 1964, Ser. No. 337,081, now Patent No. 3,383,454, dated May 14, 1968. Divided and this application Nov. 28, 1967, Ser. No. 712,875
Int. Cl. F27b *17/00;* F23m *5/00;* H05b *7/16*
U.S. Cl. 263—40 7 Claims

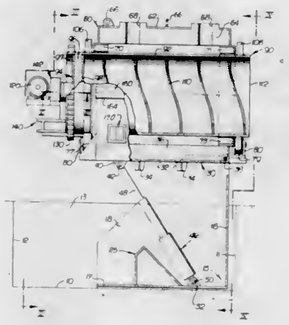


The present invention is directed to an apparatus for making a micromodular package wherein the package has a housing that includes a base and a plurality of sidewalls and a cover that has a periphery which is hermetically sealed to the sidewalls. The apparatus includes a heating element that registers with the periphery to apply heat to the periphery so as to hermetically bond the cover to the sidewalls. The invention also includes the use of a heat sink which may be used to maintain the temperature of a portion of the micromodular package below a predetermined level.

3,468,524
METAL TREATMENT FURNACE

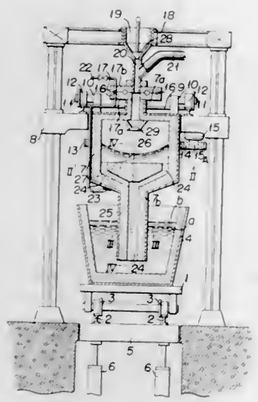
Clarence W. Haack, San Pedro, Calif., assignor to Halaco Engineering Co., Gardena, Calif., a corporation of California

Continuation of application Ser. No. 479,251, Aug. 12, 1965. This application June 25, 1968, Ser. No. 742,965
Int. Cl. C21b *11/06, 7/14;* C21c *5/50*
U.S. Cl. 266—33 6 Claims



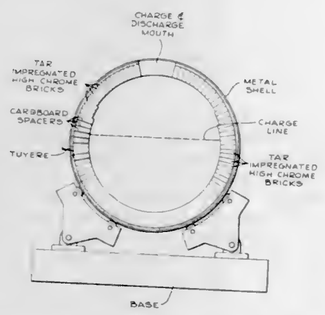
Refractory lined furnace housing providing a longitudinal chamber and having an open front end, the housing including a lower section and an upper section supported thereon, freely liftable upwardly therefrom for removal, but interengaged with the lower section by flange means preventing relative lateral and longitudinal movement; an open-mouthed pot rotatably mounted in the chamber with its open mouth adjacent the housing open front end, the pot rotational mounting including a rotatable table carried at the housing other end, the pot being abuttable against the table; and means for tilting the housing and pot together about a transverse horizontal axis adjacent the housing open end.

3,468,525
VACUUM DEGASIFYING APPARATUS
Takaho Kawawa, Tokyo, Japan, assignor to Nippon Kokan Kabushiki Kaisha, Tokyo, Japan, a corporation of Japan
Filed Nov. 15, 1966, Ser. No. 594,567
Claims priority, application Japan, Nov. 16, 1965, 40/70,106
Int. Cl. C21c *7/10*
U.S. Cl. 266—34 1 Claim



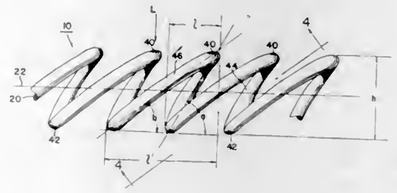
A continuous degasifying apparatus wherein a vacuum vessel is disposed over a ladle containing molten metal. The vessel is rotatably supported so it can rotate about a vertical axis. The vacuum vessel has a cylindrical tail extending down into the ladle. Molten metal is drawn up from the ladle through a draw-up conduit and thrown out by centrifugal force and returned to the ladle through a discharge conduit having an opening towards the periphery of the vacuum vessel. The discharge conduit passes through the tail down into the ladle along the axis of rotation.

3,468.526
COPPER CONVERTER HAVING TAR IMPREGNATED FIRED CHROMITE BRICK LINING
Jacques R. Martinet, San Jose, and Jan Bowman, Los Gatos, Calif., assignors to Kaiser Aluminum & Chemical Corporation, Oakland, Calif., a corporation of Delaware
Filed Oct. 25, 1965, Ser. No. 505,187
Int. Cl. F27b *1/14*; C04b *35/42*
U.S. Cl. 266—43 6 Claims



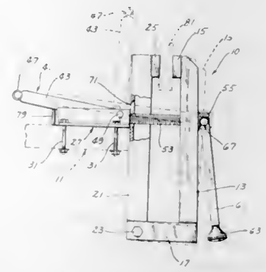
A copper converter is provided having a refractory lining containing fired, shaped articles containing at least 40% by weight of chromite and impregnated, after firing, with a cokable carbonaceous material; and in the installed lining cardboard spacers are provided between at least some of the shapes.

3,468,527
COIL SPRING
Glenn E. Mather, Logansport, Ind., assignor to North American Rockwell Corporation, Pittsburgh, Pa., a corporation of Delaware
Filed Mar. 8, 1968, Ser. No. 711,774
Int. Cl. F16f *1/06, 1/34*
U.S. Cl. 267—1 12 Claims



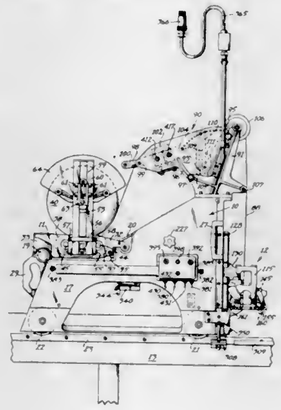
A continuous coil spring for loading in a predetermined direction transverse to its coiled axis, each coil of the spring having portions formed on different constant radii and joined by relatively short transition portions. Alternate portions of the spring are disposed at profile angles which are fixed independently of the spring index. A broad range of load-deflection characteristics, including a substantially constant load characteristic, can be attained with a high degree of predictability by accurately forming the constant radii portions and selecting the spring index in accordance with this invention. The spring, when in annular form, may be arranged to be loaded axially or radially with respect to its annular axis.

3,468,528
QUICK RELEASABLE VISE
Ralph A. Marsh, Whiting, Iowa 51063
Filed Aug. 28, 1967, Ser. No. 663,647
Int. Cl. B25b *1/06, 1/16, 1/14*
U.S. Cl. 269—223 7 Claims



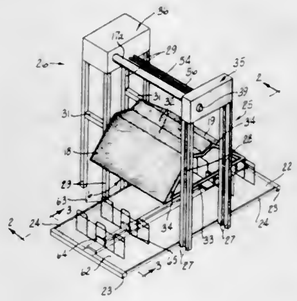
A quick releasable vise having first and second jaw members which may be quickly released with respect to each other without rotation of the actuating handle. The actuating handle is connected to a threaded rod which extends through the jaw members whereby rotation of the actuating handle will cause the jaw members to be moved with respect to each other. A quick release handle is operatively connected to the threaded rod to permit the jaw members to be separated when the quick release handle is in an unlocked position.

3,468,529
CLOTH LAYING MACHINE HAVING CLOTH ROLL SUPPORTING AND FEEDING STRUCTURE
Thomas W. Martin, Sr., and Asa Scobey Rogers, Jr., Nashville, and Shirley B. Ashton, La Vergne, Tenn., assignors to Cutters Machine Company, Inc., Nashville, Tenn., a corporation of Tennessee
Original application Apr. 4, 1966, Ser. No. 540,026, now Patent No. 3,400,927, dated Sept. 10, 1968. Divided and this application May 28, 1968, Ser. No. 739,950
Int. Cl. B65h *29/46, 17/12*
U.S. Cl. 270—31 3 Claims



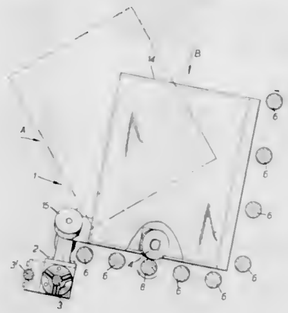
A cloth roll is cradled in two peripheral feed rollers. The core of the roll receives spindles which are guided on vertical uprights. One vertical upright carries remotely controlled means for elevating and lowering a spindle. The other vertical upright is mounted for swinging movement to an outboard inoperative position.

3,468,530
DECOLLATOR
Roy F. Bird, 1631 Garfield, Idaho Falls, Idaho 83401
Filed Sept. 27, 1966, Ser. No. 582,344
Int. Cl. B65h *41/00, 45/101*
U.S. Cl. 270—52.5 4 Claims



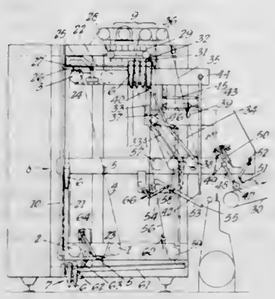
Method and apparatus are provided for decollating strips folded in zigzag fashion by drawing an inner strip upwardly and coiling it while allowing adjacent strips to fall by gravity into separate piles.

3,468,531
DRIVE MECHANISMS
Kenneth William Herbert Whittington, Barking, England, assignor to Her Majesty's Postmaster General, London, England
Filed Aug. 3, 1967, Ser. No. 658,270
Claims priority, application Great Britain, Aug. 12, 1966, 36,255/66
Int. Cl. B65h *1/04, 1/14*
U.S. Cl. 271—62 5 Claims



A card stack moving device to fit on a bed of rollers supporting the stack, the device having a wheel engageable with one or more of the rollers, the axes of the wheel and roller being skew so that rotation of the roller "screws" the wheel and the device along the length of the roller.

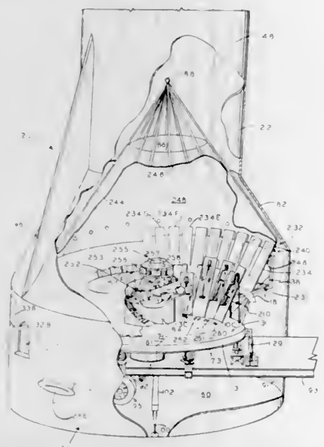
3,468,532
APPARATUS FOR FEEDING LAUNDERED SHEETS
Norman Stanley Valentine, 8 Weavers Ring, Angermering, Sussex, England
Filed Sept. 22, 1967, Ser. No. 669,881
Int. Cl. B65h *29/68*
U.S. Cl. 271—69 9 Claims



Apparatus for feeding laundered sheets to an endless callander feed band passing around spaced apart rollers, said apparatus comprising a plurality of sheet carriers, means for raising each sheet carrier upwardly to a sheet loading station with the sheet carrier defining upper and lower edges extending in a direction parallel to the axes of the said rollers, means for conveying each sheet carrier from the sheet loading station to a level above the callander feed band, and means for lowering the sheet carrier towards the callander feed band and for causing the sheet carrier to assume a setting in which one of the aforesaid edges is positioned forwardly of the other edge so as to space apart the leading and trailing ends of the sheet, and means for sweeping the leading end of

the sheet on the callander feed band, including a loaded sheet carrier storage station at which the loaded sheet carriers can queue prior to being lowered towards said callander feed band.

3,468,533
ROTATABLE PLATFORM HAVING RIDER SUPPORTS ENCLOSED IN AN OPTICAL CHAMBER FOR SIMULATING A SPACE RIDE
Walter J. House, Jr., P.O. Box 3446, Amarillo, Tex. 79106
Filed July 6, 1964, Ser. No. 380,562
Int. Cl. A63j *5/00*; G09b *9/08*; A63g *1/02*
U.S. Cl. 272—18 1 Claim



1. Apparatus for a simulated extraterrestrial ride comprising an optical enclosure chamber, said chamber having a roof at its top and, at its bottom, a platform rotatable about a vertical axis, a support for said platform, a drive means operatively connected to said platform, means permitting rotation of said platform about said axis connecting said platform to said support, control means operatively connected to said drive means settable at a predetermined speed of rotation of said platform, a plurality of sled supports fixedly mounted on said platform in an array symmetrical about said axis, each sled at a distance r from said axis, a spectator support sled movably mounted on each said support, each said sled being supported on the sled support therefor for movement in a plane extending radially upward and outward of said axis at an angle α, the relation between the angle α and the location of the sled and such platform being that $1/r$ is inversely proportional to the value of product of $(\sin \alpha) \times (\cos \alpha)$, and means for generating an optical image along said vertical axis of rotation on the roof of said chamber, and wherein the relation between the angle α at which the sleds are supported relative to the rotating platform, speed of rotation of said platform and the location of each said platform is set forth by the following formula:

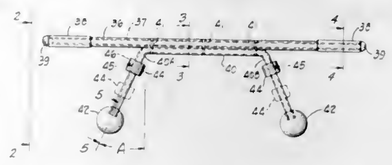
$$4\pi^2 n^2 r \sin \alpha \cos \alpha = g$$

wherein

n=the revolutions per second of the platform at which the control means is set, $\pm 2\%$,
r=the distance of the base of one spectator support from the axis of rotation of the platform, $\pm 0.5\%$,
α=angle with horizontal of the spectator support at its intersection with the platform, $\pm 1°$ and
g=the acceleration of gravity at the point geographically where the ride occurs,

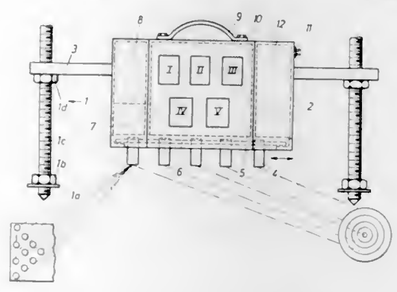
and wherein a plurality of rows of sled supports are mounted on said rotating platform, the second row of sled supports being mounted peripherally of the first row of supports and the angle α of said plane for said second row of sled supports being larger than the angle α for said first row.

3,468,534
EXERCISE BAR HAVING REVOLVABLE ARMS
John A. Donato, 11039 Fitzwater Road, Brecksville, Ohio 44141
Filed Nov. 28, 1967, Ser. No. 691,098
Int. Cl. A63b *11/04, 11/02*
U.S. Cl. 272—84 9 Claims



An exercising and amusement device in which a rotatable shaft has angular portions extending radially therefrom, to swing around the shaft axis as the shaft is moved in a motion to cause the angular portions to revolve, the shaft having handle portions held by the user to permit the shaft to rotate therein, the handle portions having a larger bore than the diameter of the shaft in the handle portions to provide a loose play and small orbital movement of the shaft in the handle portions as the shaft rotates on its axis, the free ends of the angular portions having rubber balls or resilient pads thereon for guarding the same, and auxiliary weights mountable on the angular portions to adjustable positions therealong to add desired weight for increasing the force required to swing the angular pieces about the shaft axis. The handle portions are disposed adjacent the ends of the shaft and the angular portions extend outwardly from the shaft at locations spaced from the ends of the shaft inwardly toward ends other from the handle portions, the free ends of the angular portions being closer to ends other than are the opposite ends of the shaft whereby the hands of the holder of the device are farther apart than said free ends of the angular portions.

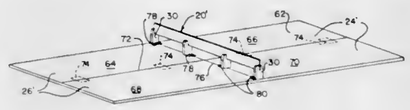
3,468,535
SCORING DEVICE
Hermann Valentin Obst, 8671 Upper Franconia, Oberkotzau, Germany
Filed Aug. 2, 1966, Ser. No. 569,613
Claims priority, application Germany, Aug. 3, 1965, O 11,043
Int. Cl. A63b *71/06*
U.S. Cl. 273—14 6 Claims



A scoring device portable to any game site; it includes bolt means characterized by a disk bolt and disk to give a wide range of adjustability to insure that the housing of

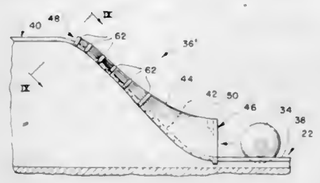
the device is level. Impact sensing contact switches are connected into an electrical scoring means carried in the housing. These contact switches are adjustable on the housing along a guide rail thereof or they can be removed from the housing and set remotely therefrom in the form of a play article such as a target.

3,468,536
RACKET AND BALL GAME
Allen J. Minshull, Marilyn A. Minshull, Glenda A. Minshull, and James B. Minshull, all of Box 175A, Rte. 1, Mercer, Pa. 16137
Filed Aug. 29, 1966, Ser. No. 575,791
Int. Cl. A63b *67/04*
U.S. Cl. 273—30 8 Claims



In a game apparatus, the combination comprising means for delineating a generally rectangular playing area, relatively low divider means extending transversely across said playing area and midway between the ends thereof, a ball adapted to be propelled from one side to the other side of said divider means, rackets for so propelling said ball, the diameter of said ball being a substantial proportion of the width of each of said rackets and of the height of said dividing means. The divider means can be in the form of a plurality of edge-abutting planar members. The playing area can be foldable. Preferably, the ball has an initial rebound characteristic of 40–50% of the drop height.

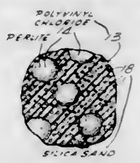
3,468,537
BOWLING BALL DECELERATING APPARATUS
Ernest C. Webb, Bay Village, Ohio, assignor to Lakewood Manufacturing Co., Westlake, Ohio, a corporation of Ohio
Filed June 22, 1965, Ser. No. 465,844
Int. Cl. A63d *5/02*
U.S. Cl. 273—49 4 Claims



This patent discloses bowling ball decelerating and cleaning apparatus comprising an elongated, plicated limber hood or passage having an open entry end and provided with resilient means against which a bowling ball works, expanding the passageway, in going through the hood or passage.

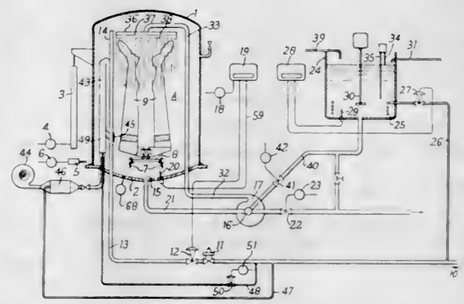
3,468,538
WEIGHTED BILLIARD CUE
John Douglas Johnson, Ironwood, Mich., assignor to Kodiak Corporation, a corporation of Michigan
Filed Dec. 6, 1965, Ser. No. 511,811
Int. Cl. A63d *15/08*

A billiard cue having an outside wall which is a tapered fiber glass tube is filled with a composition which includes an organic resin such as polyvinyl chloride, perlite, and sand to provide a properly weighted cue which will be unaffected by moisture and will be extremely durable. The perlite aggregate has a lower density than the resin and the silica sand aggregate a higher density than the



perlite so that the total density of the cue may be adjusted to a predetermined value. This results in an evenly distributed mixture of weight according to the taper of the cue tube.

3,468,539
CONTROL SYSTEM FOR SELECTIVE TREATMENT OF GARMENTS
John L. Swindall, Leicester, England, assignor to Samuel Pegg & Son Limited, Leicester, England, a British company
Filed Oct. 11, 1966, Ser. No. 585,962
Claims priority, application Great Britain, Oct. 14, 1965, 43,674/65
Int. Cl. D06p *7/00*
U.S. Cl. 223—76 4 Claims

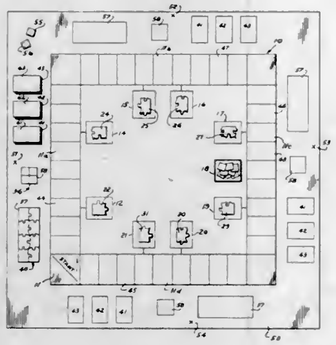


In dyeboarding apparatus having structure for mounting a garment in a treatment zone and having apparatus for applying steam, dye and hot air to the treatment zone to preboard, dye, postboard and dry the garment, there is provided a control system which operates the apparatus to carry out the said operating steps automatically. In addition, a mechanism is provided for selecting at will any group of the said four operating steps so that only the selected steps will be carried out automatically, thereby excluding the non-selected steps.

3,468,540
BOARD GAME APPARATUS WITH SELECTIVELY USABLE HAZARD AVOIDING CHANCE MEANS
Lorraine M. Mulligan, 1950 Lexington Parkway, Inkster, Mich. 48141
Filed Mar. 23, 1965, Ser. No. 442,059
Int. Cl. A63f *3/00*
U.S. Cl. 273—134 3 Claims

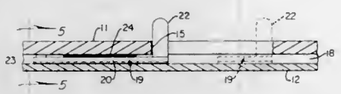
A game apparatus comprising a table mat with a game board disposed centrally thereof and having designated areas surrounding said board to receive puzzle parts and bonus tokens. The board has a peripheral path divided into a series of playing spaces, some of which have associ-

ated therewith a plurality of identical puzzle parts, and said board having associated therewith a receptacle for a plurality of bonus tokens. Some of said spaces have indicia imposing on the player obligations which render such spaces hazard spaces. Either of two chance devices may be used to determine the number of spaces to be moved, each device being constructed so that a player may elect to select by chance a number from a group of numbers



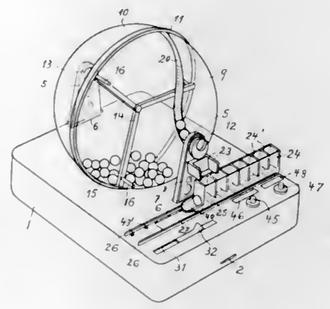
which does not include a number which might cause the player's play piece to land on one of said hazard spaces. One device has a spinner rotating over concentric rings, all of which have the same series of numbers, with a different one of said series omitted from each ring. The other device comprises a spinner rotating over a series of numbers carried by a base disc which has means for selectively covering any one of said numbers.

3,468,541
BINGO BOARD WITH SLIDES FIRMLY HELD IN COVERING POSITION
Mark Herring, Denver, Colo., assignor to Ace Bingo, Inc., Denver, Colo.
Filed June 28, 1967, Ser. No. 649,590
Int. Cl. A63f *3/00;* **G09f** *9/00, 9/40*
U.S. Cl. 273—136 **7 Claims**



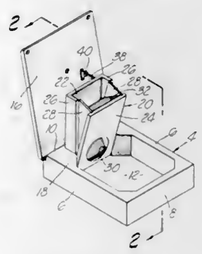
A game board for bingo and the like includes a front panel having rows of openings therein and a back panel disposed in a recess formed in the back surface of the front panel. The back panel has rows of characters on its front surface, each of the characters being aligned for viewing through one of the openings in the front panel; a slide movable in a longitudinal guide slot in the back surface of the front panel alongside each opening has a tab to advance the slide between a concealed position and a position in which the slide covers the character. The slide is formed of flexible material and its rear face has ribs at its edges which are spaced to permit flexing of the slide, said ribs being in frictional engagement with the rear panel but spacing the slide therefrom to prevent it from rubbing against the character. At one end of the front face of the slide is a boss which normally engages the front panel and holds the slide in its concealed position. When the slide is moved into a position covering the character, the boss moves into engagement with a rib carried by the front panel, this engagement flexing the slide and providing increased friction which holds the slide in position.

3,468,542
ROTARY DRUM LOT MIXING AND DISPENSING DEVICE
Max Ernst, 14 Lohengrinstr., 85 Nuremberg, Germany
Filed Aug. 11, 1967, Ser. No. 659,960
Claims priority, application Germany, Aug. 16, 1966, E 32,296
Int. Cl. A63f *7/00;* **A63b** *37/00*
U.S. Cl. 273—144 **10 Claims**



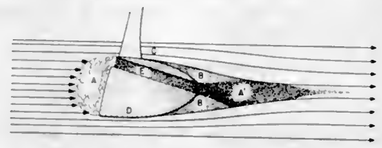
The present invention relates to a gambling device with a drum, preferably in the form of a hollow ball which is rotatable in either direction and into which marked balls may be inserted through one of the axle studs pertaining to the drum. When the drum rotates in one direction the balls are intermixed, and when the drum rotates in the other direction, the balls are dispensed through the other axle stud of the drum.

3,468,543
DICE SHAKER
Oral L. Dove, Dallas, Tex., assignor to Williams Industries Inc., Anaheim, Calif., a corporation of Texas
Filed Aug. 18, 1967, Ser. No. 661,577
Int. Cl. A63f *9/04*
U.S. Cl. 273—145 **7 Claims**



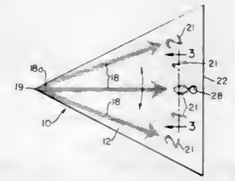
A dice shaker of the hopper type including a sectional hopper having portions swingable toward and away from each other, and swingable from a collapsed position on a generally horizontal plane within a box or housing to a generally upright position, with the hopper sections swung a limited distance away from each other through the medium of connections between the hopper sections and the housing cover when said cover is swung open.

3,468,544
GOLF CLUB OF THE WOOD TYPE WITH IMPROVED AERODYNAMIC CHARACTERISTICS
Anthony J. Antonious, 3608 Cedar Drive, Baltimore, Md. 21228
Filed Oct. 22, 1965, Ser. No. 500,532
Int. Cl. A63b *53/04*
U.S. Cl. 273—173 **2 Claims**



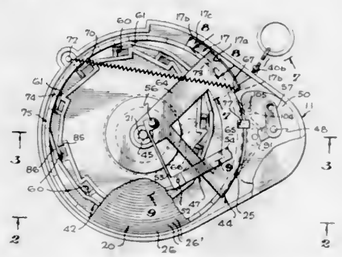
A golf club of the wood type has aerodynamically sized and shaped holes extending therethrough under the top surface of the club head with the inlet to the holes above and set back from a ball striking face and the outlet of the holes on the back surface of the club at a level below the inlet.

3,468,545
GOLFER'S HEAD MOVEMENT INDICATING DEVICE
Kay Anderson, Mount Vernon, N.Y., assignor to Pictorial Productions, Inc., Mount Vernon, N.Y., a corporation of New York
Filed Aug. 29, 1966, Ser. No. 575,597
Int. Cl. A63b *69/36*
U.S. Cl. 273—183 **4 Claims**



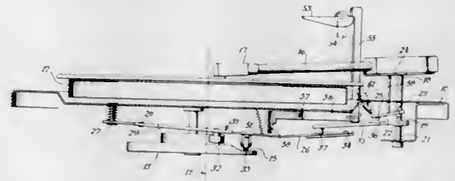
A lenticular member includes an aperture for receiving a golf tee and an elongated indicia design which appears to pivot about an end thereof if a golfer moves his head from one side to the other while viewing said design as a golf ball is addressed.

3,468,546
SEQUENTIAL PLAY PHONOGRAPH
Golda A. Duncan, North Hollywood, and Robert N. Alesson, Sylmar, Calif., assignors, by direct and mesne assignments, to Lorraine Industries, Inc., Bridgeport, Conn.
Filed Dec. 20, 1966, Ser. No. 603,244
Int. Cl. G11b *1/00, 3/70, 3/60*
U.S. Cl. 274—9 **4 Claims**



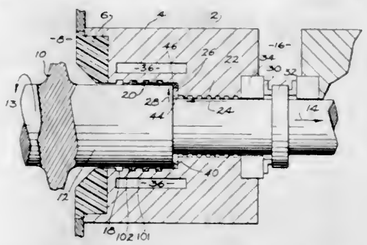
A sequential play phonograph with improved setting means including an arcuate segment concentric with the record and having means engaging a control disk to rotate the disk a predetermined distance during each operating cycle of the phonograph. The disk has windows at locations corresponding to specific passages on the record to allow a reproduction needle to engage the passages. The record is driven by a spring motor which is wound by a pull-cord that also engages the arcuate segment to assist in positioning the control disk. The arcuate segment is held in contact with the control disk by a member that engages the segment near the arcuate edge thereof to equalize the forces on the segment.

3,468,547
AUTOMATIC SOUND REPRODUCING APPARATUS
Albert E. Draper, London, England, assignor to S. Korobuk Limited, London, England
Filed June 1, 1967, Ser. No. 642,847
Int. Cl. G11b *17/08*
U.S. Cl. 274—10 **7 Claims**



Automatic sound reproducing apparatus for playing disc records in which the pick-up arm is moved outwardly at the end of a record playing operation and inwardly to start playing another record by a lever system including a main lever relative to which the pick-up arm is movable, the pick-up arm being first moved out against a stop, held whilst the main lever continues its movement to an extent determined by a sizing mechanism, and then returned by return movement of the main lever so that its inward movement is determined by the sizing mechanism.

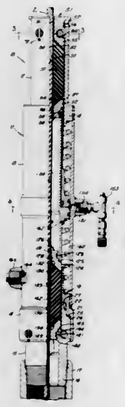
3,468,548
ROTATING SHAFT SEAL
James E. Webb, Administrator of the National Aeronautics and Space Administration, with respect to an invention of Robert L. Lessley, Pomona, and George B. Bosco, Jr., Whittier, Calif.
Filed June 8, 1966, Ser. No. 556,830
Int. Cl. F16k *15/40, 15/54*
U.S. Cl. 277—13 **5 Claims**



A liquid-vapor interface type of seal for the rotating shaft of a turbine utilizing mercury as the working fluid is disclosed. The seal includes three pumps extending between the shaft and the housing from the high-pressure turbine cavity to a low-pressure vented area. The pumps are adapted to pump liquid or vapor upon rotation of the shaft. First pump comprises a helical groove extending from the cavity to a slinger pump housed in a slinger space. The first pump is adapted to pump mercury vapor from the cavity toward the slinger space. The slinger pump tends to pump in the opposite direction of the

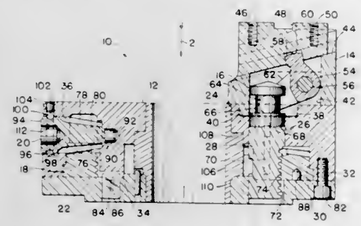
first pump. The mercury vapor in the first pump and the slinger space is cooled and condensed to liquid by flowing coolant liquid through a passage in the housing or by injecting cooled mercury into the seal. A liquid-vapor interface is formed in the slinger space and leakage of mercury vapor toward the vent is further restricted by means of a molecular pump in the form of a second helical groove extending from the vent to the slinger space and is adapted on rotation of the shaft to pump mercury molecules toward said interface.

3,468,549
LINE WIPER
James A. Wilson, 4425 San Gabriel Drive, Dallas, Tex. 75229
Filed Nov. 26, 1965, Ser. No. 509,891
Int. Cl. F16j *15/26, 15/56*
U.S. Cl. 277—59 **6 Claims**



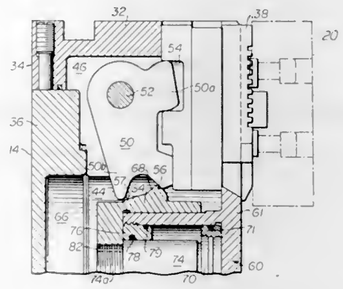
A stripping device connectable to an end of a flow conductor through which a flexible wire line is movable into and from the conductor for closing the annular space therebetween and wiping or stripping liquids from the line during its movement from the flow conductor.

3,468,550
CHUCK
William G. Platt, 3930 Harvard Road, Detroit, Mich. 48224, and Roy T. Jacks, 30607 Lorraine Ave., Warren, Mich. 48093
Filed May 23, 1966, Ser. No. 552,040
Int. Cl. B23b *31/40, 31/14, 5/34*
U.S. Cl. 279—2 **11 Claims**



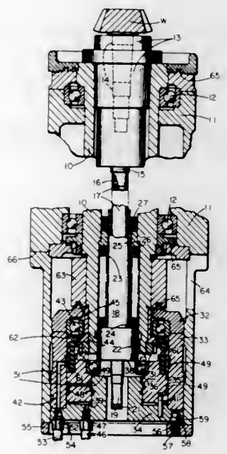
Chuck structure for lathes or the like capable of internal or external chucking either manually or automatically. The chuck structure disclosed has a pulldown feature in both internal and external chucking and is adapted to receive bar work in one modification thereof. Internal and external chucking is accomplished by providing separate spaced apart jaw structures which are rotatable about separate axes parallel to and spaced radially from the axis of rotation of the chuck. An inclined slide is provided in each jaw structure actuated by bell crank means secured to the jaw structure for providing the pulldown feature. The bell cranks of the jaw structures are actuated by separate rods in accordance with rotation of an internally threaded ring gear engaged with external threads on the rods in one modification and in accordance with a pull rod connected to an actuating member having portions engaged in recesses in the actuating rods in another modification.

3,468,551
CHUCK
Merritt B. Sampson, Shaker Heights, Ohio, assignor to The S-P Manufacturing Corporation
Filed Jan. 24, 1966, Ser. No. 522,706
Int. Cl. B23b *31/30, 31/10, 5/34*
U.S. Cl. 279—4 **9 Claims**



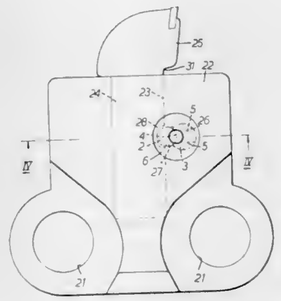
A chuck with an internal jaw operating motor, in which jaw operating linkages between the motor and jaws are located radially about the motor.

3,468,552
MACHINE TOOL SPINDLE AND WORKHOLDER ACTUATING MECHANISM
Joseph P. Nardone, Rochester, N.Y., assignor to The Gleason Works, Rochester, N.Y., a corporation of New York
Filed Sept. 22, 1967, Ser. No. 669,948
Int. Cl. B23b *31/30, 31/10, 5/32*
U.S. Cl. 279—4 **8 Claims**



The spindle of a gear testing machine is rotatable in its housing on anti-friction bearings and carries at one end a workholder actuated by a draw rod extending through the spindle. A spring, acting between the spindle and the draw rod, causes the workholder to grip a workpiece mounted therein. A hydraulically actuated piston-cylinder device, which is slidable axially in the housing, acts between the spindle and draw rod to compress the spring and cause the workholder to release. When hydraulic pressure is applied, the cylinder and piston are moved to first bring anti-friction bearings carried by them respectively into abutment with shoulders on the spindle and draw rod, and then to move the latter relative to the spindle to compress the spring. The arrangement is such that neither the hydraulic pressure nor the spring pressure is applied to the spindle bearings. When hydraulic pressure is not being applied, biasing means hold the cylinder and piston in positions wherein they and the bearings carried by them are completely free of the spindle and draw rod.

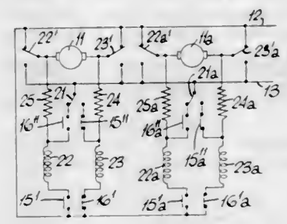
3,468,553
TOOL RETAINING DEVICES
John Gardiner Ashby, Totley, Sheffield, and Dennis Sampson Burrell, Bolsover, England, assignors to Matthias Spencer & Sons Limited, Sheffield, England
Filed Jan. 30, 1967, Ser. No. 612,507
Claims priority, application Great Britain, Jan. 31, 1966, 4,190/66
Int. Cl. B23b *31/10, 5/22, 5/34*
U.S. Cl. 279—97 **10 Claims**



A tool retaining device having a metal locking pin bonded in a groove of a resilient backing member. One end of the backing member is formed with an integral end sealing cap and the other end has a projecting spigot onto which a further end sealing cap is fitted when the device is fitted in a tool holder. In the fitted position, the two sealing caps respectively seal the ends of the device and thereby prevent the ingress of foreign matter.

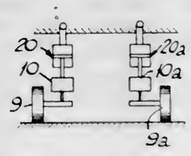
3,468,554
REAR SUSPENSION SYSTEMS FOR ROAD VEHICLES
Eric Bernard Parkes, Selly Oak, Birmingham, England, assignor to Joseph Lucas (Industries) Limited, Birmingham, England, a British company
Filed May 10, 1967, Ser. No. 637,451
Claims priority, application Great Britain, May 20, 1966, 22,547/66
Int. Cl. B60g *23/00, 19/02*
U.S. Cl. 280—6 **1 Claim**

A road vehicle rear suspension system which allows for changes in the load at the rear of the vehicle to keep the headlights level includes a pair of devices of adjustable length forming parts respectively of the connecting linkages between rear wheels and frame of the vehicle, so that the lengths of the devices determine the height of the rear portion of the vehicle, a pair of reversible motors for simultaneously adjusting the devices, and limit switches



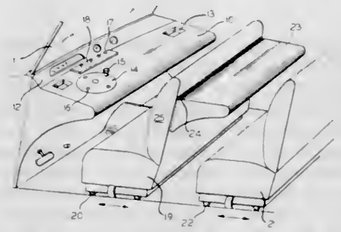
controlling the motors to determine the maximum lengths of the devices.

3,468,555
REAR SUSPENSION SYSTEMS FOR ROAD VEHICLES
Jeremy Mark Jenkinson, Sutton Coldfield, and Christopher Stephen Rayner, Kings Norton, England, assignors to Joseph Lucas (Industries) Limited, Birmingham, England, a British company
Filed May 10, 1967, Ser. No. 637,485
Claims priority, application Great Britain, May 20, 1966, 22,548/66; Nov. 14, 1966, 50,877/66
Int. Cl. B60g *23/00, 19/02*
U.S. Cl. 280—6 **5 Claims**



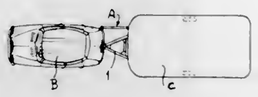
A rear suspension system for a road vehicle includes a pair of devices of adjustable length forming parts respectively of the connecting linkages between the rear wheels and frame of the vehicle, so that the lengths of said devices determine the height of the rear portion of the vehicle relative to the rear wheels when the vehicle is at rest, a pair of reversible motors for adjusting the lengths of said devices, and attitude-sensing switches which are operable to control the motors to determine the lengths of said devices.

3,468,556
AUTOMOBILE SAFETY DEVICES
Gordon Smith, 2804 N. 44th St., Milwaukee, Wis. 53210
Filed Aug. 4, 1967, Ser. No. 658,462
Int. Cl. B60r *21/04*
U.S. Cl. 280—150 **1 Claim**



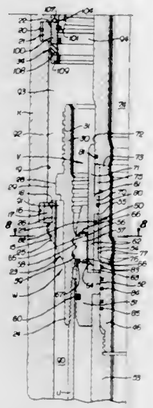
Includes padded member mounted and disposed proximate to passenger to cushion passenger impact. Padded member is adjustable from operative position where it cushions passenger to inoperative position where passenger can have convenient ingress and egress.

3,468,557
ANTI-SWAY DEVICE FOR USE BETWEEN A TOWING VEHICLE AND A TRAILER
Jean Ferrier, Cousance, Jura, France, assignor to Etablissements Jean Ferrier, Cousance, Jura, France, a French joint-stock company
Filed Nov. 3, 1967, Ser. No. 680,448
Claims priority, application France, Nov. 7, 1966, 47,905
Int. Cl. B60d *1/16*
U.S. Cl. 280—446 10 Claims



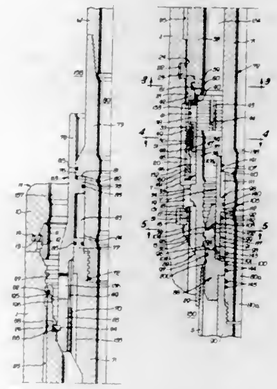
An anti-sway device is provided for mounting between a towing vehicle and a trailer. The device is mounted asymmetrically and is capable of extension and contraction. A brake is applied via a freewheel device to restrain extension, but the freewheel prevents the brake operating during contraction. The extensible device may be a cable anchored at one end to a pulley spring loaded into a "wound-up" condition and the brake may be a friction plate or hydraulic brake.

3,468,558
CASING HANGER APPARATUS
Arthur G. Ahlstone, Ventura, Calif., assignor to Ventura Tool Company, Ventura, Calif., a corporation of California
Filed Oct. 23, 1965, Ser. No. 502,927
Int. Cl. F16l *55/00, 21/00;* E21b *19/10*
U.S. Cl. 285—18 14 Claims



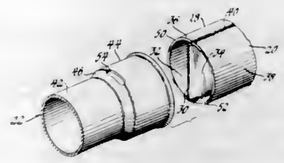
Well bore casing hanger apparatus, including an outer hanger body supporting outer casing and an inner hanger body supporting inner casing and movable to a supporting shoulder on the outer body and locked thereto. A tubular string lowers the inner body and a packing structure as a unit into the outer body to locate the inner body on the supporting shoulder, at which time the packing structure is disposed above and spaced from the inner body. The tubular string and associated operating apparatus are then released from the inner body and suitably manipulated to shift the packing structure into a sealed position closing an annular passage between the bodies, whereupon the tubular string and associated apparatus are released from the packing structure and elevated to the drilling rig.

3,468,559
HYDRAULICALLY ACTUATED CASING HANGER
Arthur G. Ahlstone, Ventura, Calif., assignor to Ventura Tool Company, Ventura, Calif., a corporation of California
Filed Oct. 23, 1965, Ser. No. 503,046
Int. Cl. F16l *55/00, 33/16, 21/00*
U.S. Cl. 285—18 19 Claims



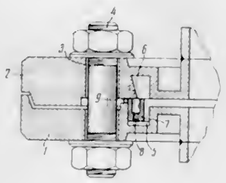
Well bore casing hanger apparatus, including an outer hanger body supporting outer casing and an inner hanger body supporting inner casing and movable to a supporting shoulder on the outer body and locked thereto. A packing structure is adapted to be shifted into a sealed position to close an annular passage between the bodies. A tubular string lowers the inner body and packing structure as a unit into the outer body and the packing structure is shifted to its sealed position by hydraulic means, the tubular string and associated operating apparatus for the packing structure, including the hydraulic means, being released from the inner body and packing structure for elevation to the drilling rig.

3,468,560
CONNECTION FOR TUBULAR MEMBERS
Thomas R. Cassel, Birmingham, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Aug. 11, 1967, Ser. No. 659,929
Int. Cl. F16l *13/02, 39/00, 41/00*
U.S. Cl. 285—21 2 Claims



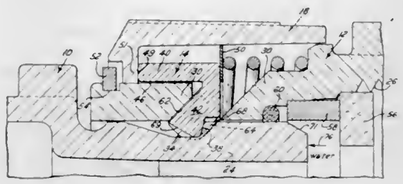
A conduit connection for a vehicle exhaust system having branch conduits arranged to form an outwardly facing annular surface that is telescopically received within a main conduit. A pair of circumferentially extending diametrically opposed slots are formed in the main conduit and each has a major axis aligned with the ends of the branch conduits and a minor axis aligned with the interfitting walls of the branch conduits. A weld material, applied within the slots, integrally connects the branch conduits to the main conduit and forms a gas-tight seal therebetween.

3,468,561
FLANGED JOINT FOR HIGH-VACUUM SYSTEMS, PARTICULARLY LARGE SYSTEMS
Andrei Vasilievich Balitsky, Varshavskoe shosse 4, kv. 82; Nikolai Ilich Penkin, Nagornaya ul. 50, korp. 7, kv. 37; Lev Alexeevich Filatovsky, Savelievsky per. 2/8, kv. 15; Nikolai Ivanovich Gavrilov, Nagornaya ul. 64, korp. 2-a, kv. 27, and Rostislav Evgenievich Rybchinsky, 3, Frunzenskaya ul. 3, kv. 131, all of Moscow, U.S.S.R.
Filed Feb. 12, 1968, Ser. No. 704,879
Int. Cl. F16l *55/00, 57/00*
U.S. Cl. 285—23 3 Claims



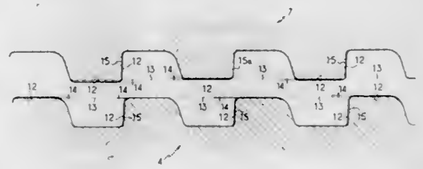
A flanged joint for high-vacuum systems in which one of the two flanges to be sealably connected has a recess in which a projection is displaceably and temporarily supported, such that a wire seal can be placed on the projection and held in place by virtue of frictional engagement with said projection so that the other flange can now be mounted on the first flange and clamped thereto, to cause the projection to be lowered into its recess and out of contact with the seal to enable the latter to be deformed between the flanges.

3,468,562
SPEED SLIP-ON HOSE COUPLER LOCKED BY FLUID PRESSURE
Ho Chow, River Edge, and George D'Angelo, Paterson, N.J., assignors to International Patent Research Corp., Moonachie, N.J., a corporation of New York
Filed Sept. 8, 1967, Ser. No. 666,265
Int. Cl. F16l *35/00, 27/00*
U.S. Cl. 285—81 13 Claims



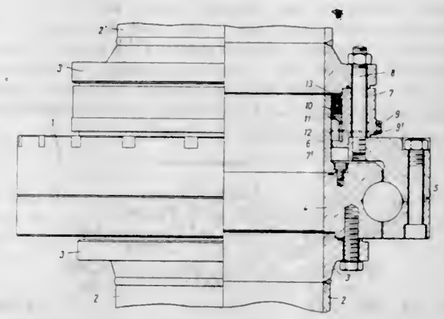
A speed slip-on type of hose coupler structured to enable ready coupling and uncoupling of the male and female coupler bodies by way of an interlocking means for the coupler bodies and a releasing device for the interlocking means, so constructed that while normally in the absence of a water pressure in the coupler the releasing device may be readily manually operated to a coupler disconnecting or uncoupling condition, the presence of a water pressure in the coupler effectively resists operation of the releasing device and thereby effectively prevents the disconnection or the uncoupling of the coupler.

3,468,563
SEPARABLE JOINT FOR PIPES
Jean Louis Albert Duret, Aulnoye-Aymeries, France, assignor to Société Anonyme dite: Vallourec, Paris, France
Filed Aug. 7, 1967, Ser. No. 658,894
Claims priority, application Luxembourg, Aug. 10, 1966, 51,742
Int. Cl. F16l *55/00, 35/00*
U.S. Cl. 285—93 9 Claims



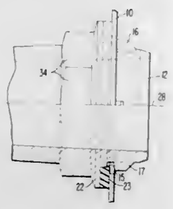
Separable pipe joints in which the manufacturing tolerances for the crests of the threads are distributed to fall half above and half below a predetermined optimum and the threads are permitted to be thinner but no thicker than a predetermined optimum.

3,468,564
TURNING CONNECTION FOR PIPES UNDER PRESSURE
Josef Fröhlich, Dusseldorf, Germany, assignor to Mannesmann Aktiengesellschaft, Dusseldorf, Germany
Filed Nov. 21, 1967, Ser. No. 684,815
Claims priority, application Germany, Dec. 9, 1966, M 71,947
Int. Cl. F16b *7/00;* F16d *1/00*
U.S. Cl. 285—111 3 Claims



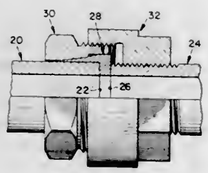
A turning connection for pipes under internal pressure which may be adjusted without releasing the pressure. The connection essentially consists of a bearing assembly, whose inner bearing part is attached to one pipe end and whose outer bearing part is attached to the other pipe end, each by a retaining ring. A gasket is disposed between the two retaining rings in adjustable manner and abuts on a thrust collar which in turn is supported by wedge pieces, uniformly disposed about the bearing periphery. The wedge pieces are vertically displaceable relative to the movement of the thrust collar by the action of set screws assigned to each of the wedge pieces.

3,468,565
COUPLING HAVING CAM MEANS TO PREVENT RELATIVE ROTATION AND AXIAL SEPARATION
Karl Roder, Stuttgart-Monchfeld, Germany, assignor to Daimler-Benz Aktiengesellschaft, Stuttgart-Untertürkheim, Germany
Filed June 28, 1968, Ser. No. 741,176
Claims priority, application Germany, July 1, 1967, 1,630,311
Int. Cl. F16l *41/00, 5/00*
U.S. Cl. 285—194 **21 Claims**



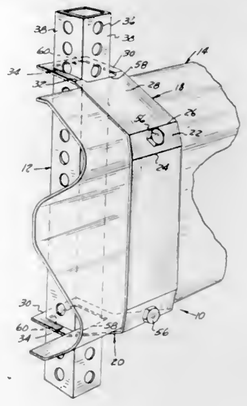
An arrangement for securing a pin or lug part at a wall, in particular for securing a full-load stop for the drive pedal of motor vehicles in the engine wall, in which a preferably cylindrical extension of the pin or lug part is adapted to be axially inserted in a form-locking manner into a fixed socket of the wall until it reaches an abutment position; the extension has at least one radial cam portion of a first type to permit its axial locking and at least one radial cam portion of a second type for its circumferential locking; the socket, in turn, has corresponding axial grooves for the cam portions of both types to enable the axial insertion whereby, in the abutment position, the cam portions of the first type are axially offset with respect to the corresponding grooves while the cam portions of the second type engage at least in part in the corresponding grooves; the grooves for the cam portions of the second type pass over into cam tracks whose distance *a* to the axis of the extension is smaller than the corresponding distance (radius *r*) of the engaging surfaces at the associated elastic cam portions cooperating with these cam tracks, and the extension is adapted to be rotated with respect to the socket from an abutment position into a locking position in which the cam portions of the first type engage with radial abutment portions at the socket while the cam portions of the second type engage with the cam tracks.

3,468,566
CONDUIT COUPLING
Walter N. Nietzel, 307 Prospect Ave., Cranford, N.J. 07016
Filed Oct. 10, 1967, Ser. No. 674,305
Int. Cl. F16l *19/06, 21/02, 17/00*
U.S. Cl. 285—341 **3 Claims**



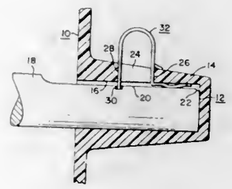
A conduit coupling employing an externally tapering, internally shouldered and deformable ferrule and internally tapering, relatively harder and mutually joinable compression and adapter fittings which grip upon the ferrule causing it to make tight end and circumferential contacts with axially aligned conduit members fitted into and against it.

3,468,567
FASTENING CLAMP
Warren R. Attwood, Wayne, and Herbert J. Henry, Dearborn Heights, Mich., assignors to Unistrut Corporation, Wayne, Mich., a corporation of Michigan
Filed Oct. 27, 1967, Ser. No. 678,692
Int. Cl. F16b *7/00;* **F16d** *3/08;* **E04b** *1/38*
U.S. Cl. 287—51 **4 Claims**



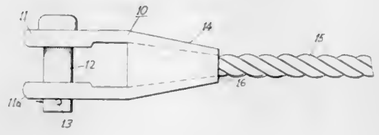
A clamp used with a metal framing system for adjustably supporting an upright member on a structural member. The clamp is of the type having a generally C-shaped configuration and being formed with registering apertures therein for the reception of the upright member therethrough to be retained by pressure exerting means.

3,468,568
HUB AND SHAFT SECUREMENT
Michael D. Ulich, Columbus, Ohio, assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Sept. 12, 1968, Ser. No. 759,413
Int. Cl. B60b *27/06;* **F16d** *1/06;* **F16c** *3/10*
U.S. Cl. 287—53 **4 Claims**



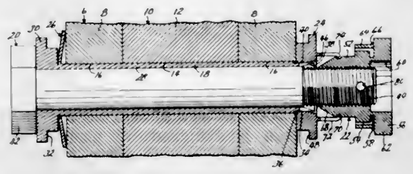
A hub and shaft securement arrangement in which a spring clip having a loop portion and a tongue portion is arranged in the hub with the tongue portion squeezed between a flat on the shaft and a flat of the hub so that the free end of the loop is pressed downwardly into a transverse groove in the flat of the shaft, the loop bight projecting from the shaft if necessary.

3,468,569
TERMINAL FITTING FOR WIRE ROPES
Donald S. Ballard and Charles R. Wilson, Kansas City, and Harlan G. Burns, Independence, Mo., assignors to Armco Steel Corporation, Middletown, Ohio, a corporation of Ohio
Filed Jan. 18, 1966, Ser. No. 521,389
Int. Cl. F16b *7/00*
U.S. Cl. 287—82 **2 Claims**



A wire rope end and a terminal fitting secured thereto, the terminal fitting comprising a conical portion having a tubular cylindrical extension, the cylindrical extension and the valleys between adjacent strands in the wire rope end being filled with an epoxy resin which is bonded to the individual strands and to the inner surface of the cylindrical extension.

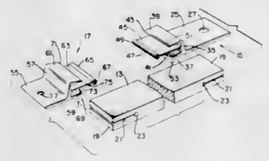
3,468,570
SAFETY PIVOT CONNECTION
Lloyd L. Mielke, 4125 Hawthorne Circle, Kansas City, Mo. 64116
Filed Aug. 15, 1967, Ser. No. 660,773
Int. Cl. F16c *11/00;* **B25g** *3/38*
U.S. Cl. 287—100 **9 Claims**



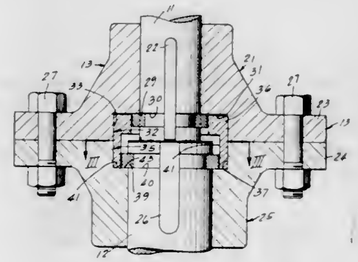
A safety pivot connection intended primarily for making pivotal connections in aircraft control linkages, and comprising a flanged sleeve insertable slidably in matching holes of the links or other work pieces, said sleeve having a portion of reduced diameter adapted to project outwardly from said work pieces and having an outwardly facing shoulder at the juncture of said reduced end portion with the body portion thereof, a washer engageable on said reduced portion, a bolt insertable through said sleeve to project from the reduced end thereof, and a nut threaded on said bolt and operable to force said washer against said shoulder and to flange the reduced portion of said sleeve outwardly to retain said sleeve and washer even if the bolt should fail.

3,468,571
CROSSARM BRACE MEANS
Marion R. Farmer, Memphis, Tenn., assignor to Utility Products Manufacturing Company, Memphis, Tenn., a corporation of Tennessee
Filed May 31, 1968, Ser. No. 733,525
Int. Cl. F16b *9/00;* **B25g** *3/36;* **E04b** *1/58*
U.S. Cl. 287—103 **5 Claims**

An extension brace for supporting a crossarm on a utility pole, having an insulated central section and ribbed brackets attached to the opposite ends of the central section, with the brackets carrying drilled strap means for attachment to the utility pole and the crossarm.



3,468,572
SHAFT COUPLING
Walter D. Haentjens, R.D. 1, Sugarloaf, Pa. 18249
Filed Aug. 7, 1967, Ser. No. 658,720
Int. Cl. F16b *7/00;* **F16d** *1/00;* **E21b** *17/02*
U.S. Cl. 278—129 **6 Claims**

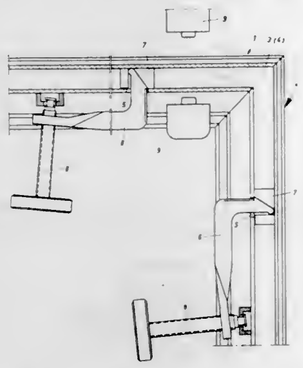


Solid type of shaft coupling particularly adapted to couple a vertical motor shaft to an axially aligned pump drive shaft disposed beneath the motor shaft. This coupling includes flanged coupling parts shrunk fit and keyed to the adjacent ends of the shafts and bolted together to provide a solid drive connection. The coupling parts are retained from vibrating loose by split rings in the form of ring segments recessed in each shaft and projecting from the peripheries of the shafts to have locking engagement with the coupling parts. A retaining ring encompasses the split ring and has engagement with internal walls of the coupling parts, to retain the split rings in position, but to accommodate ready removal of the rings, where it may be desired to disconnect the shafts and remove the coupling parts as by the use of a hydraulic puller.

3,468,573
METHOD OF CONNECTING HOLLOW-PROFILE FRAMES AND FRAME-CONNECTION ASSEMBLY
Erwin Peter, Altheim, Austria, assignor to Vereinigte Metallwerke Ranshofen-Berndorf Aktiengesellschaft Braunau am Inn-Ranshofen, Upper Austria, a corporation of Austria
Filed Dec. 11, 1967, Ser. No. 689,679
Claims priority, application Austria, Dec. 12, 1966, A 11,459/66
Int. Cl. F16b *1/00, 5/00, 7/00*
U.S. Cl. 287—189.36 **3 Claims**

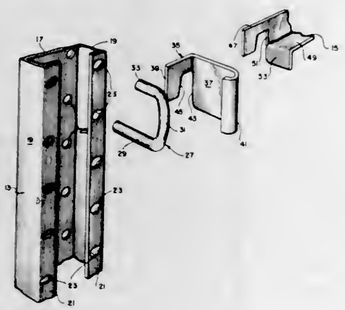
A frame-connection assembly in which a hollow-profile frame is provided with a pair of angular inserts in coextensive relationship loosely fitting between two sides of the hollow frame and stressed thereagainst while a pair of

bosses in alignment with one another are pressed into opposite walls of the frame in the plane between the inserts to drive them in opposite directions against the other



walls and form protuberances between the inserts which retain themselves under compression against the walls transverse to the depressed walls.

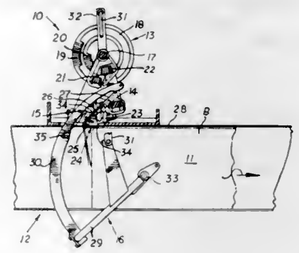
3,468,574
STRUCTURAL LOCK
Burt E. Schell, Jr., Long Grove, Ill., assignor to Speedrack, Inc., Skokie, Il., a corporation of Illinois
Filed May 23, 1968, Ser. No. 731,408
Int. Cl. F16b *1/00, 3/00, 5/00*
U.S. Cl. 287—189.36 **10 Claims**



An improved structural lock for uniting a beam or other horizontal member to a column. A generally J-shaped locking pin inserted into vertically spaced holes in the column at the desired height. The longer section of the pin extends horizontally through the column and protrudes from the other face. A locking plate affixed to the end of the beam spans the column and contains a camming slot which engages the protruding end of the pin and a connector that engages the curved center section of the locking pin. Downward force on the beam causes the locking plate to be drawn into abutting contact with the column in mutually perpendicular directions.

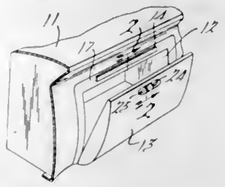
3,468,575
KNOTTER AND JAW
Homer N. Grillot, Naperville, Ill., assignor to International Harvester Company, Chicago, Ill., a corporation of Delaware
Filed Sept. 26, 1967, Ser. No. 670,530
Int. Cl. B65h *69/04*
U.S. Cl. 289—11 **8 Claims**

A rotary hook for use in a knotting mechanism and having a leading and a trailing shoulder defining a groove therebetween. The groove is positioned to receive a jaw pivotally mounted on the hook and movable with respect to the groove between an open position for receiving twine, and a closed position for gripping the twine and



crimping it into the groove. The leading shoulder is particularly contoured to prevent premature rendering of twine received by the hook with the jaw in the open position.

3,468,576
MAGNETIC LATCH
Gerald E. Beyer, Lathrup Village, and Thomas C. Holka, Detroit, Mich., assignors to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed Feb. 27, 1968, Ser. No. 708,647
Int. Cl. E05c *19/16, 17/56*
U.S. Cl. 292—251.5 **1 Claim**

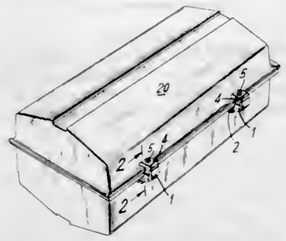


A magnetic latch for a receptacle closure in which the latching function is achieved by plastic members mounted respectively on a receptacle and its closure. The plastic members are permeated with magnetic material magnetized to provide magnetic fields emanating from sequentially alternating pole faces along the plastic members. In closed position of the closure, pole faces of opposite polarity abut each other to provide a magnetic force acting to "latch" the closure. By lateral movement of the plastic members relative to each other, pole faces of like polarity are brought into abutting relationship thereby creating a magnetic force acting to "unlatch" the closure from the receptacle.

3,468,577
QUICK OPENING LATCH AND CLAMP
Eric Winston, Melrose Park, and John T. Mazerka, Philadelphia, Pa., assignors to Jerrold Electronics Corporation, Hatboro, Pa., a corporation of Delaware
Filed Sept. 15, 1967, Ser. No. 668,009
Int. Cl. B65d *45/16;* **A47j** *36/10*
U.S. Cl. 292—256.75 **6 Claims**

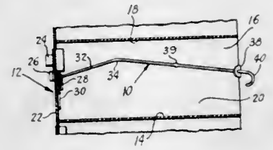
A three piece C-shaped clamp to engage the mating flanges of an associated enclosure. The base of the clamp is pivotally mounted on one half of its enclosure, permitting the clamp to pivot into and out of locking position. The top of the clamp is bolted to the base and engages the other half of the enclosure. Interacting mating surface between the clamp top and base act to position

the clamp when tightened, so that only a one half turn of the bolt is sufficient to open or close the enclosure. A



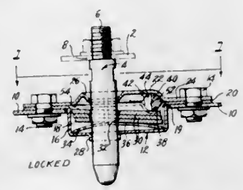
shoulder on the clamp base relieves the pivot mounting of all closing forces.

3,468,578
POST OFFICE BOX DOOR FASTENER
Charles M. Harris, Jr., 1607 S. 26th St., Arlington, Va. 22206
Filed July 21, 1967, Ser. No. 655,209
Int. Cl. E05c *19/18, 17/02*
U.S. Cl. 292—288 **4 Claims**



A device for temporarily preventing a post office box from being opened to preclude the use thereof in the event the rental fee is not paid. The device includes an elongated rod-like wire having one end thereof engaged operatively with the closure door of the box and the other end operatively engaged with the rear edge of the box for preventing the door from being opened.

3,468,579
TILT PLATE LATCH RELEASE
Paul C. Tabor, Clawson, Mich., assignor to Meteor Research Limited, Roseville, Mich., a partnership
Filed Sept. 15, 1967, Ser. No. 668,048
Int. Cl. E05c *17/38, 17/02*
U.S. Cl. 292—306 **7 Claims**



A latch of the tilt plate type provided with a movable abutment about which a tilt plate is caused to pivot, by a spring, to frictionally bind a latch pin extending through a hole in the plate. The abutment is rotatable to an inactive position to permit the plate to assume a non-tilted position, under the influence of the spring and other forces, and release the latch pin.

ERRATUM

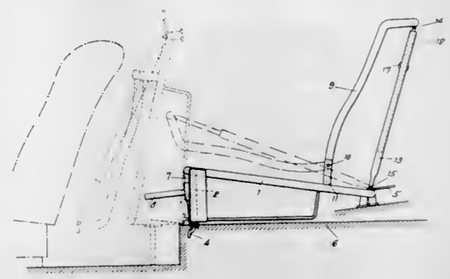
For Class 296—24 see:
Patent No. 3,469,090

3,468,580
COMBINATION DOOR AND STEP FOR VEHICLE BODIES
Delevan J. Arnold, Columbiaville, and Thomas H. Whitney, Attica, Mich., assignors to Veseley Company, a corporation of Michigan
Filed Apr. 21, 1967, Ser. No. 632,709
Int. Cl. B60j *5/04, 9/00*
U.S. Cl. 296—146 **9 Claims**



A door construction for the body of a vehicle such as a camping trailer having a floor, a side panel, and structure defining an opening therein in which the door is mounted. A hinge linkage connects the door to the body structure for opening movement in an outward, downward and inward direction to a step position in which the door sides are substantially parallel to and below the vehicle floor and the lower or bottom edge of the door is located below the floor and inwardly of the body side panel.

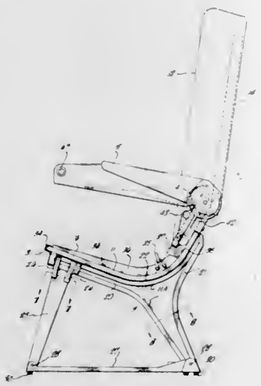
3,468,581
VEHICLE SEATS
Edmond Henry-Biabaud, Paris, France, assignor to Societe Anonyme Automobiles Citroen, Paris, France
Filed Dec. 5, 1967, Ser. No. 688,102
Claims priority, application France, Dec. 16, 1966, 87,781
Int. Cl. A47c *1/032;* **B60n** *1/06*
U.S. Cl. 297—341 **7 Claims**



A vehicle seat of the kind which is provided with a back which can be folded down onto the horizontal portion of the seat or alternatively folded backwardly to form a "couchette." The construction which enables this action to be carried out effectively includes telescopic uprights secured to the back of the seat which can be locked in

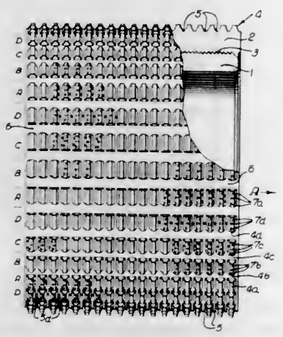
any required position by means of a locking finger which is spring loaded to engage in holes both in an outer and in an inner member of each of the telescopic uprights. In a modification, three telescopic uprights are provided only one of which has a locking finger.

3,468,582
AIRLINE PASSENGER SEAT
Ronald I. Judd, Anaheim, Calif., assignor to Henry Engineering Company, Anaheim, Calif., a company of California
Filed Dec. 4, 1968, Ser. No. 781,036
Int. Cl. A47c *5/00, 1/024*
U.S. Cl. 297—445 **13 Claims**



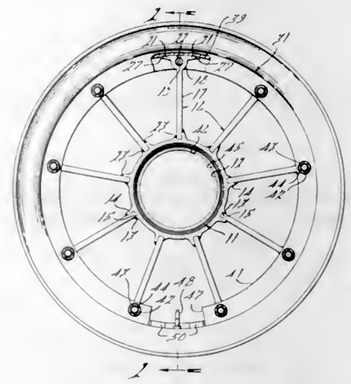
An airline passenger seat is described having contoured seat and back portions of honeycomb sections sandwiched between two sheets of lightweight metal. The seat is supported by Y-shaped saddle members which also may be made of a sandwiched honeycomb construction. The back portion pivots about the back side of the seat portion at an axis higher than normal to provide increased leg room, passenger safety and comfort.

3,468,583
DIAMOND MILLING CUTTERS
Benjamin L. Austin, Murray, Utah, assignor to Christensen Diamond Products Company, Salt Lake City, Utah, a corporation of Utah
Filed June 30, 1967, Ser. No. 650,367
Int. Cl. E21c *13/00;* **B24d** *3/00;* **E21b** *9/36*
U.S. Cl. 299—89 **22 Claims**



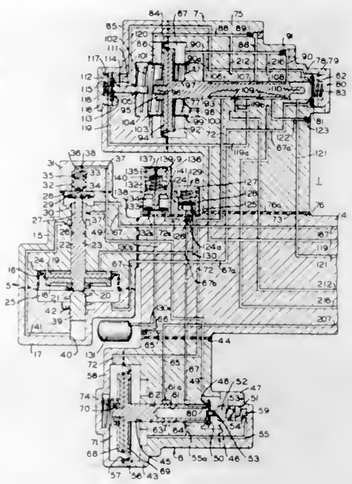
A diamond milling cutter of generally cylindrical form having axially spaced parallel ridges and grooves on and in which diamonds are arranged to form parallel ridges in the surface of a highway, airstrip, or the like, said surface ridges enhancing traction.

3,468,584
WHEEL AND BRAKE CONSTRUCTION
Keith W. Tantlinger, Grosse Pointe Shores, Mich., assignor to Fruehauf Corporation, a corporation of Michigan
Filed Feb. 14, 1967, Ser. No. 616,011
Int. Cl. B60b *1/00, 27/00*
U.S. Cl. 301—6 **9 Claims**



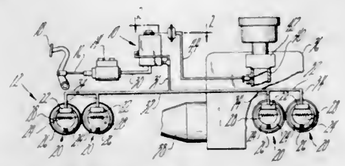
The dual wheel has an extruded hub from which extruded spokes extend for supporting a brake drum and removable wheel rims.

3,468,585
REPEATER RELAY VALVE DEVICE
Richard L. Wilson, Monroeville, Pa., assignor to Westinghouse Air Brake Company, Wilmerding, Pa., a corporation of Pennsylvania
Filed Nov. 21, 1967, Ser. No. 684,764
Int. Cl. B60t *17/06, 11/26*
U.S. Cl. 303—66 **13 Claims**



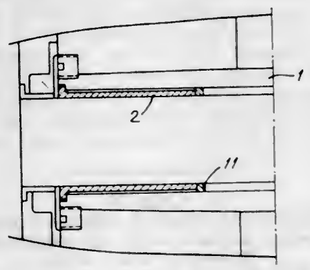
A repeater relay valve device for controlling an independent fluid pressure supply apparatus provided on a special car located at or near midway the length of a long train so as to duplicate in that portion of the train brake pipe extending from the special car to the last car in the train the same pressure variations as is effected in that portion of the brake pipe extending from the locomotive to the special car by manual operation of the engineer's brake valve device carried on the locomotive, irrespective of the end of the train from which initial charging of the brake pipe from a source of pressure supply off the train was effected prior to coupling the locomotive to one end of the train.

3,468,586
BRAKE HOLDING DEVICE
Carl E. Balkus, Birch Mountain Road, Glastonbury, Conn. 06033
Filed May 10, 1968, Ser. No. 728,282
Int. Cl. B60t *17/16, 11/10;* **B60r** *25/08*
U.S. Cl. 303—89 **6 Claims**



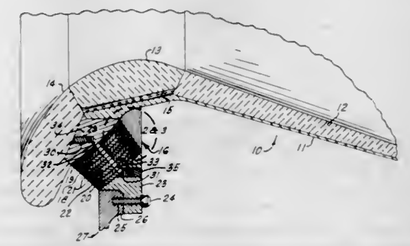
A brake holding device for an hydraulic brake system on a motor vehicle or the like comprises a housing having passageways therethrough for connection in series with the system between a master cylinder and brake cylinders. A cylindrical control spindle coaxially received in a bore in the housing and angularly movable relative thereto has ports therein which cooperate with the passageways in the housing to alter the path of fluid flow therethrough. A check valve associated with one path of flow permits pressure fluid to flow from the master cylinder to the brake cylinders but prevents retrograde flow so that pressure fluid may be trapped in the system between the brake cylinders and the housing to maintain the brakes in applied or holding position. Means are provided to move the spindle from one position to another in response to the operation of the vehicle's engine.

3,468,587
ARRANGEMENT FOR MOUNTING BEARINGS FOR COUNTER-ROTATING SHAFTS AND A BEARING THEREFOR
Oscar Hilding Hillander, Malmo, Sweden, assignor to Stal-Laval Turbin AB, Finspong, Sweden
Filed Oct. 25, 1967, Ser. No. 678,026
Claims priority, application Sweden, Nov. 16, 1966, 15,659/66
Int. Cl. F16c *35/10*
U.S. Cl. 308—15 **5 Claims**



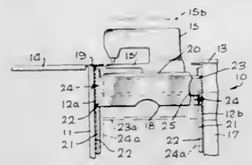
The present arrangement relates to an arrangement for mounting a tail-end bearing for an inner shaft in an outer shaft in counter-rotating ship-propeller installations, and to a bearing for effecting such a mounting. In such an arrangement the forward propeller is shrink-fitted on the outer shaft and such shaft is thereby subjected to contraction. The present arrangement is such that the bearing for the inner shaft will be located in a perfectly centered position both before and after the shrinking-on of the propeller and it consists in the provision of co-operating surfaces on both the outer shaft and the bearing, some of such surfaces being in contact when the bearing is inserted within the outer shaft and others of said surfaces coming into contact only after the contraction takes place and at which time the first-mentioned surfaces become separated.

3,468,588
LOW TORQUE FLEX-SEAL BEARING FOR THRUST VECTOR NOZZLES FOR SOLID PROPELLANT ROCKET MOTORS
Thomas E. Bolner, Fayetteville, Tenn., assignor to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware
Filed Dec. 18, 1967, Ser. No. 691,450
Int. Cl. F16c *33/72, 3/14*
U.S. Cl. 308—36.1 **5 Claims**



A low torque flex-seal bearing for thrust vector nozzles including, a plurality of circular metal shims separated by a lubricant, with ring shaped rubber seals interposed between the metal shims, the metal shims being provided with access ports to enable the lubrication of the bearing during assembly, so that the lubricant will maintain uniform pressure between the metal shims during operational environments of the flex-seal bearing.

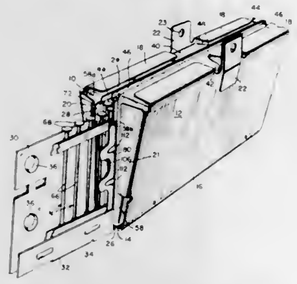
3,468,589
LEVEL ADJUSTING MECHANISM FOR FREE ARM SEWING MACHINE
Douglas E. Maynard, Los Angeles, Calif. (13216 Leach St., Sylmar, Calif. 91342)
Filed Jan. 5, 1968, Ser. No. 696,042
Int. Cl. A47b *81/00;* **D05b** *75/00*
U.S. Cl. 312—29 **14 Claims**



An apparatus facilitating level adjustment of a free are sewing machine inside a cabinet. Grooved slide blocks engage slide bars attached to the cabinet walls and support therebetween a horizontal sewing machine platform. Constant force springs connect the blocks to the upper portion of the cabinet. Spring biased bolts extend through the blocks and engage holes in the slide bars, which holes are located to permit the platform to be positioned with the sewing machine at a storage, free arm

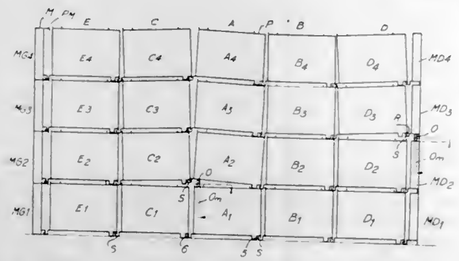
sewing, or standard sewing level. The bolts may be disengaged from the slide bars by means of bracket members which pivot, under control of a latch release bar or cord, to pull the bolts from the holes.

3,468,590
NAIL CARTRIDGE AND MAGAZINE FOR IMPACT TOOLS
Frank C. Howard, Wheeling, Ill., assignor to Signode Corporation, Chicago, Ill., a corporation of Delaware
Filed May 21, 1968, Ser. No. 730,783
Int. Cl. B65d *83/02*
U.S. Cl. 312—73 **13 Claims**



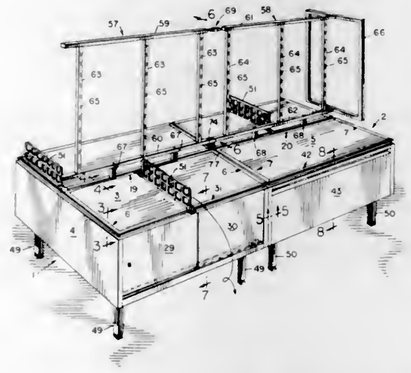
A nail cartridge and magazine assembly including a disposable cartridge in the form of a flexible plastic shell and an encompassing metal magazine. The magazine constitutes a component of a nail driving tool and snugly receives the cartridge therein. The cartridge contains a flexible strip of ribbon-connected nails and has an outlet opening through which the strip is periodically pulled by the nail feeding mechanism of the tool, one nail at a time emerging from the opening. Cooperating means on the cartridge and magazine are provided in the immediate vicinity of the outlet opening for restraining the nails from "spilling" through the opening, as well as for automatically untangling any fold in the flexible nail strip which, otherwise, might cause jamming of the nails in the outlet region of the cartridge and consequent rupture of the strip.

3,468,591
TRAYS OR DRAWERS AND SYSTEMS FOR STACKING THE SAME
Emile Wodli, 12 Rue de Wissembourg, Strasbourg, Bas-Rhin, France
Filed Dec. 30, 1966, Ser. No. 606,295
Claims priority, application France, Jan. 10, 1966, 45,360; Apr. 26, 1966, 59,124
Int. Cl. A47b *96/00;* **F16b** *12/00*
U.S. Cl. 312—111 **9 Claims**



The invention relates to a system of stackable trays or drawers or the like disposed on at least one column disposed between two columns of caissons, each tray resting by one of its sides on the tray disposed immediately below in the same column and by the other side on a seat belonging to a tray of the adjacent column or to one of the end caissons, an element making it possible to raise the tray disposed above the tray which it is required to withdraw. The invention also relates to a tray or drawer or the like comprising an enclosure, a bearing surface adapted to receive at least the foot of another tray, means for raising the tray by raising the adjacent tray, and a movable and independent raising element.

3,468,592
TABLE STRUCTURE
Marion J. Madey, Park Ridge, Ill., assignor to Poster Products, Inc., Chicago, Ill., a corporation of Illinois
Filed Jan. 24, 1968, Ser. No. 700,250
Int. Cl. A47b *96/18;* **A47f** *9/00*
U.S. Cl. 312—140.3 **5 Claims**

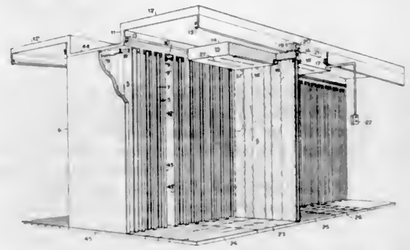


A table is assembled from shaped edge members, preferably made of extruded aluminum, secured to resin coated plywood or other sheet material, characterized particularly by top edge members, each having an upwardly extending portion adapted to engage the side edge of a horizontally disposed table top, a pair of inwardly extending parallel portions adapted to engage the upper and lower sides, respectively, of said table top adjacent said edge and an outwardly extending top portion. Each side edge member also preferably has an outwardly extending bottom portion adapted to seat on the top edge of a side panel and a downwardly depending portion integral with said bottom portion adapted to be secured to the inside of a side panel adjacent the top edge of such panel. The outwardly extending top portion of the edge member affords a lip with an underlying recess which makes it possible to secure a conventional partition to the table top and also to connect two or more tables together. Recessed channels are also provided to run transversely through the table top to afford a second lip for securing partitions, to provide means for holding an upright support for display of articles and also to provide means for holding two or more tables together.

3,468,593
BUILDING MATERIAL DISPLAY DEVICE
James Arthur Catlett, 224 Hidell St., Knoxville, Tenn. 37914
Filed Feb. 19, 1968, Ser. No. 706,273
Int. Cl. A47b *81/00*
U.S. Cl. 312—234 **6 Claims**

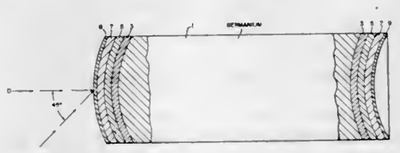
Apparatus for removably storing a multiplicity of wall covering samples and selectively withdrawing a selected sample onto a movable carriage adapted to move said

selected sample into position over selected floor samples disposed beneath said carriage to display the wall covering and floor samples in a manner representative of their



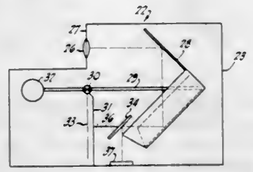
actual use. Provision is also made for simultaneous display of ceiling and moulding samples in positions representative of actual use.

3,468,594
OPTICAL APPARATUS FOR USE IN INFRARED RADIATION
Thomas P. Vogl, Pittsburgh, Pa., and Richard J. Pegis, Hilton, N.Y., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Continuation-in-part of application Ser. No. 396,296, Sept. 14, 1964. This application June 6, 1968, Ser. No. 734,942
Int. Cl. G02b *5/20, 13/14, 3/00*
U.S. Cl. 350—1 **4 Claims**



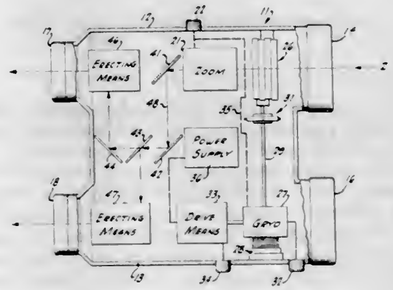
This invention relates to anti-reflective coatings for germanium and silicon lenses. More specifically, the invention is directed to a germanium or silicon lens in the 8 to 13 micron infrared region having a coating of zinc sulfide of a thickness of 1.120 microns and a barium fluoride coating of a thickness of 1.320 microns.

3,468,595
OPTICAL STABILIZATION BY REFLECTING MEANS
William E. Humphrey, Berkeley, Calif., assignor to Optical Research and Development Corporation, Oakland, Calif., a corporation of California
Filed Aug. 29, 1966, Ser. No. 575,624
Int. Cl. G02b *23/10*
U.S. Cl. 350—16 **12 Claims**



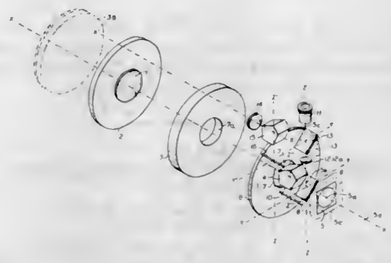
An optical stabilizer including object lens for focusing received light, a plane for displaying an image of the focused light, and at least one stabilized reflecting and retrodirecting corner cube reflecting surface therebetween. The corner cube reflecting surface is pivoted about gimbal mountings along an arm located a distance from the mirrors to the focal length of the objective lens so as to stabilize the image by intercepting and retrodirecting the focused rays of the viewed image at all angles of accidental angular deviation. Variations of this pivot distance are disclosed for eye stabilized viewing.

3,468,596
STABILIZED ZOOM OPTICAL DEVICE
Luis W. Alvarez, Berkeley, Calif., assignor to Optical Research and Development Corporation, Oakland, Calif., a corporation of California
Filed Jan. 26, 1966, Ser. No. 523,163
Int. Cl. G02b *23/12*
U.S. Cl. 350—16 **3 Claims**



A stabilized zoom optical device including a binocular case mounting a monocular optical train comprising a zoom lens system, an image splitting apparatus for binocular viewing, and a variable prism optical compensator. At least one element of the variable prism optical compensator is connected to and moved by an interior stabilizer at an increasing rate with increasing angular deflection of the casing axis to stabilize the image processed therethrough.

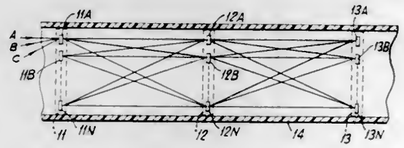
3,468,597
TELESCOPE IMAGE SWITCHING SYSTEMS
Harry S. Jones, 933 Hudson St., Hoboken, N.J. 07030
Continuation of application Ser. No. 449,701, Apr. 21, 1965. This application Sept. 3, 1968, Ser. No. 757,167
Int. Cl. G02b *23/14*
U.S. Cl. 350—28 **8 Claims**



Improvement in a telescopic system having a single eyepiece and two objectives, of which one objective is called a finder objective and is used for locating the object to be viewed in greater detail through a main objective, wherein both the main and the finder objectives

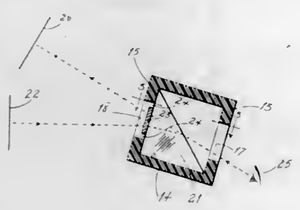
are independently focusable and are each equipped with independent reflective systems connecting each to the single eyepiece without relation to the other.

3,468,598
LIGHT BEAM TRANSMISSION SYSTEM
Michiaki Ito, Tokyo, Japan, assignor to Nippon Electric Company, Limited, Tokyo-to, Japan
Filed Aug. 22, 1967, Ser. No. 662,442
Claims priority, application Japan, Aug. 31, 1966, 41/57,408
Int. Cl. G02b *23/02*
U.S. Cl. 350—45 **4 Claims**



An optical system is provided for transmitting coherent light beams comprising an elongated optical pathway having spaced transversely along the pathway thereof, a plurality of matrices, each of said matrices having a plurality of optical lenses disposed essentially along a transverse plane, whereby a plurality of beams can be transmitted along the pathway. In a preferred embodiment, each of the matrices has the same number of lenses, such that the number of beams that can be transmitted along the pathway is equal to the square of the number of lenses in a matrix.

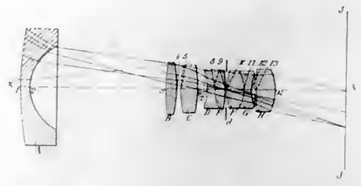
3,468,599
APPARATUS FOR PRODUCING VISUAL COLOR EFFECTS
Frank G. Jordan, 3943 Diversey Ave., Chicago, Ill. 60647
Filed May 31, 1966, Ser. No. 554,068
Int. Cl. G02b *25/00*
U.S. Cl. 350—146 **5 Claims**



A toy device for viewing black and white television images having prisms therein and an associate sheet of pink fluorescent acetate which causes the viewed image to appear in sharp relief and in variegated colors.

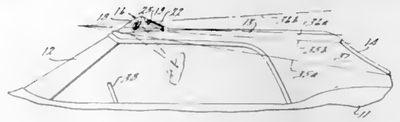
3,468,600
WIDE ANGLE SHORT PHOTOGRAPHIC OBJECTIVES
Edgard Hugues, 8 Rue Leon Boursier, 92 Courbevoie, France
Filed Nov. 10, 1966, Ser. No. 593,375
Claims priority, application France, Nov. 17, 1965, 38,802
Int. Cl. G02b *3/04, 9/62*
U.S. Cl. 350—189 **1 Claim**

The wide angle composite lens or objective comprises: a first dioptrical system including a lens having an at least approximately flat front surface and a rear surface in the form of a portion of an ellipsoid, this system being adapted to give a virtual image, this system having an optical axis; a diaphragm disposed in a plane perpendicular to said optical axis, at the place of the ellipsoid focus



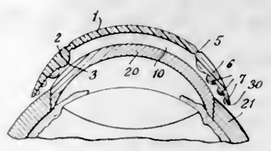
located at the greater distance from said lens; and a second dioptrical system including several lenses and disposed in the vicinity of said diaphragm, this second system being adapted to give a real image of said virtual image at the rear thereof.

3,468,601
VEHICLE REARVIEW MIRROR SYSTEM
Raymond P. Smith, Southfield, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed Oct. 11, 1967, Ser. No. 674,454
Int. Cl. G02b *5/08, 7/18*
U.S. Cl. 350—307 **6 Claims**



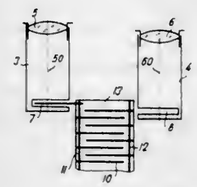
A vehicular rearview mirror system having a rearview mirror mounted in an aperture in the vehicle body roof panel, the mirror being supported with its plane intersected by the plane of the roof panel to provide dual fields of vision above and below the roof panel.

3,468,602
CONTACT LENS WITH FLEXIBLE CENTRAL PORTION
Hyman Rosen, 211 Everett Ave., Hewlett, N.Y. 11557
Filed July 11, 1966, Ser. No. 564,268
Int. Cl. G02c *7/04*
U.S. Cl. 351—160 **3 Claims**



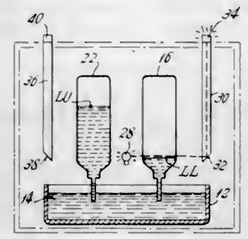
The invention relates to the structure of a yieldable and resilient corneal contact lens having a central and domed area capable of relative and substantial diaphragmatic action without contacting the eye and responsive to exertion and release of pressure induced by eyelid movement. Said lens has an outer peripheral area engageable with the eye and is provided with channels on the inner side to permit ingress and egress of eye or tear fluids to and from said domed area which latter serves as a fluid chamber. An intermediate thickened or reinforced peripheral area connected to the edge of the domed area serves as the support or fulcrum for the diphragmatic action of the domed area and also serves to connect with outer peripheral engageable area adapted to float on and adhere to the eye proximate to the cornea.

3,468,603
AUTOMATIC SLIDE PROJECTOR HAVING DUAL OPTICAL SYSTEM WITH A SINGLE MAGAZINE
Alois Kovarik, Prague, and Jindrich Suchanek, Brno, Czechoslovakia, assignors to Meopta, narodni podnik, Prerov, Czechoslovakia
Filed May 31, 1967, Ser. No. 642,537
Claims priority, application Czechoslovakia, June 2, 1966, 3,737/66
Int. Cl. G03b *21/26*
U.S. Cl. 353—94 **8 Claims**



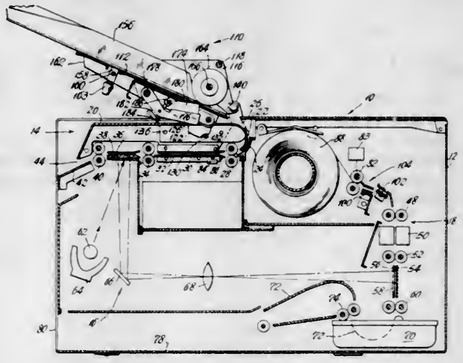
An automatically operated projector for sequentially projecting transparencies alternatingly through two optical systems having parallel axes. The transparencies are stored in a stack of pivotally mounted pockets of a magazine axially movable between the optical systems on a common support. The projector drive synchronously operates a shifting mechanism which simultaneously reciprocates the optical systems in opposite axial directions, and a pocket moving mechanism which swings a transversely aligned pocket into and out of an operative position in a receptacle of an associated optical system. The slide magazine is carried along when the optical system thereafter moves forward.

3,468,604
LIQUID LEVEL INDICATOR MEANS
George Matkovich, Stamford, and Walter J. Hanson, Old Greenwich, Conn., assignors to Pitney-Bowes, Inc., Stamford, Conn., a corporation of Delaware
Filed May 31, 1966, Ser. No. 554,183
Int. Cl. G03g *15/10*
U.S. Cl. 355—10 **8 Claims**



A liquid level indicating means for use in an electrophotographic copying machine having a developing tank and containers associated therewith for replenishing the supply of developing liquid and toner intensifier as these are depleted in the tank. A light source is directed through the separate containers so as to be visible to an operator of the machine only when the level of liquid in the respective containers drops below a predetermined level, thereby indicating the need for replacement of one or both containers.

3,468,605
DOCUMENT FEEDING DEVICE FOR COPYING MACHINES
Samuel W. Martin, Weston, Conn., assignor to Pitney-Bowes, Inc., Stamford, Conn., a corporation of Delaware
Filed June 30, 1967, Ser. No. 650,326
Int. Cl. G03b *29/00*
U.S. Cl. 355—29 **2 Claims**

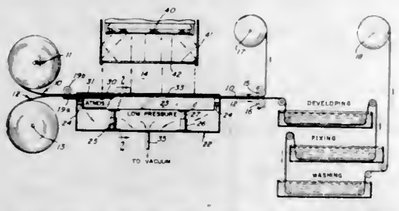


A photographic document copier having a document illumination station, an exposing station and an optical system for projecting images from the illumination station to the exposing station. Two transport mechanisms are located at both stations for transporting documents and a web of sensitized copy paper, respectively. A feeding mechanism feeds a particular length of the web of copy paper to its transport, at which time a severing device severs the web. A removable tray which is attached to the top of the copier can accommodate a stack of documents and carries document feeding rollers to successively feed the top most document to the document transport. Control switch elements are located in the path of movement of the document to sense the leading and trailing edges of the documents to actuate the severing mechanism. A normally operating driving element is carried by the main frame of the copier, and the removable tray carries an element for establishing a driving connection between the driving element and the document feeding when the tray is placed on the copier.

3,468,606
METHOD AND APPARATUS FOR CONTACT PRINTING FILM
Margery S. Wolf, Evanston, and Robert Beispel, Skokie, Ill., assignors, by mesne assignments, to Extek, Inc., a corporation of Nevada
Continuation-in-part of application Ser. No. 501,029, Oct. 22, 1965. This application Jan. 8, 1968, Ser. No. 696,357
Int. Cl. G03b *27/20*
U.S. Cl. 355—91 **14 Claims**

A method and apparatus for contact printing from a patterned transparent film onto a moving layer of light-sensitive material. The film and layer of light sensitive material are kept in register with each other through the use of a vacuum printing guide while the side edges of the film and material are kept separated from each other by a pair of wires. As the film and the layer of light sen-

sitive material are caused to move through the exposure zone, they may move either along a straight line or a spiral path, depending upon the particular embodiment



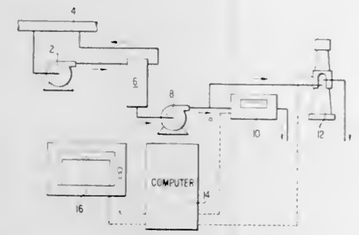
desired. Additionally a wedge shaped vacuum generating device can be used for separating the film from the layer of light sensitive material after they leave the exposure zone.

3,468,607

APPARATUS FOR THE CONTINUOUS ANALYSIS OF A LIQUID STREAM CONTAINING DISSOLVED SOLIDS OF WHICH A PORTION ARE OPTICALLY ACTIVE IN SOLUTION

George E. Sloane, Honolulu, and Kenneth M. Onna, Kaneohe, Hawaii, assignors to Hawaiian Sugar Planters Association, Honolulu, Hawaii, a voluntary, non-profit agricultural organization

Filed Dec. 6, 1966, Ser. No. 599,491
Int. Cl. G01n *21/26*
U.S. Cl. 356—73 **7 Claims**



Continuous quantitative analysis of a liquid stream (in particular a sugar solution) containing dissolved solids, some of which are optically active, is performed. A portion of the stream, optically clarified by filtration, is directed to automatically operative polarimetric and refractometric instruments. The polarimeter produces an electrical signal proportional to the concentration of optically active constituents in the stream and the refractometer produces an electrical signal proportional to the concentration of dissolved solids. The two signals are directed to a computer and recorder to produce a continuous plot of certain quantitative solution characteristics.

3,468,608

LASER ANGULAR RATE SENSOR

Barrett Doyle, New Brighton, Minn., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware

Filed Dec. 2, 1966, Ser. No. 598,660
Int. Cl. G01b *9/02*
U.S. Cl. 356—106 **7 Claims**

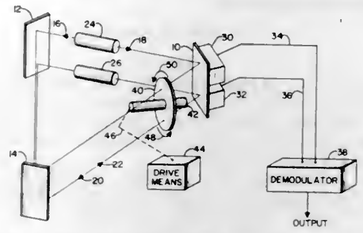
1. Apparatus of the class described comprising in combination:

means for generating two pairs of light beams, each pair comprising two substantially monochromatic beams traveling in opposite directions;

reflecting means for supporting separately said two pairs of light beams about first and second parallel closed loop paths;

a first body of substantially transparent material in the paths of said two pairs of light beams;

driving means for moving said first body so that said transparent material has a velocity along said first path and a substantially equal and opposite velocity along the second path so as to present a velocity dependent index of refraction to the beams; and



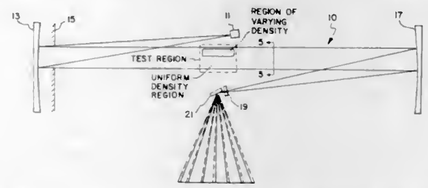
means for comparing the difference in frequency between the first pair of beams with the difference in frequency between the second pair of beams whereby the difference in frequency between the first and second pair of beams is proportional to the rotational rate.

3,468,609

LASER GRATING INTERFEROMETER

James R. Sterrett and James C. Emery, Hampton, and John B. Barber, Newport News, Va., assignors to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration

Filed Apr. 26, 1966, Ser. No. 546,149
Int. Cl. G01b *9/02;* **G01n** *21/46*
U.S. Cl. 356—107 **6 Claims**



1. An interferometer comprising a coherent, monochromatic laser light source, perforate stop means interrupting part of the divergent light from said source while permitting part of the divergent light to pass therethrough, first reflecting means reflecting the light that passes through said stop means, means for disturbing and thereby varying the density of a portion of the light reflected by said first reflecting means, second reflecting means receiving and focusing the disturbed and undisturbed portions of said reflected light onto a diffraction grating, said diffraction grating being disposed near the image of said light source, and serving to break the disturbed and undisturbed light beams into a series of overlapping diffracted orders so as to form detectable interference fringes where said orders overlap.

3,468,610

SCHLIEREN AND STRAIN BIREFRINGENCE SYSTEM

Carl Verne Muffoletto, 6100 Everall Ave., Baltimore, Md. 21206

Filed May 10, 1966, Ser. No. 548,886
Int. Cl. G01n *21/46, 1/10*
U.S. Cl. 356—129 **1 Claim**

An optical testing instrument is shown and described which comprises a tubular light shield within which a sample of transparent material to be examined is placed. One end of the shield is closed and has a spherical front surface mirror which faces toward the opposite open end. The open end has a lamp housing which is arranged to provide a pin point or slit light source which illuminates

the spherical mirror through the sample. The reflected light, passing back again through the sample, comes to a focus of the image of the pin hole or slit upon a knife edge adjacent the lamp house. An eye piece which may be open or with a magnifying telescope gives the operator a Schlieren shadow view of the brightly illuminated



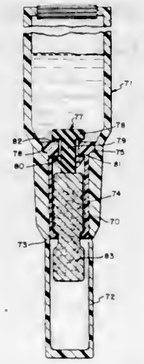
sample against a large dark field or background. The knife edge is retractable and the pinhole may be changed in size. In this manner with a rotatable analyzer replacing the eyepiece and a polarizer in the path of light from the source of the instrument becomes a large field strain birefringence examining device showing fringe patterns in strained samples.

3,468,611

LIQUID APPLICATOR

Lawrence T. Ward, Hester St., Portland, Pa. 18351

Filed May 10, 1966, Ser. No. 548,894
Int. Cl. B43m *11/06;* **B43k** *5/20, 5/16*
U.S. Cl. 401—186 **2 Claims**



A liquid applicator having a tubular member of flexible side wall construction, a porous applicator nib and valve means for controlling flow of liquid from the tubular member to the applicator nib.

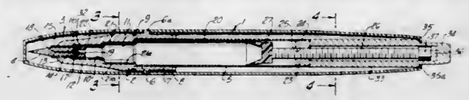
3,468,612

COSMETIC APPLICATOR CASE AND REPLACEABLE CARTRIDGE THEREFOR

Bruno D. Aston, 14421 Autumn Moon Drive, Hacienda Heights, Calif. 91745

Filed Oct. 23, 1965, Ser. No. 503,011
Int. Cl. A46b *11/02;* **B43k** *5/02, 5/14*
U.S. Cl. 401—188 **9 Claims**

A cosmetic applicator in which a replaceable cartridge is contained within an outer casing having a nose section at one end containing an applicator element, the cartridge being mountable within the casing and having a reservoir for the cosmetic, and having a piston actuatable to discharge a predetermined amount of the cosmetic each time it is actuated, the piston having a screw stem formed with a head end slidably engaged by a rotatable actuator body having a manually engageable end part projecting from an end of the case, and means being provided on the case and actuating body for indicating



the movement required for discharging a predetermined amount of the cosmetic.

3,468,613

LIQUID MARKER AND REPLACEABLE INK CARTRIDGE THEREFOR

Frederick W. Strickler, Bear Creek, Pa., assignor to Eberhard Faber, Inc., Wilkes-Barre, Pa., a corporation of New York

Filed Dec. 21, 1966, Ser. No. 603,650
Int. Cl. B43k *5/14;* **B43m** *11/08*
U.S. Cl. 401—199 **1 Claim**



A liquid marker having in combination a permanent outer casing assembly and a replaceable inner ink cartridge assembly. The outer assembly consists of a tubular barrel having a closed end, a screw-threaded sleeve fixed within its closed end, and a closure cap having a closed end and a cap insert in its closed end. The replaceable ink cartridge assembly has as its principal element an elongated tubular barrel open at both ends and having an internal taper at decreasing diameter toward its externally tapered forward end. A writing nib adapter is fixed in the forward end of the barrel. The cartridge barrel is substantially filled by an ink absorbent reservoir whose forward movement within the cartridge is limited by an internal abutment. A writing nib extends through the nib adapter into contact with the reservoir. The rear end of the cartridge through which the absorbent reservoir is inserted is sealed by a threaded end plug which engages the threads of the barrel insert in the closed end of the outer barrel to old the barrel assembly and the cartridge assembly releasably engaged with each other.

3,468,614

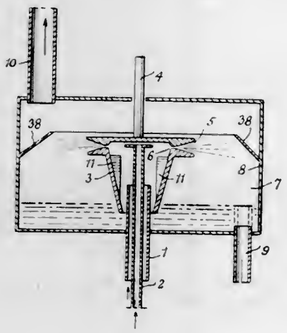
METHOD AND APPARATUS FOR BRINGING GASES, LIQUIDS AND/OR PULVERIZED SOLID BODIES INTO INTIMATE CONTACT WITH EACH OTHER

Goran Alfred Nilsson, Box 2190, Sandarne, Sweden

Filed Mar. 15, 1966, Ser. No. 534,491
Int. Cl. F23d *11/08, 11/24*
U.S. Cl. 431—2 **7 Claims**

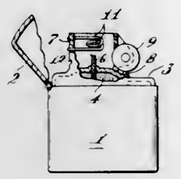
Method and apparatus for bringing a gaseous medium and a liquid medium into intimate contact with each other

by introducing them into a centrifuging drum which rotates within a chamber wherein it is whirled about and forced out through slots in the drum into a chamber



wherein the pressure is lower than that generated by the centrifuging drum, causing the liquid and gas components to become separated by the pressure drop upon entry into the chamber.

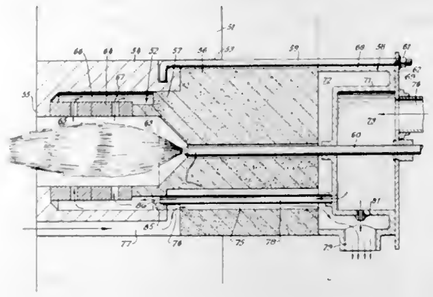
3,468,615
COLORED FLAME COMBUSTION DEVICE
Charles A. Carey, Cambridge, Mass., assignor to Gurdon S. Worcester, Gloucester, Mass.
Filed Nov. 3, 1967, Ser. No. 680,559
Int. Cl. F23g *2/32;* **C11c** *5/00*
U.S. Cl. 431—126 **12 Claims**



Several devices burning with a colored flame are shown: A cigarette lighter burning a liquid fuel containing a halogen compound such as methyl chloride has a fine indium wire within the chimney above the lighter wick. A can of gellied alcohol fuel with a halogen compound has a ring of copper gauze on the fuel. A container of liquefied gas fuel such as butane with methyl chloride has a ventilated sleeve above a valved gas jet and a copper wire ring adjacent the path of the gas through the sleeve. A halogen-containing wax candle has a copper sleeve riding on the upper end of the candle. The flame of each of the devices is colored green or blue with a copper body adjacent the halogen-containing flame, purple with an indium body, and other colors with other metals.

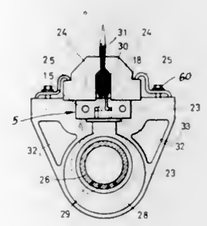
3,468,616
BURNERS FOR FURNACES
Trevor Ward, London, England, assignor to Hotwork Limited, London, England
Original application Dec. 22, 1966, Ser. No. 603,879. Divided and this application Nov. 24, 1967, Ser. No. 685,478
Int. Cl. F23d *11/44, 11/40*
U.S. Cl. 431—166 **6 Claims**

The combustion air supplied to a furnace burner for mixing with separatelyl supplied gas in the combustion zone is heated before reaching the combustion zone by passing through tubes extending through bores in a block



of refractory material, furnace gases being caused to flow through the bores outside the tubes to transfer heat to the combustion air.

3,468,617
GAS FUELED SINGEING BURNER
Yoshikazu Sando and Kiyoshi Nakaba, Wakayama-shi, Japan, assignors to Sando Iron Works Co., Ltd., Usu Wakayama-shi, Wakayama-ken, Japan
Original application Jan. 10, 1967, Ser. No. 608,345. Divided and this application May 1, 1968, Ser. No. 738,745
Claims priority, application Japan, Jan. 14, 1966, 41/2,050
Int. Cl. F23d *13/26;* **B05b** *1/14*
U.S. Cl. 431—350 **3 Claims**



1. A burner comprising an assembly of a plurality of substantially rectangular plates arranged in side-by-side juxtaposition, said plurality of plates including first plates having a slot cut inwardly from the top thereof and terminating at its inner end in a transverse slot and having a slot cut inwardly in a substantially vertical manner from the bottom thereof, said plates including second plates which are arranged alternately with said first plates and include a vertical slot cut inwardly from the bottom thereof which is aligned with the transverse portion of the slot of the first plate so as to provide a supply of gas from the vertical slot to the transverse slot and up through the vertical slot of said first plates and a second slot extending downwardly from the top wall of said second plate and terminating at its inner end in a transverse slot portion which communicates with the vertical slot defined upwardly from the bottom wall of said first plate, and gas supply means connected to said burner plate assembly adjacent the bottom thereof for supplying gas to the vertical slots cut inwardly from the bottom of said plates for flow upwardly through the vertical slots cut inwardly from the tops of said first and second plates for exiting at such location for burning.

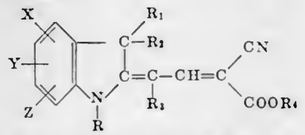
CHEMICAL

3,468,618
PROCESS FOR DYEING AND PRINTING FIBROUS MATERIALS
Arthur Buehler, Rheinfelden, Georg Sulzer, Basel, and Alfred Fasciati, Bottmingen, Switzerland, assignor to Ciba Limited, Basel, Switzerland, a Swiss company
No Drawing. Continuation-in-part of application Ser. No. 174,709, Feb. 21, 1962. This application Feb. 1, 1965, Ser. No. 429,624
Claims priority, application Switzerland, Feb. 24, 1961, 2,271/61
Int. Cl. D06p *3/68, 3/12*
U.S. Cl. 8—17 **10 Claims**

Leather, paper, and glass, cellulose, cellulose acetate, polyamide, polyurethane, polyacrylonitrile and polyester fibers are dyed with a mixture of (1) an aminoplast precursor, such as urea-formaldehyde resins, lower alcohol modified methylol ureas, and methylol ethylene ureas, (2) an acid catalyst, and (3) a 1:2 chrome or 1:2 cobalt complex of an azo dye containing at least 2 sulfonic acid groups and no substituents reacting with the aminoplast. Sulfonated azo benzenes and azo naphthalene as well as azo-naphthols, dihydroxy azo-quinolines, azopyrazolones and azo-barbituric acid metallized with chrome salicylate and acetate or cobalt tartrates, acetates or sulfates are the dyes used in this process.

3,468,619
METHINE DYESTUFFS
Roderich Raue and Hans-Peter Kühlthau, Leverkusen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany
No Drawing. Filed Oct. 12, 1965, Ser. No. 495,317
Claims priority, application Germany, Oct. 24, 1964, F 44,311; May 12, 1965, F 46,026
Int. Cl. D06p *3/04*
U.S. Cl. 8—25 **19 Claims**

Dyestuffs having superior wash fastness on polyamide fibers of the formula:



in which R, R_1 and R_2 are lower alkyl, R_3 is H or —CH, R_4 is phenyl lower alkyl, which may be substituted, phenyl lower oxyalkyl or phenyl alkenyl, and X, Y, and Z are hydrogen, lower alkyl, lower alkoxy, halo, amino, nitro cyano, carbo lower alkoxy, carbophenyloxy alkyl sulfonyl, phenyl sulfonyl carboxamide or substituted carboxamide.

3,468,620
PROCESS FOR THE DYEING OF POLYAMIDE FIBERS
Alfred Schaeuble, Riehen, Ernst Adolf Räuchle, Basel, and Willi Leutenegger, Bottmingen, Basel-Land, Switzerland, assignors to J. R. Geigy A.G., Basel, Switzerland
No Drawing. Continuation-in-part of application Ser. No. 515,717, Dec. 22, 1965, which is a continuation-in-part of application Ser. No. 214,512, Aug. 3, 1962. This application Aug. 9, 1966, Ser. No. 571,194
Claims priority, application Switzerland, Aug. 11, 1961, 9,427/61, 9,428/61
Int. Cl. D06p *3/04*
U.S. Cl. 8—54 **49 Claims**

Polyamide fibers such as wool and nylon are dyed with a thickened acid dye composition containing the reaction product of a polyalkanolamine and a fatty acid, and a tetrahydronaphthalene sulfonic acid. Thioglycolic acid can be added to the dyeing mixture, which may also contain a "steam-blowing" control agent. The acid dye composition containing the dyeing composition used in the above process is also claimed herein.

3,468,621
PREVENTION OF METAL HYDRIDE DECOMPOSITION
Arnold Lenz, Cologne-Stammheim, and Walter Rogler, Ranzel-Kolonie, Germany, assignors to Dynamit Nobel Aktiengesellschaft, Troisdorf, near Cologne, Germany, a corporation of Germany
No Drawing. Filed May 10, 1966, Ser. No. 548,859
Claims priority, application Germany, May 12, 1965, D 47,235
Int. Cl. C01b *6/34*
U.S. Cl. 21—60.5 **4 Claims**

Protection against decomposition of alkali metal hydride containing liquids by coating a surface thereof with a layer of liquid parafinic hydrocarbon which is substantially immiscible and non-reactive with the alkali metal hydride liquid, has a boiling point at least 20° C. higher than the temperature of the alkali metal hydride containing liquid and has a melting point below the temperature of the alkali metal hydride containing liquid.

3,468,622
PROCESS FOR RECOVERING RARE EARTH METAL VALUES
Harvey Pobiner, Princeton, N.J., assignor to American Can Company, New York, N.Y., a corporation of New Jersey
No Drawing. Filed June 14, 1967, Ser. No. 645,896
Int. Cl. C22b *59/00*
U.S. Cl. 23—22 **9 Claims**

A method for recovering europium oxide from a mixture containing same by acidifying such a mixture in an aqueous medium and complexing the thereby produced europium salt with a dipolar aprotic solvent such as dimethylformamide, dimethylsulfoxide, dimethylacetamide and hexamethylphosphoramide to form a soluble europium salt complex. The remaining solids are separated from the mixture. Thereafter, the europium complex is decomposed by alkalinizing the solution to redeposit the europium in its oxide form.

3,468,623
DRY STABILIZED DITHIONITE COMPOSITIONS
Marina Adriana van Damme-van Weele, Hengelo, and Bernardus Gerardus Wienk, Oldenzaal, Netherlands, assignors to N.V. Koninklijke Nederlandsche Zoutindustrie, Hengelo, Netherlands, a corporation of the Netherlands
No Drawing. Filed Mar. 19, 1965, Ser. No. 441,313
Int. Cl. C01b *17/98*
U.S. Cl. 23—116 **5 Claims**

A dry composition comprising substantially sodium dithionite having admixed therewith a stabilizer for inhibiting the decomposition thereof, said stabilizer being at least one compound selected from the group consisting of suberic acid, azelaic acid, sebacic acid and sodium, potassium, magnesium, calcium and zinc salts of said acids.

3,468,624
PROCESS FOR THE RECOVERY OF AMMONIUM SALTS FROM WASTE STREAMS IN AN ACRYLONITRILE PLANT
Arthur F. Miller, Lyndhurst, and Milena L. Salehar, Cleveland Heights, Ohio, assignors to The Standard Oil Company, Cleveland, Ohio, a corporation of Ohio
No Drawing. Filed Feb. 14, 1966, Ser. No. 527,048
Int. Cl. C01c *1/24, 1/16, 1/18*
U.S. Cl. 23—119 **5 Claims**

Mineral acid ammonium salts are recovered from the waste water streams produced in the waste water distillation columns in the manufacture of acrylonitrile and methacrylonitrile, which streams also contain undesirable organic constituents, by adding to said stream a nitrogen-containing compound selected from the group consisting of ammonia, methylamine, ethylamine, n-propylamine, n-butylamine, n-amylamine, dimethylamine, di-n-propylamine, trimethylamine, ethylenediamine, trimethylenediamine, ethanolamine, diethanolamine and triethanolamine; maintaining the pH between 6.5 and 10; removing a portion of the water from the solution; cooling the solution and adding thereto additional amounts of the nitrogen-containing compound to effect precipitation therefrom of the ammonium salt.

3,468,625
PREPARATION OF CRYSTALLINE ALUMINA BY HOMOGENEOUS PRECIPITATION
E. Richard Nightingale, Jr., Murray Hill, N.J., assignor to Esso Research and Engineering Company, a corporation of Delaware
No Drawing. Filed Nov. 18, 1966, Ser. No. 595,351
Int. Cl. C01f *7/30*
U.S. Cl. 23—143 **6 Claims**

This is a method of producing crystalline alumina having high surface area by utilizing a homogeneous precipitation technique. A stable solution of an aluminum salt in formic acid is heated to precipitate anhydrous crystalline alumina.

3,468,626
PREPARATION OF BORIC OXIDE
Dwight L. Sawyer, Boron, Calif., assignor to United States Borax & Chemical Corporation, Los Angeles, Calif., a corporation of Nevada
No Drawing. Filed May 13, 1966, Ser. No. 549,822
Int. Cl. C01b *35/00;* **C03c** *3/14;* **C09k** *3/00*
U.S. Cl. 23—149 **10 Claims**

In the preparation of boric oxide by heating at an elevated temperature a feed mixture formed by combining sodium tetraborate pentahydrate with sulfuric acid, the formation of a pasty feed mixture is avoided by use of tetraborate having a particle size smaller than about 100 mesh U.S.S. sieve.

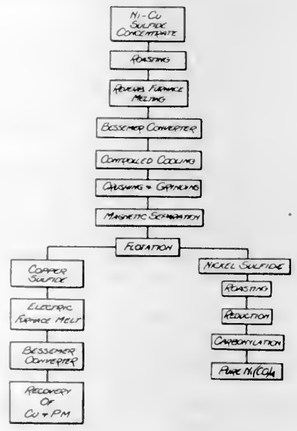
3,468,627
PRODUCTION OF BORIC OXIDE
Lloyd L. Fusby, Los Angeles, Calif., assignor to United States Borax & Chemical Corporation, Los Angeles, Calif., a corporation of Nevada
Continuation-in-part of application Ser. No. 432,652, Feb. 15, 1965. This application June 22, 1966, Ser. No. 563,015
Int. Cl. C01b *35/00*
U.S. Cl. 23—149 **13 Claims**

Vitreous boric oxide is obtained by mixing sulfuric acid and an alkali metal and/or alkaline earth metal borate to form a feed mixture, heating this mixture at an elevated temperature of at least about 750° C. to form a two layer molten reaction product mixture, separating the layers while molten and then cooling the separated layers to obtain vitreous boric oxide and by-product metal sulfate as solid fused products. Solid vitreous boric oxide compositions containing a small amount, up to about 10%, of sodium, potassium and/or calcium oxide dissolved therein are also provided. Optionally, the product can also contain a minor amount of refractory oxide, such as aluminum, silicon, titanium and zirconium oxide, dissolved therein. The products have a low rate of moisture pick up and possess improved grinding properties.

3,468,628
PROCESS FOR PRODUCING BORIC OXIDE
Robert W. Sprague, Santa Ana, Calif., assignor to United States Borax & Chemical Corporation, Los Angeles, Calif., a corporation of Nevada
No Drawing. Filed Aug. 11, 1966, Ser. No. 571,718
Int. Cl. C01b *15/12, 35/00*
U.S. Cl. 23—149 **5 Claims**

Boric oxide is produced by heating an alkali metal or alkaline earth metal borate-sulfuric acid feed mixture in a furnace at a temperature above 750° C. to form two molten layers which are then separated and cooled. The B_2O_3 content of the product is increased if the feed is dried at a temperature of up to about 300° C. prior to feeding it to the furnace.

3,468,629
RECOVERY OF NICKEL FROM NICKEL-CONTAINING SULFIDE MATERIALS
Walter Curlook, Copper Cliff, Ontario, Canada, Charles E. O'Neill, Upper Montclair, N.J., and Paul E. Queneau, Fairfield, Conn., assignors to The International Nickel Company, Inc., New York, N.Y., a corporation of Delaware
Filed Feb. 28, 1966, Ser. No. 530,573
Claims priority, application Canada, Mar. 12, 1965, 925,495
Int. Cl. C01b *31/26*
U.S. Cl. 23—203 **8 Claims**

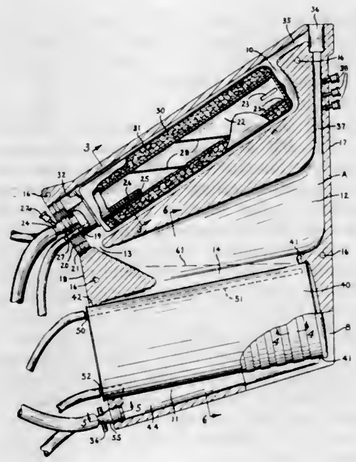


A process is disclosed for producing nickel carbonyl. The process comprises establishing a molten bath containing up to about 45% copper, less than about 3% iron, less than about 4% sulfur and the balance essentially nickel and drastically quenching the molten bath of such composition to provide particles with sulfur uniformly distributed therethroughout, which drastically quenched particles are characterized by high nickel extractions during low superatmospheric pressure carbonylation.

3,468,630
PREPARATION OF BOROHYDRIDES
Ralph C. Raisor and Raymond C. Rhees, Henderson, Nev., assignors, by mesne assignments, to American Potash & Chemical Corporation, a corporation of Delaware
Filed June 25, 1963, Ser. No. 290,893
Int. Cl. C01b *6/08*
U.S. Cl. 23—204 **3 Claims**

1. A process for converting diborane to a higher boron hydride which comprises heating a gaseous mixture of diborane, hydrogen and vapor selected from the group consisting of cyclohexane, cyclopentane and n-heptane to a temperature within the range of from about 200° C. to about 240° C. for a period of from about 3.7 to about 15 seconds in a closed reaction zone to form pentaborane-9 and immediately thereafter cooling the resulting gaseous mixture to reduce the rate of reaction of diborane to a higher boron hydride.

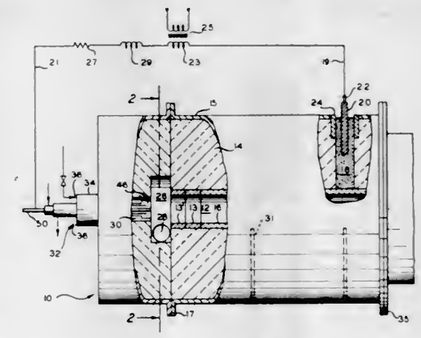
3,468,631
BLOOD OXYGENATOR WITH HEAT EXCHANGER
Donald A. Raible, Corona, and Donald J. Bentley, Newport Beach, Calif., and Richard A. De Wall, River Forest, Ill., assignors, by mesne assignments, to Bentley Laboratories, Santa Ana, Calif., a corporation of California
Filed June 21, 1965, Ser. No. 465,451
Int. Cl. A61m *31/00;* **A61f** *7/00*
U.S. Cl. 23—258.5 **14 Claims**



A unitary blood oxygenator and heat exchanger having a rigid casing, an oxygenator chamber having baffle means and being in the upper part of the casing, a settling chamber separate from, and in communication with, the oxygenator chamber, and a heat exchanger in communication with the settling chamber by means of a thin, elongate slot.

3,468,632
APPARATUS FOR PRODUCTION OF HIGH TEMPERATURE GASES AND CARBON BLACK
Thomas J. Gunnell and Albert F. Stegelman, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware
Filed Jan. 3, 1966, Ser. No. 518,332
Int. Cl. C09c *1/48;* **H05b** *7/18*
U.S. Cl. 23—259.5 **6 Claims**

Apparatus for producing carbon black in which the heat required for the pyrolytic decomposition of the hydrocarbon is generated within a reactor having one electrode as a part of an inner wall of one chamber and a second electrode located apart from the first electrode, means being supplied to introduce the reactants therebetween and for establishing a distributed electrical discharge between the electrodes.

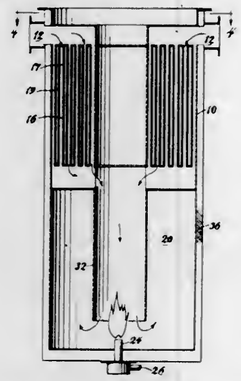


3,468,633
COUNTERCURRENT SOLID-LIQUID TREATING APPARATUS
Andrew P. Honchar, Westfield, N.J., assignor to National Lead Company, New York, N.Y., a corporation of New Jersey
Filed June 17, 1966, Ser. No. 558,337
Int. Cl. B01d *11/00;* **B01j** *9/06*
U.S. Cl. 23—270 **4 Claims**



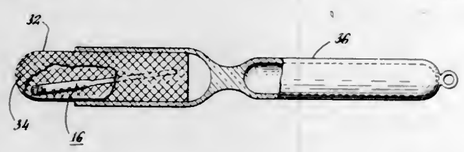
The disclosure is of a method and apparatus for leaching a titaniferous ore to produce a TiO_2 concentrate wherein segregated portions of the ore pass downwardly through roughing and finishing stages of a vertical tower while being leached by upwardly flowing acid, segregated portions of the ore being temporarily retained on conical shelves in the finishing section of the tower by the upwardly flowing acid, and selectively released from any one shelf by reducing the rate of flow of acid at the selected shelf.

3,468,634
CONCENTRIC TUBE ODOR ELIMINATOR
Carl E. Pauletta, Wellsville, N.Y., assignor to The Air Preheater Company, Inc., New York, N.Y., a corporation of Delaware
Filed Mar. 23, 1966, Ser. No. 536,835
Int. Cl. B01j 9/16; F27b 15/00
U.S. Cl. 23—288 9 Claims



A fume incinerator for thoroughly mixing a waste gas stream having a quantity of obnoxious fumes therein with the flame of a burner whereby all portions of the waste gas stream are directed into intimate contact with the flame so as to reduce the obnoxious ingredients thereof to an innocuous state. The device includes a concentric-tubes heat exchanger providing axial countercurrent flow of the waste gas and combustion products.

3,468,635
LIQUID SAMPLING
Robert S. Richmond, Westport, Conn., assignor to The Perkin-Elmer Corporation, Norwalk, Conn., a corporation of New York
Filed June 20, 1966, Ser. No. 558,696
Int. Cl. G01n 31/12, 1/28; B01l 3/00
U.S. Cl. 23—230 10 Claims

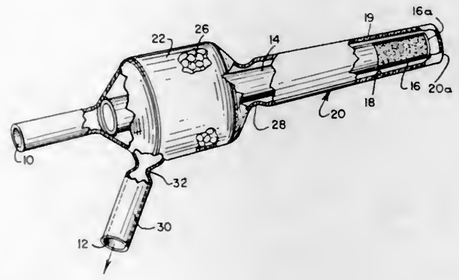


A fluid sample being analyzed is inserted into a destructible sample holder; the sample holder is sealed and shielded by an explosion barrier means; and the sample holder is inserted into and exploded in the combustion chamber of a combustion analyzing apparatus. With this arrangement, premature sample vaporization is inhibited while holder fragmentation is confined.

3,468,636
ION EXCHANGE MATERIAL AND METHOD OF MAKING SAME
Leslie D. MacLeod, 3 Victoria Gardens, Cotham, Bristol 6, Gloucestershire, England
No Drawing. Filed Mar. 9, 1965, Ser. No. 438,388
Claims priority, application Great Britain, Mar. 12, 1964, 10,513/64
Int. Cl. G01n 31/22; 31/04
U.S. Cl. 23—253 3 Claims

A method of determining the concentration of microgram quantities of cations in physiological liquids by loading the cations on to a cation exchange strip comprising a β-cellulose film which has been impregnated with Congo red dye, the loaded ions subsequently being discharged by replacement and estimated by titration.

3,468,637
FLUID MIXING DEVICE
Gerald L. Hammond, Chicago, Ill., assignor, by mesne assignments, to Precision Scientific Company, Chicago, Ill., a corporation of Delaware
Filed June 9, 1965, Ser. No. 462,520
Int. Cl. G01n 31/00; B01l 5/00
U.S. Cl. 23—292 1 Claim

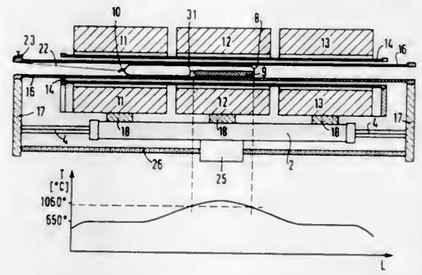


1. Apparatus for rapidly mixing two or more fluids, said apparatus comprising the combination of a primary mixing stage including a frit for breaking up the two fluids so as to provide a large interface between the two fluids, an elongated tubular member for feeding the two fluids simultaneously to said frit, an annular chamber surrounding said frit and a substantial portion of said tubular member for receiving the fluid mixture emerging from the frit and directing the fluid mixture emerging outer surface of the tubular member in a direction counter to that of the incoming fluids inside the tubular member, and a secondary mixing stage surrounding said tubular member for receiving the fluid mixture from said annular chamber, said secondary mixing stage being spaced away from said frit toward the inlet end of said tubular member and including a bed of particulate material for again breaking up the two fluids to provide a large interface between the two fluids, and an outlet port for discharging the resultant fluid mixture, said annular chamber including a restriction adjacent said secondary mixing stage to increase the velocity of the fluid mixture entering said secondary mixing stage.

3,468,638
METHOD OF PRODUCING CRYSTALLINE RODS FROM SEMICONDUCTOR COMPOUNDS
Bruno Reiss, Erlangen, and Theodor Renner, Nuremberg, Germany, assignors to Siemens Aktiengesellschaft, Erlangen, Germany, a corporation of Germany
Filed Sept. 27, 1966, Ser. No. 582,412
Claims priority, application Germany, Sept. 29, 1965, S 99,741
Int. Cl. B01j 17/02, 17/18; C01b 25/08
U.S. Cl. 23—315 2 Claims

Described is a method of producing crystalline rods of semiconductor compounds. These rods are produced from a relatively more and a relatively less volatile component. The compound is first synthesized as a melt through the synthesis reaction of the more volatile component with the less volatile component within a tubular crucible. This tubular crucible is rotatable around an axis running perpendicular to the longitudinal axis.

The synthesis is carried out with the tubular crucible in approximately horizontal position. An indentation provided in the tubular crucible separates the original material of the more volatile component from the less volatile component. After the melt has been prepared, the crucible is turned to the vertical position so that freezing of the melt may occur. Also described is apparatus for carrying out said process.



3,468,639
GASOLINES CONTAINING DEPOSIT-REDUCING MONOAMIDES OF POLYAMINES CHARACTERIZED BY IMPROVED WATER TOLERANCE
Eddie G. Lindstrom, Martinez, and Maurice R. Barusch, Richmond, Calif., assignors to Chevron Research Company, San Francisco, Calif., a corporation of Delaware
No Drawing. Filed Aug. 6, 1965, Ser. No. 477,955
Int. Cl. C10l 1/22
U.S. Cl. 44—66 3 Claims

An improved engine fuel for use in spark-ignition engines, comprising a major proportion of gasoline and in combination therewith a small amount of from about 0.0001 to about 0.1% by weight of an oil-soluble, emulsion-resistant monoamide reaction product of a polyamine and a hydrocarbon monocarboxylic acid

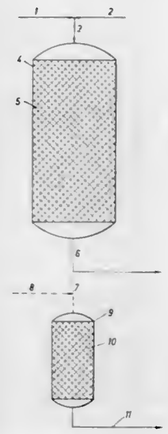
$(C_{15}–C_{30})$

3,468,640
GASOLINE COMPOSITIONS
Maurice R. Barusch, Richmond, and George J. Kautsky, El Cerrito, Calif., assignors to Chevron Research Company, a corporation of Delaware
No Drawing. Filed Sept. 22, 1964, Ser. No. 398,440
Int. Cl. C10l 1/22
U.S. Cl. 44—75 5 Claims

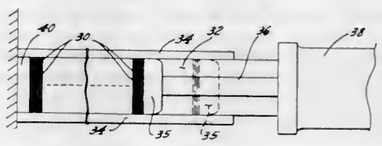
Gasoline for automotive use is improved by adding to it from about 30 to about 500 parts per one million parts of the gasoline of a particular oil-soluble quaternary ammonium hydroxide to reduce significantly the deposits due to blowby and puffback in the induction system, and particularly in the carburetor of spark-ignition engines.

3,468,641
CONVERSION OF LIQUID HYDROCARBONS INTO FUEL GAS OR WATER GAS BY A THERMAL OR CATALYTIC SPLITTING
Hans Werner Gross, Buchschlag, Erwin Ehrhardt, Sprendlingen, and Gerhard Baron, Frankfurt, Germany, assignors to Metallgesellschaft Aktiengesellschaft, Frankfurt am Main, Germany
Filed May 2, 1966, Ser. No. 546,666
Int. Cl. C10g 11/28
U.S. Cl. 48—214 13 Claims

A process of producing a gas having a high methane content by a hydrogenating splitting of hydrocarbons under at least atmospheric pressure, comprising supplying hydrocarbons containing 3–30 carbon atoms per molecule and steam in a mixture at a temperature up to 450° C. to a first bed of a catalyst having a hydrogenating splitting promoting activity, withdrawing split gases containing higher hydrocarbons from said first bed and passing them through a second bed of a catalyst having a hydrogenating splitting promoting activity and present in an amount which is 10–25% of the amount of said catalyst in said first bed, withdrawing split gases from said second bed, and controlling the temperature of said second bed at a value which is sufficiently higher than the temperature of said split gases withdrawn from said first bed to keep the concentration of higher hydrocarbons in the split gases withdrawn from said second bed below 8 grams higher hydrocarbons per standard cubic meter of split gas.

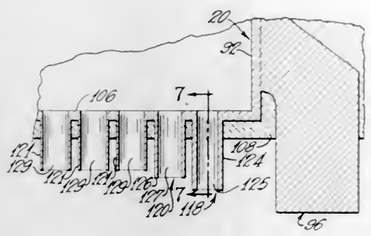


3,468,642
METHOD OF FABRICATING A FLAP-TYPE WHEEL
Russell W. Burns, Pacific Palisades, Calif., assignor to Merit Products, Inc., Los Angeles, Calif., a corporation of California
Filed Aug. 4, 1966, Ser. No. 570,204
Int. Cl. B24d 13/04
U.S. Cl. 51—297 12 Claims



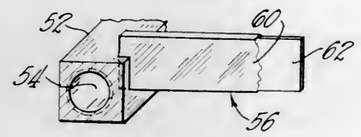
The method of fabricating an annular array of leaves with abrasives on one face comprising the steps of arranging a plurality of flexible leaves in a stack with the abrasive faces of the leaves facing in one direction, compacting the stack to cause the abrasive particles of the leaves to penetrate the back of the adjacent leaf thereby forming the stack into a rigid block, applying material to interconnect the end edges of the leaves, forming grooves in opposite side edges of the leaves in the block, loosening the leaves and forming the loose array into a circular configuration.

3,468,643
APPARATUS FOR FEEDING STREAMS OF HEAT-SOFTENED MATERIAL
Charles J. Stalego and Eugene C. Varrasso, Newark, Ohio, assignors to Owens-Corning Fiberglas Corporation, a corporation of Delaware
Filed Apr. 20, 1966, Ser. No. 543,968
Int. Cl. C03b *37/06*
U.S. Cl. 65—1 **7 Claims**



The disclosure embraces a method of and feeder construction for flowing streams of glass through orificed projections depending from the feeder and correlating the characteristics of the orificed projections in zones of heat concentration and hence lower viscosity of the glass at such regions whereby to promote the delivery of streams of glass at substantially uniform flow rates through all of the orificed projections.

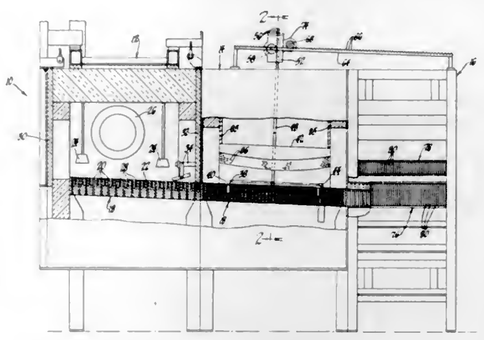
3,468,644
APPARATUS FOR THE PRODUCTION OF GLASS FIBERS
Harold E. Leaman, Newark, Ohio, assignor to Owens-Corning Fiberglas Corporation, a corporation of Delaware
Filed Sept. 28, 1966, Ser. No. 582,602
Int. Cl. C03b *25/04;* **C03c** *25/00*
U.S. Cl. 65—12 **10 Claims**



The disclosure embraces an apparatus for the production of continuous glass filaments attenuated from streams of glass flowing through orifices in a stream feeder wherein elongate members or fins of nonferrous metal disposed in heat-transferring relation with the streams are coated with a metal having a lower rate of heat conductivity than that of the metal of the elongate members or fins.

3,468,645
METHOD AND APPARATUS FOR SHAPING GLASS SHEETS SUPPORTED ON A GAS SUPPORT BED
Harold A. McMaster, Woodville, Norman C. Nitschke, Perrysburg, and John J. Kawecka, Toledo, Ohio, assignors to Permaglass Inc., Woodville, Ohio, a corporation of Ohio
Filed May 9, 1966, Ser. No. 548,755
Int. Cl. B01d *39/00, 18/02*
U.S. Cl. 65—25 **17 Claims**

A method of treating sheets of glass which may be performed by an apparatus of the instant invention wherein a substantially flat sheet of glass is floated on a fluid while being heated to deformation temperature and thereafter applying forces about the periphery of



the sheet to support the sheet and to curve the sheet by forcing the sheet against a shaped surface.

3,468,646
PROCESS FOR PRODUCING REFLECTIVE COLORED GLASS SURFACE
John B. Finn and Carl J. Hudecek, Toledo, Ohio, assignors to Owens-Illinois, Inc., a corporation of Ohio
No Drawing. Filed Sept. 30, 1966, Ser. No. 583,437
Int. Cl. C03c *19/00, 23/00;* **C03b** *29/00*
U.S. Cl. 65—30 **10 Claims**

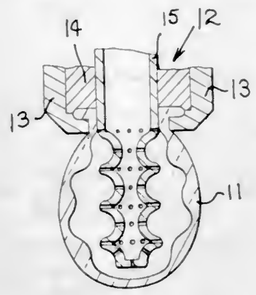
A method for producing a highly reflective mirror-like colored surface on a copper glass article wherein the surface of the article is first polished and is then subjected to a temperature within the range of 400°–800° F. in an oxidizing atmosphere for a period of time sufficient to produce the desired colored reflective surface. The resulting color of the surface will vary with the temperature and the period of time.

3,468,647
CERAMIC-METAL SEAL
Archie G. Buyers and Augustus J. Mohr. Jr., Los Angeles, Calif., assignors to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware
No Drawing. Continuation of application Ser. No. 308.629, Sept. 13, 1963. This application Oct. 4, 1967, Ser. No. 675,007
The portion of the term of the patent subsequent to Jan. 30, 1985, has been disclaimed
Int. Cl. C03c *27/02*
U.S Cl. 65—59 **11 Claims**

A method of bonding high temperature ceramic to refractory metal, or preparing it for such bond, by heating alumina ceramic and tantalum to above 1950° C., preferably in contact with molybdenum for bonding thereto, and cooling to form an intermediate compound containing tantalum.

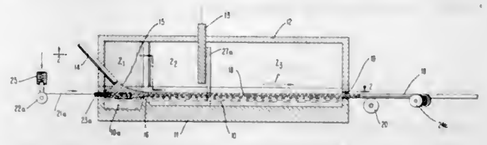
3,468,648
METHOD AND APPARATUS FOR FORMING HOLLOW GLASS ARTICLES
Edward A. Nowak, Toledo, Ohio, assignor to Owens-Illinois, Inc., a corporation of Ohio
Filed July 8, 1966, Ser. No. 563,734
Int. Cl. C03b *9/32*
U.S. Cl. 65—76 **6 Claims**

In the forming of blown glass articles in which a predetermined pattern is formed in the interior of the glass by pressing the preform or parison with a plunger carrying the desired pattern. The parison and plunger are removed from the parison mold and the parison is then preliminarily expanded by applying pressure to the interior thereof. At this point the plunger may be retracted from



the interior of the parison and the parison then blown to final form in the blow mold or the plunger may remain in the parison and the parison is rotated about its axis as the parison is blown in a "paste" mold.

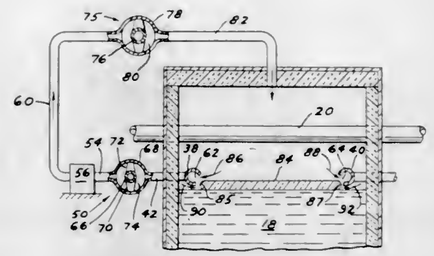
3,468,649
METHOD AND APPARATUS FOR PRODUCING FLAT GLASS
Stephane Dufaure De Lajarte, and Maurice Bourgeaux, Paris, France, assignors to Compagnie de Saint-Gobain, Neuilly-sur-Seine, France
Continuation-in-part of application Ser. No. 442,942, Mar. 26, 1965. This application July 13, 1965, Ser. No. 471,642
Claims priority, application France, July 17, 1964, 982,130; Apr. 23, 1965, 14,433
Int. Cl. C03b *18/00*
U.S. Cl. 65—91 **11 Claims**



Molten glass is poured onto the surface of a bath of molten tin, forming a pool, a glass sheet is drawn horizontally from the pool being formed at the downstream limit of the pool over a bar which determines its initial thickness. The sheet is prevented from retracting to stabilized thickness under the forces of surface tension and gravity by embedding in its edges wires which are held in predetermined spaced relation by a series of fixed guides which pass inside the wires and through the glass sheet as it progresses downstream.

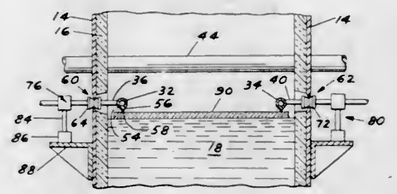
3,468,650
PROCESS USING GAS INLETS TO LATERALLY STRETCH AND STABILIZE GLASS DURING FLOAT GLASS MANUFACTURING
Premakaran T. Boaz, Lincoln Park, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed May 10, 1967, Ser. No. 637,398
Int. Cl. C03b *18/00*
U.S. Cl. 65—91 **4 Claims**

Gas inlets comprising longitudinally slotted tubes are located longitudinally along and slightly outboard of the edges of a glass ribbon floating on molten tin in the float chamber used in manufacturing glass by the float process. Powerful pumps draw the gas atmosphere existing in the float chamber laterally outward across the surface of the glass and laterally inward from the side walls of the



chamber. The glass drawn across the surface laterally stretches the glass to a thickness less than its equilibrium thickness while the gas drawn inward stabilizes the lateral position of the glass.

3,468,651
PROCESS USING STATIONARY BLADES TO LATERALLY STRETCH GLASS DURING FLOAT GLASS MANUFACTURING
Premakaran T. Boaz, Lincoln Park, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed May 10, 1967, Ser. No. 637,473
Int. Cl. C03c *15/02*
U.S. Cl. 65—91 **7 Claims**

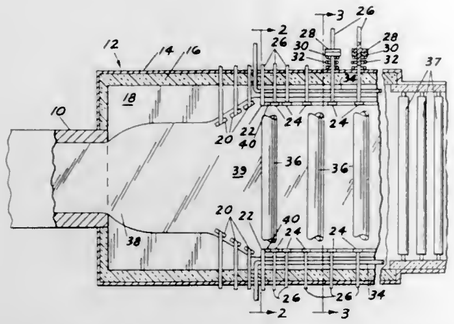


Longitudinal pipes having blades formed thereon are positioned along the edge portions of the glass ribbon floating on molten tin in the float chamber used in manufacturing glass by the float process, said blades being stationary relative to the longitudinal direction of the glass ribbon and embedding the ribbon surface and laterally stretching the ribbon. Longitudinal friction between the blades and the glass prevents the longitudinal stretching forces from being transmitted to the molten glass entering the float chamber which would pull the molten glass away from the entrance. Coolant is circulated through members carrying the blades to cool the blades and the ribbon edge portions.

3,468,652
PROCESS USING ROTATING MEMBERS TO LATERALLY STRETCH AND RESTRAIN GLASS DURING FLOAT GLASS MANUFACTURING
Jerry G. Beck, Southfield, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed June 14, 1967, Ser. No. 645,940
Int. Cl. C03b *18/00*
U.S. Cl. 65—91 **8 Claims**

Longitudinally continuous deformations in the thickness of glass being produced by the float glass process are formed near its edges while the glass is sufficiently soft by gas issuing from gas outlets. Laterally biased

rollers ride against longitudinal edges of the deformations to exert forces resisting the tendency of the glass to return to its equilibrium thickness. Simultaneously, the



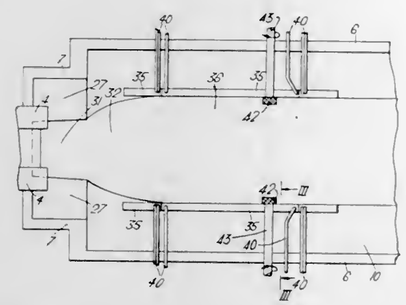
edges and main body of the glass sheet are cooled to provide sufficient inherent strength in the glass to maintain its shape.

3,468,653

LATERAL CONFINEMENT AND FLOW-HALTING APPARATUS FOR MANUFACTURE OF FLAT GLASS

Albert Sidney Robinson, Birkdale, Southport, and Jack Lawrenson, Windle, St. Helens, England, assignors to Pilkington Brothers Limited, Liverpool, England, a corporation of Great Britain

Filed Mar. 17, 1966, Ser. No. 535,089
Claims priority, application Great Britain, Mar. 22, 1965, 12,066/65
Int. Cl. C03b *18/02*
U.S. Cl. 65—99 **1 Claim**



Apparatus for the manufacture of flat glass in ribbon form wherein, after initial lateral confinement of the glass and free lateral flow on the bath, the lateral flow of the glass is physically halted and the glass advanced by means including edge rolls or the like inside the flow-halting means.

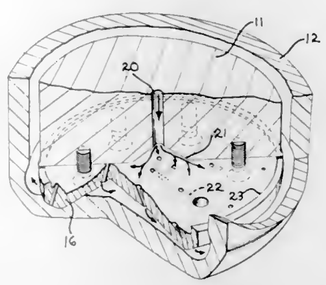
3,468,654

METHOD AND APPARATUS FOR CONTROLLING THE HEAT BUILD-UP WITHIN GLASSWARE FORMING APPARATUS

Julius J. Torok, Toledo, Ohio, assignor to Owens-Illinois, Inc., a corporation of Ohio

Filed May 2, 1966, Ser. No. 554,924
Int. Cl. C03b *11/12;* **F28f** *27/00*
U.S. Cl. 65—162 **6 Claims**

This invention relates to the method and apparatus for controlling the heat build-up within a mold or plunger of a glass molding machine. The improvement in the apparatus consists of placing openings in the internal section of the plunger to direct cooling fluid in a rotational direction against the interior of the external section of the plunger; the new method of controlling the heat build-up in the plunger utilizes the transition characteristics between film boiling and nucleate boiling of the cooling fluid.



When the exterior of the plunger approaches the upper limit of its desirable temperature range, the cavity between the internal and external portion of the plunger is purged with a limited amount of cooling fluid, thus increasing the heat transfer between the exterior of plunger and the cooling fluid.

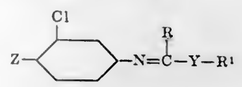
3,468,655

METHOD OF APPLYING HERBICIDAL IMIDATES

Kenneth L. Viste, Warminster, Pa., assignor to Rohm & Haas Company, Philadelphia, Pa., a corporation of Delaware

No Drawing. Filed Jan. 20, 1966, Ser. No. 521,822
Int. Cl. A01m *9/12, 9/20, 17/00*
U.S. Cl. 71—121 **9 Claims**

Disclosed herein is a method of applying liquid herbicidal compounds of the formula



wherein

R is alkyl of 1 to 6 carbon atoms,

R^1 is phenyl, methylphenyl, mono-, di- or trichlorophenyl, methylchlorophenyl or alkoxyphenyl wherein the alkoxy group has up to 5 carbon atoms,

Z is methyl or chloro, and

Y is oxygen or sulfur.

These compounds are sprayed in their undiluted liquid form onto a locus containing undesired plants wherein the spray comprises drops of a substantially uniform size up to about 500 microns in diameter.

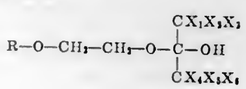
3,468,656

HERBICIDAL COMPOSITION AND METHOD

Roger L. Pierpont, Westfield, and Edmund J. Rumanowski, Dover, N.J., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York

No Drawing. Original application Apr. 13, 1964, Ser. No. 359,510, now Patent No. 3,394,398, dated July 23, 1968. Divided and this application Feb. 29, 1968, Ser. No. 729,845
Int. Cl. A01n *9/24, 17/00*
U.S. Cl. 71—122 **6 Claims**

Herbicidal compositions comprising fluorinated hemiketals of the formula



wherein R is a halogenated phenyl radical and X_1–X_6 are F or Cl, and methods for combatting growth of plants therewith.

3,468,657

METHOD FOR REFINING A METAL

Karl Erik Pihlblad, Nyby Hage, Nybybruk, and Anton Robert Wagner, Villa Elvik, Nybybruk, Sweden, assignors to Nyby Bruks Aktiebolag, Nybybruk, Sweden, a company of Sweden

No Drawing. Filed Mar. 16, 1966, Ser. No. 534,655
Claims priority, application Sweden, Mar. 19, 1965, 3,598/65
The portion of the term of the patent subsequent to Mar. 7, 1984, has been disclaimed
Int. Cl. C21c *7/04*
U.S. Cl. 75—59 **3 Claims**

In refining a metal by heating to the temperature of melting and blowing a gas over the surface of the melt, it is preferable that the blowing start when the metal is still solid and continue through the melting stage. While the metal is still solid, the blown gas should be an inert gas containing a small amount of oxygen; however, once the meta is melted the presence of oxygen is excluded.

3,468,658

METHOD OF PRODUCING DISPERSION STRENGTHENED METALS

Conrad D. Herald, Birmingham, and David M. Scruggs, Oak Park, Mich., assignors to The Bendix Corporation, a corporation of Delaware

No Drawing. Filed Dec. 8, 1965, Ser. No. 512,461
Int. Cl. C22c *29/00*
U.S. Cl. 75—122 **7 Claims**

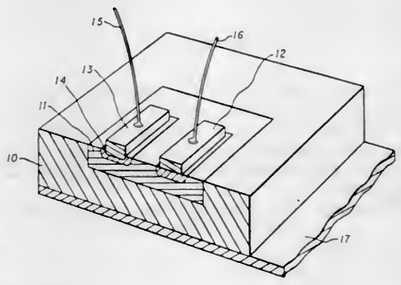
A method for dispersing refractory particles in a metal having the steps of saturating the molten metal with anions of the refracting particles, adding the refracting particles, and agitating the molten metal.

3.468,659

SEMICONDUCTOR CONTACT ALLOY

Melvin Belasco, Bobby W. Howeth, and David D. Martin, Dallas, and Price T. Wende, Richardson, Tex., assignors to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware

Original application June 9, 1965, Ser. No. 462,583, now Patent No. 3,371,255, dated Feb. 27, 1968. Divided and this application Oct. 11, 1967, Ser. No. 719,799
Int. Cl. C22c *31/00;* **H01l** *3/00*
U.S. Cl. 75—134 **2 Claims**



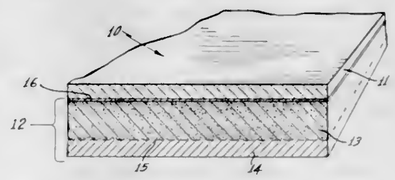
A semiconductor contact alloy for forming ohmic contact to N-type material, or for forming an emitter of an NPN Group III–V compound transistor, said contact alloy containing between 25–35% gold, between 60–70% germanium, and between 3–10% sulfur by weight of said alloy.

3,468,660

ELECTROPHOTOGRAPHIC MATERIAL COMPRISING A MULTILAYER SUPPORT HAVING A BARRIER LAYER OVER A DUPLEX PAPER BASE

Ralph M. Davenport, Jr., Greenwich, Conn., Alfred L. Kratzer, Flemington, Robert W. Sapp, Maplewood, and William T. Thomas, South River, N.J., and Heinz H. Weichardt, Spring Valley, N.Y., assignors, by mesne assignments, to Azoplate Corporation, Murray Hill, N.J., a corporation of New Jersey

Filed Feb. 15, 1963, Ser. No. 258,691
Int. Cl. G03g *7/00*
U.S. Cl. 96—1.5 **2 Claims**



1. An electrophotographic material comprising a photoconductive insulating layer on a support, the latter comprising an electrically conductive liquid-impervious barrier film on a through-conductive duplex paper base, which latter comprises an upper carbon-filled layer and a lower carbon-free layer.

3,468,661

PHOTOGRAPHIC MATERIAL SENSITIZED WITH A TRIMETHINE DYE CONTAINING A BENZOYL SUBSTITUTED BENZIMIDAZOLE NUCLEUS

Marcel Jan Libeer and Henri Depoorter, Mortsel-Antwerp, Belgium, assignors to Gevaert Photo-Producten N.V., Mortsel-Antwerp, Belgium, a company of Belgium

Filed Jan. 14, 1964, Ser. No. 337,665
Claims priority, application Great Britain, Dec. 31, 1963, 51,334/63
Int. Cl. G03c *1/18*
U.S. Cl. 96—1.7 **6 Claims**

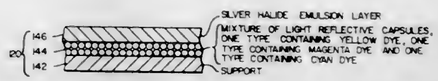
A photographic material optically sensitized with a trimethine dye having at least one benzimidazole nucleus substituted in the 5- or 6-position with a benzoyl group is described.

3,468,662

CAPSULAR PRODUCTS HAVING A SILVER HALIDE LAYER

William J. McCune, Jr., South Lincoln, Mass., assignor to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware

Continuation-in-part of application Ser. No. 108,774, May 9, 1961. This application Apr. 26, 1966, Ser. No. 545,333
Int. Cl. G03c *1/40;* **B01j** *13/02*
U.S. Cl. 96—77 **3 Claims**



This invention relates to capsules adapted to retain solid and fluid materials and to the use of such capsules

in photographic color processes for forming monochromatic and multichromatic images and to photographic products for carrying out said processes, wherein the capsules comprise a substantially continuous film-forming polymeric layer surrounding a nucleus, for example, an alkaline solution permeable polymeric layer surrounding nucleus comprising color-providing material, e.g., dye developer, having a substantially continuous metallic layer thereover, for example, a substantially continuous layer comprising silver halide thereover.

3,468,663

PHOTOGRAMMETRY

Marion J. Meyer and Donald A. McCabe, Albuquerque, N. Mex., assignors to Limbaugh Engineers, Inc., Albuquerque, N. Mex., a corporation of New Mexico

Filed Apr. 4, 1966, Ser. No. 539,929

Int. Cl. G03c *5/04;* **G03f** *5/00*

U.S. Cl. 96—41 **3 Claims**

Before and after negative transparencies of the same locale and of the same scale are superimposed and a laminate placed thereover. Optical comparison reveals the areas of change and the corresponding areas of the laminate are peeled, producing a temporary mask. Direct and reverse masks are prepared photographically from the temporary mask. A time contrast photograph is printed by double exposure, e.g. of the after negative, once through the reverse mask and once through the direct mask and a half-tone screen, whereby the unchanged areas appear in half-tone and the changed areas in full tone.

3,468,664

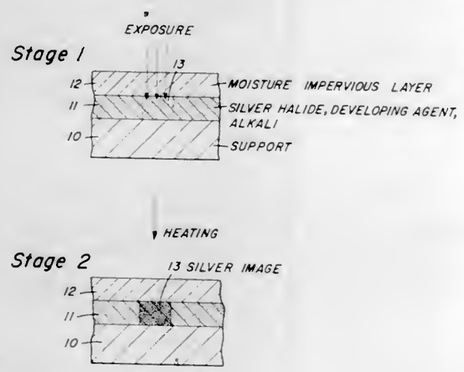
HEAT PROCESSABLE PHOTOGRAPHIC ELEMENTS HAVING WATER VAPOR-IMPERMEABLE PROTECTIVE OUTER LAYER

Paul H. Stewart, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

Filed Feb. 20, 1962, Ser. No. 174,472

Int. Cl. G03c *5/30, 1/48*

U.S. Cl. 96—63 **19 Claims**



Photographic elements containing a developing composition and having a flexible transparent layer substantially impermeable to water vapor adhered to the outer surface of the emulsion layer, methods for processing the same, and more particularly to such photographic elements adapted to processing with heat in a relatively dry atmosphere.

3,468,665

COLOR PHOTOGRAPHIC SILVER HALIDE EMULSION

Hiroshi Misu and Yukio Yasuda, Minamiashigara-machi, Ashigarakami-gun, Japan, assignors to Fuji Shashin Film Kabushiki Kaisha, Minamiashigara-machi, Ashigarakami-gun, Kanagawa-ken, Japan, a corporation of Japan

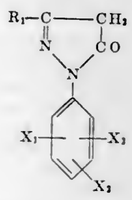
No Drawing. Filed Sept. 24, 1965, Ser. No. 490,099

Claims priority, application Japan, Sept. 29, 1964, 39/54,790

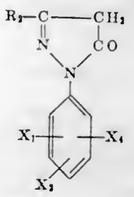
Int. Cl. G03c *1/40*

U.S. Cl. 96—100 **3 Claims**

A color photographic silver halide emulsion containing at least a color former having the general formula:



wherein R_1 represents a member selected from the class consisting of an alkyl group, a substituted alkyl group, an acylamino group and a sulfamido group and X_1, X_2 and X_3 each represents a member selected from the class consisting of a hydrogen atom, an alkyl group, a substituted alkyl group, a halogen atom, an acylamino group, an alkylcarbamoyl group, a sulfamoyl group, a substituted sulfamoyl group, an alkoxy group, and an aryloxy group, and at least a member selected from the class consisting of a color former having the general formula:



wherein R_2 repersents a member selected from the class consisting of an alkyl group, a substituted alkyl group, an acylamino group, a sulfamido group, an amino group, and an arylamino group; X_1 and X_2 are the same as previously defined; and X_4 represents a member selected from the class consisting of a sulfonic acid group and a carboxyl group, alkali metal salts thereof, and an ammonium salt thereof.

3,468,666

COLOR PHOTOGRAPHIC SILVER HALIDE LIGHT-SENSITIVE MATERIALS CONTAINING BIS-PYRAZOLONE COUPLERS

Keisuke Shiba and Hikoharu Hara, Kanagawa, Japan, assignors to Fuji Shashin Film Kabushiki Kaisha, Kanagawa, Japan

No Drawing. Filed May 5, 1966, Ser. No. 547,719

Int. Cl. G03c *1/40*

U.S. Cl. 96—100 **6 Claims**

The invention is directed to a novel magenta coupler capable of giving excellent color images when used in a light sensitive material contained in a photographic emulsion layer. The novel coupler is the reaction product of a substituted 5-pyrazolone and an aldehyde. These novel materials are almost colorless and because of their high solubility in the high boiling point solvents for the coupler, undergo virtually no agglomeration in the emulsion.

3,468,667

COATED DUST FREE PHOSPHATE FEED SUPPLEMENT

Scott S. Chandler, Glenview, and Charles L. Ray, Wheaton, Ill., assignors, by mesne assignments, to Armour Industrial Chemical Company, a corporation of Delaware

No Drawing. Filed Mar. 19, 1965, Ser. No. 441,343

Int. Cl. A23k *1/175*

U.S. Cl. 99—2 **6 Claims**

An animal feed supplement for providing anti-dusting properties comprising a nutritionally effective phosphatic substance of either dicalcium orthophosphate, diammonium orthophosphate, ammonium dihydrogen phosphate, or mixture thereof and a liquid coating composition including glyceryl lactopalmitate, a fatty acid or grade fatty acid salt and a oily liquid vehicle for binding said phosphatic substances.

3,468,668

METHOD FOR ADJUSTING SILAGE

Tsunezo Ushioda, 448 Horinouchi, 2 Suginamiku, and Tatsuo Koyanagi, 39 Sakuradai, 1 Nerimaku, both of Tokyo, Japan

No Drawing. Filed Jan. 5, 1967, Ser. No. 607,389

Claims priority, application Japan, Jan. 25, 1966, 41/4,165

Int. Cl. A23k *1/22, 3/03*

U.S. Cl. 99—8 **3 Claims**

This invention relates to a method for improving the nutritive quality of silage by adding to raw silage material a small amount of 2-oxo-4-methyl-6-ureido-hexahydropyrimidine and, thereafter ensiling.

3,468,669

METHOD OF MANUFACTURING A PROTEIN FOOD PRODUCT

Robert A. Boyer and Arthur A. Schulz, St. Louis County, and Edmond A. Schatzman, St. Louis, Mo., assignors to Ralston Purina Company, St. Louis, Mo., a corporation of Missouri

No Drawing. Continuation-in-part of application Ser. No. 168,807, Jan. 25, 1962. This application Oct. 23, 1965, Ser. No. 504,098

Int. Cl. A23j *1/14, 1/22*

U.S. Cl. 99—17 **4 Claims**

Spun protein food products are produced by adding sulfite compounds to the alkaline protein solution prior to spinning and to the acid solution after spinning to provide products of improved overall quality.

3,468,670

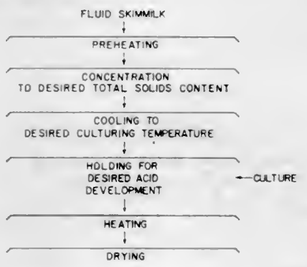
DRY CULTURED BUTTERMILK PROCESS

Clarence A. Nilsson, Glen Ellyn, Ill., assignor to H. C. Christians Co., Chicago, Ill., a corporation of Wisconsin

Filed May 12, 1966, Ser. No. 549,541

Int. Cl. A23c *17/00, 9/12*

U.S. Cl. 99—59 **6 Claims**



A dry cultured buttermilk product is prepared by preheating a quantity of fluid skim milk, concentrating the heated skim milk to a total solids of about 20 to 45%, cooling the concentrate to about 70 to 90° F., culturing the concentrate with a lactic acid producing bacterial culture to about .20 to .30% titratable acidity, heating the cultured concentrate to kill the bacteria, and drying the cultured concentrate. A whey product is preferably added in the amount of about 5 to 15% before one of the steps of concentrating, culturing, or drying.

3,468,671

PROCESS FOR THE PRODUCTION OF WHIPPED CREAM

Arthur Bratland, Konnerudgaten 3, Drammen, Norway

No Drawing. Filed Aug. 12, 1965, Ser. No. 479,293

Int. Cl. A23c *13/00*

U.S. Cl. 99—60 **11 Claims**

A whipping cream of low fat content is obtained by combining a cream of more than 30% butterfat with buttermilk to produce a whipping cream of from 15% to 25% butterfat. Skim milk or sodium caseinate can be added to improve the short consistency when the whipping cream is of less than 20% butterfat.

3,468,672

FRITTED SLAB FREEZE-DRYING

Henry Schwartzberg, Hartsdale, N.Y., assignor to General Foods Corporation, White Plains, N.Y., a corporation of Delaware

No Drawing. Filed Dec. 14, 1965, Ser. No. 513,835

Int. Cl. A23f *1/08;* **F26b** *7/00, 5/06*

U.S. Cl. 99—71 **3 Claims**

The rate of vacuum freeze-drying a frozen granular material is increased by compressing the granulated material into a porous slab prior to freeze-drying. The method has special efficacy in drying highly concentrated extracts.

3,468,673

FRENCH FRIED POTATO MIX MADE FROM DEHYDRATED MASHED POTATOES

Harold M. Keller, St. Paul, Minn., assignor to General Mills, Inc., a corporation of Delaware

No Drawing. Filed May 19, 1966, Ser. No. 551,228

Int. Cl. A23l *1/12*

U.S. Cl. 99—100 **5 Claims**

A product made to resemble French fried potatoes containing dehydrated mashed potato particles, a polygalactomannan and methyl cellulose.

3,468,674

METHOD OF PROCESSING FRESH MEAT AND FISH

Ezra Levin, 1109 W. University Ave., Champaign, Ill. 61820

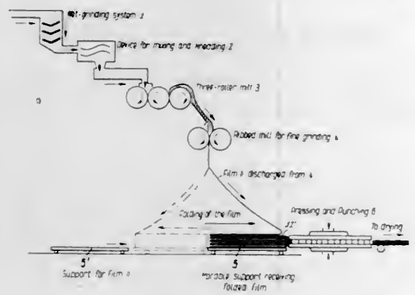
Continuation-in-part of application Ser. No. 408,231, Nov. 2, 1964. This application July 27, 1966, Ser. No. 568,159

Int. Cl. A22c *25/00;* **A23j** *1/04*

U.S. Cl. 99—111 **17 Claims**

Biological substances which have been preserved by or contain a concentration of sulfurous acid of from .1 to 3.0 percent by weight are rendered sui able for consumption by converting the sulfurous acid into harmless sulfate and sulfite residues by heating and/or azeotropic distillation.

3,468,675
PROCESS FOR THE PREPARATION OF A DRY FOOD PRODUCT CONCENTRATE IN LUMPS
Ernst Pötzl, Uetersen, Holstein, Germany, assignor to H. W. Appel Feinkost A.G., Hannover, Germany
Filed Jan. 13, 1966, Ser. No. 520,496
Claims priority, application Germany, Jan. 14, 1965, P 35,868
Int. Cl. A23l *1/00*; B01d *1/00*
U.S. Cl. 99—199 10 Claims



A process of preparing a food concentrate miscible with liquids, wherein a pasty mass is shaped in the form of a film having a thickness not substantially exceeding one half millimeter, and wherein the film is then folded and the folded film is compressed, subjected to drying and cut before or after drying to form lumps.

3,468,676
ELECTROLESS GOLD PLATING
Frederick W. Schneble, Jr., Oyster Bay, John McCormack, Roslyn Heights, and Rudolph J. Zeblisky, Hauppague, N.Y., assignors to Photocircuits Corporation, Glen Cove, N.Y., a corporation of New York
No Drawing. Continuation of application Ser. No. 307,363, Sept. 9, 1963. This application Jan. 25, 1967, Ser. No. 612,290
Int. Cl. C23b *5/02, 5/28*
U.S. Cl. 106—1 11 Claims

An electroless gold plating bath is provided which comprises water, a water-soluble gold cyanide complex, a water-soluble salt of a member selected from the group consisting of transitional metals, Group I–B metals, and mixtures thereof, and at least 20 grams/liter of ammonia and ammonium hydroxide calculated as NH_3. In addition, a method of electrolessly plating metallic surfaces with gold is provided which comprises immersing the metallic surfaces in the electroless plating bath hereinabove identified.

3,468,677
HARD WAX AND POLISH COMPOSITIONS CONTAINING THE SAME
Ernst Weingaertner, Hamburg, Dieter Berg, Buxtehude, and Karl Ernst Christian Streckebach, Hamburg, Germany, assignors to Deutsche Erdol-Aktiengesellschaft, Hamburg, Germany, a corporation of Germany
No Drawing. Filed Sept. 29, 1965, Ser. No. 491,394
Claims priority, application Germany, Oct. 7, 1964, D 45,577
Int. Cl. C09g *1/08*; C08h *9/10*
U.S. Cl. 106—10 7 Claims

Hard waxes for use in polishing materials such as paste polishes, wax emulsions and the like which hard waxes comprise the distillation residues of crude alcohols obtained from an Alfol synthesis, i.e., by reaction of trialkyl aluminum with ethylene followed by oxidation of the aluminum alkyl growth products and hydrolysis of the oxidation products. In the instances where the alcohols have M-value of less than 20 (M-value designating that number of mols of ethylene absorbed per mol of Al-C) the alcohols can be employed in admixture with a polyolefin. Alcohols having an M-value of less than 10 are etherified or esterified prior to use and can be used in this form or again in admixture with a polyolefin. Polishing materials, i.e., waxes or liquids containing such hard waxes are characterized by their improved properties for instance gloss produced when they are used.

3,468,678
ORGANIC PHOSPHORUS PRODUCTS
Rodney B. Clampitt, St. Louis, Gail H. Birum, Kirkwood, and Richard M. Anderson, St. Louis, Mo., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware
No Drawing. Original application May 29, 1963, Ser. No. 283,964, now Patent No. 3,306,937, dated Feb. 28, 1967. Divided and this application July 22, 1966, Ser. No. 594,288
Int. Cl. C09d *5/18*; C09k *3/28*
U.S. Cl. 106—15 10 Claims

A composition comprising an organic polymer and tris(bromomethyl)phosphine oxide in a flame-retardant quantity.

3,468,679
WRITING FLUID FOR BALL POINT WRITING INSTRUMENTS
Amato Furlotti, 1476 Blue Jay Way, Los Angeles, Calif. 90069
No Drawing. Filed Oct. 20, 1966, Ser. No. 587,993
Int. Cl. C09d *11/18*
U.S. Cl. 106—22 7 Claims

A washable and eradicatable fluid for ball point pens is disclosed which is compounded of acid dyes, in a concentration of 10 to 20 parts per hundred; tannic acid, as a thickening agent in amounts greater than 5 parts per hundred; and a glycol vehicle in which the dyes and tannic acid are soluble. The resulting ink is water soluble and may be eradicated using conventional ink eradicators.

3,468,680
CERAMIC DIELECTRICS
Shinobu Fujiwara, Tokyokawa-mura, Japan, assignor to TDK Electronics Co., Ltd., Tokyo, Japan
Continuation-in-part of application Ser. No. 366,732, May 12, 1964. This application Nov. 6, 1967, Ser. No. 680,900
Claims priority, application Japan, May 18, 1963, 38/26,017
Int. Cl. C04b *35/00, 35/46*; H01b *3/12*
U.S. Cl. 106—39 7 Claims

Ceramic dielectric materials are provided. Such materials demonstrate high dielectric constants and small temperature coefficients of dielectric constants. The dielectric materials are prepared by sintering at a temperature of about 1350° C. a mixture having the following composition:

Component:	Percent by weight
$SrTiO_3$	40–80
$Bi_2O_3 \cdot 2TiO_2$	10–55
$MgCO_3$	5–35

3,468,681
GLASS COMPOSITION
Maurice Jaupain, Jumet, Belgium, assignor to Glaverbel S.A., Brussels, Belgium
Filed Feb. 3, 1966, Ser. No. 524,770
Claims priority, application Luxembourg, Feb. 24, 1965, 48,072
Int. Cl. C03c *3/12*; C03b *9/10*; G02b *5/12*
U.S. Cl. 106—47 10 Claims

Vitrifiable compositions and compositions of glass prepared therefrom are provided. The glass TiO_2 25–30% by weight, BaO 45–59%, B_2O_3 3–10% and Al_2O_3 13–20%, having a refractive index of from 1.85 to 2, is capable of being formed into perfectly transparent balls of diameters as large as 5 millimeters without devitrification. Such balls are particularly useful in light-reflecting traffic signals.

3,468,682
ALKALINE EARTH OXIDE/FLUORIDE-RARE EARTH OXIDE-SILICON DIOXIDE GLASS COMPOSITIONS
Bhogaraju V. Janakirama-Rao, Philadelphia, Pa. assignor to TRW Inc., a corporation of Ohio
No Drawing. Filed July 1, 1964, Ser. No. 379,706
Int. Cl. C03c *3/10, 5/00*
U.S. Cl. 106—52 2 Claims

A vitrified glass consisting of 1 to 50 mole percent of silica and 50 to 99 mole percent of an oxide of a rare earth element and the oxide or fluoride of an alkaline earth element. The rare earth element oxide may be any of the rare earth elements of the lanthanum series of the Periodic Chart and thorium and uranium. The alkaline earth element compound may be that of barium, strontium and calcium. The molar ratio of the rare earth element compound to the alkaline earth element compound being between 3 to 1 and 1 to 2.5.

3,468,683
DOLOMITIC CONTAINING REFRACTORIES AND PROCESS OF PRODUCING THE SAME
Daniel Montgomery, Tiffin, Ohio, assignor to Basic Incorporated, Cleveland, Ohio, a corporation of Ohio
No Drawing. Filed Nov. 3, 1966, Ser. No. 591,707
Int. Cl. C04b *35/06*
U.S. Cl. 106—56 9 Claims

A dolomitic containing refractory and a process of producing such a refractory in which a relatively small quantity of elemental sulfur is blended with a carbonaceous binding agent and the dolomitic containing grains. The blend of ingredients is then formed into a refractory shape and subsequently tempered.

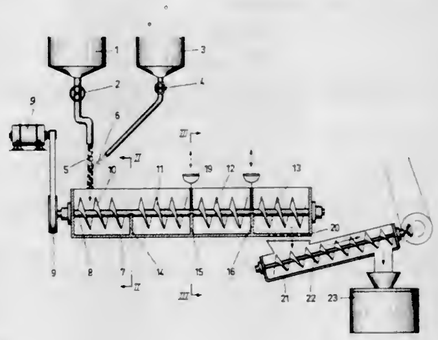
3,468,684
CONCRETE ADDITIVE
Wayne A. Proell, Jackson County, Ind. (Box 209, Seymour, Ind. 47274)
No Drawing. Filed Aug. 3, 1966, Ser. No. 569,825
Int. Cl. C04b *7/56, 7/02*
U.S. Cl. 106—95 10 Claims

An additive for cementitious mixtures capable of reducing the water-cement ratio, the thixotropy and the air entrainment of such a mixture, the additive consisting essentially of an alkyl oxydibenzenedisulfonate and the fatty acid ester of a sorbitan or the fatty acid mono ester of glycerol; and such a mixture containing said additive in a ratio, by weight, of 0.5 part to 5.0 parts additive to 100 parts cement.

3,468,685
PREPLASTICIZED METHYLCELLULOSE FILM AND PROCESS OF PREPARING SAID FILM
Albert B. Savage, Midland, and Julius C. Aldrich, Mount Pleasant, Mich., assignors to Dow Chemical Company, Midland, Mich., a corporation of Delaware
No Drawing. Filed Aug. 1, 1966, Ser. No. 569,055
Int. Cl. C08b *21/00, 27/34*
U.S. Cl. 106—189 7 Claims

Improved methylcellulose films are prepared by incorporating certain water and film compatible plasticizers into an aqueous alkaline solution containing an alkali-soluble methylcellulose with a degree of substitution of about 0.2 to 0.7 before neutralization and coagulation in an acid-salt bath.

3,468,686
METHOD OF CONTINUOUSLY PRODUCING DRY ROSIN SIZE
Elisabeth S. W. M. Schultz, Vilbeler Strasse 17, Frankfurt am Main-Fechenheim, Germany
Continuation of application Ser. No. 466,503, June 2, 1965. This application Oct. 17, 1966, Ser. No. 596,367
Int. Cl. C08h *11/00, 17/24*
U.S. Cl. 106—238 4 Claims



Dry rosin size is continuously produced by fully saponifying rosin with sodium hydroxide. The hot rosin and hot caustic are mixed at atmospheric pressure, the caustic solution containing 40–50% sodium hydroxide and the amount of the solution being sufficient to provide 16 to 19 parts by weight of sodium hydroxide and 11 to 29 parts by weight of water per 100 parts by weight of rosin in the initial mixture. The exothermic reaction produces a gel which rapidly dries into a friable mass containing about 10% water by weight.

3,468,687
INSULATING COMPOSITION AND METHOD OF APPLICATION
Neil L. Thomas, Melbourne, Australia, assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware
No Drawing. Filed Mar. 19, 1965, Ser. No. 441,367
Claims priority, application Australia, Mar. 24, 1964, 42,416/64
Int. Cl. C09d *3/54*; C08h *17/04, 13/00*
U.S. Cl. 106—281 3 Claims

1. An insulating composition consisting essentially of 80–90% by weight of expanded shale particles having a density of 45–60 lbs./ft.^{3} admixed with a 20–10% by weight of petroleum asphalt having a ring and ball softening point of 110–285° F.

2. A method for insulating a pipeline comprising the sequential steps:

(1) surrounding the pipeline with an insulating composition consisting essentially of 80–90% by weight of expanded shale particles having a density of 45–60 lbs./ft.^{3} admixed with 20–10% by weight of bitumen having a ring and ball softening point of 110–285° F., the composition being applied at a temperature such that it is plastic; and

(2) compacting the insulating composition around the pipeline until the density of the insulating composition is at least equal to the density of water.

3,468,688

NONPERMANENT PROTECTIVE COATING COMPOSITION AND METHOD

Bill Mitacek and Andrew E. Skeen, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware

No Drawing. Filed May 2, 1966, Ser. No. 546,601

Int. Cl. C09d *3/24*

U.S. Cl. 106—285 8 Claims

A composition and method for protecting surfaces which can be painted by applying protective coating composition comprising a light cycle oil and a small proportion of at least one anti-penetrant selected from detergent removable silicone and non-soap lubricant grease containing a polymer of ethylene.

3,468,689

PROCESS FOR PREPARING IMPROVED TITANIUM DIOXIDE

Harry Lott, Jr., Akron, Albert Dietz and Donald E. Darr, Wadsworth, Ohio, assignors to PPG Industries Inc., Pittsburgh, Pa., a corporation of Pennsylvania

No Drawing. Filed Aug. 9, 1965, Ser. No. 478,473

Int. Cl. C09c *1/36, 3/00;* C01g *23/04*

U.S. Cl. 106—300 16 Claims

An aqueous slurry of raw pigmentary metal oxide, particularly titanium dioxide, prepared by vapor phase oxidation of the corresponding metal halide, e.g., titanium tetrachloride, is digested in the presence of a Group II element having an atomic weight less than 200 in order to improve pigment properties, e.g., tinting strength and tint efficiency.

3,468,690

FORM BOARDS AND COATINGS THEREFOR

Charles B. Hemming, Brewster, N.Y., assignor to U.S. Plywood-Champion Papers Inc., New York, N.Y., a corporation of New York

No Drawing. Continuation-in-part of application Ser. No. 133,052, Aug. 22, 1961, now Patent No. 3,240,618.

This application Oct. 24, 1965, Ser. No. 505,060

Int. Cl. B44d *1/28, 1/20;* B27k *3/34*

U.S. Cl. 117—5.1 17 Claims

This invention has to do with an improved reuseable concrete form board of any material, such as hardboard, other fibrous board, cement-asbestos board, and a porous, polymer coating, preferably a urethane type coating, used with an oil coating applied to the board either before or after the plastic coating, or as a blend of the plastic coating and oil.

3,468,691

METHOD OF AND APPARATUS FOR THE ELECTROSTATIC APPLICATION OF SOLID PARTICLES TO ARTICLES

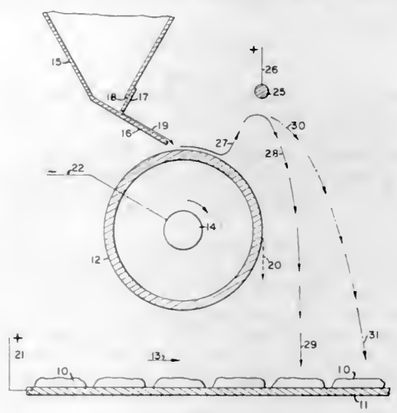
Harley E. Watkins, Applewood Mesa, Colo., assignor to Lipoma Electronics, Delano, Calif., a copartnership

Filed Oct. 23, 1965, Ser. No. 504,038

Int. Cl. A23l *1/00;* B05b *5/02*

U.S. Cl. 117—17 10 Claims

An electrostatic process and apparatus for treating food products with flavoring materials or condiments (referred to as particles) involves conveying the food products on a movable conveyer belt from above which the particles are allowed to gravitate from a hopper onto a moving surface and then onto the food products. Such surface and conveyer belt are charged at different potentials. A conductive member is positioned above such surface and laterally thereof and has a potential applied thereto which causes the particles leaving such surface



to be attracted and to be moved upwardly (levitated) prior to falling onto the food products on the conveyor belt. This moving surface may be a rotating drum or a vibrating plate.

3,468,692

TRANSCRIPTIVE MATERIAL FOR MAKING COPIES WITHOUT USE OF CARBON PAPER

Hermann Winzer, Duren, Rhineland, Germany, assignor to Firma Renker-Belipa G.m.b.H., Duren, Rhineland, Germany

No Drawing. Continuation of application Ser. No. 359,589, Sept. 14, 1964. This application Nov. 1, 1967, Ser. No. 679,944

Claims priority, application Germany, Sept. 12, 1963, B 36,101

Int. Cl. B41c *1/06;* B44d *1/14*

U.S. Cl. 117—36.4 24 Claims

Transcriptive materials and the process for producing such materials are provided. According to the process a flexible sheet carrier is coated with a mixture of a colored pigment and a high-molecular weight binding agent; the color layer is dried to a hardness such that it does not give off color transferable directly to a writing sheet placed thereunder when the carrier of the color layer is written upon with pressure on its uncoated surface; there is then applied to the dried color layer an aqueous dispersion containing as essential dispersed matter 4.5 to 14% by weight of aliphatic saturated polycarboxylic acid of a molecular weight ranging from 1,000 to 20,000 and an acid number in the range of 10 to 150, which acid comprises a main chain of carbon atoms, the terminal groups of which are free from carboxylic groups, and the carboxyl groups are bonded to the main chain as branches; the top layer is then dried at a temperature below the fusion point of the said carboxylic acid.

3,468,693

METHOD AND APPARATUS FOR LIQUID DEVELOPMENT OF ELECTROSTATIC IMAGES BY IMMERSION

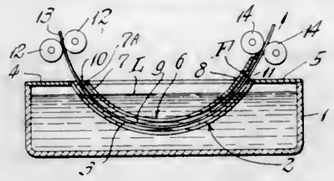
Walter J. Hanson, Old Greenwich, Conn., assignor to Pitney-Bowes, Inc., Stamford, Conn., a corporation of Delaware

Filed Apr. 4, 1966, Ser. No. 539,783

Int. Cl. B05b *5/00;* C23d *5/08*

U.S. Cl. 117—37 9 Claims

Method and apparatus for extending the developing path of liquid toners in an electrostatic copy machine. The electrostatic images on a carrier are developed by immersing the charge bearing carrier into a bath of liquid developer. As the sheet is removed from the bath and while it travels to rollers which remove the excess liquid a solid plate is spaced adjacent the liquid bearing sheet



to maintain a uniform film of liquid on the sheet. The spaced plate may be incorporated in the cover of the apparatus.

3,468,694

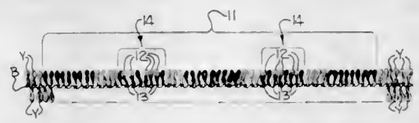
PRINTED PILE FABRICS AND METHOD

Werner Moritz, Charlotte, and Joseph C. Ridenhour, Kannapolis, N.C., assignors, by direct and mesne assignments, to Cannon Mills Company, Kannapolis, N.C., a corporation of North Carolina

Filed Aug. 15, 1966, Ser. No. 572,399

Int. Cl. B41m *1/12;* C03c *25/02;* B44d *1/52*

U.S. Cl. 117—37 6 Claims



A method of applying a pattern, as by printing, to pile fabrics such as towels to produce effects similar to those obtainable through pattern weaving. The method involves the application of an emulsion to the tips of certain pile yarns to treat and change the dyestuff receptivity characteristics thereof, and the subsequent application of a dyestuff-containing, opposite phase emulsion to the treated pile yarns to color the lower extremities thereof.

3,468.695

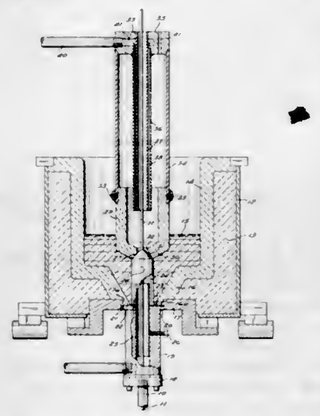
METHOD OF COATING A STEEL BASE WITH ALUMINUM

Alfred P. Federman, Shaker Heights, Ohio, assignor of fifty percent to Homer W. Giles, University Heights, Ohio

Filed July 2, 1964, Ser. No. 379,965

Int. Cl. C23c *1/08;* B44d *1/34*

U.S. Cl. 117—51 9 Claims



The present invention provides a steel wire with a thick, smooth, concentric aluminum coating substantially free of dissolved iron and having a thickness greater than .002 inch and bonded to the steel at an interfacial alloy layer whose thickness is not more than .0007 inch. Before being coated, the steel wire is preheated in a reducing atmosphere to a temperature within the 500° F.–960° F. range. For minimum interfacial alloy layer thickness, the preheat atmosphere preferably is carbon monoxide. After being preheated and without exposure to air, the wire is passed through a bath of molten aluminum for a time interval sufficient to deposit the thick aluminum coating, but not long enough to permit substantial remelting of the deposited coating within the bath.

3,468,696

METHOD OF PRODUCING A FIBROUS WEB MATERIAL HAVING RETAINED WET STRENGTH AT HIGH HUMIDITY AND THE FIBROUS MATERIAL PRODUCED THEREBY

Bernard W. Conway, Holyoke, Mass. (% C. H. Dexter & Sons, Inc., Windsor Locks, Conn. 06096)

No Drawing. Filed Apr. 5, 1965, Ser. No. 445,796

Int. Cl. B44d *1/44*

U.S. Cl. 117—62.1 10 Claims

A method of providing a fibrous web material with enhanced wet strength and retained wet strength at high humidity comprises the steps of treating a preformed fibrous web material with an aqueous alkaline solution containing carboxymethylcellulose and a water-soluble reaction product of epichlorohydrin and a polyamide, drying the alkaline treated web, subsequently acidifying the dried web with a dilute acid solution and then water-washing the fibrous web material to remove the non-substantive acid therefrom. The pH of the alkaline treating solution is between about 9 and 11 while the water-washed web exhibits a paper pH within the range of 4 through 6 as determined by TAPPI test method T435-m-52.

3,468,697

METHOD OF TREATING TEXTILE ARTICLES WHICH ARE USUALLY LAUNDERED

Robert Tweedy Hunter, Piscataway, N.J., assignor to Colgate-Palmolive Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Mar. 2, 1966, Ser. No. 531,063

Int. Cl. B44d *1/00;* C09d *5/00*

U.S. Cl. 117—66 15 Claims

A method for laundering and treating articles with mixture comprising a quaternary ammonium compound and fluorocarbon containing composition. The mixture is used in a laundering operation for imparting water and oil repellency and resistance to soiling to laundered textile articles.

3,468,698

PROCESS OF PRODUCING PIGMENT COATED PAPER

Andre Joseph Pelletier and Garon C. Hayward, Chillicothe, Ohio, assignors to The Mead Corporation, Dayton, Ohio, a corporation of Ohio

No Drawing. Filed Jan. 5, 1965, Ser. No. 423,463

Int. Cl. B44d *1/14;* C09c *1/36*

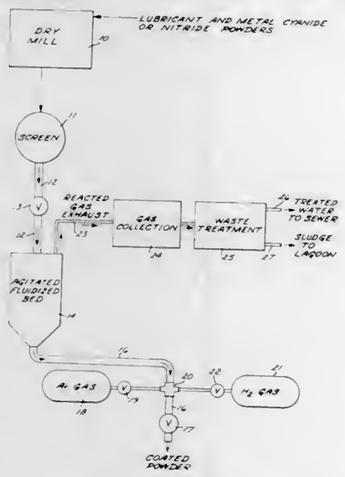
U.S. Cl. 117—76 4 Claims

Coated papers designed primarily for offset printing operations of improved strength, smoothness of the final coating surface, and other characteristics are obtained by applying a base coat comprising adhesive and pigments, at least 15% by weight (based on total dry solids) of which have an average particle size not substantially smaller than 2 microns average spherical diameter. This base coat is preferably covered with a final coating in which average pigment particle size is smaller than 2 microns average spherical diameter.

3,468,699
METHOD OF PROVIDING MALLEABLE METAL COATINGS ON PARTICLES OF LUBRICANTS

Roland D. Kremith, Newport Beach, Calif., assignor to Giannini Scientific Corporation, Amityville, N.Y., a corporation of Delaware

Continuation-in-part of application Ser. No. 579,579, Sept. 15, 1966. This application Oct. 14, 1966, Ser. No. 586,844
Int. Cl. C23c *11/16*; B44c *1/06*
U.S. Cl. 117—100 7 Claims

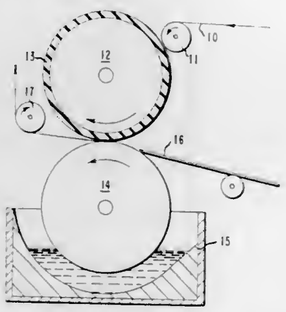


A method of forming composite particles the cores of which are lubricants, and the coatings of which are malleable metals. The core particles are first thoroughly mixed with coating particles selected from a class consisting of the cyanides and the nitrides of the malleable metals. Thereafter, the mixed core and coating particles are heated in a fluidized-bed reactor until the reduction temperature of the coating particles is achieved. Hydrogen gas is then passed in contact with the mixed particles in order to reduce the coating particles and form coatings of the malleable metals on the core particles.

3,468,700
DIFFERENTIAL SPEED GRAVURE COATING PROCESS

Cecil Louis Long, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Filed Apr. 7, 1966, Ser. No. 540,915
Int. Cl. B05c *1/12*
U.S. Cl. 117—111 8 Claims



An improved coating process using a gravure roll in which replication of the gravure pattern is eliminated by rotating the roll at a surface velocity of 1.8–10 times the linear speed of the web being coated. The process is useful in making magnetic recording tape, photographic film and moisture-proof coatings.

3,468,701
METHOD OF PREVENTING BLOCKING OF ALUMINUM SHEET MATERIAL

Francis A. Hughes, Wilmington, Del., assignor to Atlas Chemical Industries, Inc., Wilmington, Del., a corporation of Delaware

No Drawing. Filed Feb. 9, 1966, Ser. No. 526,045
Int. Cl. B44d *1/34, 5/00*
U.S. Cl. 117—134 7 Claims

An ester of a saturated fatty acid and a hexitol, a hexitan, or a hexide having not fewer than 2 nor more than 4 fatty acid groups per molecule of the ester is applied as a lubricant coating to aluminum sheet material in order to render the sheet material non-blocking in character.

3,468,702
DIALKANOL AMIDE ANTI-STATIC COMPOSITION FOR POLYMERS

Major L. Gallaugher, Bartlesville, and James E. Pritchard, Washington County, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware

No Drawing. Filed June 4, 1965, Ser. No. 461,536
The portion of the term of the patent subsequent to Dec. 14, 1982, has been disclaimed
Int. Cl. B44d *1/22*; D06m *15/00*
U.S. Cl. 117—138.8 3 Claims

Polymers such as polyarylene sulfide, polyvinyl aromatic, polyvinyl halide, polyvinylidene halide, polyacetal, polycarbonate, polyester, polyvinylester, and polyamide are surface treated with a dialkanol amide to reduce the tendency to accumulate an electrostatic charge.

3,468,703
SUBSTRATES COATED WITH AQUEOUS DISPERSIONS OF RAPIDLY CRYSTALLIZABLE VINYLIDENE CHLORIDE INTERPOLYMERIZATES

Dale S. Gibbs, Midland, Wallace J. Miles, Houghton Lake, and Eugene Kochaney, Bay City, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Oct. 14, 1966. Ser. No. 586,661
Int. Cl. C08d *13/16*; C08c *17/16*
U.S. Cl. 117—155 4 Claims

This invention pertains to an improved process for preparing substrates coated with a rapidly crystallizable vinylidene chloride interpolymer. More particularly, it relates to the use, as a coating material, of an aqueous dispersion of an interpolymerizate composed essentially of (1) between about 65 and 80 weight percent of vinylidene chloride, (2) between 5 and 20 weight percent of vinyl chloride, and (3) between about 5 and 20 weight percent of a vinyl alkanoate having from 3 to 8 carbon atoms in the acid portion.

3,468,704
CARBOXYL-TERMINATED POLYESTERS AND COATING COMPOSITION DERIVED THEREFROM

Richard B. Graver, Savage, Minn., assignor to Ashland Oil & Refining Company, Ashland, Ky., a corporation of Kentucky

No Drawing. Filed Nov. 10, 1966, Ser. No. 593,315
Int. Cl. C08g *17/18*; B44d *1/36*
U.S. Cl. 117—161 8 Claims

Carboxyl-terminated polyesters are produced by esterification of a polycarboxylic acid and an epoxide which epoxide may contain residual hydroxy groups wherein the overall ratio of carboxylic acid groups to reactive sites formed by epoxide groups and hydroxyl groups is from 1.2–3:1, which polyesters are utilized as air drying curing agents for epoxides, particularly epoxidized fatty compounds such as fatty acid esters. Further, the polyester and the epoxide may be combined in coating compositions for application to substrates such as wood, metal, and concrete.

3,468,705
METHOD OF PREPARING LEAD OXIDE FILMS

John C. Schottmiller, Penfield, N.Y., and Ray C. Walborn, Jr., Sanford, Fla., assignors to Xerox Corporation, Rochester, N.Y., a corporation of New York

Filed Nov. 26, 1965, Ser. No. 509,968
Int. Cl. C23c *13/00*; B44d *1/00*
U.S. Cl. 117—201 11 Claims

A method of forming a lead oxide film on a support which comprises evaporating onto the support a film of tetragonal lead oxide, followed by heating the film to a temperature between about 355° C. and 500° C. to transform substantially all of the film to the orthorhombic form of lead oxide, with the evaporation and/or heating being carried out at an oxygen pressure which does not exceed the decomposition pressure of lead oxide.

3,468,706
COATED STARCH

Edwin L. Speakman, Clinton, Iowa, assignor to Standard Brands Incorporated, New York, N.Y., a corporation of Delaware

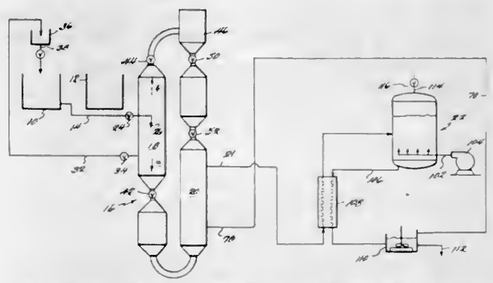
No Drawing. Filed June 22, 1966, Ser. No. 559,388
Int. Cl. C13l; B44d *1/22*; D21h *3/28*
U.S. Cl. 127—33 7 Claims

An ionic or native starch granules are coated with a cationic starch derivative in an amount effective to render the coated granules cationic.

3,468,707
HYDROLYZER PROCESS FOR STEEL PICKLING LIQUORS

Irwin R. Higgins, Oak Ridge, Tenn., assignor to Chemical Separations Corporation, Oak Ridge, Tenn., a corporation of Tennessee

Filed Apr. 4, 1966, Ser. No. 540,058
Int. Cl. B08b *3/10*
U.S. Cl. 134—3 7 Claims



A continuous cyclic process for the pickling of metal, for regenerating spent pickle liquor and for regenerating an agent employed to regenerate said spent pickle liquor which comprises conducting the pickling operation with a pickle liquor having an acid concentration maintained within the range of about 5 to 20 weight percent and a metal salt of said acid concentration maintained within the range of about 1 to 10 weight percent, continuously withdrawing spent pickle liquor from the pickling step for regeneration, said regeneration comprising flowing said spent pickle liquor through a first section of an ion exchange column loop having a shiftable ion exchange resin bed therein, to bring the same into contact with a first portion of ion exchange resin therein and exchanging metal ions from the spent pickle liquor for ions of the exchange resin; while withdrawing from said first section regenerated pickle liquor adapted for continuous recirculation to said pickling step; continuously recirculating said regenerated pickle liquor to said pickling step; simultaneously treating a second portion of said ion exchange resin which is loaded with metal ions exchanged in the regeneration of the spent pickle liquor, with a regenerating agent in a second section of said column loop; substantially simultaneously interrupting the flow of said spent pickle liquor and said regenerating agent; shifting the ion exchange resin bed in said ion exchange column loop from one section thereof to another contiguous section therein; thereby replacing at least a portion of said resin in said first section with another portion of said resin previously regenerated in said second section and displacing a portion of resin carrying the metal ions previously eliminated from the spent pickle liquor into said second section for regeneration thereof; withdrawing from said second section a solution of metal salt of regenerating agent; hydrolyzing said solution to provide a mixture of metal oxide and regenerating agent; separating said metal oxide from said regenerating agent; continuously recycling the regenerated regenerating agent to said section of said column loop, and repeating the same cycle of steps as long as desired.

3,468,708
RECHARGEABLE DRY CELLS AND METHOD OF USING SAME

Stanley M. Davis, Somerville, N.J., John D. Voorhies, New Canaan, Conn., and Edward J. Schurdak, Somerville, N.J., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

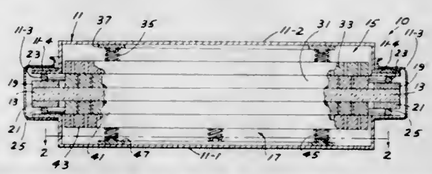
Filed Feb. 23, 1966, Ser. No. 529,536
Int. Cl. H01m *27/26, 15/00*
U.S. Cl. 136—6 5 Claims

A secondary cell which is storage stable in the discharged state, and has excellent rechargeability, consists of a zinc anode, a microporous separator, and a cathode composition containing carbon black of at least 200 square meters per gram surface area, a relatively insoluble basic oxide selected from the group consisting of barium oxide and zinc oxide, an electrolyte containing water and zinc chloride or zinc bromide, and an organic depolarizer, which is biurea as the reduced state, for the discharged condition, and azobisformamide as the oxidized state, for the charged condition.

3,468,709
SECONDARY BATTERY EMPLOYING AN ELECTRONICALLY - INSULATIVE, CATIONICALLY-CONDUCTIVE SOLID ELECTROLYTE WITH ANODIC AND CATHODIC FEEDER MEANS

Joseph T. Kummer, Ann Arbor, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware

Filed Apr. 3, 1967, Ser. No. 628,025
Int. Cl. H01m *35/00, 9/00*
U.S. Cl. 136—6 23 Claims



An electrically-rechargeable, secondary battery comprising cells in series electrical connection, a unit cell of said battery comprising a closeable cell housing which when closed forms an internal compartment and has oppositely disposed, electronically-conductive, wall surfaces electronically insulated from each other which respectively serve as anode and cathode of the cell, an

electronically-insulative, cationically-conductive, solid electrolyte interposed between said anode and said cathode, dividing said compartment into an anodic reaction zone and a cathodic reaction zone, and separating the anodic half-cell reactions of said anodic reaction zone from the cathodic half-cell reactions of said cathodic reaction zone, an anodic reactant feeder means comprising a porous object positioned within said anode compartment and in contact with said electrolyte, a cathodic reactant feeder means comprising a porous object positioned within said cathodic reaction zone and in contact with said solid electrolyte, an alkali metal within said anodic reaction compartment in contact with said anodic reactant feeder means and said solid electrolyte and in electrical connection with said anode, and within said cathodic reaction zone in contact with said cathodic reactant feeder means and said solid electrolyte and in electrical connection with said cathode, a sulfur-comprising cathodic reactant-electrolyte that is electrochemically reversibly reactive with ions of said alkali metal; and the aforedescribed cell.

3,468,710

SEA WATER BATTERY

Philip I. Krasnow, Brooklyn, and Jerome Goodman, New York, N.Y., assignors to Nuclear Research Associates, Inc., New Hyde Park, N.Y., a corporation of Delaware

Filed Feb. 16, 1966, Ser. No. 527,876

Int. Cl. H01m *35/02, 35/30*

U.S. Cl. 136—26 **3 Claims**

A cathode electrode for a sea water battery having an absorbent porous body supporting particles of lead chloride which are absorbed in said body while the lead chloride is in a molten state.

3,468,711

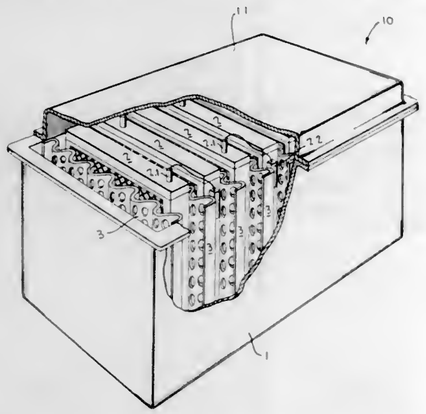
METAL-OXYGEN FUEL CELL

Bruce Jagid, Whitestone, and Martin G. Rosansky, Forest Hills, N.Y., assignors to Leesona Corporation, Warwick, R.I., a corporation of Massachusetts

Filed Mar. 15, 1966, Ser. No. 534,376

Int. Cl. H01m *29/04*

U.S. Cl. 136—86 **18 Claims**



A metal/air or oxygen battery comprising an outer housing; a plurality of electrochemical cells each containing an envelope cathode, a metal anode positioned within said envelope cathode and an electrolyte in the space separating the anode and cathode, and inter-cell spacers between and in contact with adjacent cells with the inter-cell spacers being heat-conductive and constructed and/or shaped to permit air or oxygen to pass to said plurality of cells through openings therein or through air passages defined by the shape of said spacers is described.

3,468,712

ELECTRO-CHEMICAL CELL ARRANGEMENTS

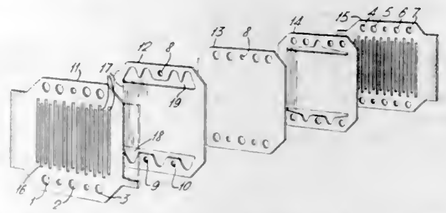
Peter James Gillespie, Walton-on-Thames, Surrey, England, assignor to Energy Conversion Limited, London, England, a British company

Filed May 16, 1966, Ser. No. 550,420

Claims priority, application Great Britain, May 18, 1965, 20,972/65

Int. Cl. H01m *27/12*

U.S. Cl. 136—86 **10 Claims**



1. A gas distribution system for an electrode of an electrochemical gaseous cell in which gas is fed to and from the electrode surface through sets of alternate parallel passages, comprising a distributor member and a manifold member, said distributor member comprising a first plate member having formed therein a first set of gas passages to feed gas to an electrode surface of the cell and a separate second set of passages to exhaust gas from said electrode surface, said manifold member comprising a second plate member separate from said first plate member, said second plate member having at least one gas inlet manifold and at least one gas outlet manifold formed therein, said gas inlet manifold being of configuration as to overlay portions only of gas passages of said first set for gas flow between said inlet manifold and said first set gas passages and said gas outlet manifold being of configuration as to overlay portions only of gas passages of said second set for gas flow between said outlet manifold and said second set of gas passages.

3,468,713

PROCESS AND PUMP FOR CIRCULATING FLUIDS OR GASES

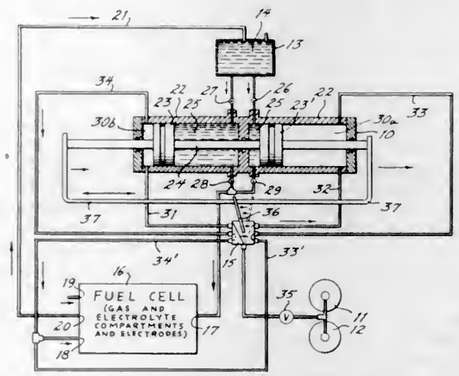
Gerd Mueller, Obertshausen, Germany, assignor to Varta Aktiengesellschaft, Hagen, Westphalia, Germany, a corporation of Germany

Filed June 15, 1966, Ser. No. 557,759

Claims priority, application Germany, June 16, 1965, V 28,696

Int. Cl. H01m *27/12, 27/22*

U.S. Cl. 136—86 **16 Claims**



1. A fuel cell system for circulating fluids which comprises a pump, a fuel cell, means for storing electrolyte and means for storing fuel gas under pressure, the pump comprising a double piston movable each within a cylinder and defining therein two cylinder sections, said sections being adapted to be alternatingly connected over valve means with the fuel gas storage means and the fuel cell, and said piston defining further two cylinder sections which are alternatingly connected over one-way valve means with the electrolyte storage means and the fuel cell, the valves being operated by the movement of the piston and the amount of fluid delivered to the fuel cell being automatically controlled by the amount of fuel consumed by the fuel cell.

3,468,714

BATTERY COMPRISING A CARBON ANODE CONTAINING A RADIOACTIVE CATALYST

Ricardo Salcedo Gumucio, Madrid, Spain, assignor to Yardney International Corporation, New York, N.Y., a corporation of New York

Continuation-in-part of application Ser. No. 62,775, Oct. 14, 1960. This application May 12, 1961, Ser. No. 109,557

Int. Cl. H01m *27/04, 27/10*

U.S. Cl. 136—86 **3 Claims**

1. A battery comprising:

a carbon anode and a carbon cathode only said anode containing a radioactive catalyst;

an aqueous alkaline electrolyte in contact with said anode and cathode;

and a load circuit connected across said anode and cathode.

3,468,715

FILLABLE GALVANIC BATTERY WITH ACTIVATION ARRANGEMENT FOR THE SIMULTANEOUS INTRODUCTION OF ELECTROLYTE INTO INDIVIDUAL CELLS

Werner Riedl, Ellwangen (Jagst), Germany, assignor to Varta Pertrix-Union G.m.bH., Ellwangen (Jagst), Germany, a corporation of Germany

Filed May 25, 1965, Ser. No. 458,541

Claims priority, application Germany, June 27, 1964, V 26,252

Int. Cl. H01m *17/00*

U.S. Cl. 136—90 **8 Claims**

A galvanic battery having a plurality of cells, the battery containing a thin walled plastic container which contains the electrolyte and which is destructible by the application of pressure only to enable the electrolyte to be introduced immediately before use into the battery cell. A pointed rigid member can be disposed loosely within the container.

3,468,716

ORGANIC ELECTROLYTE ELECTROCHEMICAL SYSTEM

Morris Eisenberg, Palo Alto, Calif., assignor to Electrochimica Corporation, Menlo Park, Calif.

No Drawing. Filed Oct. 24, 1965, Ser. No. 505,025

Int. Cl. H01m *17/00*

U.S. Cl. 136—100 **12 Claims**

An electrochemical system capable of employing highly active electrode materials, such as a cell employing an anode fabricated of an element less noble than zinc or an electrodepositing device wherein the material to be deposited at the cathode thereof comprises an element less noble than zinc, wherein the electrolyte comprises (1) a pentacyclic ester and (2) a second organic compound selected from the group consisting of aliphatic and cyclic ethers, nitroparaffins, cyclic ketones and aliphatic nitriles; and in a preferred embodiment, such electrolyte combined with a solute such as a Lewis acid.

3,468,717

ELECTRODES HAVING AN INTIMATE MIXTURE OF PLATINUM AND A SECOND METAL

Robert F. Waters, Hammond, and Hurley D. Cook, Highland, Ind., assignors to Standard Oil Company, Chicago, Ill., a corporation of Indiana

No Drawing. Continuation of application Ser. No. 299,101, July 31, 1963. This application Nov. 17, 1966, Ser. No. 595,267

Int. Cl. H01m *13/06*

U.S. Cl. 136—120 **6 Claims**

Electrodes having an intimate mixture of platinum and a second metal, the platinum being less than 10 weight percent of the electrode, and the second metal being less than 5 weight percent of the platinum, and the second meatl being one or more of the following: vanadium, copper, manganese, molybdenum, tungsten and cerium. The electrode is prepared by impregnating the electrode support with salts of platinum and the second metal, reducing at least a portion of the salts, and heating the reduced product at a temperature from 700° C. to 1400° C. in an inert atmosphere for a sufficient time to produce the intimate mixture.

3,468,718

METHOD OF PRODUCING POROUS CARBON BODIES OF STRATIFIED CONSTITUTION FROM CELLULOSIC PARTICLES

Otto Vohler, Nordendorf uber Augsburg, and Renato Martina, Meitingen uber Augsburg, Germany, assignors to Siemens-Planiawerke A.G., fur Kohlefabrikate Meitingen uber Augsburg, Germany, a corporation of Germany

Filed May 5, 1966, Ser. No. 547,979

Claims priority, application Germany, May 5, 1965, S 96,962

Int. Cl. H01m *13/04;* **C01b** *31/02*

U.S. Cl. 136—122 **10 Claims**

Method of producing a porous solid biporous body of carbon from a binder-free green mass of cellulosic particle material having substantially uniform grain size forming carbon bridges between adjacent granules when carbonized, either by pressing a plurality of strata of the green mass in the coaxial direction thereof, each wetted at least at the adjacent surfaces of the strata by a quantity of polar substance different from one another to a shaped body in the absence of binding medium, or applying respectively different amounts of pressure to each stratum of a plurality of superimposed strata of the green mass in the coaxial direction thereof and a quantity of polar substance between adjacent surfaces of the strata so as to form the strata into a shaped body in the absence of binding medium, and coking the body to obtain a solid porous structure.

3,468,719

SOLID STATE IONIC CONDUCTOR AND METHOD OF MAKING

Gerald J. Tennenhouse, Oak Park, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware

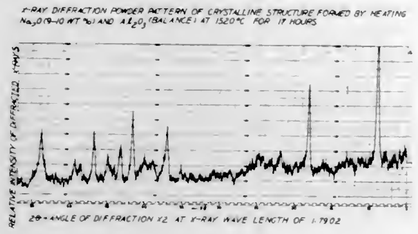
Filed Nov. 21, 1966, Ser. No. 595,979

Int. Cl. H01m *3/02;* **H01b** *1/08*

U.S. Cl. 136—153 **12 Claims**

Cationically-conductive polycrystalline objects are produced by intimately mixing aluminum oxide and sodium oxide, heating the mixed oxides at crystal forming temperature until the mixture has been converted to a first cationically-conductive crystalline composition, terminating the heating before this crystalline composition converts to a second crystalline composition, compressing

the resultant crystals into an object of the desired shape and size, and sintering the resultant compressate at a



temperature and for a time insufficient to effect conversion of the crystals to a second crystalline composition.

3,468,720

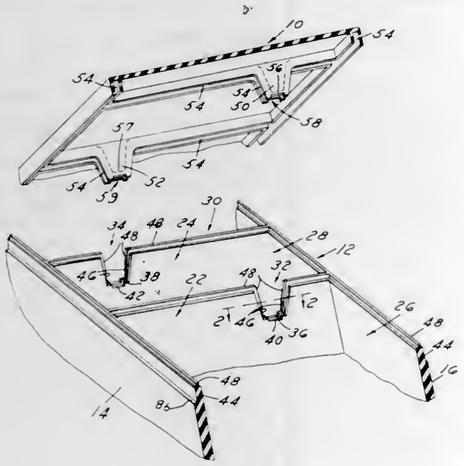
PROCESS FOR ASSEMBLING AN ELECTRICAL STORAGE BATTERY

Arvid E. Jensen, Ypsilanti, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware

Filed Jan. 19, 1968, Ser. No. 699,249

Int. Cl. H01m *1/02*

U.S. Cl. 136—176 **6 Claims**



This electrical storage battery has a plurality of cells with relatively short connections between cells. Straight intercell connectors rest on the bottom of openings formed in the partitions separating the cells and depending flanges formed on the cover fit into the openings. Channels are formed in each opening below the connector and in the flange above the connector. A tongue is formed on the top of the side walls and a continuous groove corresponding to the partitions and the tongue is formed in the battery cover and along the sides of the flanges. The partitions and tongue fit into the groove to form a tongue and groove construction but leave a continuous channel between the tip of the tongue and the bottom of the groove. This channel communicates with the channels below and above the intercell connector. Sealing material is forced into the channels through an opening in the cover to fill the channels around the intercell connector and between the tongue or partitions and groove to produce a fluid tight battery. The end of the tongue and the tops of the partitions contain a projection extending into the channel to increase the bonding area.

3,468,721

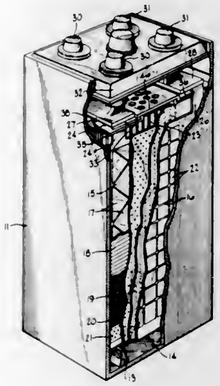
MOSS SHIELD AND SEPARATOR-PROTECTOR ASSEMBLY

Marion Ward Dickover, Glenview, and William N. Ritchie, Prospect Heights, Ill., assignors, by mesne assignments, to KW Battery Company, Skokie, Ill., a corporation of Delaware

Filed Oct. 27, 1967, Ser. No. 678,667

Int. Cl. H01m *3/04*

U.S. Cl. 136—181 **5 Claims**



A moss shield and separator-protector assembly is described for use with storage batteries of the type including an element and two groups of lugs extending therefrom, such lugs being separately interconnected by electrically conductive straps. The moss shield and separator-protector assembly comprises a pair of moss shield sections, each having a plurality of slots extending from one edge to accommodate one of the groups of lugs, respectively. The assembly also comprises a separator-protector with a pair of imperforate side sections. The moss shield sections are secured to the separator-protector with the side sections of the separator-protector overlapping a portion of each of the moss shield sections at the slotted edges thereof to thereby provide a complete enclosure of the lugs.

3,468,722

IN-LINE THERMOELECTRIC ASSEMBLY

Josef Intrater, New York, N.Y., and Lawrence R. Hill, Short Hills, N.J.; said Intrater assignor to Electronics & Alloys, Inc., Ridgefield, N.J., and said Hill assignor to General Instrument Corporation, Newark, N.J., both corporations of New Jersey

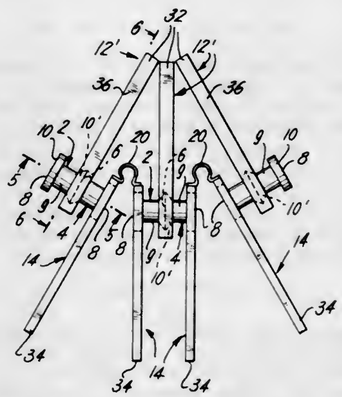
Filed Dec. 17, 1962, Ser. No. 249,967

Int. Cl. H01v *1/30, 1/02*

U.S. Cl. 136—205 **21 Claims**

1. A thermoelectric assembly comprising a plurality of thermoelectric units having hot and cold sides, said units being arranged in a row with the hot and cold sides of adjacent units opposing one another to define sets of

opposed similar sides, first and second sets of heat conducting elements substantially rigidly operatively engaging and being in heat conductive relation with one and the other set respectively of said opposed similar sides, and electrical connections between the sides of each set of opposed sides, the electrical connections between a plurality of opposed sides being flexible, thereby permitting said units to be arranged in a row of desired configuration.



21. A thermoelectric assembly comprising a support, a plurality of thermoelectric units having hot and cold sides mounted in a row thereon with like sides of adjacent units facing one another, a plurality of heat-conductive elements having sockets on opposite sides thereof, said elements being interposed between said units with the facing sides of each pair of adjacent units received in the sockets of a given element, said elements alternately extending in different directions from said support, pressure means active between said support and said row of units to retain them and said elements as a unitary asembly, and electrical connections between each pair of opposed unit sides.

3,468,723

SPRING-LOADED THERMOCOUPLE

Walter Lambert, Westport, Conn., assignor to Thermo Electric Co., Inc., Saddle Brook, N.J., a corporation of New Jersey

Filed Nov. 21, 1966, Ser. No. 595,952

Int. Cl. H01v *1/06*

U.S. Cl. 136—221 **9 Claims**



1. A spring-loaded thermocouple of the class comprising a coiled spring and a bayonet cap carried by a tubular shell, said thermocouple being characterized in that the cap is threaded onto the spring.

3,468,724

METAL COATING PROCESS

Earl R. Reinhold, Levittown, Pa., assignor to Amchem Products Inc., Ambler, Pa., a corporation of Delaware

No Drawing. Filed Mar. 31, 1966, Ser. No. 538,942

Int. Cl. C23f *7/10, 7/12*

U.S. Cl. 148—6.15 **12 Claims**

A process for treating ferriferous and zinc metal surfaces to enhance their corrosion resistant and paint-bonding characteristics wherein the surface is contacted with an aqueous solution containing from 0.01 to about 10 grams/liter of a metal selected from the group consisting of nickel and cobalt, and from 0.1 to about 100 grams/liter of an acid anion selected from the group consisting of sulfate, chloride, sulfamate, citrate, lactate, acetate, and glycolate, the pH of said aqueous treating solution being maintained between about 0.1 and 4.

3,468,725

PROCESS FOR THE PREPARATION OF PLANOGRAPHIC PRINTING PLATES

Fritz Uhlig, Wiesbaden-Biebrich, Germany, assignor to Kalle Aktiengesellschaft, Wiesbaden-Biebrich, Germany, a corporation of Germany

No Drawing. Filed May 31, 1966, Ser. No. 553,729

Claims priority, application Germany, June 3, 1965, K 56,297

Int. Cl. C23f *7/00;* **B41n** *1/00, 3/00*

U.S. Cl. 148—6.15 **3 Claims**

In the process for making a light-sensitive printing plate having a first layer of a water-soluble organic phosphonic substance on an aluminum support and a light-sensitive second layer on the first layer, the improvement in which the support is stored, after the application of the first layer and before the application of the second layer, for more than 24 hours and washed with water after storage and before the application of the second layer until any water-soluble portion of the first layer is thoroughly washed off the aluminum support.

3,468,726

HEAT-CUTTING METHOD FOR OVERLAPPING METAL PLATES

Kozo Sato, 89 Yamamoto-cho, Minami 3-chome, Yao, Osaka Prefecture, Japan

No Drawing. Filed Mar. 14, 1967, Ser. No. 622,892

Claims priority, application Japan, Dec. 2, 1966, 41/79,153

Int. Cl. B23k *7/08;* **C23f** *17/00*

U.S. Cl. 148—9 **3 Claims**

A simultaneous heat-cutting method for overlapping metal plates characterized by prior application of a paste to the part to be cut, which is composed of a compound consisting of a substance which has enough stability at high temperatures and forms a film in a fused state on contact with the cutting heat, and of another substance which generates gas by pyrolysis and turns the fused metal into nonadhesive slag by reacting on the said fused metal.

3,468,727

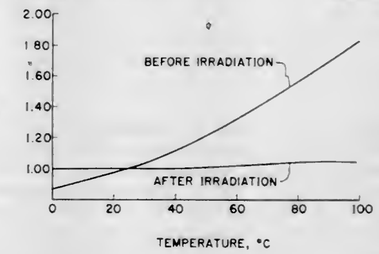
METHOD OF TEMPERATURE COMPENSATING SEMICONDUCTOR STRAIN GAGES

Chris Gross, Hampton, Va., assignor to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration

Filed Nov. 15, 1966, Ser. No. 594,584

Int. Cl. C22f *3/00*

U.S. Cl. 148—13 **6 Claims**



Semiconductor strain gages, although they are many times more sensitive to strain than the commonly used metallic foil gages, have found only limited use as precision strain transducers because of their undesirable temperature properties. These undesirable temperature

properties include large changes in gage resistance and gage factor with temperature, and have limited the usefulness of the semiconductor gage.

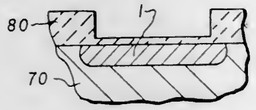
According to the present invention radiation damage studies have provided a method of significantly reducing the sensitivity of the semiconductor gage to changes in temperature. The method according to the present invention comprises exposing commercially available semiconductor gages of a specific resistivity to a prescribed dose of high energy damaging radiation. After irradiation, the change in gage resistance and gage factor with temperature will be reduced by a factor of over twenty-five of the unirradiated gage over a 50° C. temperature interval.

3,468,728

METHOD FOR FORMING OHMIC CONTACT FOR A SEMICONDUCTOR DEVICE

Robert Clurin Martin, Dallas, Tex., assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware

Filed Jan. 14, 1965, Ser. No. 425,542
Int. Cl. H01l *7/44; H05h 3/00*
U.S. Cl. 148—187 **4 Claims**



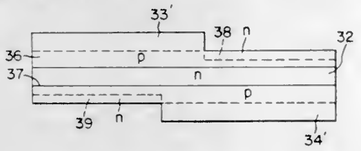
Disclosed is a method for forming an ohmic contact to a small geometry region in a semiconductor integrated circuit by using an insulating layer of different thicknesses. The insulating layer is formed on the integrated circuit with the portion of the insulating layer over the region being thinner than the rest of the insulating layer. During the formation of an opening in the insulating layer the unmasked thinner insulating layer is completely removed while the unmasked thicker insulating layer is only partially removed. A metal contact is then formed on the exposed portion of the region.

3,468,729

METHOD OF MAKING A SEMICONDUCTOR BY OXIDIZING AND SIMULTANEOUS DIFFUSION OF IMPURITIES HAVING DIFFERENT RATES OF DIFFUSIVITY

John M. Bentley, Crofton, Md., and Melvin W. Aarons, Trumbull, Conn., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Mar. 21, 1966, Ser. No. 535,814
Int. Cl. H01l *7/44*
U.S. Cl. 148—187 **2 Claims**



This invention relates to a method of making a semiconductor. A base semiconductor of "n" conductivity is selected and masked with an oxide coat on both sides of the semiconductor wafer. The oxide is removed from portions on opposite sides of the semiconductor. The oxide-removed surfaces do not overlap. The semiconductor is subjected to a diffusion environment wherein "p" and " n" or both simultaneously diffused into the wafer with the "p" impurity diffusing at a faster rate than the "n" impurity. The diffusion step produces a semiconductor material having four separate zones of differing conductivities in the semiconductor.

3,468,730

PROPELLANT COMPOSITION CONTAINING AN ORGANIC TETRAZOLE DERIVATIVE AND METAL OXIDIZER

Heinz Gawlick, Furth; Gunther Marondel, Erlangen, Hellmut Bendler, Nuremberg, and Werner Siegelin, Stein, near Nuremberg, Germany, assignors to Dynamit Nobel Aktiengesellschaft, Troisdorf, Germany

No Drawing. Filed Feb. 16, 1968, Ser. No. 705,912
Claims priority, application Germany, Feb. 17, 1967, D 52,299
Int. Cl. C06b *1/00, 15/00;* **G05**
U.S. Cl. 149—61 **11 Claims**

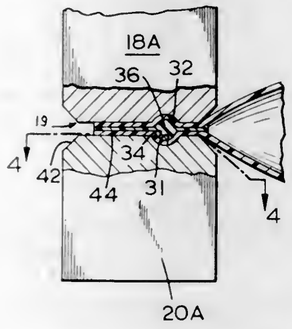
The present disclosure relates to a propellant charge for switching elements, for the triggering of switching elements and/or for control processes. More particularly, the present disclosure is directed to a propellant composition which comprises about 10 to 50% by weight of a tetrazole derivative which exhibits a melting point of at least about 90° C., a decomposition point of at least about 140° C., has a nitrogen content of at least about 40% by weight and is resistant to friction and shock and about 90 to 50% by weight of an oxygen carrier.

3,468,731

METHOD AND APPARATUS FOR SONICALLY SEALING THE END PORTION OF THERMOPLASTIC TUBULAR CONTAINERS

Edward G. Obeda, Brookfield, Conn., assignor to Branson Instruments Inc., Stamford, Conn., a corporation of Delaware

Filed July 1, 1966, Ser. No. 562,358
Int. Cl. B32b *31/20;* **B29c** *17/00*
U.S. Cl. 156—73 **8 Claims**



A method and apparatus for sealing thermoplastic tubular containers comprises interposing the end portion to be sealed between an anvil and a sonically vibratory tool, flattening the sides and squeezing them into intimate contact, the dissipation of sonic energy causing the sides to fuse together and provide a seal. Resulting from the shape of the anvil or tool, a transverse recess is provided in the flattened and sealed container end to collect thermoplastic material displaced during the sealing operation.

3,468,732

METHOD OF BUTT JOINING THERMOPLASTIC SHEET MATERIAL BY A SPIN WELDING OPERATION

Eugene E. Hewitt, Walkerton, Ind., assignor to Uniroyal, Inc., a corporation of New Jersey

Filed Aug. 19, 1966. Ser. No. 573,688
Int. Cl. B32b *31/12*
U.S. Cl. 156—73 **11 Claims**

1. In a method of welding thermoplastic sheet material, the steps of placing a pair of thermoplastic sheet portions with an edge of one of said portions located against an edge of the other of said portions, placing a thermoplastic button against one face of both of said sheet portions in a position extending across and engaging said edges thereof, and pressing said button and sheet portions against each other while simultaneously spinning said button with respect to said sheet portions at a speed sufficient to frictionally create between said button and sheet portions a temperature which will melt the material of said sheet portions and button where they frictionally



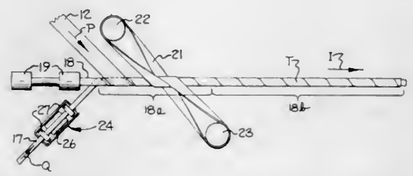
engage each other, so that during the spinning of said button with respect to said sheet portions the pressure of said sheet portions and button against each other will progressively displace said button into said sheet portions, and terminating the spinning of said button with respect to said sheet portions after said button has progressed to a given extent into said sheet portions, so that thereafter the molten material of said button and sheet portions will set and thereby weld said sheet portions to each other.

3,468,733

METHOD OF PRODUCING A SPIRALLY WOUND TUBE

Charles K. Dunlap, Jr., and James A. Fink, Hartsville, S.C., assignors to Sonoco Products Company, Hartsville, S.C., a corporation of South Carolina

Filed Jan. 5, 1966, Ser. No. 519,819
Int. Cl. B31c *3/04*
U.S. Cl. 156—190 **2 Claims**



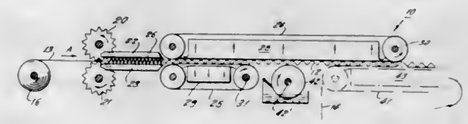
A method of winding a spirally wound tube on a winding mandrel provided with a recessed helical groove wherein a relatively narrow strip of paper is spirally wound in the mandrel groove together with a relatively wide paper strip spirally wound in overlying relationship therewith on the mandrel winding surface with adhesive therebetween and with the spiral seam of the relatively wide strip positioned approximately intermediate the side edges of the narrow strip.

3,468,734

METHOD AND APPARATUS FOR PRODUCING CORRUGATED BOARD

Albert F. Shields, Forest Hills, N.Y., assignor to S & S Corrugated Paper Machinery Company, Inc., Brooklyn, N.Y., a corporation of New York

Filed Feb. 7, 1966, Ser. No. 525,598
Int. Cl. B31f *1/20*
U.S. Cl. 156—210 **10 Claims**



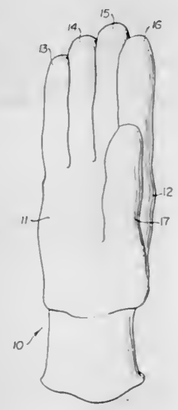
Double face board is produced with a plaited corrugated layer by longitudinally compressing the plaited medium and thereafter longitudinally drawing out the folds by utilizing a suction conveyor to accurately control flute height and pitch while an underfed liner is applied. This forms single face board which is moved by another conveyor past a station where the second liner is applied from above.

3,468,735

GLOVES AND METHODS OF CONSTRUCTION

Richard E. Mohler, Coshocton, Ohio, assignor, by mesne assignments, to Becton, Dickinson and Company, East Rutherford, N.J., a corporation of New Jersey

Original application Jan. 14, 1963, Ser. No. 251,118, now Patent No. 3,173,150, dated Mar. 16, 1965. Divided and this application Dec. 8, 1964, Ser. No. 416,688
Int. Cl. B32b *31/12, 31/26;* **B29c** *25/00*
U.S. Cl. 156—250 **3 Claims**



1. In a method of making a glove having an inner fabric lining, an outer protective coating, and an insulating layer of cellular foam material, the steps comprising:
(a) bonding a fabric lining to one surface of a sheet of cellular foam material having open cells,
(b) sealing open cells of at least a portion of the opposite surface of said sheet sufficiently to prevent impregnation by a fusible coating composition,
(c) severing glove components from said foam material and lining,
(d) connecting said glove components together to form a glove liner in which a portion of the opposite sur-

face of said sheet where open cells have been covered forms at least the outer surface of a palm portion of said glove liner,

(e) thereafter dipping at least the palm portion of said liner into a fusible coating composition, and

(f) curing said coating composition to form said outer protective coating.

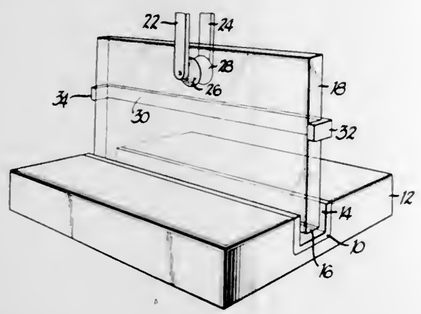
3,468,736
BONDING SHAPED STRUCTURES FOR ARTIFICIAL PLASTICS
Philip S. Porter, Lawford, Manningtree, England, assignor to Bakelite Xylonite Limited, a corporation of Great Britain
No Drawing. Filed Apr. 2, 1965, Ser. No. 445,260
Int. Cl. B32b *23/04, 27/04*
U.S. Cl. 156—273 **14 Claims**

Plastic sheets and films are effectively bonded by heating a heat softenable material having a higher dielectric loss factor than the plastic sheets or films applied to at least one plastic sheet or film with radio-frequency electromagnetic radiation to soften the applied heat softenable material and joining the plastic sheets or films to effect bonding without deleteriously heating the plastic sheets or films.

3,468,737
METHOD FOR CONNECTING ANODES
Richard D. Hildebrandt, Cupertino, Calif., and Wayne H. Clukey, Spokane, Wash., assignors to Kaiser Aluminum & Chemical Corporation, Oakland, Calif.
No Drawing. Filed Mar. 9, 1966, Ser. No. 532,884
Int. Cl. B32b *31/00;* **C09j; C04b** *35/52*
U.S. Cl. 156—293 **5 Claims**

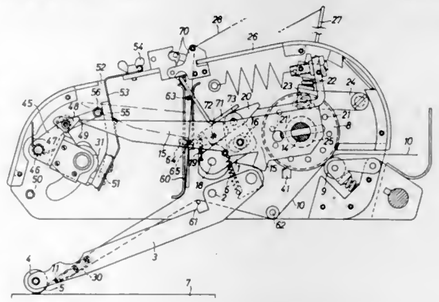
This disclosure relates to a method for bonding the metal connection member which carries current from the electrical source to the prebaked carbon anode used in an electrolytic reduction cell wherein the molten cast iron normally used is replaced by a furane mortar binder.

3,468,738
METHOD OF BONDING METAL OBJECTS TO GLASS PANELS
Robert J. Deisenroth, Elkhart, Ind., assignor to Excel Corporation, Elkhart, Ind., a corporation of Indiana
Filed Mar. 29, 1966, Ser. No. 538,369
Int. Cl. B32b *1/06, 3/02;* **C03c** *27/04*
U.S. Cl. 156—293 **8 Claims**



The method of bonding metal objects to glass panels is accomplished by first partially curing liquid resinous adhesive material to a gel form. The gel material is placed between and in contact with a metal frame and the glass panel. The gel material is then further cured to a more rigid solid condition in which it bonds the glass panel to the metal frame and provides a solid bed for the panel in the frame.

3,468,739
AUTOMATIC LABELLING MACHINE
Kurt Schrotz, Brentanostrasse 29B, Hirschhorn on the Neckar, Germany
Filed Sept. 12, 1966, Ser. No. 578,841
Claims priority, application Germany, Sept. 14, 1965, M 66,620
Int. Cl. B65h *25/00*
U.S. Cl. 156—361 **15 Claims**



1. Apparatus for applying self-adhering labels to articles as the articles are advanced by a conveyor along a path passing the apparatus, the labels being carried upon an elongated carrier strip, said apparatus comprising:

advancing means for moving the carrier strip through the apparatus;

a dispensing arm having a free end and being mounted for pivotal movement between a rest position wherein said free end is outside the path of said articles and a dispensing position wherein said free end is in said path;

a resilient label-pressing roll mounted at the free end of said dispensing arm;

deflection means for guiding the carrier strip to a position adjacent the label-pressing roll and placing a label in juxtaposed relationship with said roll;

resilient biasing means normally urging the free end of the dispensing arm toward the dispensing position;

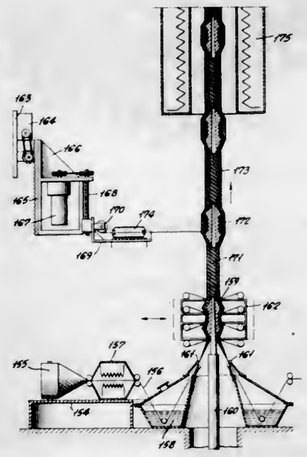
stop means cooperatively engaging said dispensing arm and mounted for movement between a first position wherein the stop means restrains the dispensing arm to retain the free end thereof at said rest position and a second position wherein the dispensing arm is allowed to pivot in response to the resilient biasing means to move the free end thereof to said dispensing position; and

drive means coupled to said stop means for actuation in response to the arrival of an article at a given location with respect to the apparatus to move said stop means from said first position to said second position and release the dispensing arm for pivotal movement to allow the free end thereof to swing into said dispensing position and for actuation in response to the arrival of the stop means at said second position to return said stop means to the first position thereof and the free end of the dispensing arm to the rest position.

3,468,740
APPARATUS FOR PRODUCING AND ASSEMBLING COMPONENTS OF ELECTRICAL INSULATORS
Alexandre Kaczerginski, Vichy, Allier, France, assignor to Societe Europeenne d'Isolateurs en Verne Sediver, Paris, France, a corporation of France
Filed Sept. 8, 1966, Ser. No. 578,013
Claims priority, application France, Sept. 17, 1965, 31,757
Int. Cl. B29d *23/00*
U.S. Cl. 156—431 **44 Claims**

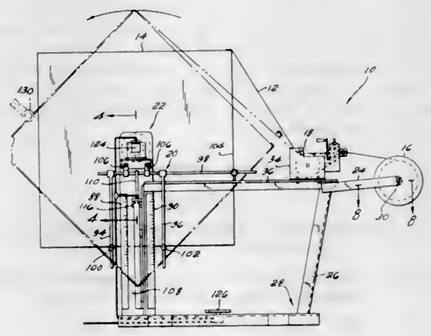
The production of electrical insulator assemblies consisting of superposed insulator discs with central heads

which are integrated by intervening rods formed of continuous parallel lengths of glass fibers impregnated with a hardenable synthetic resin, with the opposite ends of the rods either sealed within the interior, or bound to the exterior of the heads, by circumferential bindings of glass fibers also impregnated with a hardenable synthetic



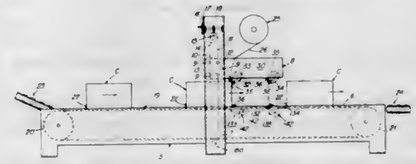
resin, said bindings being disposed on the ends of the rods or along the entire lengths thereof. Machinery for producing the rods in continuous lengths for subsequent attachment to the insulator discs, as well as machinery for applying the glass fibers directly to the heads of the insulator discs and forming the rods in situ, are within the purview of the present invention.

3,468,741
APPARATUS FOR APPLYING EDGING TAPE TO THE EDGE OF A WORKPIECE
Alfred G. Miller, Maywood, and Samuel M. Lo Dolce, Rochelle Park, N.J., assignors to Potdevin Machine Co., Teterboro, N.J., a corporation of New York
Filed Jan. 28, 1966, Ser. No. 523,698
Int. Cl. B65c *9/04*
U.S. Cl. 156—446 **5 Claims**



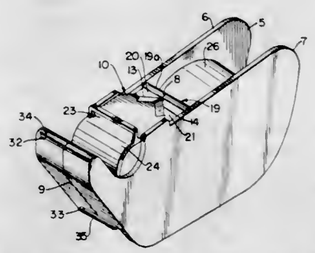
An apparatus is provided for applying edging tape to the edge of a product to be edge laminated. This product is suitably clamped for rotation by means of an air operated clamping device. Plastic edging tape is supplied from a roll and passes through a gluing machine designed to ply adhesive to one of the side faces of the tape web. The tape web is suitably guided and fed from the gluing station with the rotation of the clamped product and movement and application of the tape web to the product edge being synchronized. The tape web is cut at a suitable location to assure the application of the desired amount of tape to the edge of the product.

3,468,742
TAPE APPLYING MECHANISM
Winton Loveland, Freeport, and Saul Warshaw, New York County, N.Y., assignors to The Loveshaw Corporation, Farmingdale, N.Y., a corporation of New York
Filed Aug. 6, 1965, Ser. No. 477,788
Int. Cl. B65b *51/06*
U.S. Cl. 156—468 **4 Claims**



A closed, pressurized, gas confining chamber that provides a common gas pressure cushion for all of a plurality of mechanically separate air motors which separately manipulate and apply pressurized gaseous biasing to a plurality of separate tape-applying mechanisms. Such tape-applying mechanisms are designed to wipe down upon walls of closed, product-housing cartons adhesive tape to hold the closing flaps thereof in their closing positions.

3,468,743
ADHESIVE TAPE DISPENSERS
Charles A. Soriano, 123 Papurab Road, Fairfield, Conn. 06430
Filed July 19, 1966, Ser. No. 566,407
Int. Cl. B32b *31/14*
U.S. Cl. 156—584 **10 Claims**

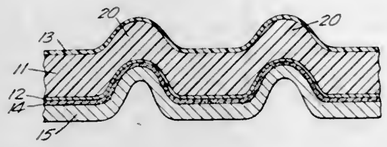


Adhesive tape dispenser for separating a singly or doubly coated pressure-sensitive adhesive tape from its separable liner, said separation being effected by moving the adhesive tape over a wedge-shaped splitter with the resultant separation of the liner along the underside of said splitter.

3,468,744
COLOR CHANGEABLE EMBOSSABLE LABEL TAPE
Thomas J. Reinhart, Bloomington, Minn., assignor to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware
Filed Aug. 13, 1964, Ser. No. 389,363
Int. Cl. B44f *1/08;* **B32b** *7/02, 27/08*
U.S. Cl. 161—6 **3 Claims**

An embossable label tape is made by providing a colored backing of unplasticized polyvinyl chloride with a pres-

sure-sensitive adhesive on one face and a transparent colored layer which differs in color from the tape on the other face. When embossed, the polyvinyl chloride



locally opacifies, to leave embossed indicia having the color of the colored layer. The polyvinyl chloride may be replaced with other transparent sheet material which opacifies when locally distorted.

3,468,745

METHOD OF COLORING GLASS AND SAID COLORED GLASS

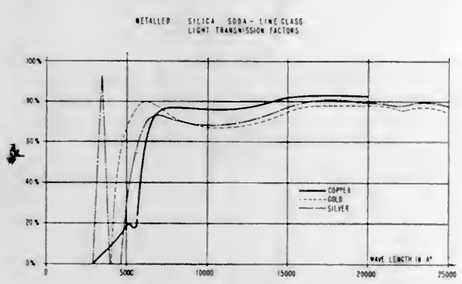
Maurice Navez and Albert Bezombes, Paris, France, assignors to Compagnie de Saint-Gobain, Neuilly-sur-Seine, France

Continuation-in-part of application Ser. No. 177,717, Mar. 6, 1962. This application Aug. 16, 1966, Ser. No. 571,434

Claims priority, application France, Mar. 13, 1961, 855,422

Int. Cl. B32b *5/18;* **C03c** *17/10*

U.S. Cl. 161—164 **17 Claims**



A glass having an internal layer of coloring metal ions, which has been made by contacting the surface of the glass while in the plastic state with molten metal comprising tin to create in the surface of the glass a reducing condition and applying a reducible coloring metal compound such as a salt of copper, gold or silver, to said surface and heating to reduce the metal compound and cause migration of the metal ions into the glass.

3,468,746

FABRIC HAVING RAVEL RESISTANT EDGE PORTION

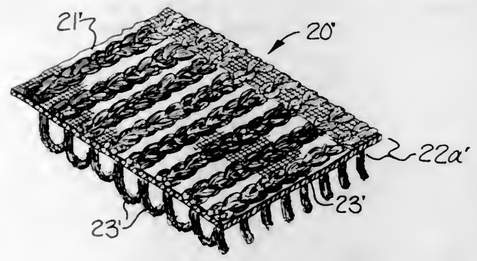
Stanley C. Scheier, Charlotte, N.C., assignor to Kendall Company, Boston, Mass., a corporation of Massachusetts

Filed Sept. 9, 1966, Ser. No. 578,259

Int. Cl. D03d *27/00;* **B32b** *3/02*

U.S. Cl. 161—63 **13 Claims**

A textile fabric having at least one corespun yarn extending along an edge portion of the fabric to provide ravel resistance to the fabric by having sheath fibers of the corespun yarn formed at least in part of thermoplastic fibers fused to contiguous yarns to secure the yarns together and wherein the core of the corespun yarn is at



least predominantly unfused so that substantial pliability and integrity thereof is maintained.

3,468,747

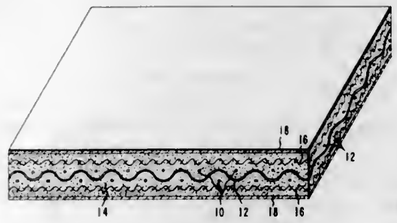
TEMPERATURE SENSITIVE ADHESIVE SHEET MATERIAL WITH AN ELECTRIC HEAT GENERATING GRID EMBEDDED THEREIN

Robert E. Tatnall, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Filed Apr. 28, 1965, Ser. No. 451,420

Int. Cl. B32b *5/18;* **D03d** *11/00*

U.S. Cl. 161—79 **11 Claims**



A temperature sensitive adhesive sheet material having embedded therein an electric heat generating grid for internally generating heat to activate the adhesive components, the adhesive having an electrical conductance significantly less than the conductance of the electrical grid and heat conductance sufficient to substantially uniformly transmit heat from the grid throughout the adhesive is provided for use in forming highly efficient bonds of high temperature adhesives.

3,468,748

NONWOVEN FABRIC WITH MACHINE DIRECTION ELASTICITY

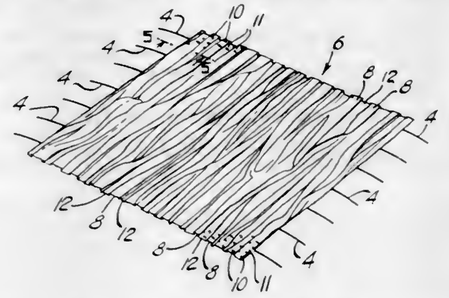
Alton H. Bassett, Princeton, N.J., assignor to Johnson & Johnson, a corporation of New Jersey

Filed Apr. 14, 1965, Ser. No. 448,173

Int. Cl. B32b *3/10, 7/14;* **D04h** *1/00*

U.S. Cl. 161—122 **5 Claims**

A nonwoven fabric having elasticity in the machine direction and defined by at least one web of fibers bonded together by a recurring print pattern and having a plurality of elastic means, in extended condition, secured to said web to provide, on their release, a fabric characterized by a plurality of substantially parallel buckled areas and having improved bulk.



3,468,749

LAMINATED GLAZING UNIT AND METHOD FOR PRODUCING SAME

Paul T. Mattimoe, Toledo, and William L. Elton, Maumee, Ohio, assignors to Libbey-Owens-Ford Company, a corporation of Ohio

No Drawing. Filed Apr. 25, 1966, Ser. No. 544,690

Int. Cl. B32b *17/06*

U.S. Cl. 161—165 **12 Claims**

An interlayer material comprising the following ingredients in the indicated proportions: 100 grams of polyvinyl butyral, 30 to 50 grams of a plasticizer for the polyvinyl butyral, and 0.1 to 5 gram milliequivalents of a compound selected from the group consisting of potassium acid maleate, potassium acid citraconate, potassium acid malate, potassium acid malonate, potassium acid phthalate, potassium dihydrogen citrate and mixtures thereof, and two sheets of glass bonded together through said interlayer material.

3,468,750

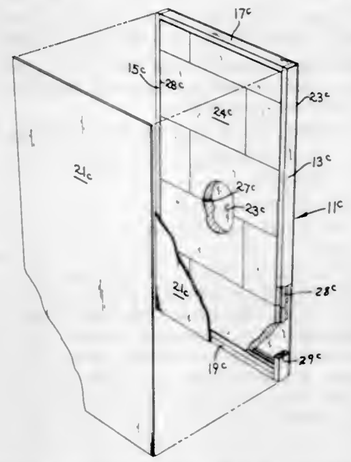
REFRACTORY BODIES WITH THERMAL BARRIER ADHESIVE COATINGS AND METHOD THEREFOR

Oliver W. Pfeifer and William C. Taylor, Toledo, Ohio assignors to Owens-Corning Fiberglas Corporation, a corporation of Delaware

Filed Mar. 4, 1964, Ser. No. 349,359

Int. Cl. B32b *9/04, 3/10*

U.S. Cl. 161—191 **15 Claims**



A refractory body containing a thermal barrier coating composed of an air dried mixture initially including a major proportion of finely divided refractory, a minor proportion of a mixture of a basic metal oxide and a water soluble phosphate salt and a minor proportion of colloidal silica, as well as methods of producing such bodies.

3,468,751

GLASS COATED WITH ORGANOSILICON COMPOUNDS

Giuliana C. Tesoro, Dobbs Ferry, N.Y., assignor to J. P. Stevens & Co., Inc., New York, N.Y., a corporation of Delaware

No Drawing. Original application Jan. 16, 1963, Ser. No. 251,741. Divided and this application June 8, 1966, Ser. No. 566,175

Int. Cl. B32b *17/06;* **C03c** *17/30*

U.S. Cl. 161—193 **46 Claims**

Glass coated with an organosilicon polymeric compound having silicon, amine and mercaptan or disulfide groups, the silicon having one or more hydrolyzable radicals attached to it and being bonded to the sulfur-containing group through a hydrocarbon chain having one or more interposed amino groups. The coated glass is characterized by increased dye-receptivity and is also used to make laminates with sulfur-vulcanizable polymerizates.

3,468,752

HERMETICALLY SEALED BODY OF CERAMIC, METAL AND GLASS AND METHOD THEREFOR

Hiroshi Yamamoto, Koichi Ikeda, and Katsuji Minagawa, Tokyo, Japan, assignors to Nippon Electric Company Limited, Tokyo, Japan, a corporation of Japan

Filed Oct. 12, 1965, Ser. No. 495,082

Claims priority, application Japan, Oct. 12, 1964, 39/58,102

Int. Cl. B32b *17/06*

U.S. Cl. 161—196 **5 Claims**

A hermetically sealed body comprising a sitnered body of ceramic formed of $MgO.SiO_2$ to which is sealed via a low melting glass a metal element, said sintered ceramic having contained therein a small but effective amount of free silica to confer a coefficient of thermal expansion corresponding substantially to the glass and the metal element over the range of approximately 95 to 105×10^{-7} within the range of 30° C. to 255° C. and a method for making the same.

3,468,753

METHOD OF PRODUCING POLYMER-METAL LAMINATES AND PRODUCTS THEREOF

Gerald G. Vincent and Joseph E. Burkholder, Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Mar. 10, 1965, Ser. No. 438,769

Int. Cl. B32b *15/08, 15/04;* **B44d** *1/36*

U.S. Cl. 161—216 **13 Claims**

A laminate comprising a metal sheet of a material such as aluminum and a film of a graft copolymer of ethylene and an ethylenically unsaturated carboxylic acid such as acrylic acid has an improved and high degree of adhesion by employing between about 35 and about 75 percent by weight finely divided inorganic particles such as aluminum particles dispersed in the copolymer film. The laminate is fabricated by subjecting a composite of a copolymer film containing the finely divided inorganic particles and a metal substrate to elevated temperatures and pressure for a period of time sufficient to bond the copolymer film to the metal substrate.

3,468,754

MODIFIED DIALLYLIC PHTHALATE RESIN SOLUTIONS AND DECORATIVE LAMINATE IMPREGNATED WITH SAME

Frank P. Greenspan, Larchmont, N.Y., and Arthur V. Dupuis, Creve Coeur, Mo., assignors to FMC Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Jan. 21, 1965, Ser. No. 427,082
Int. Cl. B32b *17/08*; C09d *3/64*
U.S. Cl. 161—250 15 Claims

A modified diallylic phthalate resin solution comprising diallyl phthalate, a methylol melamine, a catalytic amount of an organic peroxide and a volatile organic solvent which is particularly useful in the preparation of diallylic phthalate resin decorative laminates having improved delamination and mar resistance.

3,468,755

PROCESS FOR MAKING PRESSED FIBERBOARD UTILIZING THROUGH CIRCULATION PREHEATING

Charles R. Culp, Lancaster, Pa., assignor to Armstrong Cork Company, Lancaster, Pa., a corporation of Pennsylvania

Filed Aug. 16, 1966, Ser. No. 572,798
Int. Cl. D21f *13/10*; F26b *3/06*
U.S. Cl. 162—206 4 Claims

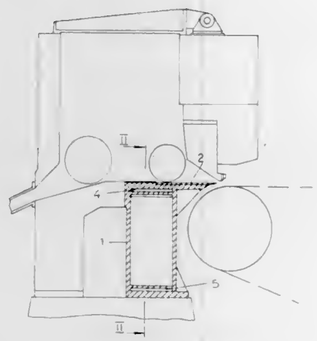
A process for making pressed fiberboard that accomplishes a preheating step by circulating warm air through the boards. The circulation of the warm air through the boards is carried out by maintaining a pressure differential on either side of the boards, with the pressure on one side thereof being subatmospheric to assure that the warm air travels through the boards before being exhausted.

3,468,756

PAPER MACHINE HEAD BOX SUPPORT

Tapio Villa, Jyvaskyla, Finland, assignor to Valmet Oy, Helsinki, Finland, a corporation of Finland

Filed Mar. 28, 1966, Ser. No. 537,834
Claims priority, application Finland, Apr. 8, 1965, 859/65
Int. Cl. D21f *1/06*; B26d *7/10*
U.S. Cl. 162—344 4 Claims



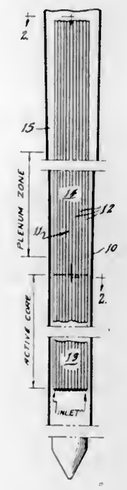
A support for a paper machine head has a box beam the top side of which carries the lower lip of the machine cutter, the beam being provided with means, such as a channel or channels for a heating medium, producing temperature differences in the beam as the result of which the top surface of the beam and the lower lip are maintained in a straight and horizontal position.

3,468,757

FUEL SUBASSEMBLY FOR A LIQUID-METAL-COOLED, FAST BREEDER NUCLEAR REACTOR

Lester M. Finch and Andy J. Anthony, Pasco, Wash., assignors to the United States of America as represented by the Secretary of the United States Atomic Energy Commission

Filed Apr. 16, 1968, Ser. No. 721,738
Int. Cl. G21c *3/30*
U.S. Cl. 176—78 1 Claim



A fuel subassembly for a liquid-metal-cooled nuclear reactor operating predominantly on fast neutrons includes a compact bundle of elongated fuel pins disposed within a shroud. The subassembly contains an active core and a fission-gas plenum zone downstream of the fuel and the shroud is of expanding cross section downstream of the active core to provide an annular coolant passageway of increasing cross section.

3,468,758

MEASLES VACCINE ATTENUATED THROUGH AVIAN CHORIO-ALLANTOIC MEMBRANE

Victor Jack Cabasso, Pearl River, N.Y., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed Aug. 17, 1965, Ser. No. 480,482
Int. Cl. C12d *7/00*; A61k *23/00*
U.S. Cl. 195—1.3 4 Claims

Attenuated live measle virus, such as Edmonston strain, which has been adapted to grow in avian embryo tissue culture is grown for a number of passages on the chorio-allantoic membrane as fertilized egg in ovo, the passages being at a temperature between 35° and 38° C. until the virulence begins to disappear. Then the passages are continued at a lower temperature, 28° to 34° C., until a vaccine is produced which has the following characteristics: (1) the vaccine causes production of measles antibodies when inoculated into children, rashes do not result, and fever is rarer and lower than with the Edmonston strain; (2) when inoculated onto a chorio-allantoic membrane of a fertilized egg, it grows; (3) during growth it produces inflammatory and necrotic lesions on the membrane.

3,468,759

6-AZAURACIL RIBOSIDE

Jan Skoda, Vilem Hess, and Frantisek Sorm, Prague, Czechoslovakia, assignors to SPOFA, spojene farmaceuticke zavody, narodni podnik, Prague, Czechoslovakia

No Drawing. Continuation of application Ser. No. 456,589, Apr. 1, 1965, which is a continuation-in-part of application 712,660, Feb. 3, 1958. This application May 9, 1966, Ser. No. 548,794
Claims priority, application Czechoslovakia, Feb. 28, 1957, 773/57
Int. Cl. C12b *1/00*; A61k *27/00*
U.S. Cl. 195—28 3 Claims

1. The method of producing 6-azauracil riboside which comprises subjecting 6-azauracil to a fermenting culture of a microorganism selected from the group consisting of *Escherichia coli* and *Aerobacter aerogenes* until 6-azauracil riboside is formed in the culture medium; and recovering 6-azauracil riboside from said medium.

3,468,760

METHOD FOR OBTAINING UROKINASE

Alfred Joss, Denens, Vaud, Switzerland, assignor to Pharmexbio A.G., Solothurn, Switzerland

No Drawing. Filed June 25, 1965, Ser. No. 467,100
Claims priority, application Switzerland, July 1, 1964, 8,618/64
Int. Cl. C07g *7/02*
U.S. Cl. 195—66 6 Claims

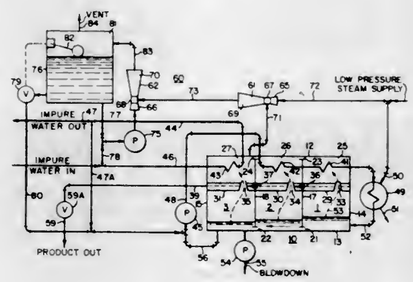
Method for purifying a crude urokinase solution which involves adding to a crude urokinase solution a water soluble acridine dye, such as 2-ethoxy-6,9-diamino acridine lactate until completion of precipitation, thereby precipitating all organic substances except urokinase and separating the precipitate from the thus purified urokinase solution.

3,468,761

STAGED VAPOR-LIQUID OPERATED EJECTOR ARRANGEMENT FOR MULTI-STAGE EVAPORATOR SYSTEM

Ernest F. Stalcup, Lansdowne, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Sept. 2, 1966, Ser. No. 576,964
Int. Cl. C02b *1/06*; B01d *3/06, 3/02*
U.S. Cl. 202—173 5 Claims



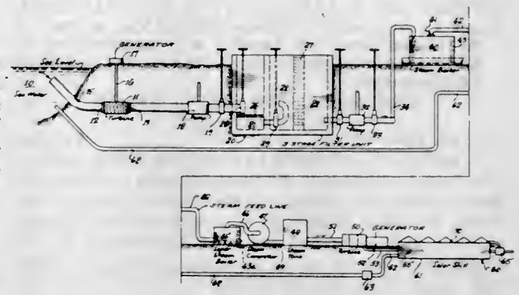
A staged ejector arrangement for a flash evaporator comprising a vapor actuated ejector having an intake portion connected to the evaporator and an exhaust portion connected to the suction chamber of an ejector actuated by feed liquid and exhausting into a tank or container for receiving and deaerating the feed liquid for the flash evaporator. Further, the feed liquid is preheated by action of the vapor contacting the liquid in the liquid actuated ejector, and by the work energy expended by a pump employed to pressurize and direct the liquid through the ejector.

3,468,762

DISTILLATION OF SEA WATER USING STEAM TURBINE ELECTRIC GENERATOR AND SOLAR STILL

Max P. Klitzsch, 2453 Alder St., Pomona, Calif. 91767

Filed June 9, 1965, Ser. No. 462,628
Int. Cl. C02b *1/06*; F01k *27/00*; B01d *3/00*
U.S. Cl. 202—186 3 Claims



An apparatus for the distillation of sea water comprising: a turbine means located below sea level and having an inlet into the ocean; electrical generator means being operatively coupled to the turbine, sea water discharged from the turbine passes through a filter unit and thence to a boiler for producing steam which drives a turbo-generator, the electric current generated is used to heat the boiler and steam from the turbo-generator is utilized to heat sea water in a solar still evaporator, the water vapor and steam produced being condensed and collected as condensate.

3,468,763

PURIFICATION OF TEREPHTHALONITRILE BY AZEOTROPIC DISTILLATION WITH ETHYLENE GLYCOL

Joseph Pugach, Bronx, N.Y., assignor to Halcon International, Inc., a corporation of Delaware

No Drawing. Filed June 21, 1966, Ser. No. 559,103
Int. Cl. B01d *3/36, 3/10, 9/02*
U.S. Cl. 203—48 4 Claims

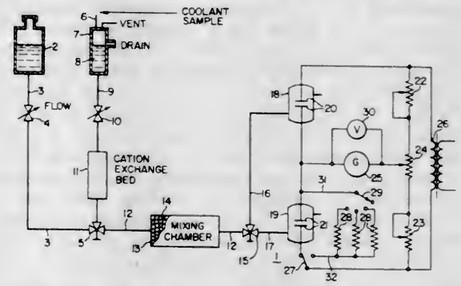
A process for purifying terephthalonitrile by distilling a mixture comprising terephthalonitrile and ethylene glycol, and separating said nitrile from said glycol.

3,468,764

METHOD AND APPARATUS FOR MEASURING THE CONCENTRATION OF BORON

Paul Cohen and Wilson D. Fletcher, Pittsburgh, Pa., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Jan. 28, 1966, Ser. No. 523,680
Int. Cl. B01k *3/00*
U.S. Cl. 204—1 8 Claims



An analyzer for determinirg the boron concentration in an aqueous solution of boron-containing material. The

analyzer has means for adding a polyhydroxyl compound to increase the electrical conductivity of the solution and means for controlling the solution temperature cell means for continuously measuring electrical conductivity of the solution and for comparing the conductivity of the solution with that of an established standard.

3,468,765
METHOD OF PLATING COPPER ON ALUMINUM
James C. McConnell, Wallops Island, Va., assignor to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration
Filed Aug. 4, 1966, Ser. No. 570,678
Int. Cl. C23b *5/20*
U.S. Cl. 204—33 **4 Claims**

A method of recovering an aluminum article having a thin copper plating with excellent adhesion characteristics thereon comprising degreasing the aluminum surface, anodizing the clean surface in a phosphoric acid solution, washing with water and live-entry transferring the wet aluminum substrate to an aqueous acid-copper plating tank under controlled conditions.

3,468,766
TREATMENT OF ALUMINUM
William C. Lang, Cypress, Calif., assignor, by mesne assignments, to McDonnell Douglas Corporation, Santa Monica, Calif., a corporation of Maryland
No Drawing. Filed Aug. 27, 1965, Ser. No. 483,360
Int. Cl. C23f *17/00;* **B32b** *15/20*
U.S. Cl. 204—35 **16 Claims**

A process of increasing the corrosion resistance of an aluminum surface by first anodizing in chromic acid; secondly coating the surface with a solution of an alkyl aryl polyethylene glycol such as octylphenoxy poly(ethyleneoxy) ethanol or nonylphenoxy poly(ethyleneoxy) ethanol; and thirdly treating the coated surface with a solution of a chromate.

3,468,767
PROCESS OF PRODUCING PERMANENTLY COLORED ALUMINUM
Richard N. Anderson, Rome, and Kenneth Howard Kabine, Newman, Ga., assignors to V. E. Anderson Mfg. Co., Owensboro, Ky., a corporation of Kentucky
No Drawing. Filed July 12, 1965, Ser. No. 471,433
Int. Cl. C23f *17/00, 5/00;* **C23b** *9/02*
U.S. Cl. 204—37 **19 Claims**

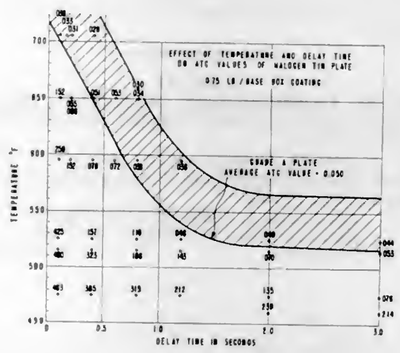
A process for permanently coloring aluminum comprising cleaning the aluminum by dipping the aluminum in a non-silicate cleaner water bath at a temperature of approximately 165° F. for a period of for example three minutes, rinsing the cleaned aluminum, anodizing the rinsed aluminum in a sulphuric acid-water bath at approximately 80° F., applying a potential between the aluminum as an anode and a cathode positioned in the sulphuric water bath to produce a current density of approximately twenty-four amperes per square foot for approximately fifteen minutes to form an oxide film on the aluminum having a thickness greater than .6 of a mil, rinsing the anodized aluminum and placing it in a ferric ammonium oxalate-water bath at approximately 165° F. for from three to ten minutes, rinsing the dyed aluminum and sealing it by dipping it in a boiling water bath.

The aluminum may be etched prior to anodizing to provide a wood-like texture thereon. Etching, if accomplished, may be by immersion in a sodium hydroxide-water bath at approximately 140° F. for between five and ten minutes. After being anodized, dyed and sealed the aluminum may be baked at a temperature of between 300° F. and 400° F. for between one and two hours to change the gold color to a permanent reddish brown wood-like color.

3,468,768
SURFACE TREATMENT OF STEEL ELECTROTINNING STOCK
Stewart E. Rauch, Jr., Bethlehem, Pa., assignor to Bethlehem Steel Corporation, a corporation of Delaware
No Drawing. Filed July 5, 1966, Ser. No. 562,483
Int. Cl. C23b *5/52, 5/04*
U.S. Cl. 204—37 **6 Claims**

In a method for producing tinplate having superior corrosion resistance, a cold rolled, annealed steel strip is pickled in a dilute aqueous solution of a mixture of specific amounts of nitric acid and hydrochloric acid for a short interval to condition the strip surface. The thus pickled strip is then electrotinned and the tinned surface flow brightened.

3,468,769
PROCESS FOR PRODUCING TIN PLATE OF HIGH CORROSION RESISTANCE
Donald A. Swalheim, Hockessin, and Robert W. Mackey, Wilmington, Del., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Continuation-in-part of application Ser. No. 317,462, Oct. 21, 1963. This application Mar. 15, 1967, Ser. No. 623,401
Int. Cl. C23b *5/52*
U.S. Cl. 204—37 **2 Claims**

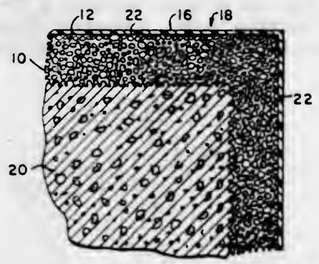


Tin plate of high corrosion resistance is produced by electrolytically depositing tin onto steel substrate, thereafter heating the plated substrate to a temperature between 520° F. and 722° F., maintaining the plated substrate at such temperature for a predetermined period of time, and thereafter rapidly quenching the heated substrate.

3,468,770
COATING OF ALUMINIUM AND/OR ALUMINIUM ALLOYS ON STEEL SURFACES
Tarun Kumar Ghose, Jadavpur University, Calcutta 32, India, and Ranendra Dutta, 28 Townshend Road, Calcutta 25, India
No Drawing. Filed Dec. 22, 1965, Ser. No. 515,716
Int. Cl. C23c *3/00;* **C23b** *7/00;* **C23f** *17/00*
U.S. Cl. 204—38 **14 Claims**

A flux composition for applying aluminium or aluminium alloy coatings to steel surfaces and a process for coating steel surfaces with aluminium or aluminium alloys and steel surfaces coated thereby.

3,468,771
POLYURETHANE FOAM STRUCTURE WITH POLYVINYL-CHLORIDE COATING
John Watson Pedlow, Chester, Pa. (% Quelcor, Inc., Paper Mill Road and Baltimore Pike, P.O. Box 33, Media, Pa. 19063)
Filed Apr. 12, 1966, Ser. No. 541,994
U.S. Cl. E04c *1/04, 1/40*
U.S. Cl. 52—309 **15 Claims**



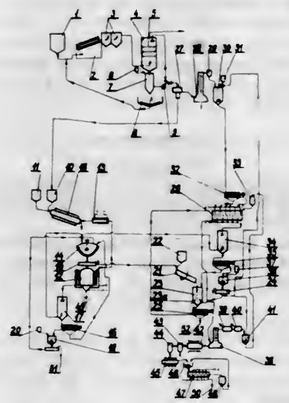
An extensively, open-celled polyurethane resilient foam skeleton is coated with cured polyvinyl-chloride. The coated foam also has an open-celled structure, for instance, which can be about 50 to 95% open. The foam is laminated to sheet polyvinyl-chloride and the resulting product can be anchored to various materials, for instance, concrete, which set below the decomposition temperature of the polyvinyl-chloride sheet-foamed laminant and such lower temperature setting materials penetrate the internal pores of the foam.

3,468,772
ANODISING TREATMENT FOR ALUMINIUM
Peter Geoffrey Sheasby, Banbury, Edward Percival Short, North Aston, and Roman Dominik Guminski, Banbury, England, assignors to Aluminium Laboratories Limited, Montreal, Quebec, Canada
No Drawing. Filed July 8, 1966, Ser. No. 563,691
Claims priority, application Great Britain, July 14, 1965, 29,940/65
Int. Cl. C23b *9/02*
U.S. Cl. 204—58 **6 Claims**

In procedure for producing coloured coatings on aluminium by anodising the aluminium in an oxalic acid solution, significantly deeper colours are obtained while providing an effective anodic oxide coating, by performing the anodic treatment with a pulsed direct current advantageously having stated characteristics, including defined values of the relative peak and means current density and of the pulse frequency, the pulses preferably being of approximately square wave form.

3,468,773
METHOD OF OBTAINING METALLIC GALLIUM FROM COMBUSTION GASES RESULTING FROM ANY KIND OF BLACK OR BROWN COAL COMBUSTION
Michal Ryczek, Ogrodowa 15/61, Krakow 28, Poland; Kornel Wesolowski, Goszczynskiego 24a, Warszawa, Poland; Franciszek Halota, Siersza 131, Poland; Boleslaw Bartoszek, Jordana 35, Katowice, Poland; Tadeusz Marcinow, Lenina 128, Siersza, Poland; Jan Niemiec, Grunwaldzka 299, Trzebinia, Poland; Zygmunt Tyszkowski, Trzebinia 165, Poland; Roman Szczerba, Elektrownia Turow w Turoszowie, Poland; Eugeniusz Kossowski, Mydlana 3, Chrzanow, Poland; Stanislaw Kaleta, Warynskiego 48, Myslachowice, Poland; Eugeniusz Szczerbowski, Grunwaldzka 229; and Mieczyslaw Cholewa, Grunwaldzka 262/4, both of Trzebinia, Poland; and Ryszard Nowak, 22 Stycznia 38, Siersza, Poland
Filed Aug. 9, 1966, Ser. No. 571,958
Int. Cl. C22d *1/00*
U.S. Cl. 204—105 **5 Claims**

Obtaining metallic gallium by combustion of mixture of coal containing organic gallium compounds and coal containing inorganic gallium compounds. The mixture

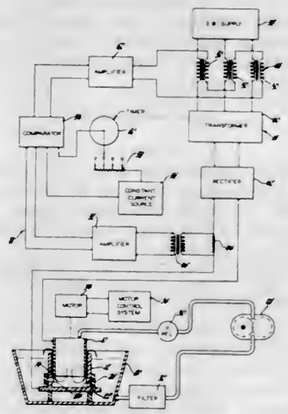


also contains organic iron compounds. After combustion the products are processed in steps including electrolysis to obtain metallic gallium deposit.

3,468,774
ELECTROLYTIC DESCALING OF TITANIUM AND ITS ALLOYS
Earl W. Kendall, San Diego, Calif., assignor to Rohr Corporation, Chula Vista, Calif., a corporation of California
No Drawing. Filed Dec. 9, 1966, Ser. No. 600,362
Int. Cl. C23b *1/06*
U.S. Cl. 204—141 **9 Claims**

1. The method of descaling an article formed of titanium and its alloys comprising the steps of immersing said article as an anode in an electrolytic bath and passing an electric current between said article and a cathode, said bath consisting essentially of hydrofluoric acid (48–50) and concentrated sulfuric dissolved in glacial acetic acid as the carrier.

3,468,775
ELECTROLYTIC STOCK REMOVAL AND DEBURRING METHOD
Harold W. Lanning, Inkster, and Alfred J. Williams, Jr., Berkley, Mich., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Sept. 29, 1964, Ser. No. 400,040
Int. Cl. B23p *1/00*
U.S. Cl. 204—143 **2 Claims**



Electrochemical machining method for providing a machining gap with current in controlled stages. The power

supply method incorporates a control system that initially causes the current to the gap to be progressively increased for a time adequate to burn away short circuit producing burrs on the workpiece. Next, the control system reduces the current to permit the workpiece to cool and then the control system increases the current to the level required to electrochemically machine the workpiece to a desired size.

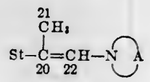
3,468,776

PHOTOSENSITIZED OXYGENATION PROCESS FOR PREPARING 20-KETOSTEROIDS FROM CORRESPONDING 22-ENAMINES

Joel E. Huber, Kalamazoo, Mich., assignor to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware

No Drawing. Filed June 16, 1967, Ser. No. 646,471
Int. Cl. B01j *1/10*
U.S. Cl. 204—158 **6 Claims**

This invention relates to a single-step process for the direct conversion, by photosensitized oxygenation, of steroid 22-enamines, i.e., steroid 20-(22)-ene-22-amines of the formula



I

to the corresponding 20-ketosteroids of the formula



II

wherein St-represents a 10,13,dimethyl cyclopentanoperhydrophenanthrene nucleus and

represents a secondary amine radical in which A represents the atoms necessary to complete two alkyl, hydroxyalkyl or aralkyl radicals or a heterocyclic ring system.

3,468,777

IRRADIATED INSOLUBLE AMYLOSE STARCH

Henry G. Schirmer, Spartanburg, S.C., assignor to W. R. Grace & Co., Duncan, S.C., a corporation of Connecticut

Filed May 14, 1965, Ser. No. 455,771
Int. Cl. C08b *1/00*
U.S. Cl. 204—160.1 **4 Claims**

This invention is directed to an irradiated starch with an increased insolubility and a high amylose content having at least about 20 percent insolubles in boiling water and 20 percent amylose and prepared by intimately contacting the starch with water to increase its moisture content and irradiating to a dosage of less than 10 megarads, all as further described herein.

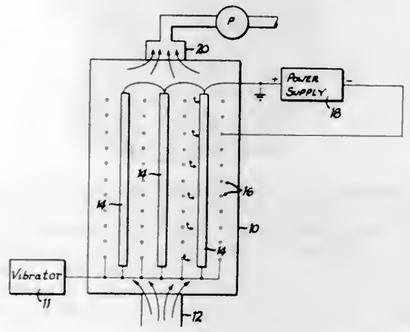
3,468,778

ELECTROSTATIC LIQUID FILTER

Gene Hirs, Birmingham, Kenneth W. MacKenzie, Detroit, and Alfred H. Stein, Southfield, Mich., assignors to Hydromation Engineering Company, Livonia, Mich., a corporation of Michigan

Filed Jan. 14, 1966, Ser. No. 520,689
Int. Cl. B01d *13/02;* **B01k** *3/04*
U.S. Cl. 204—180 **6 Claims**

A method and apparatus for electrostatically removing solids from a suspension of solids in a liquid of high dielectric strength. The method includes steps of flowing the solid-liquid dispersion along a flow path at least one boundary of which is defined by an elongated electrode, disposing in the flow path a plurality of point source electrodes spaced from each other along the flow path and also spaced from the elongated electrode, and applying an electric field to the electrodes to create a series of regions of high field strength through which particles in the dispersion pass successively, with the particles being displaced by the field toward the elongated electrode. Solid material is removed from the elongated electrode as by vibrating that electrode in the solid-liquid dispersion or another liquid. The apparatus includes a liquid container, at least one elongated electrode in the container having an extended surface, a plurality of point source electrodes in the container spaced in serial relation with



each other and substantially equidistant from the extended surface of the elongated electrode, means for producing an electric field between each point source electrode and the extended surface electrode, and an inlet and an outlet for the container for producing a flow of liquid in contact with the extended surface and serially contacting the point source electrodes to pass the liquid through successive regions of high field strength and cause solids to deposit from the liquid on the extended surface. The point source electrodes are preferably wires, and the elongated electrode is preferably a plate. A plurality of parallel plates and wires may be provided.

3,468,779

ELECTROCOATING PROCESS

William W. Slater and Lawrence E. Thow, Louisville, Ky., assignors to Celanese Coatings Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Mar. 19, 1965, Ser. No. 441,365
Int. Cl. C23b *13/00;* **B01k** *5/02*
U.S. Cl. 204—181 **2 Claims**

A process for electrocoating an aqueous dispersion of a coating-forming resin ester and a salted amine, said salted amine being the reaction product of a carboxylic acid having 1 to 8 carbon atoms and a tertiary amine in which the fatty carbon chain has from 12 to 24 carbon atoms.

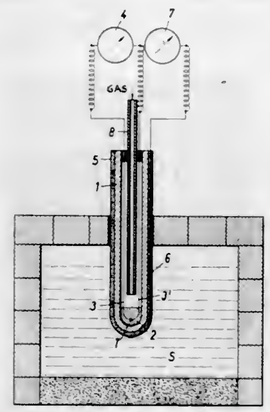
3,468,780

APPARATUS FOR DETERMINING THE OXYGEN CONTENT OF MOLTEN METAL

Wilhelm Anton Fischer, Ratingen, Germany, assignor to Gesellschaft zur Forderung der Eisenhuttentechnik m.b.H., Dusseldorf, Germany

Filed Apr. 4, 1966, Ser. No. 539,714
Claims priority, application Germany, Apr. 8, 1965, G 43,297
Int. Cl. B01k *3/00*
U.S. Cl. 204—195 **9 Claims**

Combination in apparatus for determining the oxygen content of molten metal includes a tubular container immersible in the molten metal, the tubular container being formed in part at least of stabilized zirconium oxide rendered impermeable to gas and having applied to its inner and outer surfaces a surface layer of zirconium oxide which is permeable to gas, means for introducing a reference substance to the container, a thermocouple incorporated in the inner bottom layer of zirconium oxide, means for measuring the temperature of the molten metal in which the container is immersible including a millivoltmeter and means electrically connecting the millivoltmeter to the thermocouple, the electrically connecting means comprising an inner electrode of a galvanic cell set up between the reference substance, the container and the melt, and having an outer electrode spaced from the inner electrode, the inner electrode terminating at the thermocouple, and a voltmeter electrically connected between the outer and inner electrodes for measuring the EMF of the galvanic cell.

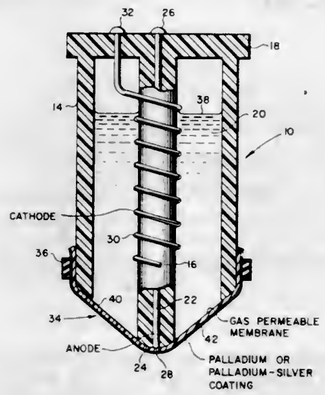


3,468,781

ELECTROCHEMICAL CELL WITH HYDROGEN PERMEABLE BARRIER

Daniel Patrick Lucero, Placentia, Calif., assignor to Beckman Instruments, Inc., a corporation of California

Filed June 17, 1966, Ser. No. 558,489
Int. Cl. B01k *3/10, 1/00*
U.S. Cl. 204—195 **7 Claims**



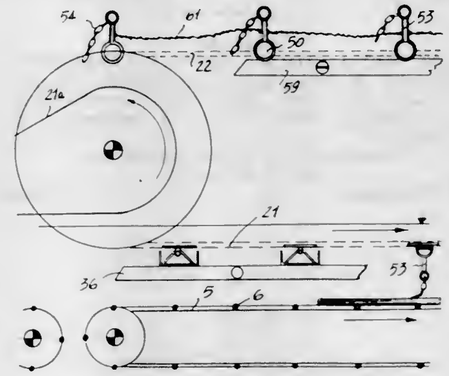
A polarographic cell for determining hydrogen comprising a pair of electrodes joined by an electrolyte and separated from the test medium by a hydrogen permeable barrier. The barrier comprises a gas permeable plastic membrane having a coating of palladium or silver-palladium alloy of a thickness no greater than about 500 A. Such barrier will pass hydrogen and not oxygen at relatively low temperatures.

3,468,782

MACHINE FOR HAVING GLASS PLATES ELECTROCHEMICALLY COPPER PLATED BY MEANS OF SOLUBLE ELECTRODES, IN THE MAKING OF MIRRORS

Luigi Bovone, Circonvallazione Stura, Ovada, Alessandria, Italy

Filed Oct. 12, 1965, Ser. No. 495,266
Claims priority, application Italy, Feb. 5, 1965, 978/65
Int. Cl. B65g *49/06;* **C23b** *5/68, 5/50*
U.S. Cl. 204—198 **7 Claims**



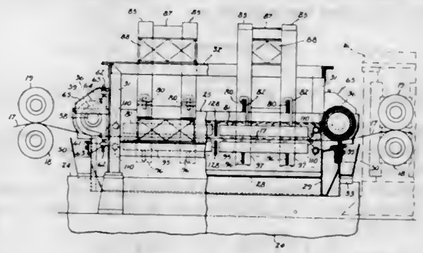
A machine for electrochemically depositing on one side on a glass plate, which has been previously coated with silver, a thin film of a metal such as copper. The machine is adapted to be used to the manufacture of mirrors. The electrolyte bath. The second conveyer means supports an electrode means forming an anode as well as a contact means which coacts with the silver-plated side of the glass plate to establish an electrical connection therewith, and by providing a suitable source of current to coact on the one hand with the electrode means carried by the second conveyer means and on the other hand with the contact means carried by the second conveyer means, an electric circuit is established resulting in conversion of the silver-plated side of the glass plate into a cathode so that a protective layer of a metal such as copper can be electrochemically deposited on the silver plating.

3,468,783

ELECTROPLATING APPARATUS

Richard C. Avellone, Mayfield Heights, Ohio, assignor to Republic Steel Corporation, Cleveland, Ohio, a corporation of New Jersey

Filed Mar. 8, 1965, Ser. No. 437,834
Int. Cl. C23b *5/58, 5/70*
U.S. Cl. 204—207 **13 Claims**



An electroplating cell for high speed continuous strip plating lines comprises a tray for holding the plating solu-

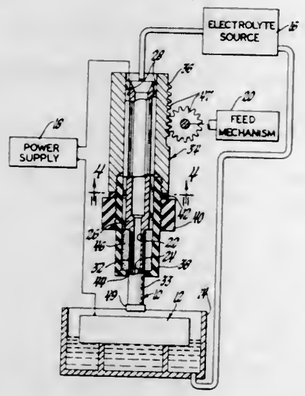
tion having end walls through which the strip passes. A pair of entry and exit dam members cooperate to hold the strip on a pass line as it travels through the tray and in conjunction with the end and side walls of the tray, contain the plating solution at a predetermined level above the pass line. At least one of the exit dam members comprises a resilient wiping strip in uniform contact across the width of the strip which serves to wipe the plating solution from a surface of the strip. A distributor tube submerged in the tray ahead of the wiping strip adjacent the pass line delivers jets of plating solution preferably counterflow to the direction of strip movement to agitate the plating solution which otherwise tends to be dragged out of the cell on the strip surface.

3,468,784

ELECTRICAL STOCK REMOVAL APPARATUS

Alexander H. Joyce, Detroit, and Antonio Pirrello, Lincoln Park, Mich., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Oct. 13, 1965, Ser. No. 495,468
Int. Cl. B23p *1/16*
U.S. Cl. 204—224 **8 Claims**



Electrochemical machining apparatus incorporating a hollow cylindrical cutting tool having a portion between the cutting tip and the shank coated with insulating material, a conductive core in the tip through which electrolyte can flow, external electrolyte passages in the periphery of the shank of the cutting tool and an enclosure surrounding these external passages. The enclosure includes a sleeve and a distributor which are interconnected to provide both a passage and an accumulator chamber for the electrolyte. The electrolyte then exits from the chamber by way of an opening in the distributor and in a direction and at a velocity that opposes and thereby reduces the velocity of the contaminated electrolyte which is ejected from the cavity at the surface of the workpiece.

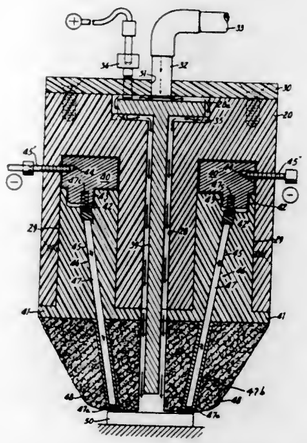
3,468,785

APPARATUS FOR ELECTROPLATING SELECTED AREAS

Joseph N. Polichette, South Farmingdale, N.Y., assignor to Photocircuits Corporation, Glen Cove, N.Y., a corporation of New York

Original application July 27, 1962, Ser. No. 212,820. Divided and this application June 21, 1966, Ser. No. 574,845
Int. Cl. C23b *5/72;* **B01k** *3/04*
U.S. Cl. 204—224 **6 Claims**

Electroplating techniques and apparatus are disclosed herein for electroplating surfaces such as printed circuit elements without the need for making the usual electrical connections between the surfaces and the potential source and for limiting corrosive and spurious current effects in areas adjacent the area being plated. A traversing plating head is provided which directs a stream of electrolyte to



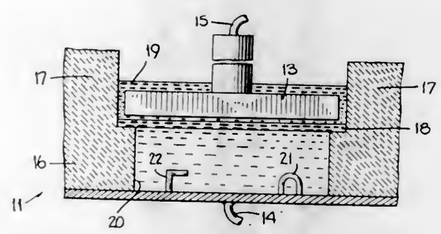
the area to be plated. The head includes a cathode structure which may be in the form of wire bristles adapted to selectively contact the surfaces to be plated and an anode structure located in the electrolyte circulating system so as to be contacted by the electrolyte. The electrode structure is arranged to confine the electrolyte.

3,468,786

FUSED BATH ELECTROLYTIC CELLS

George Gerald Day, New York, N.Y., assignor to Chlormetals Incorporated, a corporation of Delaware

Filed Apr. 12, 1966, Ser. No. 542,002
Int. Cl. C22d *1/04*
U.S. Cl. 204—243 **5 Claims**



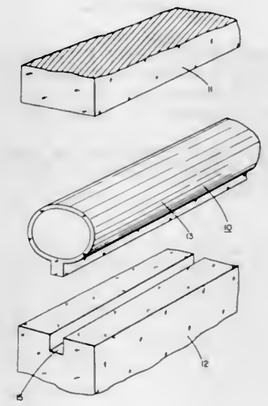
An improvement in the construction of horizontal electrolytic cells particularly adapted for the electrolysis of fused electrolyte salts floating on a flowable molten metal cathode, the improvement relating to a bottom structure comprising a metal base and a relatively thick refractory overlayer, such refractory layer having at least one recess extending fully through its thickness so as to permit direct contact between the metal base and molten cathode. The refractory overlayer is one characterized by having a low coefficient of heat transfer.

3,468,787

GRAPHITE ELECTRODES WITH DOUBLE-WALLED LOOP CURRENT LEAKAGE SEAL AND ELECTROLYTIC CELL THEREWITH

Gothe O. Westerlund, Vancouver, British Columbia, Canada, assignor to Chemech Engineering Ltd., Vancouver, British Columbia, Canada

Filed Aug. 31, 1967, Ser. No. 664,834
Claims priority, application Canada, June 27, 1967, 994,092
Int. Cl. B01k *3/04;* **C22d** *1/02*
U.S. Cl. 204—268 **29 Claims**



A new seal is provided according to this invention. The invention in one of its aspects includes the combination of at least two plate-like graphite electrodes which are stacked one upon the other. Between the two graphite electrodes is disposed a current leakage preventing seal. The seal is formed out of a thin walled hollow tube. The tube is formed of resiliently deformable electrically nonconductive thermoplastic material. Whent he seal is disposed between the two plate-like graphite electrodes, the weight of the stacked electrodes urges the tube into a collapsed condition in the form of a substantially straight double walled loop, the surfaces of the loop following the contours of the opposed graphite faces.

3,468,788

HYDROCRACKING PROCESS

Herbert F. Wilkinson, Fullerton, Calif., assignor to Union Oil Company of California, Los Angeles, Calif., a corporation of California

Filed Aug. 30, 1966, Ser. No. 576,086
Int. Cl. C10g *23/02, 23/00*
U.S. Cl. 208—89 **12 Claims**

1. In a catalytic hydrofining-hydrocracking system, a process for converting a mineral oil feedstock boiling above the gasoline range alternately to a relatively aromatic, predominantly gasoline product, and a relatively non-aromatic, predominantly middle distillate product boiling at least partially above the gasoline range, which comprises:

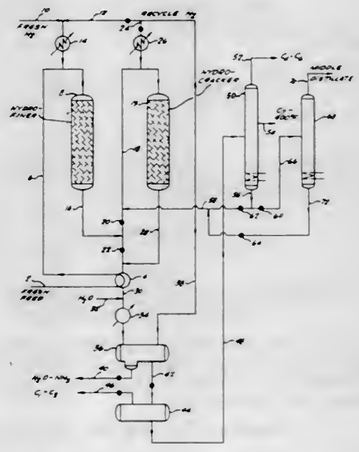
(1) passing said feedstock plus added hydrogen through a catalytic hydrofining zone at an elevated temperature and pressure to effect decomposition of organic sulfur and nitrogen compounds contained therein;

(2) in a periodic gasoline-producing cycle, passing effluent from said hydrofining zone, without intervening purification to remove ammonia and hydrogen sulfide, through a catalytic hydrocracking zone at an elevated temperature and pressure to effect about 30–80 volume percent conversion per pass of said feedstock to gasoline-boiling-range material, thereby producing a first gasoline-rich hydrocracker effluent, and recovering a predominantly gasoline product therefrom, while recycling higher boiling material to said hydrocracking zone; and

(3) in an alternating periodic middle distillate-producing cycle,

(a) blending the effluent from said hydrofining zone with a second relatively gasoline-lean effluent produced from said hydrocracking zone as hereinafter defined,

(b) washing the resulting blend to remove ammonia (and/or hydrogen sulfide) therefrom,



(c) fractionating the washed blend to recover a minor gasoline product, a major middle distillate product, and an unconverted oil boiling above said middle distillate product, and

(d) passing said unconverted oil plus hydrogen through said catalytic hydrocracking zone at an elevated pressure and a relatively low temperature controlled and correlated with liquid hourly space velocity to give a substantially lower conversion per pass to gasoline than in step (2), and to provide said hydrocracking zone effluent for step (3)(a) above;

(4) the catalyst employed in said hydrocracking zone being the same for each of steps (2) and (3).

3,468,789

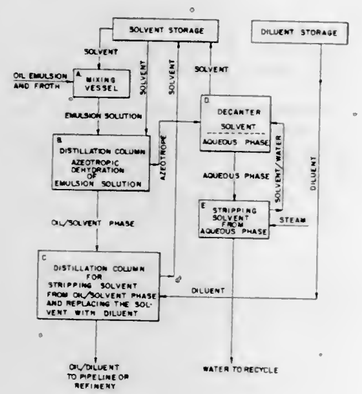
PROCESSING OF VISCOUS OIL EMULSIONS

Leslie L. Balassa, Creighton Lane, Scarborough, N.Y. 10510

Filed Apr. 22, 1965, Ser. No. 450,057
Int. Cl. C10g *33/04*
U.S. Cl. 208—188 **24 Claims**

There is described processes for obtaining an oil product substantially free of water and mineral matter from water-containing oil emulsions which comprises contacting the oil emulsion with a solvent which is a solvent for the oil and the petroleum components therein and azeotropically dehydrating the emulsion to remove the water therefrom as an azeotropic distillate. The process also provides for recovery of oil from any oil-wet mineral matter which separates out from the dehydrated oil product as well as the recovery of any oil in the aqueous

phase of the oil emulsion. The process has particular application in the treatment of oil emulsions obtained



from bituminous oil-bearing sources such as those derived from the Athabasca oil fields.

3,468,790

PROCESS FOR METAL REMOVAL FROM PETROLEUM RESIDUES

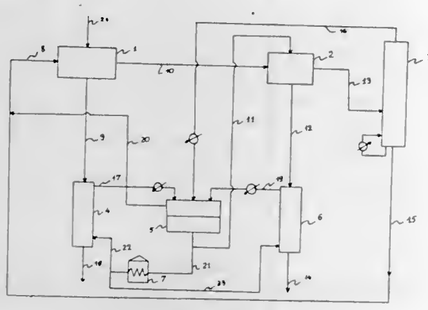
André Deschamps, Chatou, and Philippe Renault, Neuilly-sur-Seine, France, assignors to Institut Francais du Petrole des Carburants et Lubrifiants, Rueil-Malmaison, Hauts-de-Seine, France

Filed Mar. 11, 1968, Ser. No. 712,088

Claims priority, application France, Mar. 9, 1967, 98,207

Int. Cl. C10g *21/00*

U.S. Cl. 208—251 **23 Claims**



The present disclosure is directed to a process of demetalization of a petroleum fraction having a boiling point higher than about 250° C., which comprises contacting said petroleum fraction in the liquid phase with at least one member selected from the group consisting of a couple solvent-antisolvent wherein the solvent is an ether and the antisolvent includes water, alcohols and polyols, or a bifunctional organic compound containing at least one ether function and at least alcohol function in the molecule. The metal impuirties removed by the present process include, for example, nickel and vanadium.

3,468,791

ADSORPTION OF NAPHTHENES WITH A STRONTIUM TYPE X MOLECULAR SIEVE

William R. Epperly, New Providence, Chester L. Read, Westfield, and Maurice G. Lorenz, North Plainfield, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Filed May 14, 1965, Ser. No. 455,991

Int. Cl. C10g *25/04*

U.S. Cl. 208—310 **1 Claim**

A strontium type X molecular sieve is used to separate naphthenes, and particularly two- and three-ring naphthenes from admixtures with at least one constituent from the group consisting of isoparaffins and normal paraffins.

3,468,792

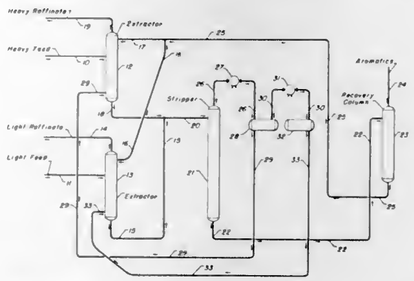
SIMULTANEOUS SOLVENT EXTRACTION OF A LIGHT AND HEAVY FRACTION

Kenneth D. Uitti, Bensenville, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

Filed Aug. 17, 1967, Ser. No. 661,272

Int. Cl. C10g *21/22, 21/02;* **C07c** *7/10*

U.S. Cl. 208—312 **7 Claims**



Process for separating and recovering aromatic hydrocarbons, such as benzene, from two different feedstock mixtures via a dual zone solvent extraction technique. The preferred solvent comprises sulfolane and the extraction zones are refluxed individually with specific non-aromatic hydrocarbon streams.

3,468,793

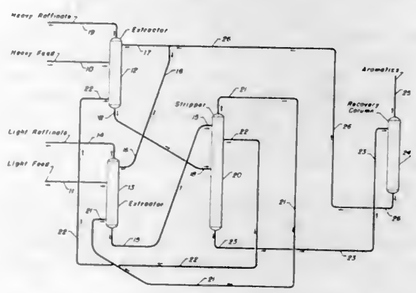
SIMULTANEOUS SOLVENT EXTRACTION OF A LIGHT AND HEAVY FRACTION

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Filed Aug. 17, 1967, Ser. No. 661,273

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U.S. Cl. 208—312 **7 Claims**



Process for separating and recovering aromatic hydrocarbons, such as benzene, from two different feedstock mixtures via a dual zone solvent extraction technique.

The preferred solvent comprises sulfolane and the extraction zones are refluxed individually with specific non-aromatic hydrocarbon streams.

3,468,794

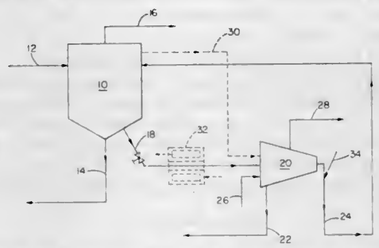
ANAEROBIC DIGESTION PROCESS

Clifford Leonard Amero, East Walpole, Mass., assignor to Bird Machine Company, South Walpole, Mass., a corporation of Massachusetts

Filed Feb. 23, 1968, Ser. No. 707,618

Int. Cl. C02c *1/14*

U.S. Cl. 210—4 **15 Claims**



Process for improving sludge digestion in anaerobic digesters. Sludge is withdrawn from a digester, centrifuged to remove a fraction of the mother liquor low in solids and acidic, the remainder being returned for further digestion usually to the same digester. By replacing the removed liquor with less acid liquor and by suitably regulating the process undesired acid build-up in the digester is minimized. By selectively utilizing as the source of replacement water raw sludge or water essentially free of solids, the solids consistency in the digester is increased or maintained as desired. By a like centrifuging operation the scum layer which forms at the top of the digester contents is broken down and returned as a manageable slurry.

3,468,795

PROCESS AND PLANT FOR BIOLOGICAL PURIFICATION OF WASTE WATER AND SEWAGE

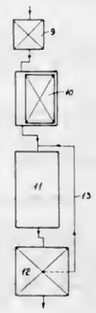
Jorgen S. Bye-Jorgensen, Humblebaek, and Gunnar H. Larsen, Rungsted, Denmark, assignors to I. Kruger A/S, Copenhagen, Denmark, a firm

Filed Mar. 15, 1968, Ser. No. 713,363

Claims priority, application Denmark, Mar. 17, 1967, 1,409/67, 1,410/67

Int. Cl. C02c *1/10*

U.S. Cl. 210—7 **3 Claims**



A contact aerator used for purification of sewage or industrial waste water is provided with air admission and distributing means working in a space outside the contact bed, the water thus aerated being circulated downwardly through the contact bed which has been found effective in preventing clogging of the bed by the coat of microorganisms being formed at a rate superior to the rate in which the said coating can be released and carried forth with the water. Such contact aerators can be advantageously used as a pre-stage of purification prior to treatment by the aerated sludge-process, provided that the sludge formed in the contact aerator and carried forth with the water leaving the said aerator is led directly to the aerated sludge-process. This makes the aerated sludge recirculating in the latter process more concentrated and renders the process in a better position to resist the influence of shock-loads and of variations in the contents of industrial waste.

3,468,796

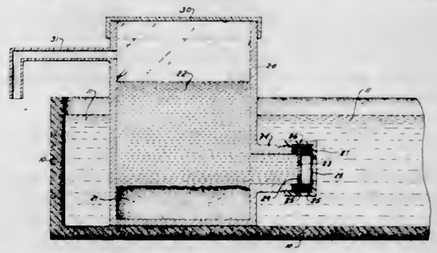
CHEMICAL FEED METHODS AND APPARATUS

Charles A. Noll and Luciano J. La Salvia, Philadelphia, Pa., assignors to Betz Laboratories, Inc., Trevose, Pa., a corporation of Pennsylvania

Filed Oct. 13, 1967, Ser. No. 675,224

Int. Cl. B01d *13/00*

U.S. Cl. 210—22 **14 Claims**



Methods and apparatus for dispensing chemicals to liquid media at a relatively uniform and constant rate. Such dispensing or feeding is by means of the diffusion of the chemicals from a solution, through a membrane permeable in respect to the chemical, and into the liquid to be treated.

3,468,797

PICKLE LIQUOR DISPOSAL

Clyde B. Myers, Mentor, Ohio, assignor to Diamond Shamrock Corporation, Cleveland, Ohio, a corporation of Delaware

No Drawing. Filed Mar. 28, 1968, Ser. No. 717,041

Int. Cl. C02b *1/18*

U.S. Cl. 210—42 **2 Claims**

Spent hydrochloric acid pickle liquors, especially those liquors which contain iron, may be disposed of in an efficient and economical manner by reacting these liquors with a waste material, which waste material is formed primarily from the discharge of an ammonia-soda plant. In this manner the iron is substantially completely removed from the liquor and therefore does not enter the surrounding watershed.

3,468,798

ASHLESS DISPERSANT-INHIBITORS AND PETROLEUM HYDROCARBONS CONTAINING THE SAME

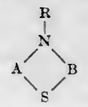
Jerome Panzer, Roselle Park, Union, N.J., assignor to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Filed Sept. 26, 1966, Ser. No. 581,685

Int. Cl. C10m *3/32;* **C10l** *1/24*

U.S. Cl. 252—47 **7 Claims**

Ashless dispersants, for normally liquid hydrocarbons, are novel thiazines of the formula:



wherein R is selected from the group consisting of hydrogen, C_{40}–C_{250} alkenyl and C_{40}–C_{250} alkyl, wherein A and B are each selected from the group consisting of a benzene ring, a naphthalene ring, an R substituted benzene ring, an R substituted naphthalene ring, and R'NH substituted benzene ring, and R'NH substituted naphthalene ring, wherein said N and S are each attached to adjacent carbon atoms of A and B, at least one R being said alkenyl or said alkyl, and R' being hydrogen or a phenyl radical.

3,468,799

PIEZOELECTRIC CERAMIC MATERIALS

Kazunobu Kurihara, Noboru Ichinose, Hirotaka Yokoyama, and Katsunori Yokoyama, Yokohama-shi, Japan, assignors to Tokyo Shibaura Electric Co., Ltd., Kawasaki-shi, Japan, a corporation of Japan

Filed Oct. 25, 1967, Ser. No. 678,009
Claims priority, application Japan, Oct. 28, 1966, 41/70,670
Int. Cl. C04b *35/48, 35/46*
U.S. Cl. 252—62.9 **2 Claims**

A piezoelectric ceramic material consisting of 40 to 50 mol percent of $PbTiO_3$, 0.5 to 6 mol percent of a compound expressed by a general formula

$$Sr(MeNb)_{0.5}O_3$$

where Me being an element selected from the group consisting of In, Y, La, Nd, Sm, Eu, Gd, Tb, Dy, Ho, Er, Tm, Yb and Lu, and the remainder of $PbZrO_3$. The material is characterised by its high electro-mechanical coupling coefficient of more than 40% and a high bulk density of more than 7.5 g./cm.^{3}.

3,468,800

PIEZOELECTRIC CERAMIC MATERIALS

Katsunori Yokoyama, Noboru Ichinose, and Yoshikazu Tanno, Yokohama-shi, Japan, assignors to Tokyo Shibaura Electric Co., Ltd., Kawasaki-shi, Japan, a corporation of Japan

Filed Dec. 20, 1967, Ser. No. 692,107
Claims priority, application Japan, June 12, 1967, 42/37,153
Int. Cl. C04b *35/46, 35/48*
U.S. Cl. 252—62.9 **2 Claims**

A piezoelectric ceramic material consisting of 44.0 to 50.0 mol percent of $PbTiO_3$, 0.5 to 6.0 mol percent of a compound represented by the general formula

$$Pb(MeNb)_{0.5}O_3$$

where Me being an element selected from the group consisting of In, Y, La, Nd, Sm, Eu, Gd, Tb, Dy, Ho, Er, Tm, Yb and Lu, and the remainder of $PbZrO_3$. The material has a high electromechanical coupling coefficient of more than 40% suitable for various applications such as an electromechanical transducer.

3,468,801

SYNTHESIS OF GARNET AT HIGH PRESSURES

Wayne D. Wilson, 2000 Wallace Ave., Silver Spring, Md. 20902, and Hubert B. Hall, 716 Somerset Place, Hyattsville, Md. 20783

Filed Jan. 21, 1966, Ser. No. 522.329
Int. Cl. B01j *17/36;* **C04b** *35/26*
U.S. Cl. 252—62.58 **23 Claims**

A method for preparing garnet crystal of the formula X_3Z_2 $(SiO_4)_3$, wherein X is Mg^{+2}, Fe^{+2}, Mn^{+2}, or Ca^{+2} and Z is Al^{+3}, Fe^{+3} or Cr^{+3} is disclosed. This method includes the steps of melting and solidifying the constituent oxides of garnet in their proper proportions at temperatures and pressures at which the garnet is stable.

3,468,802

CORROSION INHIBITED HYDRAULIC FLUIDS

Donald H. Nail, Los Angeles, Calif., assignor, by mesne assignments, to McDonnell Douglas Corporation, Santa Monica, Calif., a corporation of Maryland

No Drawing. Filed Nov. 24, 1965, Ser. No. 509,617
The portion of the term of the patent subsequent to July 18, 1984, has been disclaimed
Int. Cl. C10m *3/40;* **C07c** *119/00*
U.S. Cl. 252—78 **16 Claims**

A novel hydraulic fluid composition consisting essentially of an organic phosphate, e.g., dialkyl phenyl phosphates, alkyl diaryl phosphates, triaryl phosphates and trialkyl phosphates, and a small amount of an amine inhibitor additive which composition is non-corrosive to the metals, copper, cadmium plated iron and magnesium. Process for reducing corrosion of the above named metals by the above named organic phosphates by incorporating therein small amounts of an amine inhibitor additive. Thus, dibutyl phenyl phosphate and 0.5% of N,N',N'', N'''-tetra-salicylidene-tetra(amino-methyl) methane was noncorrosive to copper, cadmium plated iron and magnesium over extensive periods at elevated temperatures.

3,468,803

DISHWASHING COMPOSITIONS

Kenneth W. Knapp, Palo Alto, Calif., and John S. Thompson, Princeton Junction, N.J., assignors to FMC Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Apr. 14, 1966, Ser. No. 542,449
Int. Cl. C11d *3/48;* **A61l** *13/00*
U.S. Cl. 252—106 **10 Claims**

Germicidally active dishwashing compositions containing chlorinated trisodium phosphate, a low foaming nonionic surfactant and sodium silicate are rendered noncorrosive to silverware by incorporation of cyanuric acid and/or alkali metal and alkaline earth metal salts of cyanuric acid.

3,468,804

SILVER CLEANING COMPOSITION

Kenneth E. Perry, Wellesley, Mass., assignor to Winfield Brooks Company, Inc., Woburn, Mass., a corporation of Massachusetts

No Drawing. Filed Mar. 13, 1964, Ser. No. 351,840
Int. Cl. C23g *1/02;* **C11d** *7/50*
U.S. Cl. 252—143 **7 Claims**

A silver cleaning composition consisting essentially of water, sulfuric acid, thiourea and a substantially water insoluble, cationic fatty aliphatic polyamine having a terminal fatty aliphatic group of between 8 and 20 carbon atoms attached to an amino nitrogen. A preferred polyamine is

$$RN-\underset{H}{\overset{H}{C}}-\underset{H}{\overset{H}{C}}-\overset{H}{\underset{H}{C}}-NH_2,$$

where R is the aforesaid aliphatic group. A substantially water insoluble amide or salt of the polyamine may be used in place of the polyamine. However, the polyamine is preferred.

3,468,805

DETERGENT COMPOSITION

Richard A. Grifo, Easton, Pa., and John M. Walts, Clark, and Leslie M. Schenck, Mountainside, N.J., assignors to GAF Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Oct. 22, 1965, Ser. No. 502,386
Int. Cl. C11d *1/46*
U.S. Cl. 252—152 **4 Claims**

This document describes a biodegradable detergent composition containing a mixture of soluble sulfate half-esters of acyclic secondary alcohols and soluble sulfate half-esters of acyclic secondary alcohol alkylene oxide adducts.

3,468,806

ALKALI METAL GENERATOR

Andreas Niewold, Horseheads, N.Y., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Dec. 6, 1965, Ser. No. 511,600
Int. Cl. H01k *1/56;* **C09k** *1/00*
U.S. Cl. 252—181.4 **1 Claim**

An alkali generator comprising the addition of a portion of a gettering material such as tantalum to a mixture of an alkali chromate, aluminum and tugsten or a mixture of an alkali chromate and silicon to generate copious quantities of the alkali metal without evolving gaseous contaminants.

3,468,807

ALKALI METAL GENERATOR

Clayton D. Spangenberg, Horseheads, N.Y., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Nov. 19, 1965, Ser. No. 508,770
Int. Cl. C09k *3/00;* **C22b** *27/00;* **H01j** *39/22*
U.S. Cl. 252—181.4 **1 Claim**

An alkali generator including a portion of boron added to a mixture of an alkali chromate in combination with either aluminum and tungsten or silicon. The addition of an amount of boron in the approximate range between 0.1% and 10% by weight of the constituents of the generator will increase considerably the quantity of alkali metal produced.

3,468,808

PRODUCTION OF HIGH PURITY RADIOACTIVE TECHNETIUM-99m

Hirofumi Arino, Suffern, N.Y., assignor to Union Carbide Corporation, a corporation of New York

No Drawing. Filed June 16, 1967, Ser. No. 646,453
Int. Cl. C09k *3/00*
U.S. Cl. 252—301.1 **11 Claims**

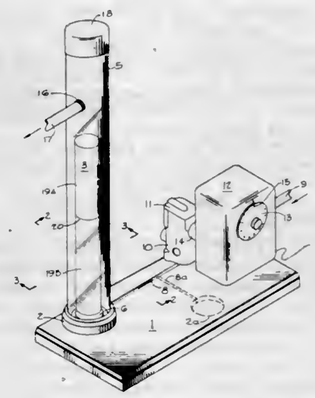
Pure technetium-99m is obtained by a process which comprises selectively extracting technetium-99m from a slurry of its radioactive parent, molybdenum-99, deposited on oxidized, hydrous zirconium oxide.

3,468,809

METHOD AND APPARATUS FOR DISSOLVING A SLIGHTLY SOLUBLE SUBSTANCE IN A LIQUID

Leon M. Bloom, Atlanta, Ga., assignor to Bio-Lab, Inc., a corporation of Georgia

Filed Apr. 24, 1967, Ser. No. 633,249
Int. Cl. E03c *1/046;* **G04c** *23/08*
U.S. Cl. 137—1 **8 Claims**



A method and apparatus for maintaining a desired concentration of a slightly soluble substance in a liquid comprises submerging an additive in solid form in a quantity of liquid in an accumulation chamber for an interval of time and thereafter expelling the liquid from the chamber at the end of the time interval and subjecting the additive remaining to a continuous flow of liquid for a subsequent time interval and repeating the steps cyclically.

3,468,810

METHOD OF MAKING TERBIUM ACTIVATED ALKALINE EARTH SILICATE PHOSPHORS

Hideo Mizuno, Takatsuki-shi, Japan, assignor to Matsushita Electronics Corporation, Osaka, Japan, a corporation of Japan

Filed Mar. 21, 1966, Ser. No. 536,098
Claims priority, application Japan, Mar. 26, 1965, 40/17,955
Int. Cl. C09k *1/54*
U.S. Cl. 252—301.4 **21 Claims**

A method of preparing terbium-activated phosphors of alkaline-earth silicates having improved properties from the standpoint of brightness and freedom of coloring due to the presence of free terbium oxide, by adding boric acid in the firing process as a flux in an amount of 0.02 to 0.06 mol of boric acid per mol of alkaline-earth silicate.

3,468,811

METHOD OF PRODUCING LUMINESCENT ALKALINE EARTH HALOPHOSPHATES

Jan Lourens Ouweltjes, Willem Lambertus Wanmaker, and Dragutin Radielovic, all of Emmasingel, Eindhoven, Netherlands

No Drawing. Filed July 13, 1966, Ser. No. 564,744
Claims priority, application Netherlands, Aug. 30, 1965, 6509868
Int. Cl. C09k *1/36*
U.S. Cl. 252—301.4 **2 Claims**

A trivalent antimony activated trivalent alkaline earth halophosphate luminescent material having the apatite structure is prepared by first forming the apatite structure and then heating a mixture of the apatite with antimony oxychloride.

3,468,812

METHODS OF PREPARING AN ALKALINE EARTH HALOPHOSPHATE

Willem Lambertus Wanmaker, Dragutin Radielovic, and Age Hylke Hoekstra, Emmasingel, Eindhoven, Netherlands, assignors, by mesne assignments, to U.S. Philips Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed July 13, 1966, Ser. No. 564,727
Claims priority, application Netherlands, July 24, 1965, 6509624
Int. Cl. C09k *1/36*
U.S. Cl. 252—301.6 **6 Claims**

In preparing antimony activated alkaline earth halophosphate phosphors, the antimony is introduced into the reaction mixture as an antimonite of either an alkaline earth metal, cadmium, or manganese.

3,468,813

METHOD OF PRODUCING ACID SILICA SOLS

Morris Mindick, Claredon Hills, and Lewis E. Reven, La Grange Park, Ill., assignors to Nalco Chemical Company, Chicago, Ill., a corporation of Delaware

No Drawing. Filed Sept. 13, 1965, Ser. No. 487,058
Int. Cl. B01j *13/00*
U.S. Cl. 252—313 **2 Claims**

This invention is concerned with producing concentrated silica sols by a process comprising passing a concentrated alkali metal silicate solution through a bed of hydrogen form cation exchange resin at a reduced temperature and a high flow rate.

3,468,814
SELF-PROPELLED AEROSOL COMPOSITION AND METHOD OF USING SAME TO COAT PLATES USEFUL IN THIN-LAYER CHROMATOGRAPHY
Paul D. Dernier, Murray Hill, and Henry Frankel, Raritan, N.J., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York
No Drawing. Filed Feb. 21, 1966, Ser. No. 528,802
Int. Cl. B01d *15/08;* **B01j** *1/00;* **C09d** *5/00*
U.S. Cl. 252—408 **18 Claims**

This application discloses aerosol compositions for use in preparing thin-layer chromatography plates. The compositions broadly comprise an adsorbent, a dispersion medium, and a propellant. The adsorbent used is silica gel, which is present in the range from about 10% to about 30% by weight. The dispersion medium used preferably comprises a mixture of about equal proportions of low polar and high polar solvents and is present in the compositions in the amount of from about 30% to about 60% by weight. A liquefied gaseous propellant is used and is present in the amount from about 25% to about 55% by weight. An example of a preferred aerosol composition is 20% by weight silica gel adsorbent, 40% by weight of a mixture of equal parts of toluene and ethyl acetate as a dispersion medium and 40% by weight dichlorodifluoromethane as a propellant.

3,468,815
EXTENDED ZEOLITIC STRUCTURES
Edward L. Cole, Fishkill, Edwin C. Knowles, Poughkeepsie, and Eugene E. Sensel, Beacon, N.Y., assignors to Texaco Inc., New York, N.Y., a corporation of Delaware
No Drawing. Filed Sept. 11, 1967, Ser. No. 666,939
Int. Cl. C01b *33/28;* **B01j** *11/46*
U.S. Cl. 252—455 **11 Claims**

The zeolitic structures are composed of a support, a layer of alumina thereon and a layer of crystalline aluminosilicate zeolite formed in situ on and from the alumina layer. The properties of the structures render it applicable to hydrocarbon separation and conversion processes including hydrogenation of olefin, hydrocracking of petroleum fractions, catalytic cracking of gas oils, isomerization of paraffins, dehydrogenation of paraffins, hydrofining of lubricating oils, desulfurization of residue and numerous oxidation processes.

3,468,816
METHOD OF PURIFYING AN IMPURE QUATERNARY AMMONIUM SALT BY ADDITION OF AN EPOXIDE
William H. Thompson, Downers Grove, and Edward G. Ballweber, Chicago, Ill., assignors to Nalco Chemical Company, Chicago, Ill., a corporation of Delaware
No Drawing. Filed July 24, 1964, Ser. No. 385,050
Int. Cl. C08g *30/08;* **C07c** *91/26*
U.S. Cl. 260—2 **3 Claims**

Impure quaternary ammonium compounds are purified by reacting them with certain epoxides. This reduces any amine contaminants whereby the impure quaternary ammonium compound contains only quaternary ammonium salts.

3,468,817
CRYSTALLINE POLYMERS OF PROPYLENE OXIDE
Henry L. Hsieh, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
No Drawing. Filed June 7, 1965, Ser. No. 462,102
Int. Cl. C08g *23/14, 23/06*
U.S. Cl. 260—2 **8 Claims**

1,2-epoxy propane is polymerized in the presence of a catalyst system formed by mixing an organoaluminum compound and a vanadium-containing compound. The polymer product has increased crystallinity when the polymerization is carried out in the presence of dicyclopentadiene. These polymers can be used as sizes and vehicles in the textile and paint industries, in the preparation of films, and in the fabrication of various shaped articles.

3,468,818
POLYMERS AND PROCESS OF PREPARATION
Kenneth G. Phillips, Berwyn, Ill., assignor to Nalco Chemical Company, Chicago, Ill., a corporation of Delaware
No Drawing. Filed Aug. 1, 1966, Ser. No. 569,090
Int. Cl. C08g *33/08*
U.S. Cl. 260—2 **15 Claims**

High molecular weight water soluble polymers are prepared by polymerizing in the presence of an acidic catalyst a compound from the group consisting of ethyleneimine and monomeric N-substituted ethyleneimines with a polydiaziridinyl compound containing hydrolytically stable linkages between nitrogen and another element and stopping the reaction short of gel formation. These compounds are especially useful as coagulants and for a wide variety of other purposes.

3,468,819
PROCESS FOR PRODUCING CELLULAR POLYURETHANES, USING ALKYL OR ARYL ACID PHOSPHATES
John F. Szabat, Pittsburgh, Pa., assignor to Mobay Chemical Company, Pittsburgh, Pa., a corporation of Delaware
No Drawing. Filed Nov. 16, 1964, Ser. No. 411,573
Int. Cl. C08g *22/16, 22/34*
U.S. Cl. 260—2.5 **8 Claims**

A process for preparing cellular polyurethane plastics based on a mixture of 5 to 40% by weight of a tertiary nitrogen containing polyol with a polyol which is free of tertiary nitrogen by reaction thereof with an organic polyisocyanate in the presence of a blowing agent, an alkyl acid phosphate and hydrolyzable chlorides. The acid phosphate must be present in an amount in the range of 0.2% to 2% by weight based on the weight of the organic polyisocyanate and there must be 0.01% to 1% by weight of hydrolyzable chloride. The amounts of both the alkyl acid phosphate and the hydrolyzable chloride combined must be at least 0.75% by weight based on the weight of the organic polyisocyanate.

3,468,820
PRODUCTION OF PARTICULATE EXPANDABLE STYRENE POLYMERS
Karl Buchholz, Ludwigshafen (Rhine), Erhard Stahnecker, Ziegelhausen, and Johannes Grohmann and Rolf Moeller, Ludwigshafen (Rhine), Germany, assignors to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen am Rhine, Germany
No Drawing. Filed Jan. 10, 1966, Ser. No. 519,439
Claims priority, application Germany, Jan. 16, 1965, B 80,144
Int. Cl. C08f *1/11, 7/04, 19/02*
U.S. Cl. 260—2.5 **8 Claims**

Particulate expanded styrene polymers which are capable of being processed into foam plastics having a finely cellular structure are prepared by polymerizing styrene with or without any other olefinically unsaturated monomeric compounds in aqueous suspension in the presence of an expanding agent and in the presence of 0.001 to 1% by weight (on the monomers) of a water insoluble high molecular weight polymer of a vinyl ester, vinyl ether, acrylic ester, or methacrylic ester which will dissolve in the monomers but is not homogeneously miscible with the polymer obtained.

3,468,821
SPONGE BALLS AND THEIR MANUFACTURE
Kenneth R. Behrendsen, Ashland, Ohio, assignor to Eagle Rubber Co., Inc., a corporation
No Drawing. Filed Apr. 11, 1966, Ser. No. 547,067
Int. Cl. C08d *13/10;* **A63b** *37/00*
U.S. Cl. 260—2.5 **2 Claims**

The invention relates to a sponge ball of pre-masticated vulcanized linear polyisoprene having a density of 21 to 32 lbs. per cubic foot and a rebound of at least 65 percent, and the process of making it.

3,468,822
URETHANE FOAMS CONTAINING WOOD TARS OR OXYALKYLATED WOOD TARS
Marco Wismer, Gibsonia, Herman P. Doerge, Verona, and Paul R. Mosso, Natrona Heights, Pa., assignors to PPG Industries, Inc., Pittsburgh, Pa., a corporation of Pennsylvania
No Drawing. Continuation-in-part of application Ser. No. 385,780, July 28, 1964. This application May 29, 1967, Ser. No. 642,221
Int. Cl. C08g *51/34, 22/44, 41/00*
U.S. Cl. 260—2.5 **7 Claims**

This invention relates to novel polyurethane resins and novel hydroxyl-containing resins prepared from wood tars. In particular, this invention pertains to the preparation of polyurethane foams from a wood tar having a hydroxyl number of about 40 to about 300 and from the oxyalkylation products of said wood tars. More particularly, this invention relates to the preparation of novel rigid polyurethane foams having excellent water vapor transmission resistance.

3,468,823
MALEIC INTERPOLYMER-STARCH-ROSIN SIZES
Paul R. Graham and August F. Ottinger, St. Louis, Mo., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware
No Drawing. Filed June 14, 1965, Ser. No. 463,891
Int. Cl. C08b *25/02*
U.S. Cl. 260—17.4 **8 Claims**

This invention relates to a composition comprising a rosin size of an alkanoic acid and an interpolymer of a α,β unsaturated polycarboxylic acid and a monocyclic aromatic hydrocarbon alpha-olefin, starch modified with said composition and paper coated with the modified starch composition.

3,468,824
EPOXY COMPOSITION
Thomas H. Williams, Elmhurst, Ill., assignor to Morton International, Inc., a corporation of Delaware
No Drawing. Continuation-in-part of application Ser. No. 307,332, Sept. 10, 1963. This application Dec. 13, 1965, Ser. No. 513,535
Int. Cl. C08g *30/12*
U.S. Cl. 260—18 **14 Claims**

1. A free-flowing shelf stable, fast curing solid molding powder for producing a molded article having high tensile, flexural and compressive strength, and resistance to degradiation and deformation by high temperatures, comprising the comminuted solid reaction product formed by preparing a melt mixture of epoxy resin, filler and curing agent, blending the melt at an elevated temperature to form a homogeneous mixture at least 25° F. below the complete cure temperature, which complete cure temperature falls between 250° F. and 350° F., of said mixture and in the absence of takeover by exothermic reaction until the solids of said mixture are wet out with liquid and the mixture forms, substantially short of complete cure, a partial reaction product between resin and curing agent which is solid at room temperature, cooling the mixture until solidified and comminuting the resulting solid to form said powder, said curing agent comprising 0.5 to 1.5 equivalents of cyclic polycarboxylic acid anhydride per equivalent of epoxy resin and 0.1 to 25 weight percent, based on epoxy resin, of zinc salt of a C_2 to C_{20} carboxylic acid over and above any amount of said zinc salt used for mold release functions, said filler being present in said mixture in an amount by weight in excess of the total epoxy resin and anhydride, said powder being curable by heating to a melt at said cure temperature to a completely cured product as said molded article within about 5 minutes and, in spite of the fast cure rate, said melt of the powder being free-flowing through a sprue into an encapsulating mold at said complete cure temperature and at a low mold pressure to fill the mold prior to curing of melt in the sprue, and said powder being shelf stable with respect to said free-flowing and curing properties for at least 2 months at room temperature.

3,468,825
PROPIONALDOXIME ANTISKINNING AGENT FOR USE WITH OXIDIZING RESINS
Lowell D. Pals, Terre Haute, Ind., assignor to Commercial Solvents Corporation, New York, N.Y., a corporation of Maryland
No Drawing. Filed Sept. 28, 1964, Ser. No. 399,813
Int. Cl. C08g *51/60;* **C08k** *1/40*
U.S. Cl. 260—22 **6 Claims**

1. A composition of matter, the essential constituents of which are a resin which dries by oxidation and propionaldoxime in an amount effective to prevent skinning of said resin.

3. The composition of claim 1 wherein said resin is an alkyd resin modified with an unsaturated fatty acid having at least about 10 carbon atoms.

3,468,826
PROCESS FOR THE PREPARATION OF HOMOGENEOUS ACRYLATE MODIFIED ALKYD RESINS
Charles J. McWhorter, Glen Ellyn, and Edgar L. Clark, Chicago, Ill., assignors to Commercial Solvents Corporation, New York, N.Y., a corporation of Maryland
No Drawing. Filed May 3, 1967, Ser. No. 637,046
Int. Cl. C08g *39/10, 17/16*
U.S. Cl. 260—22 **19 Claims**

A process for preparing a homogeneous acrylate modified alkyd resin by reacting: (1) a polymerization product selected from the group consisting of a homopolymer of an acrylic acid alkyl ester and a copolymer of an acrylic acid alkyl ester and a vinyl monomer copolymerizable therewith, said copolymer containing at least 10% by weight of acrylic acid alkyl ester, (2) a polyol, (3) a member selected from the group consisting of a fatty acid oil and a fatty acid, and (4) a member selected from the group consisting of a polyfunctional carboxylic acid and an anhydride of a polyfunctional carboxylic acid, the said reaction being carried out in the presence of an alcoholysis catalyst and under alkyd resin forming conditions.

3,468,827
STABILIZATION
George R. Hill and Donald G. Needham, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware
No Drawing. Filed Nov. 15, 1965, Ser. No. 507,680
Int. Cl. C08f *45/62*
U.S. Cl. 260—23 **4 Claims**

Ethylene/vinyl acetate copolymers are corrosion stabilized by incorporating in the copolymer an effective stabilizing amount of at least one metal salt of a fatty acid.

3,468,828

INCORPORATION OF A SOLID ADDITIVE INTO A POLYMER IN AN AQUEOUS SYSTEM

Lyle Eugene Perrins, St. Albans, and Fred Dawson and Henry George White, Blackley, Manchester, England, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

No Drawing. Filed June 27, 1966, Ser. No. 560,787

Claims priority, application Great Britain, June 30, 1965, 27,727/65; Sept. 22, 1965, 40,337/65

Int. Cl. C08f *1/92, 47/04*

U.S. Cl. 260—23.7 13 Claims

A process for the manufacture of polymeric composition consisting of polymerizing monomeric material consisting of at least one ethylenically unsaturated monomer in an aqueous medium in a polymerization vessel in the presence of a free radical yielding polymerization catalyst and adding a solid additive dispersed in an aqueous solution containing a water soluble salt of an aliphatic monocarboxylic acid having at least 6 carbon atoms to the aqueous medium before polymerization of the monomeric material is complete and, after adding the additive dispersion, reducing the pH of the aqueous medium to less than 7.0 before the polymeric material is separated from the aqueous medium and while unreacted monomeric material is present in the polymerization vessel.

3,468,829

GRAVURE INK FOR PAPER

Hiroshi Yoshioka, Osaka, Toshio Oishi, Suita-shi, Osaka-fu, and Kenji Kanehira, Yao-shi, Osaka-fu, Japan, assignors to Arakawa Rinsan Kagaku Kogyo Kabushiki Kaisha, Osaka, Japan, a juridical person of Japan

No Drawing. Filed Oct. 22, 1965, Ser. No. 502,279

Claims priority, application Japan, Oct. 31, 1964, 39/61,966

Int. Cl. C09d *11/10*

U.S. Cl. 260—27 10 Claims

Gravure inks for paper comprising a vehicle containing a binder dissolved in an aromatic hydrocarbon solvent and a pigment dispersed therein, the essential binder of said vehicle being a modified petroleum resin, prepared by reacting petroleum resin in molten state with an α,β-unsaturated dicarboxylic acid and reacting the resultant adduct with a reactive compound of a metal belonging to Group II of Periodic Table.

3,468,830

CURING OF EPOXIDE RESINS WITH THE REACTION PRODUCT OF AN ORGANIC AMINE AND AN ALDEHYDE, AND CURING AND RESIN COMPOSITIONS AND PROCESS

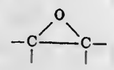
Erika Kiss, Whitestone, N.Y., assignor to Pall Corporation, Glen Cove, N.Y., a corporation of New York

No Drawing. Filed Aug. 26, 1966, Ser. No. 575,506

Int. Cl. C08g *30/14, 45/10, 51/34*

U.S. Cl. 260—29.2 15 Claims

Heat-activatable compositions for curing epoxide resins having the group



are provided comprising the reaction product of an organic amine curing agent and an aldehyde combined with a hydroscopic filler for epoxide resins. There is also provided a heat-curable epoxy resin composition comprising said reaction product and an epoxide resin and a process for curing epoxide resins using said reaction product.

3,468,831

GRAFT COPOLYMERS

Eugene S. Barabas, Watchung, and Marvin M. Fein, Westfield, N.J., assignors to GAF Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Nov. 15, 1966, Ser. No. 594,392

Int. Cl. C08f *21/00, 43/00*

U.S. Cl. 260—29.6 4 Claims

Water soluble graft copolymers are prepared by polymerization of a polymeric N-vinyl lactam, such as poly (N-vinyl pyrrolidone) with a fluorinated alpha, beta-unsaturated ester, such as fluorinated esters of acrylic or methacrylic acid.

3,468,832

STABLE AQUEOUS EMULSIONS

Eugene S. Barabas, Watchung, and Frederick Grosser, Midland Park, N.J., assignors to GAF Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Nov. 17, 1966, Ser. No. 595,028

Int. Cl. C08f *1/13, 19/00*

U.S. Cl. 260—29.6 3 Claims

Water-insoluble grafted terpolymers of a polymeric N-vinyl lactam such as polyvinyl pyrrolidone with ethylacrylate and acrylamide are prepared in an aqueous emulsion.

3,468,833

PROCESS FOR THE PREPARATION OF LARGE-PARTICLE-SIZE LATICES

Edmund R. Meincke, Cuyahoga Falls, Ohio, assignor to The General Tire & Rubber Company, a corporation of Ohio

No Drawing. Filed Mar. 10, 1967, Ser. No. 622,073

Int. Cl. C08d *1/09;* C08f *1/13*

U.S. Cl. 260—29.7 20 Claims

Synthetic polymer latices of large average-particle-size are made more rapidly by the emulsion polymerization of ethylenically unsaturated monomers in an aqueous medium containing a stable colloidal dispersion of a water-swelled polymer having either anionic or cationic groups and a surfactant having two different types of hydrophilic groups one of which can ionically associate with the ionic groups present in the water-swelled polymer.

3,468,834

COATING COMPOSITIONS AND PROCESS OF PREPARING THE SAME

Akira Oda, Hara 20-ku, Kamiumeda, Konan-ku, Ube-shi, Yamaguchi-ken, Japan

No Drawing. Continuation-in-part of application Ser. No. 527,082, Feb. 14, 1966. This application Aug. 1, 1967, Ser. No. 657,523

Claims priority, application Japan, Feb. 15, 1965, 40/8,178, 40/8,179

Int. Cl. C09d *3/74, 5/08*

U.S. Cl. 260—32.8 8 Claims

A coating solution having a high drying rate and good workability comprising an ABS resin, a good solvent selected from the group consisting of methyl ethyl ketone, methyl isobutyl ketone and ethylene dichloride and a diluent selected from the group consisting of toluene, xylene, butanol and mixture thereof, the weight ratio of ABS resin/good solvent being about 0.1–0.7 and the weight ratio of diluent/(ABS resin and good solvent) being about 0.5–2.

An undercoat paint comprising the coating solution above mentioned and a member of the group consisting of a thermosetting resin curable at normal temperature and a styrene monomer, the weight ratio of said member/ABS resin being 90:10–10:90.

3,468,835

COLD COLOR PRINTING COMPOSITIONS

John E. Dereich, Pittsburgh, Pa., assignor to Neville Chemical Company, Pittsburgh, Pa., a corporation of Pennsylvania

No Drawing. Filed Feb. 4, 1966, Ser. No. 525,117

Int. Cl. C08g *30/14, 45/00;* C09d *11/10*

U.S. Cl. 260—33.4 9 Claims

A thermosetting, normally solid, low melting, resinous printing ink base, suitable for high speed printing on glass and other substrates, comprises an epoxy resin, a C_{14}–C_{18} alkanol, such as cetyl or stearyl alcohol, a hardener, such as a guanidine compound or an acid anhydride, and a viscosity modifier, which may be phenyl salicylate, benzophenone, or triphenyl phosphate.

3,468,836

THERMOSETTING COATINGS BASED ON HYDROXY COPOLYMER PARTIALLY CONDENSED WITH SILICON-CONTAINING MATERIAL CONTAINING AT LEAST 1.2 SILICON OH OR ALKOXY GROUPS IN COMBINATION WITH AMINOPLAST RESIN

Kazys Sekmakas, Chicago, Ill., assignor to De Soto, Inc., Chicago, Ill., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 478,736, Aug. 10, 1965. This application Dec. 29, 1966, Ser. No. 605,607

Int. Cl. C08f *27/00;* C08g *37/32*

U.S. Cl. 260—33.6 12 Claims

Thermosetting organic solvent solution coating compositions possessing improved weathering and exposure characteristics are formulated to include an acrylic copolymer containing hydroxy functionality and this copolymer is partially condensed with a silicon-containing material such as a polysilanol or a polyalkoxy siloxane to provide a single phase resin which contains neutral hydroxy groups and acidic silicon-carried OH or alkoxy groups. The cure is effected with aminoplast resin which contains basic nitrogen-carried methylol groups. The cure is very rapid despite the high solvency of the condensate and the stability of the aminoplast resin blends.

3,468,837

SOLUBLE, HIGH MELTING DICYLOPENTADIENE POLYMER TYPE RESIN, ITS PROCESS OF MANUFACTURE AND ITS USE IN COMPOSITIONS SUCH AS PRINTING INKS

Harvey B. Wheeler, Pittsburgh, and Eugene P. D'Amico, Bentleyville, Pa., assignors to Neville Chemical Company, Pittsburgh, Pa., a corporation of Pennsylvania

No Drawing. Filed July 26, 1967, Ser. No. 656,033

Int. Cl. C08f *15/42, 1/02;* C09d *11/10*

U.S. Cl. 260—33.6 6 Claims

A new hydrocarbon resin is made by polymerizing a particular kind of cracked petroleum fraction in admixture with a small proportion of a terpene, notably alpha-pinene. It is of particular value in printing inks but its good solubility and high melt point make it also useful in a variety of other applications, notably in the formulation of hot melt adhesives. The resin has a high melting point and yet is soluble in solvents of low Kauri Butanol value such as are required by the printing ink industry for gravure and heat set inks. Its solution viscosity characteristics and solvent release properties compare favorably to modified rosins classically used in gravure and heat set inks. It contributes to gloss and rub resistance of ink and because of its neutrality does not react with sensitive pigments.

3,468,838

SILICONE RUBBER MATERIALS

Nevison G. Loraine and John B. Lidgate, Newcastle-upon-Tyne, England, assignors to George Angus & Company Limited, Newcastle-upon-Tyne, England, a British company

No Drawing. Filed Sept. 7, 1966, Ser. No. 577,589

Claims priority, application Great Britain, Sept. 17, 1965, 39,752/65

Int. Cl. C09g *47/06, 51/04*

U.S. Cl. 260—37 10 Claims

Rubber-like compositions suitable for oil seals or the like, which are likely to have prolonged contact with oils at high temperatures and containing as additives complex chemical compounds containing one or more of the elements sulphur, chlorine and phosphorus, are formed from a silicone rubber stock with a silica filler and magnesium oxide in a proportion 2–75 parts by weight per 100 parts of the silicone rubber stock. It is found that such additions of magnesium oxide greatly increase the operational life of such oil seals and the like.

3,468,839

POLYMER COMPOSITIONS CONTAINING BASIC MAGNESIUM CARBONATE

James J. Millane, Solihull, England, assignor to Bakelite Xylonite Limited, a British corporation

No Drawing. Filed Nov. 30, 1967, Ser. No. 686,824

Int. Cl. C08g *51/04, 51/24, 51/56*

U.S. Cl. 260—38 8 Claims

A composition comprising an organic polymeric material and at least 5 percent by weight of the organic polymeric material of basic magnesium carbonate.

3,468,840

VINYL CHLORIDE-ETHYLENE COPOLYMERS AND MOLDING COMPOSITIONS CONTAINING SAID COPOLYMERS

Charles A. Heiberger, Princeton, N.J., and Leon Fishbein, New City, N.Y., assignors, by mesne assignments, to Air Reduction Company, Incorporated, New York, N.Y., a corporation of New York

Continuation-in-part of application Ser. No. 390,416, Aug. 18, 1964. This application May 27, 1965, Ser. No. 459,289

Int. Cl. C08f *15/06*

U.S. Cl. 260—41 33 Claims

A vinyl chloride-ethylene copolymer containing about 2 to about 10%, preferably about 5 to about 8%, by weight of ethylene is prepared by polymerizing vinyl chloride in the presence of ethylene in a suspension polymerization system at a temperature of about 5 to about 95° C., at a pH of 3 to 11 and at a pressure to about 1000 p.s.i. The copolymer, which is further characterized by an intrinsic viscosity of about 0.5 to 150 dl./g., a melt flow rate of at least 0.5 dg./min. and a dynamic processability index of at least 150, can be combined with a lubricant and a stabilizer to form a rigid molding composition particularly adapted for blow molding to form containers, such as bottles.

3,468,841

COMPOSITIONS OF CARBON BLACK AND POLYACRYLONITRILE AND METHOD FOR THEIR PREPARATION

Paul Jacques Corbiere and Jean-Baptiste Rosset, Lyon, France, assignors to Crylor, Paris, France, a French body corporate

No Drawing. Filed May 2, 1966, Ser. No. 546,563

Claims priority, application France, May 10, 1965, 16,473

Int. Cl. C08f *1/84, 45/08, 27/00*

U.S. Cl. 260—41.5 5 Claims

Intensely black acrylonitrile filaments are made, having a carbon black content of 10–35% in the form of particles of diameter less than 1 cm. Acrylonitrile is ad-

sorbed on carbon black, and then polymerised in the presence of water. (Other polymerisation conditions are not suitable.) The product is dissolved in an organic solvent such as dimethylformamide, and filaments are made from the solution, preferably by wet spinning.

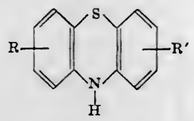
3,468,842

POLYETHER POLYURETHANES STABILIZED WITH PHENOTHIAZINE DERIVATIVES

Joseph Charles Mollica, Bound Brook, and Ajaib Singh, Highland Park, N.J., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed May 26, 1967, Ser. No. 641,446
Int. Cl. C08g *51/60*
U.S. Cl. 260—45.8 **5 Claims**

This invention relates to a polyether-based polyurethane stabilized against thermal degradation by the presence of a stabilizer of the formula:



wherein R is either alkyl of 1–18 carbon atoms, alkoxy of 1–18 carbon atoms, halogen or alkylmercapto of 1–18 carbon atoms, and R′ is hydrogen or any one of the substitutents given in the definition of R.

3,468,843

FLAME RESISTANT 66 NYLON AND PROCESS THEREOF

Warren F. Busse, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Sept. 1, 1965, Ser. No. 484,454
Int. Cl. C08g *51/56;* **C09k** *3/28*
U.S. Cl. 260—45.75 **7 Claims**

Polyhexamethylene adipamide is made flame retardent by incorporation therein of 5 to 30 percent by weight of a halide of Zn, Cd, Pb, or rare earth metal or 3 to 15 percent by weight of one of these halides plus 1 to 5 percent by weight of a metal, e.g., Sn, or Cuo. The resultant composition can be used as a wire coating.

3,468,844

FLAME RESISTANT POLYARYLENE POLYETHERS

Charles N. Merriam, Martinsville, and Eleanor E. Saunders, Highland Park, N.J., assignors to Union Carbide Corporation, a corporation of New York

No Drawing. Filed Sept. 19, 1966, Ser. No. 580,207
Int. Cl. C08g *51/56;* **C09k** *3/28*
U.S. Cl. 260—45.75 **2 Claims**

Flame resistant compositions free of halogen containing compounds comprising a polyarylene polyether and antimony oxide as the sole flame retardant are disclosed.

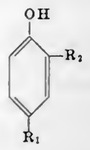
3,468,845

RUBBER COMPOSITIONS STABILIZED WITH MIXTURES OF PHENOLS

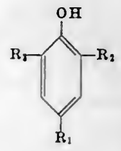
Ronald B. Spacht, Hudson, Ohio, assignor to The Goodyear Tire & Rubber Company, Akron, Ohio, a corporation of Ohio

No Drawing. Filed Apr. 7, 1966, Ser. No. 540,837
Int. Cl. C08c *11/30;* **C08f** *45/58*
U.S. Cl. 260—45.95 **6 Claims**

1. A composition comprising a rubber selected from the group consisting of natural rubber, synthetic homopolymers of dienes, copolymers of butadiene and styrene, butadiene and acrylonitrile, butyl rubber, ethylene and propylene, and terpolymer of ethylene, propylene and a diene containing, as an age resistor, a stabilizing amount of a mixture comprising (A) at least one dialkylated phenol having the structural formula:



and (B) at least one trialkylated phenol having the structural formula:



wherein R_1 is selected from the group consisting of primary methyl, ethyl, propyl and butyl radicals and R_2 and R_3 are selected from the group consisting of tertiary butyl, tertiary amyl, tertiary hexyl, tertiary heptyl and tertiary octyl radicals, wherein the mixture comprises from about 10 to about 70 parts by weight of mono-orthoalkylated para-alkyl substituted phenol and conversely from about 90 to about 30 parts by weight of di-orthoalkylated para-alkyl substituted phenol.

3,468,846

POLYCARBONATE PLASTICS

Ludwig Bottenbruch, Krefeld-Bockum, and Hermann Schnell, Krefeld-Urdingen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Continuation-in-part of application Ser. No. 23,356, Apr. 20, 1960. This application Dec. 1, 1965, Ser. No. 510,948
Int. Cl. C08g *17/14, 17/13*
U.S. Cl. 260—47 **5 Claims**

A process for preparing high molecular weight linear polycarbonates having improved physical characteristics by preparing a polycarbonate having an average molecular weight higher than that desired by reacting a dihydric phenol with a carbonate precursor under polycarbonate-forming conditions, and then hydrolyzing a solution of the polycarbonate in an inorganic solvent with an aqueous alkali metal hydroxide solution to decrease the average molecular weight of the polycarbonate by a maximum of about ⅓ of the original average molecular weight and then terminating the hydrolysis by separating the polycarbonate from the aqueous alkali metal hydroxide solution.

3,468,847

CURABLE COPOLYMERS OF PERHALOACETONES AND UNSATURATED EPOXIDES

Harold E. Doorenbos and Harry A. Smith, Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Apr. 17, 1967, Ser. No. 631,169
Int. Cl. C08g *23/06;* **C08f** *11/00*
U.S. Cl. 260—63 **9 Claims**

This invention relates to curable interpolymers of a perhaloacetone and an ethylenically unsaturated epoxide which may contain up to about 49 mole percent of a lower alkylene oxide. Such polymers are capable of being cured or crosslinked through the ethylenic double bond to produce halogen-containing, solvent-resistant plastics or rubbers.

3,468,848

POLYOXYMETHYLENE COPOLYMERS FROM TRIOXANE AN CYCLIC KETALS

Giafranco Pregaglia, Milan, Paolo Roffia, Mantova, and Giancarlo Pozzi, Milan, Italy, assignors to Montecatini Edison S.p.A., Milan, Italy, a corporation of Italy

No Drawing. Filed July 1, 1966, Ser. No. 562,072
Claims priority, application Italy, July 8, 1965, 15,269/65
Int. Cl. C08g *1/12*
U.S. Cl. 260—67 **15 Claims**

There are disclosed high molecular weight polyoxymethylene copolymers essentially made up of sequences of oxymethylenic units separated by oxyalkylene units derived from an ethylene-diketal of a cyclic diketone containing 4 to 6 carbon atoms in the ring, through opening of at least one of the diketal rings. The ratio of oxymethylene units to the oxyalkylene units is from 6:1 to 1000:1. Preparation of the copolymers in the presence of Lewis acid type catalysts containing chlorine or fluorine is disclosed.

3,468,849

PROCESS FOR THE PREVENTION OF BUILD-UP OF DEPOSITS IN VAPOR CONDUITS

Horst Rothert, Berlin, Germany, assignor to Chatillon Societa Anonima Italiana Per Le Fibre Tessili Artificiali S.p.A., Milan, Italy, and Karl Fischer Apparate- Und Rohrleitungsbau, Berlin-Borsigwalde, Germany

Filed Nov. 8, 1966, Ser. No. 592,793
Claims priority, application Italy, Nov. 11, 1965, 24,985/65
Int. Cl. C08g *17/003, 17/04*
U.S. Cl. 260—75 **3 Claims**

Method for preventing build-up of poly(ethylene terepthalate) polymer deposits in vapour conduits comprising injecting a jet of vaporized glycol into a stream of vapor containing said polymer material.

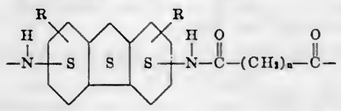
3,468,850

POLYAMIDE CONTAINING RECURRING SATURATED FLUORENE RINGS

Peter William Foster, Geneva, Switzerland, assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed May 20, 1965, Ser. No. 457,504
Int. Cl. C08g *20/00*
U.S. Cl. 260—78 **1 Claim**

A synthetic linear fiber-forming polymer consisting essentially of recurring units of the formula



wherein the geometric figure containing the letters S denotes a saturated fluorene ring for the hydrogen of which R, representing alkyl containing no more than 3 carbon atoms, may be substituted, and wherein n is a whole number from 0 to 12, inclusive, preferably a number from 4 to 10 inclusive. The polymer may contain up to 10 weight percent of polyamide copolymeric units.

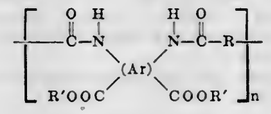
3,468,851

LINEAR POLYAMIDE AND OXAZINONE-CONTAINING POLYMER AND METHOD OF PRODUCING THE SAME

Naoya Yoda, Ryoji Nakanishi, Takashi Kubota, Masaru Kurihara, and Kojyuro Ikeda, Kamakura-shi, Japan, assignors to Toyo Rayon Kabushiki Kaisha, Tokyo, Japan, a corporation of Japan

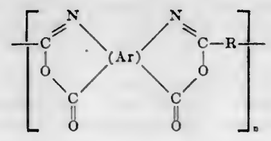
No Drawing. Filed June 14, 1965, Ser. No. 463,855
Claims priority, application Japan, June 16, 1964, 39/33,750; Sept. 22, 1964, 39/53,837; Oct. 19, 1964, 39/59,102; Feb. 26, 1965, 40/10,780
Int. Cl. C08g *20/20, 20/32, 33/02*
U.S. Cl. 260—78 **12 Claims**

A linear polyamide of the formula



(1)

is obtained by solution polycondensation of diaminodicarboxylic acids with dicarboxylic acid halides. Intramolecular cyclization of said linear polyamide by heat-treatment yields an oxazinone-containing polymer of the formula



(2)

In said Formulae 1 and 2, (Ar) is a tetravalent aromatic radical having at least 6 carbon atoms, R is a divalent radical, R′ is a monovalent radical selected from the group consisting of hydrogen, alkyl radicals of 1 to 6 carbon atoms and phenyl group, and n is an integer sufficiently great enough that the inherent viscosity measured in 0.5% solution of the polymer in concentrated sulfuric acid at 30° C. becomes at least 0.1.

3,468,852

POLYAMIDE-ACID AMIDE-ACID AND POLYIMIDE-IMIDE COMPOSITIONS

Ralph G. Flowers, Pittsfield, and Thomas L. Sherer, Richmond, Mass., assignors to General Electric Company, a corporation of New York

No Drawing. Filed Apr. 12, 1966, Ser. No. 541,943
Int. Cl. C08g *20/32*
U.S. Cl. 260—78 **5 Claims**

This invention relates to new polyamide-acid amide-acids and polyimide-imides compositions prepared by reacting polyamide-acid diamines with dianhydrides, said compositions being useful for electrical insulating purposes in the form of films or coatings.

3,468,853

PROCESS OF POLYMERIZING A GLYCOLIDE

Edward Emil Schmitt, Norwalk, Conn., and Rocco Albert Polistina, Port Chester, N.Y., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed June 15, 1966, Ser. No. 557,607
Int. Cl. C08g *17/017, 17/02*
U.S. Cl. 260—78.3 **8 Claims**

This invention relates to a process for polymerizing a glycolide composition and spinning fibers from the polymer thus produced in which the polymerization is carried

out in the presence of certain quantities of certain alcohols and certain quantities of a polymerization catalyst within a particular temperature range until a substantially equilibrium viscosity is reached and thereafter spinning the polymer from the melt state while still having a substantially equilibrium viscosity and prior to incipient crystallization.

3,468,854

RESINS AND THEIR PRODUCTION

Edwin E. Royals, Pensacola, Fla., assignor to Tenneco Chemicals, Inc., a corporation of Delaware

No Drawing. Filed Oct. 21, 1965, Ser. No. 500,319

Int. Cl. C08g *17/007, 30/12*

U.S. Cl. 260—78.5 **15 Claims**

Unsaturated polyesters prepared by reacting allo-ocimene diepoxide with 0.5 to 1 mole of dicarboxylic acid per mole of diepoxide until from 0.75 to 1.75 moles of water are formed.

The polyesters have molecular weights ranging from 1,000 to 15,000.

3,468,855

VULCANIZATION WITH p,p'-OXYBIS(THIOPHENOL) AND AT LEAST ONE ACTIVATOR SELECTED FROM SULFUR AND AN ORGANIC PEROXIDE CURATIVE

Byron A. Hunter, Woodbridge, Conn., assignor to Uniroyal, Inc., a corporation of New Jersey

No Drawing. Filed Oct. 13, 1966, Ser. No. 586,365

Int. Cl. C08c *11/54;* **C08d** *13/28;* **C08f** *45/72*

U.S. Cl. 260—79.3 **8 Claims**

Vulcanizable elastomers can be vulcanized with p,p'-oxybis(thiophenol) and at least one activator selected from (i) sulfur and (ii) organic peroxide curatives.

3,468,856

METHOD FOR PREPARATION OF POLYVINYL ETHERS

Harumi Asai, Tokyo, and Hisataka Komai and Nobuhide Hada, Yokohama, Japan, assignors to The Japanese Geon Company, Ltd., Tokyo, Japan, a corporation of Japan

No Drawing. Filed Sept. 7, 1966, Ser. No. 577,176

Claims priority, application Japan, Sept. 15, 1965, 40/56,057

Int. Cl. C08f *1/28, 3/38*

U.S. Cl. 260—80.3 **6 Claims**

A process for the preparation of vinyl ether polymers by the polymerization of a vinyl ether in the presence of a catalyst composition comprising (a) an organo aluminum compound of a general formula

$$AlX_nR_{3-n}$$

wherein X represents a halogen atom, R is a member selected from a group consisting of alkyl, cycloalkyl, aryl and aralkyl groups, and n is an integer of 0–2; (b) a carboxylic acid anhydride; and (c) a Friedel-Crafts halide, the mol ratio of (a) to (b) being 10–1:1 and the mol ratio of (a) to (c) being 20–1:1.

3,468,857

THERMOSETTING POLYMERS OF UNSATURATED ACETALS

Richard B. Graver, Savage, Minn., assignor to Ashland Oil & Refining Company, Ashland, Ky., a corporation of Kentucky

No Drawing. Filed Oct. 4, 1965, Ser. No. 492,893

Int. Cl. C08f *19/00, 7/12*

U.S. Cl. 260—80.3 **11 Claims**

A thermosetting or thermoset polymer comprising the reaction product of an ethylenically unsaturated monomer and an unsaturated acetal selected from the group consisting of cyclic and noncyclic unsaturated acetals.

3,468,858

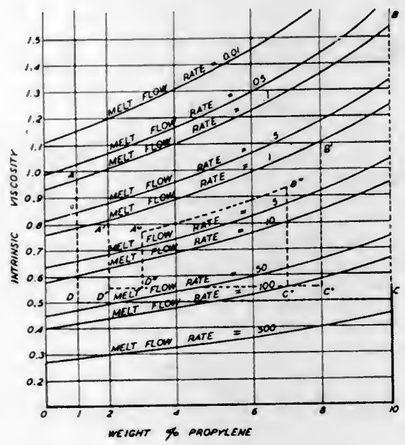
VINYL CHLORIDE-PROPYLENE COPOLYMERS

Charles A. Heiberger, Princeton, N.J., and Leon Fishbein, New City, N.Y., assignors to Air Reduction Company, Incorporated, New York, N.Y., a corporation of New York

Filed Dec. 31, 1964, Ser. No. 422,619

Int. Cl. C08f *15/04, 15/06*

U.S. Cl. 260—87.5 **13 Claims**



Vinyl chloride-propylene copolymers having desirable processing characteristics are prepared by the copolymerization of vinyl chloride and propylene under moderate temperature and pressure conditions in the presence of a free-radical catalyst. The copolymers are characterized by the combination of a propylene content of 1 to 10%, preferably 2 to 8%, by weight, an intrinsic viscosity of 0.5 to 1.5 dl./g., preferably 0.55 to 1.10 dl./g., and a melt flow rate of at least 0.1 dg./min., preferably at least 1 dg./min., the copolymers being rigid materials as evidenced by an apparent modulus of elasticity of at least 100,000 p.s.i. at a maximum temperature within the range of about 65 to about 80° C. The vinyl chloride-propylene copolymers are particularly suited for molding, e.g. blow molding, when compounded with a lubricant and a stabilizer, and have desirable stability characteristics even with relatively mild non-toxic stabilizers. The overall processing characteristics of the copolymers is expressed in terms of a Dynamic Processability Index of at least 300.

3,468,859

PROCESS FOR PRODUCING VINYL CHLORIDE/ETHYLENE AND VINYL CHLORIDE/PROPYLENE COPOLYMERS

Richard E. Davies, Ridgewood, N.J., assignor to Air Reduction Company, Incorporated, New York, N.Y., a corporation of New York

No Drawing. Filed May 27, 1965, Ser. No. 459,446

Int. Cl. C08f *15/02*

U.S. Cl. 260—87.5 **8 Claims**

Copolymers of vinyl chloride with a minor amount of an olefin, which may be propylene or ethylene, which have an increased melt flow value in relation to intrinsic viscosity and olefin content are prepared by polymerizing vinyl chloride with the olefin in the presence of a free-radical catalyst at a temperature of about 30° to about 50° C. for an initial polymerization period of about 5 hours

to about 20 hours and continuing the polymerization at a second-stage polymerization temperature of about 50° C. to about 75° C. for a second-stage polymerization period of about 1 hour to about 20 hours, the polymerization temperature in the second-stage being at least 8° higher than the temperature in the first stage.

3,468,860

ORGANOMETAL-METAL BETA-DIKETONES AS CATALYSTS FOR ALKENE OXIDE POLYMERIZATION

Henry L. Hsieh, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

No Drawing. Filed June 7, 1965, Ser. No. 462,121

Int. Cl. C08g *23/14, 23/06*

U.S. Cl. 260—88.3 **11 Claims**

Epoxide compounds are polymerized with a catalyst comprising (a) an organometallic compound selected from the group consisting of organoaluminum and organozinc compounds and (b) a metal salt of a beta-diketone. The rubbery polymers produced have substantial utility in the automobile industry for fabricating articles such as motor mounts, body mounts, suspension parts, hoses, tubing, and the like.

3,468,861

1-CYANOCYCLOBUTENE MONOMER AND POLYMER AND THEIR PREPARATION

Raymond F. Tietz, Greenmeadow, and William G. Kenyon, Wilmington, Del., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del. a corporation of Delaware

No Drawing. Filed Dec. 6, 1966, Ser. No. 599,402

Int. Cl. C08f *3/74;* **C07c** *121/48*

U.S. Cl. 260—88.7 **3 Claims**

The compound 1-cyanocyclobutene and its homopolymer are described. The preparation of 1-cyanocyclobutene by the dehydration of 1-carbamoylcyclobutene in the presence of a strong dehydrating agent at elevated temperatures is described. The homopolymer is prepared by a free radical initiated reaction. The homopolymer is a tough, high-melting polymer than can be shaped or formed into a film.

3,468,862

POLYBUTENE-1 FILM AND ITS ORIENTATION PROCESS

Ronald S. Schotland, New York, N.Y., assignor to Mobil Oil Corporation, a corporation of New York

No Drawing. Filed June 25, 1965, Ser. No. 467,088

Int. Cl. C08f *47/14;* **B29d** *7/24*

U.S. Cl. 260—93.7 **11 Claims**

Novel oriented crystalline polybutene-1 films having superior physical properties and clarity. These films are prepared by rapidly cooling or quenching an extruded film of polybutene-1 from the molten condition to a temperature (e.g., preferably below 0° C.) low enough to substantially prevent rhombohedral crystallization in the film and orienting the film uniaxially or biaxially at preferred temperatures of about 30 to 60° C. by subjecting the film to a stretching operation which is initiated prior to any significant formation of rhombohedral crystals. During actual stretching, metastable tetragonal (form II) crystals which formed during either the quenching or the heating the film to stretch temperature are largely transformed into stable rhombohedral (form I) crystals and the presence of the latter is unobjectionable at this stage.

3,468,863

METHOD AND APPARATUS FOR REMOVING SOLIDS FROM FILTER

William E. Payne and Carl L. Mariz, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware

Filed May 15, 1964, Ser. No. 367,633

Int. Cl. C08f *1/88;* **B01d** *37/00*

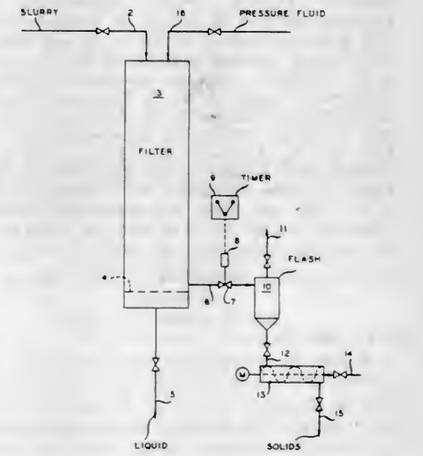
U.S. Cl. 260—93.7 **6 Claims**

A process for recovering particulate thermoplastic solid polymer from a suspension therefor in a liquid comprising the steps of:

(a) Introducing the liquid suspension of said polymer under substantial superatmospheric pressure into a pressure zone partitioned by a filter;

(b) Maintaining a substantial pressure drop across said filter to cause liquid to flow therethrough and particulate polymer to collect on the upstream side of said filter; and

(c) While maintaining substantial superatmospheric pressure in said zone repeatedly, on a short time cycle,



alternately opening an outlet in the side of said zone adjacent the upstream side of said filter to flow under the impetus of said superatmospheric pressure in said zone against substantially lower pressure at said outlet and closing said outlet to flow so as to remove said particulate polymer from said filter and from said zone.

3,468,864

OIL SOLUBLE ALKARYL SULFONATE LITHIUM AND POLYVALENT METAL SALTS IN POLYOLEFIN FIBERS AND FILMS

Orwin G. Maxson and Wayne R. Sorenson, Ponca City, Okla., assignors to Continental Oil Company, Ponca City, Okla., a corporation of Delaware

No Drawing. Filed Oct. 18, 1965, Ser. No. 497,534

Int. Cl. C08f *45/66, 45/46*

U.S. Cl. 260—93.7 **7 Claims**

Polyolefin compositions containing 0.5 to 20 weight percent of oil-soluble metal alkaryl sulfonate.

In one aspect, the disclosure concerns an improved method of dyeing polyolefins wherein the improvement comprises use of the above-described composition.

3,468,865

POLYMERIZATION AND CATALYSTS

Edgardo Santiago, Toledo, Ohio, assignor to Owens-Illinois, Inc., a corporation of Ohio

No Drawing. Filed Dec. 23, 1966, Ser. No. 604,159
Int. Cl. C08f 1/42; C08d 1/14
U.S. Cl. 260—94.3 35 Claims

Disclosed is a polymerization catalyst system comprising certain hydrocarbylsilyl chromates in combination with hydrocarbylsilanes and either an aluminum trihalide or a hydrocarbyloxy aluminum halide.

3,468,866

PROCESS FOR POLYMERIZING BUTADIENE IN THE PRESENCE OF REACTION PRODUCTS OF π-ALLYLIC COMPLEXES OF TRANSITION METAL AND ORGANIC ELECTRON ACCEPTORS

Alexandr Vasilievich Alferov, 7 Cheremushkinskaya ul. 7/43, korp. 130, kv. 53, Moscow, U.S.S.R.; Boris Davidovich Babitsky, Ul. Krasnogo Kursanta 7, kv. 9, Leningrad, U.S.S.R.; Tatiana Konstantinovna Vydrina, Prospekt Mira 131, kv. 19; and Boris Alexandrovich Dolgoplosk, Leninsky prospekt 61/1, kv. 70, both of Moscow, U.S.S.R.; Vitaly Abramovich Kormer, Zheleznovodskaya ul. 62, kv. 2; Vladimir Alexandrovich Krol, Avtovskaya ul. 25, kv. 9; and Mark Iosifovich Lobach, Annikov prospekt 28, kv. 52, all of Leningrad, U.S.S.R.; Evgenia Aronovna Mushina, Ul. Vavilova 36, korp. 3, kv. 3, Moscow, U.S.S.R.; Gali Alexandrovna Parfenova, Ul. Zaitseva 17/23, kv. 76; and Stepanida Trofimovna Romanova, Ul. Fontanka 104, kv. 2, both of Leningrad, U.S.S.R.; Elena Vladimirovna Sakharova, Ul. Karla Marxa 22, kv. 53; Elena Ivanovna Tinyakova, Ul. Krasikova 7/43, korp. 3, kv. 104; and Oleg Konstantinovich Sharaev, Ul. Chkalova 1/4, kv. 35, all of Moscow, U.S.S.R.

No Drawing. Filed May 26, 1967, Ser. No. 641,502
Claims priority, application U.S.S.R., June 6, 1966, 1,081,916
Int. Cl. C08d 1/32, 3/08
U.S. Cl. 260—94.3 5 Claims

A process for polymerizing butadiene under the catalytic effect of products obtained by reacting π-allylic complexes of transition metals of Groups IV–VIII of the periodic system with organic electron acceptors, the preferred catalytic systems being based on π-allylnickel halides and p-chloroanil.

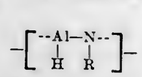
3,468,867

CATALYTIC COMPOSITIONS FOR BUTADIENE POLYMERIZATION AND PROCESSES USING SAID COMPOSITIONS

Walter Marconi, Alessandro Mazzei, and Gabriele Lugli, San Donato Milanese, Milan, Italy, assignors to SNAM S.p.A., Milan, Italy, a company of Italy

No Drawing. Continuation of application Ser. No. 494,874, Oct. 11, 1965. This application Nov. 8, 1968, Ser. No. 774,549
Claims priority, application Italy, Feb. 3, 1965, 887/65
The portion of the term of the patent subequent to Sept. 16, 1986, has been disclaimed
Int. Cl. C08d 1/14, 3/08
U.S. Cl. 260—94.3 5 Claims

For polymerizing butadiene to produce polymers of essentially 1,4 cis structure, a linear polymeric compound of aluminum of polyiminic nature is used having repeating units of the type:



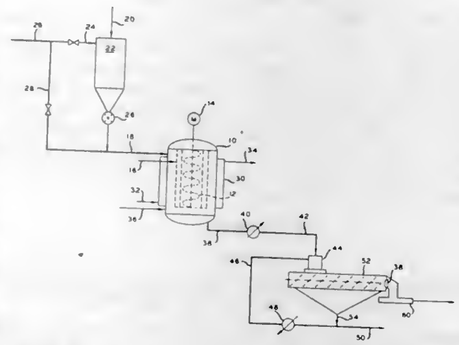
where R is an aryl, alkyl, or cycloalkyl hydrocarbon radical. With such a compound is mixed a compound of a transition metal of the IV to VIII group of the periodic system, and preferably an aluminum halide. The polymerization is carried out in the presence of an aromatic hydrocarbon solvent at a temperature between −30° C. and +100° C. and at a pressure between 1 and 20 atmospheres.

3,468,868

POLYMER RECOVERY PROCESS

Stanley J. Marwil, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

Filed Aug. 6, 1964, Ser. No. 387,867
Int. Cl. C08f 1/88
U.S. Cl. 260—94.9 2 Claims



Recovery of solid polymer from a high concentration solution thereof is achieved by flashing the solution of solvent and polymer so as to form a continuous rope of polymer which is then passed directly to an expeller for removal of liquid solvent.

3,468,869

ANTISTATIC MATERIALS

Edwin Collier Sherburne, Wilmington, Del., assignor to Atlas Chemical Industries, Inc., Wilmington, Del., a corporation of Delaware

No Drawing. Filed Apr. 8, 1966, Ser. No. 541,108
Int. Cl. C08f 45/44, 29/04
U.S. Cl. 260—94.9 6 Claims

Substituted amine oxides used as internal antistatic agents for polymers.

3,468,870

METHOD OF PURIFYING INSULIN EMPLOYING CARBOXYMETHYL CELLULOSE

Geoffrey Howard Smith, Derek Thomas, and Andrew Harklestone Hall, London, England, assignors to Burroughs Wellcome & Co., Inc., Tuckahoe, N.Y., a corporation of New York

No Drawing. Filed Feb. 17, 1966, Ser. No. 528,061
Claims priority, application Great Britain, Feb. 22, 1965, 7,466/65
Int. Cl. A61k 17/02, 17/04; C07g 7/00
U.S. Cl. 260—112.7 9 Claims

An improved method of preparing insulin using elution techniques. In particular, this invention is directed to the steps of contacting an extract of insulin containing an organic solvent with carboxymethyl cellulose adsorbent and thereafter contacting insulin containing absorbent with lipid solvent.

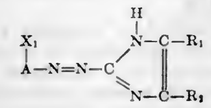
3,468,871

METAL-CONTAINING MONOAZO DYESTUFFS

Klaus Leverenz and Alois Gottschlich, Leverkusen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a German corporation

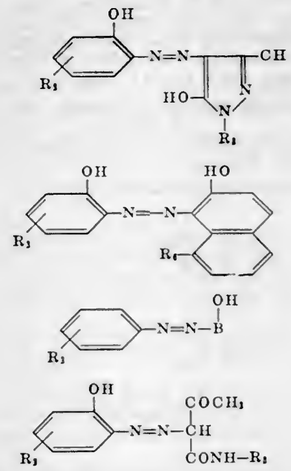
No Drawing. Filed Mar. 17, 1965, Ser. No. 440,629
Claims priority, application Germany, Mar. 26, 1964, F 42,442
Int. Cl. C09b 29/36, 45/22
U.S. Cl. 260—145 20 Claims

Complexes of a metal such as chromium, manganese, iron, cobalt, nickel and copper with a dyestuff or a mixture of dyestuffs of the formula:



in which A is substituted or unsubstituted phenylene or naphthylene; X_1 is a substituent in the o-position to the azo group and is capable of being complexed with a metal; and R_1 and R_2 are hydrogen, substituted or unsubstituted phenyl, heterocyclic, or, when taken together, are cycloaliphatic.

Mixed metal complexes of the above compound with a second azo dyestuff such as



in which B is a divalent residue of an enolic or phenolic coupling compound containing the OH group in a position adjacent to the azo bridge; R_3 is sulfonamide, substituted sulfonamide, nitro, hydrogen or chloro; R_5 is phenyl; and R_6 is hydrogen or an acyl derivative of ammonia.

3,468,872

PHTHALIMIDE DYES OF THE MONOAZO SERIES

Ernst Schefczik, Ludwigshafen (Rhine), Germany, assignor to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Rhineland, Pfalz, Germany

No Drawing. Filed Aug. 16, 1966, Ser. No. 572,666
Claims priority, application Germany, Aug. 21, 1965, B 83,374, B 83,375; June 25, 1966, B 87,724
Int. Cl. C09b 29/36
U.S. Cl. 260—152 5 Claims

Azo dyes containing an amino group which bears a phthalimide-4-carboxylic acid radical, the dye being free of sulfonic acid groups. The dyes are particularly useful as disperse dyes for dyeing polyester and polyamide textile materials.

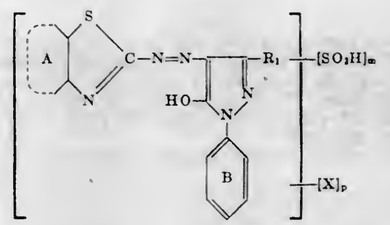
3,468,873

WATER-SOLUBLE THIAZOLYL MONOAZO-DYESTUFFS

Fritz Meininger, Frankfurt am Main, and Ludwig Schläfer, Sulzbach, Taunus, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany, a corporation of Germany

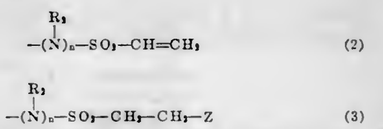
No Drawing. Filed Apr. 14, 1967, Ser. No. 630,795
Claims priority, application Germany, Apr. 20, 1966, F 48,969
Int. Cl. C09b 49/06, 29/36
U.S. Cl. 260—158 6 Claims

Water-soluble monoazo-dyestuffs and a process for their preparation and especially to dyestuffs of the general Formula 1:



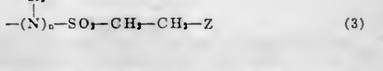
(1)

wherein A represents a radical of the benzene and naphthalene series, X represents a grouping linked to A and/or B of the formula



(2)

or



(3)

Wherein R_2 represents a hydrogen atom or an alkyl radical containing from 1 to 4 carbon atoms and Z represents an inorganic or organic radical which may be split off by an alkaline agent, R_1 represents a alkyl, carboxy or carbalkoxy group, *m* represents an integer from 0 to 3, *n* represents the number 0 or 1 and *p* represents the number 1 or 2, suitable for the dyeing of textile materials especially of those of wool, silk, natural or regenerated cellulose or polyamide fibers.

3,468,874

6 - TETRAZOLYLACETAMIDO PENICILLANIC AND 7-TETRAZOLYLACETAMIDO CEPHALOSPORANIC ACIDS

Rintje Raap and Raymond Urgel Lemieux, Edmonton, Alberta, Canada, assignors to R & L Molecular Research Ltd., Edmonton, Alberta, Canada, a corporation of Canada

No Drawing. Filed Apr. 10, 1967, Ser. No. 629,411
Int. Cl. C07d 99/14, 99/24
U.S. Cl. 260—239.1 12 Claims

6-tetrazolylacetamido penicillanic acids and 7-tetrazolylacetamido cephalosporanic acids and the salts thereof are new synthetic compounds of value as antibacterial agents and in the treatment of bacterial infections. In one of several processes a tetrazol-1,2 or 5-yl-acetylchloride is reacted with 6-aminopenicillanic acid or 7-aminocephalosporanic acid to produce the corresponding penicillin or cephalosporin.

3,468,875
6-METHYL-$\Delta^{5,7}$ STEROLS AND METHODS TO PREPARE SAME

Bjarte Löken, Shrewsbury, and Marcel Gut, Worcester, Mass., assignors to Phytogen Products, Inc., Mamaroneck, N.Y., a corporation of Delaware

No Drawing. Filed Nov. 26, 1965, Ser. No. 510,075
Int. Cl. C07c *169/60, 171/00, 167/26*
U.S. Cl. 260—239.55 **13 Claims**

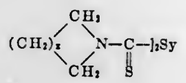
The invention relates to production of $\Delta^{5,7}$ methyl sterols such as 6-methyl ergosterol by a reaction sequence which involves epoxidizing a precursor $\Delta^{5,7}$ sterol selectively with a per-acid then reacting the epoxide with methyl magnesium bromide to form the Δ^{7}, 5-OH, 6-methyl derivative, followed by dehydrating with thionyl chloride or phosphorus oxychloride. The 3-acetates are more stable to air and light than the 3-hydroxy $\Delta^{5,7}$ 6-methyl compounds.

3,468,876
POLYMETHYLENE THIURAM SULFIDES

John J. D'Amico, Dunbar, W. Va., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Filed Jan. 6, 1966, Ser. No. 518,983
Int. Cl. C07d *41/00;* **A01n** *9/22;* **C08g** *51/48*
U.S. Cl. 260—239 **5 Claims**

Polymethylene thiuram sulfides of the formula



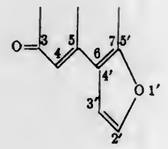
where x is 5 or 6, and y is 1 to 4, are useful as vulcanization accelerators and inhibitors of fungi.

3,468,877
FURANO-[4′5′;6,7]STEROIDS OF THE ANDROSTANE AND PREGNANE SERIES

Alexander D. Cross, Mexico City, Mexico, assignor to Syntex Corporation, Panama, Panama, a corporation of Panama

No Drawing. Filed Aug. 15, 1966, Ser. No. 572,190
Int. Cl. C07c *173/00, 173/10;* **A61k** *27/00*
U.S. Cl. 260—239.5 **12 Claims**

Furano-[4′,5′; 6,7]steroids of the androstane and pregnane series having a furano group fused to the C–6, 7 positions as shown in the following partial formula, the remainder of the structure corresponding to previously disclosed steroids:



This new group is obtained by epoxidizing a 3β, 7β-diacyloxy-Δ^{5}-ene steroid to form a 5α,6α-epoxy-3β,7β-diacyloxy steroid, reacting it with a vinyl Grignard reagent to form a respective 6β-vinyl-3β,5α,7β-triol steroid, epoxidizing the vinyl group to form a respective 6β-oxirano-3β,5α,7β-triol steroid, oxidizing this to 5α-hydroxy-6β-oxirano-3,7-dione, and cyclizing the last named compound to form the furano-[4′,5′;6,7]-3-deto-Δ^{4}-ene steroid. The products has the hormonal activities and uses of the respective parent steroids.

3,468,878
PROCESS FOR PREPARING 3 - ACYLOXY-1,3-DIHYDRO - 5 - ARYL-2H-1,4-BENZODIAZEPIN-2-ONES

Stanley C. Bell, Philadelphia, Pa., assignor to American Home Products Corporation, New York, N.Y., a corporation of Delaware

Original application Aug. 13, 1963, Ser. No. 301,771. Divided and this application Jan. 21, 1966, Ser. No. 522,271
The portion of the term of the patent subsequent to Apr. 11, 1984, has been disclaimed
Int. Cl. C07d *53/06;* **A61k** *27/00*
U.S. Cl. 260—239.3 **5 Claims**

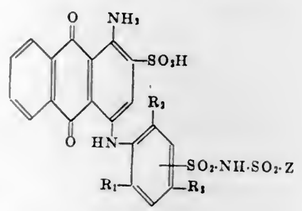
A process is described for preparing 3-acyloxy-1,3-dihydro-5-aryl - 2H-1,4-benzodiazepin-2-ones which possess and which are convertible to compounds which possess psycholeptic effects. The process consists of a sequence of reactions including the steps of treating a 2-hydroxyaminoacetamido aryl ketone with hydroxylamine and treating the product in an acid cyclizing medium with an acylating agent.

3,468,879
ANTHRAQUINONE DYESTUFFS AND PROCESSES FOR THEIR PRODUCTION

Wolfgang Harms, Leverkusen, Klaus von Oertzen, Cologne-Stammheim, Hans-Samuel Bein, Burscheid, and Edgar Siegel, Leverkusen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Filed Apr. 11, 1966, Ser. No. 541,486
Claims priority, application Germany, Apr. 14, 1965, F 45,813
Int. Cl. C09b *1/24, 1/22;* **C07d** *51/78*
U.S. Cl. 260—239.7 **7 Claims**

Anthraquinone dyestuffs of the formula



wherein R_1 stands for lower alkyl having 1 to 4 carbon atoms or halogen, R_2 is a lower alkyl having 1 to 4 carbon atoms, R_3 stands for hydrogen or lower alkyl having 1 to 4 carbon atoms and Z stands for a 5- or 6-membered heterocyclic ring which contains at least one mobile substituent or Z stands for a group containing a 5- or 6-membered ring having at least one mobile substituent or Z stands for an aliphatic, araliphatic or aromatic radical containing at least one reactive substituent or one reactive group.

3,468,880
17-SUBSTITUTED 3-(p-METHOXYBENZENESULFONOXY)ANDROST-5-ENES

John Wayne Cole, Deerfield, Ill., and Charles George Lex, Kenosha, Wis., assignors to Abbott Laboratories, North Chicago, Ill., a corporation of Illinois

No Drawing. Filed Sept. 9, 1966, Ser. No. 578,129
Int. Cl. C07c *169/08, 173/00;* **A61k** *17/00*
U.S. Cl. 260—239.55 **5 Claims**

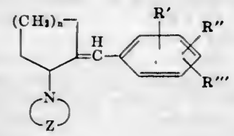
17-substituted 3-(p-methoxybenzenesulfonoxy)androst-5-enes show anti-androgenic activity in warm-blooded animals when orally administered at low dosages.

3,468,881
ALLYLIC AMINES

Jacob Szmuszkovicz, Kalamazoo, Mich., assignor to The Upjohn Company, Kalamazoo, Mich., a corporation of Michigan

No Drawing. Filed Aug. 15, 1966, Ser. No. 572,231
Int. Cl. C07d *41/08, 29/00, 27/00*
U.S. Cl. 260—240 **6 Claims**

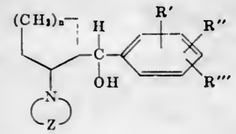
Allylic amines, having anti-depressive action of the Formula II:

II 

wherein n is 1 to 4;



is a heterocyclicamino group, R′, R″, R‴ are hydrogen or lower alkoxy, and the acid addition salt thereof, are prepared by dehydrating, with an acid having a pK_a value of at least 3.7, the corresponding amine alcohol I:

I 

The compounds are useful in the medico-veterinary field, as stimulants of the central nervous system and can be administered to mammals and birds.

3,468,882
PHENYLHYDRAZONE DERIVATIVES AS INTERMEDIATES FOR PREPARING INDOLES

Stanley C. Laskowski, East Greenbush, N.Y., assignor to Sterling Drug Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Oct. 7, 1966, Ser. No. 584,956
Int. Cl. C07d *51/72, 57/00;* **A61k** *27/00*
U.S. Cl. 260—240 **16 Claims**

New ω-[4-substituted-1-piperazinyl]lower-alkyl ketone and aldehyde phenylhydrazones useful as intermediates for preparing 1-[(3-indolyl)-lower-alkyl]-4-substituted-piperazines.

3,468,883
OXONOL DYES FOR LIGHT FILTERING LAYERS IN PHOTOGRAPHIC ELEMENTS

Joseph Bailey, Harrow, England, assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

Application June 25, 1965, Ser. No. 478,003, which is a division of application Ser. No. 98,709, Mar. 27, 1961, now Patent No. 3,247,127, dated Apr. 19, 1966. Divided and this application Aug. 25, 1966, Ser. No. 575,000
Int. Cl. C09b *23/12, 23/08;* **G03c** *1/14*
U.S. Cl. 260—240.2 **9 Claims**

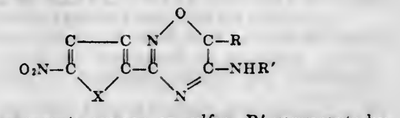
Certain novel symmetrical oxonol dyes having a carboxyalkyl group have been found to possess desirable properties as light-screening materials for photographic elements and can be incorporated in light-screening layers, including light-sensitive emusion layers. The dyes, for example, absorb light of a wave-length desired to be absorbed and are readily removed. Bis(1-carboxymethylhexahydro - 3 - n - octyl - 2,4,6 - trioxo - 5 - pyrimidine)pentamethinoxonol and bis(1 - n - butyl - 3-carboxymethylhexahydro - 2,4,6 - trioxo - 5 - pyrimidine) pentamethinoxonol are illustrative of the new oxonol dyes.

3,468,884
5-AMINOOXADIAZINES

Aldo J. Crovetti, Lake Forest, and Anne Mary Von Esch, North Chicago, Ill., assignors to Abbott Laboratories, North Chicago, Ill., a corporation of Illinois

No Drawing. Filed Aug. 15, 1966, Ser. No. 572,288
Int. Cl. C07d *99/02, 99/06;* **A01n** *9/28*
U.S. Cl. 260—244 **11 Claims**

Compounds of the formula



wherein X represents oxygen or sulfur, R′ represents hydrogen or alkyl and R represents hydrogen, methyl, or acyl such as formyl, acetyl, propionyl, butyryl, valeryl, or benzoyl and which are useful antibacterial or antifungal agents.

3,468,885
N-TRIDECYL-2,6-DIMETHYLMORPHOLINE, OR ACID ADDITION SALTS THEREOF

Walter Sanne, Karl-Heinz Koenig, and Ernst-Heinrich Pommer, Ludwigshafen (Rhine), and Herbert Stummeyer, Mannheim, Germany, assignors to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany

No Drawing. Continuation of application Ser. No. 498,083, Sept. 19, 1965, and continuation-in-part of application Ser. No. 227,697, Oct. 2, 1962. This application Mar. 6, 1968, Ser. No. 711,135
Claims priority, application Germany, Nov. 24, 1961, B 64,901; Jan. 8, 1962, B 65,435
Int. Cl. C07d *87/26;* **A01n** *9/28*
U.S. Cl. 260—247.2 **2 Claims**

N-cyclododecyl-2,6-dimethylmorpholine, N-tridecyl-2,6-dimethylmorpholine, and acid addition salts of said compounds. The compounds are highly effective agents for controlling fungi.

3.468,886
TETRAHYDROHOMOFOLIC ACID SULFATE AND SYNTHESIS THEREOF

Carol W. Mosher, Zurich, Switzerland, and Edward M. Acton and Leon Goodman, Menlo Park, Calif., assignors to the United States of America as represented by the Secretary of Health, Education, and Welfare

No Drawing. Filed Oct. 23, 1967, Ser. No. 680,296
Int. Cl. C07d *57/30;* **A61k** *27/00*
U.S. Cl. 260—251.5 **1 Claim**

The present invention relates to a novel folic acid antagonist which is a reduced form of the next upward homolog of folic acid. The present compound, uniquely as compared with known compounds, has sufficient stability to permit utilization of these qualities. Alternatively, it may be stated to be a compound related to folic acid but possessing an additional methylene group between positions 9 and 10 of the folic acid molecule and in its reduced form can be designated as homofolic-H_4 sulfate. It is a potent inhibitor, in vitro, of thymidylate synthetase.

The tetrahydrohomofolic acid sulfate is prepared according to the present invention from a known material, homofolic acid. The acid is hydrogenated using preferably a prereduced platinum or palladium catalyst in acid pH using a halogenated carboxylic acid such as trifluoroacetic acid in a hydrogen atmosphere at ambient temperature until two moles of hydrogen are absorbed for about one mole of the acid starting material. The catalyst is removed by filtration through Celite in an inert atmosphere (N_2) and the sulfate salt of tetrahydrohomofolic acid is formed by reacting the reduced free acid with alcoholic sulfuric acid. The resulting precipitate is separated and purified, preferably with ether and multiple centrifugation.

The product may be stored in a stoppered bottle at room temperature and, happily, in contrast to previous salts, is stable for 30 to 60 days. It is believed that the stability of this sulfate salt is caused by its linkage to the nitrogen in the 5 or 8 position of the pteridine moiety.

3,468,887

PROCESS FOR THE PREPARATION OF 2-PHENYLAMINO-1,3-DIAZACYCLOALKENES-2

Helmut Stable and Karl Zeile, Ingelheim am Rhein, Germany, assignors to Boehringer Ingelheim G.m.b.H., Ingelheim am Rhein, Germany, a corporation of Germany

No Drawing. Filed Oct. 24, 1967, Ser. No. 677,755
Claims priority, application Germany, Oct. 31, 1966, B 89,635; Sept. 27, 1967, B 94,681
Int. Cl. C07d *49/30, 49/00;* **A61k** *27/00*
U.S. Cl. 260—253 **6 Claims**

An improved process for the preparation of 2-phenylamino-1,3-diazacycloalkenes-2 comprising reacting an alkylene diamine with a phenylimino carbonic acid derivative and 2-phenylamino-1,3-diazacycloalkenes-2 having useful pharmacological properties, a blood-pressure reducing activity.

3,468,888

2-SUBSTITUTED PYRIMIDO[1,2-a] BENZIMIDAZOLES

Alfred W. Chow, Radnor, Pa., assignor to Smith Kline & French Laboratories, Philadelphia, Pa., a corporation of Pennsylvania

No Drawing. Filed Apr. 11, 1967, Ser. No. 629,936
Int. Cl. C07d *57/12;* **A61k** *27/00*
U.S. Cl. 260—256.4 **12 Claims**

Pyrimido[1,2-a]benzimidazol-2 - ones, optionally substituted at the 1, 3, or 4-positions, or in the benzene ring, prepared by condensation of a 2-aminobenzimidazole with an acryloyl chloride or a propiolic acid ester. 2-thiones are prepared by reaction of the 2-ones with P_2S_5. 2-amines are prepared by reaction of the 2-thiones with amines. The compounds possess diuretic activity.

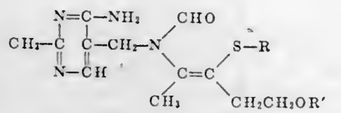
3,468,889

O-AND/OR S-NICOTINOYL DIACYLTHIAMINES AND ACYLATION PROCESS FOR PREPARING THE SAME

Haruki Nishimura, Toyonaka-shi, Hiroaki Kinugasa, Amagasaki-shi, and Kumio Onishi, Hiraoka-shi, Japan, assignors to Dainippon Pharmaceutical Co., Ltd., Osaka, Japan, a corporation of Japan

No Drawing. Filed Nov. 15, 1966, Ser. No. 594,393
Claims priority, application Japan, Nov. 18, 1965, 40/71,214; Nov. 19, 1965, 40/71,205; Dec. 2, 1965, 40/74,289; Dec. 18, 1965, 40/78,156; Dec. 20, 1965, 40/78,755; June 4, 1966, 41/36,183; June 18, 1966, 41/39,765; June 24, 1966, 41/41,205, 41/41,206
Int. Cl. C07d *99/12;* **A61k** *15/12*
U.S. Cl. 260—256.5 **30 Claims**

Diacylthiamines of the formula



wherein one of the R and R′ represents nicotinoyl, and the other represents a member selected from the group consisting of nicotinoyl; benzoyl; alkyl substituted benzoyl, wherein the alkyl group contains from 1–4 carbon atoms; substituted alkanoyl wherein the substitution is group has 1–4 carbon atoms; alkanoyl of 1–18 carbon atoms; substituted alkanoyl wherein the substitution is selected from alkoxy of 1–4 carbon atoms, halogen and phenyl, wherein the alkanoyl group has 1–18 carbon atoms; and furoyl. Such compounds are useful as active vitamin B_1 agents having rapid and prolonged B_1 activities.

3,468,890

PYRAZINO[1′,2′:1,2]PYRIDO[3,4-b]INDOLES

Sydney Archer, Bethlehem, N.Y., assignor to Sterling Drug Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed June 9, 1966, Ser. No. 556,275
Int. Cl. C07d *57/22;* **A61k** *25/00*
U.S. Cl. 260—268 **3 Claims**

Certain 1,3 - dioxo - 1,3,4,6,7,12b-hexahydro-2H,12H-pyrazino[1′,2′:1,2]pyrido[3,4-b]indoles which decrease spontaneous activity in mice are prepared by the interaction of the appropriate 1,2,3,4-tetrahydro-9H-pyrido [3,4-b]indole-1-carboxylic acid and an isocyanide in the presence of an aldehyde or ketone.

3,468,891

DIHYDRONORTHEBAINONE AND DIHYDRONORORIPAVINONE COMPOUNDS AND CORRESPONDING ENOL LOWER ALKYL ETHERS

James Richard Bartels-Keith, Brookline, Mass., and Derek William Hills, Welwyn Garden City, England, assignors to Smith Kline & French Laboratories, Philadelphia, Pa., a corporation of Pennsylvania

No Drawing. Filed July 21, 1967, Ser. No. 654,958
Claims priority, application Great Britain, July 29, 1966, 34,301/66
Int. Cl. A61k *27/00;* **C07d** *43/28*
U.S. Cl. 260—285 **10 Claims**

Dihydronorthebainone and dihydronororipavinone compounds and the corresponding enol lower alkyl ethers which have an unsaturated group or a cycloalkylmethyl group as an N-substituent are prepared by reduction of the corresponding dihydronorthebaines or dihydronororipavines or by N-substitution of the corresponding N-unsubstituted dihydronorthebainone or dihydronororipavinone compounds or the enol lower alkyl ethers. These compounds have analgesic activity.

3,468,892

SUBSTITUTED PIPERIDINES

Andrew S. Tomcufcik, Old Tappan, N.J., Paul F. Fabio, Pearl River, N.Y., and Arlene M. Hoffman, Park Ridge, N.J., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed Feb. 7, 1966, Ser. No. 525,337
Claims priority, application Great Britain, Mar. 19, 1965, 11,814/65
Int. Cl. C07d *29/12*
U.S. Cl. 260—293 **8 Claims**

Substituted amino alkylene substituted piperidines are described which are prepared by several methods, the preferred method being the reaction of a substituted amino alkylenepiperidine with an intermediate which places a group on the nitrogen of the piperidine. The present compounds are useful in inhibiting the growth of protozoa.

3,468,893

1-SUBSTITUTED-DIPHENYL-AZACYCLOALKENES

Renat Herbert Mizzoni, Long Valley, N.J., assignor to Ciba Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Mar. 14, 1966, Ser. No. 533,857
Int. Cl. C07d *29/12, 41/04;* **A61k** *27/00*
U.S. Cl. 260—293 **11 Claims**

N-hydroxyalkyl-aryl-alkyleneimines, their lower alkyl and aralkyl ethers and their hydrohalic and carboxylic acid esters, quaternaries and salts of these compounds, as well as methods for their preparation. The compounds are useful as hypotensive agents.

3,468,894

CERTAIN 2-PYRIDYL-SUBSTITUTED INDOLE DERIVATIVES

Heinz A. Pfenninger, New City, N.Y., assignor to Geigy Chemical Corporation, Ardsley, N.Y., a corporation of Delaware

No Drawing. Filed Nov. 29, 1966, Ser. No. 597,575
Int. Cl. C07d *57/00;* **A61k** *25/00*
U.S. Cl. 260—294.8 **6 Claims**

2-(pyridyl)-3-methylindoles are useful as diuretics and as cardiovascular agents and in the treatment of hyperaldosteronism.

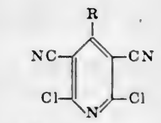
3,468,895

2,6-DICHLORO-3,5-DICYANO-4-ARYL PYRIDINES

Günther Mohr, Darmstadt, Konrad Niethammer, Traisa, and Sigmund Lust and Gerhart Schneider, Darmstadt, Germany, assignor to E. Merck Aktiengesellschaft, Darmstadt, Germany

No Drawing. Original application Mar. 30, 1964, Ser. No. 355,929, now Patent No. 3,284,293, dated Nov. 8, 1966. Divided and this application July 27, 1966, Ser. No. 568,137
Claims priority, application Germany, Apr. 2, 1963, M 56,343
Int. Cl. C07d *31/46;* **A01n** *9/22*
U.S. Cl. 260—294.9 **8 Claims**

Compounds of the following formula exhibit fungicidal activity:



wherein R is selected from the group consisting of phenyl, naphthyl, pyridyl, substituted phenyl where the substituted moiety is at least one member of the group consisting of CH_3, C_2H_5, CH_3O, C_2H_5O, —O—CH_2—O—, HO, F, Cl, Br, NO_2, NH_2 and dialkyl amino containing 1–6 carbon atoms per alkyl group.

3,468,896

METHOD OF PREPARING 2-PYRIDINEALDOXIME METHOCHLORIDE

Gordon S. Myers, Mount Royal, Quebec, and Timothy J. Mepham, Westmount, Quebec, Canada, assignors to American Home Products Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed July 16, 1965, Ser. No. 472,736
Int. Cl. C07d *31/40, 31/48;* **A61k** *27/00*
U.S. Cl. 260—296 **2 Claims**

There is disclosed herein a process for preparing 2-pyridinealdoxime methochloride by reaction 2-pyridinealdoxime with dimethylsulfate to obtain an intermediate metho-methylsulfate; and then reacting the latter, without isolation, with the hydrochloride salt of a hydrocarbon amine thereby obtaining the desired methochloride in high yields and in a high state of purity.

3,468,897

CERTAIN 6-AMINO-2-(ARYL OR HETEROARYL)-4-CHROMANONE-HYDRAZONES AND DERIVATIVES

Pierre Fournari, 10 Rue Reaumur, 21 Dijon, France; Jean Tirouflet, 25 Rue de Beauregard, 21 Dijon, France; and Claude Boichot, 12 Rue des Vignes, 21 Quetigny, France

No Drawing. Filed Oct. 5, 1966, Ser. No. 584,366
Int. Cl. C07d *7/24, 99/04;* **A61k** *25/00*
U.S. Cl. 260—296 **9 Claims**

6-amino-2-phenyl or heterocyclic-4-chromanone hydrazones and the pharmaceutically acceptable nontoxic salts thereof are useful as sedatives and muscle relaxants in mammals.

3,468,898

BRIDGED BIS-BIGUANIDES AND BIS-GUANIDINES

Royal A. Cutler, Sand Lake, and Samuel Schallt, Albany, N.Y., assignors to Sterling Drug Inc., New York, N.Y., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 358,614, Apr. 9, 1964. This application May 26, 1966, Ser. No. 553,044
Int. Cl. C07c *129/16;* **C07f** *15/06,* **A61k** *27/00*
U.S. Cl. 260—301 **25 Claims**

1,1′-bridged - bis[5 - higher-alkylbiguanides] and 1,1′-bridged-bis[3-higher-alkylguanidines] are useful biocidal and biostatic agents for applicatiin to living and nonliving surfaces.

3,468,899

THIAZOLE DERIVATIVES

Michael Barber, South Benfleet, David Rex Broad, Romford, and Basil Jason Heywood, Hornchurch, England, assignors to May & Baker Limited, Dagenham, England, a British company

No Drawing. Filed Oct. 28, 1966, Ser. No. 590,181
Claims priority, application Great Britain, Nov. 1, 1965, 46,150/65
Int. Cl. C07d *91/32;* **A01n** *9/12, 9/22*
U.S. Cl. 260—306.8 **4 Claims**

5-halo-2-cyclopropanecarbonamidothiazoles have useful herbicidal properties on pre-emergence application.

3,468,900

PROCESS FOR PREPARING ISOXAZOLE COMPOUNDS

William E. Rosen, Summit, and John W. Drew, Basking Ridge, N.J., assignors to Hoffman Laboratories, Inc., a corporation of Missouri, and Cambridge Research Inc., Roselle, N.J., a corporation of New Jersey

No Drawing. Filed Aug. 24, 1966, Ser. No. 574,533
Int. Cl. C07d *85/22*
U.S. Cl. 260—307 **13 Claims**

Isoxazole compounds are prepared by reacting an olefin with nitrosyl halide to provide a nitroso halide addition compound and then reacting the addition compound with a nucleophilic group having an active carbon atom to replace the halide followed by cyclization to form the isoxazole ring structure.

3,468,901

4-CYANOIMIDAZOLE-5-CARBOXAMIDE

Yoshitaka Yamada, 2129 Minamikase, Kawasaki-shi, and Izumi Kumashiro, 647 Osone-cho, Kohoku-ku, Yokohama-shi, both of Kanagawa-ken, Japan; Tadao Takenishi, 13 Tamagawanoge-cho, Setagaya-ku, and Katsumi Suzuki, 1631 Ikebukuro, Toshima-ku, both of Tokyo, Japan

No Drawing. Filed June 15, 1965, Ser. No. 464,216
Claims priority, application Japan, June 18, 1964, 39/34,539
Int. Cl. C07d *49/36*
U.S. Cl. 260—309 **1 Claim**

5-aminoimidazole-4-carboxamide is prepared from 4,5-dicyanoimidazole by hydrolyzing the last-mentioned compound in aqueous, strongly alkaline solution to 4-cyanoimidazole-5-carboxamide, subjecting the 4-cyanoimidazole-5-carboxamide to Hofmann Rearrangement to 4-cyano-5-aminoimidazole, and hydrolyzing the latter in a strongly alkaline aqueous medium. 5-aminoimidazole-4-carboxamide is an intermediate in the synthesis of other imidazole derivatives.

3,468,902
1-SUBSTITUTED-2-NITROIMIDAZOLE DERIVATIVES

Alden Gamaliel Beaman, North Caldwell, and Robert Duschinsky, Montclair, N.J., and William Paul Tautz, New York, N.Y., assignors to Hoffman-La Roche Inc., Nutley, N.J., a corporation of New Jersey

No Drawing. Continuation-in-part of application Ser. No. 447,087, Apr. 9, 1965. This application June 10, 1966, Ser. No. 556,585

Int. Cl. C07d *49/18, 1/00;* **A61k** *9/06*

U.S. Cl. 260—309 **32 Claims**

Anti-microbial 2-nitroimidazole derivatives are prepared by reacting 2-nitroimidazole with 1,2-propylene oxide or a substituted oxirane derivative, e.g., epihalohydrin. The reaction products can be further converted to the corresponding epoxides, esters, ketones or semicarbazones.

3,468,903
DINITROIMIDAZOLIDIN-2-ONE DERIVATIVES

Andrew Cochran Currie, Largs, and Andrew Harper Dinwoodie, Dalry, Scotland, assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Navy

No Drawing. Filed Dec. 12, 1966, Ser. No. 600,728

Claims priority, application Great Britain, Feb. 28, 1966, 8,765/66

Int. Cl. C07d *49/00, 49/34*

U.S. Cl. 260—309.7 **5 Claims**

New organic nitrogen compounds which are 4,5-dihydroxy, -dimethoxy, -diethoxy and -diacetoxy-1, 3-dinitroimidazolidin-2-ones. The compounds are propellants. They may be prepared by a process in which the starting material is a 4,5-dihydroxy, -dimethoxy, or -diethoxy-1, 3-imidazolidin-2-one or -2-nitriminoimidazolidine and is treated with nitric acid or a mixture of nitric acid and acetic anhydride at a temperature in the range of from −10° C. to 20° C.

3,468,904
PRODUCTION OF LIGHT-COLORED FATTY-DERIVED AMINO-CONTAINING COMPOUNDS

Theodore H. Kritchevsky, Chicago, Ill., assignor to Hodag Chemical Corporation, Skokie, Ill., a corporation of Illinois

No Drawing. Filed Oct. 24, 1965, Ser. No. 505,044

Int. Cl. C07d *49/34;* **C07c** *103/00, 103/02*

U.S. Cl. 260—309.6 **8 Claims**

The method of producing light colored fat acid derived amino-containing compounds, exemplified by amino-amides and amino-imidazolines of lauric acid, myristic acid and oleic acid, and which also possess enhanced color stability on storage, wherein the reaction to produce said amino-containing compounds is carried out in the presence of a small proportion of borohydrides or hydrides such as those of the alkali metals, for instance, sodium borohydride or sodium hydride.

3,468,905
N-(1-HALO-1-NITROALKYLTHIO) DICARBOXIMIDES

Gustave K. Kohn and Joseph G. E. Fenyes, Berkeley, Calif., assignors to Chevron Research Company, San Francisco, Calif., a corporation of Delaware

No Drawing. Filed Sept. 7, 1965, Ser. No. 485,619

Int. Cl. C07d *51/32, 49/32, 27/06*

U.S. Cl. 260—326 **3 Claims**

N-(1-halo-1-nitroalkylthio) dicarboximides wherein the alkyl group contains 2 to 6 carbon atoms and the halogen is of atomic number 17 to 35. Typical dicarboximides are N-(1-chloro-1-nitroethylthio) phthalimide, N-(1-halo-1-nitropropylthio) - 5,5 - dimethyl hydantoin, N,N-di-(1-chloro-1-nitropropylthio) uracil and 1,1-bis-(chloro-1-nitropropylthio) parabanic acid. These carboximides are fungicidal.

3,468,906
1,1-DIPHENYL-1-LOWER ALKANOYLOXY AND CARBOLOWER ALKOXY ALKENAMINES

Adrian Marxer, Muttenz, Switzerland, assignor to Ciba Corporation, New York, N.Y., a corporation of Delaware

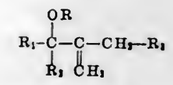
No Drawing. Filed Mar. 28, 1966, Ser. No. 537,710

Claims priority, application Switzerland, Apr. 15, 1965, 5,305/65, 5,306/65; Feb. 24, 1966, 2,693/66, 2,694/66

Int. Cl. C07d *87/36, 51/72;* **C07c** *93/22*

U.S. Cl. 260—326.3 **11 Claims**

Amino-esters of the formula



in which R represents an acyl radical, R_1 and R_2 an aryl radical each, and R_3 an aliphatic tertiary amino group, and their salts. The compounds are useful as analgesics or as cardiovascular agents.

3,468,907
GLYCERYL ESTERS OF α-(1-AROYL-3-INDOLYL)ALKANOIC ACIDS

Margaret H. Sherlock, Bloomfield, N.J., assignor to Schering Corporation, Bloomfield, N.J., a corporation of New Jersey

No Drawing. Filed Apr. 10, 1967, Ser. No. 629,363

Int. Cl. C07d *27/56;* **A61k** *27/00*

U.S. Cl. 260—326.12 **9 Claims**

The invention relates to glyceryl esters of α-(1-aroyl-3-indolyl)alkanoic acids, to their use as analgesic anti-inflammatory agents, and to the intermediates useful in the preparation thereof. Illustrative of the preparation of the compounds of this invention is the formation of glyceryl - α - (5-methoxy-1-p-chlorobenzoyl-2-methyl-3-indolyl)acetate, as follows: Heat a mixture of cyanomethyl-5-methoxy-2-methyl-3-indolylacetate and 2,2-dimethyl-1,3-dioxolane-4-methanol for 30 minutes. Convert the so-prepared β,γ-isopropylidenedioxypropyl-5-methoxyl-2-methyl-3-indolylacetate to its sodium salt with sodium hydride in an anhydrous solvent and the sodium salt is acylated by stirring with p-chlorobenzoyl chloride at room temperature for 16 hours. Hydrolyze the β,γ-isopropylidenedioxypropyl - α - (5-methoxy-1-p-chlorobenzoyl-2-methyl-3-indolyl)acetate by heating the ester on a steam bath, in the presence of 75% acetic acid, for 15 minutes. Alternate methods for the preparation of the glyceryl esters of the α-(1-aroyl-3-indolyl)alkanoic acids are also described.

3,468,908
HEXAFLUOROISOPROPYLIDENETHIETANES AND THEIR S-OXIDES AND S-DIOXIDES

Maynard S. Raasch, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 547,435, May 4, 1966. This application Apr. 22, 1968, Ser. No. 723,291

Int. Cl. C07d *61/00*

U.S. Cl. 260—327 **9 Claims**

Hexafluoroisopropylidenethietanes formed by reaction of bis(trifluoromethyl)thioketene with an olefinic compound are claimed. Also claimed are hexafluoroisopropylidenethietane S-oxides and S-dioxides formed by contacting these thietanes with oxidizing agents. The thietanes and their S-oxides and S-dioxides are useful as plasticizers for polythiocarbonyl fluoride.

3,468,909
4-BENZOTHIENYL ETHYL 2,2-DICHLOROVINYL PHOSPHATE PESTICIDE

Stanley T. D. Gough, Raritan, N.J., assignor to Mobil Oil Corporation, a corporation of New York

No Drawing. Filed Dec. 23, 1966, Ser. No. 604,186

Int. Cl. C07f *9/08;* **C07d** *63/18*

U.S. Cl. 260—330.5 **2 Claims**

The compounds are of the class of 4-benzothienyl ethyl 2,2-dichlorovinyl phosphates and ring-substituted derivatives, useful as agronomical pesticides.

3,468,910
METHOD FOR PURIFYING 6-(AND 7-) CARBOXY-2-METHYLOL-1,4-BENZODIOXANE

Arnold Fricevich Alksnis, Ul. Rannas 45, kv. 20, and Janis Aleksandrovich Surna, Ul. Maza Kaiju 3, kv. 3, both of Riga, U.S.S.R.

No Drawing. Filed July 9, 1965, Ser. No. 470,876

Int. Cl. C07d *15/18*

U.S. Cl. 260—340.3 **7 Claims**

A method for obtaining pure 6- and 7-carboxy-2-methylol-1,4-benzodioxane by reacting equimolar amounts of sodium protochatechuate and epichlorohydrin at 40–45° C. for about 2 hours to form a mixture of the sodium salts of 6- and 7-carboxy-2-methylol-1,4-benzodioxanes. The mixture is treated with aqueous orthophosphoric acid for up to 12 hours to free the desired acids from their sodium salts and precipitate them. The freed, precipitated acids are recrystallized from hot water.

3,468,911
3,11,17 - TRISUBSTITUTED . C - NORANDROSTANE-11a,17-LACTONES

Paul Kurath, Waukegan, Ill., assignor to Abbott Laboratories, North Chicago, Ill., a corporation of Illinois

No Drawing. Filed May 23, 1966, Ser. No. 551,911

Int. Cl. C07c *173/00, 171/06, 169/22*

U.S. Cl. 260—343.3 **5 Claims**

Simple 3,11α-disubstitted 17β-hydroxy-C-nor-5β-androstane 11α,17-lactones are prepared from analogous 11-oxo - 12 - hydroxy (or acyloxy)-or 11-hydroxy-12-oxo-$\Delta^{9(11)}$-androstanes. The new compounds are useful androgens at very low dosages.

3,468,912
3-CYANO 2(5H) FURANONES AND THEIR PREPARATION

John A. Ford, Jr., and Charles V. Wilson, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed June 6, 1966, Ser. No. 555,239

Int. Cl. C07d *5/16*

U.S. Cl. 260—343.6 **5 Claims**

Process for preparing 3-cyano-2(5H)furanone compounds which comprises heating an alkali metal salt of cyanoacetic acid with an alpha haloacetophenone, a monohaloacetaldehyde or a monohaloalkylketone and novel 3-cyano-2(5H)furanone compounds.

3,468,913
8-CHROMANYL-CARBAMATE ESTERS

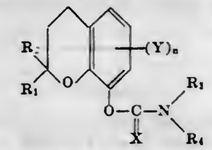
William G. Scharpf, Rocktown, N.J., assignor to FMC Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 472,335, July 15, 1965. This application June 9, 1966, Ser. No. 556,259

Int. Cl. C07d *7/20;* **A01n** *9/20*

U.S. Cl. 260—345.2 **7 Claims**

A new class of pesticides, useful for the control of Arthropoda and Nematoda, comprises 8-chromanyl carbamate esters of the formula



wherein R_1, R_2, R_3, and R_4 are each hydrogen or a lower aliphatic group; Y is hydrogen or one of a variety of groups e.g. chloro or lower alkyl; *n* is an integer of 1 to 3; and X is oxygen or sulfur. Synthesis of representative compounds of this class, their physical properties, and their effectiveness against insects and nematodes are described.

3,468,914
4-PYRONE SYNTHESIS

Alfred A. Schleppnik, St. Louis, and Marvin L. Oftedahl, Crestwood, Mo., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Filed May 16, 1966, Ser. No. 550,158

Int. Cl. C07d *7/16, 7/14*

U.S. Cl. 260—345.9 **2 Claims**

Process for the preparation of 2-alkyl-3-hydroxy-4-pyrones by the reaction sequence (1) β-unsaturated ketone with an oxalic acid diester; (2) cyclization of the adduct in acid medium; (3) oxidation of the cyclized product to yield a 3-hydroxy pyrone; and (4) decarboxylation.

These compounds have utility as food enhancers.

3,468,915
NOVEL 2-SUBSTITUTED-6-METHYL-PYROMECONIC ACIDS

Bryce E. Tate, Niantic, Conn., assignor to Chas. Pfizer & Co., Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Apr. 18, 1966, Ser. No. 543,085

Int. Cl. C07d *7/16;* **A23l** *1/26;* **C11b** *9/00*

U.S. Cl. 260—345.9 **4 Claims**

Novel 2-substituted-6-methylpyromeconic acids which are useful as aroma and flavor enhancers in edibles, perfumes, and tobacco, growth inhibitors of bacteria, yeasts, and fungi, and oil-soluble chelating agents, can be prepared by condensing kojic acid or 6-methylpyromeconic acid with an aldehyde and reducing the intermediates obtained thereby.

3,468,916
2-VINYLPYROMECONIC ACID

Bryce E. Tate, Niantic, and Robert P. Allingham, Groton, Conn., assignors to Chas. Pfizer & Co., Inc., New York, N.Y., a corporation of Delaware

No Drawing. Continuation of application Ser. No. 310,141, Sept. 19, 1963. This application Nov. 1, 1966, Ser. No. 591,126

Int. Cl. C07d *7/16, 7/14*

U.S. Cl. 260—345.9 **1 Claim**

The new compound, 2-vinylpyromeconic acid, a flavoring and antimicrobial agent.

3,468,917
NOVEL 6,6-DIHALO-9β, 10α-STEROIDS

Pieter Westerhof and Hendrik Frederik Louis Scholer, Van Houtenlaan, Weesp, Netherlands, assignors, by mesne assignments, to U.S. Philips Corporation, New York, N.Y., a corporation of Delaware

Filed June 27, 1966, Ser. No. 560,484

Claims priority, application Great Britain, June 30, 1965, 27,735/65

Int. Cl. C07c *169/66, 169/30;* **A61k** *27/00*

U.S. Cl. 260—397.3 **15 Claims**

Novel 6,6-dihalo-9β, 10α steroids of the androstane and pregnane series such as 6-bromo-6-chloro-17α-hydroxy-

9β,10α-pregn-4-en-3,20-dione 17-acetate and 6-bromo-6-fluoro-17β-hydroxy-9β,10α-androst-4-en-3-one 17-acetate. These compounds have hormonal activities.

3,468,918

PROCESS FOR PREPARING Δ^{14}-3,20-DIKETO-21-ACYL-STEROIDS

Werner Fritsch, Neuenhain, Taunus, Werner Haede, Hofheim, Taunus, Kurt Radscheit, Kelkheim, Taunus, Ulrich Stache, Hofheim, Taunus, and Heinrich Ruschig, Bad Soden, Taunus, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany, a corporation of Germany

No Drawing. Filed Dec. 5, 1966, Ser. No. 598,968

Claims priority, application Germany, Dec. 18, 1965, F 47,966

Int. Cl. C07c *167/28, 167/14, 169/36*

U.S. Cl. 260—397.47 **1 Claim**

Process for preparing Δ^{14}-3,20-diketo-21-acyloxy-5β-pregnenes or $\Delta^{4,14}$-3,20-diketo-21 acyloxy-pregnadienes, useful as intermediates in the synthesis of cardenolides, by reacting a 3,20-diketo-15α,21-dihydroxy-5β-pregnane or-Δ^4-pregnene with a sulfonic acid halide to produce a 15,21-disulfonate or 15-sulfonate-21-halide, introducing a 21-acyloxy group thereinto by reaction with an alkali metal carboxylate, and then removing the 15-sulfonate group therefrom by reaction with collidine, lithium salts, or sodium acetate.

3,468,919

PROCESS FOR THE PRODUCTION OF N,N-DIALKYLAMIDES

John R. Kilsheimer, Westfield, and Ross A. Kremer, Bell Mead, N.J., assignors to Mobil Oil Corporation, a corporation of New York

No Drawing. Filed Aug. 10, 1966, Ser. No. 571,421

Int. Cl. C11c *3/00;* **C07c** *103/20*

U.S. Cl. 260—404 **13 Claims**

A method for the preparation of N,N-dialkylamides which comprises contacting an organic acid in vaporized mixture with a dialkylamine in the presence of an ortho-aluminum phosphate catalyst.

3,468,920

ADDITION PRODUCTS OF PHENOLS AND POLYMERIZED FATTY ACIDS

Victor Lewis Larimer, Bloomington, Minn., assignor to Archer-Daniels-Midland Company, Minneapolis, Minn., a corporation of Delaware

No Drawing. Filed Apr. 5, 1965, Ser. No. 445,741

Int. Cl. C08h *9/00;* **C07c** *39/04*

U.S. Cl. 260—407 **5 Claims**

Condensation products (e.g., phenol stearic acid) of phenolic compounds and unsaturated fatty acids or alcohols (including dimers and trimers thereof) are prepared by catalytically reacting these materials together in the presence of clay catalyst and a certain amount of water at superatmospheric pressure and elevated temperatures. The condensates, or alkylated phenolic compounds, are useful as anti-oxidants, corrosion inhibitors, anti-rust compounds, lubricating oil additives, polymer intermediates, emulsifiers, curing agents for epoxies, and surfactants.

3,468,921

π-ALLYL TRANSITION METAL ADDUCTS WITH LEWIS ACIDS AND/OR LEWIS BASES

Günther Wilke, Mulheim (Ruhr), Germany, assignor to Studiengesellschaft Kohle m.b.H., Mulheim (Ruhr), Germany, a corporation of Germany

No Drawing. Continuation-in-part of application Ser. No. 272,881, Apr. 15, 1963. This application Feb. 21, 1967, Ser. No. 617,461

Claims priority, application Germany, Apr. 18, 1962, St 19,116

Int. Cl. C07f *3/00, 5/00, 7/00*

U.S. Cl. 260—429 **29 Claims**

Adducts of π-allyl transition metal compounds and Lewis acids and/or Lewis bases. Particularly claimed are 1:1:1 adducts of a Lewis base, a Lewis acid and a π-allyl transition metal compound. These products are suitable for use to catalyze the cyclo-oligomerization of mono and diolefins.

3,468,922

PROCESS FOR PREPARING 1,3-BIS-(SILYL)-1,3-DIAZA-2-SILACYCLOALKANES

Walter Fink, Zurich, Switzerland, assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware

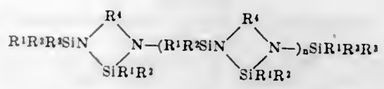
No Drawing. Filed Nov. 2, 1966, Ser. No. 591,418

Claims priority, application Switzerland, Nov. 9, 1965, 15,528/65

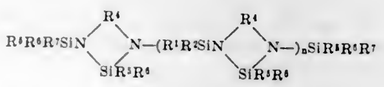
Int. Cl. C07f *7/02*

U.S. Cl. 260—448.2 **10 Claims**

Process for making compounds of formula



by reacting a halosilane of the formula $R^1R^2R^3SiX$ with a compound of formula



to split off halosilane. The claimed process produces compounds which are useful as high temperature resistant liquids for hydraulic oils, heat transferring fluids, lubricants and additives to lubricants.

3,468,923

α,β-UNSATURATED ISOCYANATES

Karl-Heinz Koenig and Horst Pommer, Ludwigshafen (Rhine), Germany, assignors to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Rhineland, Pfalz, Germany

No Drawing. Filed May 23, 1962, Ser. No. 196,912

Claims priority, application Germany, May 26, 1961, B 62,642

Int. Cl. C07c *119/04*

U.S. Cl. 260—453 **2 Claims**

1. An α,β-unsaturated isocyanate of the formula

$$R_1—N=C=O$$

wherein R_1 represents alkenyl of 2 to 4 carbon atoms substituted by 1 to 7 halogen atoms selected from the class consisting of chlorine and bromine, the olefinic double bond being in α,β-position with reference to the nitrogen atom.

3,468,924

α,α-DIFLUOROALKYLARYLMETHYL ISOCYANATES

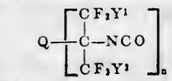
David M. Gale, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Apr. 21, 1966, Ser. No. 544,096

Int. Cl. C07c *119/04;* **B32b** *23/00;* **C08j** *1/38*

U.S. Cl. 260—453 **3 Claims**

(1) Aralkyl isocyanates of the formula



wherein Y^1 and Y^2 are fluorine, chlorine or 1–6 carbon perfluoroalkyl, ω-chloroperfluoroalkyl or ω-hydroperfluoroalkyl radicals, n is the integer 1 or 2 and Q is a radical formed by removal of n hydrogen atoms from a compound HQH selected from the group benzene, naphthalene, anthracene, biphenyl and polycyclic compounds containing 2 six-membered carbocyclic aromatic rings which are joined through a bridge selected from the group —O—, —S— and $-(CH_2)_m-$, m being an integer from 1–6; and (2) the process of preparing the aralkyl isocyanates of this invention through reaction of the corresponding amine with oxalyl chloride or phosgene.

The compounds of this invention are useful as laundry-fast water-repellent finishes for cellulosic fabrics and as intermediates in the formation of polymeric materials.

3,468,925

PREPARATION OF 2-AMINOETHYLTHIOSULFATES BY REACTION OF THIOSULFURIC ACID WITH AN AZIRIDINE

Stanley J. Brois, Matawan, N.J., assignor to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Filed May 2, 1966, Ser. No. 546,578

Int. Cl. C07c *119/04, 121/42*

U.S. Cl. 260—453 **8 Claims**

2-aminoethylthiosulfates, also known as Bunte salts, can be conveniently prepared by reacting an aziridine with thiosulfuric acid at low temperatures, such as −60° to 0° C., in the presence of a suitable solvent, such as methanol.

3,468,926

3,5-DIHALO-4-CYANOALKOXY PHENOLS

Linneaus C. Dorman, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed July 8, 1966, Ser. No. 563,719

Int. Cl. C07c *121/52;* **A01n** *9/20*

U.S. Cl. 260—465 **7 Claims**

2,6-dihalohydroquinones are monoetherified to produce 3,5-dihalo-4-alkoxyphenols. The alkylating agents contain carboxyl derivatives such as the cyano and carboxamide moieties. The compounds are useful as fungicides and bactericides.

3,468,927

PROCESS FOR PREPARING PIMELIC ACID AND A 2,2-DIALKYL-1,3-PROPANEDIOL

Roy B. Duke, Jr., Smyrna, Ga., and Milton A. Perry, Longview, Tex., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Continuation-in-part of application Ser. No. 323,602, Nov. 14, 1963. This application Mar. 15, 1965, Ser. No. 440,012

Int. Cl. C07c *69/74*

U.S. Cl. 260—468 **2 Claims**

A non-catalytic condensation of an unsaturated alicyclic aldehyde and 2,2-disubstituted hydroxy-aldehyde to form unsaturated alicyclic glycol monoesters, which are useful intermediates in producing commercially important chemicals such as pimelic acid and glycols.

3,468,928

COMPOUNDS OF 1,5-DIMETHYLBICYCLO-(2.1.1)HEXANE

Thomas W. Gibson, Cincinnati, Ohio, assignor to The Procter & Gamble Company, Cincinnati, Ohio, a corporation of Ohio

No Drawing. Filed Dec. 20, 1965, Ser. No. 515,217

Int. Cl. C07c *35/28, 61/12, 69/74*

U.S. Cl. 260—468 **5 Claims**

1,5-dimethyl-bicyclo(2.1.1)hexyl-2-acetic acid, and related compounds, and processes for their preparation are disclosed. These compounds are useful as perfume components and as flavors.

3, 468,929

CYCLENE-CARBOXYLATES AND PREPARATION THEREOF

Yannik Bonnet, Tassin-la-Demi-Lune, France, assignor to Rhone-Poulenc S.A., Paris, France, a French body corporate

No Drawing. Filed May 6, 1966, Ser. No. 548,039

Claims priority, application France, May 10, 1965, 16,474

Int. Cl. C07c *61/32, 69/74, 67/00*

U.S. Cl. 260—468 **10 Claims**

Alkyl 2-alkoxy-2-cyclene-carboxylates, useful as intermediates in the production of cycloalkanones, are made by reacting an α,α,ω-trihalogenocycloalkanone with an alkali metal alkoxide.

3,468,930

PROCESS FOR THE CONVERSION OF NITRILES TO ESTERS

Joseph Pugach, Bronx, N.Y., assignor to Halcon International, Inc., a corporation of Delaware

No Drawing. Filed Aug. 4, 1966, Ser. No. 570,181

Int. Cl. C07c *67/00*

U.S. Cl. 260—475 **9 Claims**

The present invention is concerned with the production of esters of aromatic carboxylic acids through the reaction in the liquid phase of an aromatic nitrile and a lower aliphatic polyhydric alcohol, the improvement comprising carrying out the reaction in the presence of an iron or tin catalyst.

3,468,931

4'-SUBSTITUTED DERIVATIVES OF 1,18-DI[2',3',6'-TRIMETHYLPHENYL-(1')]-3,7,12,16-TETRAMETHYL-1,3,5,7,9,11,13,15,17-OCTADECANONAENE

Giovanni Franceschi and Federico Arcamone, Milan, Italy, assignors to Societa Farmaceutici Italia, Milan, Italy, a corporation of Italy

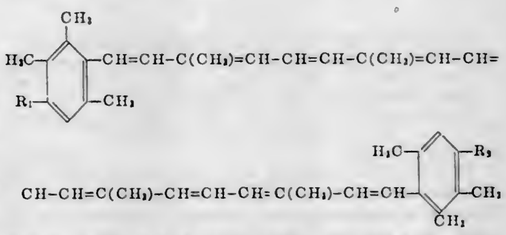
No Drawing. Filed Oct. 3, 1966, Ser. No. 583,949

Claims priority, application Italy, Oct. 7, 1965, 22,302/65; Feb. 9, 1966, 2,851/66

Int. Cl. C07c *37/20, 69/24;* **A23k** *1/16*

U.S. Cl. 260—479 **5 Claims**

The invention relates to 4'-substituted derivatives of 1,18-di[2',3',6'-trimethylphenyl - (1')] - 3,7,12,16 - tetramethyl-1,3,5,7,9,11,13,15,17-octadecanonaene of the following structure:



wherein R_1 is selected from the group consisting of hydroxy- and acyloxy-group; R_2 is selected from the group consisting of hydrogen, hydroxy and acyloxy-group, the

acyl of said acyloxy being selected from saturated aliphatic acid of from 1 to 6 carbon atoms; and the process for the preparation thereof. The compounds of the invention are carotenoids, and are characterized by a strong pigmenting power as to make them useful in animal husbandry.

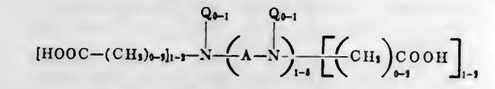
3,468,932

DERIVATIVES OF POLYAMINECARBOXYLIC ACIDS

Verner L. Stromberg, St. Louis, Mo., assignor to Petrolite Corporation, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Feb. 11, 1965, Ser. No. 432,014
Int. Cl. C07c *99/00, 101/26*
U.S. Cl. 260—482 **4 Claims**

A quaternary reaction product of (1)



where Q is H or $[(CH_2)_{0-2}—COOH]$ and A is an alkylene group having 2–10 carbon atoms, for example, diethylene triamine pentacetic acid,

(2) An epihalohydrin such as epichlorohydrin, and (3) a tertiary amine of the formula R'_2NR where R' is methyl or ethyl and R is a hydrocarbon group having at least about 6 carbon atoms. The reaction product is formed by mixing and heating (1) and (2) in water at approximately 50–80° C. for approximately ½ to 1 hour, then adding (3) to the aqueous solution and then heating and stirring at about 80–90° C. for about ½ to 1 hour. The reaction product is used for inhibiting corrosion in a system by treating the system with it and also by treating the system with it and a film-forming corrosion inhibitor. Also, the reaction product is used in a process of water flooding by using said reaction product together with a film-forming corrosion inhibitor.

3,468,933

HYDROXYMETHANE CARBOXYLIC ACID ESTERS AND PROCESS FOR THEIR MANUFACTURE

Robert Burns Woodward, 12 Oxford St., Cambridge, Mass. 02138

No Drawing. Filed Aug. 22, 1966, Ser. No. 573,886
Claims priority, application Switzerland, Sept. 10, 1965, 12,623/65; Dec. 9, 1965, 16,976/65, 16,977/65; Jan. 13, 1966, 449/66, 450/66
Int. Cl. C07c *69/66*
U.S. Cl. 260—483 **15 Claims**

Process (and products obtained thereby), wherein an oxomethane carboxylic acid ester is reacted with malonic dialdehyde or with a salt thereof, and, if desired, water is eliminated from a resulting α-diformylmethyl-α-hydroxy-methane carboxylic acid ester, and/or, if desired, a resulting compound is converted into an oxo derivative thereof. The products are intermediates for the preparation of 7 - amino-cephalosporanic acid and derivatives thereof.

3,468,934

ACYLOXYALKYLAMINE HYDROCHLORIDES

William D. Emmons, Huntingdon Valley, and Jerome F. Levy, Bethayres, Pa., assignors to Rohm & Haas Company, Philadelphia, Pa., a corporation of Delaware

No Drawing. Filed Jan. 6, 1966, Ser. No. 519,001
Int. Cl. C07c *93/16, 9/00, 65/00*
U.S. Cl. 260—485 **2 Claims**

This invention concerns novel acyloxyalkylamine hydrochlorides and novel isocyanates prepared therefrom. The novel compounds may contain a hetero atom in either the acid or alkanolamine moiety and preferably utilizes oxalic acid, or derivative thereof, as the acyl moiety.

3,468,935

PREPARATION OF ORGANOPHOSPHONIC ACIDS

Dennis Raymond Peck, Quinton, England, assignor to Albright & Wilson (Mfg.) Limited, Oldbury, near Birmingham, Warwickshire, England, a British company

No Drawing. Filed Oct. 27, 1965, Ser. No. 505,410
Claims priority, application Great Britain, Nov. 11, 1964, 45,991/64; Aug. 9, 1965, 33,939/65
Int. Cl. C07f *9/38*
U.S. Cl. 260—488 **7 Claims**

Acetoxyethylidenediphosphonic acid having the formula: $CH_3CO[CH_3CO(PO_3)_2H_4]$, is prepared by reacting glacial acetic acid with a phosphorus trihalide. The molar ratio of reactant acetic acid per mole of reactant phosphorus trihalide is at least 3.5:1, and preferably 4–10:1, with optimum results obtained with a molar ratio of at least 5:1. The product acetoxyethylidenediphosphonic acid may be recovered as such, or by contact with water converted into 1-hydroxyethylidenediphosphonic acid. Alternatively, treatment of the acetoxyethylidenediphosphonic acid containing reaction mixture with an aqueous base results in the preparation of salts of 1-hydroxyethylidenediphosphonic acid.

3,468,936

PREPARATION OF HYDROXAMIC ACIDS

Willem Jacob van der Burg, Oss, Netherlands, assignor to Organon Inc., West Orange, N.J., a corporation of New Jersey

No Drawing. Original application Feb. 11, 1965, Ser. No. 431,993. Divided and this application Mar. 18, 1968, Ser. No. 737,263
Claims priority, application Netherlands, Mar. 6, 1964, 6402255
Int. Cl. C07c *83/06*
U.S. Cl. 260—500.5 **4 Claims**

1. Process for the preparation of an hydroxamic acid from a lower alkyl or phenyl ester of an alpha amino carboxylic acid which comprises reacting said ester with a solution of hydroxylamine in an anhydrous alcohol, which soltuion is prepared by reacting a salt of hydroxylamine with lithium alcoholate in anhydrous alcohol.

3,468,937

PROCESS FOR THE PREPARATION OF PURE CARNITINE IN BETAINE FORM

Erich Strack and Irmgard Lorenz, Leipzig, Germany, assignors to VEB Berlin-Chemie, Berlin-Adlershof, Germany

No Drawing. Filed July 13, 1965, Ser. No. 471,740
Int. Cl. C07c *101/04*
U.S. Cl. 260—501.13 **4 Claims**

A process for the preparation of pure carnitine in betaine form from the respective carnitine nitrile chloride in which the carnitine nitrile chloride is heated in alcoholic hydrochloric acid solution until formation of ammonium chloride stops, whereupon it is separated from the solution, and the remaining solution is evaporated to dryness, the residue is dissolved in water, the chlorine ions are eliminated from the solution by conventional methods, and the solution is evaporated to dryness under reduced pressure, whereby the pure carnitine betaine is obtained. The products obtained are useful for many purposes, e.g. improvement of protein utilization in the body, against indigestion, adjustment of metabolism, and the like.

3,468,938

METHOD OF PREPARING SULFONATED HYDROXYBENZOPHENONE

Anthony J. Cofrancesco and Richard Ferrigan, Albany, N.Y., assignors to GAF Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Oct. 21, 1966, Ser. No. 588,293
Int. Cl. C07b *13/02;* **C07c** *143/38*
U.S. Cl. 260—511 **7 Claims**

A process for producing sulfonated benzophenones which comprises sulfonating 2-hydroxy benzophenone and derivatives thereof with chlorosulfonic acid in the presence of a chlorinated lower alkane solvent having a low miscibility with water, removing the hydrochloric acid produced during the sulfonation, adding water to provide a 15–35% by weight solution of the sulfonated benzophenone, separating the solvent layer and spray drying.

3,468,939

4- AND 5-ARYL-1-NAPHTHALENEACETIC ACID COMPOUNDS

James S. Kaltenbronn, Ann Arbor, Mich., assignor to Parke Davis & Company, Detroit, Mich., a corporation of Michigan

No Drawing. Continuation-in-part of application Ser. No. 277,468, May 2, 1963. This application Apr. 28, 1965, Ser. No. 451,625
Claims priority, application Mexico, Apr. 29, 1964, 83,041
Int. Cl. C07c *63/52, 69/76, 101/02*
U.S. Cl. 260—515 **7 Claims**

4-phenyl- and 5-phenyl-1-naphthaleneacetic acids optionally substituted on the phenyl ring; and α-alkyl derivatives, salts, alkyl esters, and dialkylaminoalkyl esters. The compounds have pharmacological activity and can be produced by (a) hydrolyzing a hydrolyzable group to carboxyl, (b) reacting a reactive metal derivative with carbon dioxide and acidifying the product, or (c) esterifying a carboxyl group or a reactive derivative.

3,468,940

DIPHENETHYLBENZENE TETRACARBOXYLIC ACID DERIVATIVES

Ferdinand B. Zienty, Warson Woods, and Myron J. Holm, Olivette, Mo., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware

No Drawing, Original application June 5, 1964, Ser. No. 373,065, now Patent No. 3,293,278, dated Dec. 20, 1966. Divided and this application Mar. 24, 1966, Ser. No. 537,025
Int. Cl. C07c *63/48*
U.S. Cl. 260—515 **2 Claims**

Certain derivatives of diphenethylbenzene-α,α',β,β'-tetracarboxylic acid are valuable as synthetic resin intermediates to prepare plasticizers, flame-proofing agents, gear oil additives, high temperature grease additives, fungicides and bacteroiostats.

3,468,941

PRODUCTION OF 2-AMINO-3-NITROBENZOIC ACID

Charles H. Chang, Piscataway, N.J., assignor to GAF Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Apr. 19, 1966, Ser. No. 543,551
Int. Cl. C07c *99/00*
U.S. Cl. 260—518 **4 Claims**

2-amino-3-nitrobenzoic acid is prepared by heating 2-hydroxyl-3-nitrobenzoic acid or a salt thereof to a temperature of about 120° C. to about 180° C. with ammonium hydroxide or a solution of ammonium hydroxide in a lower alkanol.

3,468,942

METHOD FOR THE RECOVERY OF HYDROXY AROMATIC CARBOXYLIC ACIDS

Oscar A. Blum, Upper Saddle River, N.J., assignor to Tenneco Chemicals, Inc., a corporation of Delaware

No Drawing. Filed Oct. 5, 1966, Ser. No. 584,369
Int. Cl. C07c *65/02, 65/14*
U.S. Cl. 260—520 **16 Claims**

1. In the method for the recovery of hydroxy aromatic carboxylic acids from their alkali metal salts by sequentially adding a mineral acid to an aqueous solution of an alkali metal salt of a hydroxy aromatic carboxylic acid to obtain the free organic acid, cooling the resulting mixture, separating the precipitated carboxylic acid therefrom, and then washing said separated acid with water, the improvement which comprises conducting at least one of said sequential steps in the presence of a minor amount of a wetting agent.

3,468,943

CONTINUOUS NITRIC ACID OXIDATION OF COAL

Stephen Mark Creighton and John Charles T. Wood, Edmonton, Alberta, Canada, assignors to Canadian Patents and Development Limited, Ottawa, Ontario, Canada, a company of Canada

Filed Aug. 16, 1966, Ser. No. 572,834
Int. Cl. C07c *63/02, 51/16*
U.S. Cl. 260—523 **5 Claims**

A continuous process for oxidizing long rank coal to produce humic acids in which the coal is passed through a single or twin screw conveyor and concentrated nitric acid is fed along the length of the conveyor at spaced intervals so that the nitric acid added at any feed point is completely reacted before the coal arrives at the next nitric acid feed point.

3,468,944

METHOD OF PREPARING KETOACIDS

Harry Chafetz, Poughkeepsie, and Theodore C. Mead, Glenham, N.Y., assignors to Texaco Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed May 31, 1966, Ser. No. 553,695
Int. Cl. C07c *51/09, 51/00*
U.S. Cl. 260—526 **6 Claims**

A method of preparing keto-monocarboxylic acids from 2-hydrocarbylperoxycycloalkanone directly or from 2-hydrocarbylperoxycycloalkanone derived from the reaction of 2-hydrocarbylcycloalkanone and hydrocarbyl hydroperoxide, comprising contacting the formed or preformed cycloperoxyalkanone with a strong base and acidifying the resultant reaction mixture.

3,468,945

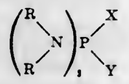
PRODUCTION OF CARBOXYLIC ACIDS AND NITRILES

David A. Edwards, Oxford, Eric B. Evans, Steventon, and Benjamin T. Fowler, Abingdon, England, assignors to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Filed Sept. 15, 1965, Ser. No. 487,581
Claims priority, application Great Britain, Sept. 25, 1964, 39,235/64
Int. Cl. C07c *51/26, 121/02*
U.S. Cl. 260—531 **9 Claims**

Organic carboxylic acids and nitriles are prepared by oxidizing primary alcohols or amines in the presence of a cobalt oxide catalyst of a higher oxidation state than cobalt monoxide. Preferably, the reaction is conducted in an aqueous alkaline medium. Desirably, the cobalt catalyst is generated in situ by the oxidation of a water-soluble cobalt salt.

3,468,946
PHOSPHORIC TRIAMIDE DERIVATIVES
Horst O. Bayer, Levittown, and Sheldon N. Lewis and Victor H. Unger, Willow Grove, Pa., assignors to Rohm & Haas Company, Philadelphia, Pa., a corporation of Delaware
No Drawing. Filed Oct. 20, 1965, Ser. No. 499,045
Int. Cl. C07f 9/52; A01n 9/36
U.S. Cl. 260—543 4 Claims
Herbicidal compositions comprising, as the active ingredient contained therein, novel halophosphonium salts of the formula



are useful for the selective control of the growth of weeds in an agronomic crop.

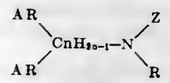
3,468,947
PREPARATION OF ALPHA,BETA-UNSATURATED ACYL HALIDES
John A. Scheben, Erlanger, Ky., and Irving L. Mador, Cincinnati, Ohio, assignors to National Distillers and Chemical Corporation, New York, N.Y., a corporation of Virginia
No Drawing. Filed Sept. 2, 1965, Ser. No. 484,715
Int. Cl. C07c 51/58, 57/06
U.S. Cl. 260—544 14 Claims
The preparation of alpha,beta-unsaturated acyl halides by reacting olefins with carbon monoxide in the presence of a platinum or palladium triad catalyst, a halide and an acid acceptor. In one example, acrylyl chloride is prepared by reacting ethylene with carbon monoxide in the presence of palladous chloride, cupric chloride and acetonitrile.

3,468,948
PROCESS FOR THE MANUFACTURE OF ANHYDRIDES OF SORBIC ACID
Hans Fernholz, Fischbach, Taunus, and Hans-Joachim Schmidt, Frankfurt am Main, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany, a corporation of Germany
No Drawing. Filed Jan. 18, 1966, Ser. No. 521,419
Claims priority, application Germany, Jan. 27, 1965, F 45,067
Int. Cl. C07c 51/54
U.S. Cl. 260—549 8 Claims
Method of making sorbic acid anhydrides by reacting the polyester of 3-hydroxy-hexenic-4-acid-1 with a monocarboxylic acid chloride or an ester formed between chlorocarbonic acid and a monohydric alcohol of an aliphatic or cycloaliphatic hydrocarbon.

3,468,949
BROMINATION PROCESS
Vincent Lamberti, Upper Saddle River, and Henry Lemaire, Leonia, N.J., assignors to Lever Brothers Company, New York, N.Y., a corporation of Maine
No Drawing. Filed Mar. 24, 1967, Ser. No. 625,583
Int. Cl. C07c 103/22
U.S. Cl. 260—559 10 Claims
A process for the bromination of salicylanilide, 5-monobromosalicylanilide or 4',5-dibromosalicylanilide with bromine which utilizes one or more C_6 to about C_{18} saturated monocarboxylic acids and esters thereof with C_1 to about C_{16} mono-, di- or trihydric alcohols as the reaction medium in the liquid state in order to produce a high yield of a light colored germicidal mixture of reaction products rich in 3,4',5-tribromosalicylanilide without being encumbered by the usual solvent-recovery and solvent-purification problems.

3,468,950
AMINOBICYCLO[3.3.1]NONANES
Alfred W. Chow, Radnor, and George L. Dunn, Wayne, Pa., assignors to Smith Kline & French Laboratories, Philadelphia, Pa., a corporation of Pennsylvania
No Drawing. Filed Dec. 20, 1965, Ser. No. 515,158
Int. Cl. C07c 87/36; A61k 27/00
U.S. Cl. 260—563 14 Claims
Bicyclo[3.3.1]nonanes, substituted at the 1,2,3, or 9-positions with amino or aminomethyl groups are prepared from appropriate bicyclic esters or ketones. The products possess antiviral activity.

3,468,951
BIS-(ALKOXYARYL)ALKYL-N-ALKENYL-AND-ALKYNYL-AMINES
Arthur K. Cho, Los Angeles, Calif., assignor, by mesne assignments, to American Hospital Supply Corporation, a corporation of Illinois
No Drawing. Filed June 14, 1965, Ser. No. 463,868
Int. Cl. C07c 93/00
U.S. Cl. 260—570 7 Claims
1. A compound selected from the class consisting of compounds of the formula:



and pharmaceutically acceptable acid addition salts thereof; wherein n is a positive integer from 1 to 3; Z is a lower alkyl having from one to three carbon atoms; R is an unsaturated lower alkyl; and AR is an alkoxy substituted aromatic hydrocarbon in which this substitution is from one to three such lower alkoxy groups each with from one to two carbon atoms.

3,468,952
N-DICHLOROACETYL-β-(p-FLUOROPHENYL)-ALANINE AND ITS SODIUM SALT
Gustav Ehrhart, Bad Soden, Taunus, Dietmar Gericke, Frankfurt am Main, and Heinrich Ott, Eppstein, Taunus, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany
No Drawing. Filed May 3, 1966, Ser. No. 547,171
Claims priority, application Germany, May 6, 1965, F 45,972
Int. Cl. C07c 103/32
U.S. Cl. 260—518 2 Claims
N-dichloroacetyl-β-(p-fluorophenyl)-alanine and its sodium salt, useful as inhibitors for antibody formation.

3,468,953
PROCESS FOR MANUFACTURE OF METHYLAMINES
Paul Besson and Pierre Thirion, La Chambre, Savoie, France, assignors to Ugine Kuhlmann, Paris, France, a corporation of France
No Drawing. Continuation-in-part of application Ser. No. 325,152, Nov. 20, 1963. This application July 6, 1966, Ser. No. 563,036
Claims priority, application France, July 8, 1965, 23,947
Int. Cl. C07c 85/12; B01j 11/16
U.S. Cl. 260—583 7 Claims
A process for the manufacture of methylamines comprising hydrogenating hydrocyanic acid under pressure in gaseous phase at a temperature between 150° C. and 300° C. in the presence of a catalyst of the group of platinum metals. The catalyst is disposed on a support of a mixture of diatomaceous earth and kaolin, a Lewis acid or a mixture of diatomaceous earth and kaolin with an acidic promoter. The acidic promoter is either a protonic acid or a Lewis acid.

3,468,954
STABILIZED DINITROSO-PENTAMETHYLENE TETRAMINE
Yvon Gilbert Marc Conseiller, Paris, and Andre Jean Arthur Quiquempois, Nogent sur Marne, France, assignors to Rhone-Poulenc S.A., Paris, France, a French body corporate
No Drawing. Filed Mar. 24, 1966, Ser. No. 536,990
Claims priority, application France, Mar. 26, 1965, 10.908
Int. Cl. C07c 87/20
U.S. Cl. 260—583 3 Claims
Hydrated borax is an effective stabilizer for dinitrosopentamethylene tetramine against the effects of acids and heat.

3,468,955
A-NORSTEROIDS
Seymour D. Levine, North Brunswick, and Patrick A. Diassi, Westfield, N.J., assignors, by mesne assignments, to E. R. Squibb & Sons, Inc., New York, N.Y., a corporation of Delaware
No Drawing. Original application Mar. 16, 1965, Ser. No. 440,311, now Patent No. 3,330,851, dated July 11, 1967. Divided and this application Mar. 9, 1967, Ser. No. 621,755
Int. Cl. C07c 171/06, 173/00; A61k 17/06
U.S. Cl. 260—586 2 Claims
This invention relates to new final products that are steroids of the A-norandrostane series of the Formula I given below and to new 2-ketal derivatives thereof of the Formula II given below which are useful as intermediates in preparing said final products. The intermediates are 17-ketone substances that are converted to the final product by reacting with a Grignard reagent or similar compound. The final products are physiologically active compounds that possess fertility inhibiting activity.

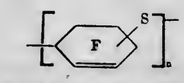
3,468,956
PREPARATION OF DIALKYL KETONES
Theodore C. Mead, Glenham, N.Y., assignor to Texaco Inc., New York, N.Y., a corporation of Delaware
No Drawing. Filed May 11, 1965, Ser. No. 454,984
Int. Cl. C07c 49/06
U.S. Cl. 260—595 4 Claims
A method of producing dialkyl ketone comprising contacting alkanoic acid with polyphosphoric acid.

3,468,957
PROCESS FOR DEHYDRATING AN ALDOL
Ronald H. Wile, Bay City, Tex., assignor to Celanese Corporation, New York, N.Y., a corporation of Delaware
No Drawing. Filed Jan. 17, 1967, Ser. No. 609,787
Int. Cl. C07c 45/16
U.S. Cl. 260—603 6 Claims
In dehydrating an aldol to the corresponding unsaturated aldehyde, e.g. in dehydrating butyraldo to 2-ethylhexenal, in a liquid phase, a catalyst is employed which comprises an acid phosphate ester. In a preferred embodiment, the dehydration reaction is conducted in a reactor containing two liquid phases in intimate contact, one being an oil phase comprising the aldol and the other being an aqueous phase, with the dehydration catalyst being either an emulsifying agent or else a compound having appreciable solubility in both the oil phase and the aqueous phase. Unusually high chemical efficiency in the dehydration reaction is obtained, and fouling of process equipment by resinous deposits is also minimized.

3,468,958
PROCESS FOR OXIDATION OF OLEFINS TO UNSATURATED ALDEHYDES AND ACIDS
James L. Callahan, Cuyahoga County, Ohio, assignor to The Standard Oil Company, Cleveland, Ohio, a corporation of Ohio
No Drawing. Application Jan. 11, 1965, Ser. No. 435,107, which is a division of application Ser. No. 250,008, Jan. 8, 1963, now Patent No. 3,197,419, dated July 27, 1965. Divided and this application Sept. 30, 1965, Ser. No. 505,424
Int. Cl. C07c 27/12, 45/04, 51/32
U.S. Cl. 260—604 8 Claims
A process is provided for the catalytic oxidation of olefins to oxygenated hydrocarbons, such as unsaturated aldehydes and acids, for example, propylene to acrolein and isobutylene to methacrolein and methacrylic acid, using catalysts composed of oxides of antimony and iron.

3,468,959
SEPARATION OF CESIUM FROM POTASSIUM AND RUBIDIUM
Carl E. Moore, Morton Grove, Frank P. Cassaretto, Evanston, John J. McLafferty, Gurnee, and Harvey W. Posvic, Cicero, Ill., assignors to Research Corporation, New York, N.Y., a nonprofit corporation of New York
No Drawing. Filed Oct. 17, 1966, Ser. No. 586,933
Int. Cl. C07f 5/02
U.S. Cl. 260—606.5 2 Claims
Cesium is selectively precipitated from a solution containing cesium and potassium or rubidium cations by additions of a solution containing tetrakis-(p-fluorophenyl) borate anions.

3,468,960
TETRAFLUOROBENZEN-1-4-DITHIOL AND 4,4'-DIMERCAPTO-OCTAFLUOROBIPHENYL
Richard Henry Mobbs, Avonmouth, England, assignor to Imperial Smelting Corporation (N.S.C.) Limited, a British company
No Drawing. Filed Apr. 26, 1966, Ser. No. 545,242
Claims priority, application Great Britain, Apr. 28, 1965, 17,820/65
Int. Cl. C07c 149/34
U.S. Cl. 260—609 2 Claims
The compounds tetrafluorobenzene-1,4-dithiol and 4,4'-dimercapto-octafluorobiphenyl, which can be converted to disulphonyl chlorides and the cuprous salts of which are useful for forming telomers and polymers with the repeating unit



A method of preparing mono and dithiols of tetrafluorobenzene, pentafluorothiophenol and dithiols of octafluorobiphenyl comprising heating an aromatic compound corresponding to the desired thiol compound but containing lithium atoms in the positions at which it is desired to put thiol groups with elemental sulfur below about —50° C., acidifying the product and isolating the desired compound.

3,468,961
PROCESS FOR THE PREPARATION OF ORTHOMERCAPTOPHENOLS
Emil J. Geering, Grand Island, and George B. Stratton, Lewiston, N.Y., assignors to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York
No Drawing. Continuation-in-part of application Ser. No. 597,228, Nov. 28, 1966. This application Sept. 11, 1967, Ser. No. 666,915
Int. Cl. C07c 149/04, 149/32
U.S. Cl. 260—609 13 Claims
Producing mercaptophenols in high yields by reducing a phenol-sulfide produced by reacting elemental sulfur

and a phenolic reactant in the presence of a basic catalyst and carrying the reaction to a degree of completion at which the maximum number of moles of hydrogen sulfide evolved is up to about 33 percent of the number of moles of sulfur charged to said reaction.

3,468,962

PROCESS FOR PREPARING PEROXYACETALS AND PEROXYKETALS

Giuliano Ballini and Carlo Bujtar, Ferrara, Italy, assignor to Montecatini Edison S.p.A., Milan, Italy, a corporation of Italy

No Drawing. Filed May 17, 1966, Ser. No. 550,643
Claims priority, application Italy, May 21, 1965, 11,441/65
Int. Cl. C07c *73/00, 43/30, 41/00*
U.S. Cl. 260—610 **10 Claims**

Preparing peroxyacetals and peroxyketals by reacting alkylidene diperoxide with divalent alcohol, desirably in the presence of an acid catalyst.

3,468,963

PROCESS FOR THE PRODUCTION OF NITROHYDROXYARYL COMPOUNDS

Peter Liechti, Binningen, and Willy Roth, Basel, Switzerland, assignors to Ciba Limited, Basel, Switzerland, a company of Switzerland

Filed June 16, 1966, Ser. No. 557,967
Claims priority, application Switzerland, June 30, 1965, 9,153/65
Int. Cl. C07c *37/00, 79/22*
U.S. Cl. 260—620 **2 Claims**

A process is provided for the manufacture of nitrohydroxyaryl compounds wherein the corresponding nitroaryl compound is reacted with an alkali metal hydroxide in the solid state at a temperature above 70° C., while at the same time, molecular oxygen is injected into the reaction mixture.

3,468,964

HYDROGENATION PROCESS

Frederic Wurl Swamer, West Chester, Pa., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Aug. 3, 1965, Ser. No. 476,997
Int. Cl. C07c *31/34, 33/10*
U.S. Cl. 260—633 **10 Claims**

A hydrogenation process for converting perfluoroalkyl aldehydes, ketones or nitriles, in the vapor phase, to corresponding alcohols or ketones employing hydrogen and a palladium on activated alumina catalyst at 25–170° C. and atmospheric pressure.

3,468,965

ALCOHOL PURIFICATION

Andrew O. Wikman, Baton Rouge, La., and Lawrence Rogovin, Cincinnati, Ohio, assignors to Ethyl Corporation, New York, N.Y., a corporation of Virginia

No Drawing. Filed Nov. 9, 1964, Ser. No. 409,968
Int. Cl. C07c *29/24, 31/00*
U.S. Cl. 260—643 **9 Claims**

In accordance with the teachings of the invention, a process is provided wherein synthetic alcohols produced through aluminum chemistry are contacted with a copper chromite type of catalyst in a hydrogen atmosphere at pressures lower than those normally employed in hydrogenation with that type catalyst and if desired are also contacted with a nickel catalyst under hydrogenation conditions to remove impurities which cause objectionable odors when the alcohols are sulfated.

3,468,966

STABILIZATION OF 1,1,1-TRICHLOROETHANE

Wesley L. Archer, Midland, and Elbert L. Simpson, Auburn, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Dec. 1, 1967, Ser. No. 687,123
Int. Cl. C07c *17/42*
U.S. Cl. 260—652.5 **2 Claims**

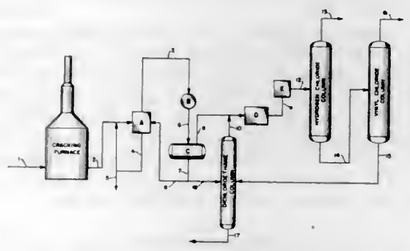
The reaction of 1,1,1-trichloroethane with aluminum is inhibited by the presence in the 1,1,1-trichloroethane of a small amount of a dissolved 2,5-hexanedione compound. Concentrations of the order of 0.005–1 gram mole per liter provide significant inhibition.

3,468,967

PRODUCTION AND PURIFICATION OF VINYL CHLORIDE

Henry H. Wall and Eric P. Breidenbach, Baton Rouge, La., and Leo A. Miller, Lakeland, Fla., assignors to Ethyl Corporation, New York, N.Y., a corporation of Virginia

Continuation-in-part of application Ser. No. 362,786, Apr. 27, 1964. This application Jan. 27, 1967, Ser. No. 612,109
Int. Cl. C07c *17/34, 17/38;* **B01d** *3/14*
U.S. Cl. 260—656 **8 Claims**



This invention relates to a novel process for the production and purification of vinyl chloride by thermal decomposition of dichloroethane and high pressure distillation of the product mixture to recover vinyl chloride. The present invention utilizes a combination of dual distillation zones which coact to cancel the effects of "sloppy" cuts in each zone and thus achieve substantially pure product streams and a substantially pure recycle stream while still effecting a considerable refrigeration saving.

3,468,968

MANUFACTURE OF HALOHYDROCARBONS

Ralph W. Baker, Greenwell Springs, John H. McCarthy, Zachary, and Harold G. Place and Andrew O. Wikman, Baton Rouge, La., assignors to Ethyl Corporation, New York, N.Y., a corporation of Virginia

No Drawing. Continuation-in-part of applications Ser. No. 127,794, July 31, 1961, Ser. No. 127,801, July 31, 1961, and Ser. No. 127,802, July 31, 1961. This application Sept. 29, 1966, Ser. No. 583,113
Int. Cl. C07c *17/00, 19/00;* **B01j** *11/78*
U.S. Cl. 260—659 **16 Claims**

Oxychlorination of olefins to dihaloalkanes, as in the conversion of ethylene into 1,2-dichloroethane, is made more efficient by carrying out the oxychlorination with a fluidized bed of alumina microspheres having particle sizes predominantly from about 120 mesh to about 325 mesh, the alumina having a surface area no greater than 300 square meters per gram and being impregnated with a copper chloride catalyst. Better still is alumina having surface area from about 1 to about 250 square meters per gram, and copper chloride catalyst containing from about 0.1 to about 0.5 percent rare earth chloride based on the

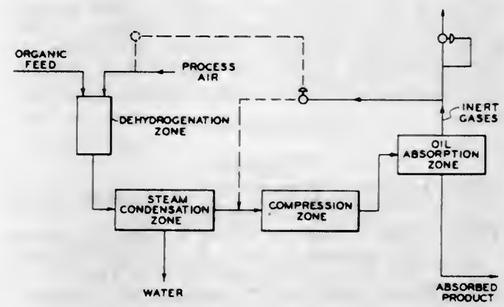
weight of the impregnated alumina. Reaction temperature is preferably from about 250 to about 350° C., and reaction pressure superatmospheric—preferably at least about 50 p.s.i.g.

3,468,969

DEHYDROGENATION PROCESS

Rudolph C. Woerner, Houston, Tex., assignor to Petro-Tex Chemical Corporation, Houston, Tex., a corporation of Delaware

Filed July 26, 1966, Ser. No. 567,858
Int. Cl. C07c *11/12, 5/18;* **C07b** *3/00*
U.S. Cl. 260—680 **7 Claims**



Organic compounds are dehydrogenated by a process which comprises (1) feeding oxygen and an organic compound to be dehydrogenated to a dehydrogenation zone to form a dehydrogenation zone effluent comprising unsaturated organic compound and noncondensable gases, (2) cooling the dehydrogenation zone effluent in a cooling zone, (3) compressing the cooled effluent in a compression zone, (4) absorbing the compressed effluent in an oil absorber to absorb the unsaturated organic compound in the oil and release an absorber overhead gas, the improvement which comprises feeding the said absorber overhead gas to the zone between the said cooling zone and the suction side of the compression zone in response to the rate of flow of oxygen to the dehydrogenation zone.

3,468,970

METHOD OF CARRYING OUT TELOMERIZATION REACTIONS

Constantinos G. Screttas, Gastonia, N.C., assignor to Lithium Corporation of America, New York, N.Y., a corporation of Delaware

No Drawing. Filed Jan. 23, 1968, Ser. No. 699,767
Int. Cl. C07c *3/52, 15/04*
U.S. Cl. 260—668 **18 Claims**

Method of carrying out production of predominately non-waxy alkyl aromatic hydrocarbons by telomerization reactions involving contacting ethylene with aromatic hydrocarbons in the presence of a catalyst in the form of solvated organolithium-active ether adducts or complexes or in the form of solvated lithium metal adducts of polyene hydrocarbons.

3,468,971

REACTIONS OF ALKALI METAL TETRAALKYL-ALUMINUM COMPOUNDS WITH ACTIVE HALOGEN COMPOUNDS

David L. Skinner, Arlington Heights, Ill., assignor to The Procter & Gamble Company, Cincinnati, Ohio, a corporation of Ohio

No Drawing. Filed Dec. 20, 1966, Ser. No. 603,099
Int. Cl. C07c *21/00, 17/32*
U.S. Cl. 260—677 **2 Claims**

A process for alkylating active halogen compounds, such as allyl halides, benzyl halides, and halogens, by reacting the active halogens with alkali metal tetraalkylaluminum compounds at a temperature of from 0° C. to 200° C. The following equations are representative alkylation reactions:

(1) $MAlR_4+CH_2=CHCH_2X\rightarrow CH_2=CHCH_2R+AlR_3+MX$

(2) $MAlR_4+C_6H_5CH_2X\rightarrow C_6H_5CH_2R+AlR_3+MX$

(3) $MAlR_4+X_2\rightarrow RX+AlR_3+MX$

(M=alkali metal, R=alkyl, X=halogen)

3,468,972

CONTROL OF BRANCHING AND COUPLING IN LITHIUM-TERMINATED POLYMERS

Henry L. Hsieh, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

No Drawing. Filed June 22, 1964, Ser. No. 377,107
Int. Cl. C08d *5/02;* **C08g** *30/00, 45/04*
U.S. Cl. 260—836 **7 Claims**

Coupling or branching between lithium-terminated polymers and a reactive organic coupling or branching agent is maximized by carrying out the reaction in a solution containing a compound having at least one ether, thioether, or tertiary amine linkage in sufficient amounts to color the solution. A coupling or branching agent is slowly added to the solution, color change of the solution is detected and, upon disappearance of the color from the solution, the addition of the agent is stopped.

3,468,973

COPOLYMER COMPOSITION FOR COATING AND IMPREGNATING PURPOSES

William D. Emmons, Huntingdon Valley, Andrew Mercurio, Elkins Park, Pa., assignors to Rohn & Haas Company, Philadelphia, Pa., a corporation of Delaware

No Drawing. Continuation of application Ser. No. 327,105, Nov. 29, 1963, now Patent No. 3,342,893, dated Sept. 19, 1967. This application Jan. 18, 1966, Ser. No. 521,425
Int. Cl. C08f *37/16;* **C08g** *37/32*
U.S. Cl. 260—851 **19 Claims**

This invention relates to novel compositions adapted to be used for coating and impregnating purposes, which comprise a solution of a mixture of (A) a water-insoluble addition copolymer of monoethylenically unsaturated monomers, at least one of the monomers being an amide of the formula —CONHR, where R is H, alkyl, hydroxyalkyl, or alkoxylalkyl, or a free hydroxyl-containing ester, and (B) an alkylated condensate of formaldehyde and a diamide of a dicarboxylic acid.

3,468,974

MOLDING COMPOSITIONS CONTAINING NYLON AND RUBBER FROM SCRAP TIRE CORD MATERIAL

Joseph C. Elgin, Princeton, N.J., assignor to U.S. Rubber Reclaiming Co., Inc., Vicksburg, Miss., a corporation of New York

Filed Mar. 21, 1966, Ser. No. 535,775
Int. Cl. C08g *41/04*
U.S. Cl. 260—857 **2 Claims**

A molding composition which contains from 64 to 91% of linear polyamide material and from 3 to 36% of vulcanized rubbery hydrocarbon elastomeric material is provided by extrusion pelletizing tire cord material from which a major portion of elastomeric material has been removed.

3,468,975

PROCESS FOR THE MANUFACTURE OF ELASTOMERIC BLOCK COPOLYMERS CONTAINING POLYAMIDE AND POLYESTER SEGMENTS

Frederick Keith Duxbury, John David Garforth, and Peter McNeeney, Manchester, England, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

No Drawing. Filed June 30, 1966, Ser. No. 561,704
Claims priority, application Great Britain, July 2, 1965, 28,133/65; May 13, 1966, 21,414/66
Int. Cl. C08g *20/30*
U.S. Cl. 260—857 10 Claims

Elastomeric block copolymers containing polyamide and polyester segments are manufactured by heating in the presence of an esterification or ester-amide interchange catalyst a mixture of a polyamide with a polyester having a melting point below 60° C. or a polyester-forming component or mixture of such components which give rise to a said polyester, or of a polyamide-forming component or mixture of such components with a said polyester.

3,468,976

ACRYLATE ELASTIC THREADS AND FILMS

Hideyasu S. Yanai, Moorestown, N.J., and Lore Jungster, Langhorne, Pa., assignors to Rohm & Haas Company, Philadelphia, Pa., a corporation of Delaware

No Drawing. Filed Sept. 8, 1966, Ser. No. 577,798
Int. Cl. C08f *19/00*
U.S. Cl. 260—883 12 Claims

Elastomeric materials and methods of producing them comprising an elastomeric "backbone" polymer (50–90 wt. percent) and a reinforcing material (50–10 wt. percent). The backbone is produced by copolymerizing (1) an alkyl (C_2–C_8) acrylate (75–99.5 wt. percent of backbone); (2) an unsaturated monomer for cross-linking the backbone by a subsequent condensation reaction e.g. N-methylolmethacrylamide (0.1–5 wt. percent); and (3) optionally, an unsaturated hardener monomer, e.g. acrylamide (up to 20 wt. percent). The reinforcing material is a polymer of at least 90 wt. percent of a carboalkoxyphenyl acrylate, e.g. p-carbomethoxyphenyl acrylate. Preferably the elastomeric materials may be spun into fibers or extruded into films.

3,468,977

ARTIFICIAL DENTURE COMPOSITIONS AND THEIR PRODUCTION

Paul-Günther Brückmann, Heino Logemann, and Carl-hans Süling, Leverkusen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Filed Sept. 20, 1966, Ser. No. 580,598
Claims priority, application Germany, Oct. 5, 1965, F 47,357
Int. Cl. C08f *15/36, 29/50*
U.S. Cl. 260—885 12 Claims

Superior compositions to be used in prosthodontics are prepared from a mixture of a substance (a) which is a polymer and which is preferably a mixture of two polymers such as the polymer of methacrylic acid methyl ester and the copolymer of methacrylic acid methyl ester with a small amount of a second vinyl compound, and a liquid (b) which is a monomer and consists of (1) an ester of methacrylic acid with an alcohol radical containing at least one free hydroxyl group, (2) an unsaturated polymerizable acid or its anhydride and (3) methacrylic acid methyl ester. The curing is conducted at a temperature not exceeding 100° C. The compositions do not become turbid upon use.

3,468,978

ETHYLENE COPOLYMER THERMOPLASTIC ADHESIVES

William R. Battersby, Lexington, Mass., assignor to United Shoe Machinery Corporation, Boston, Mass., a corporation of New Jersey

No Drawing. Original application Aug. 3, 1962, Ser. No. 214,486. Divided and this application Nov. 10, 1966, Ser. No. 593,298
Int. Cl. C08f *41/12*
U.S. Cl. 260—897 3 Claims

Thermoplastic adhesive composition and flexible coilable rod of that composition for application in fluid molten condition to wet and bond surfaces to be joined. The adhesive is compounded to have a melt viscosity within the range of 20,000 to 250,000 centipoises at 190° C. by intimately mixing a copolymer of ethylene and vinyl acetate with hydrocarbon resins such as polyethylene and polyterpene resin in certain ranges of proportions.

3,468,979

EPDM POLYMER BLEND WITH BUILDING TACK AND GREEN STRENGTH

Parviz Hamed, Akron, and Everett T. McDonel, Brecksville, Ohio, assignors to The B. F. Goodrich Company, New York, N.Y., a corporation of New York

No Drawing. Filed Jan. 17, 1968, Ser. No. 698,439
Int. Cl. C08f *37/00*; C08g *37/00*
U.S. Cl. 260—897 3 Claims

Synthetic rubber compositions with green strength and building tack are prepared by blending an EPDM polymer high in propylene (at least 55% by weight) and an EPDM polymer high in ethylene (at least 55% by weight). The tack level is further increased by compounding with carbon black and tackifying resins.

3,468,980

FLAME RESISTANT ACRYLIC SHEET CONTAINING CYCLOHEXYL ACRYLATE OR METHACRYLATE COPOLYMER

George E. Forsyth, Trevose, Pa., assignor to Rohm & Haas Company, Philadelphia, Pa., a corporation of Delaware

No Drawing. Filed Jan. 17, 1966, Ser. No. 520,900
Int. Cl. C08f *37/16*; C09k *3/28*
U.S. Cl. 260—901 6 Claims

Acrylic sheet composed of methylmethacrylate, a flame retarding polymeric phosphorous compound, and cyclohexyl acrylate or methacrylate is claimed. The acrylic sheet offers improved flame resistance, water absorption, outdoor exposure stability, higher heat distortion temperature, better forming characteristics and other properties.

3,468,981

POLYMERIC PRODUCTS FORMED FROM DIPHENYLTETRACHLOROTRIPHOSPHONITRILE AND A DIHYDROXY AROMATIC COMPOUND

Irving I. Bezman, Pittsburgh, Pa., assignor to Armstrong Cork Company, Lancaster, Pa., a corporation of Pennsylvania

No Drawing. Filed Jan. 13, 1966, Ser. No. 520,345
Int. Cl. C07d *105/02*; C07f *9/30*; C08g *33/16*
U.S. Cl. 260—927 4 Claims

A polymeric product formed from diphenyltetrachlorotriphosphonitrile and a dihydoxy aromatic compound. The polymeric product is preferably produced in the presence of a tertiary amine acid acceptor and is useful as a resinous coating for metals.

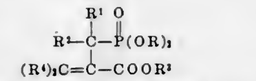
3,468,982

PROPENE-3-PHOSPHONATES AND POLYMERS THEREOF

Harvey Gerald Klein, Stamford, and Allan Ellis Sherr, Norwalk, Conn., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed July 1, 1965, Ser. No. 468,922
Int. Cl. C07f *9/40*; C08f *3/84, 25/00*
U.S. Cl. 260—941 1 Claim

Propene-3-phosphonates are provided having the formula



wherein R^4 is hydrogen or aryl; R^1, R^2 and R^3 are hydrogen, aryl or C_1 to C_4 alkyl; and R is alkyl, cycloalkyl, alkenyl, cycloalkenyl, aryl or part of a heterocyclic ring containing the adjacent phosphonate group. These compounds form fire-retardant homopolymers and copolymers with terminally unsaturated compounds such as methyl methacrylate.

3,468,983

POLYETHERS CONTAINING PHOSPHORUS AND ALCOHOLIC HYDROXY GROUPS AND THEIR PRODUCTION

Hans Eberhard Praetzel, Bensberg-Frankenforst, and Herbert Jenkner, Cologne-Deutz, Germany, assignors to Chemische Fabrik Kalk G.m.b.H., Cologne-Kalk, Germany

No Drawing. Filed Dec. 20, 1965, Ser. No. 515,165
Claims priority, application Germany, Dec. 24, 1964, C 39,428
Int. Cl. C07f *9/30*; C08g *33/16, 23/10*
U.S. Cl. 260—953 5 Claims

Process for the production of alcoholic hydroxy group and phosphorus containing polyether products wherein white prosphorus is reacted with an alkali metal hydroxide, water, a lower alkanal or its low molecular weight condensation product in the presence of a lower alkanol at a temperature between about 30 and 75° C., the quantities of alkali metal hydroxide, water and alkanal respectively supplied to the reaction being 0.75 to 0.85, 0.75 to 0.85 and 2 to 4 mol per g-atom of the white phosphorus, distilling off the more volatile components from the reaction mixture to leave a product primarily comprising an alkali metal salt of a bis-(hydroxy alkane) phosphinic acid, reacting said crude product with at least one epoxy compound at a temperature of 50 to 160° C., the quantity of said epoxy compound being such as to provide at least 3 mol per g-atom of phosphorus contained in said crude product.

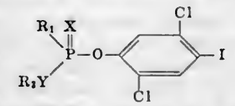
3,468,984

O-2,4-DICHLORO-4-IODOPHENYL(THIO) PHOSPHATES AND (THIO) PHOSPHONATES

Ernst Beriger, Allschwil, Switzerland, assignor to Ciba Limited, Basel, Switzerland, a Swiss company

No Drawing. Filed Nov. 16, 1965, Ser. No. 508,157
Claims priority, application Switzerland, Nov. 20, 1964, 14,977/64
Int. Cl. C07f *9/18, 9/40*; A01n *9/36*
U.S. Cl. 260—964 3 Claims

Phosphoric and phosphonic acid esters are provided which are represented by the formula



wherein R_1 represents lower alkyl, lower alkoxy or lower alkylthio, lower halogenoalkyl or aryl, R_2 denotes methyl or ethyl, and X and Y independently of one another represent oxygen or sulphur.

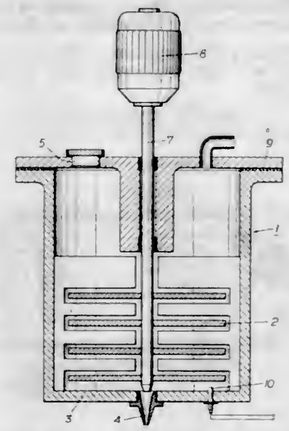
The phosphoric and phosphonic acid esters of this invention are useful as insecticides, fungicides, acaricides, nematocides and molluscicides.

3,468,985

METHOD FOR THE PRODUCTION OF SPHERICAL PARTICLES

Hubert Bildstein, Vienna, Karl Knotik, Siegendorf, and Gerhard Stolba, Vienna, Austria, assignors to Osterreichische Studiengesellschaft fur Atomenergie G.m.b.H., Vienna, Austria

Filed July 7, 1966, Ser. No. 563,530
Claims priority, application Austria, July 8, 1965, A 6,228/65
Int. Cl. G21c *21/02*; B29b *1/03*
U.S. Cl. 264—.5 10 Claims



A process for the production of spherical particles, in which the starting material for forming the particles is preferably selected from a nuclear fuel material such as a metal or metal compound of uranium, thorium and plutonium but the starting material may also be selected from the transition metals in groups 4*b*, 5*b*, and 6*b* of the Periodic Table, and comprising the steps of melting a binder material, such as paraffin, and mixing the starter material in powderous form into the melt of the binder material for forming a suspension, spraying the suspension of the starting material and the binder, while it is maintained at an elevated temperature above the melting temperature of the binder, to form droplets, and cooling the droplets to below the melting temperature of the binder for completing the formation of the spherical particles. After their formation the spherical particles are mixed with an inert powdery medium, filled into a melting crucible, and the binder material is removed by heating the particles and evaporating the binder material. Before this processing of the spherical particles, a crackable substance, such as a sugar solution, may be used to coat the particles to prevent their collapse. The spherical particles may be combined with carbon powder or other materials for providing a specific form of the spherical particle, such as a carbide or oxide.

3,468,986

METHOD FOR PRODUCING A SOLID PARTICULATE MATERIAL

David J. Watanabe, 748 E. Glendora Ave., Orange, Calif. 92667

No Drawing. Continuation-in-part of application Ser. No. 300,060, Aug. 5, 1963. This application Nov. 15, 1966, Ser. No. 594,396
Int. Cl. B22d *23/08*
U.S. Cl. 264—9 16 Claims

A method for forming discrete solid particles of a meltable substance in which the substance is first melted

and then dispersed in a nonsolvent liquid maintained at a temperature above the solidification temperature of the meltable substance, and thereafter the dispersion is cooled to solidify the dispersed droplets into discrete solid particles of the meltable substance. The dispersion of the meltable substance in nonsolvent liquid can be formed by agitating a mixture of these materials, or by injecting a stream of the molten substance into a flowing body of the nonsolvent liquid.

3,468,987

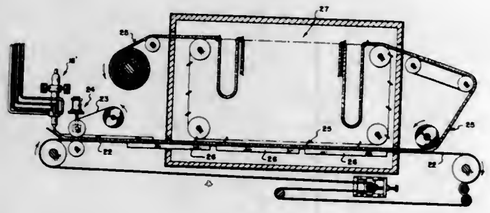
METHOD OF PREPARING AND MOLDING CHEMICAL FOAMING MIXTURES

John Willy, Attleboro, Mass., assignor to Specialty Converters, Inc., a corporation of Delaware

Continuation-in-part of application Ser. No. 261,041, Feb. 26, 1963. This application Mar. 2, 1966, Ser. No. 540,781

Int. Cl. B29d *3/00*

U.S. Cl. 264—28 **4 Claims**



A method of preparing a chemical foaming mixture in which a prepolymer reaction product is rapidly cooled to a temperature below the freezing point of the isocyanate compound in the reaction product, while the compound is simultaneously vigorously agitated to prevent extended crystal growth during freezing of the isocyanate and to provide minute isocyanate crystals which are insoluble in the hydroxyl-containing compound. Thereafter the reaction product containing the frozen isocyanate is intimately mixed with a catalyst mixture containing water and a catalyst. While the water will react with the reaction product to form a chemical foaming mixture, the reaction product is at a temperature low enough to retard gas generation during mixing and the minute isocyanate crystal formations become dispersed homogeneously throughout the chemical foaming mixture. Thus the chemical foaming mixture can be spread before the temperature rises giving greater control over foam formation and resulting in a higher quality foam product.

3,468,988

METHOD OF FORMING CONCRETE STRUCTURES WITH TREATED FORM PANELS

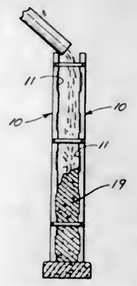
Frank L. Williams, Des Moines, Iowa, assignor, by mesne assignments, to International Concrete Systems Company, Bala Cynwyd, Pa., a corporation of Delaware

Filed Jan. 21, 1965, Ser. No. 426,885

Int. Cl. B28b *1/14, 7/36;* **E04b** *1/16*

U.S. Cl. 264—31 **4 Claims**

A method for forming a concrete structure in an assembly of aluminum panels having inner surfaces defining a construction form in which the inner surface of the panels is treated with an oxidizing agent and an oil substance is subsequently applied to the treated surfaces. Concrete is then poured into the construction form to



produce a formed structure. After hardening of the concrete, the panels are stripped from the formed structure.

3,468,989

HIGH DENSITY SURFACE FOR FOAMED INORGANICS

William J. McMillan, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Nov. 25, 1966, Ser. No. 596,805

Int. Cl. B29d *27/08*

U.S. Cl. 264—43 **8 Claims**

This specification discloses a method of providing a high density surface or skin oh a foamed inorganic molded article comprising applying a mold release agent to the walls of a mold cavity, applying a coating of discrete particles of a skin source material such as glass particles, charging a quantity of foamable inorganic granules in the cavity, and heating the mold and contents to form the granules and fuse the discrete particles to provide a high density glass surface on the foamed article.

3,468,990

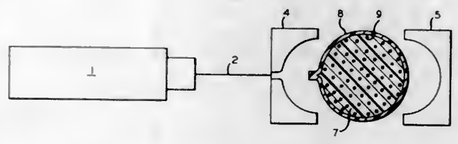
METHOD FOR FORMING A SUBSTANTIALLY WARP-FREE INTERIORLY FOAMED, THERMOPLASTIC ARTICLE

Allen E. Odell, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

Filed Mar. 30, 1966, Ser. No. 538,558

Int. Cl. B29h *7/02*

U.S. Cl. 264—45 **5 Claims**



A warp-free, foamed, thermoplastic article having a substantially nonporous outer skin and a foamed interior is formed by molding a foamable composition of the thermoplastic under foaming conditions, but under a pressure sufficient to prevent substantial foaming, and after a skin is formed around the molded thermoplastic, the molded thermoplastic is removed from the mold to allow foaming on the interior of the molded thermoplastic.

3,468,991

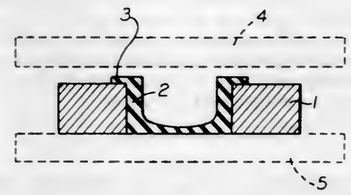
PRODUCTION OF FOAMED ARTICLES

Hans-Dietrich Krug, Heidelberg, Germany, assignor to Carl Freudenberg K.G., Weinheim an der Bergstrasse, Germany, a corporation of Germany

Filed July 18, 1966, Ser. No. 566,009

Int. Cl. B29d *27/00*

U.S. Cl. 264—45 **4 Claims**



Process of producing a polyurethane foam article having a thick substantially non-foam skin surface integral with a substantially foam form core portion wherein the foam-forming material is placed in a mold which mold has the interior surfaces thereof coated with a polyurethane cross-linking agent, preferably an organo-tin-compound.

3,468,992

PROCESS FOR PREPARING MANUFACTURED ARTICLES OF SILICON NITRIDE, ALSO IN ADMIXTURE WITH SILICON CARBIDE

Eugenio Lubatti, Torino, and Salvatore Pappalardo and Ugo Mirarchi, Novara, Italy, assignors to Montecatini Edison S.p.A., Milan, Italy, a corporation of Italy

No Drawing. Filed Apr. 20, 1966, Ser. No. 543,782

Claims priority, application Italy, Apr. 22, 1965, 8,805/65

Int. Cl. C04b *35/58, 33/32*

U.S. Cl. 264—63 **4 Claims**

Described is a process for preparing manufactured articles of silicon nitride. The process comprises admixing silicon nitride powder of at least 90% purity and a fineness of less than 0.075 mm. with less than 25% by weight of the mixture of a binder selected from the group consisting of boric acid, boron anhydride and boron phosphate. The mixture is cold compacted under a pressure between 0.5 and 5 t./cm.^{2}. The cold compacted material is subjected to sintering treatment in a nitrogenous atmosphere selected from the group consisting of nitrogen, ammonia and air at a temperature between 850 and 1250° C.

3,468,993

MANUFACTURE OF PORTLAND CEMENT PRODUCTS

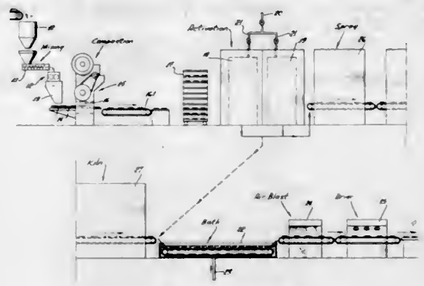
Knud Georg Bierlich, Los Angeles, Calif., assignor of thirty percent to Hobert R. Goodrich, Los Angeles, Calif.

Filed Sept. 6, 1966, Ser. No. 577,247

Int. Cl. C04b *15/14*

U.S. Cl. 264—82 **17 Claims**

A method of rapidly pressure-forming easily and immediately handleable objects from portland cement-aggregate mixes which contain a very small amount of added water (in an amount insufficient to fill all voids in the object) and subjecting the pressure-formed objects to the action of an atmosphere at superatmospheric pressure containing added carbon dioxide to produce an exothermic reaction whereby the objects attain a materially higher strength within a period of less than an hour, permitting



virtually immediate packing for storage or shipment. The press formed cementitious objects made by the method.

3,468,994

DIMETHYLSULFOXIDE IN SOLVENT SYSTEM FOR POLYOLEFIN COATING COMPOSITION

Dixie E. Gilbert, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

No Drawing. Filed June 27, 1966, Ser. No. 560,881

Int. Cl. B29c *17/00;* **B29d** *23/10*

U.S. Cl. 264—94 **8 Claims**

A polyolefin substrate such as a parison or a preformed container is coated with a vinyl halide polymer or copolymer or mixture thereof which vinyl polymer is dissolved in a solvent mixture having a dimethylsulfoxide content of from 1 to 50 percent by volume based on the total solvent mixture.

3,468,995

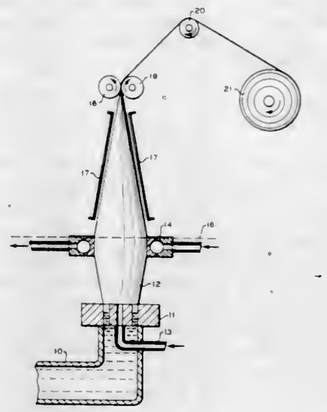
PRODUCING PLASTIC FILM

William M. Nelson, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

Filed Oct. 17, 1966, Ser. No. 587,080

Int. Cl. B29c *17/04;* **B29d** *23/04*

U.S. Cl. 264—95 **7 Claims**



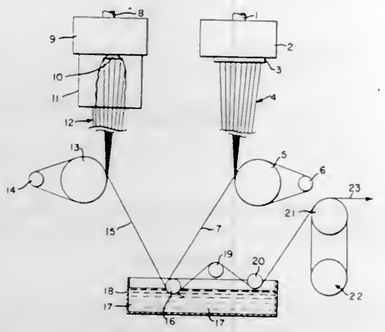
A plastic film is quenched by contact with a surface having means for circulation of quenched liquid in contact therewith for cooling and being porous to permit a portion of said quench liquid to pass therethrough for lubrication and quench.

3,468,996

PROCESS FOR PRODUCING COMPOSITE POLYESTER YARN THAT BULKS AT ELEVATED TEMPERATURES

Cecil E. Reese, Kinston, N.C., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Filed Mar. 8, 1966, Ser. No. 532,665
Int. Cl. D02j *1/00*
U.S. Cl. 264—103 **5 Claims**



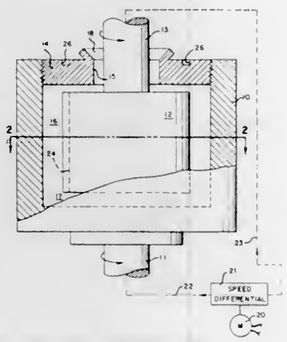
A process is disclosed for producing yarn having a latent ability to bulk when heated at 160° to 200° C. Polyester of relative viscosity greater than 27 is melt spun to form two filament bundles and one bundle is annealed at approximately 300°–370° C. as the filaments leave the spinneret. The bundles are drawn at different draw ratios to have nearly identical break-elongations and are then combined to form a composite yarn. The filaments have essentially the same boil-off shrinkage, but high-heat shrinkage of the annealed filaments is as much as 5% greater than the non-annealed filaments.

3,468,997

METHOD OF MAKING A HIGH STRENGTH ROTARY MEMBER

Edward G. Pickels, Atherton, Calif., assignor to Beckman Instruments, Inc., a corporation of California

Original application Mar. 14, 1963, Ser. No. 265,090, now Patent No. 3,263,274, dated Aug. 2, 1966. Divided and this application Dec. 1, 1965, Ser. No. 516,833
Int. Cl. B29c *5/04;* **B28b** *7/18, 21/30*
U.S. Cl. 264—108 **1 Claim**



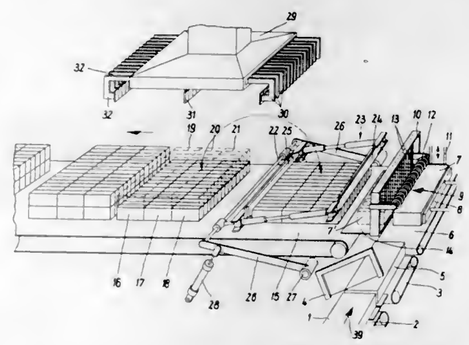
A method for forming a high strength rigid cylindrical member adapted for high speed rotation including the steps of pouring a fluid material including elongated particulate matter into a rotatable mold, rotating the mold at a substantial angular velocity for a predetermined period of time to centrifuge the material and distribute a progressively greater percentage of the particulate matter in the more radially remote portions of the mold, and solidifying the material to form a cylindrical member with a concentration of particulate matter per unit volume of material being progressively greater in the more radially remote portions of the member. The method also includes the step of rotating a mandrel disposed within the mold at a, relatively speaking, different angular velocity than the mold so as to orientate the particulate matter with its long dimension lying substantially normal to the radii of the rotating mold and in a plane substantially parallel to the plane of rotation of the mold.

3,468,998

METHOD FOR PRODUCING BRICKS AND THEREAFTER HACKING THE SAME

Johann Lingl, Finninger Strasse 70, Neu-Ulm (Danube), Germany

Filed Oct. 3, 1966, Ser. No. 583,829
Int. Cl. B29c *17/14*
U.S. Cl. 264—148 **4 Claims**



A method of cutting brick from a continuous length or strand of compressed raw material and of stacking the bricks so that the facing sides of the individual bricks lie in full engagement with each other for protection from discoloration when they are fired. The strand of material is cut as it comes from the extruder into sections of desired length for forming a row of bricks of predetermined thickness and number. Each section of material is then pushed in succession laterally through a cutter having vertical cutting wires which slice it into a plurality of individual bricks that form a transverse row. Each such row is moved by the next succeeding row of bricks being cut onto a conveyer that travels in the same direction in which the sections are pushed through the cutter. A first layer of bricks in rows that run longitudinally as well as transversely of the conveyer is thus formed on the conveyer and is moved a predetermined distance from the starting end of the conveyer. A second layer of the same number of rows is formed in the same manner at the starting end of the conveyer, and this second layer is gripped by a turn-over device which swings it through an angle of 180° face-down on the first layer, so that the bricks of both layers are in vertical alignment with each other. The double-layer flat thus formed is then lifted bodily by a gripper assembly which grips the ends of each longitudinal double-layer row of bricks in the flat, spreads the longitudinal rows apart and deposits them on a kiln car.

3,468,999

METHOD OF MAKING COATED ARC WELDING ELECTRODES

Lars Hilding Hillert, Goteborg, Sweden, assignor to Elektriska Svetsningsaktiebolaget, Goteborg, Sweden, a corporation of Sweden

No Drawing. Filed Sept. 7, 1965, Ser. No. 485,588
Claims priority, application Sweden, Sept. 7, 1964, 10,698/64
Int. Cl. B29c *25/00;* **B29f** *3/10*
U.S. Cl. 264—174 **6 Claims**

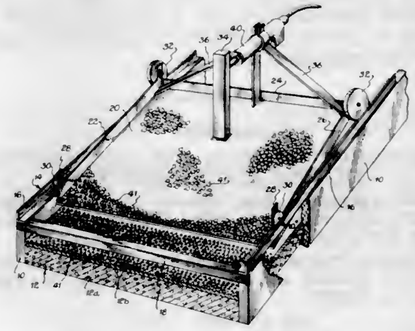
A method of making a coated welding electrode in which a pasty compound of powdered welding flux constituents with an admixture of CrO_3 is extruded onto a ferrous core at a temperature below 100° C. and subsequently heated to a temperature in the range between 196° C. and 600° C.

3,469,000

METHOD OF MAKING AN EXPOSED AGGREGATE PANEL

Albert R. Smith, 625 Robert St., Lansing, Mich. 48910

Filed Feb. 23, 1966, Ser. No. 529,397
Int. Cl. B22b *7/22*
U.S. Cl. 264—255 **1 Claim**



An exposed aggregate panel is made by placing an inclined plate over an unset cementitious base, placing aggregate on the plate, and vibrating the plate so that the aggregate slides off the plate onto the cementitious base. While sliding, the aggregate turns so that its flattest sides are downward and become embedded in the base, thus leaving exposed the sharper edges.

3,469,001

PROCESS FOR MAKING POLYESTER CORD FOR NO-RESET V-BELTS

Robert L. Keefe, Jr., Chadds Ford, Pa., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Filed Oct. 8, 1965, Ser. No. 493,976
Int. Cl. B29c *17/02*
U.S. Cl. 264—290 **4 Claims**

The improvement in the production of V-belt reinforcing cords of polyester yarn to provide no-reset V-belts characterized by low in-use elongation which comprises passing said cord through a heating zone under a stretching tension in the range of 0.7 to 1.1 grams per denier, measured as the cord leaves the heating zone, and exposing the cord in the heating zone to a temperature between 205° and 255° C. for sufficient time to stretch the cord at least 4% net stretch based on the original unstretched length.



3,469,002

BACTERICIDAL COMPOSITIONS CONTAINING 6-ACETOXY-2,4-DIMETHYL-m-DIOXANE AND A FORMALDEHYDE DONOR AND PRODUCTS CONTAINING SUCH

Wendell W. Moyer, Jr., Glen Ellyn, and Wayne E. Molenda, Northlake, Ill., assignors to Daubert Chemical Company, Oak Brook, Ill., a corporation of Illinois

No Drawing. Filed Oct. 23, 1965, Ser. No. 504,104
Int. Cl. A61l *13/02, 3/00*
U.S. Cl. 424—27 **3 Claims**

Volatile bactericidal compositions, and articles such as sheet material, especially paper, packaging material, and the like, carrying or embodying the volatile compositions, the vapors of which are gradually released, in use, to effect destruction of bacteria, fungi, and the like. The preferred compositions contain as their essential active ingredients a mixture of paraformaldehyde, or other active formaldehyde donor, and 6-acetoxy-2,4-dimethyl-m-dioxane otherwise known as "Dioxin."

3,469,003

INJECTABLE RECONSTITUTED COLLAGEN FLUID ADJUVANT FOR VACCINES AND OTHER DRUGS

Frank M. Hardy, Overland Park, Kans., assignor to Haver-Lockhart Laboratories, Incorporated, Shawnee, Kans., a corporation of California

No Drawing. Filed Apr. 1, 1966, Ser. No. 539,310
Int. Cl. A61k *9/00, 27/00*
U.S. Cl. 424—89 **8 Claims**

An injectable medicinal composition and method of preparing the same comprising a fluid adjuvant characterized by the property of undergoing an in vivo increase in viscosity in the body of a host upon injection thereof and thereafter substantially complete dissociation and absorption in the host's body at a relatively slow rate, combined with a medicinal agent. The carrier comprises reconstituted collagen prepared by the mild acid extraction of precursor material obtained from the connective members of vertebrate animals, a partially repolymerized, reconstituted collagen as defined above, mixtures of these two types of reconstituted collagen, or mixtures of procollagen with either or both of the types of reconstituted collagen.

3,469,004

FUNGICIDALLY ACTIVE ORGANOGLYOXYL-ONITRILE OXIMINO PHOSPHATES AND PHOSPHONATES

Harold A. Kaufman and Roger P. Napier, Piscataway, and Stanley T. D. Gough, Raritan, N.J., assignors to Mobil Oil Corporation, a corporation of New York

No Drawing. Filed Mar. 17, 1967, Ser. No. 623,841

Int. Cl. A01n *9/36*

U.S. Cl. 424—202 11 Claims

A method is provided for controlling fungus growth with organoglyoxylonitrile oximino phosphates and phosphonates, the organic moiety including aromatic, heterocyclic and certain combinations of aromatic and heterocyclics such as the benzothienyl group. The phosphorus-containing moiety contains alkyl groups optionally separated from the phosphorus atom by oxygen or sulfur.

3,469,005

METHOD AND COMPOSITION FOR REDUCING BLOOD PRESSURE IN MAMMALS

Theodor Weil, Highland Park, and Hugo Stange, Princeton, N.J., assignors to FMC Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 398,072, Sept. 21, 1964. This application Oct. 22, 1965, Ser. No. 502,377

Int. Cl. A61k *27/00*

U.S. Cl. 424—226 1 Claim

The sulfonyl azides in the group consisting of aromatic sulfonyl azides of the benzene and naphthalene series and lower alkyl benzene sulfonyl azides are hypotensive agents that can be safely administered to mammals over an extended period of time sufficient to lower blood pressure.

3,469,006

CONTROL OF GASTROPODS WITH SUBSTITUTED SALICYLANILIDES

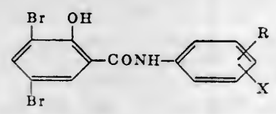
Frank A. Ehrenford, Zionsville, Ind., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Nov. 3, 1966, Ser. No. 591,698

Int. Cl. A01n *9/20*

U.S. Cl. 424—230 3 Claims

Gastropods are controlled by a method in which the gastropods, their ova or their habitats are treated with halosalicylanilides corresponding to the formula



wherein R represents methoxy or ethoxy and X represents chlorine, bromine or hydrogen.

3,469,007

INHIBITION OF EGG PRODUCTION IN PIGEONS

George E. Short, Arlington Heights, Ill., assignor to G. D. Searle & Co., Chicago, Ill., a corporation of Delaware

No Drawing. Filed Mar. 18, 1964, Ser. No. 352,949

Int. Cl. A61k *17/00*

U.S. Cl. 424—238 4 Claims

Compositions containing 20 - [(3 - dimethylamino) propyl]pregn-5-en-3β-ol or a non-toxic acid addition salt thereof and methods for administering those compositions to pigeons for the purpose of inhibiting egg production.

3,469,008

MEDICINAL COMPOSITIONS WHICH CONTAIN 15,16β-METHYLENE STEROIDS OF THE 19 NOR-ANDROSTANE SERIES

Otfried Schmidt, Rudolf Wiechert, and Friedmund Neumann, Berlin, Germany, assignors to A.G. Schering, Berlin, Germany

No Drawing. Filed Mar. 28, 1967, Ser. No. 626,427

Claims priority, application Germany, Apr. 2, 1966, Sch 38,778

Int. Cl. A61k *17/06*; C07c *171/06*

U.S. Cl. 424—243 10 Claims

15,16β-methylene steroids of the 19-nor-androstane series.

3,469,009

BENZOTHIAZOLIUM COMPLEXES FOR CONTROL OF PARASITIC ORGANISMS IN ANIMALS

Robert L. Klingbail, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 431,788, Feb. 11, 1965, which is a continuation-in-part of application Ser. No. 352,355, Mar. 16, 1964. This application Mar. 11, 1966, Ser. No. 533,436

Int. Cl. A01n *9/22*; A61k *27/00*

U.S. Cl. 424—270 19 Claims

The present disclosure is directed to methods useful for the control of parasitic organisms including methods comprising the administration to animals of various benzothiazolium compounds complexed with various phenolic or urea compounds and compositions containing such complexes. Such administration is particularly useful to improve the growth of animals and to mitigate the attack of parasitic organisms.

3,469,010

INSECTICIDAL METHODS AND COMPOSITIONS UTILIZING KETONE ADDUCTS

Pasquale Lombardo, East Hanover Township, Morris County, N.J., assignor to Allied Chemical Corporation, New York, N.Y., a corporation of New York

No Drawing. Original application Mar. 19, 1963, Ser. No. 266,215. Divided and this application Dec. 15, 1966, Ser. No. 619,096

Int. Cl. A01n *9/02*

U.S. Cl. 424—311 10 Claims

Use of adducts of decachlorooctahydro-1,3,4-metheno-2H-cyclobuta (cd) pentalen-2-one and other ketones as insecticides.

3,469,011

1,1,2-TRIFLUORO-2-CHLOROETHYL-DIFLUOROMETHYL ETHER AS AN ANESTHETIC AGENT

Ross C. Terrell, Summit, N.J., assignor to Air Reduction Company, Incorporated, New York, N.Y., a corporation of New York

No Drawing. Filed Oct. 3, 1966, Ser. No. 583,938

Int. Cl. A61k *13/00*; C07c *43/12*

U.S. Cl. 424—342 3 Claims

This application discloses the novel compound 1,1,2-trifluoro-2-chloroethyl difluoromethyl ether having the formula CHF_2OCF_2CHFCl. The compound is prepared by fluorination of the corresponding dichloromethyl ether using fluorinating agents in the presence of pentavalent antimony salts and tetravalent halides as fluorination catalysts. Advantageous preparation of the precursor dichloromethyl ether involves chlorination of the methyl ether by the addition of not more than 1.5 molar equivalents of chlorine. The novel difluoromethyl ether is useful as an anesthetic agent.

ELECTRICAL

3,469,012

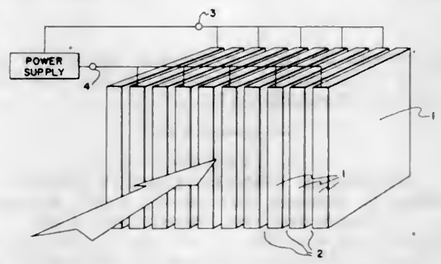
PROCESS FOR SUPPLYING PRECISELY CONTROLLED SUPPLEMENTAL HEATING TO POLYMER MELTS

Richard G. Devaney, Kingsport, Tenn., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

Filed Nov. 20, 1967, Ser. No. 684,386

Int. Cl. H05b *3/60*

U.S. Cl. 13—23 6 Claims



A direct electrical resistance method of raising the temperature of a polymer melt to a level at which any "high melting particles" contained therein may be liquefied by passing the melt through a plurality of electrodes having a charge thereon of sufficient magnitude to cause a substantial current to flow in the melt thereby raising the temperature of the same.

3,469,013

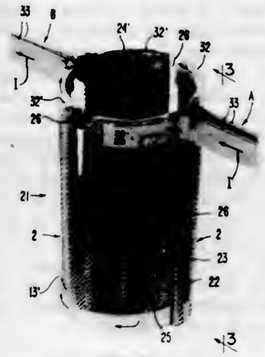
SEGMENTED MESH TYPE HEATING ELEMENT FORMED WITH REINFORCING MESH STRUCTURE

James S. Hetherington, Menlo Park, and James R. Skinner, Santa Clara, Calif., assignors to Varian Associates, Palo Alto, Calif., a corporation of California

Filed Nov. 4, 1966, Ser. No. 592,099

Int. Cl. H05b *3/66*; H01c *3/00*

U.S. Cl. 13—25 11 Claims



A mesh-type heating element for vacuum, inert gas, and hydrogen furnace use, in the temperature range from 2500° C. to an excess of 3000° C. is disclosed. The mesh heating element includes a mesh formed of a multiplicity of intertwisted helical convolutions of refractory metal wire. The mesh includes at least a pair of adjacent leg segments conductively joined together at an adjacent end for passing the heating current in series through the heating element in opposite directions in adjacent legs. The conductive connection between adjacent legs includes a mesh gusset structure, preferably having a rounded V-shaped crotch portion to reduce sharp corners and to reduce the heating current density for prolonging the operating life of the heating element. In a preferred embodiment of the present invention, the side edge portions of the leg segments are formed of increased thickness to strengthen the mesh against inwardly directed magnetomotive forces. The gusset structure preferably extends above a ring structure serving to conductively join the two leg segments for strengthening the mesh and for reducing the current density in the crotch portion. In addition, reinforcing ribs are provided in the leg portions to reduce flexure of the mesh structure in use.

3,469,014

CONNECTIONS FOR HOLLOW ELECTRIC CONDUCTORS

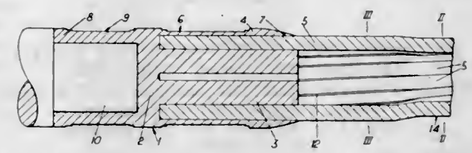
Michael Savvas Papadopulos, Longfield, Kent, England, assignor to British Insulated Callender's Cables Limited, London, England

Filed May 23, 1967, Ser. No. 640,694

Claims priority, application Great Britain, May 25, 1966, 23,297/66

Int. Cl. H02g *15/24*

U.S. Cl. 174—22 10 Claims



A connection is made to the end of a hollow stranded or segmental electric cable conductor for a fluid-filled cable by forcing an oversize plug into the conductor duct and attaching the separated conductor elements of the conductor to the plug. The spaces thus formed adjacent the plug between the conductor elements allow free flow of fluid into and out of the conductor, for example at a stop joint or oil feed joint or termination, without unduly distorting the field of electrical stress around the joint.

3,469,015

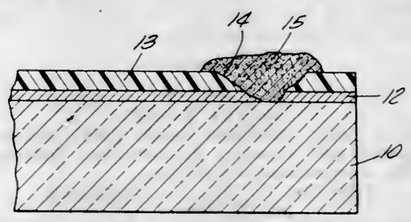
CONDUCTIVE PANEL

Robert A. Warren, Tujunga, Calif., assignor to The Sierracin Corporation, Sylmar, Calif., a corporation of California

Filed Jan. 13, 1967, Ser. No. 609,168

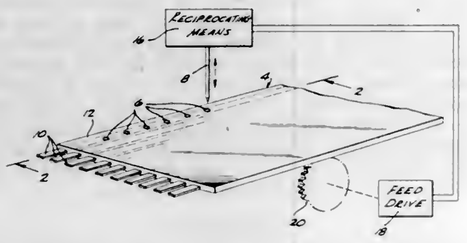
Int. Cl. H05k *9/00*

U.S. Cl. 174—35 10 Claims



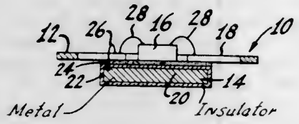
A transparent panel having an internal conductive film to which a bus bar attachment is made after fabrication of the panel.

3,469,016
INTERCONNECTION BETWEEN EXTERNAL SHIELD AND INTERNAL CONDUCTOR
Vernon E. Shelton, Manhattan Beach, Calif., assignor to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware
Filed Nov. 30, 1967, Ser. No. 687,003
Int. Cl. H01b *11/06*
U.S. Cl. 174—36 **8 Claims**



A shielded cable, comprising a flat electrical insulation material having a plurality of flat conductors enclosed therein which are disposed in parallel spaced-apart relationship to each other, the cable having a plurality of perforations through the insulation material and at least one conductor. An electrical conductive coating covers the exterior of the insulation and enters the perforations to mechanically bond and to electrically couple with the conductor.

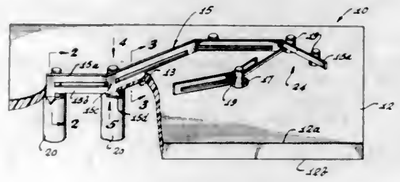
3,469,017
ENCAPSULATED SEMICONDUCTOR DEVICE HAVING INTERNAL SHIELDING
Samuel L. Starger, Clark, N.J., assignor to RCA Corporation, a corporation of Delaware
Filed Dec. 12, 1967, Ser. No. 689,993
Int. Cl. H05k *5/04*
U.S. Cl. 174—52 **4 Claims**



A semiconductor device is fabricated from an assembly comprising a lead frame, a substrate, and a semiconductor pellet. The lead frame comprises a flat sheet of metal having a cut-out therethrough providing a plurality of elongated leads. Insulatingly bonded to one side of the lead frame is an electrically conductive substrate. A semiconductor pellet is mounted on the substrate. Different portions of the pellet and the metal substrate are electrically connected to different ones of the leads. The pellet and portions of the substrate and leads are encapsulated in a molded enclosure, and the portions of the lead frame connecting the leads together are removed to separate the leads and complete the device.

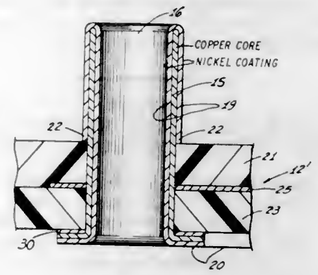
3,469,018
CIRCUIT BOARD
Edgar L. Arny, Manhattan Beach, Calif., assignor to Chemical and Aerospace Products, Inc., Wilmington, Calif., a corporation of California
Filed Dec. 16, 1966, Ser. No. 602,380
Int. Cl. H05k *1/02*
U.S. Cl. 174—68.5 **7 Claims**

An electronic circuit board having multi-rail electrically conductive ribbons in grooves preformed in a machine or chemically etched electrically insulating layer in accordance with a predetermined circuit trace pattern. The board is provided with holes at selected locations to enable electrically conductive leads of components to



pass through the board in abutment with one or more rails of the conductive ribbon, so that the leads can be welded or soldered to the rails.

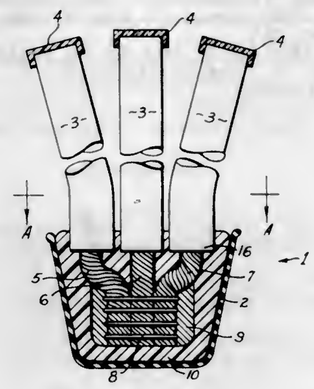
3,469,019
WELDABLE PRINTED CIRCUIT BOARD
William G. Reimann, Los Angeles, Calif., assignor to Litton Systems, Inc., Beverly Hills, Calif.
Original application Mar. 14, 1963, Ser. No. 265,178, now Patent No. 3,345,741, dated Oct. 10, 1967. Divided and this application May 25, 1967, Ser. No. 641,252
Int. Cl. H05k *1/02*
U.S. Cl. 174—68.5 **5 Claims**



Electroformed weldable tubelets extending through and beyond the surface of a printed circuit board are accurately positioned in alignment with holes in the printed circuit board, and are mechanically interlocked with the circuit board. Component leads are welded in position by welds which may be made beyond the surface of the printed circuit board. The electrical components are held in place by the closely fitting tubelets prior to welding, and are rigidly held in their proper position with regard to the circuit board assembly by the tubelets which are mechanically interlocked with the circuit board. The tubelets preferably extend beyond the circuit board by a distance of at least one-half the diameter of the tubelet and preferably have electroformed layers which securely interlock the tubelets against movement with respect to the printed circuit board.

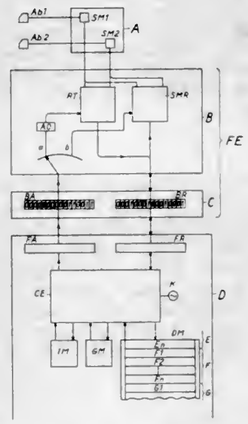
3,469,020
ELECTRICAL SPIDER CONNECTION
Charles M. Broom, Coral Gables, and Robert H. Stevens, Miami, Fla., assignors to Kearney-National Inc., St. Louis, Mo., a corporation of Delaware
Filed Dec. 6, 1965, Ser. No. 511,648
Int. Cl. H02g *3/28, 15/08*
U.S. Cl. 174—71 **9 Claims**

A device for facilitating the making of electrical connections in tight places between a main line conductor and a multiplicity of branch circuit lines wherein a multiplicity of relatively short pieces of insulated conductor, long enough to reach out of the tight place, all have an end



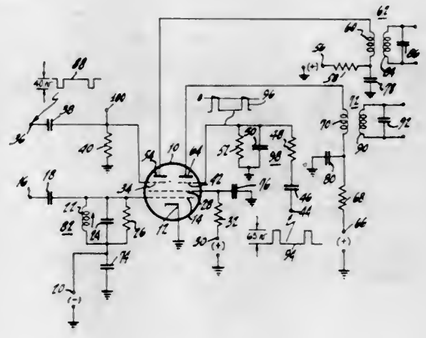
barren of insulation permanently mechanically and electrically connected together with a line conductor terminal and the junction embedded in insulation.

3,469,021
INTERMEDIATE EXCHANGE FOR TELECOMMUNICATION
Rolf August Dahlblom, Hagersten, Nils Herbert Edstrom, Vallingby, and Jan Silwer, Nacka, Sweden, assignors to Telefonaktiebolaget L M Ericsson, Stockholm, Sweden, a corporation of Sweden
Filed July 26, 1966, Ser. No. 567,981
Claims priority, application Sweden, Aug. 16, 1965, 10,649/65
Int. Cl. H04l *15/04, 15/24*
U.S. Cl. 178—2 **3 Claims**



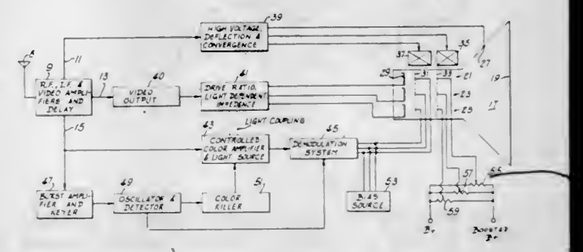
An intermediate exchange serves a plurality of teleprinter subscribers. Within the exchange there is a sender and a receiver assigned and connected to each subscriber. The exchange is controlled by a computer which establishes the connections between the called and calling subscribers. However, the information flow between the senders and receivers of the called and calling subscribers is via a storage matrix within the exchange so that there is no direct connections between the senders and receivers.

3,469,022
COMBINATION CHROMINANCE AMPLIFIER, BURST AMPLIFIER, AND BURST GATE CIRCUIT FOR A COLOR TELEVISION RECEIVER
William P. Iannuzzi, Haddonfield, N.J., assignor to RCA Corporation, a corporation of Delaware
Filed Oct. 1, 1965, Ser. No. 492,119
Int. Cl. H04n *5/42, 5/44*
U.S. Cl. 178—5.4 **3 Claims**



A split-pentode vacuum tube having a first amplifying half, a second amplifying half, and a common signal input electrode is employed in a combination chrominance amplifier, burst amplifier, and burst gate circuit for a color television receiver. Chrominance and burst signal information are coupled to the common electrode and amplified by the first and second halves, respectively. However: (1) a negative flyback pulse derived during the burst interval is used to key-off the chroma amplifying half during that interval; and (2) a positive flyback pulse also derived during the burst interval is used to key-off the burst amplifying half during the chroma signal interval. The configuration permits a simplified color reproducing system to be constructed, and at a substantial reduction in cost.

3,469,023
COLOR BALANCE AUTOMATIC SHIFT APPARATUS
Charles Bailey Neal, Batavia, N.Y., assignor to Sylvania Electric Products Inc., a corporation of Delaware
Filed July 8, 1966, Ser. No. 563,865
Int. Cl. H04n *5/42, 5/44*
U.S. Cl. 178—5.4 **10 Claims**



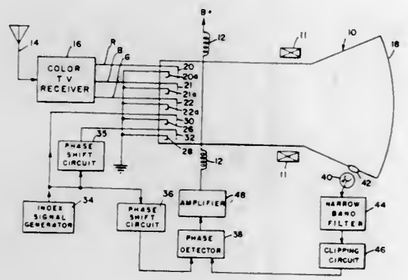
A compatible color television receiver adapted to reproduce images in both monochrome and color includes a light source and a light-dependent impedance for automatically shifting the "white" response color temperature of a visual image display device in accordance with a shift in received signals.

3,469,024

COLOR TELEVISION RECEIVER WITH HORIZONTAL INDEXING

James W. Schwartz, Western Springs, Ill., assignor to National Video Corporation, Chicago, Ill., a corporation of Illinois

Filed Nov. 16, 1966, Ser. No. 594,896
Int. Cl. H04n 5/38, 5/44
U.S. Cl. 178—5.4 9 Claims



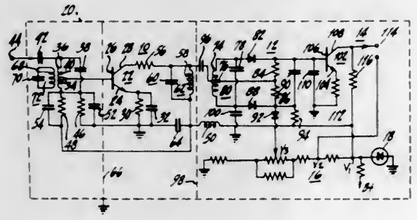
A feedback system for controlling vertical drift in a color television receiver equipped with electron beams scanning horizontal strips of color-producing phosphor. Two additional index beams scan the raster with the video beams, and the intensity of the index beams is not a function of the video signals thereby eliminating intermodulation of the index beams and permitting narrow band signal processing techniques in the feedback circuit to enhance the signal to noise ratio.

3,469,025

AUTOMATIC FREQUENCY CONTROL SYSTEM

Wayne Wheeler Evans, Indianapolis, Ind., assignor to RCA Corporation, a corporation of Delaware

Filed May 23, 1966, Ser. No. 552,090
Int. Cl. H04n 7/04, 7/06, 5/60
U.S. Cl. 178—5.8 6 Claims



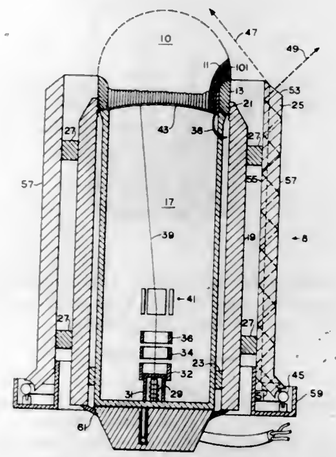
An automatic frequency control system is provided which includes a frequency responsive network coupled to receive a video carrier and means for providing an output direct voltage indicative of the received video carrier. The voltage versus frequency characteristic of the frequency responsive network is of a first polarity for a first frequency range, an alternate polarity for a successively higher frequency range and of the first polarity for a frequency range higher than the first and second frequency ranges.

3,469,026

TV PICKUP AND PROJECTION SYSTEM WITH CAMERA HAVING FIBER OPTIC HEMISPHERICAL LENS

Leon Winik, New York, and George Doundoulakis, North Bellmore, N.Y., assignors, by direct and mesne assignments, of fifteen percent to Albert C. Nolte, Jr., Oyster Bay Cove, N.Y.

Filed Apr. 22, 1966, Ser. No. 544,590
Int. Cl. H01j 29/89
U.S. Cl. 178—6.8 11 Claims



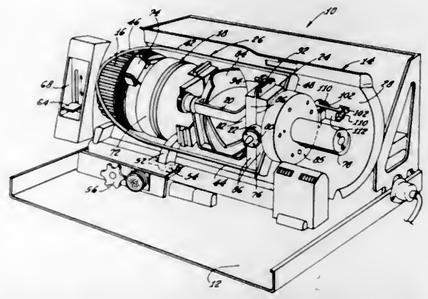
A fiber optical device wherein the ratio of the core to cladding indices of refraction varies along the optical fiber length and means for providing a television camera system whereby the fiber optic device is utilized as an objective lens.

3,469,027

FACSIMILE TRANSCEIVER

Glenn A. Reese, San Pedro, and Gustavus B. Pearson, Los Angeles, Calif., assignors to The Magnavox Company, Torrance, Calif., a corporation of Delaware

Filed Oct. 8, 1965, Ser. No. 494,053
Int. Cl. H04n 3/16, 5/38, 7/00
U.S. Cl. 178—6 11 Claims



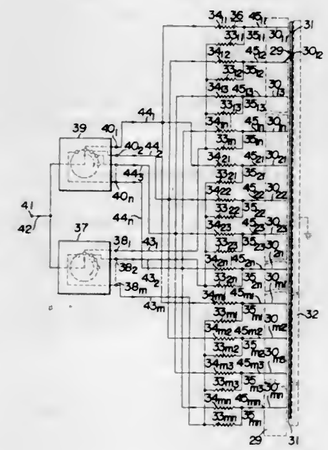
This invention relates to apparatus for providing a transducing action between the recording of information on copy paper and the reproduction of information from the copy paper. The apparatus includes an arcuate platen mounted on a particular axis and transducing means, including a stylus, rotatable on the particular axis. The copy paper is disposed on the platen and a flexible paper holder is also disposed on the platen for forcing the copy paper to conform to the shape of the platen. Means are provided for maintaining the stylus in a uniform relationship to the copy paper as the transducing means are rotated. Means are also provided for moving the transducing means between a first position in operative relationship to the platen and a second position displaced from the platen to provide for access to the platen in the second position. Drive roller means extend through the platen and cooperate with pressure roller means to compress the copy paper and move the copy paper in an axial direction.

3,469,028

ELECTRODE CONTROL SYSTEMS OF A MULTI-NEEDLE ELECTRODE TYPE ELECTROSTATIC RECORDING DEVICE

Kiyoshi Yamamoto, Yokohama-shi, Japan, assignor to Tokyo Shibaura Electric Co., Ltd., Kawasaki-shi, Japan, a corporation of Japan

Filed July 1, 1966, Ser. No. 562,225
Claims priority, application Japan, July 5, 1965, 40/40,275
Int. Cl. H04n 5/76
U.S. Cl. 178—6.6 2 Claims



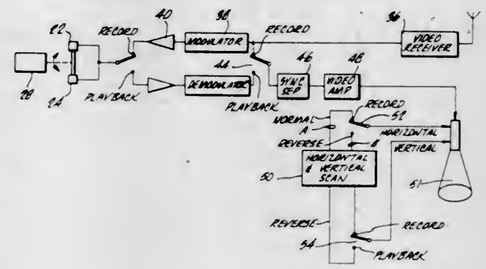
An electrode control system of a multi-electrode type electrostatic recording device has a resistance coupling network including a plurality of first resistors and the same number of second resistors, one end of each pair of said first and second resistors being connected to its corresponding needle electrode. A first high voltage pulse generator is provided to distribute and impress a high voltage pulse to the common junctions of said first resistors to cause the needle electrodes to effect the main scanning function. A second high voltage pulse generator is provided to distribute a high voltage pulse to the other ends of said second resistors at a higher speed than said first high voltage pulse generator. Means are provided to simultaneously apply a facsimile signal to both said first and second high voltage pulse generators thereby to divide said facsimile signal among said first and second high voltage pulse generators and impress it to the needle electrodes as an electrostatic recording high voltage pulse signal through said resistance network and at the different distributing speeds. Thus, needle electrodes having been impressed with the high voltage pulses simultaneously from said first and second generators can record an electrostatic latent image on a recording film.

3,469,029

APPARATUS FOR REPRODUCING VIDEO SIGNALS IN A REVERSED LINE SCAN

Norton W. Bell, Pasadena, Calif., assignor to Bell & Howell Company, Chicago, Ill., a corporation of Illinois

Filed Aug. 22, 1966, Ser. No. 573,906
Int. Cl. H04n 5/76, 5/78
U.S. Cl. 178—6.6 6 Claims



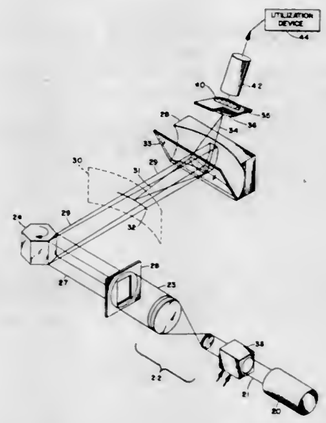
There is described a magnetic recording and playback system using rotating magnetic heads in which the heads scan across the tape at high speeds and in which the direction of scanning is reversed during playback without reversing the direction of magnetic tape drive.

3,469,030

OPTICAL SCANNER UTILIZING A SPHERICAL MIRROR

John R. Priebe, Torrance, Calif., assignor to North American Rockwell Corporation, a corporation of Delaware

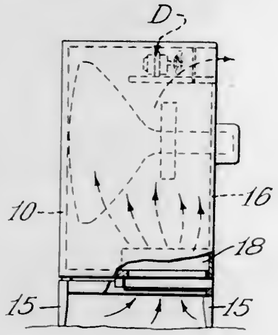
Filed Nov. 19, 1965, Ser. No. 508,685
Int. Cl. H04n 3/02
U.S. Cl. 178—7.6 5 Claims



This invention relates to an optical scanner; and more particularly to an arrangement that will move (scan) an extremely small spot of light across a given target, without introducing distortion or de-focussing of the spot of light. By using a combination of collimated light and a curved mirror, the scanning lightspot is always in focus, and of a constant size. For convenience, a beam-splitter

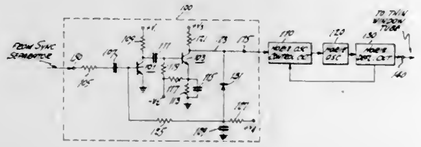
is used to position the utilization apparatus off-axis; and the scanning-mirror is displaced longitudinally in order to compensate for the optical displacement inherently caused by the beam-splitter.

3,469,031
TELEVISION SET AND ELECTRONIC AIR CLEANER
Barton T. Setchell, 5333 Matterhorn Circle, Minneapolis, Minn. 55421
Filed July 6, 1966, Ser. No. 563,152
Int. Cl. H01j *29/02*
U.S. Cl. 178—7.9 **8 Claims**



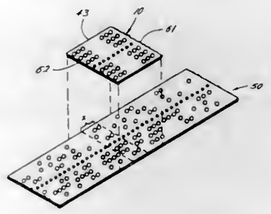
A television cabinet is provided with air passageways to provide air circulation to disperse heat generated by the tubes and other comopnents. An electronic air filter is positioned at the air inlet of the cabinet, and acts to filter out dust particles from the incoming air. This filter is supplied with high voltage from the power transformer of the television set so that a single power supply may be used to actuate both the television receiver and the electronic filter.

3,469,032
SYNCHRONIZING SYSTEM FOR TELEVISION RECEIVERS
Denis P. Dorsey and Ross W. Bruce, Levittown, Pa., assignors to Radio Corporation of America, a corporation of Delaware
Filed Jan. 30, 1967, Ser. No. 612,465
Int. Cl. H04l *7/04*
U.S. Cl. 178—69.5 **7 Claims**



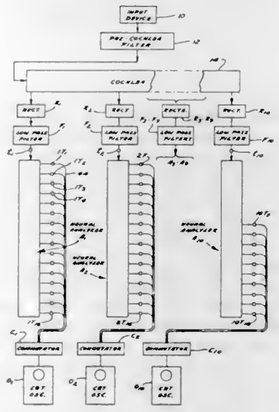
Synchronizing control apparatus for an interlaced scanning system to effectively remove from the synchronizing information used to control horizontal scanning those equalizing pulses and vertical serrations which are out of phase with the horizontal synchronizing pulses, so as to eliminate the warping or tearing of the reproduced picture at the start of each field they might otherwise cause. A pair of transistors and time constant networks generate a train of pulses synchronized with the in-phase pulses and serrations and with the horizontal synchronizing pulses.

3,469,033
CORRECTION TAPE
Paul E. Becking, Lake Orion, and Charles T. Hatfield, Grosse Pointe, Mich., assignors to Data-Link Corporation, San Mateo, Calif., a corporation of Delaware
Filed June 28, 1966, Ser. No. 561,157
Int. Cl. G11b *23/20*
U.S. Cl. 178—112 **6 Claims**



A strip of correction tape for repairing and/or correcting previously punched data tape, said correction tape having (1) areas of fully punched rubout code levels separated by areas of one or more blank code levels, (2) an adhesive for joining the correction tape to the existing data tape and (3) backing means removably joined to said adhesive, removable before joining the correction tape to the punched data tape.

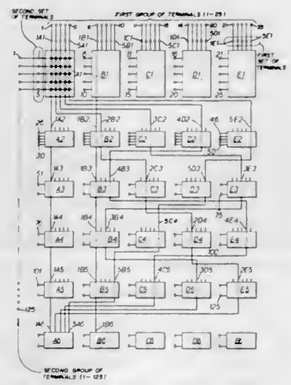
3,469,034
NEURAL-LIKE ANALYZING SYSTEM
John L. Stewart, Menlo Park, Calif., assignor to Santa Rita Technology, Inc., Menlo Park, Calif., a corporation of Arizona
Filed May 23, 1966, Ser. No. 552,158
Int. Cl. H04m *1/24;* **H04b** *1/66*
U.S. Cl. 179—1 **8 Claims**



A system for analyzing the frequency content and distribution of audio signals. A cascade of low-pass filter sections. Included in each filter section is an amplifier, a differentiating network, and a rectifier. Each of the amplifiers has a distinct gain or scale factor and the scale factor of each amplifier increases along the cascade of

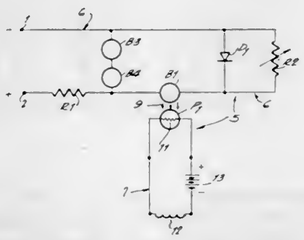
the filter sections to provide signals of consistent magnitude at each point along the cascaded filter sections. A commutator and an oscilloscope arranged to sequentially display the amplified output of each such filter section.

3,469,035
TELECOMMUNICATION SWITCHING SYSTEMS
Cecil Frederick John Hillen, Applecroft, Rectory Drive, Bidborough, Kent, England
Filed Mar. 28, 1966, Ser. No. 537,838
Claims priority, application Great Britain, Mar. 29, 1965, 13,223/65
Int. Cl. H04m *3/42*
U.S. Cl. 179—18 **5 Claims**



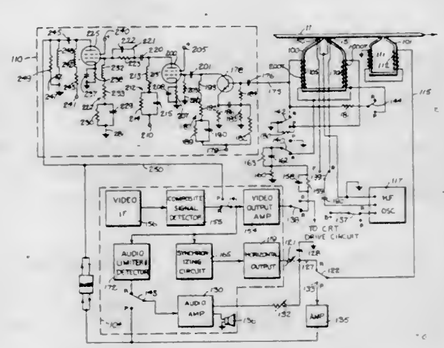
A telecommunication switching stage in which a number of switches arranged in a block as a matrix of rows and columns have their input terminals connected to subscribers' lines and their output terminals to the inputs of other switching stages. The inputs are shared by the output terminals of the switches which are interconnected with the inputs by joining each input to an output terminal of a different combination of the switches.

3,469,036
TELEPHONE RINGING SIGNAL DETECTION MEANS
Kalju Meri, Maspeth, N.Y., assignor to Robosonics, Inc., Bronx, N.Y., a corporation of Delaware
Filed Aug. 31, 1966, Ser. No. 576,327
Int. Cl. H04m *1/54*
U.S. Cl. 179—84 **7 Claims**



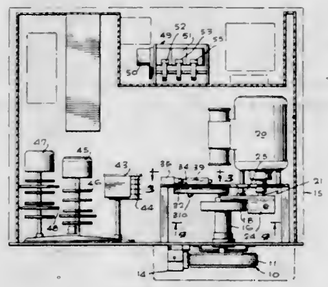
For a telephone answering service, ringing detection means comprising a neon tube detector which conducts ringing signals, neon tube signal by-pass means connected so as to by-pass signals other than ringing signals, and photocell means responsive to ringing signal detector which activates information transmitting and receiving means.

3,469,037
MAGNETIC TRANSDUCER HEAD WITH SINGLE RECORD WINDING AND PLURAL REPRODUCE WINDINGS
Marvin Camras, Glencoe, Ill., assignor to IIT Research Institute, Chicago, Ill., a corporation of Illinois
Filed Aug. 12, 1964, Ser. No. 389,021
Int. Cl. G11b *5/30*
U.S. Cl. 179—100.2 **2 Claims**



A transducer head having two windings of a different number of turns, the winding of smaller number of turns being used alone for recording and both windings being used for reproducing.

3,469,038
TIME ANNOUNCER
James W. Green, Lynwood, Calif., assignor, by mesne assignments, to Magnasync Moviola, a corporation of California
Filed Aug. 23, 1965, Ser. No. 481,614
Int. Cl. G11b *5/06*
U.S. Cl. 179—100.2 **2 Claims**

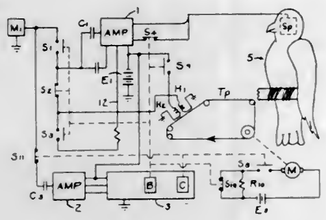


A time announcing system is provided whereby accurate time announcements may be recorded on a magnetic tape in correlation with other recorded information for subsequent reproduction.

3,469,039
MAGNETIC RECORDING AND REPRODUCING METHOD AND APPARATUS EMBODIED IN A MIMICKING PARROT OR DOLL
George H. Lee, 572 Hickory Road, Glen Ellyn, Ill. 60137
Filed Oct. 22, 1965, Ser. No. 501,113
Int. Cl. G11b *5/02*
U.S. Cl. 179—100.2 **8 Claims**

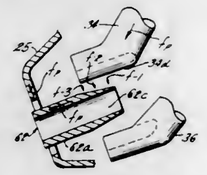
In the class of entertainment devices wherein a sound recorder is associated with a similitude, such as a parrot

or a doll, the improvement which comprises changing the speed of the recording medium, before reproducing,



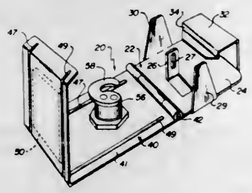
in a direction such that the pitch of the reproduced sound more closely approximates the inherent natural pitch of the similitude.

3,469,040
VARIABLE RELUCTANCE PHONOGRAPH CARTRIDGE
Harry B. Shaper, East Hills, N.Y., assignor to Empire Scientific Corporation, Garden City, N.Y., a corporation of New York
Filed Apr. 15, 1965, Ser. No. 448,369
Int. Cl. H04r *19/06*
U.S. Cl. 179—100.41 **25 Claims**



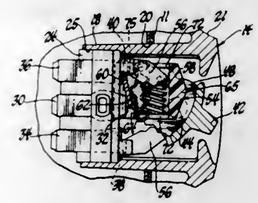
A stereophonic magnetic phonograph pickup is constructed with two magnetic circuits having a common gap positioned at the rear end of a pivotable armature. Another gap, positioned at the front end of the armature, is formed between the armature and a housing common to both magnetic circuits. The armature includes a forward cylindrical section and a rear conical section with a stylus lever connected to the cylindrical section and an elastomeric damping means surrounding the cylindrical section.

3,469,041
TELEPHONE LOCK
Emanuel A. Winston, 2925 W. Touhy Ave., Chicago, Ill. 60645
Filed Jan. 3, 1966, Ser. No. 518,371
Int. Cl. H04m *1/66*
U.S. Cl. 179—189 **5 Claims**



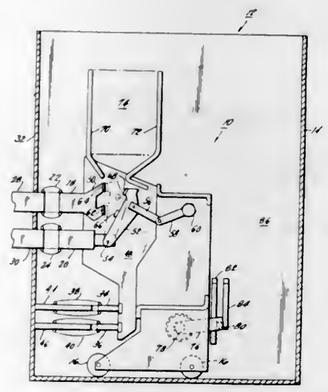
A telephone lock consisting of a U-shaped structure, one arm being pivoted and containing a lock element, the second arm fitting into the finger grip cavity of the telephone.

3,469,042
RACK AND PINION SWITCH WITH TILTABLE BRIDGING CONTACT AND STEPPED FIXED CONTACTS
Bela Sandor, Detroit, Mich., assignor to General Motors Corporation, Detroit, Mich, a corporation of Delaware
Filed Nov. 28, 1967, Ser. No. 686,167
Int. Cl. H01h *15/18, 5/18*
U.S. Cl. 200—16 **5 Claims**



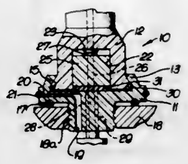
This disclosure relates to a three-position switch especially adapted for use as a window regulator switch and which includes a rack and pinion type drive for the contact carrier. In addition, a spring loaded tiltable bridging contact plate serves both as a movable contact and as a carrier travel limiting means.

3,469,043
DUAL MODE CIRCUIT BREAKER WITHDRAWAL MECHANISM
George A. Wilson, Media, Pa., assignor, by mesne assignments, to I-T-E Imperial Corporation, Philadelphia, Pa., a corporation of Delaware
Filed July 19, 1967, Ser. No. 654,594
Int. Cl. H01h *9/20, 33/46*
U.S. Cl. 200—50 **17 Claims**



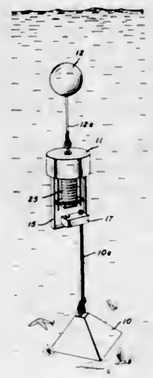
Racking mechanism for moving a circuit breaker within its cubicle between connected, test, disconnect, and out positions, which includes provisions for both electrical and manual operation. Manual operation can move the breaker through all of its positions while electrical operation can move the breaker only between its connected and test position. Apparatus is provided to condition electrically actuated movement of the circuit breaker in an indicated direction only upon the breaker's being in the one of its two possible positions from which it is intended to be moved.

3,469,044
ROTARY MAKE-UP ELECTRICAL CONNECTOR FOR UNDERWATER USE
Delbert J. Dickerson, P.O. Box 6, Agoura, Calif. 91301
Filed May 15, 1967, Ser. No. 638,354
Int. Cl. H01r *13/52, 33/30*
U.S. Cl. 200—51.07 **8 Claims**



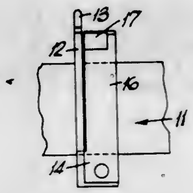
This invention is directed to improvements in electrical connectors for underwater use at whatever depths ranging from shallow to deep submarine immergence. In keeping with its objective of assuring the connector contacts against water access, the invention employs the general combination of a connector plug and base or receptacle, the plug containing an insert carrying plural contacts receivable within contact openings in the base, the body of the plug being rotatable relative to the insert so as to make and break contact with lead terminals entering the plug. The plug and base are releasably inter-engaged for relative plug rotation and moisture access to the insert conductors is effectively precluded by facing the insert with rubber which becomes a compressed sealing gasket upon mating of the plug and body in current-passing association.

3,469,045
ELECTROLYTIC TIMING DEVICE AND RELEASE ACTUATOR
Edgar N. Rosenberg, 6914 Mission Gorge Road, San Diego, Calif. 92127
Filed Sept. 29, 1967, Ser. No. 671,892
Int. Cl. H01h *29/08, 15/20*
U.S. Cl. 200—61.05 **5 Claims**



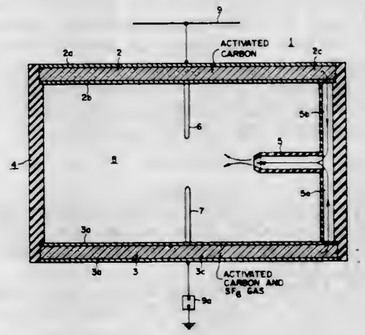
The present disclosure relates to a device for actuating a control preferably in deep water, after a predetermined time. The principle components of the device are a cylindrically shaped bellows, a pair of electrodes, disposed within the bellows and an electrolytic solution contained within the bellows electrically communicating with the electrodes. By a suitable choice of materials the bellows can be constructed to exhibit the characteristics of a voltaic cell or those attendant the electrode-position process. In either case, gases produced by the chemical changes occurring when a current is passed through an electrolyte are contained within the bellows and cause the bellow to expand. This expansion when guided by guide rods or channels is used to actuate a switch, explosive bolt, or similar control. Because the bellow is filled with the electrolyte, the actuator is not sensitive to pressure changes and is therefore ideal for use at great depths in ocean.

3,469,046
DIRECTION INDICATOR SWITCHES WITH YIELDABLY MOUNTED SAFETY CANCELLING CAM
James Johnson, Ryde, Isle of Wight, England, assignor to Joseph Lucas (Industries) Limited, Birmingham, England
Filed Apr. 14, 1967, Ser. No. 631,079
Int. Cl. H01h *3/16*
U.S. Cl. 200—61.34 **2 Claims**



A cancelling cam for a road vehicle direction indicator switch having a first part adapted to be fixed relative to the steering wheel of the vehicle, and a second part resiliently mounted on the first part and including a striker engageable in use with latches within the switch.

3,469,047
CIRCUIT-INTERRUPTING DEVICES USING ACTIVATED CARBON
Daniel Berg, Pittsburgh, and Thomas W. Dakin, Murrysville, Pa., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Oct. 22, 1965, Ser. No. 501,180
Int. Cl. H01h *9/30, 33/76*
U.S. Cl. 200—144 **15 Claims**



Circuit-interrupting devices of various types, such as fuse structures, circuit breakers, lightning arresters, etc. use activated carbon for generating an arc-extinguishing gas. The activated carbon may actually carry a portion of the series current during the opening operation of the de-

vice, or it may merely be placed in close proximity to the region of contact separation.

The generation of heat caused, either by current flow through the activated carbon, or by the placing of the activated carbon in close proximity to the arcing region, causes an arc-extinguishing gas to be evolved or desorbed from the pores of the activated carbon. This evolved or desorbed gas is directed into the arc to effect circuit interruption. After circut interruption, the activated carbon cools and readsorbs gas, which may be subsequently used for a later interruption.

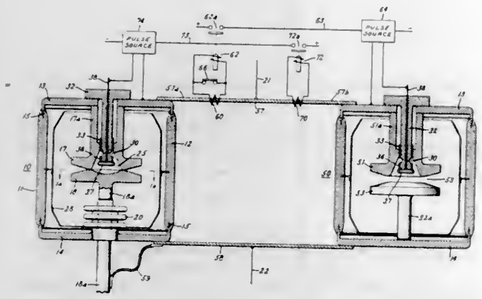
In the fuse structure, the load current may be constantly passed through activated carbon and the contacts may be pressure-operated and responsive to the quantity of gas evolved from the activated carbon, which, in turn, is a function of the magnitude of current flow through the fuse structure.

3,469,048

VACUUM-TYPE CIRCUIT BREAKER HAVING PARALLEL TRIGGERED-TYPE CIRCUIT INTERRUPTERS

Thomas H. Lee, Nether Providence, Pa., and August L. Streater, Bluffton, Ind., assignors to General Electric Company, a corporation of New York

Filed July 1, 1966, Ser. No. 562,299
Int. Cl. H01h *9/30, 33/66*
U.S. Cl. 200—144 **11 Claims**



Discloses a vacuum circuit breaker that comprises a pair of triggered vacuum-type circuit interrupters electrically connected in parallel. During interruption, coexisting arcs are developed in the two parallel vacuum interrupters, and the total current is divided between the parallel coexisting arcs. When the current through the arc in one of interrupters exceeds a predetermined value, the other interrupter, if it is not then conducting, is triggered into conduction to establish an arc therein through which a portion of the total current flows.

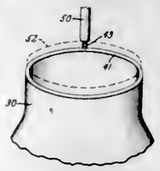
3,469,049

HIGH VOLTAGE VACUUM DEVICE WITH IMPROVED MEANS FOR INHIBITING SPARK-OVER ADJACENT THE EDGE OF A TUBULAR METAL PART

Donald W. Crouch, Newtown Square, and Donald R. Kurtz, Malvern, Pa., assignors to General Electric Company, a corporation of New York

Filed May 23, 1966, Ser. No. 552,231
Int. Cl. H01h *9/30, 33/66*
U.S. Cl. 200—144 **2 Claims**

Discloses a high voltage vacuum device comprising a tubular metal part having an annular end portion located in a region of high dielectric stress. The end portion comprises a thin-walled annulus and an annular bead of arc-melted metal substantially aligned therewith, the bead being formed by locally melting the edge of the annulus



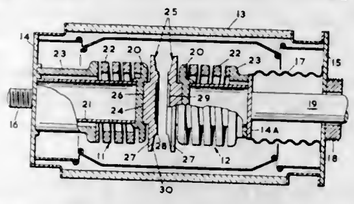
with an electric arc to produce large grains and a smooth, rounded external surface.

3,469,050

ARC ROTATING COIL STRUCTURE IN VACUUM CIRCUIT INTERRUPTERS

Alfred Alexander Robinson and James William Calvesbert, Stafford, England, assignors to The English Electric Company, Strand, London, England, a British company

Filed Aug. 1, 1966, Ser. No. 569,265
Claims priority, application Great Britain, Aug. 6, 1965, 33,781/65; Sept. 1, 1965, 37,302/65; Sept. 9, 1965, 38,557/65
Int. Cl. H01h *9/30, 33/04*
U.S. Cl. 200—144 **21 Claims**



One of the contact members of a vacuum circuit interrupter is mounted on a structural tube surrounded by a helical conductor. The major part of the current flows from the terminal to the contact member through the helical conductor, and the tube resists the loads on making of the contacts.

3,469,051

DEVICE FOR CLAMPING INSTRUMENTS TO PANELS

Kiyoshi Yamada, Rikio Takeuchi, Ikuhisa Morimoto, and Tatsuro Asano, Kadoma, Osaka, Japan, assignors to Matsushita Denko Kabushiki Kaisha, Osaka, Japan, a corporation of Japan

Filed Nov. 20, 1967, Ser. No. 684,420
Claims priority, application Japan, Nov. 26, 1966 (utility model), 41/108,507
Int. Cl. H01h *9/02*
U.S. Cl. 200—168 **3 Claims**



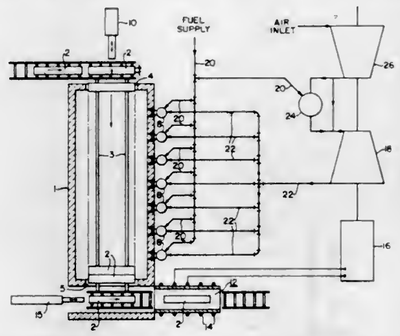
A device for clamping instruments to panels comprising a subsidiary clamp having a central round hole and provided with a plurality of pallet pieces on the periphery; a clamp for receiving the instruments, said clamp being provided with at least a pair of opposed resilient pieces each having an outwardly bent hooked piece at the tip, and with a pair of fixing screw holes made outside said resilient pieces; and fixing screws to be screwed respectively into said screw holes to fix the instruments.

3,469,052

HEATING APPARATUS FOR METAL WORKPIECES

Donald G. Hatchard, Arnold, Md., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Sept. 1, 1967, Ser. No. 665,013
Int. Cl. H05b *5/02*
U.S. Cl. 219—10.47 **4 Claims**



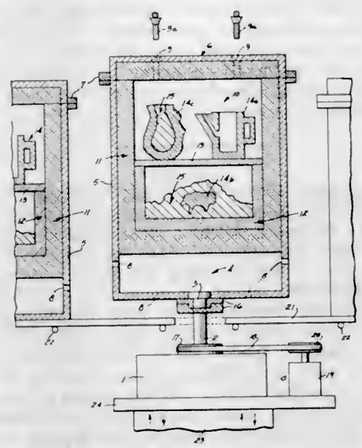
Improvement in heating apparatus in which a metal workpiece is heat treated by subjection consecutively to the heating effect of a fuel-fired radiant furnace means and an electrical induction heating means. A gas turbine means drives a generator of A.C. power for energizing the induction heating means, and high temperature air-rich exhaust gas from the turbine means is fed to the burners of the radiant furnace means to support the combustion of fuel. The gas turbine and the radiant furnace employ the same type fuel and share a common source.

3,469,053

MICROWAVE KILN

Melvin L. Levinson, 1 Meinzer St., Avenel, N.J. 07001

Filed Oct. 19, 1965, Ser. No. 497,851
Int. Cl. H05b *9/06, 9/02*
U.S. Cl. 219—10.55 **3 Claims**



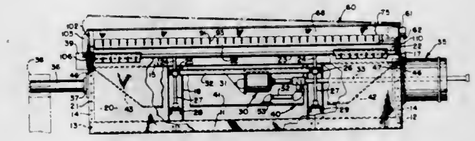
A microwave kiln apparatus which includes at least one microwave kiln having a cavity therein receptive to microwave energy. A microwave permeable implement is located within the cavity and contains a plurality of resistive particles therein, which when exposed to microwave energy converts the latter into a high refractory heat energy. Means are provided for permitting ingress and egress of greenware articles in the kiln for the firing thereof.

3,469,054

SHIELDED DIELECTRIC HEATING APPARATUS

Rudolph M. Serota, East Cleveland, Ohio, assignor to Bangor Punta Operations, Inc., Bangor, Maine, a corporation of New York

Filed Mar. 15, 1967, Ser. No. 623,376
Int. Cl. H05b *9/06*
U.S. Cl. 219—10.61 **7 Claims**



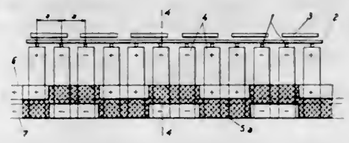
A dielectric heating apparatus provided with shield means above and below the system electrodes for collecting high-frequency wave energy and conducting the same to ground. The upper shield means is constructed and arranged for pivotal movement on the apparatus to permit threading of the dielectric web material through the apparatus. The lower shield forms an integral part of the tank circuit and functions to advantageously limit principal current flow to the interior shield members.

3,469,055

CONTACT MATRIX FOR A WIRE MESH WELDING MACHINE

Hans Gött, Graz, and Josef Ritter, Graz-Kroisbach, Austria, assignors to EVG Entwicklungs- und Verwertungsgesellschaft m.b.H., Graz, Austria

Filed Jan. 24, 1967, Ser. No. 611,408
Claims priority, application Austria, Feb. 4, 1966, A 1,049/66
Int. Cl. B23k *11/10*
U.S. Cl. 219—56 **7 Claims**



Interchangeable contact matrices have differently arranged conducting and insulation portions to provide different wire spacing in a wire mesh making machine.

3,469,056

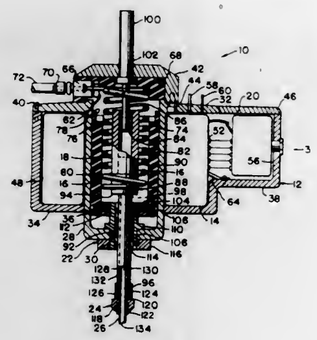
VIBRATORY ELECTRIC ARC DRILL

Thomas J. O'Connor, 100 Morgan Road, Ann Arbor, Mich. 48104

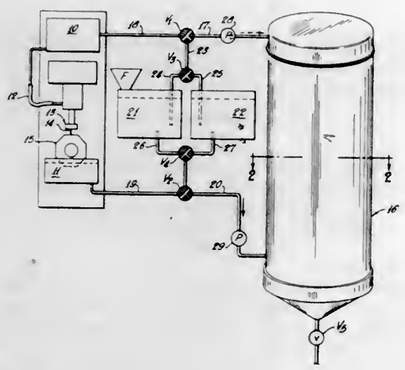
Filed Jan. 11, 1965, Ser. No. 424,622
Int. Cl. B23k *9/16*
U.S. Cl. 219—69 **7 Claims**

An electric arc drill including structure for adjusting the amplitude of reciprocation thereof and for providing reciprocation at twice the frequency of an applied alternating electric signal. Said structure includes a transformer having a secondary winding, a solenoid electrically connected to one end of the transformer secondary winding at one end, a solenoid core connected to the solenoid at the other end thereof and means for supporting an electrode for reciprocation from the solenoid core whereby a series circuit is completed through the secondary winding of the transformer from ground to the solenoid and through the solenoid core and electrode to a grounded workpiece on contact of the electrode and workpiece. The structure for adjusting the amplitude of reciprocation

comprises a movable sleeve connected to the solenoid adjacent the one end thereof. The structure for securing an electrode to the solenoid core includes a hollow electrode supporting member, a sealing member reciprocally mounted within the electrode supporting member having sealing means at one end thereof and chuck structure secured to the electrode supporting member for securing an electrode in an adjusted position within the electrode supporting member. The sealing member in one modification includes bevelled lower surfaces complementary to a bevelled end on an electrode engageable therewith. In another modification the sealing member includes a threaded opening therethrough for threadedly receiving one end of an electrode and in still another modification a sealing disc is positioned beneath the sealing member and a sealing sleeve is secured to the electrode. The sealing member is also disclosed secured directly to the electrode.

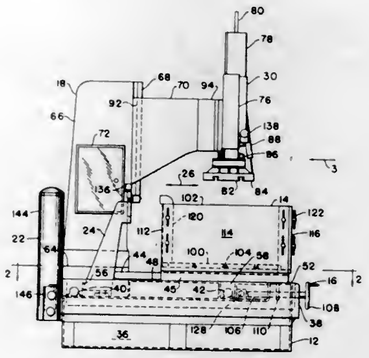


3,469,057
FILTER SYSTEM FOR PARTICULATE MATTER
Virgil L. Maines, Middletown, Ohio, assignor to Owens-Corning Fiberglas Corporation, a corporation of Delaware
Filed Feb. 15, 1965, Ser. No. 432,782
Int. Cl. B23k *9/16*
U.S. Cl. 219—69 **2 Claims**



An improved filtration system for use with lubricating and/or cooling oils, which utilizes a plurality of sizes of diatomaceous earth filter aids, and which is particularly suitable for use in purifying dielectric fluids used in electrical discharge machining. An essential element of the system is a filter comprising a plurality of perforate hollow screens coated by the mixed grades of diatomaceous earth.

3,469,058
MACHINE TOOL FOR ELECTRICAL EROSION MACHINING
Thomas J. O'Connor, 100 Morgan Road, Ann Arbor, Mich. 48104
Filed June 13, 1966, Ser. No. 556,931
Int. Cl. F16c *29/04*; **B23p** *1/02*
U.S. Cl. 219—69 **10 Claims**

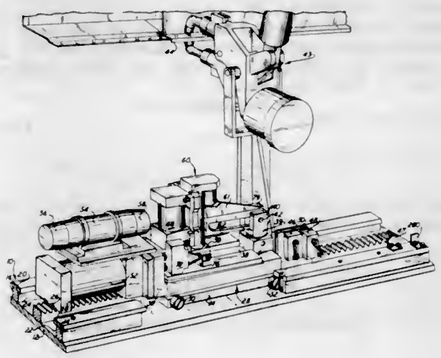


The machine tool disclosed includes a base, a work tank supported on the base for sliding movement in one direction, machining head structure supported on the base for sliding movement in a direction at right angles to the one direction including a column base, a column extending upwardly from said base at one end thereof, a slide depending from said column extending over the tank structure and separately movable ram structure depending from said slide. The work tank and machining head structure are supported on cylindrical bearings at the opposite ends thereof in one modification and in another modification are disclosed supported on a rectangular bearing at one end and an inclined adjustable bearing at the other end. Separate spacer members may be inserted between the column base and column and the slide and ram of the machining head structure to vary the dimensions thereof and a tilt-up platen is provided on the separately movable ram structure to provide ready access to an electrode carried thereby.

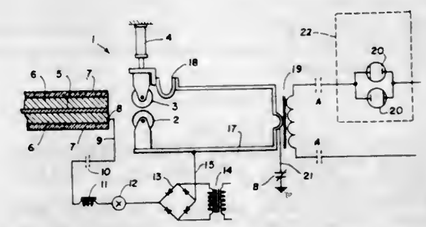
3,469,059
INDEXING SPOT WELDING APPARATUS
Zygmunt Sowa, Detroit, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed Apr. 12, 1967, Ser. No. 630,276
Int. Cl. B23k *11/10*
U.S. Cl. 219—80 **7 Claims**

This indexing mechanism is used to index a spot welding machine along a track to weld vehicle body components at equally spaced places. The mechanism comprises two basic assemblies, a frame carrying the spot welding gun and an indexing carriage carried by and movable relative to the frame. Retraction of a vertical air cylinder attached to the carriage acts through an arm to engage a frame positioning member in linear gear teeth on the track, thereby holding the gun during the welding step. Simultaneously with the welding step a horizontal air cylinder attached to the frame extends to move the indexing carriage along the track a distance equal to the spacing between welds.

When the welding step ends, the vertical cylinder extends to engage a carriage positioning member in the gear teeth and sequentially disengage the frame positioning member from the gear teeth. The horizontal cylinder then retracts to draw the frame and gun up to the next welding position, the vertical cylinder retracts to re-engage the frame positioning member with the gear teeth and the next welding step commences. A control circuit for the mechanism produces the above operation with a minimum of components and also permits the machine to weld while indexing in the reverse direction.



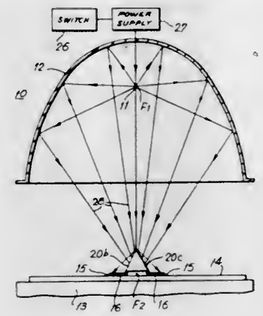
3,469,060
CONTACT SYNCHRONIZING WELDING CIRCUIT
Joseph J. Riley, Warren, Ohio, assignor to The Taylor-Winfield Corporation, Warren, Ohio
Filed Mar. 22, 1967, Ser. No. 625,085
Int. Cl. B23k *11/06*
U.S. Cl. 219—82 **9 Claims**



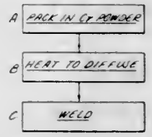
A welding apparatus and control circuit for the welding of metal strips wherein there is provided insulated clamps for holding the strips and a control circuit for controlling the application of the welding current to the strips when the electrodes have made contact with the strips. Upslope and downslope control are also provided to minimize strip edge deformation.

3,469,061
SOLDERING APPARATUS
Bernard J. Costello, Ringoes, N.J., assignor to Argus Engineering Company, Hopewell, N.J.
Filed June 28, 1966, Ser. No. 561,112
Int. Cl. B23k *1/04*
U.S. Cl. 219—85 **12 Claims**

A radiant energy apparatus and method for soldering engaging conductive surfaces of two members or for preheating a preselected region of a single member including a radiant energy source, reflective means for focusing radiation from the source upon the region to be heated and second reflective means positioned in close proximity to the member (or members) to be heated for redirecting and thereby concentrating radiation upon the preselected region (or regions) of the member (or members) to be heated which further acts to prevent radiation from striking other predetermined regions of the member (or members) and thereby prevent undue heating of such predetermined regions.



3,469,062
METHOD OF JOINING METALS
Stanley G. Berkley, Colchester, Conn., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware
Filed Jan. 3, 1968, Ser. No. 695,493
Int. Cl. B23k *9/28*
U.S. Cl. 219—92 **7 Claims**

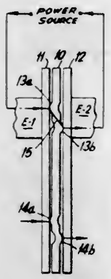


A method of fusion bonding together metals which are otherwise difficult to weld or braze, most particularly dispersion strengthened metals such as oxide dispersion strengthened nickel. The metals to be joined are diffusion coated with a material to produce a coating layer having a higher electrical resistance and/or a lower melting point than the metals to be joined. The coatings are then either resistance welded together to join the materials, or the materials are pressed together and heated whereby the coating melts and acts in the nature of a brazing compound to join the materials together.

3,469,063
PROJECTION WELDING OF BEARING MOUNTS
Horace B. Van Dorn, Kensington, Conn., assignor, by mesne assignments, to Textron Inc., Providence, R.I., a corporation of Delaware
Filed May 29, 1967, Ser. No. 641,994
Int. Cl. B23k *11/10*
U.S. Cl. 219—93 **1 Claim**

A method is disclosed for producing a projection welded metal laminate comprising at least three metal layers wherein the outside layers are projection welded to an intermediate layer. The intermediate layer is provided with a plurality of pairs of offset projections such that one projection of each pair is on one face of the intermediate layer and the other projection of the pair is on

the other face but offset from the first projection. By positioning the intermediate layer in faying relationship between the two outside layers, the layers can be welded



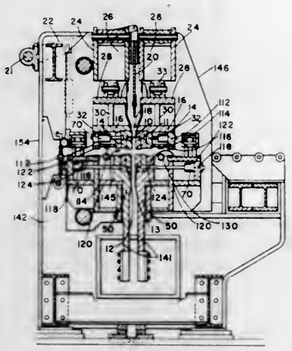
together by contact through said projections. The foregoing is particularly applicable in welding a bearing assembly to a bearing mounting bracket.

3,469,064

FLASH STRIP WELDER

Charles M. Senn and Owen S. Cecil, Jr., Pittsburgh, Pa., assignors to Mesta Machine Company, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Oct. 21, 1966, Ser. No. 588,485
Int. Cl. B23k *9/02, 11/02, 11/04*
U.S. Cl. 219—101 **12 Claims**



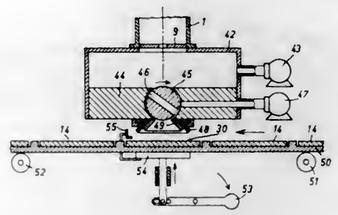
A welding machine with a pair of first die assemblies and an opposed pair of die assemblies. One of the first die assemblies is mounted upon the apparatus' supporting framework. The opposed one of the opposed pair of die assemblies is mounted for vertical movement. The remaining die assemblies are mounted upon a laterally moveable frame of the apparatus. The other of the opposed pair of die assemblies is mounted on the moveable frame for vertical motion relative to the other of said first die assemblies. The moveable frame is mounted on an eccentric portion of a supporting shaft which is slideably mounted on the supporting framework and rotatably mounted relative to the supporting framework and moveable frame. Means are included for rotating the shaft and eccentric portion to import incremental changes in the elevation of the moveable frame and die assemblies thereon to aid in alignment of the workpiece engaging surfaces thereof.

3,469,065

APPARATUS FOR THE MACHINING OF MATERIAL BY MEANS OF A BEAM OF CHARGE CARRIERS

Fritz Schleich, Unterkochen, Wurttemberg, and Wilhelm Scheffels, Aalen, Wurttemberg, Germany, assignors, by mesne assignments, to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware

Original application July 9, 1963, Ser. No. 293,776, now Patent No. 3,401,249. Divided and this application May 24, 1968, Ser. No. 740,419
Int. Cl. B23k *9/00*
U.S. Cl. 219—121 **7 Claims**



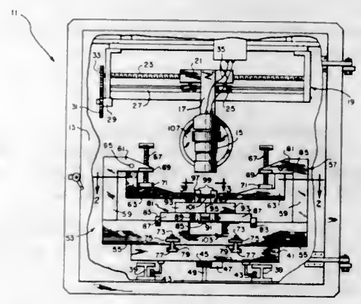
This disclosure provides apparatus for machining of workpieces by means of a beam of charge carriers. The workpieces are handled in the atmosphere and are brought into position adjacent to the machining apparatus which has a sealing ring that contacts with the surface of the work piece. With the work piece in such position, it forms one wall of a chamber which is evacuated and through which the beam of charge carriers is projected against the workpiece surface that is to be machined. It is a feature of the disclosure that the volume of the chamber, which is closed by the work piece, is small so that vacuum pumps exhaust it rapidly thereby reducing the time and cost of the machining and each successive piece. One modification has a valve with an aperture through which the beam is discharged from a vacuum chamber which communicates with the small volume chamber only after the latter is exhausted.

3,469,066

METHOD AND DEVICE FOR PREVENTING HIGH VOLTAGE ARCING IN ELECTRON BEAM WELDING

Joe R. Short, Arab, Ala., assignor to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration

Filed Sept. 30, 1966, Ser. No. 584,061
Int. Cl. B23k *15/00*
U.S. Cl. 219—121 **4 Claims**



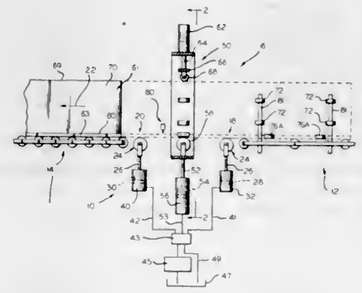
A method and device for preventing high voltage arcing in electron beam welding. A thin metallic shield is positioned between the workpiece and the electron gun so that the electron beam cuts through the metallic shield prior to impinging on the work. Best results are obtained if the shield is positioned above the workpiece within the range of ⅛ inch to ¾ inch. The electron gun is mounted on a carriage for movement of the gun over the shield and workpiece during the welding operation. The entire electron beam welding apparatus is positioned within a vacuum enclosure.

3,469,067

APPARATUS FOR WELDING TOGETHER BEAM COMPONENTS

Ralph P. Ogden and William P. Lawson, Hammond, Ind., assignors to Ogden Engineering Corporation, Schererville, Ind., a corporation of Indiana

Filed Sept. 19, 1966, Ser. No. 580,314
Int. Cl. B23k *9/12*
U.S. Cl. 219—124 **8 Claims**



The disclosure relates to a method and apparatus for welding together the end flanges and webs of girder forming I-beams, box beams and the like, in which one or more webs are placed on top of one of the end flanges, and the thus associated beam components are simultaneously moved past floating welding heads at a welding station that fillet weld the web or webs to the end flange. These beams components are positioned in their normal load supporting positions for this welding operation, that is, the web and end flange are respectively vertically and horizontally disposed, and they are clamped together adjacent the welding heads by a roller type clamping arrangement that also floats. The beam components pass to and from the welding station on roller conveyors, and on being fillet welded together form a beam subassembly that is returned to the initial assembly position, inverted, and placed on top of the other end flange, and the thus assembled beam components are again passed through the welding station to complete fabrication of the beam.

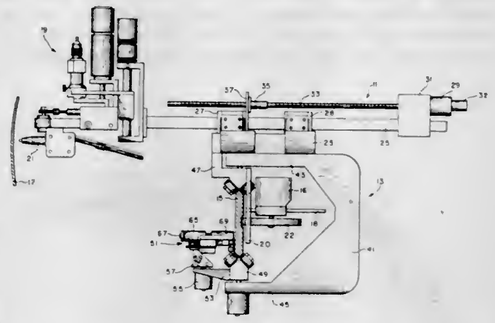
3,469,068

WELDING SKATE WITH COMPUTERIZED CONTROL

William A. Wall, Jr., Huntsville, Ala., assignor to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration

Filed Oct. 2, 1967, Ser. No. 672,382
Int. Cl. B23k *9/12*
U.S. Cl. 219—125 **10 Claims**

An apparatus for automatically varying a skate or carriage speed to obtain a substantially constant traversal speed of the welding torch or the like along the work surface. Control is accomplished through utilization of an analog computer which combines electrical inputs, representing various parameters of a carriage type system,



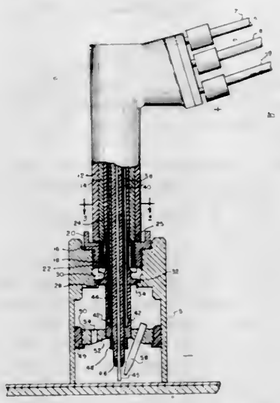
and computes the instantaneous skate or carriage velocity for a constant welding speed.

3,469,069

ELECTRIC WELDING TORCH

Gilbert V. Allen, Athens, Ala., assignor to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration

Filed Jan. 12, 1967, Ser. No. 608,944
Int. Cl. B23k *9/12, 9/16*
U.S. Cl. 219—130 **3 Claims**



An electric welding apparatus that includes a welding head having a cylindrical casing at one end thereof that forms an inert gas shield. A fixed electrode is mounted in a canted and offset position in the casing by means of a conductive collar mounted to the interior surface of the casing. Filler wire from a feeder mechanism is fed through the center of the welding head to a weld puddle. Cooling water and inert shielding gases are routed to the weld area through conduits in the welding head.

3,469,070

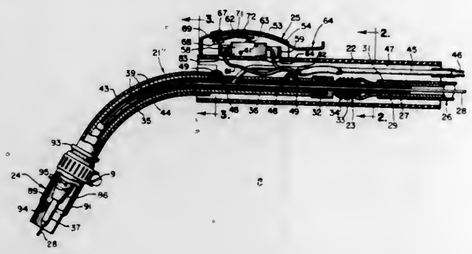
ARC WELDING GUN

Arthur A. Bernard, 611 Country Lane, Beecher, Ill. 60401, and Richard A. Bernard, 2923 Sunset, Flossmoor, Ill. 60422

Filed June 29, 1967, Ser. No. 650,051
Int. Cl. B23k *9/00*
U.S. Cl. 219—130 **4 Claims**

A high current capacity arc welding gun for gas-shielded, continuous feed, consumable electrode arc welding processes. Features include: a unique handle cooled

by convection air flow; an improved head assembly having a unique electrical insulating ion impervious shield for preventing destructive arcing to the gas nozzle, an improved shielding gas flow path through the head assembly which additionally cooperates with the ion impervious shield to prevent gas nozzle arcing, a unique current contact tip which attaches to the head assembly by



a novel curved wedge clamping concept and which is produced by an improved, versatile, and inexpensive method of manufacture that increases the copper density and refines the grain structure in the current contact tip for greater life; an improved gooseneck lining for longer life and reduced friction; a heat protected control switch assembly of rugged construction and unique trigger operation; and an improved welding cable connection assembly.

3,469,071
WELDABLE PRIMER

Ralph L. Feldt, Manchester, John F. Montle, Creve Coeur, and Ernest W. Skiles, Crestwood, Mo., assignors to Carboline Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 593,741, Nov. 14, 1966. This application Nov. 13, 1967, Ser. No. 682,556
Int. Cl. B23k *9/00;* **C23c** *11/06*
U.S. Cl. 219—137 **10 Claims**

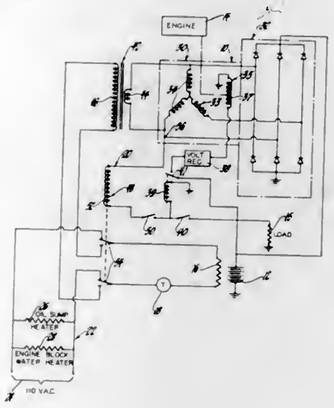
A method of arc-welding steel having a protective coating includes the step of providing the steel with a coating which is suitable for an arc-welding operation yet resistant enough to keep the steel safe from corrosion. The preferred coatings which serve this dual function utilize partially hydrolyzed esters of oxygenated amphoteric metal binders, for example ethyl silicate, and powdered sacrificial metals such as zinc metal; other silicates and titanates may be employed. The sacrificial metal should be of a size and concentration to provide electrical contact throughout the film and with the steel so that it forms a protective galvanic cell. Accordingly, the steel is protected and can be machine arc-welded at standard welding speeds.

3,469,072
ELECTRIC HEATING SYSTEM FOR MOTOR VEHICLES

Richard A. Carlson, Pontiac, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Dec. 11, 1964, Ser. No. 417,665
Int. Cl. B60l *1/02*
U.S. Cl. 219—202 **14 Claims**

A heater system for protecting a motor vehicle battery against low environmental temperatures that utilizes a single electric heater associated with the battery that can be selectively operated either by external station AC power when the vehicle is parked or by AC power of the same voltage derived from the vehicle's power generating system when the vehicle is in operation. The system includes provision for isolating the external station power

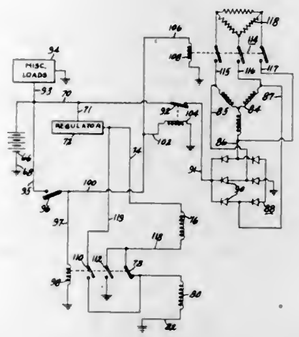


from the vehicle power generating system and also provision for isolating the battery heater from the battery. The system additionally includes provision for heating with the external station power other vehicle engine components, such as the coolant and lubrication systems.

3,469,073
ELECTRICAL SYSTEM

Thomas A. Zechin, St. Clair Shores, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed June 22, 1964, Ser. No. 376,850
Int. Cl. F27d *11/00*
U.S. Cl. 219—279 **5 Claims**



In preferred form, an automotive heating system including an alternator, means for varying the field energization of the alternator to control its output without affecting the operation or circuitry of the regulator, and thermally responsive means sensing the water temperature in a water-circulation primary heating system and including means to disconnect the alternator output from conventional DC automotive load circuits during the transient warm-up period when the alternator output is supplied to an electric heater.

3,469,074
METHOD OF ELECTRICALLY HEATING AN AQUEOUS ELECTROLYTE

Joseph Bernard Cotton and Brenda Sanderson, Sutton Coldfield, England, assignors to Imperial Metal Industries (Kynoch) Limited, London, England, a corporation of Great Britain

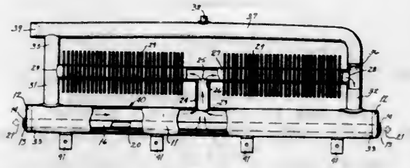
No Drawing. Filed May 25, 1964, Ser. No. 370,115
Claims priority, application Great Britain, May 31, 1963, 21,936/63
Int. Cl. H05b *3/60*
U.S. Cl. 219—284 **3 Claims**

There is provided an electrode and process of using the electrode as a heating element in boilers. The electrode consists of a coating of iridium, rhodium or alloys thereof, especially alloys with platinum, painted or plated on a titanium base. The electrodes are for use with an alternating current and have the advantage that the electrode will not corrode even if the said coating is pervious and contains pores. When water containing chlorides is used in such a boiler, it is preferred that a soluble alkali metal phosphate be dissolved in the water.

3,469,075
ELECTRIC HOT WATER SPACE HEATING UNIT HAVING IMPROVED CIRCULATION PATH

Jean Y. Barbier, St. Louis, Mo., assignor to Intertherm, Inc., St. Louis, Mo., a corporation of Missouri

Continuation of application Ser. No. 558,058, June 16, 1966. This application Sept. 4, 1968, Ser. No. 758,190
Int. Cl. H05b *7/06*
U.S. Cl. 219—341 **4 Claims**



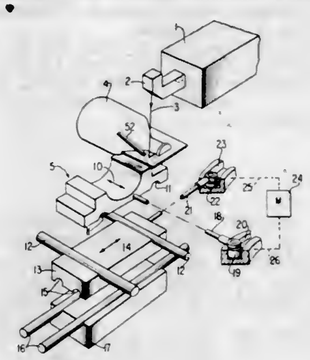
An electric hot water heating unit for space heaters including an elongated horizontal liquid-heating chamber with end enclosures having openings which sealedly support an elongated heat-communicating tube in which a heater is enclosed or a cartridge heater is inserted. A riser tube whose lower end communicates with the wall of the heating chamber above the center of such heater element, leads upwardly to the center of a substantially-horizontal tubular liquid-flow passage which is finned to transfer heat to the atmosphere, cooling the heat-transfer liquid as it flows from the central riser outwardly in opposite directions to both ends of the horizontal-flow passage. At these ends, downwardly-extending tubular return passages, bridged by a superposed tubular expansion chamber, lead the cooler liquid into end portions of the water-heating chamber adjacent to its end closures, from which it flows inwardly as it heats, reaching its maximum temperature just prior to flowing up the riser tube.

3,469,076
APPARATUS FOR REMOVING FLASHING FROM MOLDED PLASTIC ARTICLES

Sheldon Saslawsky, Easton, Conn., assignor to The Producto Machine Company, Bridgeport, Conn., a corporation of Connecticut

Filed June 1, 1967, Ser. No. 642,919
Int. Cl. H05b *7/18*
U.S. Cl. 219—383 **14 Claims**

An apparatus for removing flashing from molded plastic articles arranged in a fixture. A source of a laser beam and a lens is associated with the fixture whereby a laser beam may be directed along the juncture between the

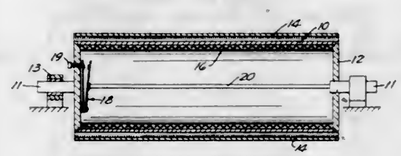


flashing and the molded plastic article to separate the flashing therefrom.

3,469,077
HEATING DEVICE

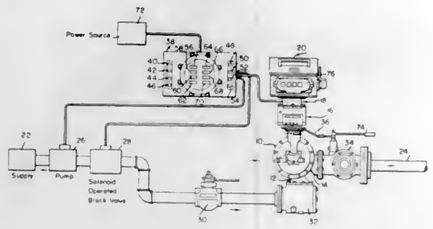
Kurt H. Petersen, White Bear Lake, and Paul A. H. Pankow, Minneapolis, Minn., assignors to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware

Filed Sept. 3, 1963, Ser. No. 305,944
Int. Cl. H05b *3/44*
U.S. Cl. 219—469 **8 Claims**



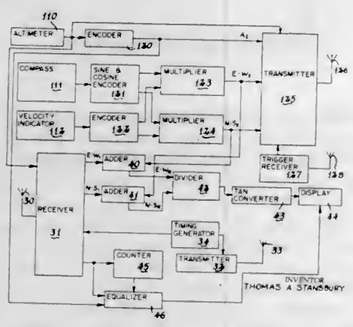
8. A device for the development or printing of photographic material, comprising: a hollow cylindrical contact member having an outer surface of extended area for contacting material to be developed or printed; means for mounting said contact member so as to permit rotation of said member about the axis thereof upon the passage of photographic material over said member; an electric heater element which extends over and is in good thermal contact with the inner surface of said contact member so that, upon supply of current to said element, heat is supplied to the extended outer surface of said contact member at a rate suitable for printing or developing contacted material; control means; including, an elongated control member having a co-efficient of thermal expansion different from that of the said contact member, said control member extending through the interior of said contact member, parallel with the axis thereof, and having one end fixedly secured relative to one end of said contact member so that relative movement takes place between the other ends of the respective contact and control members upon a change in temperature of said contact member; and switch means electrically connected to said heater element and mounted on the said other end of said contact member, said switch means being arranged to be actuated by a relative movement of the said other ends of said respective contact and control members corresponding to a predetermined rise in temperature of said contact member and, upon actuation, to control the supply of current to said heating element.

3,469,078
METERING SYSTEM AND COMPONENTS THEREOF
Benjamin L. Binford, Statesboro, Ga., assignor to Rockwell Manufacturing Company, Pittsburgh, Pa. a corporation of Pennsylvania
Original application May 9, 1963, Ser. No. 279,072, now Patent No. 3,291,389, dated Dec. 13, 1966. Divided and this application Sept. 27, 1966, Ser. No. 633,309
Int. Cl. G06g *7/50, 7/62*
U.S. Cl. 235—92 **13 Claims**



An electrical signal responsive controller for use with fluid dispensing system and comprising a pair of signal input terminals and a plurality of registers. For each register there is a key operated lock which controls a switch for selectively connecting each register to the input terminals. The input terminals are adapted to be electrically connected to a signal generating device which is actuated by a meter in the fluid dispensing system.

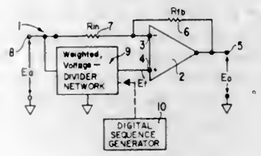
3,469,079
NAVIGATIONAL AID
Thomas A. Stansbury, 20 N. Wacker Drive, Chicago, Ill. 60606
Filed Apr. 15, 1963, Ser. No. 273,219
Int. Cl. G06f *15/48;* **G06g** *7/76, 7/78*
U.S. Cl. 235—150.23 **6 Claims**



A Pilot Warning Instrument which computes the relative velocity vector direction between crafts; displays this direction so that the operator of a craft, if in visually observing in the direction indicated, sees the other craft, he knows that the craft are on a collision course.

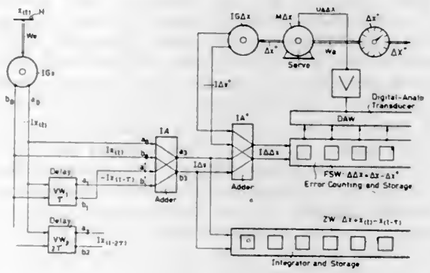
3,469,080
DIGITAL-ANALOG FOUR-QUADRANT MULTIPLIER NETWORK
Pierre E. Schmid, Whitefish Bay, and David J. Nowak, West Allis, Wis., assignors to Allen-Bradley Company, Milwaukee, Wis., a corporation of Wisconsin
Filed Aug. 24, 1966, Ser. No. 574,795
Int. Cl. G06j *1/02;* **G06g** *7/16*
U.S. Cl. 235—150.52 **9 Claims**

The invention shown is a digital-analog, four quadrant multiplier network that receives a first input signal in the form of a continuous analog signal of either polarity, which signal can be a steady state value as well as a continuously varying value, and a second input signal in the form of a digital signal that comprises a set of bits of information, the make-up of the set changing for each change in the digital signal. An operational amplifier is provided that has a pair of input terminals and the incoming analog signal is fed through a resistance to the inverting input terminal. A voltage dividing network is connected between the input of the analog signal and the second input terminal of the operational amplifier, which



network has a plurality of electronic switches that control the voltage applied to said second amplifier input terminal. The electronic switches, in turn, are controlled by the set of digital information, so that the voltage applied to the second input terminal of the amplifier represents a multiplication of the two input signals, i.e. analog and digital. A feedback resistor is placed across the output of the amplifier and its inverting input terminal, and the output of the amplifier then corresponds in both sign and magnitude to a multiplication of the two input signals.

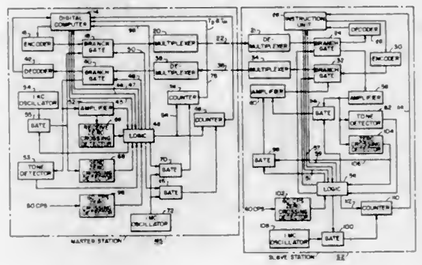
3,469,081
TACHOMETRIC COMPUTER
Max Lattmann, Zurich, Switzerland, assignor to Contraves AG, Zurich, Switzerland
Filed Aug. 19, 1964, Ser. No. 392,074
Claims priority, application Switzerland, Aug. 19, 1963, 10,194/63
Int. Cl. G06f *15/50;* **G06g** *7/22, 7/78*
U.S. Cl. 235—150.271 **12 Claims**



Two phase binary signals signifying a unit change of a physical value and the direction thereof by means of predetermined sequences of combinations of signals in said two phases, are connected directly to the first input of an increment signal adder and to the second input of the increment signal adder via a fixed delay and with reversed directional characteristic. The D.C. coupled adder has an output corresponding to the rate of change of the physical value, including direction. A feedback circuit including digital-analog conversion causes the shaft of a servomotor to follow the value at the output of the adder. An arrangement for using three of the above described

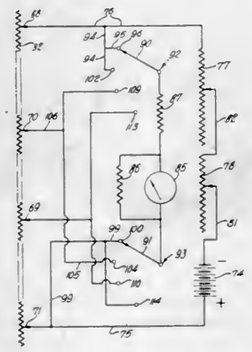
circuits for predicting the position of an object in three dimensional space relative to a fixed origin on the basis of present velocity values in three coordinate directions is also furnished.

3,469,082
PHASE MEASURING SYSTEM FOR ELECTRIC POWER NETWORKS
Francis T. Thompson, Penn Hills, Verona, and Andre Wavre, Wilkinsburg, Pa., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Apr. 29, 1966, Ser. No. 546,231
Int. Cl. G06f *15/20;* **G06g** *7/62*
U.S. Cl. 235—151.31 **8 Claims**



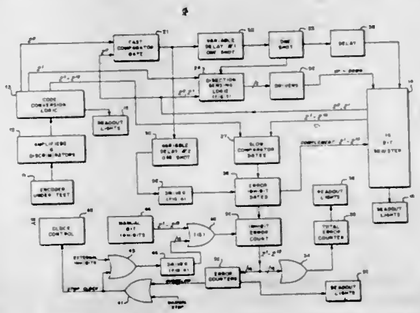
Described is a phase measuring system for electric power networks and the like to a phase measuring system of the type described wherein networks are measured and compared to in which the phase of the voltage at a central, master power station, and wherein phase shifts introduced into a monitoring tone signal by a transmission channel are compensated for and/or counteracted.

3,469,083
ANALOG CALCULATOR FOR DETERMINING PERCENTAGE CALCULATIONS BASED ON CONSTITUENT MEASUREMENTS
Claude R. Reed, Fishkill, and John W. Eldridge, Jr., New Windsor, N.Y., and Raymond Lanari, deceased, late of Beacon, N.Y., by Susan M. Lanari, executrix, Beacon, N.Y., assignors to Texaco Inc., New York, N.Y., a corporation of Delaware
Filed Nov. 17, 1965, Ser. No. 508,399
Int. Cl. G06f *15/20;* **G06g** *7/48*
U.S. Cl. 235—151.35 **7 Claims**



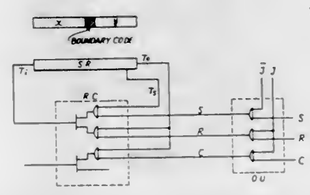
A linear resistor constructed so as to be physically related to a linearly measurable quantity that is divided into constituent portions. The length of such resistor is greater than the maximum total quantity. There are independently variable taps to correspond with the ends of the total quantity and with the junctions of the constituent portions. An electrical circuit permits measuring the resistance between the end taps and setting this measurement at a given magnitude representing one hundred percent. Then, by switching the measurement to pairs of taps at the extremities of constituent portions, the constituent portion magnitudes are determined directly in percentage of the total quantity.

3,469,084
UNIVERSAL ENCODER TESTER
Lane S. Garrett, Fountainville, John M. K. Bergey, Doylestown, Stuart G. Greenberg, Philadelphia, and Frank J. Alessandro, Upper Darby, Pa., assignors to the United States of America as represented by the Secretary of the Navy
Filed Aug. 24, 1965, Ser. No. 482,310
Int. Cl. G06f *11/08*
U.S. Cl. 235—153 **8 Claims**



An encoder tester for testing and evaluating analog-to-digital converters with respect to the performance and operating parameters thereof. Testing and evaluation is achieved by determining the noise bandwidth and amplitude of the encoder under test and by thereafter converting the digital encoder output representations into sequential binary codes. These codes are subsequently monitored and any resultant errors in the encoder output as reflected in the binary codes are recorded by individual bit counters.

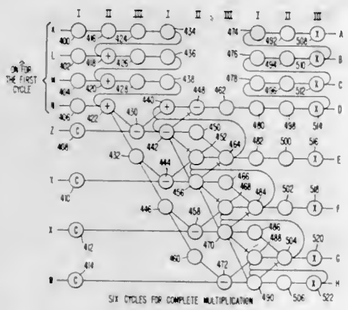
3,469,085
REGISTER CONTROLLING SYSTEM
Atsushi Asada and Isamu Washizuka, Osaka-shi, Japan, assignors to Hayakawa Denki Kogyo Kabushiki Kaisha, Osaka, Japan, a company of Japan
Filed May 12, 1966, Ser. No. 549,580
Claims priority, application Japan, May 24, 1965, 40/30,727
Int. Cl. G11c *19/00*
U.S. Cl. 235—153 **7 Claims**



A register and control system therefor wherein at least two sets of binary coded decimal numbers each consisting of at least one digit is fed into the register with the sets

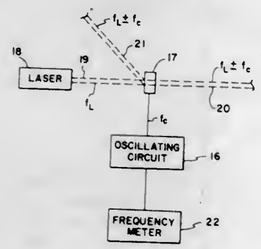
of decimal numbers being separated by a boundary code so that when the information is fed from the register, a judging signal will be produced upon the appearance of the boundary code and the presence or absence of a judging signal will cause the selection of instructional information to effect the desired computation involving the two sets of decimal numbers.

3,469,086
MAJORITY LOGIC MULTIPLIER CIRCUIT
Henry G. Matthews, Jr., Narberth, Pa., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan
Filed Oct. 9, 1964, Ser. No. 402,783
Int. Cl. G06f *7/39*
U.S. Cl. 235—164 **14 Claims**



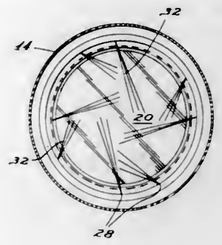
A majority logic device for use in a data processor is disclosed which performs binary arithmetic multiplication in a manner similar to manual or longhand multiplication. This, of course, is in contrast to the usual computer method using successive binary additions. The specific configuration illustrated is a four-bit parametric multiplier which utilizes a plurality of parametrons operated from a three-phase pump source to successively add partial products and generate "carries" at three times the clock frequency repetition rate.

3,469,087
LASER CALIBRATOR
Stuart L. Seaton, Hampton, Va., assignor to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration
Filed Dec. 8, 1965, Ser. No. 512,561
Int. Cl. H04b *9/00;* **G01r** *29/22*
U.S. Cl. 250—199 **4 Claims**



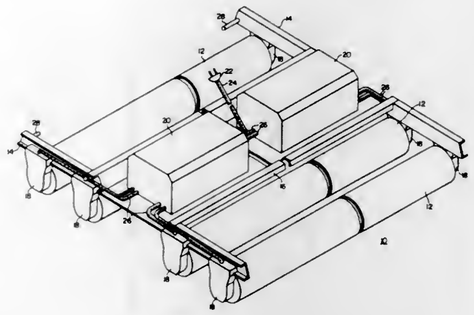
A device for measuring the power output of a laser. The laser beam is directed into a piezoelectric crystal and the resulting output from the crystal measured. In one embodiment the voltage output is measured and in another embodiment the change in the natural frequency of the crystal is measured.

3,469,088
APPARATUS FOR CLEANING THE LENS OF A VEHICLE RUNNING LIGHT
Neil A. Coleman, Dearborn, and Donald B. Welnfurther, Livonia, Mich., assignors to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed May 18, 1966, Ser. No. 550,983
Int. Cl. B08b *3/04;* **B60q** *1/04*
U.S. Cl. 240—7.1 **3 Claims**



Apparatus for cleaning the lens of a vehicle running light without interrupting the operation of the vehicle. This apparatus includes a source of pressurized cleaning fluid and a conduit interconnected with this fluid source. A plurality of angularly inclined orifices are formed in the conduit to discharge cleaning fluid therefrom in distinct pressurized streams onto the surface of the light lens such that the discharged fluid flows on the lens surface in a circular pattern to scrub road grime from the surface.

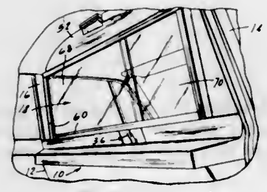
3,469,089
REMOVABLE CIRCUIT AND UNITARY SUPPORTING MEMBER THEREFOR IN A LUMINAIRE HAVING ELONGATED DISCHARGE LAMPS
George J. Picha, Cleveland, Ohio, assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed May 24, 1966, Ser. No. 552,447
Int. Cl. F21v *3/00*
U.S. Cl. 240—51.11 **1 Claim**



In an elongated luminaire a removable unitary support member formed by lampholder support members and an elongated trussing member which extends longitudinally

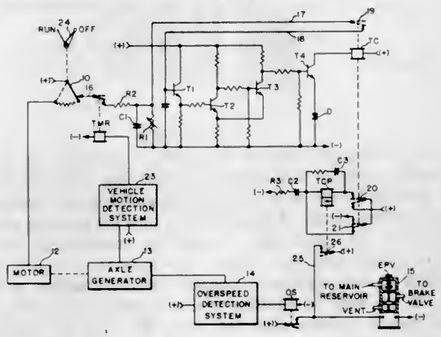
of the luminaire parallel with and between the discharge lamps. The unitary member is releasably hinged at one end and latched at the other end to the luminaire housing and is swingable out of the housing to facilitate removal or repair of lamps or the ballast components which are all carried by the trussing member. The luminaire is further equipped with a flexible electrical extension and electrical disconnect means to permit operation of the lamps in a swing down position or total removal of the unitary member.

3,469,090
PARTITION FOR VEHICLE BODIES
James E. Redus, 7950 S. Ingleside Ave., Chicago, Ill. 60619
Filed June 1, 1967, Ser. No. 642,874
Int. Cl. B62d *33/04;* **E06b** *7/32*
U.S. Cl. 296—24 **8 Claims**



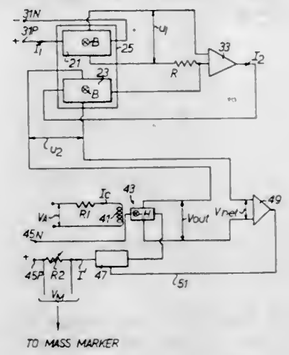
A bulletproof partition for separating the driving and passenger compartments of a taxicab having a frame adapted to nest over the front seat, a bulletproof window supported by the frame, a tray for the exchange of money, and a vent to allow communication between the compartments.

3,469,091
INITIAL WHEEL SLIP BYPASSING SYSTEM
Warren R. Wrege, Rochester, N.Y., assignor to General Signal Corporation, Rochester, N.Y., a corporation of New York
Filed Nov. 24, 1967, Ser. No. 685,464
Int. Cl. B61l *3/00*
U.S. Cl. 246—167 **9 Claims**



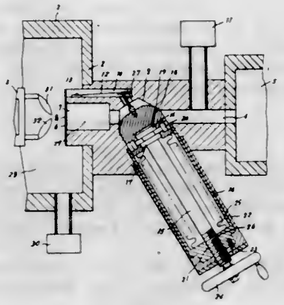
Apparatus for use with a self-powered vehicle having overspeed detection and automatic braking equipment. Wheel slip which is encountered upon starting the vehicle and which is detected as an overspeed is prevented, by means of a time controlled relay, from causing automatic braking. For a limited time after vehicle power is applied, the relay maintains a circuit which bypasses the overspeed detection system rendering it ineffective to initiate automatic braking.

3,469,092
MASS INDICATOR FOR MASS SPECTROMETER UTILIZING HALL EFFECT DEVICES
Alfred James Monks, Culcheth, near Warrington, England, assignor to Associated Electrical Industries Limited, London, England, a British company
Filed Jan. 5, 1967, Ser. No. 607,546
Int. Cl. B01d *59/44*
U.S. Cl. 250—41.9 **8 Claims**



A mass spectrometer mass indicator in which, by means of Hall effect devices, a signal is derived which is proportional to the square of the field strength in the magnetic analyzer of the spectrometer divided by the ion accelerating voltage, this signal being therefore proportional to the ion mass number.

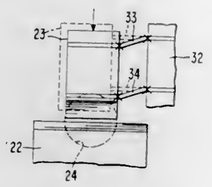
3,469,093
MASS SPECTROMETER ION SOURCE WITH DUAL INTERLOCKED VALVE MEANS FOR EVACUATION PURPOSES
Yoshio Wada, Eiji Watanabe, and Takao Suzuki, Tokyo, Japan, assignors to Nihon Denshi Kabushiki Kaisha, Tokyo, Japan, a corporation of Japan
Filed Mar. 27, 1967, Ser. No. 626,086
Claims priority, application Japan, Mar. 29, 1966, 41/28,274
Int. Cl. H01j *39/36*
U.S. Cl. 250—41.9 **2 Claims**



An ion source for a mass spectrometer having an analyzation region connected to the ion source housing by a main channel, within which is a first valve means. The main channel has an aperture slit located at the end of

the housing, and the region of the main channel between the aperture slit and the first valve means is connected to the housing by a second channel that has a second valve means for closing said channel when the main channel is open.

3,469,094
ELECTRICALLY ADJUSTABLE BEAM DEFINING SLITS AND MASS SPECTROMETERS USING SAME
Raymond A. Erickson, San Jose, Calif., assignor to Varian Associates, Palo Alto, Calif., a corporation of California
Filed May 2, 1967, Ser. No. 635,516
Int. Cl. B01d *59/44;* **H01j** *39/34*
U.S. Cl. 250—41.9 **7 Claims**

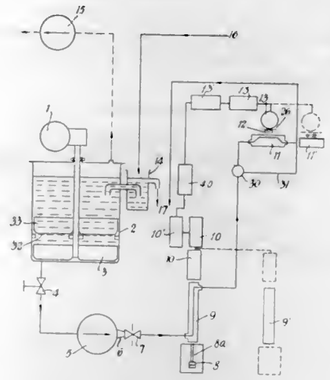


Electrically adjustable beam defining slifs are disclosed as employed for adjusting the thickness of an ion beam in a cycloidal mass spectrometer. One adjustable slit is employed at the exit of the ion source for determining the initial thickness of the ion beam. A second similar adjustable slit is employed at the entrance to the ion detector. Both slits are adjustable in concert by means of an electrical circuit over a range of 0.005". The slits comprise a fixed member, defining one side of the slit, and a movable member defining the other side of the slit. The movable member is supported on two parallel legs extending at right angles to the direction of movement of the movable slit defining member. The support legs deform to a generally S-shape to permit movement of the movable slit defining member. The deformation is such that the slit defining side edge of the movable member remains parallel to the fixed slit defining edge. A thermally expansive member, which is heated by an electrical current, operates via a lever arm against a spring bias force which tends to hold the movable slit defining member in its openmost position. Cooling of the thermally expansive member, as by loss of heating current, causes the thermal member to contract and to close the slit to its narrowest position. This is desirable since loss of heating current will cause the mass spectrometer to be adjusted to its condition of highest resolution.

In a preferred embodiment, the parallel support legs are tungsten leaf springs, whereby the support legs serve to provide the spring bias force.

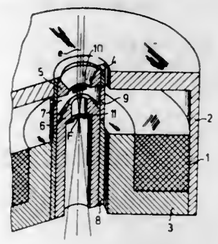
3,469,095
METHOD OF RADIOMETRIC ANALYSIS OF FINE SOLIDS SUSPENDED IN A LIQUID
Peter Edward Starnes, Earley, Reading, England, assignor to Hilger & Watts Limited, London, England, a British Company
Filed Apr. 5, 1965, Ser. No. 445,462
Claims priority, application Great Britain, Apr. 8, 1964, 14,580/64
Int. Cl. G01n *23/12*
U.S. Cl. 250—43.5 **21 Claims**

A method of carrying out radiometric analysis of fine solids suspended in a liquid in which the density of the suspension is first deduced by causing the suspension to interact with a beam of electromagnetic radiation the photons of which principally have energies in the range 600–3000 kilo electron volts and by measuring the intensity of the radiation transmitted through the suspension for comparison with similar measurements on a reference



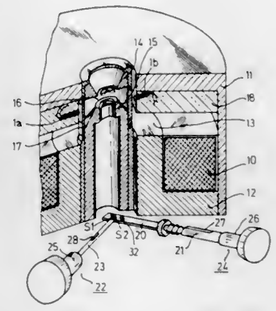
standard. Thereafter the suspension is irradiated in an analysis chamber and the resulting radiation measured for comparison with similar measurements on a reference standard.

3,469,096
CORPUSCULAR-RAY DEVICE FOR PHASE OR AMPLITUDE SPECIMENS WITH A PHASE-ROTATING FOIL
Karl-Josef Hanssen, Sulzbacherstr. 64, Braunschweig, Germany
Filed Nov. 21, 1966, Ser. No. 595,793
Claims priority, application Germany, Nov. 19, 1965, H 57,729
Int. Cl. H01j *37/26*
U.S. Cl. 250—49.5 **3 Claims**



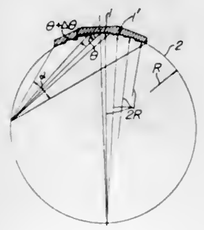
A corpuscular ray device such as an electron microscope having an objective lens producing wave aberration is provided with a phase-rotating foil located preferably in the focal plane of the objective lens on the side thereof opposite the specimen. The foil is constructed so that the phase rotating effect $\Phi=(n+x)\lambda-(-Ar^4+Br^2)$ where n is a positive or negative whole number, x being ¼ in the case of positive phase contrast, ¾ in the case of negative phase contrast, 0 in the case of amplitude objects with positive contrast and ½ in the case of amplitude objects with negative contrast, λ is the wavelength of the corpuscles, $A=C_o/4f^4$, and $B=\Delta F/2f^2$, where C_o is the spherical aberration coefficient, f is the focal distance of the objective lens and ΔF is the shifting of the focal point in front of the objective lens, and r is the radial spacing from the primary or direct ray. There may also be higher order terms in the foregoing equation for the value of Φ.

3,469,097
METHOD AND DEVICE FOR CORRECTING AXIAL ASTIGMATISM OF CORPUSCULAR-RAY-OPTICAL LENSES
Gerhard Kempf, Berlin, Germany, assignor to Siemens Aktiengesellschaft, Munich, Germany, a corporation of Germany
Filed Sept. 26, 1966, Ser. No. 581,981
Claims priority, application Germany, Sept. 28, 1965, S 99,779
Int. Cl. H01j *37/26*
U.S. Cl. 250—49.5 **8 Claims**



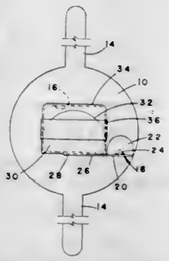
For correcting axial astigmatism of electron-optical and other corpuscular-ray lenses having an adjustable stigmator an object having edges is placed into the ray path between the lens plane and the caustic point at the image side of the lens, the object being disposed so as to have its edges lying in a plane perpendicular to the ray axis. Shadow images are then formed of the edges of the object. The adjustment of the stigmator is varied while observing the images until the images occupy a predetermined positional relation to a reference axis perpendicular to the images of the respective edges.

3,469,098
X-RAY ANALYZING ELEMENT
Hiroshi Okano, Hachioji-shi, Japan, assignor to Hitachi, Ltd., Tokyo, Japan, a corporation of Japan
Filed July 26, 1967, Ser. No. 656,115
Claims priority, application Japan, Aug. 3, 1966, 41/50,494
Int. Cl. G01n *23/20;* **H01j** *39/10*
U.S. Cl. 250—51.5 **2 Claims**



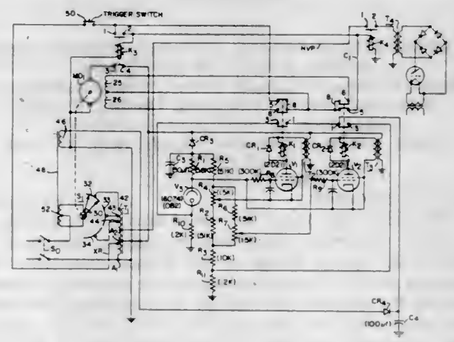
An analyzing element for use in a Johansson type X-ray spectrometer having a stepped surface provided along the circumference of the Rowland circle, each step having a radius of curvature equal to twice that of the Rowland circle, whereby an analyzing element having a large area can be employed and hence a high diffraction intensity can be obtained and the peak to background ratio can be greatly improved.

3,469,099
COMBINATION X-RAY FILM AND CONNECTING MEANS OF A BAND OF NON-METALLIC PLIABLE MATERIAL
Richard G. Best and Fred M. Medwedeff, Nashville, Tenn., assignors to Precision X-Ray Company, Nashville, Tenn., a corporation of Tennessee
Filed Apr. 21, 1966, Ser. No. 544,280
Int. Cl. G01n *21/00*
U.S. Cl. 250—70 **10 Claims**



A combination dental X-ray film holder and shield comprising a principal metallic shield and aiming device having a substantially central aperture similar in size and shape to an X-ray film, a flat supporting arm fixed to said shield and extending perpendicularly from one edge of said aperture adjacent one side thereof, said arm having a lateral offset adjacent the outer end thereof within the plane thereof and having a terminal extension thereon substantially coaxially of said aperture in said principal shield, and several different embodiments of X-ray films selectively attachable to said support and shield by holding means which essentially are attached at opposite edges to the film and extend around the outer side of the support and shield which is opposite that against which the film is disposed for contact by X-rays when discharged through said aperture of said principal shield.

3,469,100
MOTOR-OPERATED ROTARY INPUT TAP SELECTOR SWITCH TO REGULATE LINE VOLTAGE IN X-RAY SYSTEM
Robert L. Wright, Jr., North Linthicum, and William N. Sweet, Baltimore, Md., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Feb. 16, 1967, Ser. No. 616,696
Int. Cl. H05g *1/32*
U.S. Cl. 250—103 **5 Claims**

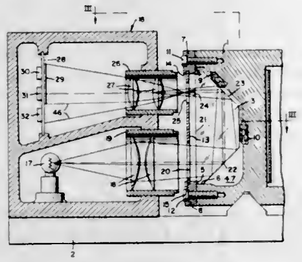


in spite of variation in line voltage. A reversible motor for the switch is controlled via relays by a pair of thyratron tubes according to such line voltage variation, and a choke means connected to a pair of supply line input brushes in the rotary switch generates a bias signal at the thyratron tubes which prevents the motor from stopping such brushes when as a pair they are bridging two contact bars, while at the same time preventing excessive current flow through the momentarily shorted turn of the autotransformer established by such bridging. An interlock relay controlled by the thyratron-controlled relays prevents the motor from being started during an X-ray exposure and prevents such an exposure from being initiated while the motor is operating.

ERRATUM

For Class 250—199 see:
Patent No. 3,469,087

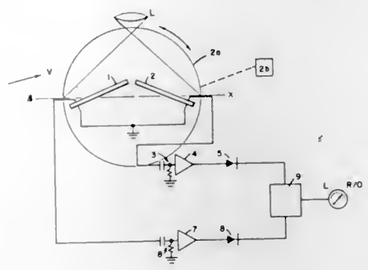
3,469,101
DEVICE FOR THE COMPENSATION OF VARIABLE INTERFERENCE EFFECTS ON A RADIATION-ELECTRICAL MEASURING OR CONTROL SYSTEM
Laszlo Rabian, Zurich, and Georg Grendelmeier, Dietikon, Switzerland, assignors to Oerlikon-Buhrle Holding Ltd., Zurich, Switzerland
Filed Sept. 30, 1966, Ser. No. 583,311
Claims priority, application Switzerland, Oct. 2, 1965, 13,621/65
Int. Cl. G01j *1/32*
U.S. Cl. 250—205 **3 Claims**



A single source of light is made to illuminate two independent sets of photocells. The output of one set of photocells is fed back to the source to control its intensity whereby the illumination of the photocells is held constant despite changes in the optical system.

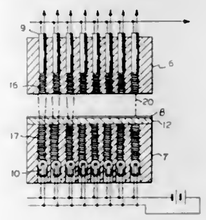
3,469,102
DRIFT ANGLE METER FOR MEASURING THE DRIFT ANGLE OF AIRCRAFT
Marius E. Huvers, Therese, Quebec, Canada, assignor to Canadair Limited, Montreal, Quebec, Canada
Filed Sept. 18, 1967, Ser. No. 668,492
Claims priority, application Canada, Sept. 27, 1966, 971,421
Int. Cl. H01j *39/12*
U.S. Cl. 250—209 **19 Claims**

The drift angle meter for use in aircraft, as described, includes elongated photosensitive means arranged to receive an optical image of the ground underlying the moving aircraft. Positioning means are provided for positioning the photosensitive means or alternatively the optical image such that one occupies relative to the other a pair of angular positions symmetrically located with respect to a medial position. The output of the photosensitive means is fed to a circuit means which is constructed to produce a signal indicative of a frequency difference in the output of the photosensitive means at the said pair of angular positions thereby giving an indication of an angular displacement between the medial position and the direction of the ground speed vector of the moving aircraft. The positioning means are arranged to permit adjustment of the medial position whereby the latter may be adjusted in a direction to nullify any difference in the frequency output of the photosensitive means. Suitable means are provided for measuring the angle of displacement between the adjusted medial posi-



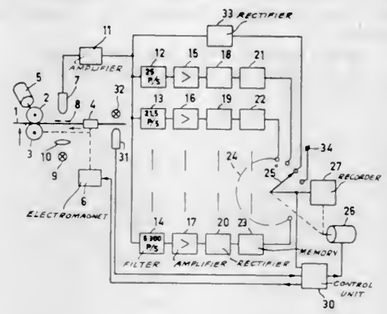
tion of the longitudinal axis of the aircraft to thereby give an indication of drift angle. The photosensitive means may comprise a pair of crossed photocells arranged in an X pattern or alternatively a single elongated photocell may be used with the positioning means being constructed to provide relative oscillation between the optical image and the photosensitive means. The output of the circuit means may be connected to a suitable servo-motor such as to drive the positioning means in a direction to reduce the frequency difference referred to above.

3,469,103
PHOTOELECTRIC PUNCHED PAPER TAPE READER REJECTING DIFFUSED LIGHT RAYS
Adolph C. Erpel, Warrington, Pa., assignor to Navigation Computer Corporation, a corporation of Pennsylvania
Filed Jan. 18, 1966, Ser. No. 521,324
Int. Cl. G01n *21/30*
U.S. Cl. 250—219 **4 Claims**



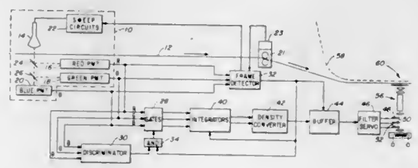
An optical punched paper tape reader works on a light diffusing principle with light source and a photoelectric detector spaced from the punched holes and located in collimator tubes, which in one form comprise screw threads, so that only a small portion of light passing through relative transparent sections of tape, such as at grease spots, can reach the detector, while a large part of the light is directed to the detector through a hole in the paper.

3,469,104
DEVICE FOR DETERMINING THE STRUCTURE OF THIN, PARTLY TRANSPARENT MATERIALS AS TEXTILE AND PAPER MATERIALS OR THE LIKE
Nils Folke Hector, Solna, Sweden, assignor, by mesne assignments, to U.S. Philips Corporation, New York, N.Y., a corporation of Delaware
Filed Jan. 14, 1966, Ser. No. 520,574
Claims priority, application Sweden, Jan. 18, 1965, 639/65; Oct. 28, 1965, 13,958/65
Int. Cl. G01n *21/30*
U.S. Cl. 250—219 **4 Claims**



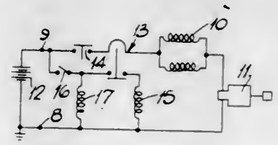
A device for analyzing the structure of thin, partly transparent materials includes means for scanning a light spot across the surface of the material and a photocell for sensing the light transmitted through the material. The photocell signal is applied to a plurality of parallel band pass filters tuned to adjacent frequency bands. The output of the filters is applied to individual memory devices. The memory devices are successively scanned to derive information about the frequency spectrum of the photocell signal, which in turn indicates the presence or absence of errors in the material.

3,469,105
PHOTOELECTRIC APPARATUS FOR DETECTING THE BORDERS OF INFORMATION BEARING REGIONS OF RECORDS
Charles Marshall Stasey, Westwood, Mass., assignor to Itek Corporation, Lexington, Mass., a corporation of Delaware
Filed Sept. 5, 1967, Ser. No. 665,426
Int. Cl. G01n *21/30*
U.S. Cl. 250—219 **24 Claims**



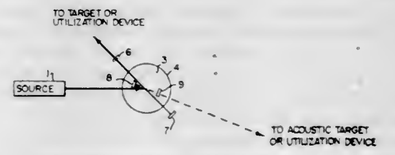
Apparatus for detecting film frames including a cathode ray tube for illuminating the film, a photomultiplier tube to sense the intensity of the light from the film, drive means to move the film past the cathode ray and photomultiplier tubes, a summing amplifier tuned to the frequency with which the frames pass between the tubes, a level detector responsive to the summing amplifier to distinguish signals representative of border portions from those representative of the information bearing portions, a flip-flop circuit responsive to such signals to provide a frame detection indication, a film position encoder and a counter responsive thereto for enabling the flip-flop to respond to the level detector during the interval in which a border portion is expected to be sensed, and a delay circuit responsive to the counter to provide a substitute representation that a border portion has been sensed during that interval when one has not actually been sensed.

3,469,106
CONTROL CIRCUITS FOR ELECTRIC STARTING MECHANISM
Alec Harry Seilly, North Wembley, England, assignor to C.A.V. Limited, London, England, a British company
Filed Aug. 30, 1966, Ser. No. 576,133
Claims priority, application Great Britain, Sept. 23, 1965, 40,535/65
Int. Cl. H02p *9/04;* **F02n** *11/08*
U.S. Cl. 290—38 **2 Claims**



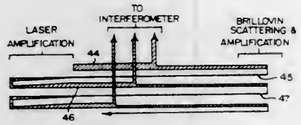
A control circuit for an electrical starting mechanism in which a pinion driven by a motor is, via a first solenoid moved into engagement with a toothed wheel and the circuit includes a current sensitive relay through the coil of which current passes to the motor and normally open contacts operable by the magnetic field produced by the coil control the current flow to the solenoid. The current flowing to the solenoid passes through a manually operable switch and a second solenoid operates a motor controlling switch in series with the motor with the second solenoid being energized by operation of the manually operable switch so that with the latter switch closed, the first solenoid is de-energised when the current flowing through the motor falls below a predetermined value.

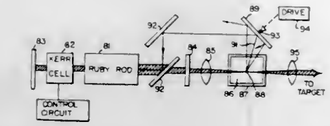
3,469,107
STIMULATED BRILLOUIN PARAMETRIC DEVICES
Charles H. Townes, Cambridge, Mass., Elsa M. Garmire, Pasadena, Calif., Raymond Y. Chiao, Boston, Mass., and Boris P. Stoicheff, Willowdale, Ontario, Canada, assignors to Massachusetts Institute of Technology, Cambridge, Mass., a corporation of Massachusetts
Filed Aug. 14, 1964, Ser. No. 389,595
Int. Cl. H03k *3/47;* **H03f** *7/00*
U.S. Cl. 307—88.3 **37 Claims**

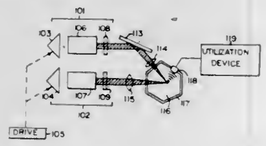


This invention relates to devices producing coherent

wave energy through the process of amplification by stimulated emission and more particularly to a device

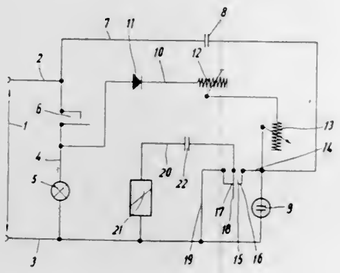






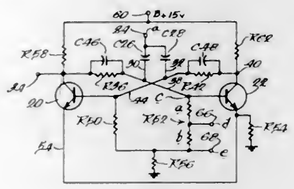
wherein an exchange of energy occurs between electromagnetic and material waves.

3,469,108
ELECTRIC TIME SWITCH
Henry Elfers, Hamburg, Germany, assignor to Lumoprint Zindler KG, Hamburg, Germany, a corporation of Germany
Filed July 14, 1966, Ser. No. 565,125
Claims priority, application Germany, July 21,1965, L 51,186
Int. Cl. H01h *7/14*
U.S. Cl. 307—141 **7 Claims**



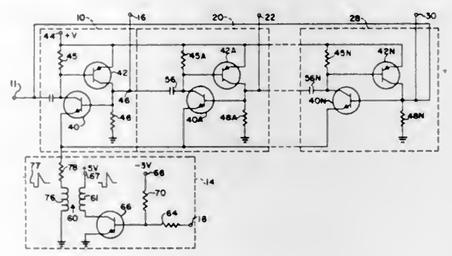
A timing switch incorporating a spring-biased trigger in sliding engagement with the armature of a relay having a set of load contacts and a set of switching contacts. A momentary depression of the trigger releases the armature resulting in the closure of the load contacts for a predetermined time interval as determined by the constants of an electrical timing circuit controlling the energization of the relay operating coil through the switching contacts. Upon energization of the operating coil, the trigger automatically returns into blocking engagement with the armature, thereby limiting actuation of the time switch to a single operating cycle of controlled time interval. When the trigger is retained in the depressed position the armature is free to operate in the normal manner and the timing circuit effects repetitive energization of the relay operating coil, thereby resulting in a repeated series of controlled time intervals.

3,469,109
MUSICAL INSTRUMENT FREQUENCY DIVIDER WHICH DIVIDES BY TWO AND BY FOUR
Ray B. Schrecongost, Park Ridge, Ill., assignor to Hammond Organ Company, Chicago, Ill., a corporation of Delaware
Filed Apr. 14, 1966, Ser. No. 542,625
Int. Cl. H03b *19/12;* **H03k** *3/286, 23/08*
U.S. Cl. 307—220 **9 Claims**



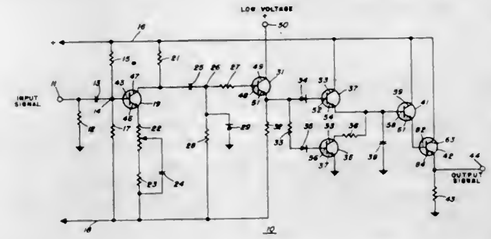
A musical instrument frequency divider of bistable flip-flop type which operates at one-fourth input pulse speed and provides divide-by-four and divide-by-two output signals. Signals from the inputs to the two sides of the flip-flop are added on a scaled basis to obtain good bright wave form at both output terminals. An ancillary feature is the provision of an additional divide-by-four output terminal having a substantially rectangular wave form signal.

3,469,110
BIT RING COUNTER WITH BIT MARKER
Michael Sherman, Granada Hills, Calif., assignor to Singer-General Precision, Inc., a corporation of Delaware
Filed May 16, 1966, Ser. No. 550,550
Int. Cl. H03k *23/08*
U.S. Cl. 307—223 **2 Claims**



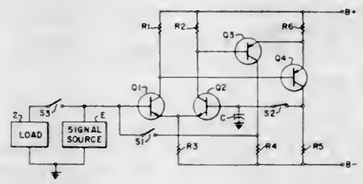
A ring counter especially useful for sequentially writing into core memory devices where power consumption is of importance. In the counter, only one bit stage at a time is in a very low current standby condition until an input signal pulse switches that stage to produce a high current output pulse. Termination of the high current pulse returns the stage to its zero ambient power consumption while enabling the next following stage into its standby condition.

3,469,111
PEAK DETECTOR CIRCUIT FOR PROVIDING AN OUTPUT PROPORTIONAL TO THE AMPLITUDE OF THE INPUT SIGNAL
James Peters and Mason A. Clift, Jr., Baltimore, Theodore B. Stagg, Jr., Towson, and Francis E. Davis, Jr., Laurel, Md., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed Apr. 29, 1966, Ser. No. 547,071
Int. Cl. H03k *5/20*
U.S. Cl. 307—235 **3 Claims**



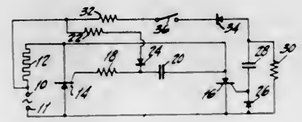
The invention is directed to a peak detector circuit which provides a direct current output voltage that is proportional to the amplitude of the input pulses. The input pulse is first amplified by a video amplifier and the alternating component of signal is fed to the input of an emitter follower through an alternating current coupler. A direct current restoration circuit restores the direct current component of the signal at the emitter follower. Output means utilizing first and second parallel connected transistors and a capacitor are connected to the output of the emitter follower and are operable to vary the charge on the capacitor in proportion to the output of the emitter follower. A Darlington configuration circuit is connected to the capacitor and the output of the peak detector is taken across this circuit.

3,469,112
STORAGE CIRCUIT UTILIZING DIFFERENTIAL AMPLIFIER STAGES
Edward Hands, Fairport, and Graham Henstock, Rochester, N.Y., assignors to Canadian Westinghouse Company, Limited, Hamilton, Ontario, Canada
Filed Dec. 1, 1966, Ser. No. 598,462
Int. Cl. H03k *5/18, 5/20*
U.S. Cl. 307—238 **7 Claims**



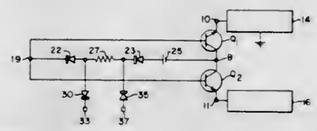
1. A storage circuit comprising:
a first differential amplifier;
input means operatively connected to a first input of said first differential amplifier for defining a desired storage level;
storage means operatively connected to a second input of said first differential amplifier;
a second differential amplifier receiving as inputs thereto the differential output of said first differential amplifier; and
selection means for connecting a first output of said second differential amplifier to said second input of said first differential amplifier and disconnecting a second output of said second differential amplifier from said first input of said first differential amplifier so that said storage means is established at said desired level, and connecting said second output of said second differential amplifier to said first input of said first differential amplifier and disconnecting said first output of said second differential amplifier from said second input of said first differential amplifier so that said desired storage level is maintained at said storage means.

3,469,113
SWITCHING CIRCUIT EMBODYING PARALLEL PAIR OF CONTROLLED RECTIFIERS
George D. Hanchett, Summit, N.J., assignor to RCA Corporation, a corporation of Delaware
Filed Feb. 28, 1966, Ser. No. 530,601
Int. Cl. H03k *17/60*
U.S. Cl. 307—252 **11 Claims**



A load is supplied from a source of alternating current via a pair of oppositely poled silicon controlled rectifiers, connected in parallel, and a corresponding pair of capacitive time constant circuits. The circuit is designed to result in rectifier switching at low AC voltage levels to provide negligible transient interference.

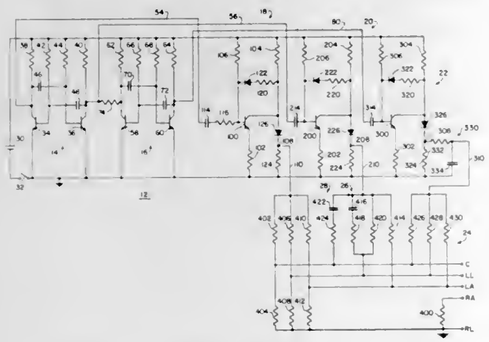
3,469,114
ELECTRONIC SWITCH AND CONTROL CIRCUIT THEREFOR
John M. Bentley, Crofton, Md., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Nov. 19, 1965, Ser. No. 508,693
Int. Cl. H03k *17/60*
U.S. Cl. 307—254 **3 Claims**



A control circuit for an electronic switch of the type which utilizes two three-electrode semiconductor devices each having a like electrode commonly connected together, a control electrode, and another electrode constituting a switch terminal. Where transistors are utilized, a control circuit is connected between the commonly connected like electrodes, constituting a first point, and the control electrodes, which are commonly connected together, constituting a second point. The control circuit includes a source of potential and a semi-conductor unidirectional current conducting device, in various embodiments including diodes, field effect transistors, and silicon con-

trolled rectifiers. Input circuit means receives input signals for controlling the conduction or non-conduction of the semiconductor unidirectional current conducting device in the control circuit. In another embodiment the electronic switch is comprised of two silicon controlled rectifiers with a silicon controlled rectifier-diode control circuit connected to the control electrodes of the two silicon controlled rectifiers of the switch.

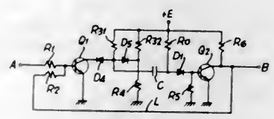
3,469,115
CARDIAC WAVEFORM SIMULATING APPARATUS
Leslie W. Partridge, Janesville, Wis., assignor to The Burdick Corporation, Milton, Wis., a corporation of Delaware
Filed May 10, 1967, Ser. No. 637,383
Int. Cl. H03k *5/01*
U.S. Cl. 307—268 **13 Claims**



A cardiac waveform simulator includes main and synchronized astable multivibrators producing timed, sequential negative-going signals capacitively coupled to three normally conductive transistors associated with P, R and T wave generators. Upon being rendered nonconductive by a negative-going signal, a resistive charging circuit returns the transistor to a threshold conduction level and then to the original conduction level. A diode and resistive branch ties the output terminal to the capacitor so that the leading edge of a triangular pulse is produced while the transistor is being returned to its threshold conduction level. Upon being rendered increasingly conductive, the transistor produces the trailing edge of the triangular pulse. A differentiating network produces an S pulse following each R pulse, and an integrating network smooths the T pulse. A mixer circuit combines the pulses to apply a cardiac wave form complex to five output terminals.

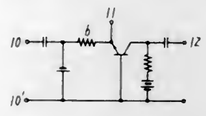
3,469,116
PULSE TIMER CIRCUIT
Keisaku Nomura, Tokyo, Japan, assignor to Nippon Electric Company, Limited, Tokyo, Japan, a corporation of Japan
Filed May 2, 1966, Ser. No. 546,727
Claims priority, application Japan, May 4, 1965, 40/26,080
Int. Cl. H03k *3/26, 17/26, 17/28*
U.S. Cl. 307—273 **3 Claims**

A stable pulse timer circuit for producing a pulse of stable duration substantially independent of variations of the potential source employed to supply power to the circuit is described. The timing circuit employs a first semiconductor switch which controls a second semiconductor switch. A resistive-capacitance time constant network is interposed between the two switches and is selectively shunted by the employment of one or several diodes. Resistors effective in the time constant network



are selected according to a particular described relationship. Several embodiments are illustrated.

3,469,117
ELECTRIC CIRCUIT EMPLOYING SEMICONDUCTOR DEVICES
Yoshihiko Mizushima and Yoshiharu Okamoto, Tokyo, Japan, assignors to Nippon Telegraph and Telephone Public Corporation, Tokyo, Japan
Filed Dec. 30, 1966, Ser. No. 606,236
Claims priority, application Japan, Jan. 8, 1966, 41/697
Int. Cl. H03k *3/26*
U.S. Cl. 307—302 **5 Claims**

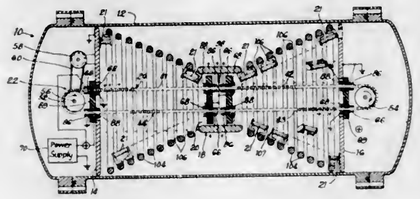


A transistor circuit for pulse or oscillatory signal generation utilizes a junction transistor having a four semiconductor layer structure with an intrinsic semiconductor layer between the collector and base electrodes. An emitter impedance of between 10 and 100 ohms is inserted in the emitter circuit and a collector voltage sufficient to make a DC base current flow in a reverse direction to that in the lower collector region but lowet than either the avalanche or the punch-through voltages of the transistor is provided. The emitter is injected with sufficient current to induce the avalanche breakdown of the transistor. Either the emitter or the collector may be modulated with an input signal. A significant improvement is produced in the pulse rise and fall times, the operation frequency, and the oscillation frequency is made independent of the external circuit impedances.

3,469,118
HIGH VOLTAGE ELECTROSTATIC GENERATOR
Raymond G. Herb and James A. Ferry, Madison, Wis., assignors to National Electrostatics Corp., a corporation of Wisconsin
Filed June 15, 1966, Ser. No. 557,818
Int. Cl. H02n *1/00*
U.S. Cl. 310—6 **20 Claims**

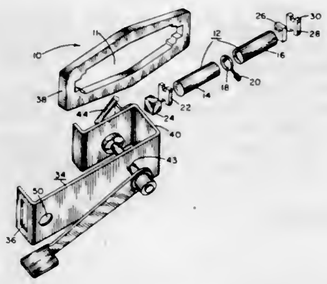
The high voltage generator comprises a hollow high voltage electrode, to which charges are carried by an endless conveyor, comprising a series of conductive charge carrying pellets, spaced along the conveyor, with insulating elements extending between the pellets. To provide a high charge carrying capacity, the pellets are cylindrically symmetrical about the longitudinal axis of the conveyor, and are arranged to project outwardly in a radial direction from the insulating elements. In one embodiment, the pellets are in the form of generally cylindrical beads, spaced along an insulating cord, which provides the insulating elements. In another embodiment, the pellets and the insulating elements are interconnected

to form an endless chain. The pellets may be charged by means of an induction electrode and a pellet contacting electrode. In one embodiment, such induction and pellet contacting electrodes are in the form of cylindrical sleeves through which the pellets travel. A high voltage is applied to the induction electrode. In another embodiment, the pellet contacting electrode is in the form of a conductive pulley, while the induction electrode comprises



a channel-shaped member adjacent the pulley. Similar induction electrodes may be employed to bind the charges to the pellets just before the pellets are discharged to the high voltage electrode. Some or all of the induction electrodes may be supplied with high voltage by means of corona electrodes disposed adjacent the conveyor, along the opposite flight thereof from the pertinent induction electrode.

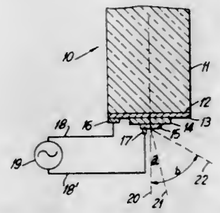
3,469,119
ROLLING CAM ACTUATED PIEZOELECTRIC VOLTAGE SOURCE
David B. Parkinson, Cleveland Heights, Ohio, assignor to Clevite Corporation, a corporation of Ohio
Continuation-in-part of application Ser. No. 541,550, Apr. 11, 1966. This application Aug. 22, 1966, Ser. No. 574,103
Int. Cl. H02n *1/04*
U.S. Cl. 310—8.7 **15 Claims**



An electric voltage source having a frame with piezoelectric elements located therein. A rolling cam contact within the frame for compressing and rotating the piezoelectric element therein to generate a voltage.

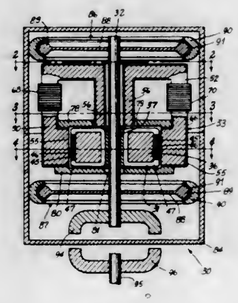
3,469,120
PIEZOELECTRIC ELECTROACOUSTIC TRANSDUCER
Morimasa Nagao and Naotaka Sakakibara, Tokyo, Japan, assignors to Nippon Electric Company Limited, Tokyo, Japan, a corporation of Japan
Filed Dec. 19, 1966, Ser. No. 602,804
Claims priority, application Japan, Dec. 21, 1965, 40/78,768
Int. Cl. H02n *1/06;* **H03h** *7/30;* **H04r** *17/00*
U.S. Cl. 310—9.5 **4 Claims**

A piezoelectric transducer is described for operation at very high acoustic frequencies. The high operating frequencies are obtained by controlling the crystalline axes of both the piezoelectric material and an underlying electrode layer. In a preferred embodiment, an aluminum electrode layer is deposited on the surface of an acoustic load and formed thereon with a crystalline axis at an oblique angle with the load surface. The piezoelectric ma-



terial which is preferably made of cadmium sulfide, is formed over the electrode layer with its C axis aligned at an angle with the load surface. A selective control of both angles within a preferred range has been found to yield a transducer capable of operating at a frequency as high as 150 mHz.

3,469,121
SUPERCONDUCTIVE POWER APPARATUS
Stuart H. Smith, Jr., 66 Briarcliff, Clayton, Mo. 63105
Filed Oct. 21, 1964, Ser. No. 405,393
Int. Cl. H02k *1/20, 3/48, 9/20*
U.S. Cl. 310—10 **16 Claims**

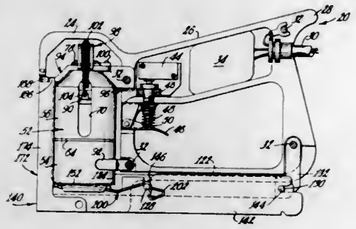


A dynamoelectric machine to be operated at cryogenic temperatures having a stator providing a homopolar field and energized by coils carrying a persistent current is arranged to cooperate with a rotor having coils with at least two sides in the path of flux, at least one side being magnetically shielded by superconducting material. Embodiments of this arrangement include a motor in which the rotor coils are of superconductive material carrying a persistent current and a generator in which the rotor coils are of non-superconductive material.

3,469,122
ELECTRIC FASTENING TOOL
Norman R. Doherty, Farmingdale, N.Y., assignor to Electric Stapler Corporation
Original application Nov. 24, 1965, Ser. No. 509,475, now Patent No. 3,347,441, dated Oct. 17, 1967. Divided and this application Sept. 18, 1967, Ser. No. 688,636
Int. Cl. H02k *33/02, 35/00*
U.S. Cl. 310—30 **2 Claims**

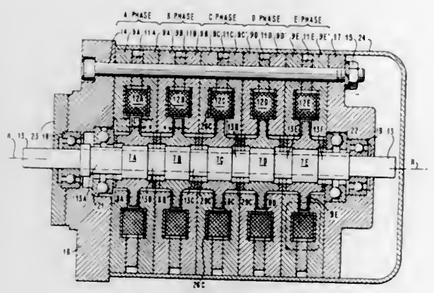
An improved solenoid for electrically powered fastener driving tools employing an armature slidably mounted on a central support shaft. An elongated spring means having

a portion fixed relative to the casing and at least one free end secured to the armature externally of the casing is



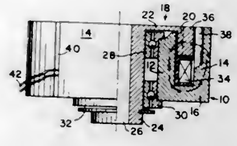
arranged to return the armature to its original position at its end of each stroke.

3,469,123
AXIAL AIR GAP POLYPHASE STEPPING MOTOR WITH DOUBLE BEARING ARRANGEMENT
Seiuemon Inaba, Kawasaki-shi, Ryoko Shirafuji, Tokyo, Toshio Kojima, Yamato-shi, and Yoichi Amemiya, Kawasaki-shi, Japan, assignors to Fujitsu Limited, Kawasaki, Japan, a corporation of Japan
Filed Mar. 6, 1968, Ser. No. 710,801
Claims priority, application Japan, Mar. 17, 1967, 42/16,734
Int. Cl. H02k *37/00*
U.S. Cl. 310—49 **13 Claims**



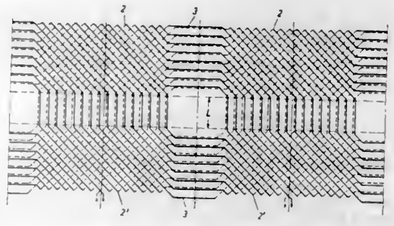
Each of a plurality of stages of an axial air gap stepping motor comprises a rotor core coaxially positioned around and affixed to a rotor hub and having a plurality of radially extending magnet poles formed therein. Each stage further comprises a pair of annular stator cores coaxially positioned around the rotor hub in spaced substantially parallel axial relation one on each side of the rotor core and each having a plurality of magnet poles formed therein on its surface facing the other and a stator core excitation winding coaxially positioned around the rotor core in the space between the pair of stator cores. Each of the rotor hubs is coaxially mounted on the motor shaft in a manner whereby the shaft with a double bearing arrangement is freely movable in axial directions and the shaft is rotatable with each of the rotor hubs. The rotor hubs are mounted in a manner whereby they are axially rotatable but immovable in axial directions so that the magnet poles of each rotor core are maintained at a constant distance from the magnet poles of each stator core of the corresponding pair of stator cores. The stator core stages are circumferentially positioned in pitch relative to each other, for example, three degrees or one fifth pole pitch.

3,469,124
MULTISTAGE IMPULSE-OPERATED ROTARY STEPPING MOTOR
Frederick Preston Willcox, 565 Oenoke Ridge, New Canaan, Conn. 06840
Filed Apr. 15, 1968, Ser. No. 721,355
Int. Cl. H02k *37/00*
U.S. Cl. 310—49 **12 Claims**



An electric rotary motor for precise control by series of electric impulses to drive, brake and accurately position-index multi-position rotary elements such as the type font wheel or drum of a printer or typewriter, or for powering carriage drive, paper feed and the imprinting action of such apparatus. A magnetically permeable stator has an annular groove or opening within which is received a simple solenoid winding and the permeable rim of a low-inertia rotor shell. The inner adjacent faces of the rotor rim and the stator groove are cylindrical and very closely spaced, while their outer faces are toothed to provide in effect a single segmented working flux gap consisting of a plurality of inter-tooth gaps that are magnetically in parallel. Several of these rotor-stator units are coupled by a common rotor shaft in tooth-offset arrangement for control of direction of rotation, braking, indexing and the like. Full acceleration is obtained from a few pulses of the solenoid, which may be followed by braking and position-indexing under similar power pulse control.

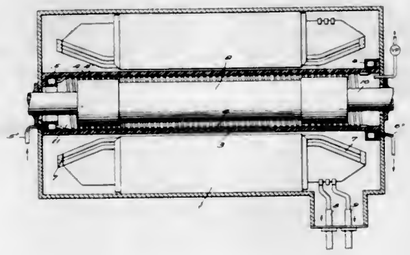
3,469,125
ARRANGEMENT OF A DIRECT LIQUID-COOLED SINGLE-PHASE WINDING FOR SYNCHRONOUS GENERATORS, PARTICULARLY FOR TURBO-GENERATORS
Rolf-Dieter Kranz, Baden, Switzerland, assignor to Aktiengesellschaft Brown, Boveri & Cie., Baden, Switzerland, a joint-stock company
Filed Mar. 27, 1967, Ser. No. 626,158
Claims priority, application Switzerland, May 3, 1966, 6,417/66
Int. Cl. H02k *9/20*
U.S. Cl. 310—54 **8 Claims**



A directly liquid-cooled single-phase winding for a synchronous generator, and particularly a turbogenerator has an even number of conductors in each slot and has at least one end connection thereof constructed as a single or multiple double-layer winging of lap or wave design.

In the range of the winding-free zone, the conductors are arranged to lie in the circumferential direction, so as simplify the connections of the cooling medium to the winding and to make them more accessible. The winding structure can be used as the excitation winding on the rotor element of the synchronous generator or on the stator element.

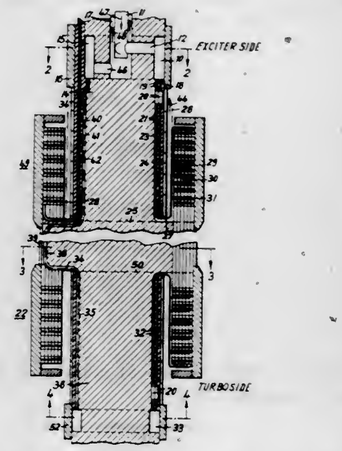
3,469,126
LIQUID-COOLED TURBO-GENERATOR
Eugen Wiedemann, Baden, Switzerland, assignor to Aktiengesellschaft Brown, Boveri & Cie., Baden, Switzerland, a joint-stock company
Filed Oct. 24, 1966, Ser. No. 588,910
Claims priority, application Switzerland, Oct. 29, 1965, 14,991/65
Int. Cl. H02k *9/20*
U.S. Cl. 310—54 **9 Claims**



A turbo-generator includes a hollow cylinder of insulating material interposed between the rotor and stator elements. The insulating cylinder is spaced radially from the surface of the rotor to establish a running space in which the pressure is reduced to reduce the rotor surface friction losses, and the inner surface of the insulating cylinder is lined with a helical pipe extending between the opposite ends of the rotor for circulation of a liquid coolant in order to remove heat from the space resulting from rotor surface friction and eddy current losses.

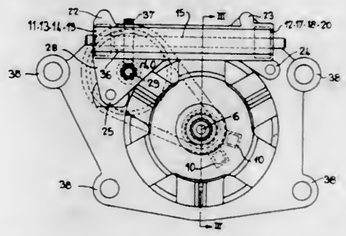
3,469,127
ROTOR COOLING ARRANGEMENT
Wilhelm Eggemann, Erich Weghaupt, and Dietrich Lambrecht, Mulheim (Ruhr), Germany, assignors to Licentia Patent-Verwaltungs-G.m.b.H., Frankfurt am Main, Germany
Filed Dec. 27, 1967, Ser. No. 693,990
Claims priority, application Germany, Dec. 28, 1966, C 55,386
Int. Cl. H02k *9/20*
U.S. Cl. 310—54 **13 Claims**

A rotor of an electrical machine having a liquid-cooled rotor winding. Coolant inlet and outlet chambers are located in a pole plane and on but one end of the rotor shaft, there being a collector chamber at the other end of the rotor shaft. Inlet tubes extend from the inlet chambers to one of two winding heads and outlet tubes extend from the other winding head to the collector chamber, there being return conduits extending from the collector chamber to the outlet chambers. The inlet and outlet tubes as well as the return conduits are arranged at the circumference of the rotor shaft and are so mounted and secured as to subject them to a minimum of stress and



also so as to afford ready access in case repairs are required.

3,469,128
ELECTRIC MOTOR-REDUCTION GEAR ASSEMBLY
Gaston Cartier, 8 Ave. de la Liberation, Cluses, Haute-Savoie, France
Filed May 9, 1967, Ser. No. 637,107
Claims priority, application France, Dec. 8, 1966, 48,037
Int. Cl. H02k *7/10*
U.S. Cl. 310—83 **6 Claims**

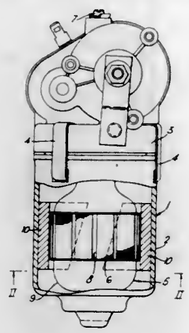


A motor-reduction gear unit comprises a case made of three separate moulded plastics members, namely a shell A, a base B and a detachable cap C. The motor is a flat motor and its stator has pole pieces **1**, **2** embedded in the shell A. The motor spindle **6** rotates in bearings one in the base and the other in the shell. A wormshaft **30** is driven by a belt drive **35**, **34**, **33** and in turn it drives a wormwheel **37** on an output shaft **15**. The bearings for the wormshaft are mounted one in the base and one in the cap, and the bearings for the output shaft are half in the base and half in the cap. The unit is compact, rigid and thin.

3,469,129
PERMANENT MAGNET ELECTRIC MOTORS
Terence Arthur George Humphreys, Dunstable, England, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed May 25, 1967, Ser. No. 641,341
Claims priority, application Great Britain, May 26, 1966, 23,645/66
Int. Cl. H02k *23/04*
U.S. Cl. 310—154 **5 Claims**

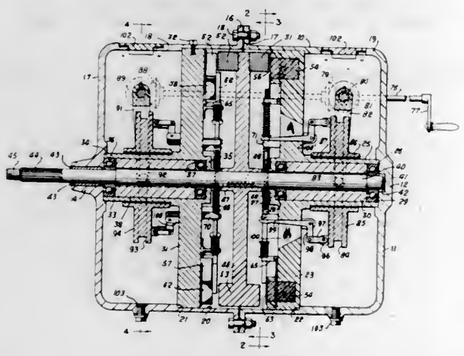
A direct current electrical motor having an armature with winding receiving slots extending parallel to the

longitudinal axis of the armature shaft and a permanent magnetic field having the longitudinal boundaries of the



magnetized material skewed relative to the longitudinal axis of the armature.

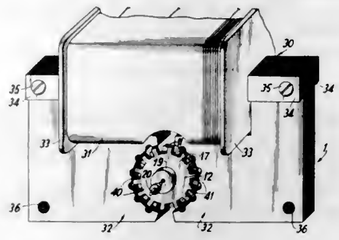
3,469,130
MEANS FOR SHIELDING AND UNSHIELDING PERMANENT MAGNETS AND MAGNETIC MOTORS UTILIZING SAME
James E. Jines, 113 S. Main, and James W. Jines, Rte. 2, Box 83, both of Perryton, Tex. 79070
Filed Aug. 4, 1967, Ser. No. 658,549
Int. Cl. H02k *21/12*
U.S. Cl. 310—156 **9 Claims**



A permanent magnet, the magnetic field of which may be selectively made effective or ineffective and a magnetic motor utilizing such magnets arranged in two staggered annuli with means for selectively rendering the magnets operative and inoperative in successive order to draw a rotor from the field of one magnet to the next successive magnet, thereby causing the rotor to rotate and drive a power shaft, coupled with means for regulating the speed of rotation of the motor and the power shaft.

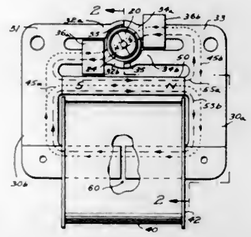
3,469,131
SYNCHRONOUS TIMER MOTORS
Frank William Stellwagen, Stamford, Conn., assignor to General Time Corporation, Stamford, Conn., a corporation of Delaware
Filed Apr. 5, 1968, Ser. No. 719,125
Int. Cl. H02k *19/02, 21/08*
U.S. Cl. 310—162 **20 Claims**

Timer motor including a polarized rotating magnetic circuit arranged so that the energizing flux does not pass through the rotating permanent magnet. The portions of the stator and rotor forming the magnetic flux paths are constructed from a magnetic material having high permeability, high saturation flux density and high resistivity as well as a low hysteresis loss characteristics, such ma-



terial being an iron-nickel alloy containing either silicon or molybdenum and being in the form of very thin laminations.

3,469,132
SYNCHRONOUS MOTOR
Arthur W. Haydon, Huntington, Edward Herbert III, Beacon Falls, and William D. Riggs, Woodbury, Conn., assignors to Tri-tech, Inc., a corporation of Connecticut
Original application Sept. 8, 1964, Ser. No. 394,669. Divided and this application May 12, 1966, Ser. No. 549,698
Int. Cl. H02k *21/14*
U.S. Cl. 310—163 **9 Claims**

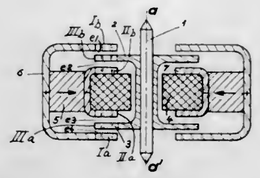


A synchronous motor having a pair of stator poles and a cylindrical rotor which is permanently magnetized in opposite directions to provide only two rotor poles. The rotor is comprised of a body of magnetic material having an energy product of at least about 3.0×10^6 gauss-oersteds. The axial length of the rotor is greater than its diameter, and the rotor exhibits a high torque-to-inertia ratio. In several embodiments the rotor accelerates to synchronous speed in the prescribed direction in the first half cycle of the applied waveform of the proper polarity. Each of the stator poles is divided into two discrete branches of dissimilar length to provide a non-uniform air gap, and one of the branches on each pole includes a shading ring. The motor also may be operated as a three wire stepper motor in which each pair of applied pulses rotates the rotor through an angle of 360 electrical degrees.

3,469,133
ELECTRIC MOTOR WITH A BRIDGE-TYPE MAGNETIC CIRCUIT
Georges Stcherbatcheff, 29 Avenue La Bourdonnais, Paris 7eme, France
Filed Oct. 13, 1965, Ser. No. 495,642
Int. Cl. H02k *21/04*
U.S. Cl. 310—164 **10 Claims**

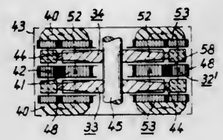
The invention broadly relates to electric synchronous motor having a permanently magnetized stator. The instant invention more particularly relates to a motor

adapted for miniature construction, due to the use of a novel type of magnetic structure, wherein the moving



armature includes an elongated core disposed along the axis of the coil and two pole-shoes, each of which forms two variable reluctance gaps with the salient stator poles.

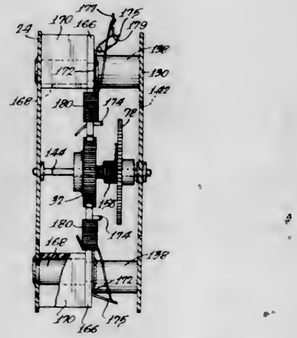
3,469,134
ELECTRICAL MACHINES
Hartwig Beyersdorf, Bremen-Arbergen, and Gerhard Bering, Bremen, Germany, assignors to Lloyd Dynamowerke G.m.b.H., Bremen, Germany
Filed July 29, 1966, Ser. No. 568,857
Claims priority, application Germany, July 31, 1965, L 40,177, L 51,276
Int. Cl. H02k *3/04*
U.S. Cl. 310—164 **10 Claims**



A rotary electrical machine composed of stator elements and rotor elements each of which is constructed in the form of a disc and which are arranged with respect to one another to form a plurality of air gaps each of which extends axially between a stator element and an adjacent rotor element, the machine including a homopolar excitation winding, an A.C. winding formed of a plurality of radial conductors, and means composed of a plurality of radially extending slots and teeth for causing one air gap to have a reluctance which varies cyclically around the circumference of the machine, the means composed of slots and teeth being disposed on an element which is rotatable with respect to the element carrying the A.C. winding. The excitation winding is arranged to produce an axially extending flux field which flows in one direction through one radial portion of each A.C. winding and in the opposite axial direction through the other portion of each such winding, whereby the flux field extending through the air gap whose reluctance varies cyclically permits a motor or generator relationship to be established between the current flowing through the A.C. winding and the rotation existing between the element carrying the A.C. winding and the element in which the slots and teeth are provided.

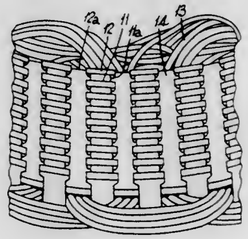
3,469,135
TONE SIGNAL GENERATOR
Lyman J. Haviland, Port St. Lucie, Fla., and Herbert E. Meinema, Barboursville, Va., assignors to Hammond Corporation, a corporation of Delaware
Filed Mar. 24, 1967, Ser. No. 625,670
Int. Cl. H02k *17/42, 19/20, 19/24*
U.S. Cl. 310—170 **2 Claims**

A tone signal generator for musical instruments having a plurality of tone wheels of gear-like configuration, one for each signal frequency, which are rotated at constant speed in individual magnetic circuits having a magnet and a plurality of signal pickup coils connected in signal aiding relationship. The generator system features octave



module organization with the module comprised of several largely identical submodules, and the use of pressed metal tone wheels and field construction which provides constant magnetic flux through the tone wheels.

3,469,136
LAMINATED STATORS FOR DYNAMO ELECTRIC MACHINES
Robert Arthur Jenkinson, Birmingham, England, assignor to Joseph Lucas (Industries) Limited, Birmingham, England
Filed Mar. 21, 1968, Ser. No. 714,831
Int. Cl. H02k *1/12*
U.S. Cl. 310—216 **1 Claim**

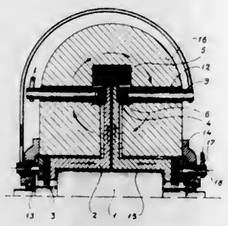


A laminated stator assembly for a dynamo electric machine consists of a plurality of annular laminates in facial contact in the usual way, the laminates having slots for receiving windings. The slots in the laminates are not all the same shape, and as a result the laminates define a pair of axially extending edges which are discontinuous, this arrangement being found to reduce noise and improve cooling.

3,469,137
ELECTRIC UNIPOLAR MOTOR
Esko Ensio Huhta-Kolvisto, Helsinki, Finland, assignor to Merwoimien Esikunta, Helsinki, Finland, a corporation of Finland
Filed Aug. 30, 1966, Ser. No. 576,137
Int. Cl. H02k *31/02*
U.S. Cl. 310—178 **4 Claims**

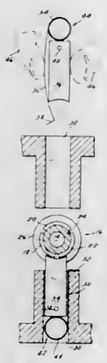
Greater operating efficiency is achieved in an electric unipolar motor by an arrangement of slip rings and

brushes which permits operation at high circumferential speeds and therefore at higher operating voltages. Very



light weight, liquid cooled brush rings cooperate with slip rings for high speed operation.

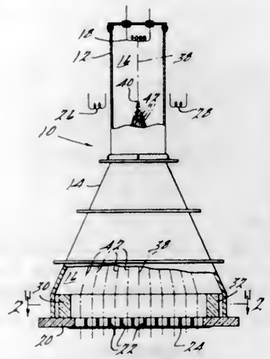
3,469,138
BRUSH HOLDING MEANS FOR ELECTRIC MOTOR
Donald L. Shortlidge, Lancaster, Pa., assignor to Schick Electric Inc., Lancaster, Pa., a corporation of Delaware
Filed Feb. 16, 1968, Ser. No. 706,110
Int. Cl. H02k *13/10;* **H01r** *39/40*
U.S. Cl. 310—246 **6 Claims**



A commutator brush holding means wherein the coiled portion of a partially unwound coil spring having an end anchored to the motor housing presses the brush toward the commutator and the unwound portion of the spring maintains the brush against the housing and substantially free of vibration.

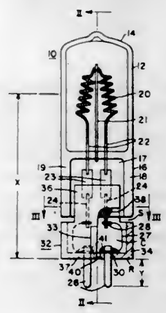
3,469,139
APPARATUS FOR ELECTRON BEAM CONTROL
Alex D. Colvin, Livonia, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed Feb. 27, 1968, Ser. No. 708,642
Int. Cl. H01j *33/02*
U.S. Cl. 313—74 **2 Claims**

A method of and apparatus for controlling an electron beam developed within the vacuum chamber of a particle accelerator. Means are provided for scanning the beam through a plurality of angularly diverging paths about a central axis. A magnetic or electrostatic field intersects these paths and deflects the beam such that it passes through the accelerator window in substantially parallel paths. The magnitude of this field varies inversely with the distance from the axis such that the greater the angle of divergence of the path of the beam, the greater



the magnitude of the beam deflecting forces caused by the field.

3,469,140
SINGLE-ENDED ELECTRIC INCANDESCENT LAMP WITH IMPROVED BASE AND TERMINAL STRUCTURE, AND METHOD OF ASSEMBLY
Arthur A. Bottone, South Amboy, and Bernard R. Fallon, Clark, N.J., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Feb. 13, 1967, Ser. No. 615,481
Int. Cl. H01j *5/50*
U.S. Cl. 313—318 **9 Claims**

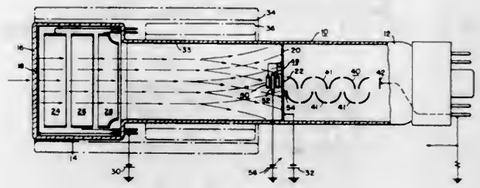


A compact projection-type lamp having a press seal and an open-sided ceramic base that is cemented to the seal, is adapted to fit various size lamps, has vent passages that cool the seal, and is disposed in prefocused relationship with the filament. Contact pins anchored in the bottom of the base are connected to the lead-in conductors by flexible fuse wires that are enclosed by the base and permit the latter to be precisely oriented relative to the envelope and filament during the basing operation.

3,469,141
IMAGE DISSECTOR CAMERA TUBE WITH ELECTRONICALLY VARIABLE SELECTOR APERTURE
James A. Hall and James F. Nicholson, Severna Park, Md., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Jan. 31, 1968, Ser. No. 701,966
Int. Cl. H01j *31/26*
U.S. Cl. 315—10 **4 Claims**

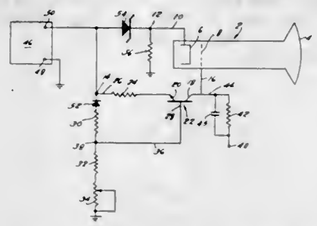
This invention relates to an image dissector camera tube which includes a photocathode onto which the input radiations are directed. The photoelectrons emitted from the photocathode are focused onto and scanned over

a plane containing a small aperture. This invention provides an improvement over this type of tube in which an electrostatic lens is provided immediately in front of



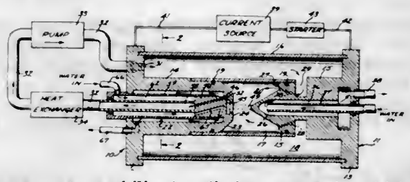
the aperture for varying the amount of photoelectrons passing through the aperture and in effect vary the size of the aperture.

3,469,142
INTENSITY CONTROL CIRCUIT FOR OSCILLOSCOPE OR THE LIKE
Richard A. Bellemare, Oakville, Conn., assignor, by mesne assignments, to Spedcor Electronics, Inc.
Filed June 20, 1967, Ser. No. 647,478
Int. Cl. H01j *29/52*
U.S. Cl. 315—30 **4 Claims**



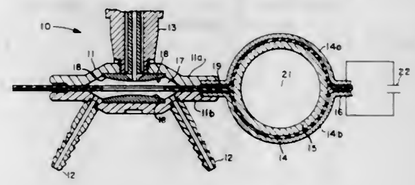
An electronic value such as a transistor has its electrodes connected between the control grid of an oscilloscope and the source of biasing voltage for the control grid, thereby constituting an exceedingly high impedance which prevents loss of signal intensity when signals are applied to the control grid from an external circuit.

3,469,143
ELECTRIC ARC LIGHT SOURCE HAVING UNDERCUT RECESSED ANODE
Delbert G. Van Ornum, Newport Beach, and William A. Geldeman, Jr., Santa Ana, Calif., and Kurt Muller, Baden, Switzerland, assignors to Geotel Inc., a corporation of Delaware
Continuation of application Ser. No. 453,241, Apr. 29, 1965. This application Oct. 11, 1966, Ser. No. 585,988
Int. Cl. H01j *7/24*
U.S. Cl. 315—111 **12 Claims**



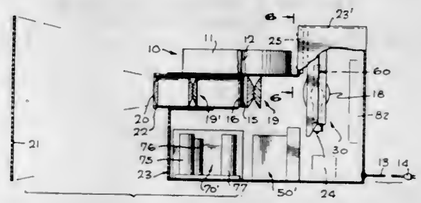
A gas vortex-stabilized radiation source in which one of the electrodes has a mouth formed therein. The mouth has a lip through which the arc passes, the arc seating on the bottom wall of the mouth.

3,469,144
ARRANGEMENT OF ELECTRICAL COMPONENTS TO DEFINE A LOW INDUCTANCE PLASMA GENERATING APPARATUS
Graham W. Flint, Winter Park, and James R. Bowen, Orlando, Fla., assignors to Martin-Marietta Corporation, Middle River, Md., a corporation of Maryland
Filed Oct. 4, 1965, Ser. No. 492,664
Int. Cl. H05b *37/00*
U.S. Cl. 315—182 **9 Claims**



The present invention involves a low inductance electrical circuit for obtaining a rapidly rising electrical current to generate a pinched plasma within a non-conducting tube containing a quantity of ionizable gas, comprising an inductance coil for encircling the tube, and capacitor means and switch means closely adjacent the coil. The coil is constituted in two portions, and parallel plate feed lines separately connect one end of each coil portion to opposite terminals of the capacitor means. The switch means are disposed at a different location with respect to the coil than the capacitor means, and are connected to the other ends of the coil portions. Significantly, the electrical interconnections between the switch means and the coil, and the capacitor means and the coil are maintained in a short and closely spaced relationship, thus to represent a comparatively small inductance and making possible a correspondingly high rate of increase of flow of current such as is desirable for creating a pinched plasma in the tube.

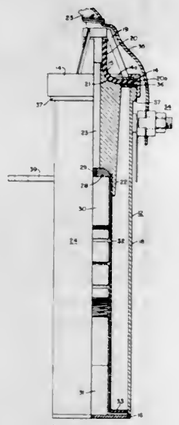
3,469,145
PROJECTOR LIGHT SOURCE
William C. Ralke, 641 N. Highland Ave., Los Angeles, Calif. 90036, and Jack K. Duncan, 10436 San Jose St., Southgate, Calif. 90280
Filed July 26, 1967, Ser. No. 656,285
Int. Cl. H05b *41/14*
U.S. Cl. 315—200 **18 Claims**



A gaseous arc light source is disclosed herein including a replaceable lamp housing and power supply for use with a projector. The lamp housing includes a face plate having brackets for mounting thereto a xenon or mercury arc lamp. A back plate for mounting a mirror is connected in angularly adjustable, spaced apart relationship with the face plate. A mounting plate on the projector case receives the housing in a position whereby the lamp arc and mirror are aligned along the projector optical axis.

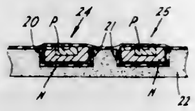
A power supply mounted within the projector case provides a high voltage RF pulse to ignite the lamp, and a low voltage, high DC current to maintain the lamp lit.

3,469,146
SUBMERSIBLE LIGHTNING ARRESTER FOR CABLE CIRCUITS
John E. Harder, Bloomington, Ind., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Sept. 8. 1967, Ser. No. 666,386
Int. Cl. H02h *1/04, 3/22*
U.S. Cl. 317—61 **5 Claims**



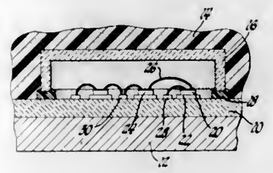
A lightning arrester having its components sealed in a conductive, preferably metal, container. The components are stacked in the radial center of the container so that an insulating column of air or gas surrounds the components and isolates them from the container side walls. The container is grounded when installed, and has a connecting means in one end of the container for connecting the arrester components to an external circuit, for example to a distribution transformer connected in an underground cable circuit.

3,469,147
DIELECTRICALLY ISOLATED STRUCTURES AND METHOD
Walter C. Benzing, Saratoga, Calif., assignor to Union Carbide Corporation, a corporation of New York
Filed July 5, 1966, Ser. No. 562,740
Int. Cl. H01l *7/00, 3/00*
U.S. Cl. 317—101 **13 Claims**



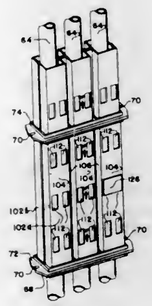
Dielectrically isolated semiconductor structures are provided which are substantially unaffected by the influence on carrier distribution in the monocrystalline semiconductor bodies of electrical charges in the polycrystalline substrate, comprising thin regions of high free-carrier concentration on the sides and bottoms of the monocrystalline bodies adjacent their isolating oxide layers whereby free carriers in the thin regions counter balance the induced effect of the charge in the polycrystalline material.

3,469,148
PROTECTIVELY COVERED HYBRID MICROCIRCUITS
Johan Lund, Mountain View, Calif., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Nov. 8, 1967, Ser. No. 681,332
Int. Cl. H01l *19/00;* **H02b** *1/02*
U.S. Cl. 317—101 **6 Claims**



A miniature hybrid integrated circuit assembly in which a semiconductive element is attached to a circuit board and wire bonded into the circuit on the board, with the resultant assembly encapsulated in plastic. Means is provided to isolate the enclosing plastic material from the filamentary wire bonds interconnecting the semiconductive elements and the electrical circuit.

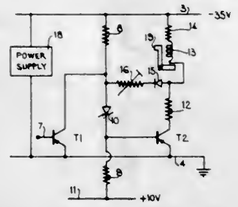
3,469,149
INSULATED BUS BAR ASSEMBLY FOR AN ELECTRICAL ENCLOSURE
Kenneth L. Paape, Mequon, Wis., assignor to Square D Company, Park Ridge, Ill., a corporation of Michigan
Filed Dec. 11, 1967, Ser. No. 689,537
Int. Cl. H02b *1/08*
U.S. Cl. 317—120 **8 Claims**



An insulated vertical bus bar assembly for an electrical control center wherein the vertical bus bars are supported against horizontal movement by vertically spaced horizontal insulators and encased by sheet-like insulating members which are removably positioned between two vertically adjacent insulators by sockets in the insulators.

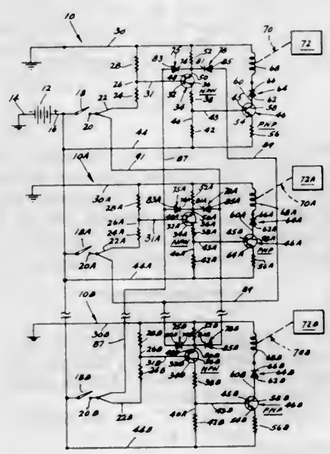
3,469,150
CIRCUIT CONTROLLING THE TOTAL TIME TO REACH MAXIMUM CURRENT VALUE IN AN INDUCTIVE LOAD
Frank John Woodley, Knebworth, and William Geoffrey Eyles, Stevenage, England, assignors to International Computers and Tabulators Limited, London, England, a British company
Filed May 4, 1967, Ser. No. 636,141
Claims priority, application Great Britain, May 11, 1966, 20,851/66
Int. Cl. H01h *47/18*
U.S. Cl. 317—123 **10 Claims**

A circiut for controlling accurately the time at which an inductive load, such as a print hammer electromagnet, is operated by a drive signal. The load is connected to a switch transistor and to an adjustable reference voltage. The reference voltage source maintains a constant voltage across the load during the initial build up of



current in the load. Hence, variation of the reference voltage varies the total time taken for the current in the load to reach its maximum value.

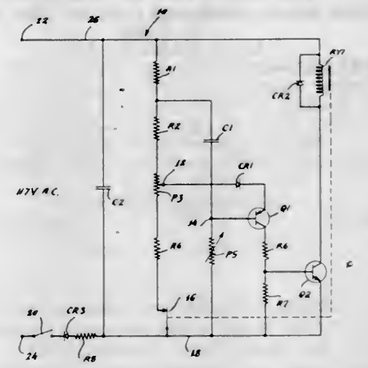
3,469,151
MULTIPLE CHANNEL CUT-OFF MEANS
Albert J. Newland, Glen Rock, N.J., assignor to The Bendix Corporation, Teterboro, N.J., a corporation of Delaware
Filed Oct. 31, 1966, Ser. No. 590,667
Int. Cl. H01h *47/02, 47/14*
U.S. Cl. 317—136 **7 Claims**



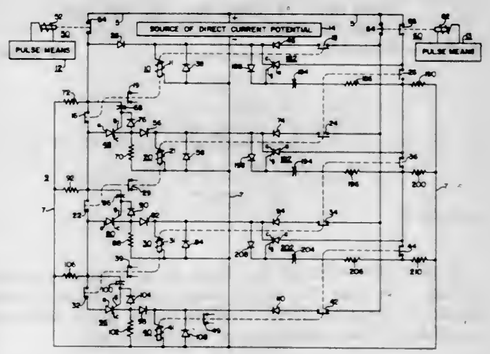
A multiple channel electronic circuit having relays controlled by transistors responsive to input signals and diodes arranged to prevent simultaneous operation of the relays by rendering all channels inoperative while signals appear at the inputs of more than one channel.

3,469,152
ELECTRONIC TIMER CIRCUITS
Edward T. Bosman, Watertown, Conn., assignor to General Time Corporation, Stamford, Conn., a corporation of Delaware
Filed Dec. 14, 1966, Ser. No. 601,780
Int. Cl. H01h *47/18*
U.S. Cl. 317—142 **8 Claims**

A delay timer having a relay output. The timer delay is measured by a resistance, capacitor, voltage divider bridge charging circuit. The charging of the capacitor is detected by a transistor. A diode connected in series with the control junction of the transistor protects this junction and provides some temperature compensation. When the charge on the capacitor reaches a predetermined value, the relay is energized. Energization of the relay disconnects the voltage divider. The transistor is maintained in its conducting state by a small current in its emitter to base circuit since it is connected in parallel with the timing capacitor after energization of the output relay. Thus, it is not necessary to provide an electronic switch such as an SCR, a latching circuit, or holding contacts as in the prior art.



3,469,153
APPARATUS FOR ENERGIZING AND DE-ENERGIZING A PLURALITY OF SWITCHING DEVICES IN A PREDETERMINED SEQUENCE
Hendrik C. Appelo, Monroeville, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Apr. 28, 1967, Ser. No. 634,769
Int. Cl. H01h *47/14*
U.S. Cl. 317—140 **7 Claims**

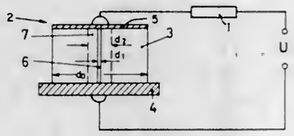


An add or remove control circuit having an add relay and a remove relay for operating a plurality of contactors (electromagnetic coils with a plurality of normally open contacts) in sequence wherein each contactor has an add-seal circuit which includes its electromagnetic coil, source potential, a normally closed contact of the remove relay and one of its own normally open contacts and wherein each contactor, except the last, has an anti-drop circuit which includes its electromagnetic coil, source potential, a silicon controlled rectifier switching device, a normally open contact from the next higher numbered contactor and a normally open contact from all the lower numbered contactors, except the first.

3,469,154
BISTABLE SEMICONDUCTOR SWITCHING DEVICE

Magne Fredslund Scholer, Nordborg, Denmark, assignor to Danfoss A/S, Nordborg, Denmark, a company of Denmark

Filed Mar. 3, 1966, Ser. No. 531,497
Claims priority, application Germany, Mar. 3, 1965, D 46,666
Int. Cl. H01l *3/00, 5/00*
U.S. Cl. 317—234 **4 Claims**

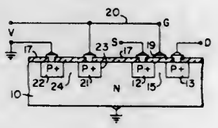


A barrierless, junctionless semiconductor switching element normally having a high resistance. Current flowing through the semiconductor material, when in its high resistance state, is distributed essentially uniformly over the entire cross sectional area of the material, which has a negative temperature coefficient in a first range of temperatures and then slightly positive in a further range of higher temperatures, such that if at any place across the area of the material resistance is decreased, for example due to increased current therethrough as the voltage thereacross is raised, the current will concentrate in the region of a predetermined path. The current concentration raises the temperature of the current path which further lowers in resistance and the entire switch element switches rapidly from a high resistance to a low resistance state.

3,469,155
PUNCH-THROUGH MEANS INTEGRATED WITH MOS TYPE DEVICES FOR PROTECTION AGAINST INSULATION LAYER BREAKDOWN

Herman W. van Beek, Laurel, Md., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Sept. 23, 1966, Ser. No. 581,580
Int. Cl. H01l *15/00, 13/00, 11/14*
U.S. Cl. 317—235 **8 Claims**



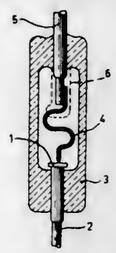
A protective element that turns on at a punch-through voltage less than the oxide breakdown voltage is connected to the gate electrode of an active MOS device to avoid destructive breakdown of the oxide layer.

3,469,156
SEMICONDUCTOR DEVICE AND METHOD OF MANUFACTURE

Jan Boerema and Meindert Johan Tegel, Stadskanaal, Netherlands, assignors, by mesne assignments, to U.S. Philips Corporation, New York, N.Y., a corporation of Delaware

Filed Oct. 5, 1966, Ser. No. 584,421
Claims priority, application Netherlands, Oct. 7, 1965, 6512980
Int. Cl. H01l *5/04, 7/60, 9/08*
U.S. Cl. 317—236 **4 Claims**

Contact to a semiconductor diode within a glass envelope is made by a conductor extending into the envelope and there joined to a wire-shaped electrode; the conductor

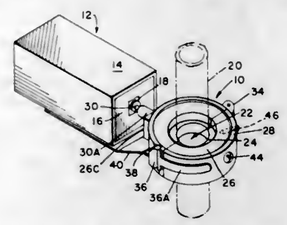


and electrode are coated with a glass enamel to improve the stability of the device.

3,469,157
CAPACITIVE SENSING DEVICE FOR DETECTING PASSAGE OF PARTICLES

William E. Rhodes, Columbus, Ohio, assignor to Robertshaw Controls Company, Richmond, Va., a corporation of Delaware

Filed Apr. 18, 1968. Ser. No. 722,306
Int. Cl. H01g *7/06*
U.S. Cl. 317—246 **18 Claims**

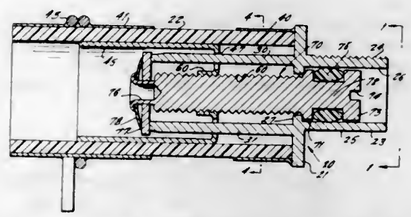


A detector unit has conductively coupled to it a capacitive sensing unit. The sensing unit has two conductive plates with a dielectric spacer physically bonding and separating the plates. The capacitive unit is of annular shape and is hinged so that it may be placed around a tube to detect the passage of free droplets or particles.

3,469,158
TRIMMER CAPACITOR

Joseph Carnazza, Brooklyn, N.Y., assignor, by mesne assignments, to JFD Electronics Corporation, Brooklyn, N.Y., a corporation of Delaware

Filed Nov. 20, 1967, Ser. No. 684,144
Int. Cl. H01g *5/16*
U.S. Cl. 317—249 **3 Claims**

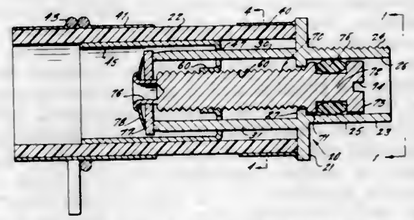


A trimmer capacitor has an axially movable nonrotating piston in which the end of the piston is inwardly formed with an oval tube which is interiorly threaded to receive a rotating adjustment screw. Two opposing arcuate slots are formed in the piston having parallel, straight edges for receiving guide rails extending from the support bushing to prevent piston rotation.

3,469,159
PISTON TRIMMER CAPACITOR

Joseph Carnazza and Marvin Weisbrod, Brooklyn, N.Y., assignors, by mesne assignments, to JFD Electronics Corporation, Brooklyn, N.Y., a corporation of Delaware

Filed Nov. 20, 1967, Ser. No. 684,398
Int. Cl. H01g *5/01*
U.S. Cl. 317—249 **11 Claims**

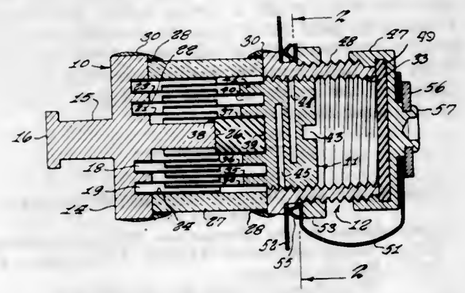


A trimmer capacitor has an axially movable nonrotating piston in which the end of the piston is inwardly formed with an oval tube which is interiorly threaded to receive a rotating adjustment screw. Two opposing arcuate slots are formed in the piston having parallel, straight edges for receiving guide rails extending from the support bushing to prevent piston rotation. The two arcuate slots are symmetrical about the piston axis, while the oval screw-receiving tube is rotated about 10° with respect to the axis of symmetry of the two slots.

3,469,160
ADJUSTABLE LOW-PASS CAPACITOR

John E. Johanson, Boonton, N.J., assignor to Johanson Manufacturing Corporation, Boonton, N.J.

Continuation-in-part of application Ser. No. 558,150, June 16, 1966. This application Sept. 5, 1967, Ser. No. 665,527
Int. Cl. H01g *5/01*
U.S. Cl. 317—251 **1 Claim**



A low loss capacitor having hollow cylindrical electrodes which are coaxially interleaved. The capacitance is varied by rotation of the rotor electrodes which are mounted on a screw member for axial displacement with respect to the stator electrodes when the screw member is turned. The screw member has a frictional locking means.

3,469,161
CAPACITORS EMPLOYING LEAD SILICO-BORATE GLASS COMPOSITIONS

Earl K. Davis, Monroeville, Pitcairn, Pa., assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania

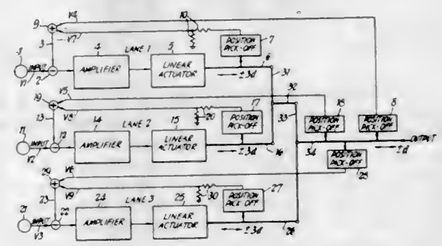
Filed Nov. 13, 1964, Ser. No. 410,928
Int. Cl. H01g *1/00*
U.S. Cl. 317—258 **3 Claims**

A capacitor having spaced confronting metal plates or electrodes is constructed with a lead silico-borate glass dielectric layer and encapsulant. The weight composition of the lead silico-borate glass is in the range of from about 35–40% PbO, 26 to 33% SiO_2, 6–9% B_2O_3, 3.5 to 6.5% K_2O, 2 to 4% Na_2O, 3 to 4% TiO_2, 3 to 4% ZnO and about 5 to 8% BaO. 1 to 3% Al_2O_3, 1–2 Li_2O, 1–2% V_2O_5, 0.25–0.5 As_2O_3 and 0.1% Co_2O_3 are included in the composition.

3,469,162
MULTIPLEX-TYPE CONTROL APPARATUS

Geoffrey Walter Goslin, Welwyn, England, assignor to Hawker Siddeley Dynamics Limited, Hatfield, Hertfordshire, England, a company of Great Britain

Filed Apr. 1, 1966, Ser. No. 539,355
Claims priority, application Great Britain, Apr. 13, 1965, 15,723/65
Int. Cl. G05b *11/01, 23/02*
U.S. Cl. 318—18 **13 Claims**

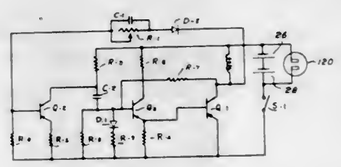


Multiplex type control apparatus which includes at least three lanes, each lane including a differential device supplied with an electrical input signal representing the magnitude of at least one variable quantity; the output of each differential device acts through an amplifier on an associated electro-mechanical converter, the electro-mechanical converters being connected in parallel to an averaging mechanism, the output of which controls the mechanism in accordance with the electrical input signal. A feedback for each lane is supplied both from the associated electro-mechanical converter and from the averaging device with the latter having the greatest effect.

3,469,163
MOVING COIL DIRECT CURRENT RECIPROCATING MOTOR

Joseph W. Mathews, 1510 W. Kingsley Road, Apt. 106–B, Garland, Tex. 75040

Filed Apr. 12, 1966, Ser. No. 542,116
Int. Cl. H02p *1/16, 7/36*
U.S. Cl. 318—127 **15 Claims**

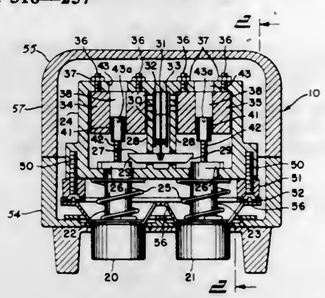


A direct current motor having a coil moving in a magnetic field to provide reciprocating motion and a circuit for controlling the flow of current through the coil, including a transistor connected in series with the coil and a D.C. source. A capacitor whose state of charge varies as a function of the back EMF generated by the coil is connected for controlling the conductivity state of the transistor or a function of the capacitor's state of charge.

3,469,164
HOIST PUSHBUTTON CONTROL

John P. Truemper, West Helena, Ark., and Aubrey H. Smith, Kenosha, Wis., assignors to Eaton Yale & Towne Inc., Cleveland, Ohio, a corporation of Ohio

Filed Feb. 4, 1966, Ser. No. 525,236
Int. Cl. H02p 1/22, 1/40; H02k 27/20
U.S. Cl. 318—257 3 Claims

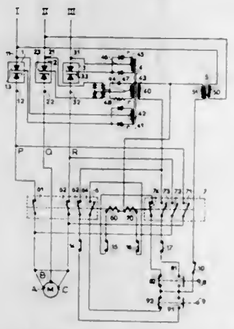


In this electric hoist control there are utilized a lifting control pushbutton and a lowering control pushbutton mounted for depressing movement on one side of a housing, as is rather usual. With those buttons, there is an interlock cam mounted for sliding on the control housing and moved by each pushbutton during a first part of its depressing movement so as to lock the other button in neutral position. A switch is moved by the interlock cam so as to actuate a directional control circuit when the cam is moved by either button. Each pushbutton has a stem connected to a movable core of a variable transformer that forms a part of a speed control circuit. The switch having actuated a directional circuit, further depressing movement of the button will vary the current in the speed circuit.

3,469,165
ARCLESS REVERSING MOTOR CONTROL

Jean Chaupit, Fontenay-aux-Roses, and Jacques Nigra, Velizy, France, assignors to Compagnie Generale d'Electricite, Paris, France, a French corporation

Filed June 28, 1966, Ser. No. 561,129
Claims priority, application France, June 28, 1965, 22,547
Int. Cl. H02p 3/20
U.S. Cl. 318—289 9 Claims

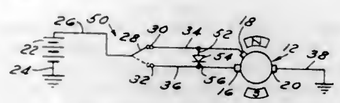


A motor control circuit for inversing the rotation of a polyphase motor fed from a polyphase current supply which utilizes symmetrical Symistor components adapted to be started and blocked with a control electrode for either starting or blocking the symmetrical component. A dual symmetrical contactor with two excitation coils is provided which consists of two simple contactors, each having three normally open contacts and one normally closed contact while in the resting condition. This unit is arranged in such a manner that a single coil may be excited through the medium of the normally closed contact of the opposite simple contactor. Excitation of a first one of the two excitation coils operates to establish a first connection between the phases of the multiphase supply and the phase windings of the motor, whereas excitation of the second coil brings about a second reverse connection between the energizing phases and the motor windings. Two control push-buttons are provided wherein operation of one of the push-buttons closes the excitation circuit for a single one of the excitation coils and maintains it closed as well as applies a starting excitation for gating pulses to the Symistor components. Operation of the other control push-button closes the excitation of the second excitation coil and maintains it closed and also applies a starting excitation or gating signal to the Symistor component. If the control push-buttons are at rest, the circuit arrangement is such that the Symistors will not be supplied with energizing gating signal pulses to the control electrodes thereof. Hence the motor will stand still.

3,469,166
DIRECT CURRENT MOTOR SPEED CONTROL

Robert W. Burby, Ann Arbor, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware

Filed Oct. 31, 1966, Ser. No. 590,774
Int. Cl. H02p 5/44, 7/50
U.S. Cl. 318—361 7 Claims

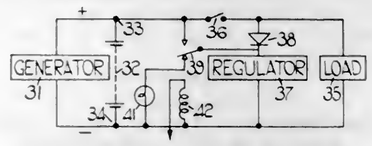


A control circuit for a direct current motor having a low speed brush and a high speed brush angularly spaced from the low speed brush. Current may be directed to either brush as desired motor speed dictates. During high speed motor operation, current automatically will be terminated to the high speed brush and shifted to the low speed brush upon a predetermined load being applied to the motor in order to increase motor load bearing capabilities.

3,469,167
BATTERY CHARGING SYSTEM FOR ROAD VEHICLES

Maurice James Wright, Birmingham, England, assignor to Joseph Lucas (Industries) Limited, Birmingham, England, a British company

Filed Nov. 28, 1966, Ser. No. 597,464
Claims priority, application Great Britain, Jan. 28, 1966, 3,880/66
Int. Cl. H02j 7/04
U.S. Cl. 320—48 7 Claims

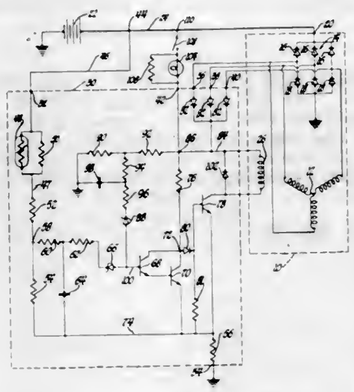


In a battery charging system for a road vehicle the output of a generator is controlled by a voltage regulator. The voltage sensing part of the voltage regulator is arranged to be connected directly across the battery terminals when the generator is charging the battery, but when the generator is not charging the battery it is connected across the battery terminals in series with a diode and the ignition switch.

3,469,168
VOLTAGE PROTECTION CIRCUIT FOR TRANSISTOR REGULATORS

Glen E. Harland, Jr., and Charles G. Hanson, Kokomo, Ind., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Sept. 19, 1967, Ser. No. 668,836
Int. Cl. H02j 7/10
U.S. Cl. 320—64 7 Claims

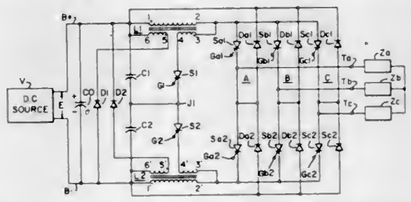


This invention relates to a transistor regulator for controlling the output voltage of a battery charging generator. The transistor regulator includes a first voltage sensing circuit for sensing the output voltage of the generator and includes a regulating section controlled by the sensing circuit for regulating the field current of the generator. The field power for the generator is supplied by a circuit that is separate from the circuit that supplies current to the battery and the first voltage sensing circuit of the regulator. If the voltage sensing circuit becomes disconnected from the battery or if the generator becomes disconnected from the battery the regulator will sense either no voltage or battery voltage causing field power to be continuously supplied. This raises the output voltage of the generator to a point where the regulator will be destroyed. To prevent this a second voltage sensing circuit is provided which is connected with the circuit for supplying field power to the generator. The second voltage sensing circuit is capable of regulating the output voltage of the generator even when the first voltage sensing circuit is disconnected from the system or otherwise is sensing a low voltage.

3,469,169
INVERTER APPARATUS

Leland A. Schlabach and John Rosa, Pittsburgh, Pa., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Nov. 29, 1967, Ser. No. 686,442
Int. Cl. H02m 7/46
U.S. Cl. 321—5 10 Claims

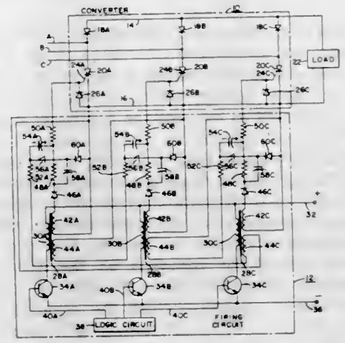


The present disclosure relates to inverter apparatus of the forced commutation type operative with a direct current source, which may have a relatively low output, for supplying alternating current to a load. The inverter includes a plurality of controlled switching devices, such as silicon controlled rectifiers, for controllably completing a circuit to the load. A commutating circuit is provided including commutating control switching devices and inductive and capacitive elements to commutate the plurality of controlled switching devices. The commutating inductive element is provided to reduce current flow in the commutating control switching devices by current transformer action, and, through voltage transformer action and the use of unilateral devices, such as diodes, the voltage levels of the capacitive elements are accurately controlled and the energy stored in the commutating circuit is recovered for high efficiency of operation.

3,469,170
FIRING CIRCUIT FOR SEMICONDUCTIVE CONTROLLED RECTIFIERS

Laszlo Gyugyi, Pittsburgh, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Sept. 11, 1967, Ser. No. 666,911
Int. Cl. H02m 7/02
U.S. Cl. 321—5 9 Claims

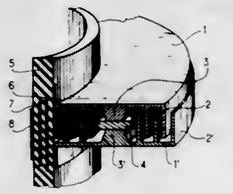


A firing circuit for semiconductive controlled rectifiers to be fired in sequence, characterized in that means are provided for storing energy at the gate of a controlled rectifier about to be fired from the drive pulse of the preceding rectifier, the stored energy being discharged into the gate of the rectifier about to be fired upon initiation of its drive pulse to supply momentary peak drive and prevent high local dissipation.

3,469,171
POWER RECTIFYING DEVICE INCLUDING HEAT EXCHANGE ARRANGEMENT

Jacques Toulemonde, Versailles, and Maurice Gallay, Aix-les Bains, France, assignors to Compagnie Generale d'Electricite, Paris, France

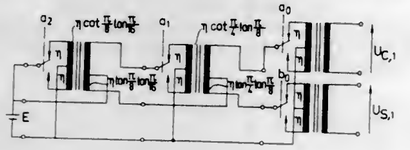
Filed Jan. 31, 1967, Ser. No. 612,930
Claims priority, application France, Jan. 31, 1966, 47,870
Int. Cl. H02m 7/00, 1/18; H01l 5/00
U.S. Cl. 321—8 7 Claims



A power rectifying device for very high voltages, made up of semiconductor elements connected in series and

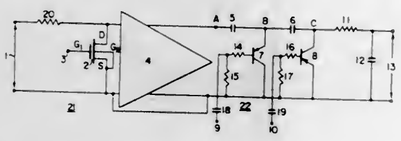
coordinated with heat exchangers and with capacitances and resistances, wherein the said heat exchangers are organized in such manner that they form the bearers of the said semiconductor elements and, at the same time, the capacitances and/or resistances coordinated with the said elements.

3,469,172
CIRCUIT DEVICES FOR CONVERTING A DIRECT CURRENT VOLTAGE INTO A STEPPED ALTERNATING CURRENT VOLTAGE
Gunnar A. Kihlberg, Sollentuna, Sweden, assignor to Jungner Instrument Aktiebolag, Stockholm, Sweden
Filed Nov. 4, 1965, Ser. No. 506,302
Claims priority, application Sweden, Nov. 16, 1964, 13,767
Int. Cl. H02m *1/12*
U.S. Cl. 321—9 **13 Claims**



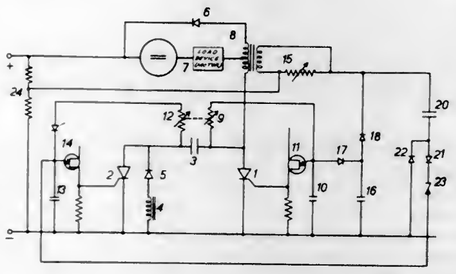
A method and circuit for converting a direct current voltage into an alternating current voltage having a stepped envelope approximating a sinusoidal waveform, in which an input voltage vector of the direct current voltage is converted to two voltage components having a phase difference of 90°, as by a transformer with three input and three output taps, including a center tapped primary winding and a tapped secondary winding, alternately and at a predetermined frequency algebraically combining the argument of the input voltage vector and a predetermined argument by adding the two to one another, subtracting the argument of the input voltage vector from the predetermined argument or subtracting the predetermined argument from the argument of the input voltage vector, as by alternately switching a single pole, two-way switch at a predetermined frequency, to produce two orthogonal output voltage components whose output voltage vector has a step-wise varying argument, and repeating this procedure on the output voltage vector at a different switching frequency than the preceding frequency. Normally the frequency is controlled by a master oscillator having a frequency twice the highest frequency of the first switch and each successive switch is gated to have a frequency of half the frequency of the previous switch.

3,469,173
SPIKE NOISE ELIMINATION CIRCUIT FOR A D.C.-A.C. CONVERTER
Shin-ichi Ohashi, Kodaira-shi, and Toshijiro Takagi, Tokyo-to, Japan, assignors to Hitachi, Ltd., Tokyo-to, Japan
Filed Dec. 2, 1966, Ser. No. 598,817
Claims priority, application Japan, Dec. 6, 1965, 40/74,624; July 20, 1966, 41/47,032
Int. Cl. H02m *7/46*
U.S. Cl. 321—44 **17 Claims**



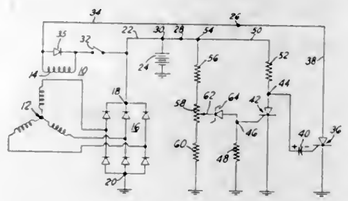
A spike noise elimination circuit for a D.C.-A.C. converter utilizing a semi-conductor chopper followed by an A.C. amplifier and two spike-removing switches connected in the output of the amplifier whereby a first series circuit consisting of a capacitor and the first switch is connected across the output of the amplifier while a second series circuit consisting of a second capacitor and the other switch is connected across the first switch, and the two switches are so controlled during alternate periods of the converted A.C. signal that spikes present in the output of the amplifier are eliminated during the alternate conductive periods of the respective switches.

3,469,174
CIRCUIT FOR REGULATING A D.C. VOLTAGE TO AN ELECTRICAL DEVICE
Torleiv Tufto, Oslo, Norway, assignor to Sentralinstitutt for Industriell Forskning, Oslo, Norway
Filed Aug. 18, 1964, Ser. No. 390,360
Claims priority, application Norway, Sept. 2, 1963, 149,936
Int. Cl. G05f *1/40*
U.S. Cl. 323—22 **3 Claims**



The D.C. voltage supplied to an electrical device is regulated by a circuit comprising two alternatively conducting and blocked thyristors. Timing means including a variable resistor permits regulation of the conducting and blocked intervals and overload protection is provided to limit the maximum current by increasing the blocked periods.

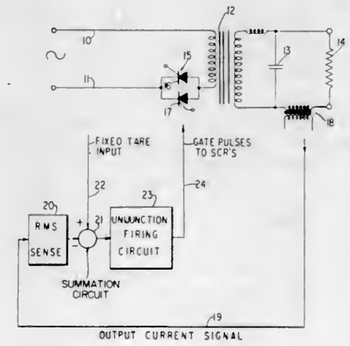
3,469,175
SEMICONDUCTOR VOLTAGE REGULATOR
Thomas E. Kirk, Anderson, Ind., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Aug. 6, 1962, Ser. No. 215,173
Int. Cl. H02h *7/06;* **H02p** *9/30*
U.S. Cl. 322—28 **2 Claims**



A circuit for regulating the direct current output potential of an electrical generating system. The field winding and a gate controlled switch are connected in series across

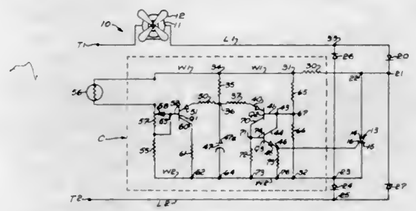
the positive and negative polarity output circuit lines in that order. The gate electrode of the gate controlled switch is connected, through a capacitor, to the anode electrode of a silicon controlled rectifier included in the potential magnitude sensing circuit. With the silicon controlled rectifier in a non-conducting state, the gate controlled switch is triggered conductive by the positive polarity potential pulse applied across the gate-cathode electrodes as the capacitor charges. Upon the conduction of the silicon controlled rectifier with overpotential conditions, the charge upon the capacitor is applied in a reverse polarity relationship across the gate-cathode electrodes of the gate controlled switch to extinguish this device.

3,469,176
CONSTANT CURRENT REGULATOR
Fred G. Rea, Watertown, Wis., assignor to Sola Basic Industries, Inc., Milwaukee, Wis., a corporation of Wisconsin
Filed May 27, 1966, Ser. No. 553,376
Int. Cl. G05f *1/40*
U.S. Cl. 323—4 **4 Claims**



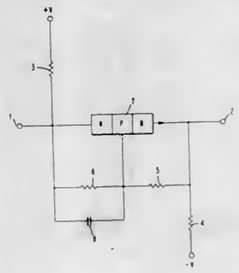
A current regulator for airport lighting and like loads wherein a capacitor shunted high leakage reactance transformer-regulator provides for coarse regulation, and an SCR control circuit connected to the input side of the transformer-regulator effects fine regulation. Suitable circuitry also provides tare and slow starting voltages and recovery of the control system in the event of excessive voltages.

3,469,177
A.C. PHASE CONTROL SYSTEM RESPONSIVE TO A SENSED CONDITION
Jerome L. Lorenz, Columbus, Ohio, assignor to Ranco Incorporated, Columbus, Ohio, a corporation of Ohio
Filed Sept. 27, 1966, Ser. No. 582,276
Int. Cl. G05f *1/60;* **H02p** *13/14, 13/16*
U.S. Cl. 323—19 **16 Claims**



An A.C. motor speed control circuit which is operable to govern the speed of a fan motor in response to sensed temperature. The circuit includes a differential amplifier operated by rectified unfiltered alternating current. The amplifier is associated with a semiconductor switch in circuit with the motor and is effective to control the amount of power supplied to the motor during half cycles of the power supply in accordance with the sensed temperature.

3,469,178
VOLTAGE LEVEL SHIFT CIRCUIT CONTROLLED BY RESISTOR RATIOS
Peter Alan Edward Gardner, Winchester, England, assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed May 4, 1966, Ser. No. 549,427
Claims priority, application Great Britain, June 24, 1965, 26,711/65
Int. Cl. H02p *13/14;* **H02m** *3/08;* **G05f** *1/60*
U.S. Cl. 323—22 **6 Claims**

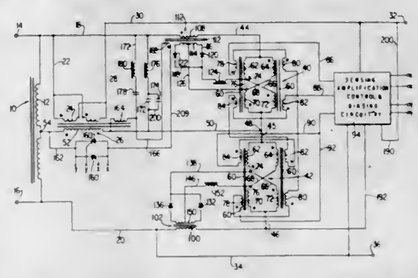


A level shift circuit connected between the output of a preceding stage and the input to the next stage comprises a transistor having its collector terminal connected to the output and its emitter terminal connected to the input and two resistors connected between the base and collector terminals and the base and emitter terminals of the transistor. The voltage level shift is proportional to the ratio of the resistors and the circuit can be adjusted by trimming the resistors.

ERRATUM

For Class 323—22 see:
Patent No. 3,469,174

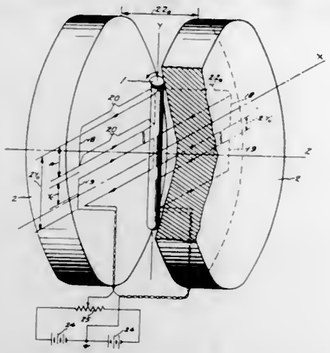
3,469,179
BUCK/BOOST VOLTAGE REGULATOR EMPLOYING SHUNT MAGNET AMPLIFIER
John A. Bassett, Jr., Schaumburg, Ill., assignor to Sola Basic Industries, Inc., Milwaukee, Wis., a corporation of Wisconsin
Filed Sept. 7, 1967, Ser. No. 666,064
Int. Cl. H02p *13/06, 13/10*
U.S. Cl. 323—45 **9 Claims**



A voltage regulator having a pair of magnetic amplifiers connected in shunt across the supply transformer with a connection between the two magnetic amplifiers

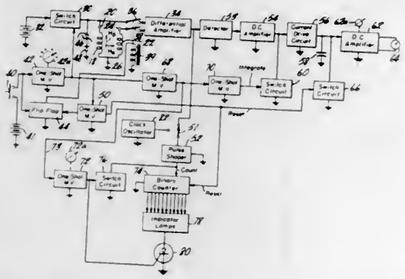
and the transformer, said connection having a transformer winding therein connected in one of the leads to the load so that the direction of current in said connection will provide a bucking or boosting voltage to the load.

3,469,180
APPARATUS FOR IMPROVING THE HOMOGENEITY OF A MAGNETIC FIELD
Weston A. Anderson, Palo Alto, Calif., assignor to Varian Associates, Palo Alto, Calif., a corporation of California
Original application Dec. 19, 1960, Ser. No. 76,679, now Patent No. 3,199,021, dated Aug. 3, 1965. Divided and this application Mar. 22, 1965, Ser. No. 441,829
Int. Cl. G01n *27/00;* **G01r** *33/08;* **H01f** *27/28*
U.S. Cl. 324—0.5 **4 Claims**



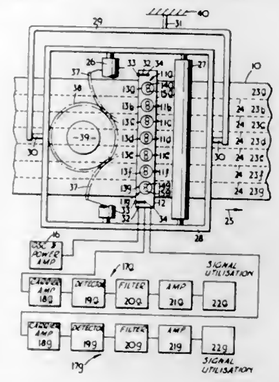
Shim coil apparatus for removing gradients in strong magnetic fields of the type required in gyromagnetic resonance spectrometers. One or more sets of circular coils are located in two planes which straddle the sample area, the geometry of the coils and their respective locations in the two planes being such that the ratio of the coil radii to their separation is a predetermined constant. The various coil configurations are capable of independently eliminating any, or all, of the first through the fourth order gradients which tend to destroy gyromagnetic spectra resolution obtainable from a sample spinning in the gap of a powerful magnet.

3,469,181
NUCLEAR MAGNETOMETER WITH MEASUREMENT SEQUENCING SYSTEM
Joseph A. Staples III, Houston, Tex., assignor to Schlumberger Technology Corporation, Houston, Tex., a corporation of Texas
Filed July 22, 1966, Ser. No. 567,274
Int. Cl. G01n *27/72;* **G01r** *33/08*
U.S. Cl. 324—.5 **7 Claims**



In the particular embodiment of the invention described herein, nuclear magnetism testing apparatus polarizes the magnetic moments of the atomic nuclei of a chemical element by supplying a locally generated unidirectional field thereto for a selected period of time. Following removal of the unidirectional field, the frequency of the atomic nuclei undergoing phase-coherent free precession under the influence of the earth's magnetic field is counted directly and a visual reproduction of the accumulated count is provided. Also provided is a visual indication of the initial magnitude of the voltage induced in a detecting coil by the alternating magnetic field produced by the precessing atomic nuclei.

3,469,182
FLAW DETECTING APPARATUS WITH MECHANICAL SCANNING OF DETECTION MEANS
John Ralph Wycherley, Penn, Wolverhampton, Michael C. Proudman, Bridgnorth, and Alan C. Clare, Sutton Coldfield, England, assignors to G.K.N. Group Services Limited, Smethwick, Stafford County, England, a British company
Filed June 23, 1967, Ser. No. 648,306
Int. Cl. G01r *33/12*
U.S. Cl. 324—37 **4 Claims**

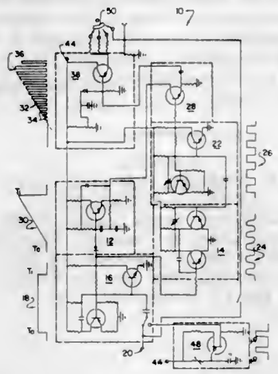


A flaw detection apparatus having a plurality of field coils each enclosing two detector coils and spaced apart laterally across the feed path for a metal billet or slab, the field coils being energised with high frequency alternating current, and the field coils and pick-up coils collectively being moved to and fro transversely of the feed path by motor driven eccentric elements.

3,469,183
METHOD AND APPARATUS FOR DETERMINING LINEARITY CHARACTERISTICS OF VOLTAGE READ-OUT INSTRUMENTS UTILIZING AN ENVELOPE SERIES OF PULSES
Donald G. Cosgrove and Le Roy E. Erwin, Fort Worth, and Eldon W. Bielss, Weatherford, Tex., assignors to General Dynamics Corporation, a corporation of Delaware
Filed Oct. 6, 1966, Ser. No. 584,725
Int. Cl. G01r *27/02*
U.S. Cl. 324—57 **5 Claims**

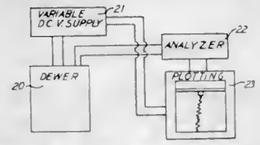
A means by which the linearity characteristics of voltage read-out instruments, such as amplifiers, oscilloscopes, ultrasonic cathode ray tube instruments, and like devices may be determined by generating a ramp-like series of pulses each having a fast rise and fall time and equally spaced in time respective to the preceding and ensuing pulses; the pulses varying with time and voltage to form the ramp-like envelope, accomplished by energizing a first monostable multivibrator, energizing a sawtooth generator and an astable multivibrator from the first monostable multivibrator, shaping the pulses from the astable multivibrator by a second monostable multivibrator, mixing the signals resultant from the sawtooth generator and

second monostable multivibrator to produce the envelope series of pulses, and introducing these pulses into a read-out instrument. Provision may be made for attenuating



the voltages prior to introduction into the read-out instrument, as well as for incorporation of a trigger pulse generator within the test instrument if desired.

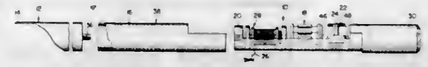
3,469,184
METHOD OF ANALYZING A SUBSTANCE UTILIZING A TUNNELING JUNCTION
John J. Lambe and Robert C. Jaklevic, Birmingham, Mich., assignors to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed Dec. 13, 1966, Ser. No. 601,439
Int. Cl. G01r *27/02;* **G01n** *27/00;* **H03k** *17/00*
U.S. Cl. 324—65 **11 Claims**



A method of analyzing a substance so as to ascertain the constituents thereof is disclosed in this specification. More specifically, the disclosed method utilizes a tunneling junction wherein the substance to be analyzed is deposited at the interface of the junction's insulating layer and one of its electrodes. The junction is subjected to a cryogenic temperature and a variable voltage is impressed thereon. The amount of current passing through the junction is measured and a plot is constructed wherein the second derivative of the current with respect to voltage is graphed against specific voltages. The peaks which occur on this plot identify specific constituents of the substance being analyzed. Disclosed tunneling junctions which may be employed with the method of this invention include: aluminum-aluminum oxide-lead, tantalum-tantalum oxide-lead, aluminum-aluminum oxide-tin and aluminum-aluminum oxide-aluminum.

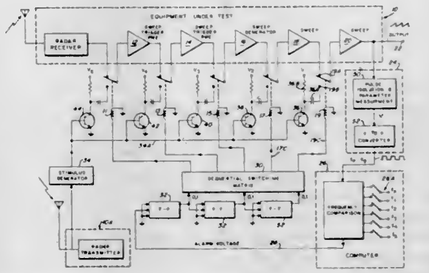
3,469,185
ELECTRICAL TEST PROBE HAVING AN OFFSET TIP AND LINE OF SIGHT THEREFOR
Paul R. Ransom, 313 Topa Drive, Ojai, Calif. 93023, and Ted C. Dorsey, 4479 Westmont, Ventura, Calif. 93003
Filed Dec. 11. 1967, Ser. No. 689,657
Int. Cl. G01r *31/02*
U.S. Cl. 324—72.5 **9 Claims**

An electrical instrument in the form of a pocket test probe, fountain pen-like in shape, which may be conveniently used for electric test purposes. The device has an offset probing point through which contact is made at an appropriate location with the aid of a line of sight extending from the offset probing point along the length of the body of the probe and a reading is taken through



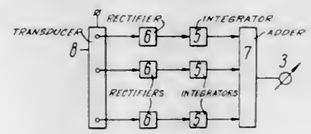
a magnifying glass positioned over an end dial. The probe includes a selector switch having indications which appear in the line of sight and a grounding connector lead located on a take-in reel. Readings are taken without breaking contact with the point under test.

3,469,186
STIMULUS INJECTION SYSTEM FOR LOCALIZING DEFECTIVE COMPONENTS IN CASCADED SYSTEMS
Richard L. Gowan, Coronado, Calif., assignor to the United States of America as represented by the Secretary of the Navy
Filed Mar. 14, 1967, Ser. No. 623,524
Int. Cl. G01r *15/12*
U.S. Cl. 324—73 **5 Claims**



To localize a defective component in a series of cascaded components the output of the series is continuously monitored and an alarm voltage is produced each time an out-of-limits signal arrives. In response to an alarm, a standardized stimulus signal locally generated, is injected into the input of the last component of the series. If the last component in the series thus stimulated is operating properly, the remaining components are successively stimulated until the faulty component is found.

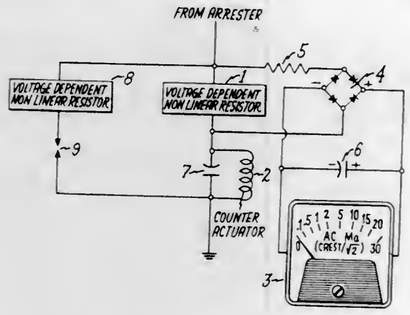
3,469,187
RANDOM SIGNAL LEVEL METER
Nikolai Panteleimonovich Kozlenko, Starosadsky per. 8, kv. 16, and Zoya Nikolaevna Rezvyakova, Ulitsa Kirova 22, kv. 14, both of Moscow, U.S.S.R.
Filed Dec. 6, 1966, Ser. No. 599,417
Int. Cl. G01r *27/02*
U.S. Cl. 324—77 **4 Claims**



A meter for measuring the level of a random signal such as a light or sound signal comprises a transducer for converting the signal to be measured into an electrical signal, said transducer being connected to a volt-

meter having integrators with different time characteristics connected in groups with parallel connected inputs, the input of each group being connected to a rectifier interposed between the transducer and the group and the output of each integrator being connected to an adder.

3,469,188
COMBINATION DISCHARGE COUNTER AND GRADING CURRENT MEASURING MEANS FOR A LIGHTNING ARRESTER
Theodore W. Hall, Pittsfield, Mass., assignor to General Electric Company, a corporation of New York
Filed July 13, 1966, Ser. No. 564,825
Int. Cl. G01r *19/00, 31/12, 27/28*
U.S. Cl. 324—102 **2 Claims**



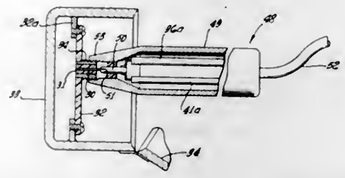
A circuit is provided for use with lightning arresters comprising a combination grading current measuring circuit and discharge voltage detecting arrangement. The curent measuring means is uniquely protected from damage due to overvoltage surges which the circuit is adapted to discharge to ground periodically. The meter is calibrated to give an accurate measurement of grading and leakage currents ranging from a fraction of a milliampere to several milliamperes.

3,469,189
METHOD AND SYSTEM FOR COMMUNICATION OF INFORMATION UTILIZING PULSE COMPRESSION PRINCIPLES
Park H. Miller, Jr., Del Mar, Calif., assignor, by mesne assignments, to Gulf General Atomic Incorporated, San Diego, Calif., a corporation of Delaware
Filed Apr. 1, 1966, Ser. No. 539,381
Int. Cl. H04b *7/00, 1/04, 1/16*
U.S. Cl. 325—38 **23 Claims**



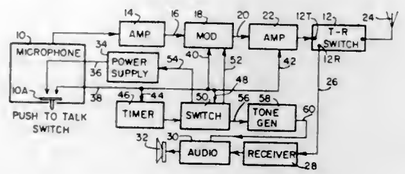
A method and system for communicating information utilizing a particular form of transmitted signals and the processing of the received signals to produce compressed pulses. The transmitted signals are each a number of short wave trains of different frequencies in specified time relationships. The received signals are applied to active filters tuned to respective transmitted frequencies to produce detection signals corresponding to the transmitted wave trains. The detection signals are combined in such time relationships as to produce a composite pulse corresponding to each of the transmitted signals compressed in time relative to the duration of each applied short wave train.

3,469,190
TUNABLE R.F. VOLTMETER FOR CATV SIGNAL LEVEL INDICATION
William A. Rheinfelder, South Laguna, Calif., assignor, by mesne assignments, to Anaconda Electronics Company, Anaheim, Calif., a corporation of Delaware
Filed June 27, 1966, Ser. No. 560,659
Int. Cl. H04b *3/02, 1/00*
U.S. Cl. 325—67 **6 Claims**



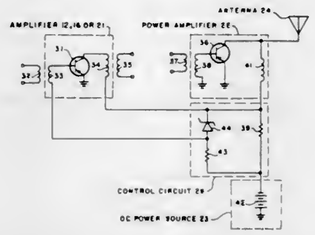
The disclosure concerns signal level indication equipment for use in a cable television system, and including a probe containing phase sensitive and synchronous detector elements and having a terminal to be brought into contact with an R.F. signal level test point of the system in such manner that the detector inputs are located proximate the test point.

3,469,191
TRANSMISSION TIME LIMITING
Daniel D. Russell, Jr., Harwood Heights, Paul H. Jacobs, Melrose Park, and Larry R. Wright, Franklin Park, Ill., assignors to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois
Filed Aug. 31, 1966, Ser. No. 576,475
Int. Cl. H04b *1/04*
U.S. Cl. 325—133 **8 Claims**



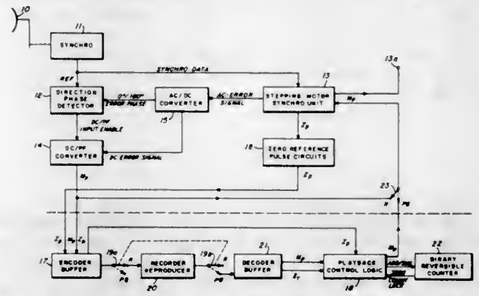
Control systems for limiting duration of continuous transmission from a transmitter operating with other transmitters on a single channel, and wherein the transmitter is actuated for each operation. A timing unit has a capacitor which is normally charged through a transistor circuit, with the transistor circuit disconnecting the capacitor from its charging voltage when a transmission is initiated. A threshold circuit connected to the capacitor actuates a semiconductor switch when the voltage falls to a predetermined value representing a given time duration, to apply a low impedance path to a tuned circuit in the transmitter to inhibit the emission of carrier signals. The timing unit also actuates a tone generator for producing an audio signal to alert the operator that the transmitter is disabled.

3,469,192
AMPLITUDE CONTROL CIRCUIT FOR SINGLE SIDEBAND GENERATOR BY CONTROLLING THE GAIN OF A DRIVER STAGE
Haruki Tomono, Kawasaki-shi, Japan, assignor to Fujitsu Limited, Kawasaki, Japan, a corporation of Japan
Filed Feb. 9, 1966, Ser. No. 526,197
Int. Cl. H04b *1/68*
U.S. Cl. 325—137 **5 Claims**



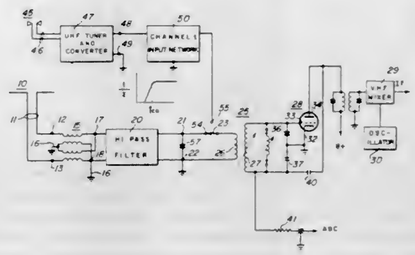
A control circuit connected between the final amplification stage and the power supply for such stage and an amplifier in the input of the final amplification stage provides an electrical control signal proportional to the consumed DC power supplied by the power supply to the amplification stage and controls the amplification of the amplifier when the control signal exceeds a predetermined limit. This controls the output signal produced by the final amplification stage.

3,469,193
AUTOMATIC CORRECTION SYSTEM FOR BRINGING RECORDED DATA INTO SYNCHRONISM WITH A REFERENCE
John Marez, San Diego, Calif., assignor to the United States of America as represented by the Secretary of the Navy
Filed July 22, 1966, Ser. No. 567,160
Int. Cl. H04b *1/10*
U.S. Cl. 325—323 **9 Claims**



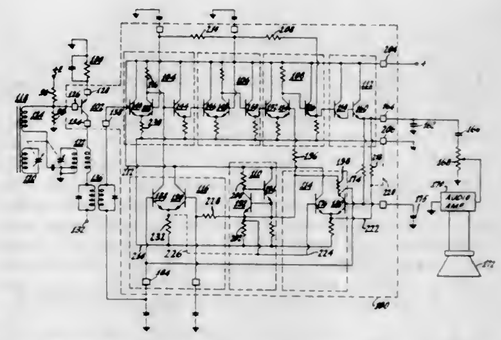
A system for correcting errors in pulse encoded data signals generated by a repetitive source compares and detects whether recorded data is advanced or retarded relative to a reference and operates to either inhibit signals or to add signals, respectively, in order to bring the recorded data into synchronism with the reference. Due to the fact that the system operates to either inhibit signals or add signals in accordance with whether the recorded data is advanced or retarded, respectively, relative to a known or determinable reference, the two sources of data signals are brought into synchronism in a period of time not more than one-half of the cyclic repetitive period of the signal source which includes the repetitive reference signal. Accordingly, the system is most effective for synchronizing, for example, recorded target information from a radar input so that it may be played back in synchronism with other radar input information which may take the form, for example, of signals indicative of a landmass. Thus, dynamic target information may be recorded, played back, and brought into synchronism with static radar information to provide, in effect, an overlay for evaluation, test, or training purposes as may be desired.

3,469,194
TELEVISION TUNER INPUT CIRCUIT FOR VHF AND UHF SIGNALS
Raymond L. Osborn, Skokie, Ill., assignor to Oak Electro/Netics Corporation, a corporation of Delaware
Filed Nov. 13, 1964, Ser. No. 411,017
Int. Cl. H04b *1/06, 1/16*
U.S. Cl. 325—370 **7 Claims**



An input circuit for the RF amplifier of the VHF tuner of a television tuner which accepts the VHF signal from a 300-ohm balanced source and the UHF signal at a frequency below that of the VHF signal from a UHF converter, the UHF signal having an unbalanced 75-ohm output impedance. The primary winding of a step-up-coupling transformer is selectively connected through a switch with the UHF source or with the VHF source through a high pass filter and a balun. The secondary of the transformer is connected with the input of an amplifier which serves as a radio frequency amplifier for VHF and as an intermediate frequency amplifier for UHF.

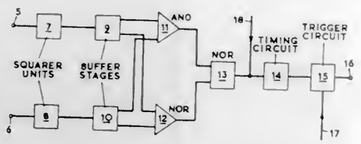
3,469,195
DETECTOR AND AGC CIRCUIT STABILIZATION RESPONSIVE TO POWER SUPPLY CHANGES
Leopold A. Harwood, Somerville, N.J., assignor to RCA Corporation, a corporation of Delaware
Filed Nov. 29, 1965, Ser. No. 510,212
Int. Cl. H04b *1/16*
U.S. Cl. 325—405 **7 Claims**



Detector and automatic gain control (AGC) circuit stabilization is achieved in a direct coupled signal translating system by developing a control voltage which

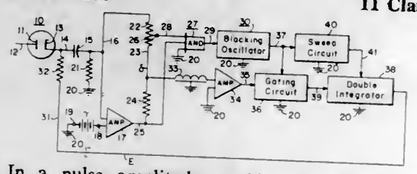
varies in response to undesirable power supply changes and by coupling this voltage to the detector and AGC circuits to maintain their operating biases substantially constant.

3,469,196
ELECTRICAL SIGNAL PHASE COMPARATOR
William Alan Cowin, Stafford, and Ronald Philip Carter, Bristol, England, assignors to The English Electric Company Limited, London, England, a British company
Filed Mar. 21, 1966, Ser. No. 535,870
Claims priority, application Great Britain, Mar. 22, 1965, 12,077/65
Int. Cl. H03k *5/20*
U.S. Cl. 328—133 **2 Claims**



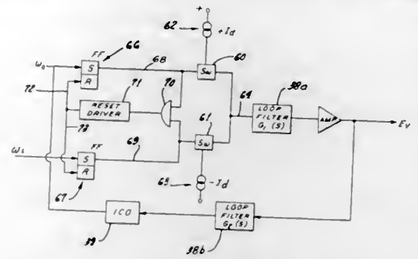
This invention relates to phase comparators for detecting the phase difference between two signals alternating at the same frequency. In particular it includes means for squaring the two signals and first and second gates connected thereto for developing outputs wherever the two signals are simultaneously negative or positive respectively. A further gate develops an output when no output is produced by both the first and second gates. The output of this further gate charges a capacitor so that the charge level of the capacitor is a measure of the phase difference of the two signals. A trigger circuit can be connected to the capacitor to provide a warning signal at a fixed level of charge.

3,469,197
AUTOMATIC PULSE AMPLITUDE TRACKING CIRCUIT
Charles C. Ryan, Glen Burnie, Md., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Dec. 4, 1959, Ser. No. 857,330
Int. Cl. H03k *17/60*
U.S. Cl. 328—150 **11 Claims**



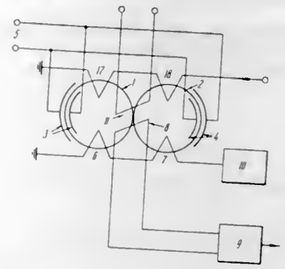
11. In a pulse amplitude tracking circuit, in combination, biased rectifier means having a signal of recurrent pulses to be tracked applied thereto, the biased rectifier means having a variable biasing potential E applied thereto and passing only the portion of the pulses which exceeds in amplitude the amplitude of the biasing potential, and servo means including error signal obtaining means operatively connected to the biased rectifier means, the obtained error signal having a value which varies in polarity and amplitude in accordance with variations in the amplitude of the pulses to be tracked from an amplitude e corresponding to $e=E+\gamma+\epsilon$ where γ is a constant, said servo means including means for varying the bias potential E on the biased rectifier means in a manner which tends to maintain a predetermined constant difference substantially equal to $\gamma+\epsilon$ between the amplitude of the pulse signal and the amplitude of the biasing potential.

3,469,198
PHASE DETECTOR FOR PHASE LOCKED LOOP FREQUENCY DETECTOR EMPLOYING CURRENT SWITCHING APPARATUS
R. Glen Madsen, Newport Beach, Calif., assignor to Astrodata, Inc., Anaheim, Calif., a corporation of California
Filed Dec. 20, 1965, Ser. No. 514,839
Int. Cl. H03d *3/18*
U.S. Cl. 329—50 **9 Claims**



The disclosure concerns a phase detector for use in a phase locked loop frequency detector, and characterized by phase sampling apparatus to repeatedly and quantitatively sample the phase difference between a data input signal and a loop oscillator generated signal; the loop also including a filter; and improved current switching apparatus connected to pass loop filter input current during time intervals corresponding to such sampling.

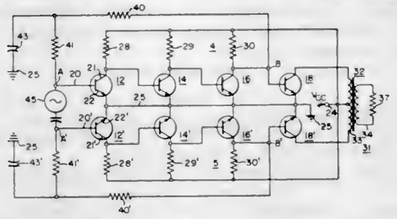
3,469,199
MAGNETIC AMPLIFIER
Alexandr Moiseevich Khazen, Molodogvardeiskaya ulitsa 36, korpus 1, kv. 48, Moscow, U.S.S.R.
Filed Nov. 3, 1966, Ser. No. 591,882
Int. Cl. H03f *9/00*
U.S. Cl. 330—8 **2 Claims**



The invention relates to a magnetic amplifier comprising at least one ferrite core, a supply winding fed with a high-frequency current, a bias winding and a cutoff winding; the improvement consists in further providing the amplifier with electrodes or buses applied to the core or cores in such a manner that the electric field set up by these electrodes in the core or cores is perpendicular to the high-frequency magnetic field produced by the supply winding when it is fed by a high-frequency current.

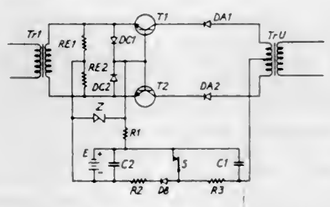
3,469,200
PLURAL STAGE TRANSISTOR AMPLIFIER WITH D.C. FEEDBACK
Brian L. Jones, State College, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Aug. 17, 1965, Ser. No. 480,333
Int. Cl. H03f *3/26*
U.S. Cl. 330—15 **2 Claims**

An amplifier system including a plurality of direct coupled cascaded transistor stages including a first stage transistor to which an input signal is applied and a last or output stage transistor having an output load means in its collector-emitter circuit. The base of the output transistor



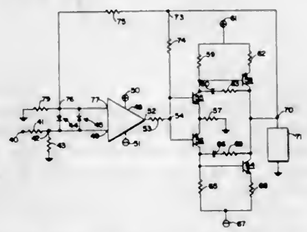
is connected to the base of the input transistor by way of a D.C. feedback circuit for accurate regulation of the base bias of the output transistor.

3,469,201
TRANSISTOR AMPLIFIER
John Jeffreys Gameson, Toronto, Ontario, Canada, assignor to Telefonaktiebolaget L M Ericsson, Stockholm, Sweden, a corporation of Sweden
Filed Mar. 5, 1968, Ser. No. 710,567
Claims priority, application Sweden, Mar. 15, 1967, 3,629/67
Int. Cl. H03f *3/26*
U.S. Cl. 330—15 **1 Claim**



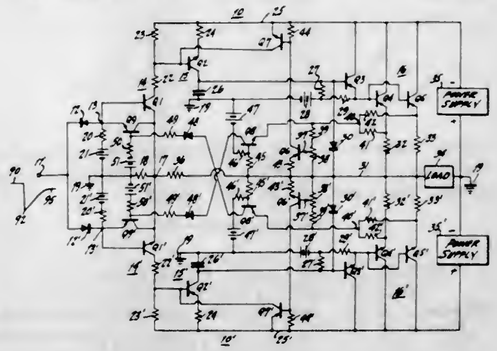
The present invention concerns a transistor amplifier comprising two push-pull connected transistors the emitter electrodes of which are connected to the opposite ends of the secondary winding of an input transformer and the collector electrodes of which are connected to the opposite ends of the primary winding of an output transformer which primary winding is provided with a centre tapping. When the amplifier is in an idle or standby condition means are provided for blocking disturbing signals received from the amplifier output.

3,469,202
LOW DEADBAND AMPLIFIER APPARATUS
Lloyd W. Priddy, Mahtomedi, Minn., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware
Filed Oct. 23, 1967, Ser. No. 677,357
Int. Cl. H03f *3/18, 1/34*
U.S. Cl. 330—28 **6 Claims**



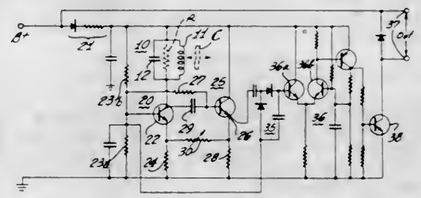
A two stage amplifying circuit incorporating feedback wherein a complementary output amplifier utilizes a "feed forward" network to eliminate deadband effects.

3,469,203
AMPLIFIER CONTROL SYSTEM
Donald J. Poitras, Haddonfield, N.J., assignor to RCA Corporation, a corporation of Delaware
Filed Aug. 20, 1965, Ser. No. 481,284
Int. Cl. H03f *1/36, 3/68*
U.S. Cl. 330—84 **12 Claims**



An amplifier control system useful in D.C. motor control applications is described. The output transistors of the power amplifier are maintained in a linear region of their characteristics during the turn-on-turnoff and reversal transients of a printed circuit D.C. motor by means of current limiting feedback circuits which become operative only when the output current exceeds a predetermined value. To prevent short circuits during the reversal transient, an interlock circuit inhibits operation of the positive portion of the amplifier when the negative portion is on and vice versa.

3,469,204
PROXIMITY SENSITIVE ON-OFF OSCILLATOR SWITCH CIRCUIT
John J. Magyar, Arcadia, and Richard J. Zollinger, Claremont, Calif., assignors, by mesne assignments, to Whittaker Corporation, Los Angeles, Calif.
Filed Sept. 14, 1967, Ser. No. 667,795
Int. Cl. G08b *21/00*
U.S. Cl. 331—65 **8 Claims**

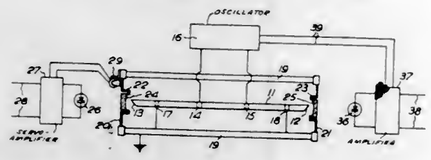


A proximity switch using a feedback oscillator in which the loss resistance of an LC circuit forms part of the feedback circuit and determines the condition for production and inhibition of the oscillator in dependence upon an object in the vicinity of the inductor of the LC circuit.

3,469,205
CONTROL OF OPTICAL MASERS OR LASERS
Alan Hugh Cook, William Richard Charlton Rowley, and David Charles Wilson, Teddington, England, assignors to National Research Development Corporation, London, England, a corporation of Great Britain
Filed May 7, 1964, Ser. No. 365,831
Claims priority, application Great Britain, May 7, 1963, 18,066/63
Int. Cl. H01s *3/05*
U.S. Cl. 331—94.5 **17 Claims**

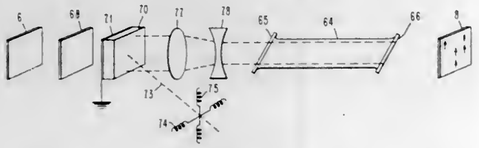
A method and apparatus for stabilizing the wave length of the output of a maser wherein the properties of the

maser are cyclically varied over a small range. The change in intensity resulting from the cyclical modification is detected and employed to modify the properties of the



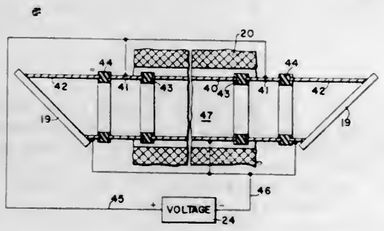
optical resonator in such a manner that the intensity of radiation produced is shifted towards a minimum rate of change with respect to the wave length.

3,469,206
DEGENERATE LASER DEVICE HAVING POLARIZATION CONTROL OF LIGHT
Thomas J. Harris, Poughkeepsie, and Kurt M. Kosanke, Werner W. Kulcke, and Erhard Max, Wappingers Falls, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Apr. 1, 1964, Ser. No. 356,442
Int. Cl. H01s *3/05*
U.S. Cl. 331—94.5 **10 Claims**



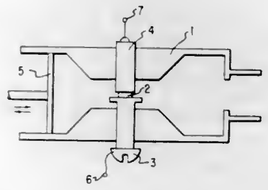
Laser scanning apparatus is provided including in a degenerate laser cavity an optical phase plate and electro-optic element operative in response to an electron beam for effecting selective scanning of the laser output beam. A magnetic member may be arranged in the cavity having binary information stored therein for influencing the polarization of the light beam of the laser enabling the scanning apparatus to provide the information in the output beam. The scanning apparatus may also operate outside the cavity.

3,469,207
METAL-CERAMIC GAS LASER DISCHARGE TUBE
Raymond Solomon, Sunnyvale, Calif., and Louis F. Mueller, Jr., Marblehead, Mass., assignors to Varian Associates, Palo Alto, Calif., a corporation of California
Filed June 24, 1965, Ser. No. 467,825
Int. Cl. H01s *3/22*
U.S. Cl. 331—94.5 **10 Claims**



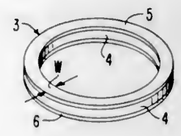
The envelope of the laser is formed of hollow cylindrical alternating metal and ceramic sections brazed together to form a vacuum-tight wall. The metal sections when energized with the operating potentials serve as the electrodes of the laser while the ceramic sections serve as insulators. This simple structure eliminates complex and fragile electrode supports and permits efficient cooling of the electrodes which form exposed exterior portions of the envelope.

3,469,208
MICROWAVE SOLID-STATE OSCILLATOR DEVICE AND A METHOD FOR VARYING THE OSCILLATION FREQUENCY THEREOF
Kiichi Komatsubara, Kodaira-shi, Japan, assignor to Hitachi, Ltd., Tokyo-to, Japan
Filed Feb. 25, 1966, Ser. No. 530,230
Claims priority, application Japan, Feb. 27, 1965, 40/10,984
Int. Cl. H03b *5/12, 7/12*
U.S. Cl. 331—107 **11 Claims**



A microwave solid-state oscillator device is described which is comprised by a solid state oscillator unit comprising a piece of GaAs or InP coupled with a cavity resonator including a matching piston for adjusting the cavity capacitance and frequency of operation of the oscillator device. The solid-state oscillator unit is supplied with a high voltage pulse and is inserted between a stressing structure for applying a variable monoaxial stress force to the oscillator unit so that the oscillator operatively provides Gunn oscillation, and the frequency of the oscillation can be varied by varying the monoaxial stress force applied to the solid-state element.

3,469,209
MICROWAVE BULK-EFFECT NEGATIVE-RESISTANCE DEVICE HAVING A HIGH PERIMETER TO AREA RATIO
Charles H. Mosher, Menlo Park, Calif., assignor to Varian Associates, Palo Alto, Calif., a corporation of California
Filed June 30, 1967, Ser. No. 650,540
Int. Cl. H03b *5/12, 5/36, 7/06*
U.S. Cl. 331—107 **10 Claims**

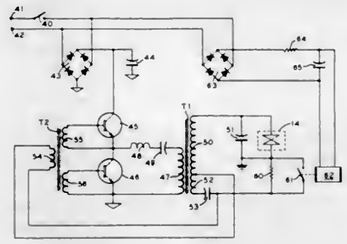


A microwave bulk-effect negative-resistance semiconductive device is disclosed. The bulk-effect semiconductive device is formed and arranged as a ring of semiconductive material or as a ring-shaped array of semiconductive segments. The ring-shape serves to remove semiconductive material from the central region of the device where the microwave current density is low due to skin effect. In this manner, the current density is nearly constant across the device to limit transverse domain propagation which can cause burnout. The radial thickness of the ring or segments of the ring-shaped device is preferably less than a skin depth at the operating frequency of the device and the circumference is preferably less than a half wavelength to prevent unwanted modes of oscillation. The ring-shape increases the power handling capabilities of transit-time-mode Gunn-effect devices and improves the efficiency of Gunn devices operated in the limited space charge accumulation mode.

3,469,210
FREQUENCY-STABILIZED LOW FREQUENCY OSCILLATOR
Stanley B. Freeman, Jericho, N.Y., assignor to General Instrument Corporation, a corporation of Delaware
Filed Sept. 27, 1967, Ser. No. 670,896
Int. Cl. H03k *3/28*
U.S. Cl. 331—113 **35 Claims**

A low frequency oscillator of the multivibrator type having a pair of electronic valves interconnected so as to be alternately conductive, in which the circuit constants and the interconnection between the control electrodes of the two valves are such as to control the periods of conductivity and nonconductivity of individual valves as the supply voltage varies so that the frequency of operation of the circuit is substantially constant with variations in supply voltage.

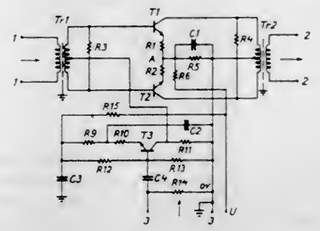
3,469,211
OSCILLATORY CIRCUIT FOR ELECTRO-ACOUSTIC CONVERTER WITH STARTING MEANS
Andrew Shoh, Ridgefield, and Hans Joachim Wilkens, New Fairfield, Conn., assignors to Branson Instruments, Incorporated, Stamford, Conn., a corporation of Delaware
Filed Oct. 16, 1967, Ser. No. 675,435
Int. Cl. H03b *5/30, 5/36*
U.S. Cl. 331—116 **11 Claims**



A feedback type oscillatory circuit which includes an electro-acoustic converter is operated at the natural mechanical open circuit resonant frequency of the converter. In order to start the circuit under overload conditions when insufficient loop gain is available, a resistive starting device is temporarily inserted in the oscillatory circuit for increasing the loop gain.

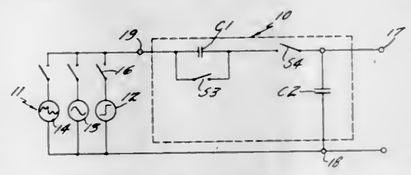
3,469,212
MODULATOR EMPLOYING A PAIR OF TRANSISTORS BIASED FOR CLASS AB OPERATION
Heinz Georg Karl, Trangsund, and Börje Mats Ingvar Roos, Stockholm, Sweden, assignors to Telefonaktiebolaget L M Ericsson, Stockholm, Sweden, a corporation of Sweden
Filed Oct. 31, 1966, Ser. No. 590,983
Claims priority, application Sweden, Nov. 23, 1965, 15,094/65
Int. Cl. H03c *1/36*
U.S. Cl. 332—31 **2 Claims**

A modulator includes a pair of transistors whose bases are connected to the arms of a centertapped secondary winding of an input transformer which receives the modulating signals across its primary winding. The collectors of the transistors are connected to the arms of a centertapped primary winding of an output transformer whose secondary winding transmits modulated signals. The emitters of the transistors are interconnected by a centertapped resistor. A source of operating voltage is connected between the centertap of the resistor and the centertap



of the primary winding of the output transformer. A voltage divider is connected across the operating voltage source with the output of the voltage divider connected to the centertap of the secondary winding of the input transformer to bias the base electrodes to class AB operation. The carrier signal is applied between the centertap of the secondary winding of the input transformer and a terminal of the source of operating voltage.

3,469,213
DYNAMIC TRANSFER NETWORKS
Leonard Baker, Philadelphia, Pa., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware
Filed May 16, 1967, Ser. No. 638,884
Int. Cl. H03h *7/10*
U.S. Cl. 333—70 **25 Claims**

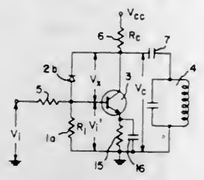


Transfer networks are provided by means of high-speed sampling of quantized energy between pairs of real capacitive elements bearing a known ratio to one another. In each time segment of the repetitive sampling operation, the energy of the source is divided between the real capacitors, this energy being allowed to build up in one of them, and being repetitively dissipated in another of them. High order and loop configurations are also included, and the networks are capable of use in virtually any configurations, utilizing the design and analysis techniques of the prior art.

3,469,214
REACTANCE TRANSISTOR CIRCUIT CONFIGURATION
Reiichi Sasaki and Michio Furuhashi, Hirakata-shi, Japan, assignors to Matsushita Electric Industrial Co., Ltd., Osaka, Japan
Filed July 18, 1967, Ser. No. 654,168
Claims priority, application Japan, Aug. 26, 1966, 41/56,596; Apr. 17, 1967, 42/24,362
Int. Cl. H01p *1/24*
U.S. Cl. 333—80 **4 Claims**

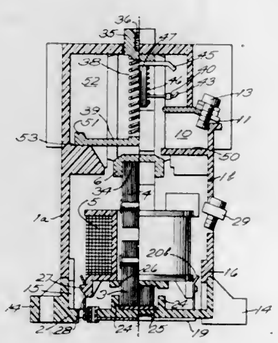
The present invention concerns a reactance transistor circuit configuration having an improved linearity of frequency control and less distortion. It is comprised of: a

reactance transistor having base, emitter and collector electrodes; input circuit means for applying a control signal between the base and the emitter electrodes of the reactance transistor; and an impedance element coupled in parallel to the base and emitter electrodes of the reactance transistor. A voltage variable capacitance means



is connected across the base and collector electrodes of the reactance transistor; and a voltage control means is coupled to the collector of the reactance transistor. The voltage control means is designed to produce a variation in the voltage across the voltage variable capacitance means in accordance with the variation of the collector current of the reactance transistor.

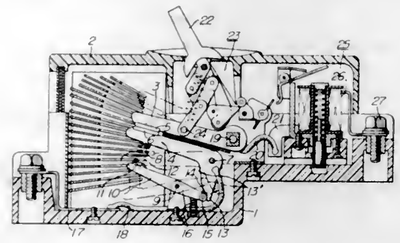
3,469,215
MULTI-POLE ELECTROMAGNETIC RELAY WITH CONVERTIBLE CONTACTS
Antonio Brovedan, Milan, Italy, assignor to Pirelli Societa per Azioni, Milan, Italy, a corporation of Italy
Filed May 23, 1967, Ser. No. 640,577
Claims priority, application Italy, May 24, 1966, 18,207/66
Int. Cl. H01h *67/02*
U.S. Cl. 335—132 **13 Claims**



An electrical relay with contacts which convert from a normally opened condition to a normally closed condition, and vice versa, by removing spring loaded contact units from one recess zone of a moveable contact carrier and reinserting the contact unit in another zone.

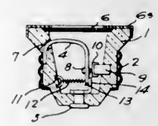
3,469,216
HIGH SPEED CURRENT LIMITING CIRCUIT BREAKER UTILIZING ELECTROMAGNETIC REPULSION
Tokuo Shiraishi, Tokyo, Japan, assignor to Nikko Electric Mfg. Co., Ltd., Tokyo, Japan, a corporation of Japan
Filed July 10, 1967, Ser. No. 652,248
Claims priority, application Japan, July 12, 1966, 41/45,116
Int. Cl. H01h *3/28*
U.S. Cl. 335—195 **3 Claims**

A circuit breaker having two movable contact arms arranged in opposed parallel relation in a closed state and respectively carrying contacts at their end extremities, wherein, upon occurrence of fault current conditions, one of said movable contact arms is pivotally moved downward by electromagnetic repulsion acting between said



movable contact arms and at the same time the force of a spring supplying contact pressure for said movable contact arm is dropped off rapidly to enable said movable contact arm to further move downwardly to a fully open position wherein it is locked by locking means.

3,469,217
PROTECTOR FOR ELECTRICAL CIRCUITS
Ulle C. Linton, 11300 Farmland Drive, Rockville, Md. 20852
Filed Nov. 15, 1966, Ser. No. 594,469
Int. Cl. H01h *37/58*
U.S. Cl. 335—208 **6 Claims**

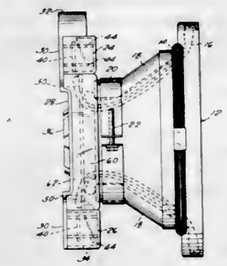


The present protector for electrical circuits is capable of being interconnected in an electrical circuit for breaking said circuit when an overload occurs therein and has a pair of current conducting links for the passage of such current, which links are normally held in contact by one link or a part thereof being of a magnetically attracted material and being drawn to a magnet or having a magnet drawn to a magnetically attracted element whereby when said current overload occurs the magnetic permeability of the magnetically attracted material or magnet is diminished allowing said links to move apart breaking contact and thus, breaking said current, through resilient means attached to or the resiliency of one of said links.

3,469,218
COMPACT YOKE FOR KINESCOPE
Frank J. Zoladz, Willimansett, Mass., assignor to General Instrument Corporation, a corporation of Delaware
Filed May 24, 1967, Ser. No. 640,924
Int. Cl. H01f *7/00;* **H02b** *1/04*
U.S. Cl. 335—210 **16 Claims**

The rear end of the liner projects radially outward further than the rear end of the core and coils, and is there formed into terminal board housings which are displaced forward, for compactness in axial direction. A one-piece cover serves to cover the rear end of the yoke and the terminal board housings, and has centering fingers which engage the neck of the kinescope. There are two sets of locating notches for each terminal board. One set is for

temporary use to facilitate pot soldering of the terminal board connections, and the other set is located more deep-

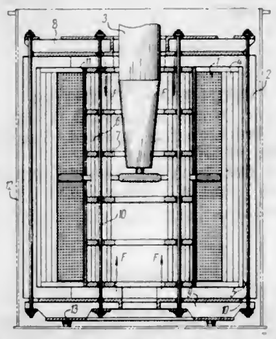


ly in the housings for use after pot soldering. The plastic parts may be assembled with a snap detent action.

3,469,219
THERMALLY STABILIZED CELLULOSE IN ELECTRICAL APPARATUS AND METHOD FOR MAKING SAME
Daniel Berg, Churchill, Pittsburgh, and Leonard C. Flowers, Murrysville, Pa., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed June 16, 1966, Ser. No. 558,129
Int. Cl. H01f *27/12*
U.S. Cl. 336—58 **5 Claims**

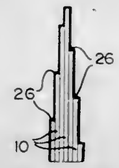
A cellulosic insulating material such as kraft paper which is pretreated with an organic solution containing from about 0.1% to 10% by weight of a derivative of 2,4-diamino-s-triazine, whereby the material has improved thermal stability and is suitable for use at temperatures up to 150° C. when submerged in transformer oil.

3,469,220
CORELESS HIGH VOLTAGE ELECTRICAL REACTOR
Lev Alexandrovich Mastrjukov, 13 Parkovaya ulitsa 40/2, kv. 36, Moscow, U.S.S.R.
Filed June 5, 1967, Ser. No. 643,599
Int. Cl. H01f *27/26*
U.S. Cl. 336—210 **7 Claims**



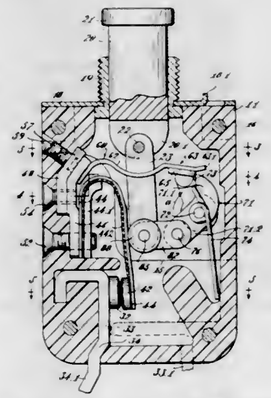
An electrical reactor without a magnetic core, in which C-shaped shunts of a magnetic system externally embrace a winding in symmetrical disposition about the axis of the winding, a high voltage input being coaxially mounted inside the winding and extending through a central opening formed by the shunts. The shunts are constituted of sheets of electrical steel including portions extending parallel to the winding axis and end portions bent towards the middle plane of the shunt and formed by groups of sheets in each of which the sheet length decreases from the outside to the inside, whereby the shunt ends are of approximately trapezoidal shape.

3,469,221
TRANSFORMER CORE
Willy Olsen, Mount Vernon, Ill., assignor to Olsen Magnetics, Inc., Mount Vernon, Ill., a corporation of Illinois
Continuation-in-part of application Ser. No. 568,285, July 27, 1966. This application May 19, 1967, Ser. No. 644,428
Int. Cl. H01f *27/24*
U.S. Cl. 336—212 **10 Claims**



A C-type cut transformer core has the ends of the laminations of each part of the core staggered relative to one another and assembly of the completed core with its coil is facilitated by coating the cut ends of the lamination so as to cover the metal burrs formed during the operation of cutting of the lamination.

3,469,222
ELECTRICAL CIRCUIT BREAKER
Lawrence W. Brackett, Sr., Georgetown, Mass., assignor to Wood Electric Corporation, Lynn, Mass., a corporation of Massachusetts
Filed Jan. 26, 1967, Ser. No. 611,887
Int. Cl. H01h *71/16*
U.S. Cl. 337—74 **2 Claims**

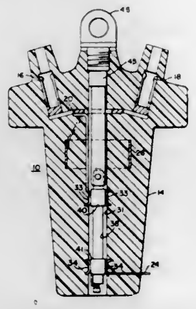


An automatic circuit breaker of the "trip free" type has two fixed contacts and two corresponding parallel spring contacts side by side. A push button operator has hinged to its inner end a rod having at its swinging end rollers which bear against the spring contacts on one side and which swinging end is rigidly connecting on the other side with a link to one arm of a spring biased lever having a catch on a second arm. A bimetal element bridges the spring contacts and reaches from their fixed side towards the catch which it normally holds with its swinging side forming a latch. The swinging end of the operator rod is normally, with the push button depressed, over center and holds the spring contacts closed. On pulling back the push button the rolls on the operator rod release the spring contacts and they open. Upon overload, the latch of the heated bimetal element releases the catch of the biased two armed lever and permits the spring contacts to open. The circuit breaker cannot be held closed, or reclosed, so long as the bimetal strip remains heated and hence in catch releasing position. The bimetal element can be adjusted to swing its latch end similarly to its motion upon overload heating.

3,469,223
CAST BUSHING FOR CONNECTING A HIGH VOLTAGE AND HIGH CURRENT TO ELECTRICAL APPARATUS LOCATED IN A METAL CASING OR TANK

Merrill G. Leonard, Fowler, Ohio, assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed June 26, 1968, Ser. No. 740,181
Int. Cl. H01h 85/02, 85/20
U.S. Cl. 337—202 2 Claims

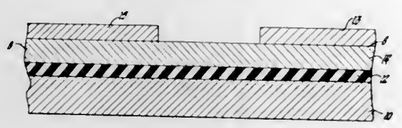


A cast bushing for connecting a high voltage and high current electrical line to electrical apparatus housed in a metallic casing or tank. The bushing comprises a flange portion located outside the casing and a body portion located inside the casing. The high current circuit is isolated entirely in the flange portion of the bushing so that the high current does not pass through the wall of the casing. Only the current of the apparatus housed in the casing passes through the wall of the casing. The bushing has a central continuous opening through the flange and the body portions for receiving a replaceable fuse for protecting the electrical apparatus in the casing.

3,469,224
PRINTED THERMISTOR ON A METAL SHEET

John W. Riddel, Fenton, and Raymond E. Schwyn, Flint, Mich., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Dec. 8, 1966, Ser. No. 600,230
Int. Cl. H01c 7/04
U.S. Cl. 338—22 4 Claims



A thermistor assembly is formed by coating a nickel substrate with a film of thermistor material and subsequently heating the coated nickel substrate until a thin, adherent insulative layer of nickel oxide is formed. The nickel oxide layer insulates the nickel substrate electrically from the thermistor material and it bonds the thermistor material to the nickel substrate. After the coated nickel substrate has cooled, two electrical contacts in spaced relationship to each other are printed on top of the thermistor film. This thermistor assembly has a fast temperature response, high heat dissipation characteristics which permit the thermistor to be operated at power levels above and below one watt, and provides a sturdy construction which is not readily broken.

3,469,225
MINIATURE, MULTITURN TRIMMER POTENTIOMETER

George W. Wood, Hammonton, N.J., assignor to TRW Inc., Philadelphia, Pa., a corporation of Ohio

Filed Mar. 12, 1968, Ser. No. 712,486
Int. Cl. H01c 5/02
U.S. Cl. 338—163 4 Claims

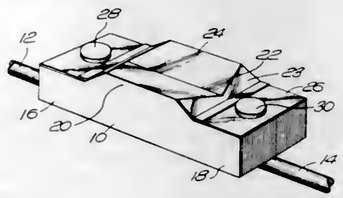


A miniature, multiturn trimmer potentiometer comprising a cup-shaped housing having an annular resistance path and a contact termination on the inner surface of the base thereof. Terminal pins extend through the base of the housing and are individually connected to the ends of the resistance path and the contact termination. A circular contact carrier plate is mounted in the housing for rotation about its center. The contact carrier plate carries a contact which slidably engages both the resistance path and the contact termination. A cover extends across the open end of the housing and is rotatably supported thereon. A small gear is secured to the center of the inner surface of the cover and the housing has a ring of gear teeth extending around the gear on the cover. An idler gear is rotatably supported on a pin on the contact carrier plate and meshes with the gear on the cover and the gear teeth on the housing. Rotation of the cover rotates the contact carrier plate through the idler gear with the contact carrier plate rotating at a rate smaller than the rate of rotation of the cover.

3,469,226
THIN FILM RESISTOR

Benjamin Solow, North Hollywood, Calif., assignor to Angstrohm Precision Incorporated, Van Nuys, Calif., a corporation of Delaware

Filed Oct. 26, 1967, Ser. No. 678,330
Int. Cl. H01c 1/02
U.S. Cl. 338—252 9 Claims

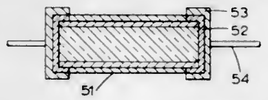


A film resistor which is trimmable to a predetermined value and which, once adjusted, is not materially affected by its environment. A resistive film is deposited in a groove formed in an appropriate substrate and a pair of leads secured to this substrate are connected to respective opposite ends of the film. An encapsulating material is formed around the substrate and over the film-filled groove. The value of resistance is adjustable by grinding or otherwise removing a portion of the film at the upper edges of the groove, until the desired value is achieved.

3,469,227
OXIDE FILM RESISTOR

Giovanni Canegallo, Milan, Italy, assignor to Welwyn Electric Limited, Bedlington, England, a corporation of Great Britain

Filed Jan. 3, 1967, Ser. No. 607,058
Claims priority, application Italy, Jan. 11, 1966, 13,290/66
Int. Cl. H01c 1/02
U.S. Cl. 338—262 4 Claims

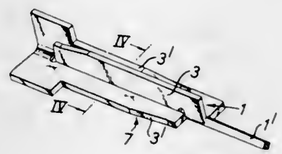


A substrate has an oxide resistor thereon. A protective metal oxide covers the resistor film except at the end portions wherein metal regions blending into the protective film are placed. Terminals are placed at these metal regions.

3,469,228
ELECTRICAL CONNECTOR

Hermanus P. J. Gilissen, Vlijmen, Netherlands, assignor to AMP Incorporated, Harrisburg, Pa.

Filed Mar. 3, 1967, Ser. No. 620,382
Claims priority, application Great Britain, Mar. 11, 1966, 10,752/66
Int. Cl. H01r 25/02, 13/02
U.S. Cl. 339—47 16 Claims



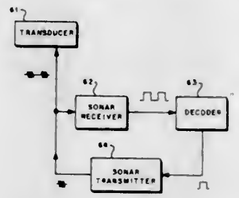
An electrical connector having prongs disposed at an angle of 90° or thereabout therebetween for mateable engagement with other prongs of a like electrical connector or complementary electrical connector.

3,469.229
UNDERWATER ACOUSTIC NAVIGATION SYSTEM

Samuel Pure, Rydal, Pa., and John D. Wallace, Princeton, N.J., assignors to the United States of America as represented by the Secretary of the Navy

Filed Apr. 26, 1961, Ser. No. 106,418
Int. Cl. G01s 9/66
U.S. Cl. 340—3 4 Claims

An acoustic navigation system is which a plurality of pairs of acoustic transponders are air dropped or otherwise deposited beneath the surface of a waterway at known locations. A chart-making vessel, equipped with acoustic interrogating, range measuring and recording apparatus traverses the waterway continuously and simultaneously determining the range to selected transponders and constructing a plot on a chart of the vessel course with respect to the transponders. The location of other objects in the waterway is recorded along with the vessel course whereby the resultant chart may be employed to

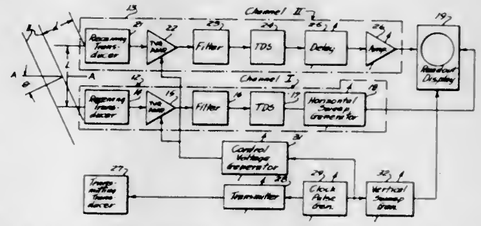


determine a safe course to be followed by appropriately equipped vessels in the waterway having reference only to the transponders for position information.

3,469,230
SONAR SYSTEM

Ted I. Haney and Henry L. Warner, Panama City, Fla., assignors to the United States of America as represented by the Secretary of the Navy

Filed Feb. 8, 1968, Ser. No. 704,069
Int. Cl. G01s 9/66
U.S. Cl. 340—3 9 Claims



A sonar system having a transmitting channel and a pair of receiving channels, with the receiving channels each including a transducer, a time-varied-gain amplifier, a filter, and a tunnel diode switch. One of said receiving channels further includes a delay line and amplifier which is coupled between the output of its tunnel diode switch and the intensity input of a readout, while the other of said receiving channels further includes a horizontal sweep generator which is connected between the output of its tunnel diode switch and the horizontal sweep circuit of said readout for the timely triggering thereof. The aforesaid transmitting channel is connected to the vertical sweep circuit of said readout, likewise for the timely triggering thereof.

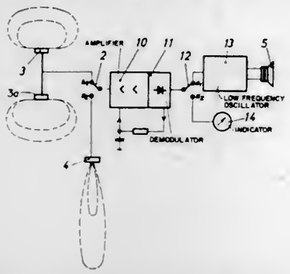
3,469,231
UNDERWATER LOCATING AND INTERCOMMUNICATING DEVICE, PARTICULARLY FOR FREE-SWIMMING DIVERS

Hermann Geiling, Sommerstrasse 8, Graefelfing, near Munich, Germany, and Paul Weberling, Sundergaustrasse 160, Munich, Germany

Filed July 20, 1967, Ser. No. 654,936
Claims priority, application Germany, July 22, 1966, G 47,502
Int. Cl. H04b 13/02
U.S. Cl. 340—6 7 Claims

A device for underwater communicating and locating; has a housing which may be carried on a diver's wrist, a modulated ultrasonic frequency wave transmitter with one or more ultrasonic radiators, which have a far-reaching spherical-shaped characteristic. An ultrasonic frequency receiver with several sonic frequency transducers which also have spherical shape characteristics but are

provided with a point for locating a device, switch arranged in the housing, for alternate sending and



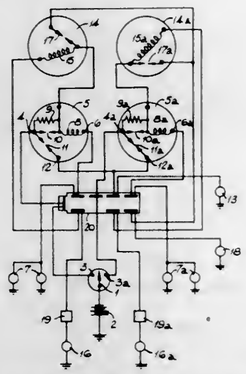
receiving and acoustic or optical indicating elements for receiving signals and for locating a device.

3,469,232

VEHICLE DIRECTION INDICATOR SYSTEMS

Alfred Donald Prickett, Birmingham, England, assignor to Joseph Lucas (Industries) Limited, Birmingham, England

Filed Mar. 14, 1966, Ser. No. 533,953
Int. Cl. B60q *1/34*
U.S. Cl. 340—80 **1 Claim**



A vehicle direction indicator system including a flasher unit having a first terminal for connection to a source of electric supply, a second terminal for connection to a set of indicator lamps of a vehicle and a third terminal for connection to a pilot lamp. The flasher unit being provided with a fourth terminal for connection to a further set of indicator lamps which may optionally be brought into the circuit. The first terminal having an internal connection with the second terminal by way of a resistance wire and the coil of an electromagnet and the fourth terminal being connected to a point intermediate the resistance wire and the coil whereby the additional current flow to the fourth terminal will have substantially no effect on the frequency of operation of the flasher unit.

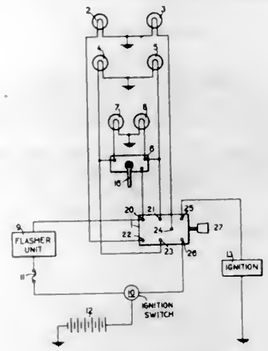
3,469,233

FLASHER AND TURN INDICATOR CIRCUIT FOR VEHICLE AND SELECTOR SWITCH THEREFOR

Karel Havlicek and Alois Kostal, Prague, Czechoslovakia, assignors to PAL, narodni podnik, Koely u Prahy, Czechoslovakia

Filed Mar. 31, 1966, Ser. No. 539,171
Claims priority, application Czechoslovakia, July 22, 1965, 4,666/65, 4,683/65
Int. Cl. B60q *1/52, 1/34*
U.S. Cl. 340—81 **7 Claims**

A selector switch comprises a contact operatively connected to a control member and engageable with at least five contacts for selectively connecting first and fifth contacts in a first position of the control member. In a second position of the control member, second,



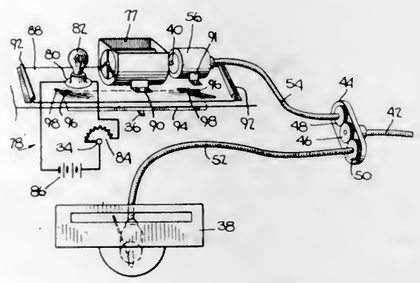
third and fourth contacts are selectively connected. The first and fifth contacts are connected in the third position of the control member while the connection between the second, third and fourth contacts is maintained.

3,469,234

VISUAL SIGHTING DEVICE

Edmund Greacen, 106 Woodcrest Ave., White Plains, N.Y. 10604

Continuation-in-part of application Ser. No. 481,432, Aug. 20, 1965. This application Aug. 16, 1966, Ser. No. 572,859
Int. Cl. B60r *27/00;* **G01c** *3/12*
U.S. Cl. 340—104 **25 Claims**



This invention relates to a visual sighting device for automatically and continuously indicating to the operator of a motor vehicle a safe distance between his motor vehicle and the next preceding motor vehicle.

3,469,235

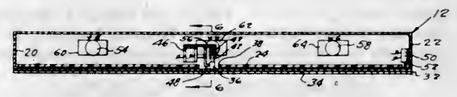
VEHICLE WARNING LIGHT AND SYSTEM

Edward C. Devlin and James M. R. Phillips, both of P.O. Box 239, Andersen, Calif. 96007

Filed Mar. 3, 1967, Ser. No. 620,465
Int. Cl. B60q *1/52*
U.S. Cl. 340—107 **1 Claim**

A warning light system which may be actuated from either the front or rear seat of an automobile and which includes a housing, a translucent message forming cover

on the housing, lamps in the housing, a movable cover for protecting the message forming cover and an electrical



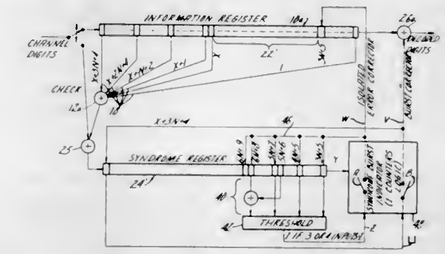
system including an electric latch for releasing the movable cover is disclosed.

3,469,236

ERROR BURST DECODER FOR CONVOLUTIONAL CORRECTION CODES

Robert G. Gallager, Lafayette, Calif., assignor to Codex Corporation, Cambridge, Mass., a corporation of Delaware

Filed Mar. 10, 1965, Ser. No. 438,565
Int. Cl. G06f *11/04*
U.S. Cl. 340—146.1 **17 Claims**



Convolutional code decoder has circuitry for forming and examining syndrome digits to locate the leading edge of an error burst and for correcting errors in the assumed burst on the basis of a further syndrome digit. Shown in combination therewith are circuitry for locating the trailing edge of the burst, circuitry for operating alternatively in error burst correction and random error correction modes, and specific circuitry for correcting systematic convolutional codes in which each parity digit is positioned close in the digit stream to one of the information digits it checks. Interrelated counters are shown to track the leading and trailing edges proceeding through the decoder to control the correction procedure.

ERRATUM

For Class 340—146.3 see:
Patent No. 3,469,263

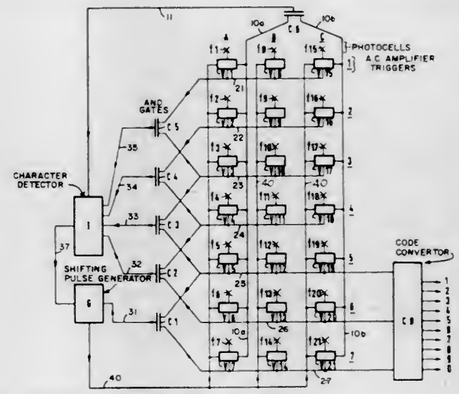
3,469,237

INFORMATION BEARER AND READING DEVICE THEREFOR

Christiaan Johannes van Dalen, Leidschendam, Netherlands, assignor to de Staat der Nederlanden, Ten Deze Vertegenwoordigd Door de Directeur-Generaal der Posterijen, Telegrafie en Telefonie, The Hague, Netherlands

Filed Feb. 20, 1964, Ser. No. 346,252
Claims priority, application Netherlands, Feb. 22, 1963, 289,336
Int. Cl. G06k *9/00, 7/00*
U.S. Cl. 340—146.3 **13 Claims**

An information bearer provided with rows of characters including digits that can be read by vision or by machine and that consist of line sections lying in *n* rows and *m* columns, as code elements of a self-checking code and, of line sections lying between the columns, each connected at least to one of the first-mentioned sections of line and provided for visual reading and rejection by the machine reader. The reader for these characters comprises *m* columns and more than *n* rows of code element scanners to provide for vertical misalignment of the characters being scanned, which scanners are connected to A.C. amplifiers and storing triggers which respond only to abrupt transitions in the marks or lines. AND-gate means are connected to the scanner triggers for detecting a whole char-



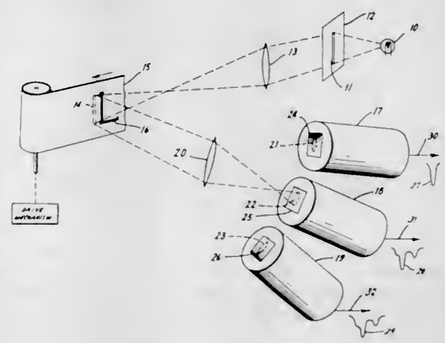
acter by the presence of sections in its outer columns and rows of code elements. For stored information from characters out of vertical alignment, shifting means controlled by said detecting means are provided for shifting the stored information through the columns of scanner triggers until the information for that character is recorded in those triggers which are connected to the output or code converter for that information.

3,469,238

CHARACTER RECOGNITION APPARATUS USING SINGLE STROKE SCANSION OF CHARACTER AREA WITH ELONGATE IMAGE

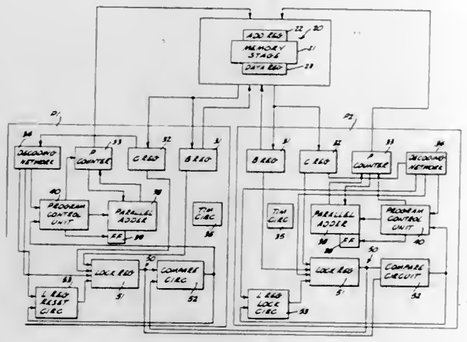
Melvin E. Partin, Montgomeryville, Pa., assignor to Philco-Ford Corporation, Philadelphia, Pa., a corporation of Delaware

Filed Mar. 30, 1965, Ser. No. 443,814
Int. Cl. G06k *9/02*
U.S. Cl. 340—146.3 **3 Claims**



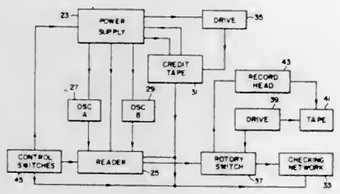
Character recognition apparatus using single stroke scansion of character area with elongate image. A plurality of photoresponsive devices view scanned area through masks of differing transparencies to develop signals which are differentiated, forming pulses which are counted to obtain indication of character identity.

3,469,239
INTERLOCKING MEANS FOR A MULTI-PROCESSOR SYSTEM
Richard C. Richmond, Orange, and Hisashi H. Ogushi, Los Angeles, Calif., assignors to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware
Filed Dec. 2, 1965, Ser. No. 511,159
Int. Cl. G11b *5/00*
U.S. Cl. 340—172.5 **15 Claims**



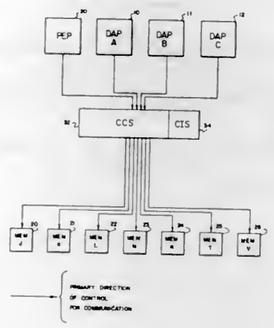
A system in which each of a plurality of processors has access to a memory unit in which items of common data are stored, each item having an assigned code number. Prior to processing an item of common data, each processor transfers the code number into its lock register for comparison with the contents of the lock registers of other processors. If the comparison is positive, the processor wanting to update the data performs a predetermined routine until a subsequent comparison indicates that no other processor is operating on the common data. In response to simultaneous requests for common data, a priority control determines which processor is to update the data.

3,469,240
COMPUTER FOR RECORDATION OF A CREDIT TRANSACTION
Arthur Ryden, McKeesport, Pa., assignor to Philip R. Dutch, Pittsburgh, Pa.
Filed Apr. 19, 1966, Ser. No. 543,670
Int. Cl. G11b *13/00*
U.S. Cl. 340—172.5 **6 Claims**



A system is disclosed for recording a complete credit transaction in a gasoline station in binary code on a tape. The identification of the purchaser is on a punched card and the data of the transaction is set on code wheels. The card has two rows of hole positions only one hole in each position being punched. After the card is checked for credit integrity by comparison with pairs of hole positions on a tape, having complementary punching, to identify bad credit risks, the data of the complete transaction is converted into a binary electrical signal having one frequency for 0 and another frequency for 1 and recorded on the tape.

3,469,241
DATA PROCESSING APPARATUS PROVIDING CONTIGUOUS ADDRESSING FOR NON-CONTIGUOUS STORAGE
Richard Barton, Lorenz A. Hittel, and Laszlo L. Rakoczi, Phoenix, Ariz., and Jerome B. Wiener, Armonk, N.Y., assignors to General Electric Company, a corporation of New York
Filed May 2, 1966, Ser. No. 546,716
Int. Cl. G11b *13/00;* **G06f** *1/00*
U.S. Cl. 340—172.5 **18 Claims**

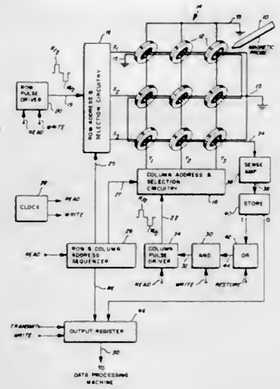


A multiprogram computer system is disclosed in which the memory cells in which the data words are stored are divided into a series of blocks, or sets, of such cells. The data processing unit of the system, when it is to communicate with the memory, supplies a group of signals which symbolically represent the addresses of memory cells, all the cells so addressed in executing a given program being symbolically located in contiguous blocks, or sets, of such cells. The symbolic address of each word is applied to a translating device which produces signals which represent the actual addresses of a cell including the actual block in which such cell is located, but in which the actual blocks, or sets, of cells actually addressed are non-contiguous, and which signals are applied to the memory for transferring a data word between the processor and the memory by means of a transmission member.

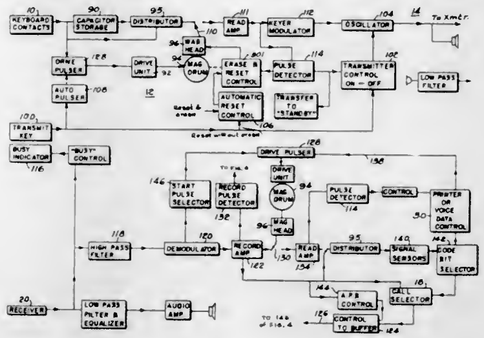
This invention relates to multicomputer and multiprogrammed systems and more particularly to apparatus for exercising management control of a multicomputer or multiprogrammed data processing system.

3,469,242
MANUAL DATA ENTRY DEVICE
Joseph J. Eachus, Cambridge, and Charles L. Bagnaschi, Braintree, Mass., assignors to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware
Filed Dec. 21, 1966, Ser. No. 603,646
Int. Cl. G11c *11/06*
U.S. Cl. 340—172.5 **9 Claims**

Data entry apparatus generates digital information relating to the identification of one or more manual selections made on a pictorial representation of a number of different items projected directly on the entry portion of the apparatus. The entry portion of the apparatus takes the form of a planar surface having an array of bistable elements positioned therein. Each bistable element is positionally located in the array so as to be only associated with an area corresponding to a single one of the items. A selection probe is used for selecting the different items by placing it adjacent the particular bistable element associated with the item. This is effective to partially switch the bistable element. The array of elements is scanned and the associated apparatus is operative to produce a unique output digital signal in the form of an array address to identify each partially switched element in the array. The apparatus is arranged so that the array and associated circuitry store a momentary selection until the apparatus is cleared.

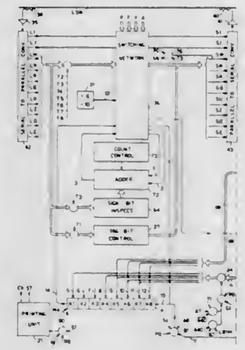


3,469,243
RECEIVING STATION FOR SELECTIVE-CALL DATA SYSTEM
Frederick P. Willcox, 261—1 Oenoke Ridge, New Canaan, Conn. 06840, and Newland F. Smith, New Canaan, Conn.; said Smith assignor to said Willcox
Original application May 12, 1964, Ser. No. 366,792, now Patent No. 3,314,051, dated Apr. 11, 1967. Divided and this application Mar. 29, 1967, Ser. No. 644,417
Int. Cl. G06f *7/00, 15/00*
U.S. Cl. 340—172.5 **2 Claims**



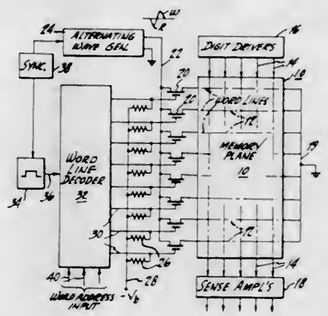
A coded data-storage query and response system including a central data storage and look-up station accessible to a plurality of channel-sharing remote inquiry stations. Means are provided to affix to each query message (from a remote station) a station-identifying code group or groups which are repeated as an address prefix to the response from the central station, and each remote station is provided with means for recognizing its own address code and thereby enabling the storage and subsequent display of the remaining characters of the message. To enable the central station to communicate with all remote stations on a channel, when required, the remote stations are also arranged to receive and display any message prefixed by a distinctive "all-stations" signal.

3,469,244
ELECTRONIC COMPUTER
Pier Giorgio Perotto, Torino, and Giovanni De Sandre, Sacile, Italy, assignors to Ing. C. Olivetti & C., S.p.A., Ivrea, Italy, a corporation of Italy
Continuation of application Ser. No. 435,877, Mar. 1, 1965. This application Jan. 29, 1968, Ser. No. 701,193
Claims priority, application Italy, Mar. 2, 1964, 4,933/64
Int. Cl. G11b *13/00*
U.S. Cl. 340—172.5 **14 Claims**



In an electronic computer for processing mixed-radix represented numbers, a single cyclic serial memory comprises n registers, each one adapted to contain m characters each one including b bits, and is made of a single delay line adapted to contain $n \cdot m \cdot b$ bits, corresponding bits of the several registers being stored in contiguous positions of said delay line.

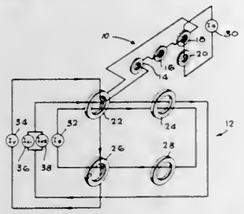
3,469,245
SWITCHING SYSTEM FOR DRIVING READ-WRITE LINES IN A MAGNETIC MEMORY
Anthony D. Robbi, Monmouth Junction, and James W. Tuska, Hopewell Township, Mercer County, N.J., assignors to RCA Corporation, a corporation of Delaware
Filed Dec. 21, 1965, Ser. No. 515,353
Int. Cl. G11b *5/62*
U.S. Cl. 340—174 **7 Claims**



A plurality of bi-directional insulated-gate field-effect transistor switches each have a control electrode connected to a respective word line in a magnetic memory plane. The other current-path electrodes of all transistor switches are connected to a source of alternating current having a substantially sine wave shape and having a period corresponding with a read-write cycle of the memory. A control pulse having a steep leading edge is applied to the control electrode of any selected one of the transistor switches with a timing to render the selected transis-

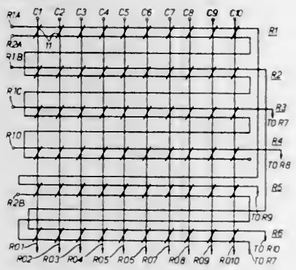
tor switch conductive from a time just before the peak of a half cycle of the alternating current wave to a time just after the peak of the next following half cycle of opposite polarity.

3,469,246
LINEAR SELECT DEVICE
Richard P. Shively and David V. Dickey, Los Angeles, Calif., assignors to Litton Systems, Inc., Beverly Hills, Calif., a corporation of Maryland
Filed Feb. 23, 1966, Ser. No. 529,319
Int. Cl. G11b *5/00*
U.S. Cl. 340—174 **24 Claims**



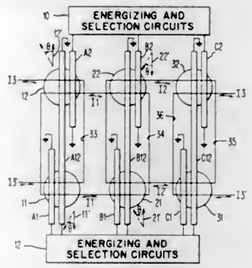
A memory device comprising a storage core matrix and a core selection matrix. Switching means are provided for cyclically switching selected ferromagnetic switching cores from a first to a second and then back to a first remanent state so that the speed of said former transition, timed to coincide with a read mode of operation, is substantially greater than that of the latter transition, timed to coincide with a write mode. The transitional rates are selected to apply different desired magnitudes of magnetomotive force to the selected storage cores in the read-write modes, and these desired transitional rates are obtained by reducing the magnetomotive force in steps during the transition period from the second, back to the first remanent state.

3,469,247
READ-ONLY DIGITAL DATA STORAGE ARRANGEMENT
Brian Alfred Boulter and Barry Dwyer, London, England, assignors to Elliott Brothers (London) Limited, London, England, a British company
Filed Feb. 25, 1966, Ser. No. 530,060
Claims priority, application Great Britain, Mar. 9, 1965, 9,849/65
Int. Cl. G11b *5/02*
U.S. Cl. 340—174 **6 Claims**



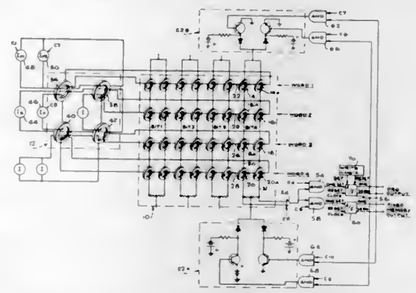
A read-only data storage arrangement comprises a matrix of row and column electrical conductors, with magnetic cores operatively arranged at at least some of the matrix intersections, the stored data being represented by the number and position of the operative cores in each row. Each row has two row conductors which are so linked with the cores of that row as to tend to switch the cores in opposite directions when energised. Thus, successive energisation of the two row conductors of any row produces output signals on the column conductors representing the data stored in that row.

3,469,248
DUAL-TRANSFER MAGNETIC FILM SHIFT REGISTER
Donald T. Best, Plymouth Meeting, Pa., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed June 23, 1966, Ser. No. 559,998
Int. Cl. G11b *5/74*
U.S. Cl. 340—174 **8 Claims**



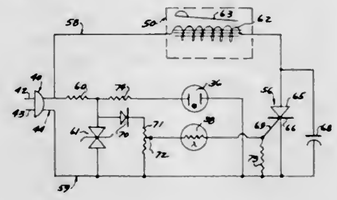
An invention is disclosed for a magnetic shift register wherein flux gain is obtained in the transfer loop coupling the memory locations. The flux gain is obtained during information transfer since any memory element is driven by the output from two cascaded memory elements.

3,469,249
MEMORY FOR SIMULTANEOUSLY STORING FIXED AND ELECTRICALLY ALTERABLE INFORMATION
Richard P. Shively and Burton C. Sigal, Los Angeles, Calif., assignors to Litton Systems, Inc., Beverly Hills, Calif., a corporation of Maryland
Filed June 14, 1966, Ser. No. 557,469
Int. Cl. G11b *5/00*
U.S. Cl. 340—174 **21 Claims**



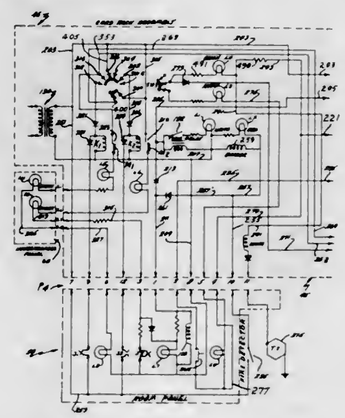
A memory for simultaneously storing electrically alterable and fixed information in an array comprising but a single core per bit. The memory includes ferromagnetic storage cores arranged in sets of bits to form words of storage, with each word of storage being threaded by a separate word drive line; and with a separate pair of sensing lines threading the same bit position of each word, thereby forming two-bit locations per bit. A core is provided at only one of the two-bit locations for each bit according to a fixed memory program. Electrically alterable information is stored in the form of one or the other of the two remanent states of magnetization of the cores, and means are provided for reading out, storing and rewriting the alterable information, said last mentioned means being coupled to both sensing lines of each pair of sensing lines. Additional means, responsive to only a single one of the sensing lines of each pair of sensing lines, is provided for reading the fixed information.

3,469,250
SMOKE, HEAT AND EXCESSIVE MOISTURE MULTIPLE ALARM DEVICE
Robert H. Voigt, Milford, Mich., assignor to Dynatron Incorporated, Milford, Mich., a corporation of Michigan
Filed Apr. 26, 1966, Ser. No. 545,369
Int. Cl. G08b *21/00*
U.S. Cl. 340—237 **12 Claims**



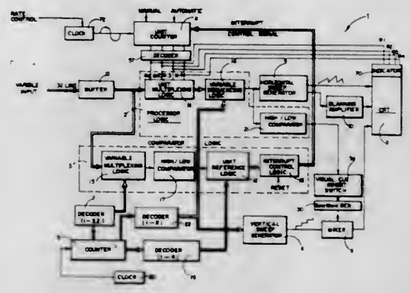
A multiple alarm device for giving an alarm for ambient smoke condition accompanied or not by an elevated temperature and a rapid rate of rise of ambient temperature, and also capable of detecting excessive moisture present in the atmosphere. The device consists of a unit for plugging in an electric outlet which includes a light-proof chamber open to the ambient. A light beam emitted in the chamber and reflected by smoke particles or by moisture condensation on a wall of the chamber is caused to strike a photocell which triggers a solid state switch element for activating an alarm giving member. The solid state switch element is exposed to ambient temperature and automatically triggers an alarm in the event that there is a sudden rise in ambient temperature.

3,469,251
TV SET DISCONNECTION MONITORING SYSTEM
Freeman C. Beilfuss, Wyoming, Mich., assignor to Call-Boy Systems, Inc., Wyoming, Mich., a corporation of Michigan
Original application Sept. 9, 1964, Ser. No. 395,144. Divided and this application July 13, 1967, Ser. No. 666,223
Int. Cl. G08b *13/02, 29/00, 21/00*
U.S. Cl. 340—286 **2 Claims**



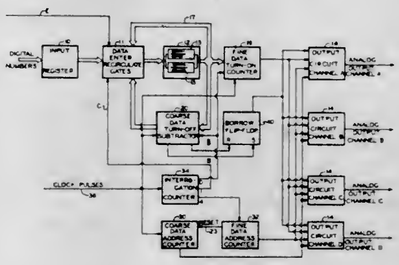
A signalling system for hotels and motels for indicating the status of television sets in respective rooms is disclosed. Means are provided whereby when the television set is disconnected a power drain monitoring circuit indicates this to the desk.

3,469,252
INTEGRATED BAR GRAPH DISPLAY HAVING INTERRUPT CONTROL
Donald V. Bet, Los Alamitos, Calif., assignor to North American Rockwell Corporation
Filed Feb. 6, 1967, Ser. No. 614,129
Int. Cl. G08b *23/00*
U.S. Cl. 340—324 **5 Claims**



A display system for sequentially displaying groups of monitored variables in one form indicating normal variables and in another form indicating an abnormal variable within the group being displayed. The system includes a control circuit for interrupting the normal processing of variables to a display for immediately displaying an abnormal variable under the control of a signal generated as a function of the abnormal variable. The variables are compared with reference quantities for determining abnormal variables before the variables being compared are processed to the display.

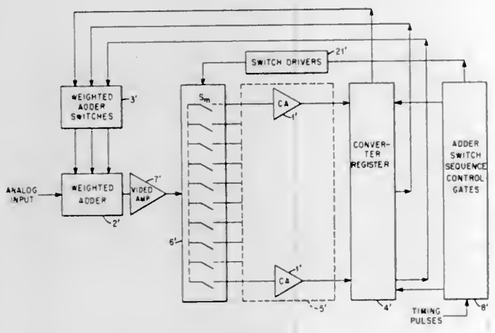
3,469,253
DATA CONVERSION SYSTEM
John M. Hunt, Binghamton, N.Y., assignor to Singer-General Precision, Inc., Binghamton, N.Y., a corporation of Delaware
Filed May 25, 1964, Ser. No. 369,819
Int. Cl. H04l *3/00*
U.S. Cl. 340—347 **20 Claims**



A digital to analog converter formed of an input circuit and a processing circuit connected in common to a plurality of output channels which is capable of handling a plurality of words simultaneously, with the number of words being equal to the number of output channels. The input circuit includes a serial memory device having a delay time measured in discrete time increments equal to at least the number of words being converted. The processing circuit includes a fine data turn-on counter which accepts the fine data of each word and adds a "one" thereto during each time increment until a maximum count is attained to supply a turn-on signal to the output channels. The processing circuit also includes a course data turn-off subtractor which accepts the course data of each word and subtracts a

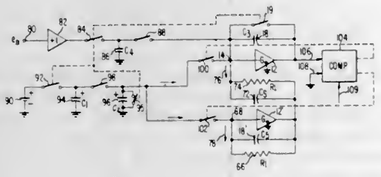
"one" therefrom and supplies the modified course data back into the serial memory device. When the course data subtractor has decremented the course data to a minimum count, a turn-off signal is generated thereby and supplied to the output channels. A source of clock pulses is employed to synchronize the fine data counter, the course data counter, and switching circuitry which is operative to steer each of the turn-on and turn-off signals to the appropriate output channel.

3,469,254
ANALOG-TO-DIGITAL CONVERTER
Malcolm H. Goosey, Aiken, S.C., and Edward R. Brady, Sierra Madre, Calif., assignors to the United States of America as represented by the United States Atomic Energy Commission
Filed Oct. 29, 1965, Ser. No. 505,764
Int. Cl. H03k *13/00;* **G08c**
U.S. Cl. 340—347 **2 Claims**



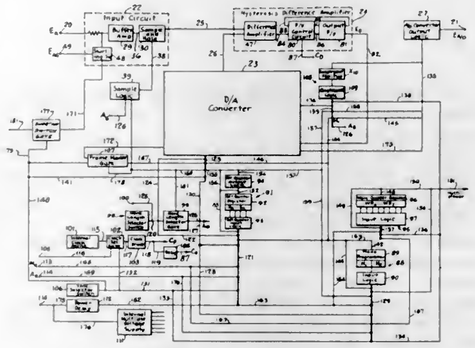
An analog to digital converter having a circuit for adding a series of reference potentials to the analog imput and a series of sequentially operated switches for coupling the resultant potentials to a series of comparator amplifiers. Each comparator amplifier having an on-off or digital output corresponding to a single significant bit which is transmitted to a flip-flop circuit for storage and subsequent readout.

3,469,255
BALANCED CHARGE TRANSFER CIRCUIT
Philip A. Hoffman, Towson, Charles W. Barbour, Timonium, McKenny W. Egerton, Jr., Owings Mills, and Gerard B. Gilbert, Jr., Baltimore, Md., assignors, by mesne assignments, to The Bendix Corporation, a corporation of Delaware
Filed Mar. 8, 1965, Ser. No. 437,948
Int. Cl. H04l *3/00*
U.S. Cl. 340—347 **14 Claims**



Disclosed is a balanced charge transfer circuit for use in capacitive charge transfer analog to digital converters and other circuits. The balanced transfer circuit comprises a pair of high gain amplifiers employing negative capacitive feedback with the output of one amplifier connected to the input of the other through a parallel resistor and capacitor. The balanced circuit substantially reduces the effects of stray capacitance on the transfer of charge.

3,469,256
ANALOG-TO-DIGITAL CONVERTER
Ronald G. Runge, 2824 Jackson Ave., Orange, Calif. 92667
Continuation-in-part of application Ser. No. 277,196, May 1, 1963. This application May 10, 1965, Ser. No. 454,572
Int. Cl. H03k *13/02*
U.S. Cl. 340—347 **14 Claims**

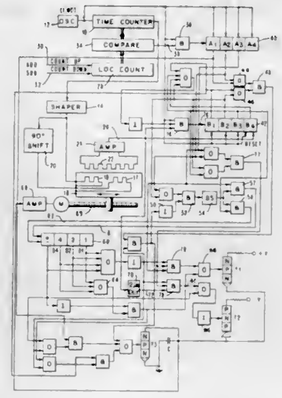


1. Apparatus for converting a bounded, varying analog signal into a frame of digital words, comprising:
an input circuit for receiving said analog signal from an analog system;
a plurality of signal generating means;
signal combining means including means for sequentially coupling said signal generating means to said said signal combining means and producing a series of different trial signals one for each different combination of signal generating means coupled to said signal combining means;
means for generating a correction signal having a magnitude proportional to a difference between ground potentials for said apparatus and said analog system;
means for combining said correction signal and said trial signals to produce corrected trial signals;
comparator means for comparing said analog signal with each corrected trial signal and developing a control signal indicative of said comparison;
means responsive to said control signal for controlling the combination of signal generating means coupled to said signal combining means such that said corrected trial signals approach said analog signal;
and output means responsive to the combination of signal generating means coupled to said signal combining means for developing a digital word indicative of the magnitude of said analog signal.

3,469,257
AUTOMATIC CONTROL APPARATUS
Gerhard E. Hoernes and Edward V. Weber, Poughkeepsie, N.Y., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed Dec. 21, 1965, Ser. No. 515,362
Int. Cl. G08c *9/00*
U.S. Cl. 340—347 **7 Claims**

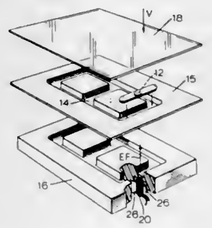
Apparatus for accurately positioning a moveable element such as a machine tool. The position error between a digital address representing the desired location, and

the physical location of the moveable element is calculated by a control circuit. The circuit includes a phase comparator which produces an analog error signal which



is exactly proportional to the position error. The analog signal is utilized to cause the element to move in a direction which tends to reduce the error to zero.

3,469,258
ROTATING MAGNETICALLY ACTUATED DISPLAY OR INDICATOR
Donald Winrow, Downsview, Ontario, Canada, assignor, by mesne assignments, to Ferranti-Packard Limited, Toronto, Ontario, Canada
Filed Nov. 4, 1966, Ser. No. 592,178
Int. Cl. G08b *5/22*
U.S. Cl. 340—373 **13 Claims**

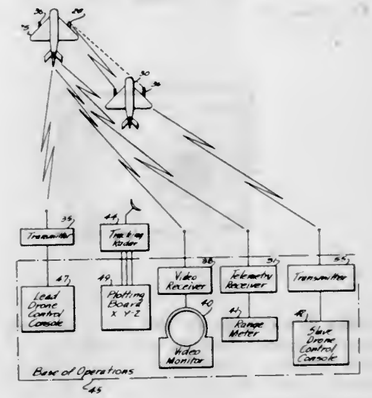


A magnetically actuable display or indicating member carrying a permanent magnet is actuated by an exterior, reversible, permanently magnetizable magnet. The magnet is energized by a pair of windings which each surround said exterior magnet along extents which are at least partially overlapping.

3,469,259
WITHDRAWN

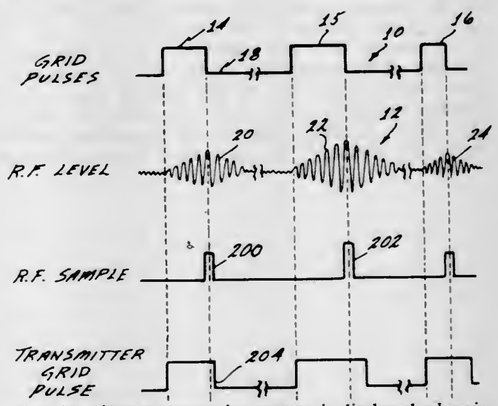
3,469,260
REMOTELY MONITORED AND CONTROLLED AIRBORNE TELEVISION SYSTEM
Lloyd Junior Holt, Ridgecrest, and Harry L. Myers, China Lake, Calif., assignors to the United States of America as represented by the Secretary of the Navy
Filed Jan. 16, 1968, Ser. No. 698,313
Int. Cl. G01s *9/00*
U.S. Cl. 343—6 **4 Claims**

A visual monitoring aid is provided which may be used, for example, for flying a lead drone and one or more slave drone aircraft in precision formation. A lead drone is equipped with a TV pod mounted on the wing. The lead drone is controlled by conventional remote control meth-



ods and the slave drone(s) remotely controlled to fly in a formation position which is within the field of view of the television camera.

3,469,261
PULSE-RADAR DISTANCE-MEASURING SYSTEM
William H. Lambert, Jr., Northridge, and Richard J. Seger, Glendale, Calif., assignors to The Bendix Corporation, a corporation of Delaware
Filed Nov. 28, 1967, Ser. No. 686,061
Int. Cl. G01s *9/06*
U.S. Cl. 343—13 **10 Claims**



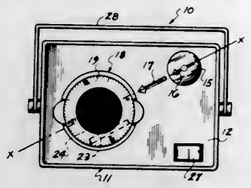
A radar distance-measuring system is disclosed wherein pulses of traveling-wave energy are transmitted over the distance to be measured, and echoes are then sensed to indicate an interval of time which is directly related as a distance measurement. The system includes a cavity oscillator in the transmitter, and controls the amplitude and/or pulse width of the transmitted pulse on the basis of the distance to be measured by controlling the period during which the cavity oscillator is energized. Such control of the somewhat unstable cavity oscillator is accomplished by sampling the output therefrom and utilizing the resulting control signal (in combination with a signal indicative of the presently-observed distance) to control grid-pulse operation of the cavity oscillator, thereby controlling the pulse width and/or amplitude and/or pulse repetition rate of the generated RF pulse.

3,469,262

RADIO DIRECTION FINDER

Edward Frieling, Livingston, N.J., assignor to Electronic Enterprises, Inc., Newark, N.J., a corporation of New Jersey

Filed Nov. 28, 1967, Ser. No. 686,026
Int. Cl. G01s 5/02
U.S. Cl. 343—115 8 Claims



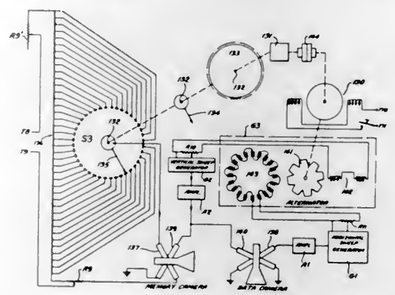
A radio direction finder unit has a movable housing carrying a magnetic compass that includes a magnetized rotatable member cooperable with a marking on the housing by which the housing may be located in a predetermined orientation relative to magnetic north or south. A dial member is rotatable on the housing relative to an index for indicating azimuth angles or directions from the reference magnetic pole and a radio receiver is tunable to the frequencies of radio waves from selected transmitting stations, with at least a directional antenna of such receiver being rotatable with the dial member so that the power of radio waves collected by the antenna is dependent, at least in part, on the direction of the antenna relative to the transmitting station as shown by the dial member and index. The receiver's loudspeaker and/or a meter is used to sense variations in the power of the collected radio waves and thereby aid in disposing the antenna in a predetermined direction relative to the selected transmitting station. Such loudspeaker is positioned relative to the housing to have the axis of its magnet on a line extending through the axis of rotation of the magnetized member of the compass and the cooperating marking on the housing, and the loudspeaker magnet is polarized to supplement the effect of the earth's magnetic field on the magnetized member when the housing is in said predetermined orientation.

3,469,263

CHARACTER RECOGNITION SYSTEM

Gordon van B. King, Convent, N.J., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware

Filed Feb. 9, 1953, Ser. No. 335,944
Int. Cl. G06k 9/12
U.S. Cl. 340—146.3 12 Claims

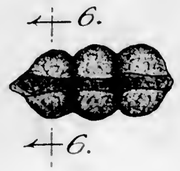


10. A system for processing variable data composed of different discrete conventional legible characters on a record member, comprising means for analyzing the characters one at a time and producing time-sequence pulse combinations varying according to the configurations of the different characters, each different pulse combination being representative of a different one of the characters, means including a magnetic record medium and coacting pick-up for producing in continuously repetitive readout cycles a series of reference time-sequence pulse combinations respectively matching the different character representative pulse combinations, means for effecting pulse-by-pulse comparison between the pulse combination representative of the character being analyzed and one after another of the reference pulse combinations at sequential times of a readout cycle to detect the one matching reference combination, and selective character manifesting means operating under control of the comparison means upon detection of the matching reference combination for effecting a character manifestation depending upon the sequential time of the readout cycle at which the matching reference combination is detected by the comparison means.

DESIGNS

SEPTEMBER 23, 1969

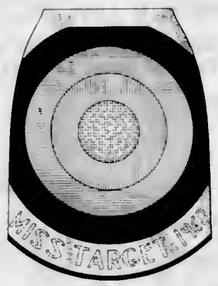
215,260
SNACK FOOD PRODUCT OR THE LIKE
Myron G. Cooper and Richard M. Vondell, Battle Creek, Mich., assignors to Kellogg Company, Battle Creek, Mich., a corporation of Delaware
Filed Oct. 8, 1968, Ser. No. 13,891
Term of patent 14 years
Int. Cl. D1—*01*
U.S. Cl. D1—1



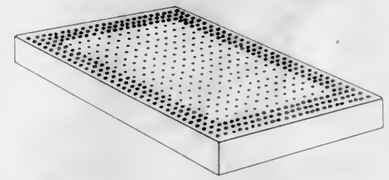
215,261
SNACK FOOD PRODUCT OR THE LIKE
Myron G. Cooper and Kenneth E. Grandon, Jr., Battle Creek, Mich., assignors to Kellogg Company, Battle Creek, Mich., a corporation of Delaware
Filed Feb. 8, 1968, Ser. No. 10,505
Term of patent 14 years
Int. Cl. D1—*01*
U.S. Cl. D1—7



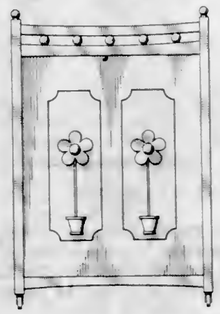
215,262
SKIRT
Meryl L. Stoddard, 7102 E. Oak St., Scottsdale, Ariz. 85257
Filed May 1, 1968, Ser. No. 11,757
Term of patent 14 years
Int. Cl. D2—*01*
U.S. Cl. D2—223



215,263
MATTRESS CORE
Howard G. Haas, Glencoe, Ill., and John J. Corrigan, Huntington, Conn., assignors to Sealy Inc., Chicago, Ill., a corporation of Delaware
Filed May 23, 1967, Ser. No. 7,238
Term of patent 14 years
Int. Cl. D6—*02*
U.S. Cl. D5—2



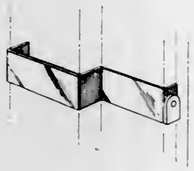
215,264
HEADBOARD
Robert V. Jacobs, Los Angeles, Calif., assignor to Babyline Furniture Corp., Los Angeles, Calif., a corporation of California
Filed May 8, 1968, Ser. No. 11,836
Term of patent 14 years
Int. Cl. D6—*01*
U.S. Cl. D5—4



215,265
HEDGE TRIMMER
George L. Congdon, Fort Atkinson, Wis., assignor to McGraw-Edison Company, Milwaukee, Wis., a corporation of Delaware
Filed Aug. 28, 1968, Ser. No. 13,300
Term of patent 14 years
Int. Cl. D8—*01*
U.S. Cl. D8—8



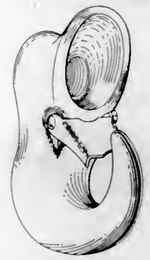
215,266
DOOR LOCK
James Woodcock, 105 Chestnut Drive, East Greenwich, R.I. 02818
Filed May 6, 1968, Ser. No. 11,788
Term of patent 14 years
Int. Cl. D8—*03*
U.S. Cl. D8—109



215,267
KEY
Sam Reisner, Pacific Palisades, Calif., assignor to Osco Corporation, a corporation of California
Filed July 30, 1968, Ser. No. 12,960
Term of patent 14 years
Int. Cl. D8—*03*
U.S. Cl. D8—136



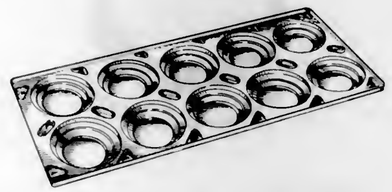
215,268
CRANE HOOK
Glenn Arthur Batchelor, 144 N. Delphia Ave., Brea, Calif. 92621
Filed Sept. 4, 1968, Ser. No. 13,389
Term of patent 14 years
Int. Cl. D8—*03*
U.S. Cl. D8—252



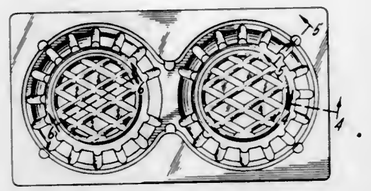
215,269
JAR OR THE LIKE
Walter J. Landor, San Francisco, Calif., assignor to Hills Bros. Coffee, Inc., San Francisco, Calif.
Filed Sept. 20, 1968, Ser. No. 13,628
Term of patent 14 years
Int. Cl. D9—*01*
U.S. Cl. D9—150



215,270
WAFER TRAY
Henry W. Gutsche, St. Louis, Darrell M. Harris, Kirkwood, and Robert J. Walsh, Ballwin, Mo., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware
Filed May 21, 1968, Ser. No. 12,021
Term of patent 14 years
Int. Cl. D9—*04*
U.S. Cl. D9—187



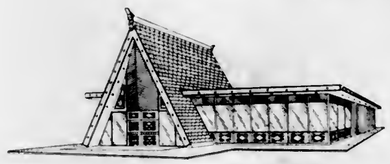
215,271
CUPCAKE CONTAINER
Edward Hildebrand, Jr., Greenwich, Conn., assignor to Chicago Display Company, Melrose Park, Ill., a corporation of Illinois
Filed July 1, 1968, Ser. No. 12,556
Term of patent 14 years
Int. Cl. D9—*04*
U.S. Cl. D9—189



215,272
BAGGING TOOL
Patrick James Walsh, New York, N.Y., and Frederich Carl Heidtke, Neenah, Wis., assignors to American Can Company, a corporation of New York
Filed June 27, 1966, Ser. No. 2,810
Term of patent 14 years
Int. Cl. D9—*08*
U.S. Cl. D9—252



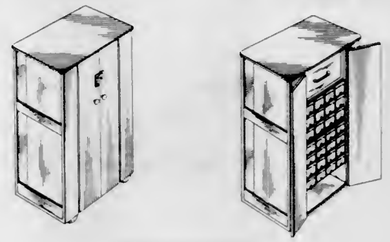
215,273
BUILDING
Sam Horwitz, Chicago, Ill., assignor to Equipment Manufacturing Company, a corporation of Illinois
Filed Dec. 17, 1968, Ser. No. 15,025
Term of patent 14 years
Int. Cl. D25—*04*
U.S. Cl. D13—1



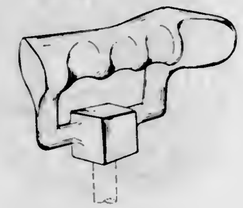
215,274
ARMORED MOTOR VEHICLE
Russell E. Bauer, Grosse Pointe, Mich., assignor to Bauer Ordnance Company, Warren, Mich., a corporation of Michigan
Filed Jan. 2, 1968, Ser. No. 10,030
Term of patent 14 years
Int. Cl. D12—*09*
U.S. Cl. D14—3



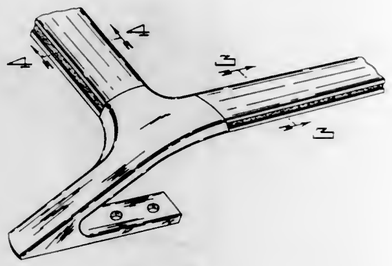
215,275
COMBINATION MEDICAL SUPPLY CART AND CABINET
Lloyd J. Oye, 6714 Crest Road W., Palos Verdes, Peninsula, Calif. 90274
Filed Aug. 8, 1968, Ser. No. 13,063
Term of patent 14 years
Int. Cl. D12—*02*; D24—*02*
U.S. Cl. D14—3



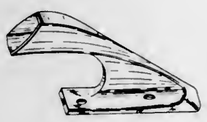
215,276
HANDLE FOR AN AUTOMOBILE SHIFT LEVER OR SIMILAR ARTICLE
David J. Spargo, 963 Hartford Turnpike, Hamden, Conn. 06517
Filed Sept. 16, 1968, Ser. No. 13,544
Term of patent 14 years
Int. Cl. D12—*14*
U.S. Cl. D14—6



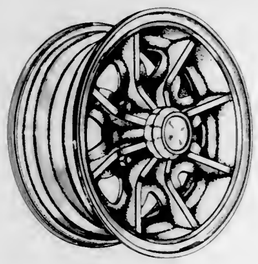
215,277
LUGGAGE RACK
John A. Bott, 931 Lake Shore Drive, Grosse Pointe Shores, Mich. 48236
Original design application Oct. 27, 1967, Ser. No. 9,517, now Patent No. 212,186, dated Sept. 10, 1968. Divided and this application Aug. 5, 1968, Ser. No. 13,382
Term of patent 14 years
Int. Cl. D12—*14*
U.S. Cl. D14—27



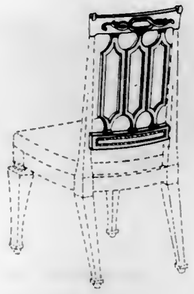
215,278
STANCHION FOR A LUGGAGE RACK
John A. Bott, 931 Lake Shore Drive, Grosse Pointe Shores, Mich. 48236
Filed Oct. 16, 1968, Ser. No. 14,081
Term of patent 14 years
Int. Cl. D12—*14*
U.S. Cl. D14—27



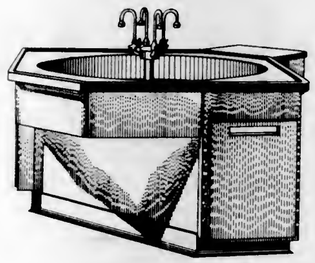
215,279
METAL WHEEL
William Eric Mitchell, Coventry, England, assignor to The Dunlop Company Limited, Birmingham, England, a corporation of Great Britain
Filed Mar. 25, 1968, Ser. No. 11,136
Claims priority, application Great Britain Oct. 18, 1967
Term of patent 14 years
Int. Cl. D12—*14*
U.S. Cl. D14—30



215,280
CHAIR
Wayland B. Parker, South Boston, Va., assignor to Schlumberger Limited (Schlumberger N.V.), New York, N.Y., a corporation of the Netherlands Antilles
Filed May 8, 1968, Ser. No. 11,834
Term of patent 14 years
Int. Cl. D6—*01*
U.S. Cl. D15—1



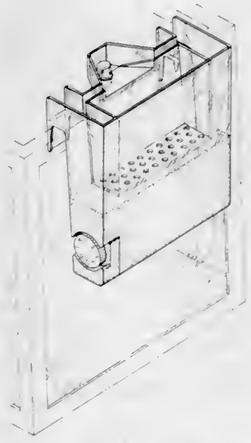
215,281
LABORATORY TABLE UNIT
Arthur W. Carlson, Muskegon, and Thomas C. Linacre, North Muskegon, Mich., assignors to E. H. Sheldon & Company, Muskegon, Mich., a corporation of Michigan
Filed Aug. 5. 1968, Ser. No. 13,035
Term of patent 14 years
Int. Cl. D24—*99*
U.S. Cl. D16—2



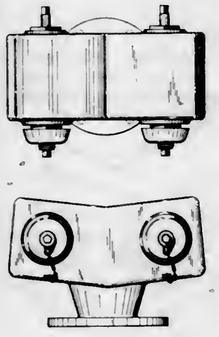
215,282
FISH LURE
Melkiah E. Pope, 2527 Community Ave., Montrose, Calif. 91030
Filed July 22, 1968, Ser. No. 12,844
Term of patent 14 years
Int. Cl. D22—*07*
U.S. Cl. D22—29



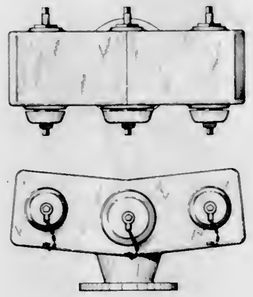
215,283
HOUSING FOR AN AQUARIUM HEATER AND FILTER
Walter Sesholtz, Park Ridge, N.J., assignor to Sternco Industries, Inc., Harrison, N.J., a corporation of New Jersey
Filed Sept. 27, 1968, Ser. No. 13,756
Term of patent 14 years
Int. Cl. D23—*01, 03*
U.S. Cl. D23—4



215,284
FIRE HYDRANT
Edward Page, Walnut Creek, Calif., assignor to M. Greenberg's Sons, Inc., San Francisco, Calif., a corporation of California
Filed Nov. 6, 1968, Ser. No. 14,329
Term of patent 14 years
Int. Cl. D23—*01*
U.S. Cl. D23—12

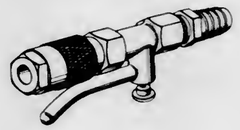


215,285
FIRE HYDRANT
Edward Page, Walnut Creek, Calif., assignor to M. Greenberg's Sons, Inc., San Francisco, Calif., a corporation of California
Filed Nov. 6, 1968, Ser. No. 14,330
Term of patent 14 years
Int. Cl. D23—*01*
U.S. Cl. D23—12



215,286
SPRAY NOZZLE
George W. Meek, 1205 6th St., Page Park, Fort Myers, Fla. 33901
Filed Feb. 21, 1968, Ser. No. 10,682
Term of patent 14 years
Int. Cl. D23—*01*
U.S. Cl. D23—34

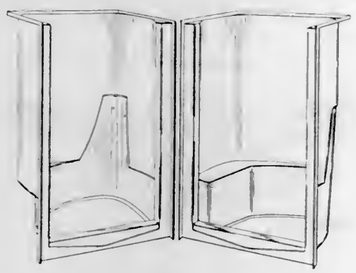
215,287
COMBINED COUPLING AND AIR NOZZLE
Melvin A. Nordeen, 2313 Tully Road, Modesto, Calif. 95350
Filed July 22, 1968, Ser. No. 12,842
Term of patent 14 years
Int. Cl. D23—*01*
U.S. Cl. D23—34



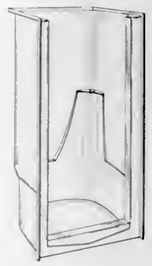
215,288
ADJUSTABLE SHOWER UNIT
Bernard Thomas Thebiay, 1850 N. Whitley Ave., Hollywood, Calif. 90028
Filed July 2, 1968, Ser. No. 12,595
Term of patent 14 years
Int. Cl. D23—*01*
U.S. Cl. D23—35



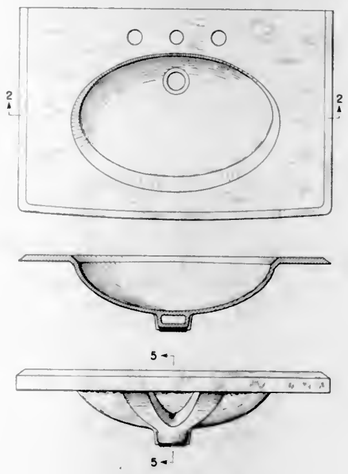
215,289
SHOWER STALL
Merritt W. Seymour, Toledo, Ohio, assignor to Owens-Corning Fiberglas Corporation, a corporation of Delaware
Filed Mar. 29, 1968, Ser. No. 11,199
Term of patent 14 years
Int. Cl. D23—*01*
U.S. Cl. D23—57



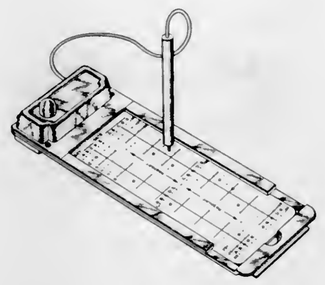
215,290
SHOWER STALL
Merritt W. Seymour, Toledo, Ohio, assignor to Owens-Corning Fiberglas Corporation, a corporation of Delaware
Original design application Mar. 29, 1968, Ser. No. 11,199. Divided and this application Oct. 11, 1968, Ser. No. 14,372
Term of patent 14 years
Int. Cl. D23—*02*
U.S. Cl. D23—57



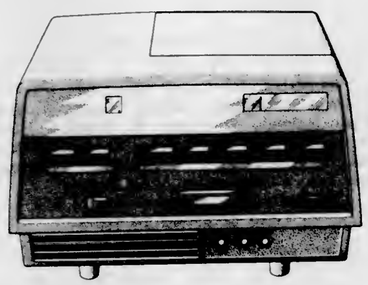
215,291
LAVATORY
Joseph W. Owings, Jeffersonville, Ind., assignor to American Standard Inc., New York, N.Y., a corporation of Delaware
Filed Nov. 29, 1968, Ser. No. 14,722
Term of patent 14 years
Int. Cl. D23—*02*
U.S. Cl. D23—58



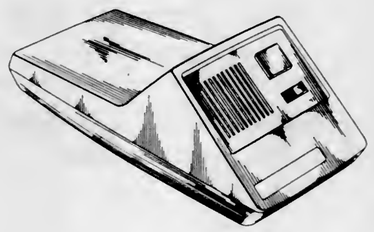
215,292
EDUCATIONAL RESPONDER DEVICE
Steven C. Brandt, Palo Alto, Calif., assignor to Leon Brandt Inc., Palo Alto, Calif., a corporation of California
Filed June 24, 1968, Ser. No. 12,475
Term of patent 14 years
Int. Cl. D19—*08*
U.S. Cl. D25—1



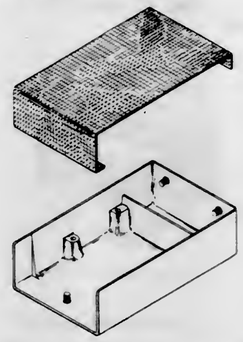
215,293
ELECTRONIC TEACHING UNIT
Yo Sakakibara, Shibuya, P.O. Box 140, Tokyo 150—91, Japan
Filed July 25, 1968, Ser. No. 12,903
Term of patent 14 years
Int. Cl. D19—*08;* D14—*01*
U.S. Cl. D25—1



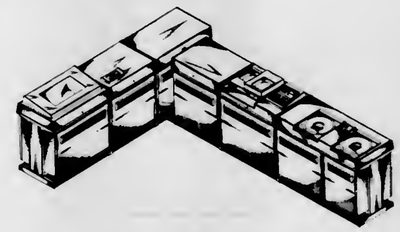
215,294
HOUSING FOR ELECTRONIC APPARATUS
Robert E. Kalvitis, Fairport, N.Y., assignor to Xerox Corporation, Rochester, N.Y., a corporation of New York
Filed May 9, 1968, Ser. No. 11,859
Term of patent 14 years
Int. Cl. D14—*99*
U.S. Cl. D26—5



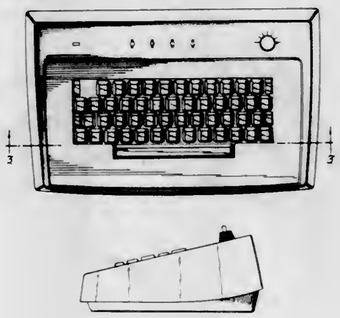
215,295
MINIATURE CABINET FOR ELECTRICAL COMPONENTS
Robert D. Veech, 11 Yates Ave., Commack, N.Y. 11725
Filed Apr. 22, 1968, Ser. No. 11,564
Term of patent 14 years
Int. Cl. D13—*02*
U.S. Cl. D26—5



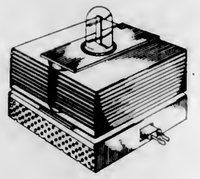
215,296
CONSOLE FOR A DATA PROCESSING SYSTEM
Charles T. Inatomi, Culver City, and Jackson R. Iblings, Manhattan Beach, Calif., assignors to The National Cash Register Company, Dayton, Ohio, a corporation of Maryland
Filed Sept. 25, 1968, Ser. No. 13,708
Term of patent 14 years
Int. Cl. D14—*02*
U.S. Cl. D26—5



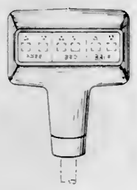
215,297
DATA KEYBOARD
Eugene W. Yeager, Lansdale, Pa., assignor to Digital Information Devices Inc.
Filed Feb. 4, 1969, Ser. No. 15,625
Term of patent 14 years
Int. Cl. D14—*02;* D18—*01*
U.S. Cl. D26—5



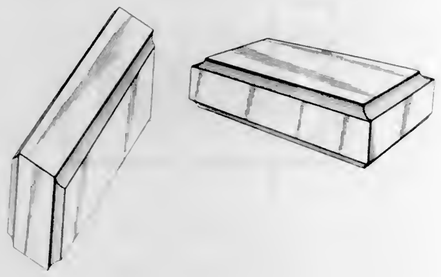
215,298
MAGNETRON DEVICE
Benjamin V. Valles, Williamsport, Pa., assignor to Litton Precision Products, Inc., San Carlos, Calif., a corporation of Delaware
Original design application Feb. 16, 1968, Ser. No. 10,610, now Patent No. 212,758, dated Nov. 19, 1968. Divided and this application Sept. 20, 1968, Ser. No. 13,639
Term of patent 14 years
Int. Cl. D26—*01*
U.S. Cl. D26—8



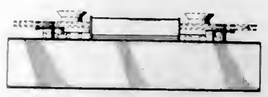
215,299
REMOTE CONTROL HOUSING
Norbert T. Kuypers, Warren, Mich., assignor to Borg-Warner Corporation, Chicago, Ill., a corporation of Delaware
Filed Dec. 26, 1967, Ser. No. 9,933
Term of patent 14 years
Int. Cl. D13—*03;* D8—*03*
U.S. Cl. D26—13

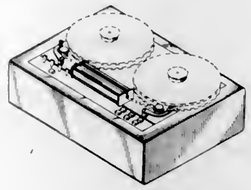


215,300
LOUDSPEAKER UNIT
George Bruce Kamp, Bala Cynwyd, and Stanley Rejniak, New Cumberland, Pa., assignors to International Telephone and Telegraph Corporation, a corporation of Delaware
Filed Nov. 30, 1967, Ser. No. 9,591
Term of patent 14 years
Int. Cl. D14—*01*
U.S. Cl. D26—14

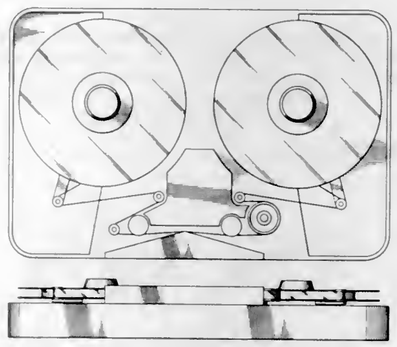


215,301
MAGNETIC TAPE DECK
Earl J. Peterman, Mountain View, Calif., assignor to Metrotech, Inc., Mountain View, Calif., a corporation of California
Filed June 19, 1968, Ser. No. 12,435
Term of patent 14 years
Int. Cl. D14—*01*
U.S. Cl. D26—14

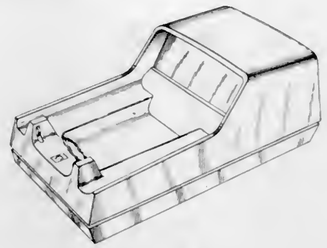




215,302
MAGNETIC TAPE TRANSPORT
Karel Jacobs, Huntington Beach, Agazio S. Gugliotta, Hacienda Heights, Alexander M. Bradley, Huntington Beach, Charles E. Wallace, Palos Verdes, and Robert C. Mallon, La Habra, Calif., assignors to Vanguard Data Systems, Inc., a corporation of California
Filed Dec. 9, 1968, Ser. No. 14,842
Term of patent 14 years
Int. Cl. D14—*01*
U.S. Cl. D26—14



215,303
STAND FOR A SELF-CHARGING HAIR CLIPPER
Herbert R. Carpenter, Chicago, Ill., assignor to Andis Clipper Co., Racine, Wis., a corporation of Wisconsin
Filed Dec. 5, 1968, Ser. No. 14,815
Term of patent 14 years
Int. Cl. D13—*02*
U.S. Cl. D26—15



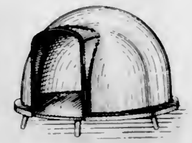
215,304
ILLUMINABLE CHRISTMAS DECORATION
Otto Kadmon and Alice Kadmon, both of 144—37 76th Road, Flushing, N.Y. 11367
Filed Dec. 16, 1968, Ser. No. 15,034
Term of patent 7 years
Int. Cl. D11—*05*
U.S. Cl. D29—1



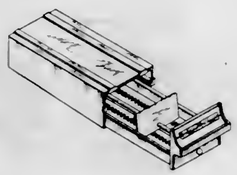
215,305
GOLF FIGURINE
Joseph D. Petito, 189 W. 232nd Place, Wilmington, Calif. 90744
Filed Mar. 28, 1968, Ser. No. 11,167
Term of patent 7 years
Int. Cl. D11—*02*
U.S. Cl. D29—23



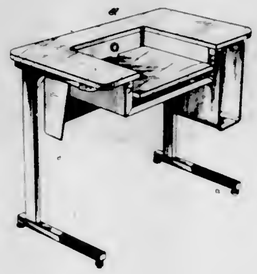
215,306
DOGHOUSE
Thayer J. Hoff, 6817 N. 22nd Place, Phoenix, Ariz. 85016
Filed Dec. 11, 1968, Ser. No. 14,894
Term of patent 14 years
Int. Cl. D30—*01*
U.S. Cl. D30—1



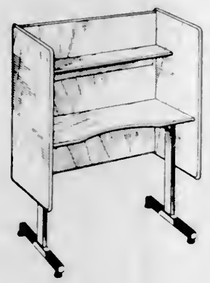
215,307
FILING DRAWER UNIT
Charles M. Huck, New Brunswick, N.J., assignor to Estey Corporation, Red Bank, N.J., a corporation of New York
Filed Sept. 25, 1968, Ser. No. 13,713
Term of patent 14 years
Int. Cl. D6—*99*
U.S. Cl. D33—1



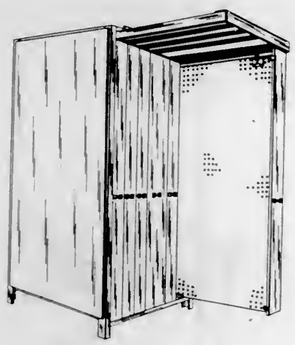
215,308
TYPEWRITER DESK
Raymond C. Barnes, Temple, Tex., assignor to American Desk Manufacturing Company, Temple, Tex., a corporation of Texas
Filed May 29, 1968, Ser. No. 12,133
Term of patent 14 years
Int. Cl. D6—*01*
U.S. Cl. D33—7



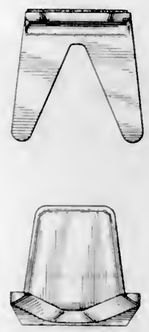
215,309
STUDY CARREL
Raymond C. Barnes, Temple, Tex., assignor to American Desk Manufacturing Company, Temple, Tex., a corporation of Texas
Filed May 29, 1968, Ser. No. 12,134
Term of patent 14 years
Int. Cl. D6—*01*
U.S. Cl. D33—11



215,310
TOOL STORAGE CABINET OR THE LIKE
Robert G. Marks, 35 Cottage St., Watertown, Mass. 02172
Filed Feb. 21, 1968, Ser. No. 10,669
Term of patent 14 years
Int. Cl. D6—*01*
U.S. Cl. D33—19



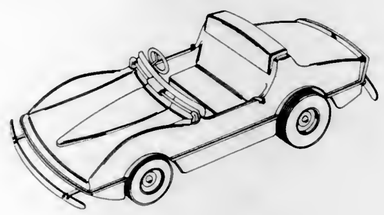
215,311
TUBE HOLDER
Robert E. Born, 4111 St. Charles Road, Bellwood, Ill. 60104
Filed Oct. 1, 1968, Ser. No. 13,804
Term of patent 3½ years
Int. Cl. D6—*01*
U.S. Cl. D33—22



215,312
TOY DINOSAUR HEAD
Terry L. Bernard, Cincinnati, Ohio, assignor to Kenner Products Company, Cincinnati, Ohio, a corporation of Delaware
Filed Nov. 14, 1968, Ser. No. 14,469
Term of patent 14 years
Int. Cl. D21—*02*
U.S. Cl. D34—2



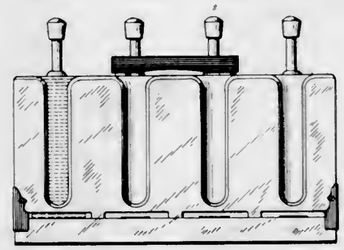
215,313
AMUSEMENT RIDE AUTO
Robert H. Gurr, Los Angeles, Calif., assignor to Wed Enterprises, Inc., Glendale, Calif., a corporation of California
Filed Nov. 14, 1968, Ser. No. 14,446
Term of patent 14 years
Int. Cl. D21—*04*
U.S. Cl. D34—5



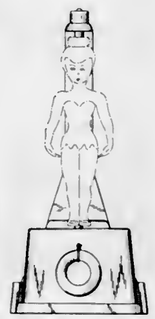
215,314
HANDGRIP FOR GOLF CLUB
Albert P. Jackson, 2800 Fleur Drive, Bldg. 4, Apt. 301, Des Moines, Iowa 50321
Filed Jan. 21, 1969, Ser. No. 15,420
Term of patent 14 years
Int. Cl. D21—*03*
U.S. Cl. D34—5



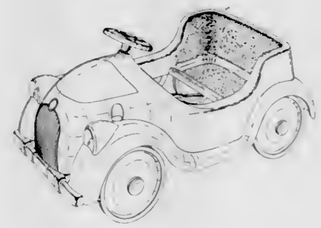
215,315
POKER CHIP DISPENSING DEVICE
Nicholas Hall, 615 Pine St., Reading, Pa. 19602
Filed July 30, 1968, Ser. No. 12,958
Term of patent 14 years
Int. Cl. D21—*01*
U.S. Cl. D34—13



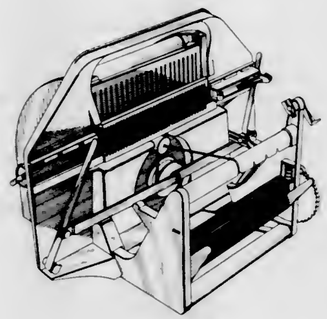
215,316
TWIRLING FIGURINE TOY
Frank Kohner, New York, N.Y., and Albert Stubbman, Franklin Lakes, N.J., assignors to Kohner Bros., Inc., East Paterson, N.J., a corporation of New York
Filed Nov. 12, 1968, Ser. No. 14,393
Term of patent 14 years
Int. Cl. D21—*02*
U.S. Cl. D34—15



215,317
PEDAL CAR
Christopher John Hood, Tolworth, Surrey, England, assignor to Tri-Ang Toys Limited, London, England, a British company
Filed Nov. 20, 1968, Ser. No. 14,545
Claims priority, application Great Britain Sept. 4, 1968
Term of patent 7 years
Int. Cl. D21—*04*; D12—*13*
U.S. Cl. D34—15



215,318
TOY WEAVING MACHINE
Gerald M. Rodmaker and Jacob M. Burkart, Cincinnati, Ohio, assignors to Kenner Products Company, Cincinnati, Ohio, a corporation of Delaware
Filed Nov. 21, 1968, Ser. No. 14,565
Term of patent 14 years
Int. Cl. D21—*02*
U.S. Cl. D34—15



215,319
DECORATIVE PICK FOR ATTACHMENT OF FLOWERS TO A BASE MATERIAL
Saul Klayman, Mattapan, Mass., assignor to Kandy-Pak, Inc., Roslindale, Mass.
Filed Aug. 23, 1968, Ser. No. 13,253
Term of patent 14 years
Int. Cl. D8—*01*
U.S. Cl. D35—1



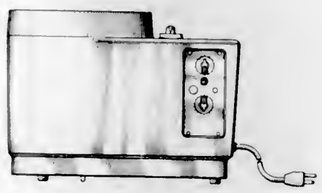
215,320
DECORATIVE FLORAL STAKE
Saul Klayman, Mattapan, Mass., assignor to Kandy-Pak, Inc, Roslindale, Mass.
Filed Aug. 23, 1968, Ser. No. 13,252
Term of patent 14 years
Int. Cl. D31
U.S. Cl. D35—1



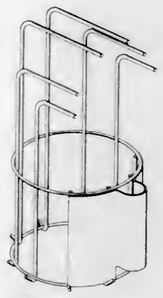
215,321
CANDY DISH OR SIMILAR ARTICLE
Oscar Jacob, 453 S. Las Palmas Ave., Los Angeles, Calif. 90005
Filed Nov. 1, 1968, Ser. No. 14,267
Term of patent 7 years
Int. Cl. D7—*01*
U.S. Cl. D36—2



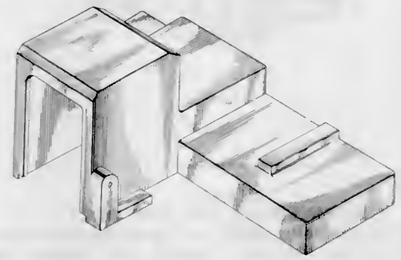
215,322
LAPPING MACHINE
Leonard E. Zerlaut, Santa Ana, Calif., assignor to Conrac Corporation, Duarte, Calif., a corporation of New York
Filed July 10, 1968, Ser. No. 12,675
Term of patent 14 years
Int. Cl. D15—*99*
U.S. Cl. D37—1



215,323
FRUIT PICKER HEAD
John C. Humenay, Rte. 2, Box 20, Spring, Tex. 77373
Filed Oct. 24, 1968, Ser. No. 14,159
Term of patent 14 years
Int. Cl. D8—*01*
U.S. Cl. D40—1



215,324
FRAME FOR A COIL WINDING MACHINE
Lawrence T. Fleming, 440 S. Carmelo Ave., Pasadena, Calif. 91107
Filed Nov. 6, 1967, Ser. No. 9,285
Term of patent 14 years
Int. Cl. D15—*99*
U.S. Cl. D41—1



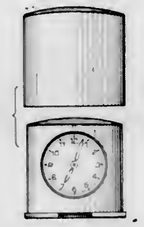
215,325
CHOCK
Joseph Merlo, M.R. 23, Morristown, N.J. 07960
Filed Nov. 19, 1968, Ser. No. 14,534
Term of patent 14 years
Int. Cl. D12—*99*
U.S. Cl. D41—1



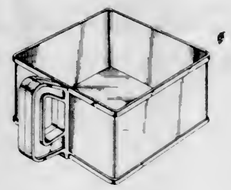
215,326
POCKET WATCH OR THE LIKE
Mel Appel, Short Hills, N.J., assignor to General Time Corporation, Stamford, Conn., a corporation of Connecticut
Filed Apr. 14, 1967, Ser. No. 6,706
Term of patent 14 years
Int. Cl. D10—*02*
U.S. Cl. D42—8



215,327
POCKET WATCH OR THE LIKE
Mel Appel, Short Hills, N.J., assignor to General Time Corporation, Stamford, Conn., a corporation of Connecticut
Original design application Apr. 14, 1967, Ser. No. 6,706. Divided and this application Oct. 24, 1967, Ser. No. 9,301
Term of patent 14 years
Int. Cl. D10—*02*
U.S. Cl. D42—8



215,328
HOLDER FOR A DAIRY PRODUCT CARTON OR THE LIKE
Gino Fera, 1230 Commercial Drive, Vancouver, British Columbia, Canada
Filed Aug. 30, 1967, Ser. No. 8,427
Term of patent 14 years
Int. Cl. D7—*99*
U.S. Cl. D44—21



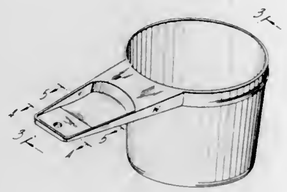
215,329
INTERLOCKING FINGER RING
Daniel Shiman, Maplewood, N.J., assignor to Shiman Manufacturing Company, Inc., Newark, N.J., a corporation of New York
Filed July 14, 1967, Ser. No. 7,800
Term of patent 14 years
Int. Cl. D11—*01*
U.S. Cl. D45—10



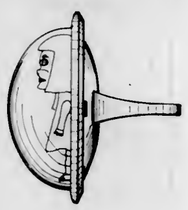
215,330
PLATE
Francis M. Mair, Berkeley, Calif., assignor, by mesne assignments, to St. Regis Paper Company, New York, N.Y., a corporation of New York
Filed Jan. 17, 1969, Ser. No. 15,394
Term of patent 14 years
Int. Cl. D7—*01*
U.S. Cl. D44—15



215,331
MEASURING CUP
James B. Swett, Barrington, R.I., and Sidney Z. Smith, Worcester, Mass., assignors to Rexall Drug and Chemical Company, Los Angeles, Calif., a corporation of Delaware
Filed Aug. 12, 1968, Ser. No. 13,094
Term of patent 14 years
Int. Cl. D7—*99*
U.S. Cl. D44—29



215,332
COMBINED FINGER RING AND DOLL
Erin Libby, Hermosa Beach, Calif., assignor to Mattel, Inc., a corporation of California
Filed Dec. 12, 1967, Ser. No. 9,751
Term of patent 14 years
Int. Cl. D11—*01*
U.S. Cl. D45—10



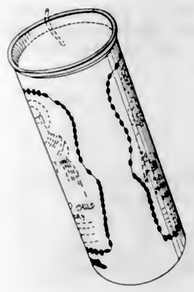
215,333
RING
Louis P. Solomon, 3600 N. Talman Ave., Chicago, Ill. 60618
Filed Aug. 30, 1968, Ser. No. 13,330
Term of patent 14 years
Int. Cl. D11—*01*
U.S. Cl. D45—10



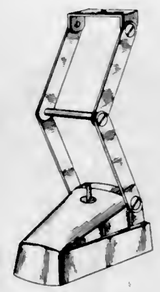
215,334
COMBINED LOCKET AND DOLL
Guy J. Colwell, Hollywood, Erin Libby, Hermosa Beach, Cyril Gordon Shireman, Rolling Hills Estates, and David Weissmann, Palos Verdes Estates, Calif., assignors to Mattel, Inc., a corporation of California
Filed Nov. 16, 1967, Ser. No. 9,449
Term of patent 14 years
Int. Cl. D11—*01*
U.S. Cl. D45—15



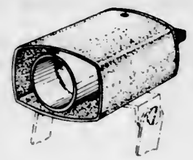
215,335
HOLDER FOR A RELIGIOUS CANDLE
Roy Valle, also known as Hugo Della Valle, 158 Columbia St., Brooklyn, N.Y. 11231
Filed Nov. 1, 1968, Ser. No. 14,337
Term of patent 14 years
Int. Cl. D26—*05*
U.S. Cl. D48—2



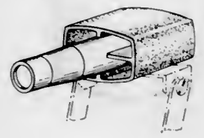
215,336
BASE FOR A HIGH-INTENSITY LAMP
Warren C. Portman, Peekskill, and Alex J. Weinstein, Croton-on-Hudson, N.Y., assignors to The Ednalite Corporation, Peekskill, N.Y., a corporation of New York
Filed Oct. 29, 1968, Ser. No. 14,212
Term of patent 14 years
Int. Cl. D26—*02*
U.S. Cl. D48—20



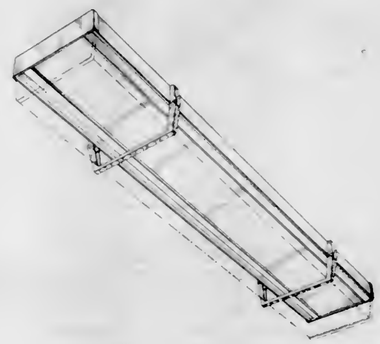
215,337
LAMP HOUSING FOR HIGH INTENSITY READING OR WORK
Warren C. Portman, Peekskill, and Alex J. Weinstein, Croton-on-Hudson, N.Y., assignors to The Ednalite Corporation, Peekskill, N.Y., a corporation of New York
Filed Oct. 29, 1968, Ser. No. 14,221
Term of patent 14 years
Int. Cl. D26—*02*
U.S. Cl. D48—20



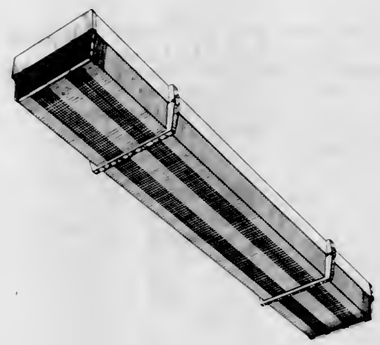
215,338
LAMP HOUSING FOR A SPOTLIGHT
Warren Conrad Portman, Peekskill, and Alex J. Weinstein, Croton-on-Hudson, N.Y., assignors to The Ednalite Corporation, Peekskill, N.Y., a corporation of New York
Filed Oct. 31, 1968, Ser. No. 14,255
Term of patent 14 years
Int. Cl. D26—*02*
U.S. Cl. D48—20



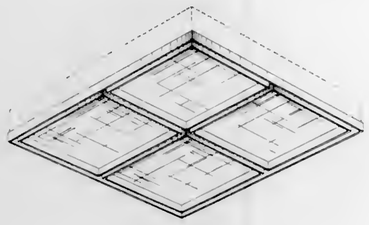
215,339
LUMINAIRE
Vearl S. Wince, Newark, Ohio, assignor to Holophane Company, Inc., New York, N.Y., a corporation of Delaware
Original design application May 19, 1967, Ser. No. 7,190. Divided and this application Feb. 19, 1968, Ser. No. 13,407
Term of patent 14 years
Int. Cl. D26—*03*
U.S. Cl. D48—23



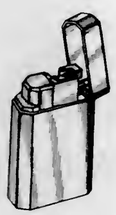
215,340
LUMINAIRE
Vearl S. Wince, Newark, Ohio, assignor to Holophane Company, Inc., New York, N.Y., a corporation of Delaware
Filed May 19, 1967, Ser. No. 7,190
Term of patent 14 years
Int. Cl. D26—*02*
U.S. Cl. D48—23



215,341
LIGHTING FIXTURE
Gerard Edmund Mulvey, 36 Castle Frank Road, and George Elliott Boake, 6 Maple Ave., both of Toronto, Ontario, Canada
Filed Jan. 16, 1968, Ser. No. 10,188
Term of patent 14 years
Int. Cl. D26—*02*
U.S. Cl. D48—23



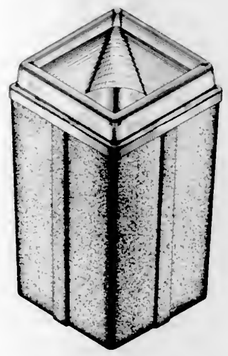
215,342
POCKET LIGHTER
Kenjiro Goto, Tokyo, Japan, assignor to Mansei Kogyo Kabushiki Kaisha, Kawaguchi, Saitama Prefecture, Japan, a joint-stock company of Japan
Filed Oct. 21, 1968, Ser. No. 14,085
Term of patent 14 years
Int. Cl. D27—*05*
U.S. Cl. D48—27



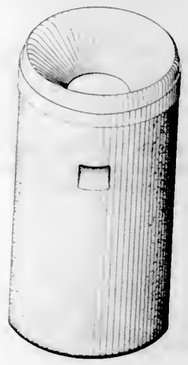
215,343
CARRYING BAG FOR LAUNDRY AND THE LIKE
James Christie, La Puente, Calif.
(5656 Cedarglen Drive, Azusa, Calif. 91702)
Filed Aug. 24, 1967, Ser. No. 8,373
Term of patent 14 years
Int. Cl. D7—*06*
U.S. Cl. D49—8.1



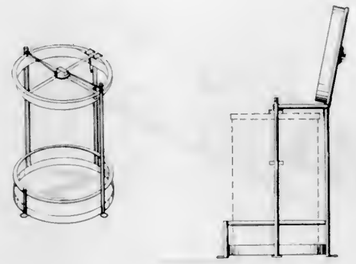
215,344
TRASH RECEPTACLE OR THE LIKE
Raymond J. Mangold, Montville, and Clayton S. Myers, Fanwood, N.J., assignors, by mesne assignments, to Continental Manufacturing Company, St. St. Louis, Mo., a corporation
Filed July 10, 1968, Ser. No. 12,673
Term of patent 14 years
Int. Cl. D7—*06*
U.S. Cl. D49—30



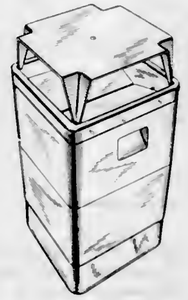
215,345
TRASH RECEPTACLE OR THE LIKE
Raymond J. Mangold, Montville, and Clayton S. Myers, Fanwood, N.J., assignors, by mesne assignments, to Continental Manufacturing Company, St. Louis, Mo., a corporation
Filed July 10, 1968, Ser. No. 12,681
Term of patent 14 years
Int. Cl. D7—*06*
U.S. Cl. D49—30



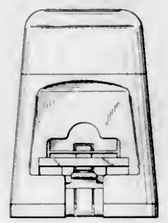
215,346
TUBULAR CAN HOLDER OR SIMILAR ARTICLE
John Aldape, 1300 Santa Paula, Boise, Idaho 83702
Filed Sept. 30, 1968, Ser. No. 13,768
Term of patent 14 years
Int. Cl. D7—*99*
U.S. Cl. D49—35



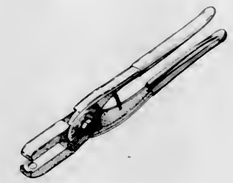
215,347
TRASH RECEPTACLE OR THE LIKE
Raymond J. Mangold, Montville, and Clayton S., Myers, Fanwood, N.J., assignors, by mesne assignments, to Continental Manufacturing Company, St. Louis, Mo., a corporation
Filed Oct. 4, 1968, Ser. No. 13,846
Term of patent 14 years
Int. Cl. D7—*06*
U.S. Cl. D49—35



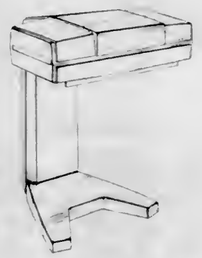
215,348
BUTTER PAT DISPENSER
Leila R. Chenkin, 525 E. 86th St., New York, N.Y. 10028
Filed Nov. 18, 1968, Ser. No. 14,507
Term of patent 3½ years
Int. Cl. D7—*99*
U.S. Cl. D52—2



215,349
LIVESTOCK EAR TAG CLAMP HOLDING AND CLOSING PLIERS
Herman J. McMurray, Seal Beach, Calif. (P.O. Box 18948, Los Angeles, Calif. 90018)
Filed Aug. 6, 1968, Ser. No. 13,042
Term of patent 14 years
Int. Cl. D8—*01*
U.S. Cl. D54—13



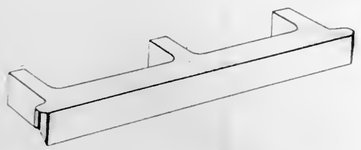
215,350
WORK TRANSPORTING MACHINE OR SIMILAR ARTICLE
Russell A. Fritts, Boonton, N.J., assignor to The Singer Company, New York, N.Y., a corporation of New Jersey
Filed July 3, 1968, Ser. No. 12,617
Term of patent 14 years
Int. Cl. D15—*05*
U.S. Cl. D55—1



215,351
MOLD SHOE FOR MAKING CONCRETE BLOCKS
Loring Pickering, 5005 Townsend Way, Bladensburg, Md. 20710
Filed Sept. 23, 1968, Ser. No. 13,657
Term of patent 14 years
Int. Cl. D15—*99*
U.S. Cl. D55—1



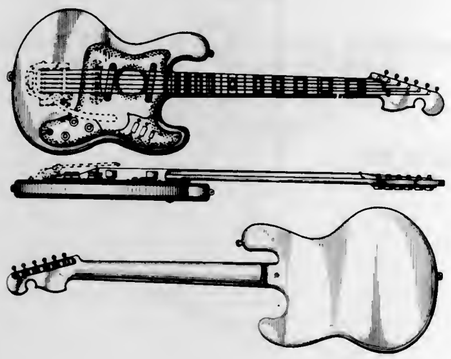
215,352
MOLD SHOE FOR MAKING CONCRETE BLOCKS
Loring Pickering, 5005 Townsend Way, Bladensburg, Md. 20710
Filed Sept. 23, 1968, Ser. No. 13,659
Term of patent 14 years
Int. Cl. D15—*99*
U.S. Cl. D55—1



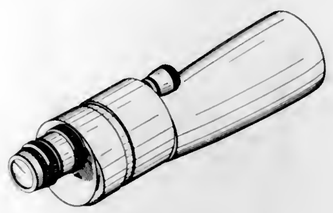
215,353
STRINGED MUSICAL INSTRUMENT
Paul Daniel Broussard, Andrew, La. (Rte. 2, Box 271, Kaplan, La. 70548)
Filed Apr. 29, 1968, Ser. No. 11,690
Term of patent 14 years
Int. Cl. D17—*03*
U.S. Cl. D56—1



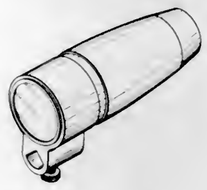
215,354
STRINGED MUSICAL INSTRUMENT
Paul Daniel Broussard, Andrew, La. (Rte. 2, Box 271, Kaplan, La. 70548)
Filed Apr. 29, 1968, Ser. No. 11,691
Term of patent 14 years
Int. Cl. D17—*03*
U.S. Cl. D56—1



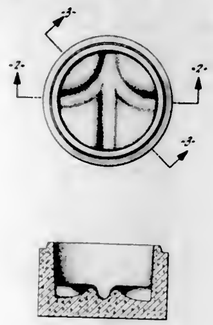
215,355
SPOTTING SCOPE
Roy E. Weatherby, 7549 E. 4th Place, Downey, Calif. 90241, and Fred L. Jennie, 6481 Victoria Circle, Buena Park, Calif. 90620
Filed Oct. 29, 1968, Ser. No. 14,215
Term of patent 14 years
Int. Cl. D16—*08;* D22—*02*
U.S. Cl. D57—1



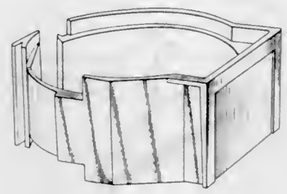
215,356
SCOPE SIGHTER
Roy E. Weatherby, 7549 E. 4th Place, Downey, Calif. 90241, and Fred L. Jennie, 6481 Victoria Circle, Buena Park, Calif. 90620
Filed Oct. 29, 1968, Ser. No. 14,217
Term of patent 14 years
Int. Cl. D16—*08;* D22—*02*
U.S. Cl. D57—1



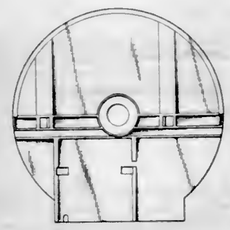
215,357
PRECAST CONCRETE MANHOLE BASE SECTION
Edgar L. Nelson, Carmichael, and Herman W. Davis, Pollock Pines, Calif., assignors to A. Teichert & Son, Inc., a corporation of California
Filed Oct. 30, 1968, Ser. No. 14,416
Term of patent 14 years
Int. Cl. D25—*5*
U.S. Cl. D60—2



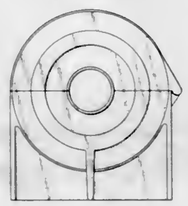
215,358
FILM CARTRIDGE OR SIMILAR ARTICLE
Frederick G. Knowles and Elmer O. Wangerin, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed May 20, 1968, Ser. No. 12,014
Term of patent 14 years
Int. Cl. D16—*99*
U.S. Cl. D61—1



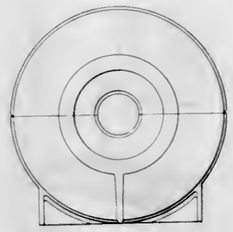
215,359
FILM CARTRIDGE OR THE LIKE
John J. Bundschuh, Penfield, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed May 23, 1968, Ser. No. 12,053
Term of patent 14 years
Int. Cl. D16—*99*
U.S. Cl. D61—1



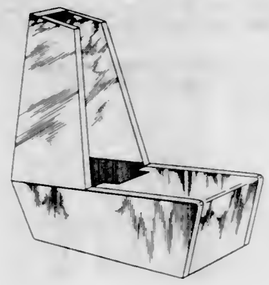
215,360
FILM CARTRIDGE OR THE LIKE
John J. Bundschuh, Penfield, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed May 23, 1968, Ser. No. 12,057
Term of patent 14 years
Int. Cl. D16—*99*
U.S. Cl. D61—1



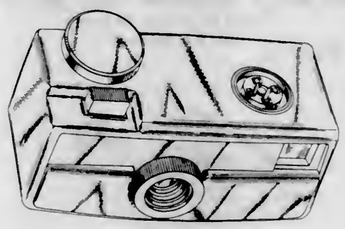
215,361
FILM CARTRIDGE OR THE LIKE
John J. Bundschuh, Penfield, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed May 23, 1968, Ser. No. 12,056
Term of patent 14 years
Int. Cl. D16—*09*
U.S. Cl. D61—1



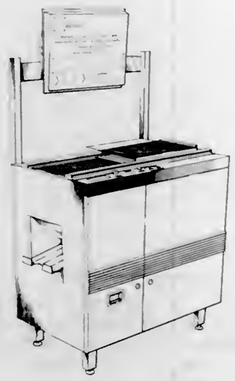
215,362
PROJECTOR SUPPORT HOUSING
William S. Chipping, Westmount, Quebec, Canada, assignor to Northern Electric Company Limited, Montreal, Quebec, Canada
Filed May 16, 1968, Ser. No. 11,966
Term of patent 14 years
Int. Cl. D16—*03*
U.S. Cl. D61—1



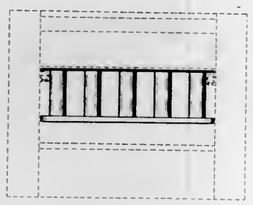
215,363
PHOTOGRAPHIC CAMERA OR SIMILAR ARTICLE
Peter T. Quinn, Brighton, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed June 17, 1968, Ser. No. 12,387
Term of patent 14 years
Int. Cl. D16—*01*
U.S. Cl. D61—1



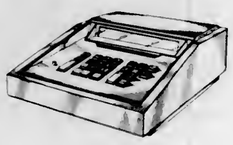
215,364
COPYING MACHINE
Charles W. Giebelhausen, Buffalo Grove, Ill., assignor to Sescon Industries, Inc., a corporation of Illinois
Continuation of design application Ser. No. 9,726, Dec. 11, 1967. This application July 2, 1968, Ser. No. 12,691
Term of patent 14 years
Int. Cl. D14—*02*
U.S. Cl. D61—1



215,365
DIE PRESS PLATEN
Robert Garwin, % Ormont Machine Co. Inc., 687 Broadway, New York, N.Y. 10012
Continuation-in-part of design application Ser. No. 10,442, Feb. 5, 1968. This application Nov. 4, 1968, Ser. No. 14,674
Term of patent 14 years
Int. Cl. D15—*05*
U.S. Cl. D63—1



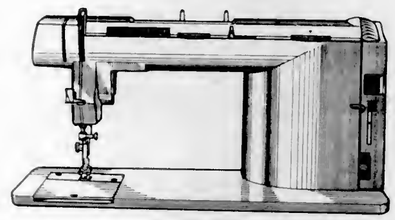
215,366
DESK ELECTRONIC CALCULATOR
Tetsuo Kashiwagi, Yasuhiro Koshido, and Yasukazu Orikasa, Tokyo, Japan, assignors to Hitachi, Ltd., Tokyo, Japan, a corporation of Japan
Filed Sept. 6, 1968, Ser. No. 13,410
Claims priority, application Japan Apr. 5, 1968
Term of patent 14 years
Int. Cl. D18—*01*
U.S. Cl. D64—11



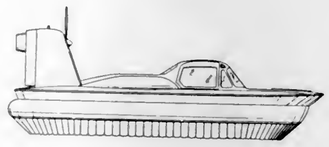
215,367
HANGER
Joseph Y. Pelavin, North Bergen, N.J., assignor to Lark Luggage Corporation, New York, N.Y.
Filed Dec. 23, 1968, Ser. No. 15,089
Term of patent 14 years
Int. Cl. D6—*07*
U.S. Cl. D80—8



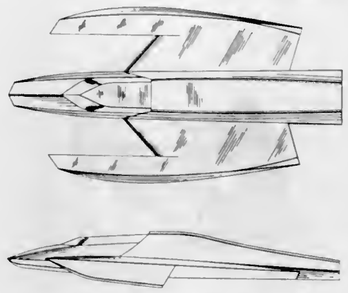
215,368
DESIGN FOR A SEWING MACHINE
Marco Zanuso, Milan, Italy, and Richard F. Sapper, Stuttgart-Degerloch, Germany, assignors to Necchi Società per Azioni, Pavia, Italy
Filed May 10, 1968, Ser. No. 11,886
Claims priority, application Italy Nov. 14, 1967
Term of patent 14 years
Int. Cl. D15—*09*
U.S. Cl. D70—1



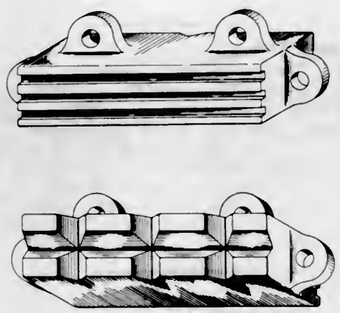
215,369
AIR-CUSHION VEHICLE
Paul Dominic Davis, 4 Firtree Grove, Butt Ash Lane, Hythe, Southampton, England
Filed Dec. 17, 1968, Ser. No. 15,028
Claims priority, application Great Britain July 17, 1968
Term of patent 14 years
Int. Cl. D12—*06*
U.S. Cl. D71—1



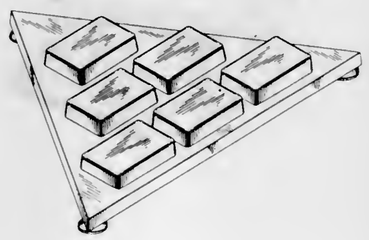
215,370
BOAT
Dale E. Calkins, 4070 Gros Ventre, San Diego, Calif. 92117, and Bruce W. Bryant, 1007 Q St., Renton, Wash. 98055
Filed Nov. 4, 1968, Ser. No. 14,310
Term of patent 14 years
Int. Cl. D12—*06*
U.S. Cl. D71—1



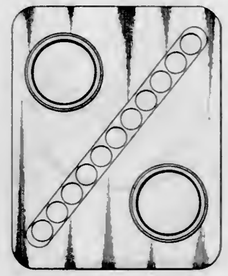
215,371
BOAT FENDER OR SIMILAR ARTICLE
Neil Peacock, 4441 S. 12 St., Sheboygan, Wis. 53081
Filed Sept. 16, 1968, Ser. No. 13,545
Term of patent 7 years
Int. Cl. D12—*99*
U.S. Cl. D71—1



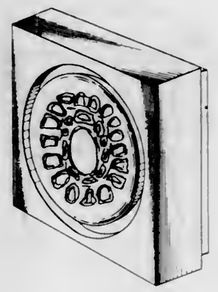
215,372
FLASHING SIGNAL UNIT
Robert D. Kahn, 24 Maple Ave., Rockville Centre, N.Y. 11570
Continuation-in-part of design application Ser. No. 9,385, Nov. 13, 1967. This application May 23, 1968, Ser. No. 12,593
Term of patent 14 years
Int. Cl. D29—*99*
U.S. Cl. D72—1



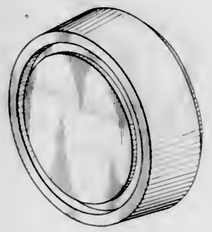
215,373
FACE PLATE FOR A TRAFFIC CONTROL LIGHT
Christian J. Reimuller, Cherry Valley, Calif., assignor of one-third each to Barbara J. Reimuller and Christian Alan Reimuller, both of Cherry Valley, Calif.
Filed Mar. 6, 1967, Ser. No. 6,058
Term of patent 14 years
Int. Cl. D29—*99*
U.S. Cl. D72—1



215,374
WALL CHIME
John Doggert, Macclesfield, England, assignor to V & E Friedland Limited, Macclesfield, Cheshire, England, a British company
Filed Sept. 9, 1968, Ser. No. 13,448
Claims priority, application Great Britain Mar. 26, 1968
Term of patent 14 years
Int. Cl. D31
U.S. Cl. D72—1



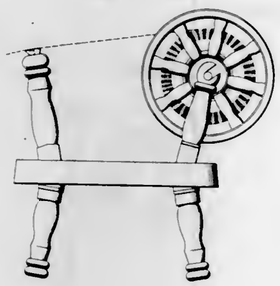
215,375
WALL CHIME
John Doggert, Macclesfield, England, assignor to V & E Friedland Limited, Macclesfield, Cheshire, England, a British company
Filed Sept. 9, 1968, Ser. No. 13,452
Claims priority, application Great Britain Mar. 26, 1968
Term of patent 14 years
Int. Cl. D31
U.S. Cl. D72—1



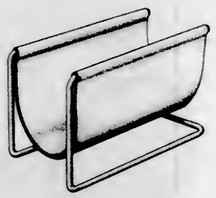
215,376
COMBINED REFLECTIVE HIGHWAY LANE DIVIDER AND ROAD MARKER
Dwight L. Haley, Tyler, Tex., assignor to Ferro Corporation, Cleveland, Ohio, a corporation of Ohio
Filed Nov. 25, 1968, Ser. No. 14,611
Term of patent 14 years
The portion of the term of the patent subsequent to Feb. 21, 1981, has been disclaimed
Int. Cl. D29—*99*
U.S. Cl. D72—1



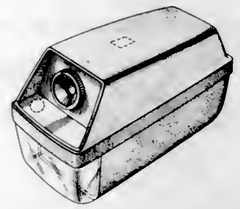
215,377
TAPE DISPENSER
Oscar Miller, 4 Overlook Park, Newton Center, Mass. 02159
Filed Nov. 28, 1967, Ser. No. 9,572
Term of patent 3½ years
Int. Cl. D19—*02*
U.S. Cl. D74—1



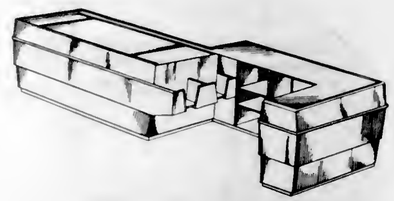
215,378
MAIL HOLDER OR THE LIKE
Clifford R. Schaible, 21 Walnut Lane, Dayton, Ohio 45419
Filed Feb. 12, 1968, Ser. No. 10,543
Term of patent 14 years
Int. Cl. D19—*02*
U.S. Cl. D74—9



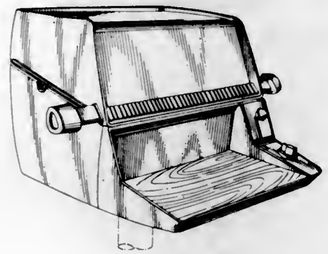
215,379
ELECTRIC PENCIL SHARPENER
Kohji Mizuno, Amagasaki-shi, and Daisuke Kajiwara, Moriguchi-shi, Japan, assignors to Matsushita Electric Industrial Co., Ltd., Kadoma, Osaka, Japan, a corporation of Japan
Filed Sept. 4, 1968, Ser. No. 13,390
Claims priority, application Japan Mar. 8, 1968
Term of patent 14 years
Int. Cl. D19—*99*
U.S. Cl. D74—21



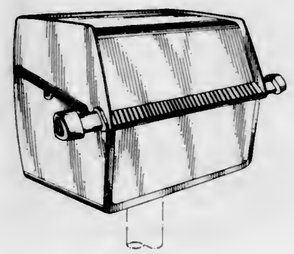
215,380
CHECK-OUT COUNTER OR SIMILAR ARTICLE
William E. Kinslow, Willingboro, N.J., assignor to Radio Corporation of America, a corporation of Delaware
Filed Oct. 14, 1968, Ser. No. 13,986
Term of patent 14 years
Int. Cl. D6—*01*
U.S. Cl. D80—2



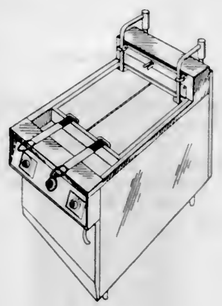
215,381
OUTDOOR GRILL
Robert R. Deines, Timothy J. Tierney, and Blond E. Swadley, Wichita, Kans., assignors to The Coleman Company, Inc., Wichita, Kans., a corporation of Kansas
Filed June 21, 1968, Ser. No. 12,466
Term of patent 14 years
Int. Cl. D7—*04*
U.S. Cl. D81—10



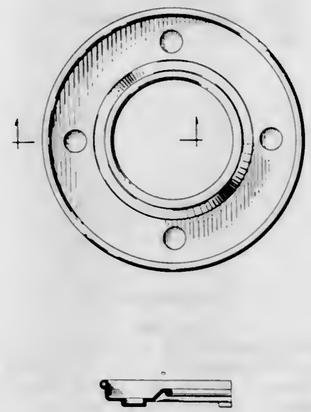
215,382
OUTDOOR GAS GRILL
Robert R. Deines, Timothy J. Tierney, and Blond E. Swadley, Wichita, Kans., assignors to The Coleman Company, Inc., Wichita, Kans., a corporation of Kansas
Filed June 17, 1968, Ser. No. 12,383
Term of patent 14 years
Int. Cl. D7—*04*
U.S. Cl. D81—10



215,383
DEEP FAT FRYER
Lewis Frank Moore, 711 Evangeline Drive 71106; Robert L. Dunkelman, 801 Lark Ave. 71105; and Travis E. Schermerhorn, Jr., 434 Monrovia 71106, all of Shreveport, La.
Filed Mar. 8, 1968, Ser. No. 10,893
Term of patent 14 years
Int. Cl. D7—*04*
U.S. Cl. D81—10



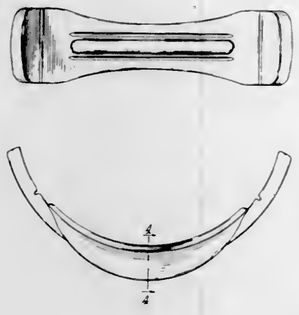
215,384
COMBINATION GAS BURNER FLAME GUIDE AND DRIP CATCHER
Kurt H. Meschwitzer, 4627 Dover Center Road, North Olmsted, Ohio 44020
Filed Feb. 18, 1969, Ser. No. 15,826
Term of patent 14 years
Int. Cl. D7—*04*
U.S. Cl. D81—26



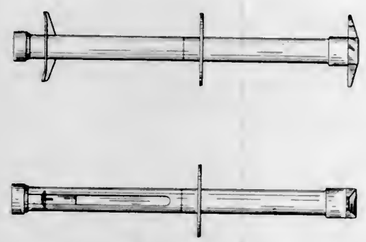
215,385
SHORT WAVE DIATHERMY
Hal C. Mettler, 680 Westbridge Place, Pasadena, Calif. 91105
Filed Nov. 1, 1968, Ser. No. 14,269
Term of patent 14 years
Int. Cl. D24—*02*
U.S. Cl. D83—1



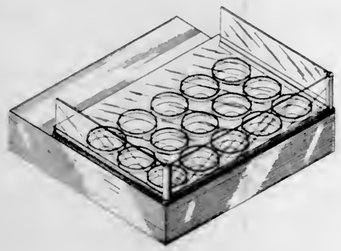
215,386
CATAMENIAL NAPKIN
Jacob A. Glassman, 1680 Meridian Ave., Miami Beach, Fla. 33139
Filed Mar. 11, 1969, Ser. No. 16,177
Term of patent 14 years
Int. Cl. D28—*01*
U.S. Cl. D83—1



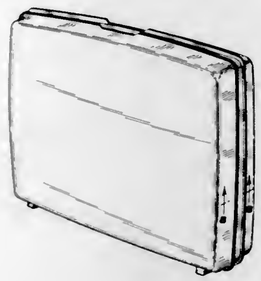
215,387
GUIDE MECHANISM FOR A MEDICAL CATHETER
Clair E. Cox, Winston-Salem, N.C., and Frank Hinman, Jr., San Francisco, and Andrew Harautuneian, Gardena, Calif., assignors to Pharmaseal Division of American Hospital Supply Corporation, Glendale, Calif., a corporation of Illinois
Filed Nov. 21, 1968, Ser. No. 14,574
Term of patent 14 years
Int. Cl. D24—*03*
U.S. Cl. D83—12



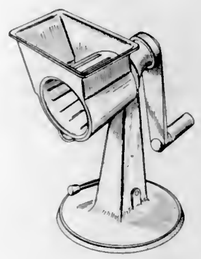
215,388
LIPSTICK BLENDING MACHINE
Lewis J. Kieran, 511 Montview Place, Pittsburgh, Pa. 15221
Filed Apr. 19, 1968, Ser. No. 11,534
Term of patent 14 years
Int. Cl. D28—*99*
U.S. Cl. D86—10



215,389
LUGGAGE CASE
Clair A. Samhammer, Orange, Calif., assignor to Samsonite Corporation, Denver, Colo., a corporation of Colorado
Filed May 22, 1967, Ser. No. 7,201
Term of patent 14 years
Int. Cl. D3—*01*
U.S. Cl. D87—5



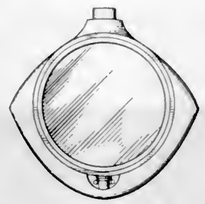
215,390
FOOD SLICER
Porter G. McGee, Winston-Salem, N.C., assignor to Kut Kleen Kutter Corporation, Winston-Salem, N.C., a corporation of North Carolina
Filed Mar. 4, 1969, Ser. No. 16,023
Term of patent 14 years
Int. Cl. D7—*05*
U.S. Cl. D89—1



215,391
COMBINED SHEET AND EYELINERS
Leon J. Mitchell, 74 Forest Road, Dalston, London, England
Filed Aug. 5, 1968, Ser. No. 13,024
Term of patent 14 years
Int. Cl. D28—*02*
U.S. Cl. D86—10



215,392
COMBINED FLASHLIGHT AND MIRROR
Sidney Schwartz, 375 West End Ave., New York, N.Y. 10024
Filed Oct. 14, 1968, Ser. No. 13,979
Term of patent 14 years
Int. Cl. D28—*03*
U.S. Cl. D86—10



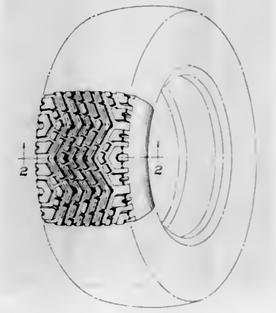
215,393
CANOPY TOP FOR BICYCLE
Herbert Odell Stith, Jr., 3309 Sepulveda Blvd., Manhattan Beach, Calif. 90266
Filed Jan. 31, 1969, Ser. No. 15,580
Term of patent 7 years
Int. Cl. D12—*14*
U.S. Cl. D90—1



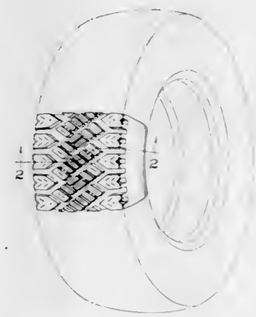
215,394
TIRE
Gilbert J. Hoke, Kenmore, N.Y., assignor to Dunlop Tire and Rubber Corporation, Buffalo, N.Y., a corporation of New York
Filed July 19, 1968, Ser. No. 12,833
Term of patent 14 years
Int. Cl. D12—*14*
U.S. Cl. D90—20



215,395
TIRE
James W. Pond, Doylestown, Ohio, assignor to The B. F. Goodrich Company, New York, N.Y., a corporation of New York
Filed Jan. 3, 1969, Ser. No. 15,199
Term of patent 14 years
Int. Cl. D12—*14*
U.S. Cl. D90—20



215,396
TIRE
James W. Pond, Doylestown, Ohio, assignor to The B. F. Goodrich Company, New York, N.Y., a corporation of New York
Filed Jan. 6, 1969, Ser. No. 15,215
Term of patent 14 years
Int. Cl. D12—*14*
U.S. Cl. D90—20



215,397
BEDSPREAD OR SIMILAR ARTICLE
Harold Schwartz, 325 E. 75th St., New York, N.Y. 10021
Filed Feb. 16, 1968, Ser. No. 10,604
Term of patent 14 years
Int. Cl. D6—*08*
U.S. Cl. D92—2



215,398
CARPET OR SIMILAR ARTICLE
John Beresford Fowler, 39 Brook St., London W. 1, England
Filed July 18, 1968, Ser. No. 12,815
Term of patent 14 years
Int. Cl. D6—*04*
U.S. Cl. D92—4



LIST OF REISSUE PATENTEES

TO WHOM

PATENTS WERE ISSUED ON THE 23RD DAY OF SEPTEMBER, 1969

NOTE.—Arranged in accordance with the first significant character or word of the name (in accordance with city and telephone directory practice).

Sarbo, Edgar G., to Wayne-Gossard Corp. Foot cover and method of manufacturing the same. Re. 26,667, 9–23–68, Cl. 66—171.

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Sarbo, Edgar G. Re. 26,667.

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Pecoff, Ronald. Acacia plant. 2,920, 9–23–69, Cl. 54.

LIST OF DESIGN PATENTEES

Aldape, John. Tubular can holder or similar article. 215,346, 9–23–69, Cl. D49—35.
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American Desk Mfg. Co.: *See*—
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Barnes, Raymond C. 215,309.
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Appel, Mel, to General Time Corp. Pocket watch or the like. 215,327, 9–23–69, Cl. D42—8.
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Barnes, Raymond C., to American Desk Mfg. Co. Study carrel. 215,309, 9–23–69, Cl. D33—11.
Batchelor, Glenn A. Crane hook. 215,268, 9–23–69, Cl. D8—252.
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Bauer, Russell E., to Bauer Ordnance Co. Armored motor vehicle. 215,274, 9–23–69, Cl. D14—3.
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Bott, John A. Stanchion for a luggage rack. 215,278, 9–23–69, Cl. D14—27.
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Broussard, Paul D. Stringed musical instrument. 215,354, 9–23–69, Cl. D56—1.
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Bundschuh, John J., to Eastman Kodak Co. Film cartridge or the like. 215,360, 9–23–69, Cl. D61—1.
Bundschuh, John J., to Eastman Kodak Co. Film cartridge or the like. 215,361, 9–23–69, Cl. D61—1.
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Carpenter, Herbert R., to Andis Clipper Co. Stand for a self-charging hair clipper. 215,303, 9–23–69, Cl. D26—15.
Chenkin, Leila R. Butter pat dispenser. 215,348, 9–23–69, Cl. D52—2.
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Chipping, William S., to Northern Electric Co., Ltd. Projector support housing. 215,362, 9–23–69, Cl. D61—1.
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Congdon, George L., to McGraw-Edison Co. Hedge trimmer. 215,265, 9–23–69, Cl. D8—8.
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Glassman, Jacob A. Catamenial napkin. 215,386, 9–23–69, Cl. D83—1.
Goto, Kenjiro, to Mansei Kogyo Kabushiki Kaisha. Pocket lighter. 215,342, 9–23–69, Cl. D48—27.
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Haas, Howard G., and J. J. Corrigan, to Sealy Inc. Mattress core. 215,263, 9–23–69, Cl. D5—2.
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Alksnis, Arnold Fricevich, and Surna, Janis Aleksandrovich. Method for purifying 6-(and 7-) carboxy-2- methylol-1,4-benzodioxane. 3,468,910, Cl. 260-340.3
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Balkus, Carl E. Brake holding device. 3,468,586, Cl. 303-089.
Ball, Lawrence J., to Phillips Petroleum Company. Puller. 3,468,409, Cl. 198-165.
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Ballin, Gene. Infant-feeding container and cap assembly. 3,468,445, Cl. 215-011.
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Barry, Philip H., and Vee, Richard F., to Teletype Corporation. Tape supply cabinet. 3,468,491, Cl. 242-071.1
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Barton, Richard, Hittel, Lorenz A., Rakoczi, Laszlo L., and Wiener, Jerome B., to General Electric Company. Data processing apparatus providing contiguous addressing for non-contiguous storage. 3,469,241, Cl. 340-172.5
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Belden, William Perry a/k/a Belden, Perry, deceased (by Belden, Katherine Arnel, executrix). Rotary pump with axially movable radial vanes. 3,468,260, Cl. 103-139.
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Bellows, Alfred H., to Polaroid Corporation. Photographic camera having a scanning exposure system with distortion compensation. 3,468,230, Cl. 095-015.
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Bernelin, Bernard Marcel, Frindel, Sebastien, and Benezech, Claude, to Societe Anonyme: Societe Alsacienne de Constructions Atomiques, de Telecommunications et d'Electronique 'Alcatel'. Arrangement for high precision cylindrical or plane grinding. 3,468,072, Cl. 051-165.
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Birch, William, (Engineers) Limited: *See—*
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Bitzer, Roland. Knitted pile fabric and method of making the same. 3,468,139, Cl. 066-194.
Bjorksten, Johan A., and Kaufman, William A., to Griffolyn Company, Inc. Means and system for tie-down. 3,467,999, Cl. 024-245.
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Boaz, Premakaran T., to Ford Motor Company. Process using gas inlets to laterally stretch and stabilize glass during float glass manufacturing. 3,468,650, Cl. 065-091.
Boaz, Premakaran T., to Ford Motor Company. Process using stationary blades to laterally stretch glass during float glass manufacturing. 3,468,651, Cl. 065-091.
Bodine, Albert G., Jr. Apparatus including an orbiting-mass sonic oscillator for slip-forming concrete. 3,468,001, Cl. 025-041.
Bodine, Albert G. Sonic hand cutting tool utilizing sonic rectification in conjunction with double acting spring biasing. 3,468,384, Cl. 173-049.
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Bonneric, Francis, to Service d'Exploitation Industrielle des Tabacs et des Allumettes. Device for delivering a precise quantity of divided tobacco or like material. 3,468,459, Cl. 222-196.
Bonnet, Yannik, to Rhone-Poulenc S.A. Cyclene-carboxylates and preparation thereof. 3,468,929, Cl. 260-464.
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Bottone, Arthur A., and Fallon, Bernard R., to Westinghouse Electric Corporation. Single-ended electric incandescent lamp with improved base and terminal structure, and method of assembly. 3,469,140, Cl. 313-318.
Boucherie, Gerard Benoni. Device for stepwise displacement of workpieces, tools and suchlike. 3,468,176, Cl. 074-142.
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Brockmuller, Friedrich Franz, to Windmoller & Holscher. Inking system provided with a tub for high-speed flexographic printing machines. 3,468,251, Cl. 101-350.
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Brown, Kenneth Robson, and McDermott, Bernard Colin, to Ferranti, Limited. Method of making slot closers for small motors. 3,468,019, Cl. 029-596.
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Bush, Harley Eugene, to National Lead Company. Stress embrittlement testing. 3,468,160, Cl. 073-086.
Busse, Warren F., to Du Pont de Nemours, E. I., and Company. Flame resistant 66 nylon and process thereof. 3,468,843, Cl. 260-045.75
Buyers, Archie G., and Mohr, Augustus J., Jr., to Hughes Aircraft Company. Ceramic-metal seal. 3,468,647, Cl. 065-059.
Bye-Jorgensen, Jorgen S., and Larsen, Gunnar H., to Kruger I., A/S. Process and plant for biological purification of waste water and sewage. 3,468,795, Cl. 210-007.
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Barber, Stanley Frederick, 3,468,008.
Seilly, Alec Harry, 3,469,106.
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Cambridge Research Inc.: *See—*
Rosen, William E., and Drew, John W., 3,468,900.
Camoletti, Bruno, and Hausermann, Pascal, to Societe Sciper A.A. Compoundly curved, sectional structure. 3,468,083, Cl. 052-081.
Camp, Thomas R., to Chicago Bridge & Iron Company. Ceramic filter bottom directly supporting media. 3,468,422, Cl. 210-274.
Campbell, Henry Fred, to Campbell Research Corporation. Building erection. 3,468,094, Cl. 052-742.
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Canadair Limited: *See—*
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Canegallo, Giovanni, to Welwyn Electric Limited. Oxide film resistor. 3,469,227, Cl. 338-262.
Cannon, Cyril G., Davies, Barrie L., Selwood, Alan, and Williams, Roy A., to British Nylon Spinners Limited. Continuous filament yarns. 3,468,117, Cl. 057-140.
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Carey, Charles A., to Worcester, Gurdon S. Colored flame combustion device. 3,468,615, Cl. 431-126.
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Cummins, Richard D., 3,468,307.
Carlson, Donald W., and Eller, Phillip E., to Ford Motor Company. Method of anchoring a metallic member to plastic. 3,468,020, Cl. 029-597.
Carlson, Richard A., to General Motors Corporation. Electric heating system for motor vehicles. 3,469,072, Cl. 219-202.
Carlsson, Sixten Einar, to Borgs Fabriks AB. Arresting gear for aircraft and other vehicles. 3,468,500, Cl. 244-110.
Carnazza, Joseph, to JFD Electronics Corporation, mesne. Trimmer capacitor. 3,469,158, Cl. 317-249.
Carnazza, Joseph, and Weisbrod, Marvin, to JFD Electronics Corporation, mesne. Piston trimmer capacitor. 3,469,159, Cl. 317-249.
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Cassil, Jim C. Aquarium conditioner. 3,468,288, Cl. 119-005.
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Catlett, James Arthur. Building material display device. 3,468,593, Cl. 312-234.
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Chaban, Castulo, Jr., to Du Pont de Nemours, E. I., and Company. Means to splay and coat filamentary yarn. 3,468,284, Cl. 118-044.
Chafetz, Harry, and Mead, Theodore C., to Texaco Inc. Method of preparing ketoacids. 3,468,944, Cl. 260-526.
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Chandler, Scott S., and Ray, Charles L., to Armour Industrial Chemical Company, mesne. Coated dust free phosphate feed supplement. 3,468,667, Cl. 099-002.
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Charman, Walter M. Jr., and Borden, James H., to Norton, Oglebay, Company. Hot tops. 3,468,368, Cl. 164-359.
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Chaupit, Jean, and Nigra, Jacques, to Compagnie Generale d'Electricite. Arcless reversing motor control. 3,469,165, Cl. 318-289.
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Chow, Alfred W., to Smith Kline & French Laboratories. 2-Substituted pyrimido[1,2-α]benzimidazoles. 3,468,888, Cl. 260-256.4
Chow, Alfred W., and Dunn, George L., to Smith Kline & French Laboratories. Aminobicyclo [3.3.1] nonanes. 3,468,950, Cl. 260-563.
Chow, Ho, and D'Angelo, George, to International Patent Research Corporation. Speed slip-on hose coupler locked by fluid pressure. 3,468,562, Cl. 285-081.
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Clampitt, Rodney B., Birum, Gail H., and Anderson, Richard M., to Monsanto Company. Organic phosphorus products. 3,468,678, Cl. 106-015.
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Clare, Alan C.: *See—*
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Cofrancesco, Anthony J., and Ferrigan, Richard, to GAF Corporation. Method of preparing sulfonated hydroxybenzophenone. 3,468,938, Cl. 260-511.
Cohen, Kenneth W., to Bailey Meter Company. Triggerable flip-flop fluid device. 3,468,326, Cl. 137-081.5
Cohen, Paul, and Fletcher, Wilson D., to Westinghouse Electric Corporation. Method and apparatus for measuring the concentration of boron. 3,468,764, Cl. 204-001.
Cole, Edward L., Knowles, Edwin C., and Sensel, Eugene E., to Texaco Inc. Extended zeolitic structures. 3,468,815, Cl. 252-455.
Cole, John Wayne, and Lex, Charles George, to Abbott Laboratories. 17-Substituted 3-(p-methoxybenzenesulfonoxy androst-5-enes. 3,468,880, Cl. 260-239.55
Coleman, Clarence B. Container with disposable liner. 3,468,451, Cl. 220-063.
Coleman, Neil A., and Weinfurther, Donald B., to Ford Motor Company. Apparatus for cleaning the lens of a vehicle running light. 3,469,088, Cl. 240-007.1
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Navez, Maurice, and Bezombes, Albert, 3,468,745.
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Maxson, Orwin G., and Sorenson, Wayne R, 3,468,864.
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Contri, Giovanni Dall'Olio. Pressure equalizer for dual tyres of landcraft or aircraft. 3,468,162, Cl. 073-146.3
Conway, Bernard W. Method of producing a fibrous web material having retained wet strength at high humidity and the fibrous material produced thereby. 3,468,696, Cl. 117-062.1
Cook, Alan Hugh, Rowley, William Richard Charlton, and Wilson, David Charles, to National Research Development Corporation. Control of optical masers or lasers. 3,469,205, Cl. 331-094.5
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Cooley, William C., to Exotech Incorporated. Hypervelocity jet producing system employing an impact cumulation process. 3,468,481, Cl. 239-101.
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Cosgrove, Donald G., Erwin, Le Roy E., and Bielss, Eldon W., to General Dynamics Corporation. Method and apparatus for deter-

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Costello, Bernard J., to Argus Engineering Company. Soldering apparatus. 3,469,061, Cl. 219-085.

Cotta, Ezio D., and Ford, Vernon E., to Polaroid Corporation. Exposure control apparatus. 3,468,237, Cl. 095-063.

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Cowell, Terence K., to Brooke, Godfrey. Skin resistance reaction time testing apparatus. 3,468,302, Cl. 128-002.1

Cowin, William Alan, and Carter, Ronald Philip, to English Electric Company Limited, The. Electrical signal phase comparator. 3,469,196, Cl. 328-133.

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Cramer, William F., Jr., to United States of America, Army. Segmental propellant grain. 3,468,125, Cl. 060-039.47

Crandall, Charles B., and Townsend, Franklin L., to Barber-Colman Company. Method and apparatus for open end spinning. 3,468,116, Cl. 057-058.89

Creighton, Stephen Mark, and Wood, John Charles T., to Canadian Patents and Development Limited. Continuous nitric acid oxidation of coal. 3,468,943, Cl. 260-523.

Cress, Keith E. Archery bow torque reducing device. 3,468,297, Cl. 124-024.

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Crompton & Knowles Corporation: *See—*
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Crook, Gaines Morton. Gear train. 3,468,191, Cl. 074-681.

Croseck, Hans-Henning, and Grohmann, August, to Hydraulik G.m.b.H. Hydraulic metal tube press. 3,468,152, Cl. 072-265.

Cross, Alexander D., to Syntex Corporation. Furano- [4'5';6,7] androstane and pregnane series. 3,468,877, Cl. 260-239.5

Crouch, Donald W., and Kurtz, Donald R., to General Electric Company. High voltage vacuum device with improved means for inhibiting sparkover adjacent the edge of a tubular metal part. 3,469,049, Cl. 200-144.

Crovetti, Aldo J., and Von Esch, Anne Mary, to Abbott Laboratories. 5-Aminooxadiazines. 3,468,884, Cl. 260-244.

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Culp, Charles R., to Armstrong Cork Company. Process for making pressed fiberboard utilizing through circulation preheating. 3,468,755, Cl. 162-206.

Cumming, John, to Blakeslee, G. S., & Co. Sectional dishwashing machine and structural units. 3,468,320, Cl. 134-046.

Cummins, Richard D., to Carleton Controls Corporation. Intermittent positive pressure breathing apparatus. 3,468,307, Cl. 128-145.5

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Curlee, Sandy T., to Curlee Machinery Company, Inc. Bracket. 3,468,506, Cl. 248-221.

Curlock, Walter, O'Neill, Charles E., and Queneau, Paul E., to International Nickel Company, Inc., The. Recovery of nickel from nickel-containing sulfide materials. 3,468,629, Cl. 023-203.

Currie, Andrew Cochran, and Dinwoodie, Andrew Harper, to United States of America, Navy, mesne. Dinitroimidazolidin-2-one derivatives. 3,468,903, Cl. 260-309.7

Curtis, John G., to Corning Glass Works. Method of forming an electrical resistance element. 3,468,011, Cl. 029-620.

Custer, George M., to Hennessy Products, Inc. Boxcar door control. 3,468,062, Cl. 049-362.

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Davenport, Ralph M., Jr., Kratzer, Alfred L., Sapp, Robert W., Thomas, William T., and Weichardt, Heinz H., to Azoplate Corporation, mesne. Electrophotographic material comprising a multi- layer support having a barrier layer over a duplex paper base. 3,468,660, Cl. 096-001.5

Davies, Barrie L.: *See—*
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Davies, Fred. Pipe-fitting tools. 3,468,147, Cl. 072-112.

Davies, Richard E., to Air Reduction Company, Incorporated. Process for producing vinyl chloride/ethylene and vinyl chloride/propylene copolymers. 3,468,859, Cl. 260-087.5

Davies, Stuart Duncan, and Chilman, John Alfred, to Dowty Rotol Limited. Gas turbine engines. 3,468,473, Cl. 230-114.

Davis, Earl K., to Westinghouse Electric Corporation. Capacitors employing lead silico-borate glass compositions. 3,469,161, Cl. 317-258.

Davis, Francis E., Jr.: *See—*
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Davis, Frederick George, and Dean, Robert, to Fisons Fertilizers Limited. Sack filling. 3,468,349, Cl. 141-075.

Davis, Stanley M., Voorhies, John D., and Schurdak, Edward J., to American Cyanamid Company. Rechargeable dry cells and method of using same. 3,468,708, Cl. 136-006.

Davy and United Engineering Company Limited: *See—*
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De Hart, Marvin L., and Straub, Harold E., to Titus Manufacturing Corporation. Rectangular air diffusers. 3,468,239, Cl. 098-040.

Deisenroth, Robert J., to Excel Corporation. Method of bonding metal objects to glass panels. 3,468,738, Cl. 156-293.

DeLajarte, Stephane Dufaure, and Bourgeaux, Maurice, to Compagnie de Saint-Gobain. Method and apparatus for producing flat glass. 3,468,649, Cl. 065-091.

Del Vecchio, Michael, 50% to Gigliotti, Peter. Rotary tool. 3,468,073, Cl. 051-170.

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De Maio, Peter. Plumbing tools. 3,468,198, Cl. 081-055.

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Des Ormeaux, John A., and Paradis, Joseph R., to Worthen, Frederic P. Method and apparatus for cutting tape in sewing machine. 3,468,269, Cl. 112-130.

De Sandre, Giovanni: *See—*
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Deschamps, Andre, and Renault, Philippe, to Institut Francais du Petrole des Carburants et Lubrifiants. Process for metal removal from petroleum residues. 3,468,790, Cl. 208-251.

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de Staat der Nederlanden, Ten Deze Vertegenwoordigd Door de Directeur-Generaal der Posterijen, Telegrafie en Telefonie: *See—*
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Devaney, Richard G., to Eastman Kodak Company. Process for supplying precisely controlled supplemental heating to polymer melts. 3,469,012, Cl. 013-023.

Devlin, Edward C., and Phillips, James M. R. Vehicle warning light and system. 3,469,235, Cl. 340-107.

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Diamond International Corporation: *See—*
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Diassi, Patrick A.: *See—*
Levine, Seymour D., and Diassi, Patrick A. 3,468,955.

Di Camillo, Carmine V., to Bowles Engineering Corporation. Mechanical-to-fluid interface. 3,468,340, Cl. 137-625.48

Dickerson, Delbert J. Rotary make-up electrical connector for underwater use. 3,469,044, Cl. 200-051.09

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Doorenbos, Harold E., and Smith, Harry A., to Dow Chemical Company, The. Curable copolymers of perhaloacetones and unsaturated epoxides. 3,468,847, Cl. 260-063.

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Fraleigh, William P., and Melanson, Alcide, to H & A Supply Company Limited. Sashless window with meeting rail. 3,468,064, Cl. 049-413.

Franceschi, Giovanni, and Arcamone, Federico, to Societa Farmaceutici Italia. 4'-Substituted derivatives of 1,18-di[2',3',6'-trimethylphenyl-(1')]-3,7,12,16-tetramethyl- 1,3,5,7,9,11,13,15,17-octadecanonaene. 3,468,931, Cl. 260-479.

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Freeman Supply Company, The: *See—*
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Fries, John R., and Price, Ralph E., to Landis Tool Company. Metal reed support for oscillating cradle. 3,468,070, Cl. 051-101.

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Fritsch, Werner, Haede, Werner, Radscheit, Kurt, Stache, Ulrich, and Ruschig, Heinrich, to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning. Process for preparing Δ^{14}-3,20-diketo-21- acyl-steroids. 3,468,918, Cl. 260-397.47

Frohlich, Josef, to Mannesmann Aktiengesellschaft. Turning connection for pipes under pressure. 3,468,564, Cl. 285-111.

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Fukuoka, Tatuo. Sandals. 3,468,040, Cl. 036-011.5

Fumat, Joseph, to Societe des Mecaniques Verdol. Heddle frame actuating gearing for looms. 3,468,347, Cl. 139-066.

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Furst, Stefan, to Reiners, Walter. Device for unloading a transfer case containing textile coils. 3,468,407, Cl. 198-053.
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Gallaugher, Major L., and Pritchard, James E., to Phillips Petroleum Company. Dialkanol amide anti-static composition for polymers. 3,468,702, Cl. 117-138.8
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Galloway, George W., and Blanchard, Albert E., to Galloway, G. W., Company. Multistage linear motor with means for locking the stages thereof against relative rotary movement. 3,468,398, Cl. 182-141.
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Gardner, Brian George, and Runchman, David John. Self-adjusting clutch assembly. 3,468,405, Cl. 192-111.
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Geiling, Hermann, and Weberling, Paul. Underwater locating and intercommunicating device, particularly for free-swimming divers. 3,469,231, Cl. 340-006.
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Geyer, Wallace T., and Coyle, Edward L., to ACF Industries. Heat transfer means for a railway tank car. 3,468,300, Cl. 126-343.5
Ghose, Tarun Kumar, and Dutta, Ranendra. Coating of aluminium and/or aluminium alloys on steel surfaces. 3,468,770, Cl. 204-038.
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Gibbs, Dale S., Miles, Wallace J., and Kochaney, Eugene, to Dow Chemical Company, The. Substrates coated with aqueous dispersions of rapidly crystallizable vinylidene chloride interpolymerizates. 3,468,703, Cl. 117-155.
Gibson, Thomas W., to Procter & Gamble Company, The. Compounds of 1,5-dimethylbicyclo (2.1.1) hexane. 3,468,928, Cl. 260-468.
Gibson, Warren O., to Hawaiian Sugar Planters Association. Surface irrigation device. 3,468,130, Cl. 061-012.
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Giori, Gualtiero. Apparatus for removing ink from the surface of wiping cylinders used in direct steel plate printing. 3,468,248, Cl. 101-167.
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Golden, Dorothy L. Surgical scrubbing device. 3,467,978, Cl. 015-111.
Golloway, William O., Jr., to Hoover Company, The. Suction cleaners. 3,467,980, Cl. 015-324.
Gompert, Daryl Herman. Probe-type weeder and thinner apparatus for row crops. 3,468,380, Cl. 172-006.

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Goodfellow, David Sydney, and Gilbertson, Ian David, to British Insulated Callender's Cables Limited. Wire-stranding machines. 3,468,115, Cl. 057-052.
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Krasnow, Philip I., and Goodman, Jerome 3,468,710.
Goodman, John E., and Grange, Arthur, to Ultrasonics Limited. Means for applying a sonic or ultrasonic transducer system to a surface to prevent deposition of materials thereon. 3,468,517, Cl. 259-002.
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Goosey, Malcolm H., and Brady, Edward R., to United States of America, Atomic Energy Commission. Analog-to-digital converter. 3,469,254, Cl. 340-347.
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Goslin, Geoffrey Walter, to Hawker Siddeley Dynamics Limited. Multiplex-type control apparatus. 3,469,162, Cl. 318-018.
Gott, Hans, and Ritter, Josef, to EVG Entwicklungs- und Verwertungsgesellschaft m.b.H. Contact matrix for a wire mesh welding machine. 3,469,055, Cl. 219-056.
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Graft, David John, to British Telecommunications Research Limited. Fluid control devices. 3,468,342, Cl. 137-625.66
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Hadley, Emerson E., deceased, Hadley, Doris J., Hadley, Emerson Rea, and Long, Joanne B., heirs. Sphere shaped structure. 3,468,082, Cl. 052-081.
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Hamed, Parviz, and McDonel, Everett T., to Goodrich, B. F., Company, The. EPDM polymer blend with building tack and green strength. 3,468,979, Cl. 260-897.

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Haney, Ted I., and Warner, Henry L., to United States of America, Navy. Sonar system. 3,469,230, Cl. 340-003.

Hannan, James M. Safety helmet edge bead. 3,467,964, Cl. 002-003.

Hanscom, Russell C., Jr. Fruit picker. 3,468,111, Cl. 056-328.

Hansen, Siegfried, to Hughes Aircraft Company. Dimension regulated structural strut. 3,468,080, Cl. 052-001.

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Hanssen, Karl-Josef. Corpuscular-ray device for phase or amplitude specimens with a phase-rotating foil. 3,469,096, Cl. 250-049.5

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Hardy, Frank M., to Haver-Lockhart Laboratories, Incorporated. Injectable reconstituted collagen fluid adjuvant for vaccines and other drugs. 3,469,003, Cl. 424-089.

Harland, Glen E., Jr., and Hanson, Charles G., to General Motors Corporation. Voltage protection circuit for transistor regulators. 3,469,168, Cl. 320-064.

Harmon, Donald K., to General Electric Company. Hair treating apparatus. 3,468,319, Cl. 132-009.

Harms, Wolfgang, von Oertzen Klaus, Bein, Hans-Samuel, and Siegel, Edgar, to Farbenfabriken Bayer Aktiengesellschaft. Anthraquinone dyestuffs and processes for their production. 3,468,879, Cl. 260-239.7

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Harris, Fritz B., to Activa Corporation. Instant paper-mache. 3,468,414, Cl. 206-047.

Harris, Glen H., to Oil States Rubber Co. Platform leg packer. 3,468,132, Cl. 061-063.

Harris, Thomas J., Kosanke, Kurt M., Kulcke, Werner W., and Max, Erhard, to International Business Machines Corporation. Degenerate laser device having polarization control of light. 3,469,206, Cl. 331-094.5

Harrison, William M. Air cushion transporting system for heavy duty pallet. 3,468,393, Cl. 180-116.

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Heiberger, Charles A., and Fishbein, Leon, to Air Reduction Company, Incorporated. Vinyl chloride-propylene copolymers. 3,468,858, Cl. 260-087.5

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Hillen, Cecil Frederick John. Telecommunication switching systems. 3,469,035, Cl. 179-018.

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Holland, Fred D., to Calcium Removal, Inc. Magneto-sonic disintegrator of diamagnetic material. 3,468,301, Cl. 128-001.05

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House, Walter J., Jr. Rotatable platform having rider supports enclosed in an optical chamber for simulating a space ride. 3,468,533, Cl. 272-018.

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Hsieh, Henry L., to Phillips Petroleum Company. Crystalline polymers of propylene oxide. 3,468,817, Cl. 260-002.

Hsieh, Henry L., to Phillips Petroleum Company. Organometal-metal beta-diketones as catalysts for alkene oxide polymerization. 3,468,860, Cl. 260-088.3

Hsieh, Henry L., to Phillips Petroleum Company. Control of branching and coupling in lithium-terminated polymers. 3,468,972, Cl. 260-836.

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Hunt, Waldo H., to Graphics International, Inc. Folding puppet, marionette, or doll, head. 3,468,055, Cl. 046-126.

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Karrer, Karl, and Linzberger, Robert, to Buhler, Gebruder. Automatic control of feed material in a comminuting mill. 3,468,488, Cl. 241-034.
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Kummer, Joseph T., to Ford Motor Company. Secondary battery employing an electronically-, insulative, cationically-conductive solid electrolyte with anodic and cathodic feeder means. 3,468,709, Cl. 136-006.

Kuntscher, Gerhard, to Orthopedic Equipment Company, Inc., The, mesne. Method and instrument for cutting or severing a bone from the bone's inside. 3,468,312, Cl. 128-317.

Kurath, Paul, to Abbott Laboratories. 3,11,17-Trisubstituted-C-norandrostane-11α,17-lactones. 3,468,911, Cl. 260-343.3

Kuratomi, Tatsuo, to Takeo Kagitani. Steel-cored rod as a component of an aluminum cable, the cable and process of making the rod. 3,468,119, Cl. 057-145.

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Levin, Ezra. Method of processing fresh meat and fish. 3,468,674, Cl. 099-111.

Levine, Irvin. Electrical rodent exterminator. 3,468,054, Cl. 043-098.

Levine, Seymour D., and Diassi, Patrick A., to Squibb, E. R., & Sons, Inc. A-norsteroids. 3,468,955, Cl. 260-586.

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Lindner, Edmund, and Knoll, Arnulf, to Badische Anilin- & Soda-Fabrik Aktiengesellschaft. Shutoff nozzle for injection molding machines. 3,468,482, Cl. 239-453.

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Partridge, Leslie W., to Burdick Corporation, The. Cardiac waveform simulating apparatus. 3,469,115, Cl. 307-268.
Patarini, Leon M., Montgomery, Elmer M., and Major, Louis A., to National Can Corporation. Die set unit and method for can manufacture. 3,468,153, Cl. 072-370.
Patry, Ernest: *See—*
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Patry, Harvey L., Patry, Francis J., Patry, Ernest, and Lamont, Harold Blair. Apparatus for coating a strip. 3,468,285, Cl. 118-221.
Patterson, Arch. Flow regulator. 3,468,338, Cl. 137-517.
Pauletta, Carl E., to Air Preheater Company, Inc., The. Concentric tube odor eliminator. 3,468,634, Cl. 023-288.
Payerle, Frank S., to North American Rockwell Corporation, mesne. Foot pedal connector for push-pull control cable. 3,468,187, Cl. 074-512.
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Perotto, Pier Giorgio, and De Sandre, Giovanni, to Ing. C., Olivetti, & C., S.p.A. Electronic computer. 3,469,244, Cl. 340-172.5
Perrins, Lyle Eugene, Dawson, Fred, and White, Henry George, to Imperial Chemical Industries Limited. Incorporation of a solid additive into a polymer in an aqueous system. 3,468,828, Cl. 260-023.7
Perry, Kenneth E., to Winfield Brooks Company, Inc. Silver cleaning composition. 3,468,804, Cl. 252-143.
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Pesch, Herman, and Angell, George Z., to Phillips Petroleum Company. Container assembling machine. 3,468,225, Cl. 093-036.5
Peter, Erwin, to Vereinigte Metallwerke Ranshofen-Berndorf Aktiengesellschaft. Method of connecting hollow-profile frames and frame-connection assembly. 3,468,573, Cl. 287-189.36
Peter, Joseph E., to Hamilton Caster & Mfg. Co., The. Caster brake mechanism. 3,467,981, Cl. 016-035.
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Peterson, William H., to Pullman Incorporated. Double acting hydraulic cushion. 3,468,433, Cl. 213-043.
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Petrolite Corporation: *See—*
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Pfeifer, Oliver W., and Taylor, William C., to Owens-Corning Fiberglas Corporation. Refractory bodies with thermal barrier adhesive coatings and method therefor. 3,468,750, Cl. 161-191.
Pfenninger, Heinz A., to Geigy Chemical Corporation. Certain 2-pyridyl-substituted indole derivatives. 3,468,894, Cl. 260-294.8
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Tate, Bryce E., and Allingham, Robert P., 3,468,916.
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Burk, Marvin C., and Roof, Lewis B., 3,468,157.
Clardy, Edwin K., 3,468,156.
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Odell, Allen E., 3,468,990.
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Picha, George J., to Westinghouse Electric Corporation. Removable circuit and unitary supporting member therefor in a luminaire having elongated discharge lamps. 3,469,089, Cl. 240-051.11
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Anderson, Kay, 3,468,545.
Pierpont, Roger L., and Rumanowski, Edmund J., to Allied Chemical Corporation. Herbicidal composition and method. 3,468,656, Cl. 071-122.
Pihlblad, Karl Erik, and Wagner, Anton Robert, to Nyby Bruks Aktiebolag. Method for refining a metal. 3,468,657, Cl. 075-059.
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Pool, Clarence. Cattle tag. 3,468,050, Cl. 040-302.
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Porter, Philip S., to Bakelite Xylonite Limited. Bonding shaped structures for artificial plastics. 3,468,736, Cl. 156-273.
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PPG Industries, Inc.: *See—*
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Wismer, Marco, Doerge, Herman P., and Mosso, Paul R., 3,468,822.
Zurheide, George B., and Harvey, Frank E., 3,468,434.
Pracht, Gunter, to Grossmann, C. Eisen,- und Stahlwerk AG. Hydraulically damped actuator for self-closing doors. 3,467,982, Cl. 016-055.
Praetzel, Hans Eberhard, and Jenkner, Herbert, to Chemische Fabrik Kalk G.m.b.H. Polyethers containing phosphorus and alcoholic hydroxy groups and their production. 3,468,983, Cl. 260-953.
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Price, Ralph E., and Bricker, Robert E., to Landis Tool Company, mesne. Indexing mechanism for machine tools. 3,468,066, Cl. 051-072.
Prickett, Alfred Donald, to Lucas, Joseph, (Industries) Limited. Vehicle direction indicator systems. 3,469,232, Cl. 340-080.
Priddy, Lloyd W., to Honeywell Inc. Low deadband amplifier apparatus. 3,469,202, Cl. 330-028.
Priebe, John R., to North American Rockwell Corporation. Optical scanner utilizing a spherical mirror. 3,469,030, Cl. 178-007.6
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Raap, Rintje, and Lemieux, Raymond Urgel, to R & L Molecular Research Ltd. 6-Tetrazolylacetamido penicillanic and 7-tetrazolylacetamido cephalosporanic acids. 3,468,874, Cl. 260-239.1

Raasch, Maynard S., to Du Pont de Nemours, E. I., and Company. Hexafluoroisopropylidenethietanes and their S-oxides and S-dioxides. 3,468,908, Cl. 260-327.

Rabek, Jan W. Transmission. 3,468,175, Cl. 074-063.

Rabenhorst, David W., to United States of America, Navy. Releasable fastener. 3,467,992, Cl. 024-019.

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Radielovic, Dragutin: *See—*
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Raible, Donald A., Bentley, Donald J., and DeWall, Richard A., to Bentley Laboratories, mesne. Blood oxygenator with heat exchanger. 3,468,631, Cl. 023-258.5

Raisor, Ralph C., and Rhees, Raymond C., to American Potash & Chemical Corporation, mesne. Preparation of borohydrides. 3,468,630, Cl. 023-204.

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Ransom, Paul R., and Dorsey, Ted C. Electrical test probe having an offset tip and line of sight therefor. 3,469,185, Cl. 324-072.5

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Raue, Roderich, and Kuhlthau, Hans-Peter, to Farbenfabriken Bayer Aktiengesellschaft. Methine dyestuffs. 3,468,619, Cl. 008-025.

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Reese, Cecil E., to Du Pont de Nemours, E. I., and Company. Process for producing composite polyester yarn that bulks at elevated temperatures. 3,468,996, Cl. 264-103.

Reese, Glenn A., and Pearson, Gustavus B., to Magnavox Company, The. Facsimile transceiver. 3,469,027, Cl. 178-006.

Reeves, Louie E. Self-cooled oil well polish rod stuffing box. 3,468,374, Cl. 166-084.

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Reibold, Elmer L. Tubular section for rotatable display units. 3,468,428, Cl. 211-144.

Reilly, William J. Bag holder. 3,468,505, Cl. 248-101.

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Reimer, Victor W., to Killbery Industries, Ltd. Pick-up finger and reel batt construction. 3,468,109, Cl. 056-220.

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Reinhold, Earl R., to Amchem Products Inc. Metal coating process. 3,468,724, Cl. 148-006.15

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Rhodes, William E., to Robertshaw Controls Company. Capacitive sensing device for detecting passage of particles. 3,469,157, Cl. 317-246.

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Conseiller, Yvon Gilbert Marc, and Quiquempois, Andre Jean Arthur, 3,468,954.
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Richmond, Richard C., and Ogushi, Hisashi H., to Hughes Aircraft Company. Interlocking means for a multiprocessor system. 3,469,239, Cl. 340-172.5

Richmond, Robert S., to Perkin-Elmer Corporation, The. Liquid sampling. 3,468,635, Cl. 023-230.

Riddel, John W., and Schwyn, Raymond E., to General Motors Corporation. Printed thermistor on a metal sheet. 3,469,224, Cl. 338-022.

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Riedl, Werner, to Varta Pertrix-Union G.m.b.H. Fillable galvanic battery with activation arrangement for the simultaneous introduction of electrolyte into individual cells. 3,468,715, Cl. 136-090.

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Riley, Joseph J., to Taylor-Winfield Corporation, The. Contact synchronizing welding circuit. 3,469,060, Cl. 219-082.

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Ritter, Josef: *See—*
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Rittman, Dieter, to Pronter-Werk Alfred Gauthier, G.m.b.H. Timing device for setting the exposure time for a photographic camera equipped with an electronic timing device. 3,468,235, Cl. 095-053.

Ritzerfeld, Gerhard. Apparatus for printing and recording on cards. 3,468,245, Cl. 101-091.

Ritzerfeld, Gerhard. Electrostatically chargeable printing form. 3,468,254, Cl. 101-401.1

Robbi, Anthony D., and Tuska, James W., to RCA Corporation. Switching system for driving read-write lines in a magnetic memory. 3,469,245, Cl. 340-174.

Robbins, Jim, Seat Belt Co.: *See—*
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Robertson, George M., and Charles, George K., to Cow & Gate Limited. Continuous cheesemaking process. 3,468,026, Cl. 031-089.

Robinson, Albert Sidney, and Lawrenson, Jack, to Pilkington Brothers Limited. Lateral confinement and flow halting apparatus for manufacture of flat glass. 3,468,653, Cl. 065-099.

Robinson, Alfred Alexander, and Calvesbert, James William, to English Electric Company, Limited, The. Arc rotating coil structure in vacuum circuit interrupters. 3,469,050, Cl. 200-144.

Robosonics, Inc.: *See—*
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Rodgers, Peter A. Wig stand. 3,468,499, Cl. 223-066.

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Rosen, William E., and Drew, John W., to Hoffman Laboratories, Inc., and Cambridge Research Inc. Process for preparing isoxazole compounds. 3,468,900, Cl. 260-307.

Rosenberg, Edgar N. Electrolytic timing device and release actuator. 3,469,045, Cl. 200-061.05

Rosner, Michael W., Boileau, Louis D., and Greipel, Frank J. Ice channel cutter. 3,468,277, Cl. 114-042.

Ross, Keith, to Davy and United Engineering Company Limited. Forging press. 3,468,155, Cl. 072-456.

Rosser, Reginald John, to United Kingdom of Great Britain and Northern Ireland, Secretary of State for Defence in Her Britannic Majesty's Government of the. Rocket projectiles. 3,468,127, Cl. 060-201.

Rosset, Jean-Baptiste: *See—*
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Rowland, David L. Collapsible and stackable paper ash receptacle for cigarettes. 3,468,317, Cl. 131-235.

Rowley, Alan Stamford. Machines for sharpening rotary cutters. 3,468,065, Cl. 051-037.

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Sasaki, Reiichi, and Furuhashi, Michio, to Matsushita Electric Industrial Co., Ltd. Reactance transistor circuit configuration. 3,469,214, Cl. 333-080.

Saslawsky, Sheldon, to Products Machine Company, The. Apparatus for removing flashing from molded plastic articles. 3,469,076, Cl. 219-383.

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Savage, Albert B., and Aldrich, Julius C., to Sow Chemical Company, The. Preplasticized methylcellulose film and process of preparing said film. 3,468,685, Cl. 106-189.

Sawyer, Dwight L., to United States Borax & Chemical Corporation. Preparation of boric oxide. 3,468,626, Cl. 023-149.

Schaeuble, Alfred, Rauchle, Ernst Adolf, and Leutenegger, Willi, to Geigy, J. R., A.G. Process for the dyeing of polyamide fibers. 3,468,620, Cl. 008-054.

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Schefczik, Ernst, to Badische Anilin- & Soda-Fabrik Aktiengesellschaft. Phthalimide dyes of the mono azo series. 3,468,872, Cl. 260-152.

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Schimmelpfennig, Peter, to Licentia Patent-Verwaltungs-G.m.b.H. Searchlight assembly for weapons carriers, particularly for armored vehicles. 3,468,218, Cl. 089-036.

Schirmer, Henry G., to Grace, W. R., & Co. Irradiated isoluble amylose starch. 3,468,777, Cl. 204-160.1

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Schmidt, Otfried, Wiechert, Rudolf, and Neumann, Friedmund, to Schering, A.G.Medicinal compositions which contain 15,16-β-methylene steriods of the 19 nor-androstane series. 3,469,008, Cl. 424-243.

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Schmitt, Edward Emil, and Polistina, Rocco Albert, to American Cyanamid Company. Process of polymerizing a glycolide. 3,468,853, Cl. 260-078.3

Schmitz, Christian, to Daimler-Benz Aktiengesellschaft. Cooled rotor blade. 3,468,513, Cl. 253-039.15

Schneble, Frederick W., Jr., McCormack, John, and Zeblisky, Rudolph J., to Photocircuits Corporation. Electroless gold plating. 3,468,676, Cl. 106-001.

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Schrotz, Kurt. Automatic labelling machine. 3,468,739, Cl. 156-361.

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Seilly, Alec Harry, to C.A.V. Limited. Control circuits for electric starting mechanism. 3,469,106, Cl. 290-038.

Sekmakas, Kazys, to De Soto, Inc. Thermosetting coatings based on hydroxy copolymer partially condensed with silicon-containing material containing at least 1.2 silicon OH or alkoxy groups in combination with aminoplast resin. 3,468,836, Cl. 260-033.6

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Shinohara, Shinitsu, and Hanada, Masatosi, to Kabushiki Kaisha Tadano Tekkosho. Expansion means of treble booms for use with a crane truck. 3,468,431, Cl. 212-055.

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Shwartzberg, Shalom, to Ford Motor Company. Steering column for motor vehicle. 3,468,183, Cl. 074-492.

Siano, Violet. Spout operated mixing valve. 3,468,343, Cl. 137-636.2

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CLASSIFICATION OF PATENTS

ISSUED SEPTEMBER 23, 1969

NOTE.—First number, class; second number, subclass; third number, patent number

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451	3,468,013	37	3,468,097	33	3,468,172	200	3,468,243	127– 33	3,468,706		3,468,732
472.1	3,468,014	123	3,468,098	52	3,468,173	101– 90	3,468,244		3,468,706	190	3,468,733
481	3,468,015	140	3,468,099	55	3,468,174	91	3,468,245	128– 1.5	3,468,301	210	3,468,734
488	3,468,016	189	3,468,100	63	3,468,175	93	3,468,246	2.1	3,468,302	250	3,468,735
571	3,468,017	376	3,468,101	142	3,468,176	115	3,468,247		3,468,303	273	3,468,736
577	3,468,018	385	3,468,102	339	3,468,177	167	3,468,248	36	3,468,304	293	3,468,737
596	3,468,019	55– 33	3,468,103		3,468,178	232	3,468,250	57	3,468,305		3,468,738
597	3,468,020	222	3,468,104	425	3,468,179	235	3,468,249	66	3,468,306	361	3,468,739
599	3,468,021	269	3,468,105	475	3,468,180	350	3,468,251	145.5	3,468,307	431	3,468,740
611	3,468,022	56– 9	3,468,106	492	3,468,181	379	3,468,252	214	3,468,308	446	3,468,741
615	3,468,023	23	3,468,107		3,468,182	395	3,468,253	216	3,468,309	468	3,468,742
620	3,468,011	25.4	3,468,108		3,468,183	401.1	3,468,254	283	3,468,310	584	3,468,743
629	3,468,024	220	3,468,109	501	3,468,185	102– 70.2	3,468,255	296	3,468,311	160–172	3,468,360
30–346.51	3,468,025	328	3,468,110		3,468,186	73	3,468,256	317	3,468,312	161– 6	3,468,744
31– 89	3,468,026		3,468,111	.5	3,468,184	103– 53	3,468,257	520	3,468,313	63	3,468,746
32– 1	3,468,027	364	3,468,112	512	3,468,187	87	3,468,258	131– 3	3,468,314	79	3,468,747
12	3,468,028	57– 34	3,468,113	552	3,468,188	111	3,468,259	20	3,468,315	122	3,468,748
17	3,468,029		3,468,114	573	3,468,189	139	3,468,260	187	3,468,316	164	3,468,745
34	3,468,030	52	3,468,115	604	3,468,190	150	3,468,261	235	3,468,317	165	3,468,749
61	3,468,031	58.89	3,468,116	681	3,468,191	161	3,468,262	132– 9	3,468,318	191	3,468,750

161 – 193 : 3,468,751	204 – 37 : 3,468,768	224 – 42.1 : 3,468,460
196 : 3,468,752	3,468,769	225 – 3 : 3,468,461
216 : 3,468,753	38 : 3,468,770	97 : 3,468,462
250 : 3,468,754	58 : 3,468,772	226 – 64 : 3,468,463
162 – 206 : 3,468,755	105 : 3,468,773	141 : 3,468,464
344 : 3,468,756	141 : 3,468,774	227 – 10 : 3,468,465
164 – 89 : 3,468,361	143 : 3,468,775	3,468,466
3,468,362	158 : 3,468,776	229 – 1.5 : 3,468,467
125 : 3,468,363	160.1 : 3,468,777	14 : 3,468,468
235 : 3,468,364	180 : 3,468,778	33 : 3,468,469
266 : 3,468,365	181 : 3,468,779	54 : 3,468,470
332 : 3,468,366	195 : 3,468,780	62.5 : 3,468,471
340 : 3,468,367	3,468,781	230 – 95 : 3,468,472
359 : 3,468,368	198 : 3,468,782	114 : 3,468,473
165 – 2 : 3,468,369	207 : 3,468,783	233 – 27 : 3,468,474
66 : 3,468,370	224 : 3,468,784	29 : 3,468,475
156 : 3,468,371	3,468,785	235 – 23 : 3,468,476
184 : 3,468,372	243 : 3,468,786	50 : 3,468,477
166 – 55.8 : 3,468,373	268 : 3,468,787	71 : 3,468,478
84 : 3,468,374	206 – 19.5 : 3,468,411	92 : 3,469,078
120 : 3,468,375	46 : 3,468,412	117 : 3,468,479
272 : 3,468,376	3,468,413	137 : 3,468,480
274 : 3,468,377	47 : 3,468,414	150.23: 3,469,079
171 – 58 : 3,468,378	208 – 89 : 3,468,788	.271 3,469,081
172 – 2 : 3,468,379	188 : 3,468,789	.52: 3,469,080
6 : 3,468,380	251 : 3,468,790	151.31: 3,469,082
19 : 3,468,381	310 : 3,468,791	.35: 3,469,083
264 : 3,468,382	312 : 3,468,792	153 : 3,469,084
173 – 1 : 3,468,383	3,468,793	3,469,085
49 : 3,468,384	209 – 74 : 3,468,415	164 : 3,469,086
159 : 3,468,385	3,468,416	239 – 101 : 3,468,481
174 – 22 : 3,469,014	120 : 3,468,417	204 : 3,468,484
35 : 3,469,015	315 : 3,468,418	230 : 3,468,485
36 : 3,469,016	210 – 4 : 3,468,794	251 : 3,468,486
52 : 3,469,017	7 : 3,468,795	403 : 3,468,487
68.5 : 3,469,018	22 : 3,468,796	453 : 3,468,482
3,469,019	42 : 3,468,797	460 : 3,468,483
71 : 3,469,020	67 : 3,468,419	240 – 7.1 : 3,469,088
175 – 4.6 : 3,468,386	90 : 3,468,420	51.11: 3,469,089
16 : 3,468,387	96 : 3,468,421	241 – 34 : 3,468,488
176 – 78 : 3,468,757	274 : 3,468,422	39 : 3,468,489
177 – 37 : 3,468,388	360 : 3,468,423	242 – 55.19: 3,468,490
178 – 2 : 3,469,021	401 : 3,468,424	71.1 : 3,468,491
5.4 : 3,469,022	490 : 3,468,425	.8 : 3,468,492
3,469,023	211 – 35 : 3,468,426	74 : 3,468,493
3,469,024	64 : 3,468,427	75.2 : 3,468,494
.8 : 3,469,025	144 : 3,468,428	118.8 : 3,468,495
6 : 3,469,027	169 : 3,468,429	125.1 : 3,468,496
.6 : 3,469,028	182 : 3,468,430	192 : 3,468,497
3,469,029	212 – 55 : 3,468,431	207 : 3,468,498
.8 : 3,469,026	213 – 37 : 3,468,432	244 – 110 : 3,468,500
7.6 : 3,469,030	43 : 3,468,433	137 : 3,468,501
.9 : 3,469,031	214 – 1 : 3,468,434	150 : 3,468,502
69.5 : 3,469,032	3,468,435	153 : 3,468,503
112 : 3,469,033	6 : 3,468,436	246 – 167 : 3,469,091
179 – 1 : 3,469,034	15 : 3,468,437	248 – 14 : 3,468,504
18 : 3,469,035	17 : 3,468,438	101 : 3,468,505
84 : 3,469,036	77 : 3,468,439	221 : 3,468,506
100.2 : 3,469,037	390 : 3,468,440	243 : 3,468,507
3,469,038	519 : 3,468,441	314 : 3,468,508
3,469,039	766 : 3,468,442	316 : 3,468,509
.41: 3,469,040	215 – 1 : 3,468,443	357 : 3,468,510
189 : 3,469,041	9 : 3,468,444	250 – 41.9 : 3,469,092
180 – 65 : 3,468,389	11 : 3,468,445	3,469,093
66 : 3,468,390	3,468,446	3,469,094
98 : 3,468,391	41 : 3,468,447	43.5 : 3,469,095
112 : 3,468,392	219 – 10.47: 3,469,052	49.5 : 3,469,096
116 : 3,468,393	.55: 3,469,053	3,469,097
117 : 3,468,394	.61: 3,469,054	51.5 : 3,469,098
3,468,395	56 : 3,469,055	70 : 3,469,099
181 – .5 : 3,467,984	69 : 3,469,056	103 : 3,469,100
3,468,396	3,469,057	199 : 3,469,087
36 : 3,468,397	3,469,058	205 : 3,469,101
182 – 141 : 3,468,398	80 : 3,469,059	209 : 3,469,102
229 : 3,468,399	82 : 3,469,060	219 : 3,469,103
184 – 1 : 3,468,400	85 : 3,469,061	3,469,104
187 – 25 : 3,468,401	92 : 3,469,062	3,469,105
192 – 18 : 3,468,402	93 : 3,469,063	251 – 61.1 : 3,468,511
41 : 3,468,403	101 : 3,469,064	74 : 3,468,512
99 : 3,468,404	121 : 3,469,065	252 – 47 : 3,468,798
111 : 3,468,405	3,469,066	62.58: 3,468,801
195 – 1.3 : 3,468,758	124 : 3,469,067	.9 : 3,468,799
28 : 3,468,759	125 : 3,469,068	3,468,800
66 : 3,468,760	130 : 3,469,069	78 : 3,468,802
198 – 41 : 3,468,406	3,469,070	106 : 3,468,803
53 : 3,468,407	137 : 3,469,071	143 : 3,468,804
110 : 3,468,408	202 : 3,469,072	152 : 3,468,805
165 : 3,468,409	279 : 3,469,073	181.4 : 3,468,806
173 : 3,468,410	284 : 3,469,074	3,468,807
200 – 16 : 3,469,042	341 : 3,469,075	301.1 : 3,468,808
50 : 3,469,043	383 : 3,469,076	.4 : 3,468,810
51.07: 3,469,044	469 : 3,469,077	3,468,811
61.05: 3,469,045	220 – 3.6 : 3,468,448	.6 : 3,468,812
.34: 3,469,046	9 : 3,468,449	313 : 3,468,813
144 : 3,469,047	27 : 3,468,450	408 : 3,468,814
3,469,048	63 : 3,468,451	455 : 3,468,815
3,469,049	67 : 3,468,452	253 – 39.15: 3,468,513
3,469,050	75 : 3,468,453	254 – 106 : 3,468,514
168 : 3,469,051	221 – 147 : 3,468,454	256 – 1 : 3,468,515
202 – 173 : 3,468,761	225 : 3,468,455	24 : 3,468,516
186 : 3,468,762	222 – 55 : 3,468,456	259 – 2 : 3,468,517
203 – 48 : 3,468,763	3,468,457	6 : 3,468,518
204 – 1 : 3,468,764	94 : 3,468,458	9 : 3,468,519
33 : 3,468,765	196 : 3,468,459	39 : 3,468,520
35 : 3,468,766	223 – 66 : 3,468,499	260 – 2 : 3,468,816
37 : 3,468,767	76 : 3,468,539	3,468,817

260 – 2 : 3,468,818	260 – 453 : 3,468,924	279 – 2 : 3,468,550
.5 : 3,468,819	3,468,925	4 : 3,468,551
3,468,820	465 : 3,468,926	3,468,552
3,468,821	468 : 3,468,927	97 : 3,468,553
3,468,822	3,468,928	280 – 6 : 3,468,554
17.4 : 3,468,823	3,468,929	3,468,555
18 : 3,468,824	475 : 3,468,930	150 : 3,468,556
22 : 3,468,825	479 : 3,468,931	446 : 3,468,557
3,468,826	482 : 3,468,932	285 – 18 : 3,468,558
23 : 3,468,827	483 : 3,468,933	3,468,559
.7 : 3,468,828	485 : 3,468,934	21 : 3,468,560
27 : 3,468,829	488 : 3,468,935	23 : 3,468,561
29.2 : 3,468,830	500.5 : 3,468,936	81 : 3,468,562
.6 : 3,468,831	501.13: 3,468,937	93 : 3,468,563
3,468,832	511 : 3,468,938	111 : 3,468,564
.7 : 3,468,833	515 : 3,468,939	194 : 3,468,565
32.8 : 3,468,834	3,468,940	341 : 3,468,566
33.4 : 3,468,835	518 : 3,468,941	287 – 51 : 3,468,567
.6 : 3,468,836	3,468,952	53 : 3,468,568
3,468,837	520 : 3,468,942	82 : 3,468,569
37 : 3,468,838	523 : 3,468,943	100 : 3,468,570
38 : 3,468,839	526 : 3,468,944	103 : 3,468,571
41 : 3,468,840	531 : 3,468,945	129 : 3,468,572
.5 : 3,468,841	543 : 3,468,946	189.36: 3,468,573
45.75: 3,468,843	544 : 3,468,947	3,468,574
3,468,844	549 : 3,468,948	289 – 11 : 3,468,575
.8 : 3,468,842	559 : 3,468,949	290 – 38 : 3,469,106
.95: 3,468,845	563 : 3,468,950	292 – 251.5 : 3,468,576
47 : 3,468,846	570 : 3,468,951	256.75: 3,468,577
63 : 3,468,847	583 : 3,468,953	288 : 3,468,578
67 : 3,468,848	3,468,954	306 : 3,468,579
75 : 3,468,849	586 : 3,468,955	296 – 24 : 3,469,090
78 : 3,468,850	595 : 3,468,956	146 : 3,468,580
3,468,851	603 : 3,468,957	297 – 341 : 3,468,581
3,468,852	604 : 3,468,958	445 : 3,468,582
.3 : 3,468,853	606.5 : 3,468,959	299 – 89 : 3,468,583
.5 : 3,468,854	609 : 3,468,960	301 – 6 : 3,468,584
79.3 : 3,468,855	3,468,961	303 – 66 : 3,468,585
80.3 : 3,468,856	610 : 3,468,962	89 : 3,468,586
3,468,857	620 : 3,468,963	307 – 88.3 : 3,469,107
87.5 : 3,468,858	633 : 3,468,964	141 : 3,469,108
3,468,859	643 : 3,468,965	220 : 3,469,109
88.3 : 3,468,860	652.5 : 3,468,966	223 : 3,469,110
.7 : 3,468,861	656 : 3,468,967	235 : 3,469,111
93.7 : 3,468,862	659 : 3,468,968	238 : 3,469,112
3,468,863	668 : 3,468,970	252 : 3,469,113
3,468,864	677 : 3,468,971	254 : 3,469,114
94.3 : 3,468,865	680 : 3,468,969	268 : 3,469,115
3,468,866	836 : 3,468,972	273 : 3,469,116
3,468,867	851 : 3,468,973	302 : 3,469,117
.9 : 3,468,868	857 : 3,468,974	308 – 15 : 3,468,587
3,468,869	3,468,975	36.1 : 3,468,588
112.7 : 3,468,870	883 : 3,468,976	310 – 6 : 3,469,118
145 : 3,468,871	885 : 3,468,977	8.7 : 3,469,119
152 : 3,468,872	897 : 3,468,978	9.5 : 3,469,120
158 : 3,468,873	3,468,979	10 : 3,469,121
239 : 3,468,876	901 : 3,468,980	30 : 3,469,122
.1 : 3,468,874	927 : 3,468,981	49 : 3,469,123
.3 : 3,468,878	941 : 3,468,982	3,469,124
.5 : 3,468,877	953 : 3,468,983	54 : 3,469,125
.55: 3,468,875	964 : 3,468,984	3,469,126
3,468,880	261 – 111 : 3,468,521	3,469,127
.7 : 3,468,879	263 – 33 : 3,468,522	83 : 3,469,128
240 : 3,468,881	40 : 3,468,523	154 : 3,469,129
3,468,882	264 – .5 : 3,468,985	156 : 3,469,130
.2 : 3,468,883	9 : 3,468,986	162 : 3,469,131
244 : 3,468,884	28 : 3,468,987	163 : 3,469,132
247.2 : 3,468,885	31 : 3,468,988	164 : 3,469,133
251.5 : 3,468,886	43 : 3,468,989	3,469,134
253 : 3,468,887	45 : 3,468,990	170 : 3,469,135
256.4 : 3,468,888	3,468,991	178 : 3,469,137
.5 : 3,468,889	63 : 3,468,992	216 : 3,469,136
268 : 3,468,890	82 : 3,468,993	246 : 3,469,138
285 : 3,468,891	94 : 3,468,994	312 – 29 : 3,468,589
293 : 3,468,892	95 : 3,468,995	73 : 3,468,590
3,468,893	103 : 3,468,996	111 : 3,468,591
294.8 : 3,468,894	108 : 3,468,997	140.3 : 3,468,592
.9 : 3,468,895	148 : 3,468,998	234 : 3,468,593
296 : 3,468,896	174 : 3,468,999	313 – 74 : 3,469,139
3,468,897	255 : 3,469,000	318 : 3,469,140
301 : 3,468,898	290 : 3,469,001	315 – 10 : 3,469,141
306.8 : 3,468,899	266 – 33 : 3,468,524	30 : 3,469,142
307 : 3,468,900	34 : 3,468,525	111 : 3,469,143
309 : 3,468,901	43 : 3,468,526	182 : 3,469,144
3,468,902	267 – 1 : 3,468,527	200 : 3,469,145
.6 : 3,468,904	269 – 223 : 3,468,528	317 – 61 : 3,469,146
.7 : 3,468,903	270 – 31 : 3,468,529	101 : 3,469,147
326 : 3,468,905	52.5 : 3,468,530	3,469,148
.12: 3,468,907	271 – 62 : 3,468,531	120 : 3,469,149
.3 : 3,468,906	69 : 3,468,532	123 : 3,469,150
327 : 3,468,908	272 – 18 : 3,468,533	136 : 3,469,151
330.5 : 3,468,909	84 : 3,468,534	140 : 3,469,153
340.3 : 3,468,910	273 – 14 : 3,468,535	142 : 3,469,152
343.3 : 3,468,911	30 : 3,468,536	234 : 3,469,154
.6 : 3,468,912	49 : 3,468,537	235 : 3,469,155
345.2 : 3,468,913	68 : 3,468,538	236 : 3,469,156
.9 : 3,468,914	134 : 3,468,540	246 : 3,469,157
3,468,915	136 : 3,468,541	249 : 3,469,158
3,468,916	144 : 3,468,542	3,469,159
397.3 : 3,468,917	145 : 3,468,543	251 : 3,469,160
.47: 3,468,918	173 : 3,468,544	258 : 3,469,161
404 : 3,468,919	183 : 3,468,545	318 – 18 : 3,469,162
407 : 3,468,920	274 – 9 : 3,468,546	127 : 3,469,163
429 : 3,468,921	10 : 3,468,547	257 : 3,469,164
448.2 : 3,468,922	277 – 13 : 3,468,548	289 : 3,469,165
453 : 3,468,923	59 : 3,468,549	361 : 3,469,166

320 – 48 : 3,469,167	325 – 38 : 3,469,189	331 – 116 : 3,469,211	340 – 81 : 3,469,233	340 – 347 : 3,469,254	356 – 73 : 3,468,607
64 : 3,469,168	67 : 3,469,190	332 – 31 : 3,469,212	104 : 3,469,234	3,469,255	106 : 3,468,608
321 – 5 : 3,469,169	133 : 3,469,191	333 – 70 : 3,469,213	107 : 3,469,235	3,469,256	107 : 3,468,609
3,469,170	137 : 3,469,192	80 : 3,469,214	146.1 : 3,469,236	3,469,257	129 : 3,468,610
8 : 3,469,171	323 : 3,469,193	335 – 132 : 3,469,215	.3 : 3,469,237	373 : 3,469,258	401 – 186 : 3,468,611
9 : 3,469,172	370 : 3,469,194	195 : 3,469,216	3,469,238	380 : 3,469,259	188 : 3,468,612
44 : 3,469,173	405 : 3,469,195	208 : 3,469,217	3,469,263	343 – 6 : 3,469,260	199 : 3,468,613
322 – 28 : 3,469,175	328 – 133 : 3,469,196	210 : 3,469,218	172.5 : 3,469,239	13 : 3,469,261	424 – 27 : 3,469,002
323 – 4 : 3,469,176	150 : 3,469,197	336 – 58 : 3,469,219	3,469,240	115 : 3,469,262	89 : 3,469,003
19 : 3,469,177	329 – 50 : 3,469,198	210 : 3,469,220	3,469,241	350 – 1 : 3,468,594	202 : 3,469,004
22 : 3,469,174	330 – 8 : 3,469,199	212 : 3,469,221	3,469,242	16 : 3,468,595	226 : 3,469,005
3,469,178	15 : 3,469,200	337 – 74 : 3,469,222	3,469,243	3,468,596	230 : 3,469,006
45 : 3,469,179	3,469,201	202 : 3,469,223	3,469,244	28 : 3,468,597	238 : 3,469,007
324 – .5 : 3,469,180	28 : 3,469,202	338 – 22 : 3,469,224	174 : 3,469,245	45 : 3,468,598	243 : 3,469,008
3,469,181	84 : 3,469,203	163 : 3,469,225	3,469,246	146 : 3,468,599	270 : 3,469,009
37 : 3,469,182	331 – 65 : 3,469,204	252 : 3,469,226	3,469,247	189 : 3,468,600	311 : 3,469,010
57 : 3,469,183	94.5 : 3,469,205	262 : 3,469,227	3,469,248	307 : 3,468,601	342 : 3,469,011
65 : 3,469,184	3,469,206	339 – 47 : 3,469,228	3,469,249	351 – 160 : 3,468,602	431 – 2 : 3,468,614
72.5 : 3,469,185	3,469,207	340 – 3 : 3,469,229	237 : 3,469,250	353 – 94 : 3,468,603	126 : 3,468,615
73 : 3,469,186	107 : 3,469,208	3,469,230	286 : 3,469,251	355 – 10 : 3,468,604	166 : 3,468,616
77 : 3,469,187	3,469,209	6 : 3,469,231	324 : 3,469,252	29 : 3,468,605	350 : 3,468,617
102 : 3,469,188	113 : 3,469,210	80 : 3,469,232	347 : 3,469,253	91 : 3,468,606	

Classification of Designs

D 1 – 1 : 215,260	D23 – 12 : 215,284	D33 – 1 : 215,307	D44 – 29 : 215,331	D56 – 1 : 215,353	D74 – 1 : 215,377
7 : 215,261	215,285	7 : 215,308	D45 – 10 : 215,329	215,354	9 : 215,378
D 2 – 223 : 215,262	34 : 215,286	11 : 215,309	215,332	D57 – 1 : 215,355	21 : 215,379
D 5 – 2 : 215,263	215,287	19 : 215,310	215,333	215,356	D80 – 2 : 215,380
4 : 215,264	35 : 215,288	22 : 215,311	15 : 215,334	D60 – 2 : 215,357	8 : 215,367
D 8 – 8 : 215,265	57 : 215,289	D34 – 2 : 215,312	D48 – 2 : 215,335	D61 – 1 : 215,358	D81 – 10 : 215,381
109 : 215,266	215,290	5 : 215,313	20 : 215,336	215,359	215,382
136 : 215,267	58 : 215,291	215,314	215,337	215,360	215,383
252 : 215,268	D25 – 1 : 215,292	13 : 215,315	215,338	215,361	26 : 215,384
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48 : 215,308
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51 : 215,280
55 : 215,265
215,371

Plant Patents

6 : 2,920

6 : 2,921

U.S. DEPARTMENT OF COMMERCE
OFFICIAL GAZETTE of the UNITED STATES PATENT OFFICE
September 23, 1969 Volume 866 Number 4

TRADEMARKS

NOTICES

Orders for Copies of Foreign Patents and/or Published Applications

Some foreign countries are not publishing their patents and/or applications in numerical order. Since the U.S. Patent Office will begin supplying orders for copies of these foreign documents from master microfilm reels made up on weekly or other periodic publishing sequences, effective immediately all orders must include the country, patent or application number, and the publication date (if known) of the ordered document. Reference should be made to Section 901 05(a) of the Manual of Patent Examining Procedure to assist in determining the publication date of the commonly encountered foreign patents and applications.

Aug. 21, 1969. W. R. ARMSTRONG, *Director, Office of Patent Services.*

Trademark Suits

Notices under 15 U.S.C. 1116; Trademark Act of July 5, 1946

Reg. No. 82,124 (WALTHAM), Waltham Watch Company, Watches, watchcases, watch-movements, and parts thereof, **filed** Dec. 10, 1964, D.C., S.D.N.Y., Doc. 64–C–3796, *Waltham Watch Company* v. *Clifford Siegmeister et al.* Stipulation and order of dismissal with prejudice, June 16, 1969.

Reg. No. 220,747 (HUDSON'S BAY "POINT"), The Governor and Company of Adventurers of England Trading Into Hudson's Bay, doing business as Hudson's Bay Company, Woolen blankets; **Reg. No. 223,137** (PRO PELLE CUTEM AND DESIGN OF SHIELD), same, Blankets made of wool; **Reg. No. 310,276** (YE OLD HUDSON'S BAY), Rum; **Reg. No. 312,230** ("SPECIAL" ETC. AND DESIGN), same, Whisky; **Reg. No. 312,274** ("HUDSON'S BAY COMPANY" AND DESIGN), same, Brandy; **Reg. No. 376,025** (HUDSON'S BAY 1670), same, Whisky and Cognac; **Reg. No. 664,838** (HUDSON'S BAY AND COAT OF ARMS DESIGN), same, Whisky and brandy, **filed** June 28, 1968, D.C., C.D. Calif. (Los Angeles), Doc. 68–1062–AAH, *The Governor and Company of Adventurers of England Trading Into Hudson's Bay* v. *Hudson's Bay Company of California, Inc.* By stipulation, defendant permanently enjoined, June 27, 1969.

Reg. No. 223,137. (See Reg. No. 220,747.)

Reg. No. 310,276. (See Reg. No. 220,747.)

Reg. No. 312,230. (See Reg. No. 220,747.)

Reg. No. 312,274. (See Reg. No. 220,747.)

Reg. No. 376,025. (See Reg. No. 220,747.)

Reg. No. 619,268 (HOT SHOT), R-H Products Company, Liquid insecticide; **Reg. No. 822,118** (SPOT SHOT), Sifers Chemicals, Inc., Spotting compound for rugs, **filed** June 26, 1969, D.C. Kans. (Wichita), Doc. W–4186, *Hot Shot Quality Products, Inc.* v. *Sifers Chemicals, Inc.*

Reg. No. 664,838. (See Reg. No. 220,747.)

Reg. No. 669,234 (WHITE), White Sewing Machine Corpo-

CONDITION OF TRADEMARK APPLICATIONS AS OF JULY 31, 1969

Total number of applications awaiting action [excluding renewals and Sec. 12(c)]	14,039
Date of oldest new application	October 9, 1968
Date of oldest amended application (filing date)	April 1, 1966

C. M. WENDT, Director, Trademark Examining Operation TRADEMARK EXAMINING DIVISIONS, EXAMINERS AND TRADEMARK CLASSES UNDER EXAMINATION	Oldest Application	
	New	Amended
(I) L. J. BETTENDORF, Classes 2, 3, 4, 5, 7, 9, 10, 11, 27, 28, 30, 32, 33, 37, 38, 39, 40, 41, 42, 43, 50; Certification Marks, Classes A and B	2–17–69	5–3 –66
(II) F. H. WETHERBEE, Classes 1, 6, 15, 18, 45, 46, 47, 48, 49, 51, 52; Collective Membership Mark, Class 200	10–28–68	5–24–66
(III) P. S. BALL, Classes 19, 21, 23, 26, 31, 34, 35, 36	12–18–68	11–10–66
(IV) M. E. ABRAMSON, Classes 8, 12, 13, 14, 16, 17, 20, 22, 24, 25, 29, 44; Service Marks, Classes 100, 101, 102, 103, 104, 105, 106, and 107	10–9 –68	4–1 –66
Renewals (All Classes)	6–3 –69	----------
Sec. 12(c) Publications (All Classes)	6–16–69	----------

Applications filed during the month of July 1969—2,747

Registrations Issued ----------343—No. 877,244 to No. 877,586
Renewals Issued ----------150

The TRADEMARK SECTION of the OFFICIAL GAZETTE, issued weekly, is mailed under the direction of the Superintendent of Documents, Government Printing Office, Washington, D.C., 20402 to whom all subscriptions should be made payable and all communications addressed; subscription price, $20.50 per annum, foreign mailing $5.75 additional; single copies, 40 cents each.

PRINTED COPIES OF TRADEMARK REGISTRATIONS are furnished by the Patent Office for 20 cents each. Address orders to the Commissioner of Patents, Washington, D.C. 20231.

ration, Sewing machines, **filed** June 23, 1969, D.C. Ariz. (Phoenix), Doc. C–69–268, *White Sewing Machine Company* v. *John P. Rooney et ux, Sewing Distributors, Inc. et al.*

Reg. No. 670,255 (MUSIDISC), Nilo Santos Pinto, Grooved phonograph records, **filed** June 25, 1969, D.C., S.D.N.Y., Doc. 69–C–2746, *Nilo Santos Pinto, Records Distributors of America Inc.* v. *Talmadge Productions Inc.*

Reg. No. 670,566 (BOBCAT), Sherman Products, Inc., Backhoes for attachment to trunks, tractors, trailers and the like and parts therefor; **Reg. No. 822,806** (MELROE BOBCAT AND DESIGN), Melroe Manufacturing Company, Self-propelled front end loader vehicles, **filed** Mar. 21, 1969, D.C. N. Dak. (Fargo), Doc. C–4441, *Melroe Company* v. *Otis Elevator.*

Reg. No. 675,796 (CAR-FRESHENER), Car-Freshener Corporation, Absorbent bodies impregnated with a perfumed air deodorant, **filed** Feb. 21, 1967, D.C., S.D.N.Y., Doc. 67–C–743, *Car-Freshener Corporation* v. *Turtle Wax, Inc.* Notice of voluntary dismissal, June 30, 1969.

Reg. No. 714,249. (See Reg. No. 722,375.)

Reg. No. 722,375 (BURGER-KING), Burger King of Florida, Inc., Drive in restaurant services; **Reg. No. 782,990** (HOME OF THE WHOPPER), same; **Reg. No. 714,249** (DESIGN OF A KING ON A BUN), same, **filed** Oct. 22, 1968, D.C., S.D. Fla. (Miami), Doc. 68–1213 (Eaton), *Burger King Corporation, and Davmor Industries, Inc.* v. *Burger Castle Systems, Inc.* Order of dismissal with prejudice, Jan. 10, 1969.

Reg. No. 762,414 (WATER PIK), Aqua-Tec Corporation, Readily portable oral hygiene appliance utilizing a pulsed jet of water for massaging the gums and cleaning spaces adjacent the teeth; **Reg. No. 785,673** (WATER PIK AND DESIGN), same; **Reg. No. 809,624** (AQUA PIK), same, **filed** Jan. 16, 1967, D.C. Colo. (Denver), Doc. 67–C–20, *Aqua Tec Corporation* v. *Skaggs Drug Centers, Incorporated.* Consent judgment plaintiff owner of trademarks, Aug. 22, 1967.

Reg. No. 782,990. (See Reg. No. 722,375.)
Reg. No. 785,673. (See Reg. No. 762,414.)
Reg. No. 809,624. (See Reg. No. 762,414.)
Reg. No. 822,118. (See Reg. No. 619,268.)
Reg. No. 822,806. (See Reg. No. 670,566.)

MARKS PUBLISHED FOR OPPOSITION

SECTION 1

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Application for the registration of these marks in more than one class has been filed as provided in section 30 of said act as amended by Public Law 772, 87th Congress, approved Oct. 9, 1962, 76 Stat. 769. Opposition under section 13 may be filed within thirty days of this publication. See Rules 2.101 to 2.105.

A separate fee of twenty-five dollars for each class opposed must accompany the opposition.

[NOTE: For publication of marks presented in applications for registration in one class, see section 2.**]**

SN 257,590. Carver-Greenfield Corporation, East Hanover, N.J., assignee of Fred S. Carver Inc., Summit, N.J. Filed Oct. 31, 1966.

CARVER-GREENFIELD

Class 100—Miscellaneous

For Designing Plants for Dehydrating Edible or Inedible Materials in Fluid Systems (Int. Cl. 42).

Class 103—Construction and Repair

For Construction of Plants for Dehydrating Edible or Inedible Materials in Fluid Systems (Int. Cl. 37).

First use Aug. 1, 1961.

SN 263,807. Andree Biallot, Ltd., New York, N.Y. Filed Feb. 2, 1967.

SUE-SUE

Class 51—Cosmetics and Toilet Preparations

SN 275,853. Kokoku Rayon and Pulp Co., Ltd., Minato-ku, Tokyo, Japan. Filed July 12, 1967.

POLYCHLAL

Priority claimed under Sec. 44(d) on Japanese applications filed Jan. 19, 1969; Reg. Nos 779,938, 798,929, and 803,762, dated Apr. 30, 1968, Dec. 2, 1968, and Jan. 14, 1969, respectively.

Class 1—Raw or Partly Prepared Materials

For Synthetic Fibers (Int. Cl. 22).

Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

For Woven and Knitted Fabrics Used in Making Coats and Jackets and for Upholstery and Drapery Purposes (Int. Cl. 24).

Class 43—Thread and Yarn

For Yarn Excluding Sewing Yarns and Fishing Lines (Int. Cl. 23).

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[NOTE: For publication of marks presented in applications for registration in one class, see section 2.]

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For Designing Plants for Dehydrating Edible or Inedible Materials in Fluid Systems (Int. Cl. 42).

Class 103—Construction and Repair

For Construction of Plants for Dehydrating Edible or Inedible Materials in Fluid Systems (Int. Cl. 37).

First use Aug. 1, 1961.

SN 263,807. Andree Biallot, Ltd., New York, N.Y. Filed Feb. 2, 1967.

SUE-SUE

Class 51—Cosmetics and Toilet Preparations

For Perfume, Toilet Water, Bath Oil, Solid Perfume, Sachet, and Dusting Powder (Int. Cl. 3).

Class 52—Detergents and Soaps

For Toiletry Soap (Int. Cl. 3).

First use Dec. 30, 1966.

SN 268,528. Roofing Machinery Mfg. Co., Elk Grove Village, Ill. Filed Apr. 6, 1967.

ROMMCO

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Hot Mix Plants for Paving Mixtures, Shingle Manufacturing Machines, Knives and Cutters for Shingle Manufacturing Machines, Repair and Replacement Parts for the Foregoing (Int. Cl. 7).

Class 34—Heating, Lighting, and Ventilating Apparatus

For Combination Asphalt Heating and Storage Tanks (Int. Cl. 11).

First use on or about Mar. 17, 1967.

SN 271,624. International Plastics, Inc., Miami, Fla. Filed May 16, 1967.



Class 2—Receptacles

For Articles Fabricated From Plastic Material—Namely, Seat Trays for Airlines (Int. Cl. 21).

Class 19—Vehicles

For Airplane Seat Arm-Rest End Caps (Int. Cl. 12).

First use Apr. 20, 1967.

SN 275,853. Kokoku Rayon and Pulp Co., Ltd., Minato-ku, Tokyo, Japan. Filed July 12, 1967.

POLYCHLAL

Priority claimed under Sec. 44(d) on Japanese applications filed Jan. 19, 1969; Reg. Nos 779,938, 798,929, and 803,762, dated Apr. 30, 1968, Dec. 2, 1968, and Jan. 14, 1969, respectively.

Class 1—Raw or Partly Prepared Materials

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Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

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Class 43—Thread and Yarn

For Yarn Excluding Sewing Yarns and Fishing Lines (Int. Cl. 23).

SN 281,156. Zimmerman's Cut Rate Liquor Store, Inc., Chicago, Ill. Filed Sept. 26, 1967.

CORTARO

Class 47—Wines

For Wines (Int. Cl. 33).

Class 49—Distilled Alcoholic Liquors

For Brandy (Int. Cl. 33).

First use May 25, 1967.

SN 287,378. Ross Operating Valve Company, Detroit, Mich. Filed Dec. 21, 1967.



The mark consists of a geometric design in the form of two stylized letters "R," the first standing upright and the second being inverted. Owner of Reg. No. 741,149.

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

For Pneumatic Control Valves for Industrial Uses and Regulators for Controlling the Pressure of Compressed Air in Control Systems (Int. Cl. 6).

First use Nov. 6, 1967

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Lubricators for Injecting Lubricant as a Spray Into Compressed Air Used in Control Valve Systems and Mufflers for Reducing the Noise in Compressed Air Control Valve Systems (Int. Cl. 7).

First use Dec. 7, 1967.

Class 26—Measuring and Scientific Appliances

For Gauges for Indicating the Pressure of Compressed Air in Control Valve Systems (Int. Cl. 9).
First use Dec. 7, 1967.

Class 31—Filters and Refrigerators

For Air Filters for Compressed Air Used in Control Valve Systems (Int. Cl. 11).
First use Dec. 7, 1967.

SN 288,414. Fuller Company, Catasauqua, Pa. Filed Jan. 9, 1968.

FULLER

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Gas Compressors; Pneumatic Pumps and Parts Thereof for Use in Loading Barges and Ships; Water Sewage Treatment Plants; Pneumatic Conveying Systems for Conveying Bulk Materials; Motion Safety Switch for Belt, Chain and Screw Conveyors; Rotary Air Compressors for Use in the Pulp and Paper Industry; Pneumatic Blowers and Vacuum Pumps for Use in the Paper and Pulp Industry; Gravity Blenders for Mixing Dry Solids; Mechanical Air Separators for Adjusting Cement Fineness; Rock and Mineral Crushers (Int. Cls. 7 and 9).
First use 1926.

Class 31—Filters and Refrigerators

For Industrial Dust Collectors; Portable Air Filters for Use With Railway Car Unloaders; Package Water Purification Treatment Plants (Int. Cl. 11).
First use 1957.

Class 34—Heating, Lighting, and Ventilating Apparatus

For Industrial Fans and Blowers, Rotary Kilns and Parts Therefor; Grate Coolers Designed To Receive Nodules and Pellets for a Kiln or a Furnace Affecting Rapid Cooling With Effective Heating Recuperation; Fluidized Heat Exchanger for Use in the Cement Industry; Fluid Bed Reactors for Drying and Cooling Materials for Industrial Use (Int. Cl. 11).
First use 1926.

SN 289,605. Planalog, Inc., Philadelphia, Pa. Filed Jan. 25, 1968.

PLANALOG

Owner of Reg. Nos. 812,494 and 870,865.

Class 100—Miscellaneous

For Consulting in and Designing Systems for Scheduling, Planning and Managing of Programs of Production and Resource Utilization (Int. Cl. 42).

Class 107—Education and Entertainment

For Education and Training in Scheduling, Planning and Managing of Programs of Production and Resource Utilization (Int. Cl. 41).

First use July 1964.

SN 289,678. Heritage Quilts, Inc., Chattanooga, Tenn. Filed Jan. 26, 1968.

POLY-LITE

Class 32—Furniture and Upholstery

For Synthetic Fiber Filler Sold as a Component of Pillows (Int. Cl. 20).

Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

For Synthetic Fiber Filling Sold as a Component of Bedspreads, Comforters, and Quilts (Int. Cl. 24).

First use Dec. 7, 1967.

SN 290,409. Pet Chemicals, Inc., Miami Springs, Fla. Filed Feb. 6, 1968.

VIP

The drawing is lined for the color red.

Class 6—Chemicals and Chemical Compositions

For Tick Killer, Tick and Flea Powder, Tick and Flea Spray, Insect Repellant, Talc for Killing Fleas and Ticks, Kitten and Puppy Spray for Killing Fleas and Ticks, House and Kennel Insecticide Spray, Fumicide Insecticide, Bitter Spray Deterrent for Stopping Chewing, Anti-Mating Spray Deterrent, Spray for Neutralizing Odors, Lawn and Kennel Insecticide Spray, and Lawn and Kennel Insecticide Dust (Int. Cl. 5).

Class 15—Oils and Greases

For Clipper Lubricant (Int. Cl. 4).

Class 18—Medicines and Pharmaceutical Preparations

For Ear Powder, Medicated Salve, Fungicide, All for Veterinary Use (Int. Cl. 5).

Class 52—Detergents and Soaps

For Foam Cleaner in the Nature of Shampoo for Veterinary Use (Int. Cl. 5).

First use Jan. 13, 1967.

SN 291,185. Reimers Electra Steam, Inc., Clearbrook, Va. Filed Feb. 15, 1968.

Reimers

Owner of Reg. No. 510,638.

Class 24—Laundry Appliances and Machines

For Commercial Steam Irons (Int. Cl. 7).

Class 34—Heating, Lighting, and Ventilating Apparatus

For Permanent and Portable Steam Cleaners and Sterilizers; Steam Baths; Hot Water Boilers; and Steam Boilers (Int. Cls. 7 and 11).

First use Mar. 1, 1966.

SN 291,524. Charles Revson, Inc., New York, N.Y. Filed Feb. 20, 1968.

BRAGGI

The word "Braggi" is fictitious. Owner of Reg. No. 854,304.

Class 51—Cosmetics and Toilet Preparations

For Shaving Lather (Int. Cl. 3).

Class 52—Detergents and Soaps

For Shampoo for Body and Hair (Int. Cl. 3).

First use July 11, 1966.

SN 296,813. Cummings & Co., Inc., Nashville, Tenn. Filed Apr. 29, 1968.

Owner of Reg. Nos. 848,932, 871,038, and others.

Class 100—Miscellaneous

For Renting (or Leasing) of Sign and Poster Space, and Consultation Services Regarding Sign Programs (Int. Cl. 42).

Class 101—Advertising and Business

For Creation of Design and Advertising Material and All Types of Signs (Int. Cl. 35).

Class 103—Construction and Repair

For Painting of Design and Advertising Material Upon Bulletin Boards, the Application of Posters Upon Poster Boards, the Maintenance and Installation of Signs and Bulletin Boards (Int. Cl. 37).

First use Mar. 15, 1967.

SN 297,123. The Torrington Company (Delaware corporation), Torrington, Conn., assignee of The Torrington Company (Maine corporation), Torrington, Conn. Filed May 2, 1968.

PROGRESS THROUGH PRECISION

Owner of Reg. Nos. 202,735, 819,471, and others.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Machine Needles, Thread Guides and Knitting Machine Units (Int. Cl. 7).

Class 44—Dental, Medical, and Surgical Appliances

For Surgical Needles (Int. Cl. 10).

First use Sept. 26, 1966.

SN 297,239. Amateur Athletic Union of the United States, Inc., New York, N.Y. Filed May 3, 1968.

AAU

Owner of Reg. No. 791,171.

Class 3—Baggage, Animal Equipments, Portfolios, and Pocketbooks

For Luggage, Travel Bags and Briefcases (Int. Cl. 18).
First use at least as early as 1958.

Class 28—Jewelry and Precious-Metal Ware

For Jewelry, Lapel Pins, Tie Tacks and Clasps, Money Clips Made in Part of Precious Metal, and Charms (Int. Cl. 14).
First use at least as early as 1938.

Class 38—Prints and Publications

For Periodical Publications—Namely, Pamphlets, Books, Manuals, Newsletters, and Films (Int. Cl. 16).
First use at least as early as 1936.

Class 39—Clothing

For Wearing Apparel and Accessories—Namely, Uniforms, Jackets, Coats, Pants, Shirts, Hats and Caps, Hosiery, Shoes and Ties (Int. Cl. 25).
First use at least as early as 1937.

Class 50—Merchandise Not Otherwise Classified

For Souveniers, Pins, Trophies, Plaques, Medallions, Medals, Banners, Patches and Emblems (Int. Cls. 14, 20, 24, and 26).
First use at least as early as 1936.

Class 107—Education and Entertainment

For Organizing, Promoting, Sponsoring, Sanctioning, Conducting, Administering, Regulating and Governing Amateur Athletic Programs and Activities; Establishing and Maintaining by Registration a Uniform Standard of Amateur Standing for Athletes; Instituting, Regulating and Awarding Amateur Athletic Championships; as Well as Maintaining Records and Certifying Record Performances of Amateur Athletes; and Qualifications of Officials To Perform Such Services (Int. Cl. 41).
First use at least as early as 1888.

Class 200

For Indicating Membership in Applicant.
First use at least as early 1888.

SN 298,078. Regal Ware, Inc., Kewaskum, Wis. Filed May 14, 1968.

Regal

Owner of Reg. Nos. 302,874 and 528,672.

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

For Cooking and Food Serving Utensils Made Primarily of Metal—Namely, Saucepans, Non-Electric Percolators, Tea Kettles, Tubular Cake Pans, Trays, Cake Covers, Water Pitchers, Non-Electric Bun Warmers, Storage Bowls, Mixing Bowls, Serving and Decorative Bowls, Snack Bowl Sets, Frying Pans, Kettles, Casserole Pots, Dutch Ovens, Egg Poachers, Stackable Metal Food Containers for Cooking, Carrying and Serving Food With Optional Plastic Insulated Carrying Bag, Roasting Pans, Double Boilers, Griddles, Chicken Fryers, Rectangular Baking and Roasting Pans, Pizza Pans, Bread and Loaf Pans, Muffin Pans, Cookie Sheets, Round Cake Pans, Square Cake Pans, Broiling Pans and Racks, and Pie Pans, and Covers for Said Goods (Int. Cls. 6 and 11).

Class 21—Electrical Apparatus, Machines, and Supplies

For Electrical Apparatus—Namely, Percolators, Frying Pans, Broilers, Popcorn Poppers, Instant Hot Drink Makers, Griddles and Coffee Urns (Int. Cl. 11).

First use 1954.

SN 298,764. Tol-O-Matic, Inc., Minneapolis, Minn. Filed May 21, 1968.

TOL·O·MATIC

The drawing is lined for the color blue, but color is not an essential feature of the mark.

Class 19—Vehicles

For Brakes for Vehicular Applications (Int. Cl. 12).

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Components of Mechanical, Hydraulic, and Pneumatic Power Transmitting Mechanisms—Namely, Gear Boxes, Right Angle Gear Drives, Hydraulic and Pneumatic Cable Actuating Cylinders, Brakes for Machine Tools and Industrial Applications, Pneumatic Clutches, and Air-Over-Oil Tanks for Hydraulic Cylinders (Int. Cl. 7).

First use Feb. 9, 1968.

SN 299,128. The Hoover Company, North Canton, Ohio. Filed May 27, 1968.

HOOVER

Owner of Reg. Nos. 502,428, 779,226, and others.

Class 21—Electrical Apparatus, Machines, and Supplies

For Blenders, Broiler-Bakers, Fry Pans, Toasters, and Repair and Replacement Parts for Such Goods (Int. Cls. 7 and 11).

First use Jan. 12, 1965.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Can Openers, Floor Washer-Dryer Combination, Knives, Knife Sharpener-Can Opener Combinations, Upholstery Shampooers Which Create and Apply Foam to the Surface Being Cleaned, and Repair and Replacement Parts for Such Goods (Int. Cls. 7 and 11).

First use July 11, 1963.

Class 24—Laundry Appliances and Machines

For Clothes Dryers Which Extract Liquid by Spinning the Clothes, Clothes Dryers Which Dry by Application of Heat, Clothes Washers, and Repair and Replacement Parts for Such Goods (Int. Cl. 7).

First use Feb. 18, 1963.

Class 29—Brooms, Brushes, and Dusters

For Shoe Polishers, Toothbrushes, and Repair and Replacement Parts for Such Goods (Int. Cls. 7 and 21).

First use Jan. 25, 1965.

Class 44—Dental, Medical, and Surgical Appliances

For Hair Dryers, and Repair and Replacement Parts Therefor (Int. Cl. 11).

First use July 12, 1963.

SN 304,031. Waters Associates Inc., Framingham, Mass. Filed July 31, 1968.



The mark consists of a stylized letter "W."

Class 6—Chemicals and Chemical Compositions

For Cross-Lined Polystyrene Gel Column Packings for Liquid and Gas Chromatography (Int. Cl. 1).

Class 26—Measuring and Scientific Appliances

For Chromatographs, Detectors, and Fluid Analyzers (Int. Cl. 9).

First use May 2, 1968.

SN 304,844. Hamilton Cosco, Inc., Columbus, Ind. Filed Aug. 12, 1968.

COSCO

Owner of Reg. Nos. 518,072, 722,569, and others.

Class 2—Receptacles

For Clothes Hampers (Int. Cl. 20).
First use at least as ealy as Jan. 5, 1967.

Class 19—Vehicles

For Shopping Carts, Infants' Strollers and Rumble Seats Therefor (Int. Cl. 12).
First use at least as early as July 21, 1958.

Class 22—Games, Toys, and Sporting Goods

For Infants' Walkers (Int. Cl. 28).
First use at least as early as Oct. 8, 1960.

Class 24—Laundry Appliances and Machines

For Foldable Dryers, Laundry Carts and Sorters and Replacement Containers Therefor (Int. Cls. 12 and 21).
First use at least as early as July 25, 1966.

Class 32—Furniture and Upholstery

For Bed Rails, Book Cases and Shelving, Tables, Chairs for Infants, Toilet Trainers, and Clothes Racks (Int. Cl. 20).
First use at least as early as Nov. 1, 1945.

SN 305,507. Avon Products, Inc., New York, N.Y. Filed Aug. 20, 1968.

FANCY NOTIONS

Class 51—Cosmetics and Toilet Preparations

For Cologne, Perfume, Bath Oil, and Powder Sachet (Int. Cl. 3).

Class 52—Detergents and Soaps

For Toilet Soap (Int. Cl. 3).

First use Aug. 1, 1968.

SN 305,512. Pennzoil United, Inc., Oil City, Pa. Filed Aug. 20, 1968.

PENNZOIL

The drawing is lined for the colors yellow and red. Owner of Reg. No. 849,168 and others.

Class 6—Chemicals and Chemical Compositions

For Windshield Washer Solvent and Anti-Freeze, Brake Fluid, Lighter Fluid, and Charcoal Lighter (Int. Cls. 1 and 4).
First use July 18, 1967.

Class 15—Oils and Greases

For Motor Oil, Fuel System Anti-Freeze and Carburetor Cleaner, Crankcase Oil Additive, Automatic Transmission Fluid, and Oil Additive for Engines, Transmissions and Gear Boxes (Int. Cls. 1 and 4).
First use Oct. 24, 1967.

SN 306,709. Gladwin Industries, Inc., Atlanta, Ga. Filed Sept. 6, 1968.



The drawing is lined for the colors red and pink, but the mark is not restricted to any particular color or combination of color. Owner of Reg. No. 807,426.

Class 1—Raw or Partly Prepared Materials

For Acrylic Rods and Tubes, Cellulose Acetate and Cellulose Acetate Butyrate, Vinyl Sheet, Flexible Plastic Film, and Oriented Polyethylene Terephthalate (Polyester) Base Film Used as a Transparent Plastic Film for Use in Making Transparencies on Photocopy Duplicating Machines (Int. Cl. 17).

Class 2—Receptacles

For Combined Plastic Bowls or Trays and Light Containing Supports Therefor (Int. Cl. 21).

Class 12—Construction Materials

For Plastic Telephone Booth Roofs (Int. Cl. 19).

Class 32—Furniture and Upholstery

For Enclosures for Telephones, Walk-Up Partial Enclosures for Telephones, Telephone Directory Shelves, and School Study Enclosures—Namely, Carrels (Int. Cl. 20).

Class 37—Paper and Stationery

For Plastic Materials Sheet Having a Marking Surface Thereon (Int. Cl. 16).

Class 50—Merchandise Not Otherwise Classified

For Plastic Signs (Int. Cl. 19).

First use May 1, 1968.

SN 306,710. Avon Products, Inc., New York, N.Y. Filed Sept. 6, 1968.

TENDRIL

Class 51—Cosmetics and Toilet Preparations

For Hair Conditioner and Hair Setting Lotion (Int. Cl. 3).

Class 52—Detergents and Soaps

For Hair Shampoo (Int. Cl. 3).

First use July 17, 1968.

SN 306,711. Avon Products, Inc., New York, N.Y. Filed Sept. 6, 1968.

ANECDOTE

Class 51—Cosmetics and Toilet Preparations

For Cologne, Perfume, and Dusting Powder (Int. Cl. 3).

Class 52—Detergents and Soaps

For Toilet Soap (Int. Cl. 3).

First use July 17, 1968.

SN 306,713. Avon Products, Inc., New York, N.Y. Filed Sept. 6, 1968.

KARAKUL

Class 51—Cosmetics and Toilet Preparations

For Cologne, Perfume, and Dusting Powder (Int. Cl. 3).

Class 52—Detergents and Soaps

For Toilet Soap (Int. Cl. 3).

First use July 17, 1968.

SN 306,715. Avon Products, Inc., New York, N.Y. Filed Sept. 6, 1968.

CONSEQUENCE

Class 51—Cosmetics and Toilet Preparations

For Cologne, Perfume, and Dusting Powder (Int. Cl. 3).

Class 52—Detergents and Soaps

For Toilet Soap (Int. Cl. 3).

First use July 17, 1968.

SN 306,716. Avon Products, Inc., New York, N.Y. Filed Sept. 6, 1968.

COUNTRY HAYRIDE

Class 51—Cosmetics and Toilet Preparations

For Hand Cream, Cream Sachet, Cologne, and Lip Pomade (Int. Cl. 3).

Class 52—Detergents and Soaps

For Toilet Soap (Int. Cl. 3).

First use July 17, 1968.

SN 306,717. Avon Products, Inc., New York, N.Y. Filed Sept. 6, 1968.

FURTHERMORE. . .

Class 51—Cosmetics and Toilet Preparations

For Cologne, Perfume, and Dusting Powder (Int. Cl. 3).

Class 52—Detergents and Soaps

For Toilet Soap (Int. Cl. 3).

First use July 17, 1968.

SN 306,718. Avon Products, Inc., New York, N.Y. Filed Sept. 6, 1968.

RIO

Class 51—Cosmetics and Toilet Preparations

For Cologne, Perfume, and Dusting Powder (Int. Cl. 3).

Class 52—Detergents and Soaps

For Toilet Soap (Int. Cl. 3).

First use July 17, 1968.

SN 306,720. Avon Products, Inc., New York, N.Y. Filed Sept. 6, 1968.

INSTRUMENTAL

Class 51—Cosmetics and Toilet Preparations

For Cologne, Perfume, and Dusting Powder (Int. Cl. 3).

Class 52—Detergents and Soaps

For Toilet Soap (Int. Cl. 3).

First use July 17, 1968.

SN 306,723. Avon Products, Inc., New York, N.Y. Filed Sept. 6, 1968.

RECOLLECTION

Class 51—Cosmetics and Toilet Preparations

For Cologne, Perfume, and Dusting Powder (Int. Cl. 3).

Class 52—Detergents and Soaps

For Toilet Soap (Int. Cl. 3).

First use July 17, 1968.

SN 306,920. Kimco Auto Products, Inc., Memphis, Tenn. Filed Sept. 9, 1968.

NULINE

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Clutch Discs (Int. Cl. 12).

Class 35—Belting, Hose, Machinery Packing, and Nonmetallic Tires

For Disc Brake Pads (Int. Cl. 12).

First use July 1, 1968.

SN 307,163. Aluma-Form, Inc., Memphis, Tenn. Filed Sept. 12, 1968.

ALUMA-FORM

Owner of Reg. No. 754,430.

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

For Fixtures in the Nature of Brackets and Braces for Supporting Electrical Equipment (Int. Cl. 6).

Class 21—Electrical Apparatus, Machines, and Supplies

For Supplies for Electrical Utilities—Namely, Equipment Mounts (Int. Cl. 9).

First use at least as early as July 21, 1961.

SN 308,161. Syracuse China Corporation, Syracuse, N.Y. Filed Sept. 24, 1968.

GALLERY COLLECTION

No claim is made by the applicant to the exclusive use of the word "Collection" apart from the mark as shown.

Class 8—Smokers' Articles, Not Including Tobacco Products

For Giftware Made of China—Namely, Ash Trays (Int. Cl. 34).

Class 30—Crockery, Earthenware, and Porcelain

For Giftware Made of China—Namely, Vases, Candy Boxes, and Cake Plates (Int. Cl. 21).

First use at least as early as Jan. 31, 1962.

SN 313,467. The American Automobile Association (Incorporated), d.b.a. American Automobile Association, Washington, D.C. Filed Dec. 3, 1968.

AMERICAN AUTOMOBILE ASSOCIATION

Without waiver of any of its common law rights, applicant makes no claim to exclusive right to use the words "Automobile Association" apart from the mark as shown. Owner of Reg. Nos. 547,321, 703,556, and 829,265.

Class 100—Miscellaneous

For Automobile Association Services Rendered to Motor Vehicle Owners, Motorists and Travelers Generally—Namely, Obtaining Motor Vehicle License Plates and Title Certificates; Sponsoring School Safety Patrols; Advocating Legislation Favorable to Safe and Economical Motor Vehicle Travel, Operation and Maintenance; Conducting Motor Vehicle Tests and Making Tests of Automotive and Related Products; and Rating Tourist Accommodations (Int. Cl. 42).

First use 1903.

Class 101—Advertising and Business

For Arranging for Discount Purchases and Collecting Damage Claims (Int. Cl. 35).

First use 1916.

Class 102—Insurance and Financial

For Providing Bail Bond; Offering Rewards for Information Leading to Arrest and Conviction of Persons Stealing Members' Automobiles; and Placing Insurance With Underwriters (Int. Cl. 36).

First use 1916.

Class 103—Construction and Repair

For Providing Emergency Road Services (Int. Cl. 37).

First use 1916.

Class 105—Transportation and Storage

For Disseminating Travel Information and Making Travel Arrangements (Int. Cl. 39).

First use 1902.

Class 107—Education and Entertainment

For Teaching Motor Vehicle Operation; Conducting Traffic and Pedestrian Safety Campaigns; and Giving Traffic Safety Lessons (Int. Cl. 41).

First use 1924.

SN 313,672. Baylis Industries, Inc., Roselle, N.J. Filed Dec. 5, 1968.

Smokador

Owner of Reg. No. 165,697.

Class 2—Receptacles

For Waste Baskets, Urns, Planters, and Carafes (Int. Cl. 21).

First use in or before 1930.

Class 8—Smokers' Articles, Not Including Tobacco Products

For Ash Receivers—Namely, Ash Trays; Pipe Racks (Int. Cl. 34).

First use in 1922.

Class 32—Furniture and Upholstery

For Smoking Stands, Smokers' Wall Urns and Floor Urns, Umbrella Stands, Luggage Racks, Tray Stands, Coat-Hanging Stands and Wall Racks, Desk Trays and Stands, Bookends, and Message Racks (Int. Cl. 20).

First use in 1922.

SN 313,857. Marquette Corporation, St. Paul, Minn. Filed Dec. 9, 1968.

MARQUETTE

Owner of Reg. Nos. 505,250, 851,634, and others.

Class 21—Electrical Apparatus, Machines, and Supplies

For Battery Chargers and Boosters (Int. Cl. 9).

First use Feb. 15, 1965.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Frame Straighteners for Automotive Vehicles (Int. Cl. 7).

First use June 2, 1967.

Class 26—Measuring and Scientific Appliances

For Electrical Tune Up Equipment—Namely, Equipment for Testing and Indicating the Condition of Internal Combustion Engines in Connection With the Adjusting and Tuning Thereof (Int. Cl. 9).

First use May 25, 1965.

Class 34—Heating, Lighting, and Ventilating Apparatus

For Electrical Welders and Parts Thereof, Gas Welding and Cutting Equipment—Namely, Torch Handles and Tips, Cutting Attachments With Cutting Tips, Hose, and Gas Regulators, and Welding Rods (Int. Cls. 6 and 9).

First use Mar. 1, 1965.

SN 315,288. Gray Tool Company, Houston, Tex. Filed Dec. 26, 1968.

GRAY

Owner of Reg. Nos. 646,340 and 646,782.

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

For Petroleum Wellhead Equipment—Namely, Casing Head Housings, Casing Heads, Casing Hangers, Tie-Back Collars, Tie-Back Subs, Casing Bonnets, Casing Head Spools, Tubing Heads, Tubing Hangers, Tubing Head-Bonnets, Tubing Plugs, Valve Reinstallation Nipples and Plugs, Valve Removal Plugs, Multiple Bowl Wellheads (Casing-Tubing Heads), Flow Control Manifolds, Multiple Zone Completion Tubing Assemblies, Multiple Completion Tubing Hanger Systems, Tubing Bonnet Hold Down Flanges, Top Flanges, Threaded Fittings, Flanged Fittings, Studded Fittings, Double Tapered Seals, Chokes and Choke Beans and Choke Bean Nipples, Flanges and Nipples for Valves—Namely, Gate Valves, Float Valves and Check Valves, and for Remote Controlled Conduit Connectors (Int. Cls. 6 and 7).

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Petroleum Well Drilling and Completion Equipment—Namely, Control Equipment Test Hangers, Tubing Plugging Tools, Valve Removal Tools, Drilling Adapters, Tubing Head Bowl Adapters, Strippers, Head Bowl Protectors, Running and Retrieving Tools, and Rotary Drilling Swivels (Int. Cl. 7).

First use during 1935.

SN 315,708. The Chesapeake Corporation of Virginia, West Point, Va. Filed Jan. 3, 1969.



Class 1—Raw or Partly Prepared Materials

For Unbleached Paper Pulp (Int. Cl. 1).

First use May 25, 1965.

Class 37—Paper and Stationery

For Kraft Paper Suitable for Use in Making Bags, Paper Laminates and as Reinforcing Base Sheets as Well as Kraft Paper Board Suitable for Use in Making Corrugated Boxes, Wound Paper Tubes, Publication Covers, Liners and Backings (Int. Cl. 16).

First use Oct. 1, 1965.

Class 38—Prints and Publications

For Periodicals—Namely, Newsletters on Paper Mill and Forest Activities (Int. Cl. 16).

First use Oct. 1, 1965.

SN 320,391. Fries & Fries, Inc., Cincinnati, Ohio. Filed Mar. 3, 1969.

PRECISION

Class 18—Medicines and Pharmaceutical Preparations

For Natural and/or Imitation Flavors, Either Liquid or Spray-Dried, To Be Used in the Making of Medicines and Pharmaceutical Preparations (Int. Cls. 3 and 30).

Class 45—Soft Drinks and Carbonated Waters

For Natural and/or Imitation Flavors, Either Liquid or Spray-Dried, To Be Used in the Making of Soft Drinks (Int. Cls. 3 and 30).

Class 46—Foods and Ingredients of Foods

For Natural and/or Imitation Flavors, Either Liquid or Spray-Dried To Be Used in Food and in the Making of Food Beverages (Int. Cls. 3 and 30).

First use Dec. 5, 1966.
Subj. to Intf. with SN 317,011.

SN 325,914. Jerome H. Pennock, Palm Beach, Fla. Filed Apr. 30, 1969.

LUV-RUG

Class 39—Clothing

For Ponchos (Int. Cl. 25).

Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

For Rugs (Int. Cl. 27).

First use Apr. 8, 1969.

SECTION 2

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Opposition under section 13 may be filed within thirty days of publication. See Rules 2.101 to 2.105.

A fee of twenty-five dollars must accompany the opposition.

[NOTE: For publication of marks presented in a combined application for registration in more than one class, see section 1.]

Class 1—Raw or Partly Prepared Materials

SN 274,997. Storey Brothers and Company, Limited, Lancaster, England. Filed June 28, 1967.

STOREY-CLAD

For Plastic Sheets, With or Without an Adhesive Applied to Them, for Covering Other Articles To Give Them a Decorative, Easily Cleaned and Wear Resistant Surface (Int. Cl. 17).
First use Feb. 23, 1967; in commerce Apr. 3, 1967.

SN 279,668. Morgan Adhesives Company, Stow, Ohio. Filed Sept. 5, 1967.



For Cellular Honeycomb-Type Core Materials Sold for Further Use in the Industrial Arts (Int. Cl. 6).
First use Dec. 19, 1966.

SN 292,438. Vaughan's Seed Company, Downers Grove, Ill. Filed Mar. 4, 1968.

INSTANT GLAMOUR

For Rose Plants (Int. Cl. 31).
First use February 1961.

SN 292,776. Flex-O-Glass, Inc., d.b.a. Warp Brothers, Chicago, Ill. Filed Mar. 8, 1968.

POLY-RIB

For Ribbed Plastic Sheet Material (Int. Cl. 17).
First use Feb. 2, 1968.

SN 297,074. Marketeers, Inc., Cleveland, Ohio. Filed May 1, 1968.

COPY CAT

For Organic Compound Used To Produce Casting Patterns by Forming Operations Such as by Molding or Machining (Int. Cl. 1).
First use Mar. 14, 1968.

SN 298,004. Hooker Chemical Corporation, Niagara Falls, N.Y. Filed May 13, 1968.

RUCOTHANE

Owner of Reg. Nos. 520,693, 854,396, and others.
For Synthetic Resins (Int. Cl. 1).
First use Mar. 5, 1968.

SN 298,272. Van Well Nursery, Inc., Wenatchee, Wash. Filed May 15, 1968.



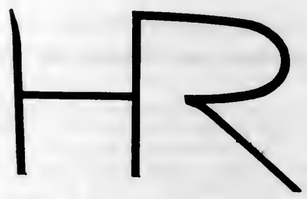
Applicant disclaims the term "Red" and the representation of the red apple, apart from the mark as shown. The drawing is lined for the color red.
For Apple Trees (Int. Cl. 31).
First use Nov. 22, 1967.

SN 306,879. CBS Industries, Sun Valley, Calif. Filed Sept. 9, 1968.



Applicant disclaims the word "Soil" apart from the mark as shown.
For Plant Potting Mix (Int. Cl. 1).
First use July 27, 1968.

SN 308,589. P. Huber Hanes, Jr., Winston-Salem, N.C. Filed Oct. 3, 1968.



The mark is a fanciful representation of the letters "HR."
Owner of Reg. No. 855,693.
For Cattle and Cattle Semen (Int. Cl. 31).
First use Sept. 1, 1965.

SN 308,803. Arnold Nitz, d.b.a. Arnie Nitz, Correll, Minn. Filed Oct. 3, 1968.

BLUE MYSTERY

The word "Blue" is disclaimed apart from the mark as shown.
For Mink and Mink Pelts (Int. Cl. 18).
First use May 13, 1968.

SN 316,189. De-An-Industries, Inc., Springfield, Pa. Filed Jan. 9, 1969.

de·ana·prene

For Urethane Used in the Manufacture of Tires, Tubes, Sheets, Slabs, Cylinders and Resting Gears (Int. Cl. 1).
First use Mar. 14, 1968.

SN 316,246. Stone Container Corporation, Chicago, Ill. Filed Jan. 9, 1969.



Owner of Reg. No. 729,311.
For Plastic Film for Use in Making Skin Packages (Int. Cl. 17).
First use Sept. 20, 1968.

SN 316,448. Mercer Greenhouses, Inc., Fredonia, Pa. Filed Jan. 13, 1969.



For Nursery Stock—Namely, Flowers, Plants, Shrubs and Trees (Int. Cl. 31).
First use July 1, 1968.

SN 316,496. American Lava Corporation, Chattanooga, Tenn. Filed Jan. 14, 1969.

ALSIBASE

Owner of Reg. No. 729,178.
For Unfired Ceramic Clays for General Use in the Industrial Arts (Int. Cl. 19).
First use Dec. 26, 1968.

SN 317,482. Constantine Zuras, d.b.a. Xylon Manufacturing Co., Silver Spring, Md. Filed Jan. 24, 1969.

XYLON

For Treated Wooden Blocks Used for Kindling Fires (Int. Cl. 4).
First use Mar. 19, 1968.

SN 322,522. Fife-Freeman Corporation, New York, N.Y. Filed Mar. 24, 1969.

PATRA

For Poromeric Synthetic Leather (Int. Cl. 18).
First use Mar. 12, 1969.

SN 323,638. Dow Badische Company, Williamsburg, Va. Filed Apr. 4, 1969.

QUELOC

For Synthetic Textile Fiber (Int. Cl. 22).
First use Mar. 27, 1969.

SN 323,639. Dow Badische Company, Williamsburg, Va. Filed Apr. 4, 1969.

TOLARA

For Synthetic Textile Fiber (Int. Cl. 22).
First use Mar. 27, 1969.

SN 325,138. Olin Mathieson Chemical Corporation, New Haven, Conn. Filed Apr. 22, 1969.

MYNEL

For Plastic Foam (Int. Cl. 17).
First use Apr. 1, 1969.

Class 3—Baggage, Animal Equipments, Portfolios, and Pocketbooks

SN 295,778. Swaggercraft Ltd., New York, N.Y. Filed Apr. 16, 1968.



Without waiving any rights, "Vinyl Is Fashion" is disclaimed apart from the mark as shown.
For Wallets, Billfolds, Credit Card Holders, Money Clips, Pocket Secretaries, Key Cases, Portfolios; Made Wholly or in Part of Vinyl Plastic Material (Int. Cl. 18).
First use Feb. 28, 1968.

SN 302,787. Veterinary Research Institute, Incorporated, Dallas, Tex. Filed July 15, 1968.

EQUI-BIB

The word "Bib" is disclaimed apart from the mark as shown.
For Restraint To Prevent Horses From Chewing on Blankets, Wounds, and Bandages (Int. Cl. 18).
First use Mar. 11, 1968.

Class 4—Abrasives and Polishing Materials

SN 289,976. Daron Products, Inc., Margate City, N.J. Filed Jan. 31, 1968.

ZIRCOPOWDER

For Dental Prophylaxis of Zirconium Silicate for Cleaning and Polishing (Int. Cl. 3).
First use Jan. 5, 1965.

SN 295,734. The Herbert Stanley Company, Skokie, Ill. Filed Apr. 16, 1968.

PANEL BRIGHT

For Polishing and Conditioning Preparation for Wall Paneling (Int. Cl. 3).
First use on or about Mar. 12, 1968.

SN 297,761. Byrne Plywood Company, Birmingham, Mich. Filed May 9, 1968.

CABINET LIFE

Owner of Reg. No. 774,322.
For Finish Renewer, More Particularly a Polish or Scuff and Scratch Remover (Int. Cl. 3).
First use Apr. 9, 1968.

SN 304,414. Transelco, Inc., Penn Yan, N.Y. Filed Aug. 5, 1968.

SATINOX

For Polishing Compound for Polishing Plastic Lenses (Int. Cl. 3).
First use July 29, 1968.

SN 306,162. John A. Murphy, d.b.a. John A. Murphy & Co., Tulsa, Okla. Filed Aug. 28, 1968.

MARFREE

For General Purpose Household Cleaning, Sealing, and Polishing Compound for Hard Surfaces Such as Plastics, Tile, Brick, Metal, and Wood (Int. Cl. 3).
First use Nov. 6, 1959.

SN 310,042. Accurate Diamond Tool Corp., Hackensack, N.J. Filed Oct. 21, 1968.

VITROID

For Diamond Wheels (Int. Cl. 7).
First use Aug. 5, 1968.

SN 319,461. National Service Industries, Inc., d.b.a. Zep Manufacturing Company, Atlanta, Ga. Filed Feb. 18, 1969.

ZEP SHEEN

Applicant disclaims the word "Sheen" apart from the mark as shown. Owner of Reg. Nos. 681,037, 696,197, and others.
For Cleaning and Polishing Preparation for Furniture, Mirrors, Counter Tops and for Surfaces Including Wood, Metal, Glass, Plastic, and the Like (Int. Cl. 3).
First use June 1, 1966.

Class 5 — Adhesives

SN 288,069. Amercoat Corporation, Brea, Calif. Filed Jan. 4, 1968.

NUkem

Owner of Reg. No. 517,966.
For Chemical Resistant Adhesives—Namely, Furfuryl Alcohol Resins, Polysulfide-Plasticized Sulfur Base Compounds, Epoxy Compounds and Polyester Resins (Int. Cl. 1).
First use in or about April 1935.

Class 6 — Chemicals and Chemical Compositions

SN 283,882. Denver Chemical Manufacturing Company, Stamford, Conn., assignee of The Denver Chemical Manufacturing Company, d.b.a. Wampole Laboratories, Stamford, Conn. Filed Nov. 1, 1967.

RHEUMATON

For Diagnostic Reagent for Laboratory Use in the Determination of the Rheumatoid Factor (Int. Cl. 1).
First use Oct. 25, 1967.

SN 292,037. Wyandotte Chemicals Corporation, Wyandotte, Mich. Filed Feb. 27, 1968.

DILIGENT

For Nonionic Liquid Emulsifier for Laundry Use (Int. Cl. 3).
First use Feb. 2, 1968.

SN 292,536. Gabriel Chemicals, Ltd., New York, N.Y., by change of name from Agrisect Chemical Corporation, New York, N.Y. Filed Mar. 6, 1968.

AGRISECT

For Acaricides, Defoliants, Fungicides, Herbicides, Insecticides, and Nematocides (Int. Cl. 5).
First use Dec. 21, 1964.

SN 302,160. Velsicol Chemical Corporation, Chicago, Ill. Filed July 5, 1968.

GOLD CREST

For Insecticides (Int. Cl. 5).
First use Sept. 24, 1967.

SN 308,014. K-Lan Company, Inc., Amarillo, Tex. Filed Sept. 23, 1968.



The drawing is lined for the color red.
For Chemical Composition Which Prevents the Growth of Roots in Sewer Lines (Int. Cl. 5).
First use Apr. 4, 1968.

SN 312,315. Miraclefoam Products, Inc., Bloomington, Ind. Filed Nov. 15, 1968.

MIRACLEFOAM
CHEMICAL #50



No claim is made to the word "Chemical" apart from the mark.
For Mortar Additives Used for Retarding and Air Entraining (Int. Cl. 1).
First use Nov. 14, 1967.

SN 313,268. Coulter Diagnostics, Inc., Miami Springs, Fla. Filed Nov. 29, 1968.

3C

For Stabilized Human Liquid Control Serum of Plurality Constituents for Use in Making Diagnostic Tests in Clinical Chemistry Laboratories (Int. Cl. 1).
First use Oct. 29, 1968.

SN 321,364. Barrett Chemical Company, Philadelphia, Pa. Filed Mar. 11, 1969.

MULTIFIX

For Corrosion Inhibitor Which Penetrates and Loosens Stuck Nuts and Bolts and Other Parts Held Fast by Rust and Carbon (Int. Cl. 2).
First use at least as early as January 1968.

SN 324,335. Eli Lilly and Company, Indianapolis, Ind. Filed Apr. 14, 1969.

BALAN

For Herbicide (Int. Cl. 5).
First use Mar. 16, 1965.

SN 324,369. Ralston Purina Company, St. Louis, Mo. Filed Apr. 14, 1969.

PURINA

For Vegetation Killer (Int. Cl. 5).
First use March 1969.

SN 324,370. Ralston Purina Company, St. Louis, Mo. Filed Apr. 14, 1969.

i-O

Owner of Reg. No. 653,970.
For Disinfectant (Int. Cl. 5).
First use January 1969.

SN 324,653. Chas. Pfizer & Co., Inc., New York, N.Y. Filed Apr. 16, 1969.

TRANSAM-TEL

For Diagnostic Reagents for Transaminase Determinations for Laboratory Use (Int. Cl. 1).
First use Mar. 7, 1969.

SN 324,862. GAF Corporation, New York, N.Y. Filed Apr. 18, 1969.

GAFIX

Owner of Reg. Nos. 269,187, 837,005, and others.
For Photographic Processing Chemicals (Int. Cl. 1).
First use Apr. 1, 1969.

Class 8 — Smokers' Artides, Not Including Tobacco Products

SN 315,090. Minton Limited, Stoke-on-Trent, Stafford, England. Filed Dec. 23, 1968.

MINTON

Owner of U.S. Reg. Nos. 427,236, 859,292, and others.
For Tobacco Jars, Cigarette Boxes, Match and Match Box Holders, Ash Trays, All Being Goods Made of Porcelain, Earthenware or Pottery (Int. Cl. 34).
First use Dec. 1, 1894; in commerce Dec. 1, 1894.

SN 315,333. Peterson's Ltd., Inc., New York, N.Y. Filed Dec. 27, 1968.

EMERALD

For Pipes (Int. Cl. 34).
First use March 1968.
Subj. to Intf. with SN 314,868.

Class 9 — Explosives, Firearms, Equipments, and Projectiles

SN 308,625. Lebers Inc., Raytown, Mo. Filed Oct. 1, 1968.

PROTECT-HER!

For Hand-Operated Protective Apparatus With an Extendable Member for Defense of the Person (Int. Cl. 13).
First use Sept. 13, 1968.

Class 10 — Fertilizers

SN 319,874. W. R. Grace & Co., New York, N.Y. Filed Feb. 24, 1969.

MOLY-CO-THI

For Micro-Nutrient Seed Coating for Soybeans and Other Legumes (Int. Cl. 5).
First use September 1968.

SN 321,235. Kaiser Aluminum & Chemical Corporation, Oakland, Calif. Filed Mar. 10, 1969.

GATOR

For Fertilizers (Int. Cl. 1).
First use at least as early as Sept. 15, 1959.

Class 11 — Inks and Inking Materials

SN 309,024. Chemolene Industries, Inc., Bordentown, N.J. Filed Oct. 7, 1968.

SNEEK A PEEK

For Stamp Pads (Int. Cl. 16).
First use Sept. 19, 1968.

Class 12 — Construction Materials

SN 290,796. Rohn Manufacturing Co., Peoria, Ill. Filed Feb. 12, 1968.

RIGID-TUBE

Owner of Reg. No. 688,873.
For Structural Component Parts for Antenna Towers, and Towers Formed Therefrom (Int. Cl. 6).
First use June 15, 1961.

SN 304,386. Poly Resins, Sun Valley, Calif. Filed Aug. 5, 1968.

Urabond

For Elastromeric Sealant for Use in Coating, Priming, Caulking, Waterproofing and Bonding Applications in Structures of Building Material (Int. Cl. 17).
First use Dec. 14, 1961.

SN 307,884. U.F. Chemical Corporation, Woodside, N.Y. Filed Sept. 20, 1968.

UFC-FOAM

For Plastic Foam for Acoustic and Thermal Insulation (Int. Cl. 17).
First use Sept. 16, 1968.

SN 310,489. Owens-Corning Fiberglas Corporation, Toledo, Ohio. Filed Oct. 24, 1968.

SC10

For Insulating and Finishing Cements (Int. Cl. 17).
First use January 1968.

SN [illegible],968. Xypex Chemicals (Canada) Limited, North Burnaby, British Columbia, Canada. Filed Nov. 12, 1968.

XYPEX

For Material for Waterproofing Concrete and Cement (Int. Cl. 19).
First use Nov. 5, 1968; in commerce Nov. 5, 1968.

SN 314,962. Economy Forms Corporation, Des Moines, Iowa. Filed Dec. 20, 1968.

MONO - FLYER

For Metal Forms for Use in Retaining Concrete Structures During the Setting and Hardening Thereof (Int. Cl. 6).
First use Aug. 8, 1968.

SN 317,823. Concrete Plank Co., Inc., North Arlington, N.J. Filed Jan. 29, 1969.

SPANLOK

For Construction Material—Namely, Roof Decking (Int. Cl. 19).
First use October 1968.

SN 318,191. Hupp, Inc., Cleveland, Ohio. Filed Feb. 3, 1969.

MAGNA-WALL

For Room Partitions Including Doors and Support Structure Therefor (Int. Cl. 19).
First use Sept. 24, 1967.

SN 323,644. Minnesota Mining and Manufacturing Company, St. Paul, Minn. Filed Apr. 4, 1969.

MOTIQUE

For Decorative Veneer for Furniture, Walls, and Other Surfaces (Int. Cl. 19).
First use Mar. 19, 1969.

SN 323,766. PPG Industries, Inc., Pittsburgh, Pa. Filed Apr. 7, 1969.

COLORSONIX

For Acoustical Panels (Int. Cl. 19).
First use at least as early as Mar. 6, 1969.

Class 13 — Hardware and Plumbing and Steam-Fitting Supplies

SN 280,394. Char-Lynn Company, Eden Prairie, Minn. Filed Sept. 15, 1967.

HYDRA-SEAL

For Conduit Connector in Fluid Power Circuits (Int. Cl. 7).
First use in or about October 1955.

SN 301,226. Walter E. Hayward Co., Inc., Attleboro, Mass. Filed June 24, 1968.

KAR

For Keyholder (Int. Cl. 6).
First use May 2, 1968.

SN 305,140. Jet Aeration Company, Cleveland, Ohio. Filed Aug. 14, 1968.

JET

For Sewage Treatment and Disposal Units, and Parts Thereof (Int. Cl. 11).
First use Aug. 1, 1955.

SN 306,599. Tri-Point Industries, Inc., Commack, N.Y. Filed Sept. 4, 1968.

TRI-PIPE

For Pipe Lining (Int. Cl. 17).
First use Aug. 14, 1968.

SN 306,622. The Allen Pump Co., d.b.a. The Allen-Sherman-Hoff Co., Paoli, Pa. Filed Sept. 5, 1968.

FLEX-CHECK

For Check Valves, Valve Liners Therefor and Valve Parts Thereof (Int. Cl. 6).
First use as early as August 1940.

SN 306,817. Steiner American Corporation, Chicago, Ill. Filed Sept. 6, 1968.

UNIVERSAL

For Recessed Towel Dispenser Fixture (Int. Cl. 21).
First use June 1962.

SN 306,977. Anaheim Foundry Company, Anaheim, Calif. Filed Aug. 28, 1968.

P-I

For Pipe Fittings (Int. Cl. 6).
First use Aug. 12, 1968.

SN 306,978. Anaheim Foundry Company, Anaheim, Calif. Filed Aug. 28, 1968.

PLAST-IRON

For Pipe Fittings (Int. Cl. 6).
First use Aug. 12, 1968.

SN 308,046. Super Caster Corporation, Miami, Fla. Filed Sept. 23, 1968.

MERCURY

For Casters (Int. Cl. 6).
First use on or about Sept. 5, 1968.

SN 308,333. Unistrut Corporation, Wayne, Mich. Filed Sept. 26, 1968.

UNI-CLIP

For Supports for Rigid and Flexible Conduits, Cables, Pipes and Tubing and Adapted To Be Carried by Channel-Type Framing Members (Int. Cl. 6).
First use Mar. 20, 1968.

SN 308,643. Tri-Point Industries, Inc., Commack, N.Y. Filed Oct. 1, 1968.

TRI-H-MOLD

For Hydrostatic Molded Parts and Components—Namely, Liquid Handling Valve Bodies (Int. Cl. 17).
First use Aug. 27, 1968.

SN 318,678. Red Valve Company, Inc., Carnegie, Pa. Filed Feb. 7, 1969.

Redflex

For Rubber Pipe With Rubber Elbows, Expansion Joints, Rubber Reducers, and Flexible Pipe (Int. Cls. 6 and 17).
First use July 1965.

SN 318,963. Jamesbury Corp., Worcester, Mass. Filed Feb. 12, 1969.

jfc

For Valves and Valve Controls—Namely, Valves for Regulating the Flow of Liquids, Gases and Slurries, and Controls for Such Valves (Int. Cl. 6).
First use on or before Oct. 29, 1968.

SN 319,080. Jay R. Smith Mfg. Co., Piscataway, N.J. Filed Feb. 13, 1969.

ROOF-CEPTOR

For Roof Drains (Int. Cl. 6).
First use Dec. 1, 1968.

SN 319,089. United-Carr Incorporated, Boston, Mass. Filed Feb. 13, 1969.

ON-SERT

For Sheet Metal Fasteners (Int. Cl. 6).
First use Jan. 16, 1969.

SN 319,202. Selectile Company Inc., Los Angeles, Calif. Filed Feb. 14, 1969.

SELECT

For Prefabricated Tubs and Showers (Int. Cl. 11).
First use Dec. 4, 1968.

SN 320,333. Embart Corporation, Hartford, Conn. Filed Feb. 28, 1969.

Cross

Any right to the exclusive use of the representation of a tack, apart from the mark shown, is disclaimed. Owner of Reg. No. 286,989.
For Nails, Rivets, Burrs, Staples, Thumb Tacks, Decorative Nails, Corrugated Fasteners, and Finishing Washers (Int. Cl. 6).
First use August 1957 on nails.

SN 321,122. Koch Industries, Inc., Wichita, Kans. Filed Mar. 10, 1969.

BLUE STREAK

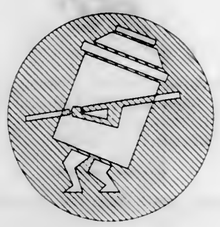
For Fiber Glass Pipes and Pipe Fittings (Int. Cl. 17).
First use Oct. 14, 1968.

SN 322,733. Navarre Products Inc., North Lawrence, Ohio. Filed Mar. 25, 1969.

Touch-N-Tissue

For Electric Toilet Paper Dispenser (Int. Cl. 7).
First use Feb. 18, 1969.

SN 325,555. Western Irrigation Valve Corporation, Des Moines, Iowa. Filed Apr. 25, 1969.



The drawing is lined for the color green.
For Valves and Hydrants (Int. Cls. 7 and 11).
First use Oct. 1, 1968.

SN 325,556. Western Irrigation Valve Corporation, Des Moines, Iowa. Filed Apr. 25, 1969.



The drawing is lined for the color green. Owner of Reg. No. 830,082.
For Valves and Hydrants (Int. Cls. 7 and 11).
First use Oct. 1, 1968.

SN 325,557. Western Irrigation Valve Corporation, Des Moines, Iowa. Filed Apr. 25, 1969.

Wivco GREEN GUARD

Owner of Reg. No. 830,082.
For Valves and Hydrants (Int. Cls. 7 and 11).
First use Oct. 1, 1968.

SN 326,287. Bruning Company, Lincoln, Nebr. Filed May 5, 1969.

CROSSMATE

For Quick Disconnect Couplers for Conductors for Liquids and Gases (Int. Cl. 6).
First use Apr. 23, 1969.

Class 14 — Metals and Metal Castings and Forgings

SN 274,604. Eutectic Welding Alloys Corporation, Flushing, N.Y. Filed June 23, 1967.

RACOSPRAY

Owner of Reg. No. 410,584.
For Metallic Powders for Industrial Use (Int. Cl. 6).
First use Oct. 12, 1966.

SN 314,423. Howmet Corporation, New York, N.Y. Filed Dec. 13, 1968.

ULTRA FOIL

Applicant disclaims the term "Foil" apart from the mark as shown.
For Hot Stamping Foils and Roll Leaf (Int. Cl. 6).
First use July 24, 1968.

SN 314,506. Abex Corporation, New York, N.Y. Filed Dec. 16, 1968.

PARABOLOY

For Chromium-Nickel-Molybdenum Iron Alloy Made Into Castings Exposed to Abrasive Wears, Such as Liners for Grinding Mills and the Like (Int. Cl. 6).
First use July 26, 1968.

SN 316,493. Xaloy Incorporated, New Brunswick, N.J. Filed Jan. 13, 1969.

XAL-BOND

Owner of Reg. No. 863,812.
For Metallic Alloys Including Ferrous and Non-Ferrous Alloys (Int. Cl. 6).
First use Oct. 11, 1968.

Class 15 — Oils and Greases

SN 294,054. K & W Products, Inc., Santa Fe Springs, Calif. Filed Mar. 25, 1968.

XPEL-IT

For Chemical Compounds To Be Added to Gasoline and Other Motor Fuels To Dissolve and Expel Gasoline Gum in Carburetors and Feed Passages To Improve Motor Performance (Int. Cl. 1).
First use May 15, 1945.

SN 307,355. Shell Oil Company, New York, N.Y. Filed Sept. 13, 1968.

DELIMA

For Paper Machine Lubricating Oil (Int. Cl. 4).
First use at least as early as Mar. 15, 1968.

SN 307,686. Standard Oil Company of California, San Francisco, Calif. Filed Sept. 18, 1968.



Owner of Reg. Nos. 640,575, 641,258, and 824,761.
For Emulsified Petroleum Hydrocarbon Additive for Water, To Be Used To Prevent Sticking of Asphalt Aggregate to Rubber Tired or Steel Wheeled Rollers (Int. Cl. 4).
First use July 20, 1965.

SN 308,411. Union Oil Company of California, Los Angeles, Calif. Filed Sept. 27, 1968.

Royal UNOBA

Owner of Reg. No. 339,467.
For Lubricating Greases (Int. Cl. 4).
First use Aug. 15, 1967.

SN 308,804. Northland Products Company, Inc., d.b.a. Northland Products Company, Waterloo, Iowa. Filed Oct. 3, 1968.

NORTHLAND

For Gasoline, Lubricating Oils, Hydraulic Oils, and Lubricating Greases (Int. Cl. 4).
First use 1912.

Class 16 — Protective and Decorative Coatings

SN 265,503. Excel Chemical Corporation, Milwaukee, Wis. Filed Feb. 27, 1967.

PPC

For Liquid Silicone Water Repellants for Masonry, Brick, Wood, Metal, and the Like (Int. Cl. 1).
First use Mar. 8, 1966.

SN 311,096. Dura-Paints, Inc., Chicago, Ill. Filed Nov. 1, 1968.

FLEXILANT

For Polysulfide Rubber Base Sealant Coating Compositions (Int. Cl. 2).
First use on or about Sept. 10, 1968.

Class 17 — Tobacco Products

SN 314,868. Bayuk Cigars Incorporated, Philadelphia, Pa. Filed Dec. 19, 1968.

EMERALDOS

For Cigars (Int. Cl. 34).
First use Oct. 7, 1968.
Subj. to Intf. with SN 315,333.

Class 18 — Medicines and Pharmaceutical Preparations

SN 283,018. Manufacture de Produits Pharmaceutiques A. Christiaens, Brussels, Belgium. Filed Oct. 20, 1967.

STOFILIN

Priority claimed under Sec. 44(d) on Belgian Reg. No. 111,347, dated Apr. 25, 1967.
For Bronchodilator and Vascular and Digestive Spasmolytic (Int. Cl. 5).

SN 292,488. Lahr-Cummins-Lewis, Inc., Cleveland, Ohio. Filed Mar. 5, 1968.

PHIOCON

For External Antiseptic Solution (Int. Cl. 5).
First use at least as early as Jan. 16, 1964.

SN 307,107. Imperial Chemical Industries Limited, Millbank, London, England. Filed Sept. 11, 1968.

MYALEX

Owner of British Reg. No. 778,598, dated June 11, 1958.
For Pharmaceutical Preparations for the Treatment of Arthritis and Related Conditions (Int. Cl. 5).

SN 308,579. Vitaminerals, Inc., Glendale, Calif. Filed Oct. 1, 1968.

VI-CLARUS

For Antitussive-Expectorant (Int. Cl. 5).
First use Sept. 12, 1968.

SN 310,796. The Norwich Pharmacal Company (Delaware corporation), Norwich, N.Y., assignee of The Norwich Pharmacal Company (New York corporation), Norwich, N.Y. Filed Oct. 29, 1968.

ENTROXONE

Owner of Reg. No. 587,328.
For Pharmaceutical Preparation Containing Furazolidone for Human Use (Int. Cl. 5).
First use Mar. 4, 1968.

SN 311,768. Cargill, Incorporated, Minneapolis, Minn. Filed Nov. 12, 1968.

CARGILL

Owner of Reg. No. 771,407.
For Medicated Animal Feeds (Int. Cl. 31).
First use Feb. 20, 1963.

SN 317,989. American Home Products Corporation, New York, N.Y. Filed Jan. 31, 1969.

S-E2-V 50

Applicant makes no exclusive claim to the numeral "50" apart from the mark as shown.
For Sulfa Drug Preparation for Veterinary Use (Int. Cl. 5).
First use Jan. 7, 1969.

SN 318,324. Miles Laboratories, Inc., Elkhart, Ind. Filed Feb. 4, 1969.

NYSTAFORM

Owner of Reg. No. 863,424.
For Dermatological Preparation (Int. Cl. 5).
First use on or before June 30, 1962.

SN 318,723. U.S. Ethicals Inc., Long Island City, N.Y. Filed Feb. 10, 1969.

PAVATARD

For Antispasmodic (Int. Cl. 5).
First use Aug. 15, 1961.

SN 319,772. Kasar Company, Niles, Ill. Filed Feb. 24, 1969.

UNIAD

For Medicinal Tablets Useful in the Management of Tuberculosis (Int. Cl. 5).
First use on or about Feb. 11, 1969.

SN 319,773. Kasar Company, Niles, Ill. Filed Feb. 24, 1969.

TRINIAD

For Medicinal Tablets Useful in the Management of Tuberculosis (Int. Cl. 5).
First use on or about Feb. 11, 1969.

SN 322,212. American Home Products Corporation, New York, N.Y. Filed Mar. 20, 1969.

FOLAN

For Veterinary Hormone Preparation (Int. Cl. 5).
First use Mar. 11, 1969.

SN 322,777. American Home Products Corporation, New York, N.Y. Filed Mar. 26, 1969.

REDIPAK

Owner of Reg. No. 760,463.
For Pharmaceutical and Medicinal Preparations in Pre-Packaged Unit Dose Form (Int. Cl. 5).
First use July 27, 1962.

SN 323,067. Harvey Wolfson, d.b.a. Columbia Medical Co., New York, N.Y. Filed Mar. 28, 1969.

AQUA-BAN

For Mild Diuretic To Help Eliminate Fluid From the Human Body (Int. Cl. 5).
First use Mar. 13, 1969.

Class 19—Vehicles

SN 290,923. Wheel Horse Products, Inc., South Bend, Ind. Filed Feb. 12, 1968.

GET A HORSE WHEEL HORSE, OF COURSE

Owner of Reg. No. 597,595.
For Dump Trailers and Utility Wagons (Int. Cl. 12).
First use about August 1963.

SN 295,624. Dempster Brothers, Inc., Knoxville, Tenn. Filed Apr. 15, 1968.

DEMPSTER-DINOTRAILER

Owner of Reg. Nos. 712,475, 785,785, and others.
For Vehicle Trailers for Receiving, Transporting and Dumping Containers for Materials of Various Kinds—Namely, Refuse, Trasb. Garbage, Scrap, Dirt, and Rocks (Int. Cl. 12).
First use Mar. 27, 1968.

SN 295,625. Dempster Brothers, Inc., Knoxville, Tenn. Filed Apr. 15, 1968.

DINOTRAILER

Owner of Reg. Nos. 712,475, 785,785, and others.
For Vehicle Trailers for Receiving, Transporting and Dumping Containers for Materials of Various Kinds—Namely, Refuse, Trash. Garbage, Scrap, Dirt, and Rocks (Int. Cl. 12).
First use Mar. 27, 1968.

SN 296,799. The Boeing Company, Seattle, Wash. Filed Apr. 29, 1968.

BOEING

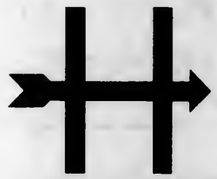
Owner of Reg. Nos. 247,992, 376,449, and 423,674.
For Airplanes and Parts Thereof (Int. Cl. 12).
First use in or before September 1923.

SN 312,250. Winnebago Industries, Inc., Forest City, Iowa. Filed Nov. 14, 1968.



Owner of Reg. No. 777,541.
For Vehicles and Components of Completed Vehicles—Namely, Motor Homes, Travel Trailers, House Trailers, Camper Coaches, Pick-Up Coaches, Pick-Up Campers, Fitted Pick-Up Covers, Mobile Offices, Tent Trailers, Houseboats, Pontoon Boats, and Vehicle Component Panels (Int. Cl. 12).
First use April 1959.

SN 317,665. Vincent J. Serio, Sr., d.b.a. Serio Boat Yard, Newport News, Va. Filed Jan. 22, 1969.



For Sailboats and Sails Therefor (Int. Cls. 12 and 22).
First use in or about May 1936.

SN 317,918. Nutting Truck and Caster Company, Faribault, Minn. Filed Jan. 30, 1969.

ADJU-LOK

For Plunger-Type Mechanism for Attachment to a Warehouse Truck or the Like for Engagement With the Floor To Prevent Movement of the Truck (Int. Cl. 12).
First use Jan. 21, 1969.

SN 318,994. The R. J. Strohmeier Company, Cincinnati, Ohio. Filed Feb. 12, 1969.

STRO-MIRO

For Vehicle Mirrors—Namely, Trailer Hitch Guide Mirrors (Int. Cl. 12).
First use Jan. 21, 1969.

Class 21—Electrical Apparatus, Machines, and Supplies

SN 291,149. The General Industries Company, Elyria, Ohio. Filed Feb. 15, 1968.

GENAIRE

For Fans and Blower Wheels for Use in Electric Appliances, Such as Automobile Heaters and Windshield Defrosters (Int. Cl. 11).
First use Aug. 4, 1952.

SN 296,053. Tec Square Inc., Willowick, Ohio. Filed Apr. 19, 1968.

AromaVision

The drawing is lined for the color red.
For Electrically Operated Audio-Visual-Odor Advertising Units (Int. Cl. 9).
First use June 5, 1966.

SN 300,374. Lili-Charlotte Sarnoff, Bethesda, Md. Filed June 13, 1968.

FLOLITE

For Electrically Illuminated Fiber-Optics Sculpture, Comprising a Supporting Base Containing a Lamp To Illuminate One End of a Bundle of Light-Transmitting Fibers Whose Distal Ends Are Fanned Out in a Decorative Pattern (Int. Cl. 11).
First use May 5, 1968.

SN 303,188. Motorola, Inc., Franklin Park, Ill. Filed July 19, 1968.

CADET

For Television Receivers (Int. Cl. 9).
First use October 1964.

SN 307,438. Dynair Electronics, Inc., San Diego, Calif. Filed Sept. 16, 1968.

SKYCRAFTERS

For Two-Way Radio Telephone Equipment (Int. Cl. 9).
First use Dec. 1, 1955.

SN 308,062. Andrew J. White, d.b.a. MVR Transonics, Lee, N.H. Filed Sept. 23, 1968.

TEL-E-TRON

For Electrical Signaling System—Namely, a Pressure Switch, Sender, Indicator and Pickup Coil Attachable to an Automobile To Give a Signal When Tire Pressure Falls to a Predetermined Point (Int. Cl. 9).
First use August 1968.

SN 309,303. Sentry Electric Corp., Freeport, N.Y. Filed Oct. 9, 1968.

Sentry

For Fluorescent Lamp Starters, Photoelectric Light Controls, Lamp Dimmers, and Luminaires (Int. Cl. 11).
First use May 2, 1947.

SN 310,627. Arvin Industries, Inc., Columbus, Ind. Filed Oct. 28, 1968.

HARD HEAD

The word "Head" is disclaimed apart from the mark as shown.
For Transducer Heads for Magnetic Tape (Int. Cl. 9).
First use May 20, 1968.

SN 314,686. Television Manufacturers of America Co., Wheeling, Ill. Filed Dec. 17, 1968.

HOWARD

For Stereophonic Hi-Fidelity-Radio Receiving Set Combinations (Int. Cl. 9).
First use on or about Apr. 12, 1968.

SN 315,532. Berk-Tek, Inc., Reading, Pa., by change of name from Berkshire Technical Products, Inc., Reading, Pa. Filed Jan. 2, 1969.

BERK-TEK

For Various Types of Electrical Conductors (Int. Cl. 9).
First use Nov. 22, 1968.

SN 315,657. American Home Products Corporation, New York, N.Y. Filed Dec. 30, 1968.

EASY-OFF

Owner of Reg. Nos. 697,201, 846,900, and others.
For Rug Shampooing Machines (Int. Cl. 7).
First use Mar. 26, 1968.

SN 318,722. Torr X-Ray Corporation, Los Angeles, Calif. Filed Feb. 10, 1969.

DynaRad 150

For X-Ray Apparatus for Industrial Uses (Int. Cl. 10).
First use Oct. 7, 1968.

SN 322,185. Omtronics Manufacturing, Inc., Omaha, Nebr. Filed Mar. 19, 1969.

OMTRONICS

Owner of Reg. No. 742,930.
For Electrical Resistors for Use in Electronic Circuits (Int. Cl. 9).
First use at least as early as May 25, 1961.

SN 322,214. Chomerics, Inc., Arlington, Mass. Filed Mar. 20, 1969.

CHO-FOAM

Owner of Reg. No. 845,337 and others.
For Electrically Conductive Aerated Silicone Elastomer for Use as a Radio Frequency Interference/Electromagnetic Interference Shielding Material (Int. Cl. 17).
First use Oct. 2, 1968.

SN 322,215. Chomerics, Inc., Arlington, Mass. Filed Mar. 20, 1969.

CHO-SIL

Owner of Reg. No. 845,337 and others.
For Electrically Conductive Silicone Elastomer for Use as Radio Frequency Interference/Electromagnetic Interference Strip Gaskets (Int. Cl. 17).
First use Oct. 2, 1968.

Class 22 — Games, Toys, and Sporting Goods

SN 293,832. John Letters & Company Limited, Glasgow, Scotland. Filed Mar. 21, 1968.

THE BANKER

For Golf Clubs (Int. Cl. 28).
First use Jan. 12, 1968; in commerce Feb. 4, 1968.

SN 297,395. Curtis L. Erwin, Jr., Portland, Oreg. Filed May 6, 1968.

THE JOGGER

For Physical Exercise Treadmill (Int. Cl. 28).
First use May 2, 1968.

SN 299,487. Rexall Drug and Chemical Company, d.b.a. The Seamless Rubber Company, Los Angeles, Calif. Filed May 31, 1968.

MAJORCA

For Dive Mask for Swimmers and Skin Divers (Int. Cl. 28).
First use November 1966.

SN 300,908. The Conolon Corporation, Santa Ana, Calif. Filed June 20, 1968.

CONOLON

Owner of Reg. No. 537,090.
For Fishing Rods, Rod Handles and Poles (Int. Cl. 28).
First use at least as early as March 1947.

SN 302,481. Aurora Plastics Corporation, West Hempstead, N.Y. Filed July 11, 1968.

SUPER-LOOPER

For Toy Racing Sets Comprising Model Racing Cars and Track (Int. Cl. 28).
First use May 9, 1967.

SN 302,542. Victor Comptometer Corporation, Chicago, Ill. Filed July 11, 1968.



For Archery Bows (Int. Cl. 28).
First use Nov. 13, 1967.

SN 302,762. "Automatic" Sprinkler Corporation of America, Cleveland, Ohio, assignee of The Rawlings Corporation, St. Louis, Mo. Filed July 15, 1968.



For Baseball Gloves and Mitts and Parts Thereof (Int. Cl. 28).
First use July 6, 1967.

SN 302,990. True Temper Corporation, Cleveland, Ohio. Filed July 17, 1968.



For Fishing Tackle—Namely, Fishing Rods and Fishing Reels (Int. Cl. 28).
First use May 30, 1968.

SN 304,249. Paul A. Price Co., Inc., d.b.a. Papco, Roslyn, N.Y. Filed Aug. 2, 1968.



The stippling on the mark is for shading purposes only.
For Child's Hop Toy (Int. Cl. 28).
First use June 20, 1968.

SN 304,487. Bruce B. Mises, Inc., Los Angeles, Calif. Filed Aug. 6, 1968.



For Fishing Line (Int. Cl. 28).
First use May 15, 1968.

SN 306,939. Patterson International Corporation, Cincinnati, Ohio. Filed Sept. 9, 1968.

FOOSBALL COMPETITIVE SPORTS SYSTEM

Owner of Reg. No. 816,922.
For Coin Operated Table Soccer Machines (Int. Cl. 28).
First use June 1, 1968.

SN 308,303. Musexport Limited, Toronto, Ontario, Canada. Filed Sept. 26, 1968.

MULTI-SPORTER

For Equipment for Isometric Exercises (Int. Cl. 28).
First use February 1966; in commerce Apr. 1, 1968.

SN 312,393. Mattel, Inc., Hawthorne, Calif. Filed Nov. 18, 1968.

SING-A-SONG

For Educational Toy, Comprising a Phonograph and Pictures With Indexing Means To Cause Sound Reproduction Relevant to a Picture Indexed (Int. Cl. 28).
First use Oct. 23, 1968.

SN 312,394. Mattel, Inc., Hawthorne, Calif. Filed Nov. 18, 1968.

BABY PUFF

No claim of exclusive right is made to "Baby" for the goods recited.
For Dolls, Doll Clothing, and Doll Accessories (Int. Cl. 28).
First use Oct. 23, 1968.

SN 312,395. Mattel, Inc., Hawthorne, Calif. Filed Nov. 18, 1968.

WIPE-OUT

For Equipment Sold as a Unit for Playing a Board Game (Int. Cl. 28).
First use Oct. 11, 1968.

SN 313,653. Mattel, Inc., Hawthorne, Calif. Filed Dec. 5, 1968.

JEFF LONG

The mark is fanciful and fictitious and is not known to be the name of any person.
For Dolls, Doll Clothing, and Doll Accessories (Int. Cl. 28).
First use Aug. 22, 1968.

SN 315,697. Northern Songs Limited, London, England. Filed Nov. 1, 1968.

SGT. PEPPERS LONELY HEARTS CLUB BAND

"Sgt. Peppers" does not identify a particular living individual; the name is a fictitious creation.
For Toys—Namely, Paper Cut-Outs (Int. Cl. 28).
First use June 6, 1967; in commerce June 6, 1967.

SN 316,368. Continental Promotions, Inc., Minneapolis, Minn. Filed Jan. 13, 1969.



For Styrofoam Cubical Boxes for Playing a Puzzle Game (Int. Cl. 28).
First use Dec. 27, 1968.

SN 316,369. Continental Promotions, Inc., Minneapolis, Minn. Filed Jan. 13, 1969.

COUPLE-UP!

For Equipment (or Apparatus), Sold as a Unit for Playing a Parlor-Type Game (Int. Cl. 28).
First use Sept. 25, 1968.

SN 316,754. Pagliani & Provenzale S.p.A., Turin, Italy. Filed Jan. 16, 1969.



The words "Cue" and "Torino" are disclaimed apart from the mark as shown. Owner of Reg. Nos. 863,475 and 863,476.
For Cues for Billiard Game (Int. Cl. 28).
First use July 18, 1968; in commerce July 18, 1968.

SN 319,551. Minnesota Mining and Manufacturing Company, St. Paul, Minn. Filed Feb. 19, 1969.



Owner of Reg. Nos. 782,016 and 852,666.
For Apparatus Sold as a Unit for Playing a Card Game (Int. Cl. 28).
First use Dec. 30, 1968.

Class 23 — Cutlery, Machinery, and Tools, and Parts Thereof

SN 277,488. Richard D. Harris, d.b.a. Trusco Manufacturing Company, Fort Lauderdale, Fla. Filed Aug. 3, 1967.

TRUSCO

For Mobile Spray Paint Striper Useful for Striping Highways, Parking Lots, and the Like (Int. Cl. 7).
First use Jan. 1, 1965.

SN 290,060. American Home Products Corporation, New York, N.Y. Filed Feb. 1, 1968.

CLASSIC

For Culinary Tools—Namely, Paring Knives, Utility Knives, Sandwich Knives, Butcher Knives, Meat and Bread Slicers, Steak Knives, French Cooks' Knives, Vegetable Mashers, Spoons, Turners, Forks, and Spatulas (Int. Cl. 8).
First use on or about Jan. 1, 1965.

SN 290,149. Aerodyne Machinery Corporation, Hopkins, Minn. Filed Feb. 2, 1968.

AERODYNE

For Systems for Air Pollution Control Composed of Gas Scrubbing, Dust Filtration, Centrifugal and Cyclone Type Dust Separators and Electrostatic Precipitators; and Bulk Materials Handling Composed of Pneumatic Conveyors (Int. Cl. 11).
First use October 1962.

SN 292,606. North Plains Fertilizer & Chemicals, Inc., Dumas, Tex. Filed Mar. 6, 1968.

NP

For Injection Systems—Namely, Injection Pumps Having a Discharge Conductor for Connection to a Water Line for Injecting Materials, Such as Fertilizer, Into Such Water Line (Int. Cl. 7).
First use Nov. 1, 1966.

SN 292,720. Seifert Mfg. Co., Inc., St. Nazianz, Wis. Filed Mar. 7, 1968.

ZIP-HITCH

For Front End Loaders for Tractors (Int. Cl. 12).
First use Aug. 21, 1966.

SN 292,934. The Heald Machine Company, Worcester, Mass. Filed Mar. 11, 1968.

ACRACENTER

For Combination Drilling, Milling, Reaming, Tapping, and Boring Machine With Automatic Operation (Int. Cl. 7).
First use on or about Sept. 1, 1966.

SN 293,719. Hersey-Sparling Meter Company, Los Angeles, Calif. Filed Mar. 20, 1968.

For Water Treatment Control Systems and Components for Water Treatment Control Systems (Int. Cl. 11).
First use July 7, 1961.

SN 294,594. The Chemithon Corporation, Seattle, Wash. Filed Apr. 1, 1968.

CHEMATIC

For Plastic Forming Machinery (Int. Cl. 7).
First use on or about Dec. 1, 1967.

SN 294,909. Atlas Hydrostapler GmbH & Co., K.G., Weiskirchen, Germany. Filed Apr. 4, 1968.

ATLAMATIC

For Forklift Trucks and Parts Thereof (Int. Cl. 12).
First use spring 1961; in commerce Feb. 2, 1963.

SN 295,561. Slope Tractor, Inc., Harper, Kans. Filed Apr. 12, 1968.

SLOPE RUNNER

For Farm Type Tractors and Attachments Therefor, Such as Mowers (Int. Cl. 12).
First use Feb. 6, 1968.

SN 297,042. Dake Corporation, Grand Haven, Mich. Filed May 1, 1968.

NORTA-MATIC

For High-Speed Precision Hydraulic Presses (Int. Cl. 7).
First use on or about Feb. 19, 1968.

SN 297,154. Robert P. Worden, d.b.a. Worden Company, Wilmette, Ill. Filed May 2, 1968.

MULTIVEND

For Coin-Operated and Non-Coin-Operated Vending Machines (Int. Cls. 7 and 9).
First use Feb. 23, 1968.

SN 298,480. Speed Equipment, Inc., St. Louis, Mo. Filed May 17, 1968.

DISPEN-SERRATOR

For Dispensers Provided With Serrating Means for Dispensing Sheet Material From Rolls Thereof (Int. Cl. 7).
First use May 2, 1968.

SN 299,289. Air Dynamics Corporation, Seattle, Wash. Filed May 29, 1968.

AIR DYNAMICS

Applicant disclaims the words "Air Dynamics," except as shown on the drawing.
For Pneumatic Equipment—Namely, Pneumatic Motors, Agitators, and Shears (Int. Cl. 7).
First use Apr. 24, 1968.

SN 302,796. Belk Stores Services, Inc., Charlotte, N.C. Filed July 9, 1968.

POLLY PRIDE LOVES HER ELECTRICAL APPLIANCES

The wording "Electrical Appliances" is disclaimed apart from the mark. Owner of Reg. No. 848,926.
For Electric Knives (Int. Cl. 7).
First use Aug. 15, 1966.

SN 303,899. Eckert & Ziegler GmbH, Weissenburg, Bavaria, Germany. Filed July 30, 1968.

LINOmat

Priority claimed under Sec. 44(d) on German application filed Feb. 7, 1968; Reg. No. 846,678, dated July 1, 1968.
For Injection Die-Casting Machines, Multi-Station Injection Die-Casting Machines, and Parts Therefor; and Injection Die-Casting Molds (Int. Cls. 6, 7, and 20).

SN 306,340. Cole National Corporation, Cleveland, Ohio. Filed Aug. 30, 1968.

K

For Cutlery, Particularly Pocket Knives, Hunting Knives, and Fishing Knives (Int. Cl. 8).
First use on or about July 23, 1968.

SN 306,384. Industrial Service Company, Inc., Cushing, Okla. Filed Aug. 30, 1968.

VOR-CLONE

For Cyclonic Separators (Int. Cl. 7).
First use June 5, 1968.

SN 307,635. Engineered Concrete Placement Manufacturing Corporation, Oklahoma City, Okla. Filed Sept. 18, 1968.

E·CON·PLACER

For Pumping Unit for Dispensing Concrete Slurries (Int. Cl. 7).
First use Apr. 27, 1965.

SN 308,621. Claude K. Hulen, d.b.a. Hulen Line-Up Table Co., Kansas City, Mo. Filed Oct. 1, 1968.

HULEN

For Graphic Arts Register Punch (Int. Cl. 7).
First use Sept. 19, 1961.

SN 310,215. Paul M. Dozier, d.b.a. Dozier & Sons, Camarillo, Calif. Filed Oct. 22, 1968.

GOFER-DOZER

For Hand Tools for Dispensing Poison To Eliminate Rodents (Int. Cl. 8).
First use Sept. 30, 1968.

SN 314,672. Becton, Dickinson and Company, East Rutherford, N.J. Filed Dec. 17, 1968.

DESTRUCTIP

For Hand Tool for the Destruction of Hypodermic Needles (Int. Cl. 8).
First use Sept. 28, 1968.

SN 316,437. Imperial Knife Associated Companies, Inc., Providence, R.I. Filed Jan. 13, 1969.

SPRING BLOSSOMS

For Stainless Steel Knives, Forks and Spoons (Int. Cl. 8).
First use Sept. 24, 1968.

SN 317,534. DEK, Inc., Huntsville, Ala. Filed Jan. 27, 1969.

TWIN TENDER

For Hot-Cold Beverage and Snack Vending Machine (Int. Cl. 9).
First use Jan. 21, 1969.

SN 317,920. O.W.D. Incorporated, Tupper Lake, N.Y. Filed Jan. 30, 1969.

LADY DIANNE

For Plastic Spoons and Forks and Knives (Int. Cl. 8).
First use Sept. 30, 1966.

SN 320,936. Beloit-Passavant Corporation, Janesville, Wis. Filed Mar. 6, 1969.

LAGOON MASTER

For Waste Water Treatment Machinery—Namely, Floating Aerators for Circulating and Oxygenating Liquids in Aeration Basins (Int. Cl. 11).
First use Aug. 28, 1967.

SN 323,725. Kenneth N. Nichols, d.b.a. Kaenen Tools, Chicago, Ill. Filed Apr. 4, 1969.

MULTI-SINE

For Angle Dressers for Use With Grinding Wheels (Int. Cl. 7).
First use Feb. 4, 1969.

SN 323,914. Glenmarc Manufacturing Company, Northbrook, Ill. Filed Apr. 8, 1969.

FLUD-GARD

For Jet Pumps (Int. Cl. 7).
First use Feb. 26, 1969.

SN 324,374. The Torrington Manufacturing Company, Torrington, Conn. Filed Apr. 14, 1969.



For Machinery for Working Metal Sheet, Strip, Tube, Rod and Wire Which Performs One or More of the Operations of Rolling, Milling, Slitting, Straightening, Edging, Coiling, Decoiling, Blanking, Forming, Bending, Combined Forming and Welding, Combined Bending and Welding, and Cutting Into Lengths; Machinery for Working Products of Above—Namely, Spring Loopers and Grinders; Permanent Molds for Non-Ferrous Metal—Namely, Air and Water Cooled Molds, Rolling Mills, Slab Milling Machines, Straighteners, Strip Coilers, Strip Decoilers, Four-Slide Machines, Spring Coilers, Spring Winders, Spring Loopers and Spring Grinders; and Parts and Attachments for the Foregoing (Int. Cl. 7).
First use on or about Mar. 31, 1969.

Class 26—Measuring and Scientific Appliances

SN 274,577. Air Reduction Company, Incorporated, New York, N.Y. Filed June 23, 1967.

MIXMAKER

For Gas Mixing Systems for Mixing Desired Proportions of Breathing Gases for Life Support (Int. Cl. 9).
First use Apr. 20, 1967.

SN 297,511. Vernitron Corporation, Farmingdale, N.Y. Filed May 7, 1968.



For Data Processing Equipment—Namely, Data Terminals, Couplers, and Printing Apparatus Thereof (Int. Cl. 9).
First use Mar. 26, 1968.

SN 297,884. Quindar Electronics, Inc., Springfield, N.J. Filed May 10, 1968.

QICS

For Telemetering Systems and Components—Namely, Supervisory Control Systems and Components (Int. Cl. 9).
First use Apr. 22, 1968.

SN 300,678. Beckman Instruments, Inc., Fullerton, Calif. Filed June 18, 1968.

NYSTAGMOTRAC

For Optical Stimulator for Nystagmus Induction (Int. Cl. 9).
First use Mar. 12, 1968.

SN 304,899. Dacom, Inc., Palo Alto, Calif. Filed Aug. 12, 1968.

DACOM

For Special Purpose Data Processing Systems Including Data Compressors and Optical Telemeters (Int. Cl. 9).
First use at least as early as June 1967.

SN 306,943. Raytheon Education Company, Lexington, Mass. Filed Sept. 9, 1968.

RAYTHEON

For Educational Equipment—Namely, Language Learning Laboratories Utilizing Teaching Consoles, Television, Electronic Amplification and Recording-Playback Units Incorporated Into a Dial Access Communication System, Sold as a Unit; Student Response Systems Utilizing Student and Instructor Consoles, Student-Instructor Communication and Monitoring Stations, and Electronic Data Storage Units Incorporated Into a Student-Instructor Communication System, Sold as a Unit; and Driver Training Simulation Systems (Int. Cl. 9).
First use May 1968.

SN 308,285. General Nucleonics Inc., Columbus, Ohio. Filed Sept. 26, 1968.

SENTRONIZED

Owner of Reg. No. 790,356.
For Machinery Sold as a Unit To Prevent Pilferage—Namely, a Control Box, a Magnetizer or Demagnetizer Machine, a Pair of Posts With an Electronic Charge Running Between Them for Detecting Magnetized Plates; and Separate Demagnetizer for Plates; and Detection Plates Used With the Above (Int. Cl. 9).
First use May 1962.

SN 308,286. General Nucleonics Inc., Columbus, Ohio. Filed Sept. 26, 1968.



Owner of Reg. No. 790,356.
For Machinery Sold as a Unit To Prevent Pilferage—Namely, a Control Box, a Magnetizer or Demagnetizer Machine, a Pair of Posts With an Electronic Charge Running Between Them for Detecting Magnetized Plates; and Separate Demagnetizer for Plates; and Detection Plates Used With the Above (Int. Cl. 9).
First use May 1962.

SN 309,692. Pavelle Limited, Epsom, Surrey, England. Filed Oct. 15, 1968.

PAVELLE

For Apparatus for Printing, Enlarging and Processing Photographic Materials, and Parts and Components Thereof (Int. Cl. 9).
First use July 1968; in commerce July 1968.

SN 313,104. Heraeus-Schott Quarzschmelze G.m.b.H., Hanau am Main, Germany. Filed Nov. 26, 1968.

INFRALUX

Owner of German Reg. No. 848,976, dated Aug. 23, 1968.
For Optical Articles of Quartz—Namely, Prisms, Lenses, Plates, Mirrors, Rods and Ingots; and Ultraviolet- and Infrared-Transparent or Translucent Laboratory and Industrial Articles of Quartz Glass—Namely, Tubes, Containers and Receptacles and Crucibles (Int. Cl. 9).

SN 314,416. Flight Products, Inc., Moonachie, N.J. Filed Dec. 13, 1968.

FLIGHTMATIC

For Ground Level Pilot Training Machines Simulating Radio Navigation and Instrument Flight Conditions (Int. Cl. 9).
First use on or about Nov. 1, 1967.

SN 314,508. Alpha Tech, Inc., Greenlawn, N.Y. Filed Dec. 16, 1968.



For Circuit Modules Encapsulated in Clear Plastic for Use in Electronic Training Aids—Namely, "OR" Gates, "AND" Gates, Flip-Flops, Delay Gates, Employing Diodes, Resistors, Transistors, Indicating Lamps, Capacitors and Inductors (Int. Cl. 9).
First use on or about June 17, 1966.

SN 314,604. Optonetics, Inc., Teterboro, N.J. Filed Dec. 16, 1968.

TRUCKTRACE

For Electronic Truck Identification Machines—Namely, an Electronic Solid State Scanner Which Optically Senses Coded Labels on Trucks and Feeds This Information to a Control Cabinet for Further Transfer (Int. Cl. 9).
First use Nov. 26, 1968.

SN 315,855. Ingenuics, Inc., Gaithersburg, Md. Filed Jan. 6, 1969.



The drawing is lined for the color red and such color is claimed as a part of the mark.
For Third Dimension (3-D) Motion Picture Projector System Consisting of Motion Picture Projector, Image Adapter, Viewing Spectacles, and Screen (Int. Cl. 9).
First use Oct. 15, 1968.

SN 316,816. Perfect Parts, Inc., Carlstadt, N.J. Filed Jan. 16, 1969.

FREEZ-TEST

For Hydrometers for Indicating the Specific Gravity of Radiator Fluids (Int. Cl. 9).
First use Dec. 10, 1968.

SN 319,011. Zeigler Electronics, Inc., Gardena, Calif. Filed Feb. 12, 1969.



For Combination Water Level Indicator and Automatic Bilge Pump Starter for Boats (Int. Cl. 9).
First use Dec. 27, 1968.

SN 320,075. Omal Group Limited, London, England. Filed Feb. 25, 1969.

OMAL

Owner of British Reg. No. 586,222, dated June 14, 1938.
For Paper and Cardboard for Use in Copying Machines, Particularly Sensitized or Coated Paper and Cardboard for Use in Electrostatic Copying Machines (Int. Cl. 1).

SN 323,962. Precision Scientific Company, Chicago, Ill. Filed Apr. 8, 1969.

AUTO-AQUATRATOR

Owner of Reg. No. 432,441.
For Laboratory Apparatus for Determining Water Content of Materials (Int. Cl. 9).
First use Dec. 7, 1965.

Class 27—Horological Instruments

SN 296,529. Elgin National Watch Company, Elgin, Ill. Filed Apr. 25, 1968.

HELBROS

Owner of Reg. Nos. 505,782 and 687,542.
For Watches, Watch Movements, and Watch Cases (Int. Cl. 14).
First use July 1, 1916.

SN 300,614. Pennwood Numechron Company, Pittsburgh, Pa. Filed June 17, 1968.

TYMETER

For Time Meters—Namely, Direct Reading Digital Clocks (Int. Cl. 14).
First use June 15, 1965.

SN 315,790. Schwab & Co., Bienne, Switzerland. Filed Jan. 3, 1969.

ONDINA

Owner of Swiss Reg. No. 216,254, dated Mar. 8, 1966.
For Watches, Watch Movements, Watch Cases, Watch Dials; and Repair Parts for Watch Movements (Int. Cl. 14).

Class 28 — Jewelry and Precious-Metal Ware

SN 295,682. The Traub Company, Detroit, Mich. Filed Apr. 15, 1968.



The drawing is lined for the color orange.
For Fine Jewelry (Int. Cl. 14).
First use February 1968.

SN 318,636. James P. Davis, Miami, Fla. Filed Feb. 7, 1969.

BACH GANDER

For Finger Rings and Medallions (Int. Cl. 14).
First use Jan. 11, 1969.

SN 318,637. James P. Davis, Miami, Fla. Filed Feb. 7, 1969.

BACHETTE GOOSE

For Finger Rings and Medallions (Int. Cl. 14).
First use Jan. 11, 1969.

Class 29 — Brooms, Brushes, and Dusters

SN 309,536. American Associated Companies, Inc., Atlanta, Ga. Filed Oct. 14, 1968.

GREAT DANE

For Mop Yarn and Map Yarn Heads (Int. Cls. 21 and 23).
First use Jan. 15, 1953.

Class 30 — Crockery, Earthenware, and Porcelain

SN 314,567. J & H International Corporation, Chicago, Ill. Filed Dec. 16, 1968.

ST. REGIS

For China Dinnerwear (Int. Cl. 21).
First use Nov. 13, 1968.

Class 31 — Filters and Refrigerators

SN 308,453. W. & R. Balston, Limited, Maidstone, Kent, England. Filed Sept. 30, 1968.

Whatman

Owner of Reg. Nos. 55,304, 868,419, and others.
For Industrial Filter Tubes (Int. Cl. 11).
First use Feb. 1, 1966; in commerce May 31, 1967.

SN 313,256. The Bastian-Blessing Company, Chicago, Ill. Filed Nov. 29, 1968.

UNI-SERV

Owner of Reg. Nos. 556,882, 591,098, and 591,149.
For Refrigerated Ice Cream Cabinets, Ice Cream Compartments, and Refrigerated Soda Fountains (Int. Cl. 11).
First use Oct. 31, 1968.

SN 319,866. General Electric Company, Louisville, Ky. Filed Feb. 24, 1969.

AMERICANA

For Refrigerator (Int. Cl. 11).
First use Oct. 15, 1968.

SN 321,492. Havens Steel Company, Kansas City, Mo. Filed Mar. 12, 1969.



Owner of Reg. No. 762,726.
For Cooling Towers and Parts Thereof (Int. Cl. 11).
First use during July 1967.

Class 32 — Furniture and Upholstery

SN 298,969. Schlaraffia-Werke Huser & Co., Wuppertal-Barmen, Germany. Filed May 23, 1968.

SCHLARAFFIA

The English translation of the word "Schlaraffia" is "dreamland." Owner of German Reg. No. 675,814, dated May 11, 1955.
For Mattresses, Pillows, Upholstered Furniture, Bed-Frames, Clamps for Beds, Box Springs, Pre-Cut Sponge- and Foam-Type Materials for Mattresses, and Beds (Int. Cl. 20).

SN 303,830. Sheller-Globe Corporation, Toledo, Ohio. Filed July 29, 1968.

6500 LINE

The word "Line" is disclaimed apart from the mark as a whole.
For Filing Cabinets (Int. Cl. 20).
First use Mar. 21, 1967.

SN 321,376. Artco Corporation, Lansdale, Pa. Filed Mar. 11, 1969.



For Storage Racks for Boats (Int. Cl. 20).
First use Aug. 17, 1966.

Class 33 — Glassware

SN 292,881. Elvin Buller, d.b.a. Merchandise Enterprises, Wichita, Kans. Filed Mar. 11, 1968.

CROWN JEWEL

For Crystal Stemware (Int. Cl. 21).
First use on or about Aug. 19, 1960.

SN 301,038. Centrala Eksportowo-Importowa "Minex," Warsaw, Poland. Filed June 21, 1968.



No claim is made to the word "Glass" apart from the mark as shown. Owner of Polish Reg. No. 46,588, dated Apr. 24, 1967.
For Household Glass and Crystal Glasses—Namely, Liqueur Glasses, Drinking Glasses, Sets for Water and Compote, and Vases (Int. Cl. 21).

Class 34 — Heating, Lighting, and Ventilating Apparatus

SN 270,525. Franklin Products Corp., Chicago, Ill. Filed May 3, 1967.

Master Chef

For Gas Operated Ranges, Ovens, Fryers, and Broilers (Int. Cl. 11).
First use Apr. 3, 1967.

SN 313,713. Loren Cook Company, Berea, Ohio. Filed Dec. 5, 1968.

AXIA-PAC

For Ventilating Equipment—Namely, Blowers (Int. Cl. 11).
First use Aug. 30, 1968.

SN 316,259. Twinoak Products, Inc., North Aurora, Ill. Filed Jan. 9, 1969.

VAPOPAK

For Humidifier Evaporator Pads (Int. Cl. 11).
First use on or about Sept. 10, 1968.

Class 35 — Belting, Hose, Machinery Packing, and Nonmetallic Tires

SN 315,123. Tri-Point Industries, Inc., Commack, N.Y. Filed Dec. 23, 1968.

TRI-GASPAK

For Gasket and Packing Material (Int. Cl. 17).
First use Dec. 5, 1968.

Class 36 — Musical Instruments and Supplies

SN 272,096. Remco Industries, Inc., Harrison, N.J. Filed May 22, 1967.

THE LIVERPOOL COMPACT

For Musical Instruments—Namely, Drums and Drum Sets (Int. Cl. 15).
First use July 20, 1966.

Class 37 — Paper and Stationery

SN 263,430. Williamhouse-Regency Inc., Brooklyn, N.Y., by change of name from The Williamhouse, Inc., Brooklyn, N.Y. Filed Jan. 27, 1967.

FANTA SEAL

For Envelopes (Int. Cl. 16).
First use Jan. 19, 1967.

SN 290,762. J. S. Staedtler, Nurnberg, Germany. Filed Feb. 9, 1968.

DURANITE

For Pencils, Pencil Slips, Slate Pencils, Pencil Protectors, Pencil Cases, Mechanical Pencils and Refill Leads Therefor, Lead Holders and Refill Leads Therefor, Penholders, Erasers, Chalks, Crayons, Pastels, Felt Markers, Ball Point Pens, Ball Point Pencils and Refills for Ball Point Pens and Ball Point Pencils, Fountain Pens and Parts Thereof (Int. Cl. 16).
First use March 1967; in commerce July 1967.

SN 297,206. Mediforms, Inc., Newton, Mass. Filed May 2, 1968.

MEDIFORMS

For Multiple Copy Billing Forms, Including a Plurality of Identical Monthly Statement Forms and a Ledger Card (Int. Cl. 16).
First use Sept. 25, 1966.

Class 38 — Prints and Publications

SN 273,675. The Pennsylvania State University, University Park, Pa. Filed June 12, 1967.



For Catalogs of Fossil Spores and Pollen, English Translation of Taxonomic Materials and Microfilms (Int. Cl. 16).
First use Oct. 16, 1957.

SN 281,624. Random House, Inc., New York, N.Y. Filed Oct. 2, 1967.

TAKE-ALONG BOOKS

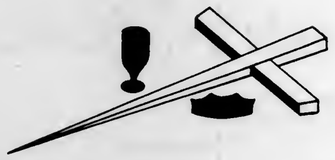
Applicant disclaims exclusive right to the word "Books" apart from the mark as shown.
For Books Published From Time to Time in Series (Int. Cl. 16).
First use on or about Aug. 11, 1967.

SN 291,047. Harold J. Cooper, Beaumont, Tex. Filed Feb. 14, 1968.

Louisiana Cattlemen

For Magazine Containing Articles Relating to the Breeding, Feeding and Raising of Livestock (Int. Cl. 16).
First use Feb. 6, 1968.

SN 291,350. C & R Enterprises, Jacksonville, Ill. Filed Feb. 19, 1968.



For Sheet Music (Int. Cl. 16).
First use June 7, 1967.

SN 293,816. The Explorers Club, New York, N.Y. Filed Mar. 21, 1968.

THE EXPLORERS NEWSLETTER

For Scientific and Educational Quarterly Newsletter (Int. Cl. 16).
First use August 1959.

SN 293,817. The Explorers Club, New York, N.Y. Filed Mar. 21, 1968.

EXPLORERS JOURNAL

For Scientific and Educational Quarterly Journal (Int. Cl. 16).
First use November 1921.

SN 305,914. The Bristol Brass Corporation, East Hartford, Conn. Filed Aug. 26, 1968.

ELECTROCAL

For Multicolor Heat Transfers Printed in Reverse on a Carrier Coated With a Release Material, for Application to a Product by Heat and Pressure (Int. Cl. 16).
First use during August 1961.

SN 310,116. Milton Bradley Company, East Longmeadow, Mass. Filed Oct. 21, 1968.

MOBIL-GRAPH

For Clear Film Transparency Imprinted With Specific Polarized Patterns of Various Colors That Simulate Particular Motions When Projected on an Overhead Viewer Through a Rotating Disc of Polarized Material (Int. Cl. 9).
First use Sept. 16, 1968.

SN 313,403. Ward's Natural Science Establishment, Inc., Rochester, N.Y. Filed Nov. 29, 1968.

UNISTRIP

For Exposed and Developed Educational Video Film Strips (Int. Cl. 9).
First use Oct. 24, 1968.

SN 313,517. Phillips Petroleum Company, Bartlesville, Okla. Filed Dec. 3, 1968.

MAR BAND

Applicant disclaims the word "Band" apart from the mark as shown.
For Printed Plastic Labels for Containers (Int. Cl. 16).
First use Feb. 12, 1968.

SN 317,736. Eye Gate House, Inc., Jamaica, N.Y. Filed Jan. 28, 1969.

EYE GATE

For Educational Film Strips (Int. Cl. 9).
First use Sept. 20, 1950.

SN 319,521. Vance Publishing Corporation, Chicago, Ill. Filed Feb. 18, 1969.

MOBILE & RECREATIONAL HOUSING MERCHANDISER

Owner of Reg. No. 777,049.
For Magazine (Int. Cl. 16).
First use Jan. 1, 1969.

SN 323,201. National Periodical Publications, Inc., New York, N.Y. Filed Apr. 1, 1969.

THE UNEXPECTED

For Comic Magazine (Int. Cl. 16).
First use Jan. 29, 1968.

SN 324,667. Aerial Photos of New England, Inc., Boston, Mass. Filed Apr. 16, 1969.

AEROSCALE

For Aerial Pictorial Plot Plans Reproducible by Diazo Machine (Int. Cl. 16).
First use at least as early as February 1968.

SN 325,605. Hudson Publishing Company, Los Altos, Calif. Filed Apr. 25, 1969.

BUILDING PRODUCTS GUIDE

Owner of Reg. Nos. 347,126, 513,788, and 636,833.
For Trade Magazine Issued Periodically (Int. Cl. 16).
First use December 1963.

Class 39 — Clothing

SN 261,223. Maro Industries, Inc., New York, N.Y. Filed Dec. 21, 1966.

FASHION FAIR

The word "Fashion" is disclaimed apart from the mark as shown.
For Hosiery (Int. Cl. 25).
First use Sept. 26, 1966.

SN 312,173. Atlas Underwear Company, Piqua, Ohio. Filed Nov. 14, 1968.



Owner of Reg. Nos. 389,826, 676,383, and others.
For Underwear. (Int. Cl. 25).
First use Oct. 9, 1968.

SN 312,174. Atlas Underwear Company, Piqua, Ohio. Filed Nov. 14, 1968.



Owner of Reg. Nos. 389,826, 676,383 and others.
For Underwear (Int. Cl. 25).
First use Oct. 9, 1968.

SN 313,485. Barrie Knitwear Limited, Hawick, Scotland. Filed Dec. 3, 1968.

KINROSS CASHMERE

Applicant disclaims the word "Cashmere" apart from the mark as shown.
For Articles of Clothing Made of Cashmere for Women and Girls—Namely, Jumpers, Cardigans, Skirts, Dresses, Suits, Shorts, Trousers, Trouser Suits, Boleros, Stockings, Scarves, Socks, Sweaters, Waistcoats, Dressing Gowns, Gloves, Hats, Caps, Ponchos, Capes, Evening Coats, Culottes, Jump-Suits; and Articles of Clothing Made of Cashmere for Men and Boys—Namely, Slipovers, Pullovers, Cardigans, Waistcoats, Undercoats, Sleeveless Cardigans, Shorts, Socks, Stockings, Car Coats, Gloves, Dressing Gowns, Ties, Golf Hose, Hats, and Caps (Int. Cl. 25).
First use November 1968; in commerce Nov. 6, 1968.

SN 315,264. Riegel Textile Corporation, New York, N.Y. Filed Dec. 26, 1968.

SOFTSORB

For Training Pants and Diapers (Int. Cl. 25).
First use on or about Nov. 6, 1963.

SN 316,539. Kenrose Manufacturing Co., Inc., New York, N.Y. Filed Jan. 14, 1969.

Kenrose

Owner of Reg. No. 442,745.
For Women's and Misses' Dresses, Robes, and Sportswear—Namely, Pants, Skirts, Culottes and Playsuits (Int. Cl. 25).
First use October 1945.

SN 317,342. Paul Harvey Ltd., New York, N.Y. Filed Jan. 23, 1969.

PAUL HARVEY

The name "Paul Harvey" is fanciful and is not the name of a particular living individual.
For Men's Sportswear—Namely, Shirts, Jackets, Slacks, Coats, and Suits (Int. Cl. 25).
First use June 21, 1968.

SN 317,553. The B. F. Goodrich Company, Akron, Ohio. Filed Jan. 27, 1969.

SHUGLOVS

For Overshoes (Int. Cl. 25).
First use October 1926.

SN 319,000. U.S. Industries, Inc., New York, N.Y. Filed Feb. 12, 1969.

REPLACE-A-LEG

Owner of Reg. No. 864,295.
For Hosiery and Underwear (Int. Cl. 25).
First use on or before Apr. 16, 1968.

SN 319,019. Alba-Waldensian, Inc., Valdese, N.C. Filed Feb. 13, 1969.

PATTER PUFFS

For Knitted Slippers (Int. Cl. 25).
First use Nov. 1, 1968.

SN 319,022. Avon Sole Company, Avon, Mass. Filed Feb. 13, 1969.

CUSH-N-TUFF

For Shoe Soling Material Cut Into Soles and Sold as Such (Int. Cl. 25).
First use Jan. 31, 1969.

SN 319,807. Bayside Mfg. Co., Inc., Fall River, Mass. Filed Feb. 24, 1969.

Ticker Tape

For Ladies' and Girls' Wearing Apparel—Namely, Dresses, Slacks, Blouses, Sweaters, Skirts, Shorts, Coats, and Hats (Int. Cl. 25).
First use Feb. 3, 1969.

SN 319,814. Blue Gem Manufacturing Company, Greensboro, N.C. Filed Feb. 24, 1969.

WHEELIE JEANS

The word "Jeans" is disclaimed apart from the mark as shown.
For Men's, Boys', Women's, and Girls' Jeans (Int. Cl. 25).
First use Jan. 23, 1969.

SN 319,860. Freeland Shirt Co., Inc., Freeland, Pa. Filed Feb. 24, 1969.

PRO DOWN

Applicant expressly disclaims the exclusive right to use of the word "Down" apart from the mark as shown, reserving, however, unto itself any common law rights that it may have.
For Jackets (Int. Cl. 25).
First use December 1968.

SN 319,986. Van Raalte Company, Inc., New York, N.Y. Filed Feb. 24, 1969.

CREPESSENCE

For Lingerie (Int. Cl. 25).
First use Jan. 2, 1969.

SN 320,081. Rigamarole, Inc., Farmingdale, N.Y. Filed Feb. 25, 1969.

RIGAMAROLE

For Ladies' Sport Coats (Int. Cl. 25).
First use at least as early as June 18, 1968.

SN 320,174. Peter Pan International, Inc., New York, N.Y. Filed Feb. 26, 1969.

MAGIC MERGE

For Girdles (Int. Cl. 25).
First use Feb. 3, 1969.

SN 320,285. Quality Mills, Incorporated, Mount Airy, N.C. Filed Feb. 27, 1969.

Tog-a-Longs

For Infants' and Children's Knit and Woven Apparel—Namely, Shirts, Shorts, Two-Piece Suits, Slacks, and Cardigans (Int. Cl. 25).
First use Mar. 31, 1961.

SN 320,314. On Gard Industrial Footwear, Inc., Cicero, Ill. Filed Feb. 28, 1969.

BUMP TOE

The word "Toe" is disclaimed apart from the mark as shown.
For Shoes (Int. Cl. 25).
First use Feb. 7, 1969.

SN 320,341. Formflex Foundations, Inc., Saddle Brook, N.J. Filed Feb. 28, 1969.

UP-TIGHT

For Girdle That Holds Stockings Without Garter (Int. Cl. 25).
First use Feb. 17, 1969.

SN 320,818. IMEC Confezioni S.p.A., Paderno d'Adda, Como, Italy. Filed Mar. 5, 1969.

IMEC

Owner of Italian Reg. No. 244,031, dated Mar. 27, 1968.
For Women's Wear—Namely, Corsets, Brassieres, Stockings, Suspenders, and Panties (Int. Cl. 25).

SN 320,947. Glamorise Foundations, Inc., New York, N.Y. Filed Mar. 6, 1969.

GLAMOR-X

Owner of Reg. No. 734,214.
For Foundation Garments (Int. Cl. 25).
First use January 1969.

SN 320,949. Griffin-Jaco Mills Corporation, Griffin, Ga. Filed Mar. 6, 1969.

DIX KNIT

Owner of Reg. No. 246,323.
For Knitted Underwear (Int. Cl. 25).
First use Jan. 1, 1926.

SN 321,170. Bear Brand Hosiery Co., Chicago, Ill. Filed Mar. 10, 1969.

NEW CRUSH!

For Hosiery (Int. Cl. 25).
First use Feb. 25, 1969.

SN 322,902. Phillips-Van Heusen Corporation, New York, N.Y. Filed Mar. 26, 1969.

COLLARITE

For Men's Shirts, Cuffs, Collars, Pajamas, Sports Shirts, Underwear, Knit Shirts, and Slacks (Int. Cl. 25).
First use June 14, 1927.

SN 322,978. Eloesser-Heynemann Company, South San Francisco, Calif. Filed Mar. 27, 1969.

FRISKO JACS

Owner of Reg. No. 768,232 and others.
For Outer Shirts (Int. Cl. 25).
First use Mar. 3, 1969.

SN 323,016. The Puritan Sportswear Corp., Altoona, Pa. Filed Mar. 27, 1969.

HYDRAKNIT

For Men's Sweaters (Int. Cl. 25).
First use Mar. 21, 1968.

SN 323,030. John B. Stetson Company, Philadelphia, Pa. Filed Mar. 27, 1969.

the Wellington by STETSON

For Headwear, Including Hats and Caps, Sweaters, Robes, Rainwear, Underwear, Hosiery, Sleepwear, Swimwear, Belts, Gloves, and Handkerchiefs (Int. Cl. 25).
First use Jan. 22, 1969.

SN 323,031. John B. Stetson Company, Philadelphia, Pa. Filed Mar. 27, 1969.

THE WELLINGTON BY STETSON

For Headwear, Including Hats and Caps, Sweaters, Robes, Rainwear, Underwear, Hosiery, Sleepwear, Swimwear, Belts, Gloves, and Handkerchiefs (Int. Cl. 25).
First use Jan. 22, 1969.

SN 323,078. Atlas Shirt Company, Inc., New York, N.Y. Filed Mar. 28, 1969.

SASCOT

For Ascot Tie (Int. Cl. 25).
First use Dec. 12, 1968.

Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

SN 324,645. Deering Milliken, Inc., New York, N.Y. Filed Apr. 16, 1969.

GOLDEN VALLEY

For Textile Fabrics Made of Wool, Cotton, and Synthetic Fibers, and Combinations Thereof (Int. Cl. 24).
First use Apr. 9, 1969.

SN 325,293. Deering Milliken, Inc., New York, N.Y. Filed Apr. 23, 1969.

CRIB-CROWD

Owner of Reg. No. 516,544.
For Cotton Piece Goods (Int. Cl. 24).
First use Apr. 18, 1968.

Class 50—Merchandise Not Otherwise Classified

SN 306,681. Norcross, Inc., New York, N.Y. Filed Sept. 5, 1968.

BUDDY BUTTONS

Applicant disclaims the word "Buttons" apart from the mark as shown and retains all common law rights therein.
For Novelty Buttons Containing Indicia, for Mounting on Clothing of the Wearer (Int. Cl. 20).
First use Apr. 19, 1968.

SN 307,768. Transilwrap Company, Inc., Chicago, Ill. Filed Sept. 19, 1968.

TRAN-STAY

For Flat Polyester Film Sold for Use in the Graphic Arts Field for Color Registering, Stripping and To Locate and Hold Various Segments of a Printed Page (Int. Cl. 16).
First use February 1963.

SN 320,952. The Hopp Press, Inc., New York, N.Y. Filed Mar. 6, 1969.

REGAL

For Store Directory Signs (Int. Cl. 16).
First use on or about Dec. 15, 1968.

Class 51—Cosmetics and Toilet Preparations

SN 290,074. Clairol Incorporated, New York, N.Y. Filed Feb. 1, 1968.

SHIMMERESCENT

For Frosted Lipstick (Int. Cl. 3).
First use Dec. 4, 1967.

SN 294,504. Helene Curtis Industries, Inc., Chicago, Ill. Filed Mar. 29, 1968.

GASSER MASK

Reserving its common law rights, applicant disclaims "Mask" apart from the mark as shown.
For Skin Freshener (Int. Cl. 3).
First use on or about Mar. 8, 1968.

SN 294,811. Caswell-Massey Co., Ltd., New York, N.Y. Filed Apr. 3, 1968.

CAYN



The design is a silhouette of a winged foot.
For Cologne and Toilet Water (Int. Cl. 3).
First use May 1, 1947.

SN 296,664. Helene Curtis Industries, Inc., Chicago, Ill. Filed Apr. 26, 1968.

MOISTURE SILK

Without waiving common law rights applicant disclaims "Moisture" apart from the mark as shown.
For Moisturized Creme (Int. Cl. 3).
First use on or about Apr. 2, 1968.

SN 300,279. Richard Hudnut, Morris Plains, N.J. Filed June 12, 1968.

WEATHEREYES

For Eye Shadow (Int. Cl. 3).
First use June 6, 1968.

SN 302,384. Boettger Kommanditgesellschaft Pharmazeutische und Kosmetische Praeparate, Berlin, Germany. Filed July 10, 1968.

ALGAMAR

Owner of German Reg. No. 839,238, dated Oct. 19, 1962; and U.S. Reg. No. 787,911.
For Cosmetic Additive for Both Water and Cosmetic Face Packs (Int. Cl. 3).

SN 309,207. Original Products Company, Bronx, N.Y. Filed Oct. 9, 1968.

Follow Up

For Cologne (Int. Cl. 3).
First use Sept. 24, 1968.

SN 311,677. Fermodyl Laboratories, Inc., Los Angeles, Calif. Filed Nov. 8, 1968.

FERMO-CARE

Owner of Reg. No. 843,802.
For Hair Conditioner (Int. Cl. 3).
First use Sept. 21, 1968.

SN 316,785. Givaudan Corporation, Clifton, N.J. Filed Jan. 16, 1969.

THE ESTABLISHMENT

For Men's Fragrance Products—Namely, Colognes, After Shave Lotions, Personal Deodorant Talcum (Int. Cls. 3 and 5).
First use Dec. 20, 1968.

SN 317,387. Janet Sartin, Inc., New York, N.Y. Filed Jan. 23, 1969.

JANET SARTIN

For Cosmetic Facial Cream, Lip Pomade, Lipstick, Cosmetic Cleansing Oil, Perfume, Cologne, Toilet Water, Sun Lotions, Face and Body Powder, Astringents, Bath Oil, Moisturizing Creams and Lotions, Rouge (Int. Cl. 3).
First use January 1948.

SN 319,049. The Gillette Company, d.b.a. The Toni Company, Boston, Mass. Filed Feb. 13, 1969.

SCATTER PERM

Applicant disclaims the term "Perm" apart from the mark as shown.
For Hair Waving Preparation (Int. Cl. 3).
First use Jan. 10, 1969.

SN 319,646. Sybil Ives Incorporated, Yonkers, N.Y. Filed Feb. 19, 1969.

HEART OF THE YOLK

Applicant disclaims the word "Yolk" apart from the mark as shown.
For Cold Permanent Waving Preparation, Hair Conditioner and Hair Spray (Int. Cl. 3).
First use July 26, 1968.

SN 320,814. The Gillette Company, d.b.a. The Toni Company, Boston, Mass. Filed Mar. 5, 1969.

DIPPITY-DO

Owner of Reg. No. 694,682.
For Hairspray (Int. Cl. 3).
First use Oct. 31, 1967.

SN 322,811. Avon Products, Inc., New York, N.Y. Filed Mar. 26, 1969.

TWINKLE TONE

Applicant disclaims the word "Tone" apart from the mark as shown.
For Lipstick, Nail Enamel, and Foundation Makeup (Int. Cl. 3).
First use Dec. 31, 1968.

SN 323,917. Lever Brothers Company, New York, N.Y. Filed Apr. 8, 1969.

CLOSE-UP IS FOR CLOSE-UPS

Owner of Reg. Nos. 181,419, 620,093, and 813,333.
For Dentifrice (Int. Cl. 3).
First use Mar. 28, 1969.

Class 52 — Detergents and Soaps

SN 298,463. Mayday, Inc., Elkins Park, Pa. Filed May 17, 1968.

Locean of Suds

Applicant disclaims the word "Suds" except in the association shown.
For Concentrated Dishwashing Detergents (Int. Cl. 3).
First use Apr. 6, 1968.

SN 319,467. National Service Industries, Inc., d.b.a. Zep Manufacturing Company, Atlanta, Ga. Filed Feb. 18, 1969.

ZEPAX

Owner of Reg. Nos. 681,037, 696,197, and others.
For Multi-Surface Cleaner-Disinfectant (Int. Cl. 3).
First use Jan. 2, 1966.

SN 319,474. National Service Industries, Inc., d.b.a. Zep Manufacturing Company, Atlanta, Ga. Filed Feb. 18, 1969.

ZEPOWER

Owner of Reg. Nos. 681,037, 696,197, and others.
For Car Wash Preparation (Int. Cl. 3).
First use June 1, 1967.

SN 319,483. National Service Industries, Inc., d.b.a. Zep Manufacturing Company, Atlanta, Ga. Filed Feb. 18, 1969.

ZEPHENE

Owner of Reg. Nos. 681,037, 696,197, and others.
For Multi-Purpose Cleansing Preparation Having Incidental Disinfectant and Deodorizing Properties (Int. Cl. 3).
First use Jan. 2, 1961.

SN 319,490. National Service Industries, Inc., d.b.a. Zep Manufacturing Company, Atlanta, Ga. Filed Feb. 18, 1969.

ZEPEXO

Owner of Reg. Nos. 681,037, 696,197, and others.
For Multi-Purpose Cleaning and Degreasing Preparation (Int. Cl. 3).
First use June 1, 1964.

SN 325,305. Lever Brothers Company, New York, N.Y. Filed Apr. 23, 1969.

URBAN

For Detergent for General Washing and Cleansing (Int. Cl. 3).
First use Apr. 15, 1969.

SN 325,306. Lever Brothers Company, New York, N.Y. Filed Apr. 23, 1969.

CITY

For Detergent for General Washing and Cleansing (Int. Cl. 3).
First use Apr. 15, 1969.

SN 325,548. Colgate-Palmolive Company, New York, N.Y. Filed Apr. 25, 1969.

PURASOFT

For Liquid Detergent for Washing Dishes and Clothes (Int. Cl. 3).
First use Mar. 20, 1969.

SN 325,659. Gemcraft Company, Inc., Boston, Mass. Filed Apr. 28, 1969.

PEARL BATH

Owner of Reg. No. 766,123.
For Cleaner for Pearls (Int. Cl. 3).
First use Oct. 5, 1962.

SN 325,923. Colgate-Palmolive Company, New York, N.Y. Filed Apr. 30, 1969.

COOL POWER

Owner of Reg. Nos. 756,538 and 864,349.
For All-Purpose Detergent and Cleaner (Int. Cl. 3).
First use Jan. 31, 1969.

SN 326,301. S. C. Johnson & Son, Inc., Racine, Wis. Filed May 5, 1969.

ON TOP

For Hair Shampoo (Int. Cl. 3).
First use on or about Apr. 10, 1969.

SERVICE MARKS

Class 100 — Miscellaneous

SN 279,980. American Institute of Interior Designers Inc., New York, N.Y. Filed Sept. 11, 1967.

American Institute of Interior Designers



The lines shown on the drawing are a design feature and are not intended to represent color.
For Association Services in the Field of Interior Design (Int. Cl. 42).
First use June 28, 1967.

SN 290,400. National Association of Home Builders of the United States, Washington, D.C. Filed Feb. 6, 1968.



For Association Services—Namely, Promoting the Business of Home Builders and Associated Trades by Conducting a General Advertising Campaign (Int. Cl. 42).
First use Aug. 11, 1967.

SN 290,401. National Association of Home Builders of the United States, Washington, D.C. Filed Feb. 6, 1968.

The Name of the Game is Living.

For Association Services—Namely, Promoting the Business of Home Builders and Associated Trades by Conducting a General Advertising Campaign (Int. Cl. 42).
First use Aug. 11, 1967.

SN 290,402. National Association of Home Builders of the United States, Washington, D.C. Filed Feb. 6, 1968.

The Name of the Game is Living. Explore a New Apartment Today.

For Association Services—Namely, Promoting the Business of Home Builders and Associated Trades by Conducting a General Advertising Campaign (Int. Cl. 42).
First use Aug. 11, 1967.

SN 290,403. National Association of Home Builders of the United States, Washington, D.C. Filed Feb. 6, 1968.

The Name of the Game is Living. Explore a New Address Today.

For Association Services—Namely, Promoting the Business of Home Builders and Associated Trades by Conducting a General Advertising Campaign (Int. Cl. 42).
First use Aug. 11, 1967.

SN 292,638. Union Tank Car Company (Delaware corporation), Chicago, Ill., by assignment and change of name from Union Tank Car Company (New Jersey corporation), Chicago, Ill. Filed Mar. 6, 1968.

CHANGEABLECAR

For Railroad Tank Car Leasing Services (Int. Cl. 42).
First use at least as early as Sept. 11, 1967.

SN 293,802. The Confederate Air Force, Mercedes, Tex. Filed Mar. 21, 1968.

CONFEDERATE AIR FORCE

For Maintaining a Museum Featuring Historical Military Aircraft and Preserving and Displaying Such Aircraft and Promoting Public Interest Therein (Int. Cl. 42).
First use Sept. 6, 1957.

SN 293,919. Fife & Drum Motor Inn, Honesdale, Pa. Filed Mar. 22, 1968.

Fife & Drum Motor Inn

Applicant disclaims the words "Motor Inn" apart from the mark as shown, without relinquishing any of its common law rights.
For Motel Services (Int. Cl. 42).
First use Aug. 1, 1967.

SN 294,284. Interpool, Inc., New York, N.Y. Filed Mar. 27, 1968.

INTERPOOL

For Leasing of Containers and Container Handling Equipment (Int. Cl. 42).
First use Feb. 12, 1968.

SN 294,832. G.S.D. Enterprises, Inc., Buffalo, N.Y. Filed Apr. 3, 1968.

GOLDEN STEER

For Restaurant Services (Int. Cl. 42).
First use July 19, 1967.

SN 296,404. Crain's English Pig & Whistle, Inc., West Lafayette, Ind. Filed Apr. 24, 1968.



The drawing is lined for the colors green, brown, and yellow.
For Restaurant Services (Int. Cl. 42).
First use Feb. 28, 1967.

SN 301,211. Design and Development, Inc., Cleveland, Ohio. Filed June 24, 1968.

The mark comprises a fanciful representation of the lettering "DD."
For Product Design, Product Development, Automation Development, Instrumentation Design and Prototypes (Int. Cl. 42).
First use Mar. 18, 1968.

SN 302,081. Host International, Inc., Los Angeles, Calif. Filed July 5, 1968.

Charley Brown's

Applicant claims use for the area comprising the States of California, Oregon, Washington, Arizona, Nevada, Idaho, New Mexico, Utah, and Hawaii.
For Restaurant Services (Int. Cl. 42).
First use Oct. 26, 1965.
Subj. to Concurrent Use Proceeding with SN 287,498.

SN 305,172. Windjammer Restaurant Corp., Richmond, Va. Filed Aug. 14, 1968.

FLYING CLOUD

For Seafood Restaurant Services (Int. Cl. 42).
First use Aug. 13, 1968.

SN 307,440. Econo Lodge, Inc., Vestal, N.Y. Filed Sept. 16, 1968.

ECONO LODGE

The drawing is lined for the colors blue, green, yellow and red. The word "Lodge" is disclaimed apart from the mark as shown. Owner of Reg. No. 813,642.
For Motel Services (Int. Cl. 42).
First use July 1965.

SN 308,386. Mr. Ham-Mr. Beef, Inc., Jackson, Mich. Filed Sept. 27, 1968.

Mr. Ham Mr. Beef

Without disclaiming any of its common law rights, the applicant disclaims the wording "Bavarian Sandwich House" and the words "Ham" and "Beef" apart from the mark as shown.
For Restaurant Services (Int. Cl. 42).
First use on or before Feb. 20, 1968.

SN 308,637. Spa International, Inc., Houston, Tex. Filed Oct. 1, 1968.

PRESIDENTS

For Supervised Physical Training for Men To Promote Physical Fitness and Weight Reduction (Int. Cl. 42).
First use in or about July 1961.

SN 308,896. Howard Johnson's Motor Lodges, Inc., Dorchester, Mass. Filed Oct. 4, 1968.

HOWARD JOHNSON'S

The drawing is lined for the colors blue and orange.
For Motor Lodge Services (Int. Cl. 42).
First use during April 1967.

SN 309,045. Hillbrook Recreation, Inc., Ottawa, Ohio. Filed Oct. 7, 1968.

HILLBROOK

For Renting of Camping, Fishing, and Picnicking Grounds (Int. Cl. 42).
First use on or before Apr. 1, 1968.

SN 313,813. Fiesta Enterprises, Ltd., Washington, D.C. Filed Dec. 6, 1968.

DON PEDRO'S

For Restaurant Services (Int. Cl. 42).
First use November 1967.

SN 315,066. Assa Drori, Los Angeles, Calif. Filed Dec. 23, 1968.

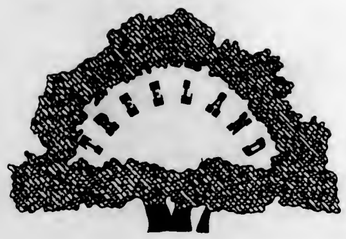
For Consulting Services Regarding the Design of Items of Commerce Such as Products, Packages, Publications, Posters and Reports, and Graphic Devices Such as Logos, Symbols and Trademarks (Int. Cl. 42).
First use July 18, 1968.

SN 318,161. The Chicken Chef Systems Incorporated, Jackson, Miss. Filed Feb. 3, 1969.



For Restaurant Services (Int. Cl. 42).
First use Nov. 26, 1968.

SN 319,573. Boething Treeland Nursery Co., Woodland Hills, Calif. Filed Feb. 19, 1969.



For Plant Nursery Services (Int. Cl. 42).
First use at least as early as June 1960.

SN 319,574. Boething Treeland Nursery Co., Woodland Hills, Calif. Filed Feb. 19, 1969.

TREELAND

For Plant Nursery Services (Int. Cl. 42).
First use at least as early as February 1954.

SN 321,140. National Office Products Association, Washington, D.C. Filed Mar. 10, 1969.

nopa
NATIONAL OFFICE PRODUCTS ASSOCIATION

The words "National Office Products Association" are disclaimed apart from the mark as shown.
For Trade Association Services—Namely, Promoting the Interests of Office Products Dealers and Manufacturers (Int. Cl. 42).
First use Jan. 1, 1968.

SN 323,667. The American Kennel Club, Incorporated, New York, N.Y. Filed Apr. 4, 1969.



For General Association Services to Members, Such as Maintaining Official Stud Books and Registration Records; Detecting, Preventing and Punishing of Frauds in Connection With the Purchase, Sale and Registration of Pure Bred Dogs; Publishing of Informative Literature and Sponsorship or Research, Advancing the Study, Breeding, Exhibiting, Running and Maintenance of the Purity of Thoroughbred Dogs, Maintaining a Library of Books About Dogs, Maintaining a Breeding Information Service; Licensing and Inspection of Kennels and Handlers; Supervising Pure Bred Dogs and Persons at Dog Shows; and Issuance of Championship Certificates (Int. Cl. 42).
First use at least as early as Jan. 5, 1909.

SN 324,269. Oxfords Shoppes, Ltd., Chicago, Ill. Filed Apr. 11, 1969.



For Restaurant and Carry-Out Services (Int. Cl. 42).
First use on or about Mar. 5, 1969.

SN 324,270. Oxfords Shoppes, Ltd., Chicago, Ill. Filed Apr. 11, 1969.

OXFORD'S

For Restaurant and Carry-Out Services (Int. Cl. 42).
First use on or about Jan. 22, 1969.

Class 101 — Advertising and Business

SN 286,992. Area Consultants, Inc., New York, N.Y. Filed Dec. 15, 1967.

AREA CONSULTANTS

The word "Consultants" is disclaimed apart from the mark as shown.
For Consulting and Advisory Services in the Relocation of Individuals, Personnel and Businesses (Int. Cl. 35).
First use on or about June 2, 1965.
Subj. to Intf. with SN 276,909 and SN 276,910.

SN 311,225. Automotive Distributors, Inc., Kansas City, Mo. Filed Nov. 4, 1968.

HY-PO

For Distributing Auto Parts, Accessories, and Equipment of Others (Int. Cl. 35).
First use May 25, 1968.

SN 311,616. Normandie Press, Inc., Long Island City, N.Y. Filed Nov. 7, 1968.

VIBRACOLOR

For Printing Services (Int. Cl. 35).
First use Oct. 29, 1968.

Class 102 — Insurance and Financial

SN 261,767. Wells Fargo Bank, San Francisco, Calif. Filed Dec. 30, 1966.

WELLS FARGO BANKARD

Applicant disclaims use of the word "Bankard" except when used as a part of the mark as shown. Owner of Reg. Nos. 743,913, 779,187, and 791,983.
For Banking Services (Int. Cl. 36).
First use Nov. 21, 1966.

SN 302,403. The Fidelity Bank, Philadelphia, Pa. Filed July 10, 1968.

Sure Cash

For Checking Account Services (Int. Cl. 36).
First use June 10, 1968.

Class 103 — Construction and Repair

SN 294,848. Union Oil Company of California, Los Angeles, Calif., assignee of Glen I. Payton, Jr., Kailua, Hawaii. Filed Apr. 3, 1968.

CAR CADDY

Applicant disclaims the word "Car" apart from the mark as shown.
For Providing Fuel and the Like to Automobiles While They Are Being Temporarily Stored, as in a Parking Facility (Int. Cl. 37).
First use on or about June 30, 1967.

SN 302,240. Donald J. Narus, d.b.a. Car Seal Corporation, Parma, Ohio. Filed July 8, 1968.



For Sealing Automobile Chassis Against Dust, Water, or Air Leaks (Int. Cl. 37).
First use Oct. 1, 1961.

SN 308,004. Andrew Smith Harkness Limited, Boreham Wood, England. Filed Sept. 23, 1968.

VISTARAMA

For Installation and Maintenance of Motion Picture Display Systems (Int. Cl. 37).
First use February 1965; in commerce May 1, 1968.

SN 315,048. Burroughs Corporation, Detroit, Mich. Filed Dec. 23, 1968.

Burroughs

For Business Machine Maintenance and Repair Services (Int. Cl. 37).
First use about March 1910.

SN 315,049. Burroughs Corporation, Detroit, Mich. Filed Dec. 23, 1968.



For Business Machine Maintenance and Repair Services (Int. Cl. 37).
First use Apr. 16, 1947.

Class 104 — Communication

SN 320,401. Multimedia Associates, Inc., New York, N.Y. Filed Mar. 3, 1969.



For Providing Direct Access to Programmed Tapes of Educational, Instructional, Training, Promotional and Advertising Information by the Use of Telephone Equipment (Int. Cl. 38).
First use Oct. 27, 1968.

Class 105 — Transportation and Storage

SN 299,827. Blue Tours International, Inc., New York, N.Y. Filed June 6, 1968.

'blue tours international inc.

Applicant makes no claim to the term "Tours" except in association with the remainder of the mark.
For Tour Services (Int. Cl. 39).
First use Apr. 1, 1968.

Class 107 — Education and Entertainment

SN 291,871. Independent Grocers' Alliance Distributing Co., Chicago, Ill. Filed Feb. 26, 1968.

COOKING CAN BE FUN

The word "Cooking" is disclaimed and applicant waives none of its common-law rights in said mark or any feature thereof.

For Title of a Television Program Devoted to the Art of Cooking (Int. Cl. 41).

First use Dec. 4, 1966.

SN 301,851. Alan Lorber Productions Inc., New York, N.Y. Filed July 2, 1968.

ULTIMATE SPINACH

For Entertainment Service in the Form of Popular Music Performed by a Vocal and Instrumental Group (Int. Cl. 41).

First use Feb. 1, 1968.

SN 303,252. David Anthony Productions, Inc., Minneapolis, Minn. Filed July 22, 1968.



For Musical Entertainment Services Performed by a Musical and Vocal Group (Int. Cl. 41).

First use Mar. 1, 1967.

Subj. to Intf. with SN 303,544.

SN 317,320. Communication and Education for Industry, Inc., Greenwich, Conn. Filed Jan. 23, 1969.



The mark represents a fanciful recitation of the letters "cei."

For Setting Up and Conducting Training Courses, Seminars, and Programs for Industry in Connection With Sales Skills and Techniques (Int. Cl. 41).

First use January 1968.

SN 318,013. Synectics, Inc., Cambridge, Mass. Filed Jan. 31, 1969.



Owner of Reg. No. 822,159.

For Teaching Services—Namely, the Teaching to Individuals and Groups, Techniques for Arriving at Creative New Concepts, Products and Solution; and Advising Businesses and Individuals and Providing Methods of Moving New Ideas From a Conceptual Stage Into Concrete Implementation and Through a Business Organization Until Such Ideas Emerge Either Into Practice or Into the Market Place (Int. Cl. 41).

First use at least as early as October 1960.

SN 321,005. National Football League and American Football League (joint owners), New York, N.Y. Filed Mar. 7, 1969.

SUPER BOWL

For Entertainment Services in the Nature of Football Exhibitions (Int. Cl. 41).

First use Jan. 15, 1967.

COLLECTIVE MEMBERSHIP MARKS

Class 200

SN 299,597. Transportation Club of Milwaukee, Inc., Milwaukee, Wis. Filed June 3, 1968.



For Indicating Membership in Applicant.

First use May 1, 1968.

SN 304,324. Ducks Unlimited, Inc., Des Plaines, Ill. Filed Aug. 5, 1968.



For Indicating Membership in the Applicant.

First use Mar. 15, 1966.

TRADEMARK REGISTRATIONS ISSUED

PRINCIPAL REGISTER

Class 1 — Raw or Partly Prepared Materials

877,244. BEVO. Seton Leather Company. SN 308,400. Pub. 7-8-69. Filed 9-27-68.

877,245. ZA-TITE. Zapata Industries, Inc. SN 308,557. Pub. 7-8-69. Filed 9-30-68.

877,246. CAL-GRIT. Iowa Limestone Company. SN 309,457. Pub. 7-8-69. Filed 10-11-68.

877,247. ZONAREZ. Arizona Chemical Company. SN 309,655. Pub. 7-8-69. Filed 10-15-68.

877,248. OLD STYLE. Koppers Company, Inc. SN 310,468. Pub. 7-8-69. Filed 10-24-68.

877,249. 1107. Dow Corning Corporation. SN 311,092. Pub. 7-8-69. Filed 11-1-68.

877,250. TOPIC TULIPS. Handelsvennootschap Onder de Firma A. Overdevest Gzn & Zonen, d.b.a. Overdevest Gzn & Sons. SN 311,146. Pub. 7-8-69. Filed 11-1-68.

877,251. LASTGLAZE. Dayco Corporation. SN 316,628. Pub. 7-8-69. Filed 1-15-69.

877,252. EQUINOX. Dow Badische Company. SN 320,908. Pub. 7-8-69. Filed 3-6-69.

Class 2 — Receptacles

877,253. MICROLABORATORIES. Health Facilities, Inc. SN 291,986. Pub. 7-8-69. Filed 2-27-68.

877,254. WELL X TROL. American Tube & Controls Incorporated. SN 296,783. Pub. 7-8-69. Filed 4-29-68.

877,255. LILYKLEER. Lily-Tulip Cup Corporation. SN 304,235. Pub. 7-8-69. Filed 8-2-68.

877,256. E-Z VUE. Gulf States Paper Corporation. SN 306,483. Pub. 7-8-69. Filed 9-3-68.

877,257. E-Z VU. Gulf States Paper Corporation. SN 306,484. Pub. 7-8-69. Filed 9-3-68.

877,258. HEMOFLEX. Union Carbide Corporation. SN 309,798. Pub. 7-8-69. Filed 10-16-68.

877,259. EUROPA-TOTE. Continental Extrusion Corp. SN 315,212. Pub. 7-8-69. Filed 12-26-68.

Class 3 — Baggage, Animal Equipments, Portfolios, and Pocketbooks

877,260. MILLIONAIRE. Sirco Products Company, Inc. SN 293,742. Pub. 7-8-69. Filed 3-20-68.

877,261. WINDFALL. Sirco Products Company, Inc. SN 293,744. Pub. 7-8-69. Filed 3-20-68.

877,262. PULVEX AND DESIGN. William Cooper & Nephews, Incorporated. MULTIPLE CLASS (Classes 3, 6, 18, 51, and 52). SN 301,996. Pub. 7-8-69. Filed 7-5-68.

877,263. STERNCO AND DESIGN. Sternco Industries, Inc. MULTIPLE CLASS (Classes 3 and 46). SN 306,707. Pub. 7-8-69. Filed 9-6-68.

Class 4 — Abrasives and Polishing Materials

877,264. MISCELLANEOUS DESIGN. Atlantic Abrasive Corporation. SN 315,028. Pub. 7-8-69. Filed 12-23-68.

Class 5 — Adhesives

877,265. ARON ALPHA. Toa Gosei Chemical Industry Co. Ltd. SN 298,976. Pub. 7-8-69. Filed 5-23-68.

Class 6 — Chemicals and Chemical Compositions

877,262. (See Class 3 for this trademark.)

877,266. TREBL. Eli Lilly and Company. MULTIPLE CLASS (Classes 6 and 10). SN 284,416. Pub. 7-8-69. Filed 11-9-67.

877,267. AQUAPHASE. Aquaphase Laboratories, Inc. SN 294,247. Pub. 7-8-69. Filed 3-27-68.

877,268. DIKAR. Rohm and Haas Company. SN 294,972. Pub. 7-8-69. Filed 4-4-68.

Class 7 — Cordage

877,269. SUMMIT. Sumitomo Shoji New York, Inc. SN 315,962. Pub. 7-8-69. Filed 1-6-69.

Class 8 — Smokers' Articles, Not Including Tobacco Products

877,270. FIGURE OF MOLDER AT WORK. Wilton Brass Company. MULTIPLE CLASS (Classes 8, 13, and 34). SN 293,334. Pub. 7-8-69. Filed 3-14-68.

Class 9 — Explosives, Firearms, Equipments, and Projectiles

877,271. MINI-STREAMER. Federal Laboratories, Inc. SN 302,396. Pub. 3-25-69. Filed 7-10-68.

Class 10 — Fertilizers

877,266. (See Class 6 for this trademark.)

877,272. PLASTSOIL. U.F. Chemical Corporation. SN 307,886. Pub. 7-8-69. Filed 9-20-68.

877,273. CROP-MATE. The American Oil Company. SN 309,946. Pub. 7-8-69. Filed 10-18-68.

Class 11 — Inks and Inking Materials

877,274. ULTRA FILM ETC. AND DESIGN. Curtis-Young Corporation. SN 291,364. Pub. 7-8-69. Filed 2-19-68.

Class 12 — Construction Materials

877,275. SWIFT-SET. Tombill Corporation. SN 250,054. Pub. 5-2-67. Filed 7-11-66.

877,276. HEY'DI. Johannes Heyen. SN 301,427. Pub. 7-8-69. Filed 6-26-68.

877,277. CARNABY STREET. D. A. White Inc. SN 306,831. Pub. 7-8-69. Filed 9-6-68.

877,278. DRI HOME. Canadian Forest Products Ltd. MULTIPLE CLASS (Classes 12 and 16). SN 314,524. Pub. 7-8-69. Filed 12-16-68.

877,279. WOODGLEN. U.S. Plywood-Champion Papers Inc. SN 318,375. Pub. 7-8-69. Filed 2-5-69.

Class 13 — Hardware and Plumbing and Steam-Fitting Supplies

877,270. (See Class 8 for this trademark.)

877,280. DRU AND DESIGN. Koninklijke Fabrieken Diepenbrock & Reigers N.V. MULTIPLE CLASS (Classes 13, 24, and 34). SN 269,818. Pub. 7-8-69. Filed 4-24-67.

877,281. DORT. Moline Malleable Iron Company. SN 288,707. Pub. 7-8-69. Filed 1-12-68.

877,282. ARMORBOND. Lakeland Plastics, Inc. SN 294,230. Pub. 7-8-69. Filed 3-26-68.

877,283. ECONOMYX. Economyx Division of Wright Industries. SN 296,703. Pub. 7-8-69. Filed 4-26-68.

877,284. LOOKS LIKE A SEAM, ZIPS LIKE A DREAM. Unique Zipper Distributing Co. SN 312,621. Pub. 7-8-69. Filed 11-19-68.

877,285. "A HEAD OF THE TIMES." Reed & Prince Manufacturing Co. SN 313,446. Pub. 7-8-69. Filed 12-2-68.

877,286. POWREACTOR. Grove Valve and Regulator Company. SN 313,577. Pub. 7-8-69. Filed 12-4-68.

877,287. HANDI-JON. Thomas T. Bradshaw. SN 315,534. Pub. 7-8-69. Filed 1-2-69.

877,288. ELASTOROID. Gallagher Corporation. SN 316,381. Pub. 7-8-69. Filed 1-13-69.

Class 14 — Metals and Metal Castings and Forgings

877,289. TRU BAR AND DESIGN. Banner Steel Service, Inc. SN 308,356. Pub. 7-8-69. Filed 9-27-68.

Class 15 — Oils and Greases

877,290. FINGER-EASE AND DESIGN. Chem-Pak, Inc., d.b.a. Virginia Aerosol. SN 304,587. Pub. 7-8-69. Filed 8-7-68.

877,291. HELP-MATE. Strathmore Products, Inc. SN 306,188. Pub. 7-8-69. Filed 8-28-68.

877,292. THE RACER'S EDGE. STP Corporation. SN 307,353. Pub. 7-8-69. Filed 9-13-68.

877,293. PIGGY BANK AND DESIGN. Piggy Bank Stations, Inc. SN 308,916. Pub. 7-8-69. Filed 10-4-68.

877,294. TINY TCT. Pioneer Products, Inc. SN 309,090. Pub. 7-8-69. Filed 10-7-68.

877,295. THALCO. United Merchants and Manufacturers, Inc. SN 319,683. Pub. 7-8-69. Filed 2-20-69.

Class 16 — Protective and Decorative Coatings

877,278. (See Class 12 for this trademark.)

877,296. PETAL (DESIGN). Tenneco Chemicals, Inc. SN 286,780. Pub. 7-8-69. Filed 12-12-67.

877,297. TOP GUN. H. B. Anderson, d.b.a. Anderson Gun Shop. SN 294,154. Pub. 7-8-69. Filed 3-26-68.

877,298. NUBELAR. SCM Corporation. SN 302,523. Pub. 7-8-69. Filed 7-11-68.

877,299. FLO-PAQUE. Floquil Products, Inc. SN 308,282. Pub. 7-8-69. Filed 9-26-68.

Class 17 — Tobacco Products

877,300. NEW CURRENCY. Lorillard Corporation. SN 315,766. Pub. 7-8-69. Filed 11-22-68.

877,301. SUB ROSA. Lorillard Corporation. SN 316,035. Pub. 7-8-69. Filed 12-30-68.

877,302. POSTMASTER. Lorillard Corporation. SN 316,036. Pub. 7-8-69. Filed 12-30-68.

Class 18 — Medicines and Pharmaceutical Preparations

877,262. (See Class 3 for this trademark.)

877,303. ACTRON NIGHT. Miles Laboratories, Inc. SN 284,932. Pub. 7-8-69. Filed 11-15-67.

877,304. MONICARD. Bristol-Myers Company. SN 287,889. Pub. 7-8-69. Filed 1-2-68.

877,305. LEGUMIN. Agway, Inc. SN 294,898. Pub. 7-8-69. Filed 4-4-68.

877,306. CATHOSPORIN. Burroughs Wellcome & Co. (U.S.A.) Inc. SN 295,107. Pub. 7-8-69. Filed 4-8-68.

877,307. GERANDREST. Bowman, Inc. SN 300,326. Pub. 7-8-69. Filed 6-13-68.

877,308. ROLITETRIN-IV. Bristol-Myers Company. SN 303,504. Pub. 7-8-69. Filed 7-24-68.

877,309. MEASURIN. Sterling Drug Inc. SN 304,508. Pub. 7-8-69. Filed 8-6-68.

877,310. GRANULETS. Norden Laboratories, Inc. SN 305,481. Pub. 7-8-69. Filed 8-19-68.

877,311. ANTHELCIDE. Norden Laboratories, Inc. SN 305,482. Pub. 7-8-69. Filed 8-19-68.

877,312. MYSTECLIN-F. E. R. Squibb & Sons, Inc. SN 305,691. Pub. 7-8-69. Filed 8-21-68.

877,313. KOS-HOUSE OTIC CREAM PAK. Smith, Miller & Patch, Inc. SN 307,512. Pub. 7-8-69. Filed 9-16-68.

877,314. LUDIOMIL. Ciba Limited. SN 307,553. Pub. 7-8-69. Filed 9-17-68.

877,315. SICORTEN. Ciba Limited. SN 307,554. Pub. 7-8-69. Filed 9-17-68.

877,316. LIORESAL. Ciba Limited. SN 307,555. Pub. 7-8-69. Filed 9-17-68.

877,317. CANALB. Johnson & Johnson, assignee of The Dow Chemical Company. SN 307,780. Pub. 7-8-69. Filed 9-17-68.

877,318. PHYSIOPREP. The Purdue Frederick Company. SN 308,032. Pub. 7-8-69. Filed 9-23-68.

877,319. AL-VITE. Drug Industries Company. SN 308,681. Pub. 7-8-69. Filed 10-2-68.

877,320. HELMATAC. Smith Kline & French Laboratories, SN 317,427. Pub. 7-8-69. Filed 1-24-69.

877,321. EXIREL. Chas. Pfizer & Co., Inc. SN 319,120. Pub. 7-8-69. Filed 2-14-69.

Class 19 — Vehicles

877,322. HUNTER. Rootes Motors Limited. SN 241,521. Pub. 7-8-69. Filed 3-21-66.

877,323. TOR-SHOK AND DESIGN. ARA, Inc. SN 261,354. Pub. 7-16-68. Filed 12-23-66.

877,324. TRAILS WEST. Wallace D. Patterson and J. Ronald Walker (joint owners), d.b.a. Trails West. SN 291,767. Pub. 7-8-69. Filed 2-23-68.

877,325. OMNI-RING. Forecast, Inc. SN 292,777. Pub. 7-8-69. Filed 3-8-68.

877,326. FORERUNNER. Forecast, Inc. SN 292,778. Pub. 7-8-69. Filed 3-8-68.

877,327. QC. The Boeing Company. SN 294,705. Pub. 7-8-69. Filed 4-2-68.

877,328. AQUA PAL. Rolf A. Samsing. SN 303,351. Pub. 6-3-69. Filed 7-22-68.

877,329. TRIPPER. Tripper Enterprises, Inc. SN 314,634. Pub. 7-8-69. Filed 12-16-68.

Class 21 — Electrical Apparatus, Machines, and Supplies

877,330. HYPER-SERVO. General Electric Company. SN 270,375. Pub. 7-8-69. Filed 5-1-67.

877,331. PERMAG CORPORATION AND DESIGN. Permag Corporation. SN 284,099. Pub. 7-8-69. Filed 11-3-67.

877,332. AQUALIZER. Compagnie Francaise Thomson Houston-Hotchkiss Brandt. SN 287,348. Pub. 7-8-69. Filed 12-21-67.

877,333. VIKOA. Vikoa, Incorporated. MULTIPLE CLASS (Classes 21, 23, and 26). SN 289,160. Pub. 7-8-69. Filed 1-19-68.

877,334. TDK. TDK Electronics Co., Ltd. MULTIPLE CLASS (Classes 21, 26, and 36). SN 294,688. Pub. 7-8-69. Filed 4-1-68.

877,335. LUMAPAC. Lumapac, Inc. SN 299,565. Pub. 7-8-69. Filed 6-3-68.

877,336. RACESAFE. De Witt C. Cary, Jr., d.b.a. Cary Engineering Company. SN 302,299. Pub. 7-8-69. Filed 7-9-68.

877,337. UNISET. Amicon Corporation. SN 304,881. Pub. 7-8-69. Filed 8-12-68.

877,338. C-LECTOR. Century Lighting, Inc. SN 311,326. Pub. 7-8-69. Filed 11-5-68.

877,339. HIGH MAG. Allied Control Company, Inc. SN 311,997. Pub. 7-8-69. Filed 11-13-68.

877,340. "THE WATER LAMP." Lieba, Incorporated. SN 312,052. Pub. 7-8-69. Filed 11-13-68.

877,341. COMPUTONE. Computrol Systems, Inc. SN 312,566. Pub. 7-8-69. Filed 11-19-68.

877,342. DOR-FLEX. Dorsett Electronics, Inc. SN 312,569. Pub. 7-8-69. Filed 11-19-68.

877,343. RCA. RCA Corporation, by change of name from Radio Corporation of America. SN 312,720. Pub. 7-8-69. Filed 11-21-68.

877,344. RCA. RCA Corporation, by change of name from Radio Corporation of America. SN 312,721. Pub. 7-8-69. Filed 11-21-68.

877,345. SUPER-M. Marathon Oil Company. SN 313,317. Pub. 7-8-69. Filed 11-29-68.

877,346. COMPANDIT. International Telephone and Telegraph Corporation. SN 313,472. Pub. 7-8-69. Filed 12-3-68.

877,347. FEROCEL. Yardney Electric Corporation. SN 314,997. Pub. 7-8-69. Filed 12-20-68.

877,348. AI AND DESIGN. Alpha Industries, Inc. SN 319,106. Pub. 7-8-69. Filed 2-14-69.

Class 22 — Games, Toys, and Sporting Goods

877,349. RUF. G. E. Patton, d.b.a. Lestrix Co. SN 290,748. Pub. 7-8-69. Filed 2-9-68.

877,350. PLAYSKOOL. Playskool, Inc., assignee of Playskool Manufacturing Company. MULTIPLE CLASS (Classes 22 and 32). SN 301,667. Pub. 3-18-69. Filed 7-1-68.

877,351. GOBBLE-DEGOOP. Mattel, Inc. SN 306,303. Pub. 7-8-69. Filed 8-30-68.

877,352. DIDDLIES. Flambeau Plastics Corporation. SN 307,015. Pub. 7-8-69. Filed 9-10-68.

877,353. ARMORLOC. W. J. Voit Rubber Corp. SN 308,548. Pub. 7-8-69. Filed 9-30-68.

877,354. DOUG DAVIS. Mattel, Inc. SN 308,964. Pub. 7-8-69. Filed 10-7-68.

877,355. SUPERNAUT. Mattel, Inc. SN 308,985. Pub. 7-8-69. Filed 10-7-68.

877,356. BARRY BABOON. Mattel, Inc. SN 308,991. Pub. 7-8-69. Filed 10-7-68.

877,357. CLACKER QUACKER. General Mills, Inc. SN 311,438. Pub. 7-8-69. Filed 11-6-68.

877,358. JET PACK. Eldon Industries, Inc. SN 311,978. Pub. 7-8-69. Filed 10-16-68.

877,359. SPUZZLE. Pictorial Publishers, Inc. SN 313,385. Pub. 7-8-69. Filed 12-2-68.

877,360. VENTURE. Minnesota Mining and Manufacturing Company. SN 319,549. Pub. 7-8-69. Filed 2-19-69.

Class 23 — Cutlery, Machinery, and Tools, and Parts Thereof

877,333. (See Class 21 for this trademark.)

877,361. SODASTREAM. Sodastream Limited. MULTIPLE CLASS (Classes 23 and 45). SN 280,361. Pub. 7-8-69. Filed 9-15-67.

877,362. YIELD MASTER. Meat Separator Corporation. SN 282,110. Pub. 7-8-69. Filed 10-9-67.

877,363. NORCO. Northeast Cutter Service & Manufacturing Corp. SN 289,520. Pub. 7-8-69. Filed 1-24-68.

877,364. BB AND DESIGN. Baron Blakeslee, Inc. MULTIPLE CLASS (Classes 23, 34, and 52). SN 290,207. Pub. 7-8-69. Filed 2-5-68.

877,365. DUROL-IMPERIAL. Imperial Knife Associated Companies, Inc. SN 292,742. Pub. 7-8-69. Filed 3-8-68.

877,366. ROLL-O-RAIL. Automatic Devices Company, assignee of Roll-O-Matic Stage Equipment Corporation. SN 296,719. Pub. 7-8-69. Filed 4-26-68.

877,367. POSI-TRAC. Greenlee Bros. & Co. (Delaware corporation), assignee of Greenlee Bros. & Co. (Illinois corporation). SN 297,671. Pub. 2-25-69. Filed 5-8-68.

877,368. AUTOMATOR. Mermet & Virthner. SN 298,024. Pub. 7-8-69. Filed 5-13-68.

877,369. FOLLOW CHARLIE AND DESIGN. Malsbary Manufacturing Company. SN 292,800. Pub. 7-8-69. Filed 3-8-68.

877,370. CMI. CMI Corporation, by change of name from Construction Machinery, Inc. SN 300,172. Pub. 7-8-69. Filed 6-11-68.

877,371. AUTOGRADE. CMI Corporation, by change of name from Construction Machinery, Inc. SN 300,173. Pub. 7-8-69. Filed 6-11-68.

877,372. EILI AND DESIGN. Eili Dicon, S.A. SN 300,570. Pub. 7-8-69. Filed 6-17-68.

877,373. EILI. Eili Dicon, S.A. SN 300,571. Pub. 7-8-69. Filed 6-17-68.

877,374. CAM AND DESIGN. CAM Industries, Inc. SN 300,903. Pub. 7-8-69. Filed 6-20-68.

877,375. CAM AND DESIGN. CAM Industries, Inc. SN 300,904. Pub. 7-8-69. Filed 6-20-68.

877,376. ROTOGLIDE. The Cello Chemical Company. SN 303,891. Pub. 7-8-69. Filed 7-30-68.

877,377. SENSATION AND DESIGN. Sensation Mfg. Co. SN 311,412. Pub. 7-8-69. Filed 11-5-68.

877,378. TRIPHASE. Milling Specialties Inc. SN 312,485. Pub. 7-8-69. Filed 11-18-68.

877,379. TOASTMASTER. McGraw-Edison Company. SN 313,055. Pub. 7-8-69. Filed 11-29-68.

877,380. AIR-TUF. Air Industries Corporation. SN 313,246. Pub. 7-8-69. Filed 11-29-68.

877,381. KLEVER KLEEVER, The Sandell Company. SN 314,116. Pub. 7-8-69. Filed 12-10-68.

877,382. ARS (DESIGN). Automatic Refuse Systems, Inc. SN 314,303. Pub. 7-8-69. Filed 12-12-68.

877,383. POW-R-MATE. Aero-Motive Manufacturing Company. SN 318,939. Pub. 7-8-69. Filed 2-12-69.

Class 24 — Laundry Appliances and Machines

877,280. (See Class 13 for this trademark.)

Class 26 — Measuring and Scientific Appliances

877,333. (See Class 21 for this trademark.)

877,334. (See Class 21 for this trademark.)

877,384. EXA. Ihagee Kamerawerk Aktiengesellschaft. SN 138,866. Pub. 2-5-63. Filed 3-1-62.

877,385. BUSCH SYMBOL OF QUALITY AND DESIGN. Edwin Busch, d.b.a. Busch Film and Equipment Company. SN 151,658. Pub. 7-8-69. Filed 8-22-62.

877,386. OCTORAMA. Design Built Exhibits, Inc. SN 228,342. Pub. 7-8-69. Filed 9-22-65.

877,387. NORLITE. Macbeth Corporation. SN 278,307. Pub. 11-28-67. Filed 8-15-67.

877,388. AKU CHECK AND DESIGN. Precision Photography, Inc. SN 291,770. Pub. 7-8-69. Filed 2-23-68.

877,389. SERVIVAC AND DESIGN. Ambac Industries Incorporated. SN 304,752. Pub. 7-8-69. Filed 8-9-68.

877,390. EYE CADET. Cooke & Associates, Inc. SN 313,077. Pub. 7-8-69. Filed 11-26-68.

Class 27 — Horological Instruments

877,391. MISCELLANEOUS DESIGN. Kabushiki Kaisha Hattori Tokeiten. SN 283,254. Pub. 7-8-69. Filed 10-24-67.

877,892. MATTHEY-DORET. Pan American Barter Co., Inc. SN 313,018. Pub. 7-8-69. Filed 11-25-68.

877,393. BARONET OF LONDON. Time Products Ltd. SN 313,529. Pub. 7-8-69. Filed 12-3-68.

Class 28 — Jewelry and Precious-Metal Ware

877,394. SHEPHERD'S CROSS. Pelton & Leru, Inc. SN 283,145. Pub. 7-8-69. Filed 10-23-67.

877,395. LUSTRA-GEMS. Kohinoor Watch and Diamond Corporation. SN 294,288. Pub. 7-8-69. Filed 3-27-68.

877,396. LOVE CHAIN. Hermine Hanlin. SN 294,393. Pub. 7-8-69. Filed 3-28-68.

877,397. MAGNIFIQUE. The Richelieu Corp. SN 298,043. Pub. 7-8-69. Filed 5-13-68.

877,398. MINI-MATES. Mini-Mates Creations, Inc. SN 300,952. Pub. 7-8-69. Filed 6-20-68.

877,399. SOUL BROTHER. Warrior Investments, Inc. SN 303,086. Pub. 7-8-69. Filed 7-18-68.

877,400. SOUL SISTER. Warrior Investments, Inc. SN 303,090. Pub. 7-8-69. Filed 7-18-68.

877,401. FOUR SEASONS RING. Phylchris Corporation, d.b.a. The Catamore Company. SN 313,023. Pub. 7-8-69. Filed 11-25-68.

877,402. LOVE LEATHERS. Beaumont Design Group Incorporated. SN 314,751. Pub. 7-8-69. Filed 12-18-68.

877,403. KAREN MARIE. June Wilmot, d.b.a. Karen Marie. SN 317,170. Pub. 7-8-69. Filed 1-21-69.

Class 29 — Brooms, Brushes, and Dusters

877,404. BASTA. Basta Tandbørster A/S. SN 311,433. Pub. 7-8-69. Filed 11-6-68.

Class 30 — Crockery, Earthenware, and Porcelain

877,405. MIDAS. Interpace Corporation, assignee of Shenango Ceramics, Inc. SN 292,508. Pub. 7-8-69. Filed 3-5-68.

Class 31 — Filters and Refrigerators

877,406. SATELLITE. Swimrite Manufacturing Company, Inc. SN 297,891. Pub. 7-8-69. Filed 5-10-68.

877,407. CRANCOLD. The Crandall Wholesale Company. SN 299,757. Pub. 7-8-69. Filed 6-5-68.

877,408. DAVID DOUGLAS. David Douglas & Co., Inc. SN 312,758. Pub. 7-8-69. Filed 11-21-68.

Class 32 — Furniture and Upholstery

877,350. (See Class 22 for this trademark.)

877,409. VIRTUE OF CALIFORNIA. Schlumberger Limited, d.b.a. Virtue Bros. Mfg. Co. SN 288,646. Pub. 7-8-69. Filed 1-11-68.

877,410. STREATER. Streater Industries, Incorporated. SN 308,240. Pub. 7-8-69. Filed 9-25-68.

877,411. MORTON SALAD BAR. Morton International, Inc. MULTIPLE CLASS (Classes 32 and 46). SN 311,634. Pub. 7-8-69. Filed 11-8-68.

877,412. CORINTH. Clopay Corporation. SN 317,723. Pub. 7-8-69. Filed 1-28-69.

877,413. MIRAGE. Clopay Corporation. SN 317,725. Pub. 7-8-69. Filed 1-28-69.

877,414. MONTEGO. Clopay Corporation. SN 317,726. Pub. 7-8-69. Filed 1-28-69.

877,415. SEVILLE. Clopay Corporation. SN 317,727. Pub. 7-8-69. Filed 1-28-69.

Class 34 — Heating, Lighting, and Ventilating Apparatus

877,270. (See Class 8 for this trademark.)

877,280. (See Class 13 for this trademark.)

877,364. (See Class 23 for this trademark.)

877,416. SAFETY-SILV. J. W. Harris Co., Inc. SN 291,867. Pub. 7-8-69. Filed 2-26-68.

877,417. HUMID DISC. Hamilton Humidity, Inc. SN 303,227. Pub. 7-8-69. Filed 7-22-68.

877,418. MONTEREY. The Slant/Fin Corporation. SN 307,511. Pub. 7-8-69. Filed 9-16-68.

Class 36 — Musical Instruments and Supplies

877,334. (See Class 21 for this trademark.)

877,419. CANE BLEND TONE BRIDGE AND DESIGN. Music Specialties, Inc. SN 250,590. Pub. 7-8-69. Filed 7-19-66.

Class 37 — Paper and Stationery

877,420. DM. Dri Mark Products, Inc. SN 262,689. Pub. 7-8-69. Filed 1-17-67.

877,421. DM AND DESIGN. Dri Mark Products, Inc. SN 262,690. Pub. 7-8-69. Filed 1-17-67.

877,422. SUN DIAL (DESIGN). The Sorg Paper Company. MULTIPLE CLASS (Classes 37 and 44). SN 295,850. Pub. 7-8-69. Filed 4-17-68.

877,423. SUPERLIN. Permalin Products Corporation. SN 307,231. Pub. 7-8-69. Filed 9-12-68.

877,424. DIDDLE DADDLE. Sanford Ink Company. SN 312,503. Pub. 7-8-69. Filed 11-18-68.

877,425. FONTANA. Kimberly-Clark Corporation. SN 313,309. Pub. 7-8-69. Filed 11-29-68.

877,426. U. Consolidated Foods Corporation. SN 313,909. Pub. 7-8-69. Filed 12-9-68.

877,427. WATERVLIET AND DESIGN. Hammermill Paper Company. SN 314,554. Pub. 7-8-69. Filed 12-16-68.

877,428. ACE. J. M. Huber Corporation. SN 315,626. Pub. 7-8-69. Filed 12-30-68.

877,429. GRAFFITI. Scripto, Inc. SN 316,028. Pub. 7-8-69. Filed 1-7-69.

877,430. LAW-FLO. The Lawton-York Corporation. SN 317,069. Pub. 7-8-69. Filed 1-21-69.

Class 38 — Prints and Publications

877,431. COWTOONS. The Thos. D. Murphy Co. SN 286,168. Pub. 7-8-69. Filed 12-4-67.

877,432. TALENT. The International Platform Association. SN 290,859. Pub. 7-8-69. Filed 2-12-68.

877,433. FINANCIAL PERSPECTIVE. Information & Research Services, Incorporated. SN 291,399. Pub. 7-8-69. Filed 2-19-68.

877,434. PLACE MARK PRODUCTS. The H. M. Gousha Company. SN 296,424. Pub. 7-8-69. Filed 4-24-68.

877,435. C AND DESIGN. Cinerama Releasing Corporation. SN 297,275. Pub. 7-8-69. Filed 5-3-68.

877,436. ACTION CALL A PRIEST SOS AND DESIGN. Herold Overseas Publishing Corporation, Inc. SN 299,773. Pub. 7-8-69. Filed 6-5-68.

877,437. ACOUSTIME. The George P. Little Co., Inc. SN 310,573. Pub. 7-8-69. Filed 10-25-68.

877,438. TEENS ON WHEELS. The Associated Press. SN 312,009. Pub. 7-8-69. Filed 11-13-68.

877,439. TARGET. Barbara M. Wells, d.b.a. Teen Age Republicans. SN 312,927. Pub. 7-8-69. Filed 11-22-68.

877,440. PANDORA AND FLORAL DESIGN. Pandora Productions, Inc. SN 313,019. Pub. 7-8-69. Filed 11-25-68.

877,441. ITSIE KIDS. Beatrice Barshay. SN 313,892. Pub. 7-8-69. Filed 12-9-68.

877,442. SOUND-N-SIGHT. Hayden Book Company, Inc. SN 315,854. Pub. 7-8-69. Filed 1-6-69.

877,443. FEATHER HEAD. Norcross, Inc. SN 316,024 Pub. 7-8-69. Filed 1-7-69.

877,444. TEXTILE CHEMIST AND COLORIST. American Association of Textile Chemists and Colorists. SN 316,583. Pub. 7-8-69. Filed 1-15-69.

877,445. THE PACER. International Textbook Company. SN 316,747. Pub. 7-8-69. Filed 1-16-69.

877,446. ASTROVIEW AND DESIGN. Homer Grooman. SN 317,557. Pub. 7-8-69. Filed 1-27-69.

877,447. FLOWER FESTIVAL. Norcross, Inc. SN 318,218. Pub. 7-8-69. Filed 2-3-69.

877,448. YOUNG LOVE. National Periodical Publications, Inc. SN 320,683. Pub. 7-8-69. Filed 3-4-69.

Class 39 — Clothing

877,449. TORONADO. John B. Stetson Company (Delaware corporation), by merger from John B. Stetson Company (Pennsylvania corporation). SN 234,677. Pub. 10-4-66. Filed 12-15-65.

877,450. NANCY ARDEN. Kinney Shoe Corporation. SN 241,666. Pub. 12-27-66. Filed 3-23-66.

877,451. GOLDEN FEET (DESIGN). Doris Moore of California, Inc. SN 294,298. Pub. 7-8-69. Filed 3-27-68.

877,452. THE UNCRUSHABLES. David Crystal, Inc. (Delaware corporation), by merger from David Crystal, Inc. (New York corporation). SN 303,859. Pub. 7-8-69. Filed 7-30-68.

877,453. LEON THOMAS. The Leon Godchaux Clothing Company, Limited. SN 309,591. Pub. 7-8-69. Filed 10-14-68.

877,454. NOVA. Benj. Noble, Inc. SN 309,940. Pub. 7-8-69. Filed 10-18-68.

877,455. HERB LEE. Clark Shoe Company, Inc. SN 313,076. Pub. 7-8-69. Filed 11-26-68.

877,456. FRED SLATTEN. Fred Slatten. SN 313,342. Pub. 7-8-69. Filed 11-29-68.

877,457. BOBBIE-PRESS. Bobbie Brooks, Incorporated. SN 314,848. Pub. 7-8-69. Filed 12-19-68.

877,458. DOVE-SHEER. S. D. Arrowood & Co. Inc. SN 315,027. Pub. 7-8-69. Filed 12-23-68.

877,459. HUDDLE CLUB. Boyd-Richardson Company. SN 315,200. Pub. 7-8-69. Filed 12-26-68.

877,460. PUK-A-NIL. D. & H. Cohen Limited. SN 316,295. Pub. 7-8-69. Filed 1-10-69.

877,461. HIPSTER. The H. D. Lee Company, Inc. SN 316,444. Pub. 7-8-69. Filed 1-13-69.

877,462. PRINCE DORI. Atlas Shirt Company, Inc. SN 317,195. Pub. 7-8-69. Filed 1-22-69.

877,463. PIX SHOES ETC. AND DESIGN. Pix of America, Inc. SN 317,466. Pub. 7-8-69. Filed 1-24-69.

877,464. FREEZ-NO-MOR AND DESIGN. Freez-No-Mor, Incorporated. SN 319,236. Pub. 7-8-69. Filed 2-17-69.

877,465. COMFORT WIRE. Maidenform, Inc. SN 320,110. Pub. 7-8-69. Filed 2-26-69.

Class 40 — Fancy Goods, Furnishings, and Notions

877,466. ZIP-COMB. Arnold A. Singer, d.b.a. Zipco. SN 314,920. Pub. 7-8-69. Filed 12-19-68.

877,467. STANLEY. Stanley Home Products, Inc. SN 317,157. Pub. 7-8-69. Filed 1-21-69.

877,468. TINTA. Namm & Singer, Inc. SN 320,218. Pub. 7-8-69. Filed 2-27-69.

Class 42 — Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

877,469. BULLDOG BOND WILL NEVER LET GO. Alamac Knitting Mills, Inc. SN 292,244. Pub. 7-8-69. Filed 3-1-68.

877,470. QUORUM. Quorum Fabrics Inc. SN 299,789. Pub. 7-8-69. Filed 6-5-68.

877,471. THE UNCRUSHABLES. David Crystal, Inc. (Delaware corporation), by merger from David Crystal, Inc. (New York corporation). SN 303,860. Pub. 7–8–69. Filed 7–30–68.

877,472. MISCELLANEOUS DESIGN. Appleton Mills. SN 311,454. Pub. 7–8–69. Filed 11–6–68.

877,473. STRETCHOVA AND DESIGN. Stretchova Limited. SN 313,993. Pub. 7–8–69. Filed 12–9–68.

877,474. TUBMASTER. Meadtex Fabrics Co., Inc. SN 316,447. Pub. 7–8–69. Filed 1–13–69.

877,475. LITTLE TOT. Johnson & Johnson. SN 316,653. Pub. 7–8–69. Filed 1–15–69.

877,476. LEWRENE. Lewrene Products Company. SN 316,684. Pub. 7–8–69. Filed 1–15–69.

Class 43 — Thread and Yarn

877,477. CHECKMATE. Collins & Aikman Corporation. SN 304,055. Pub. 7–8–69. Filed 8–1–68.

Class 44 — Dental, Medical, and Surgical Appliances

877,422. (See Class 37 for this trademark.)

877,478. MIDAS. Air Reduction Company, Incorporated. SN 316,956. Pub. 7–8–69. Filed 1–21–69.

877,479. NEW FREEDOM. Kimberly-Clark Corporation. SN 318,367. Pub. 7–8–69. Filed 2–5–69.

877,480. TRANSPORE. Minnesota Mining and Manufacturing Company. SN 320,002. Pub. 7–1–69. Filed 2–25–69.

Class 45 — Soft Drinks and Carbonated Waters

877,361. (See Class 23 for this trademark.)

Class 46 — Foods and Ingredients of Foods

877,263. (See Class 3 for this trademark.)

877,411. (See Class 32 for this trademark.)

877,481. CAPTAINS PANTRY. Canadian Tuna Company (1965) Ltd., assignee of Atlantic Fish Processors Co. Ltd. SN 281,023. Pub. 7–8–69. Filed 9–25–67.

877,482. MARCO LASS. Doane Feed Products Co. SN 297,851. Pub. 7–8–69. Filed 5–10–68.

877,483. TASTE-T-LAC. Doane Feed Products Co. SN 297,852. Pub. 7–8–69. Filed 5–10–68.

877,484. KERNCO. Kern County Land Company. SN 304,931. Pub. 7–8–69. Filed 8–12–68.

877,485. KERN STAR AND DESIGN. Kern County Land Company. SN 304,933. Pub. 7–8–69. Filed 8–12–68.

877,486. DELMONICO. Delmonico Foods, Inc. SN 305,410. Pub. 7–8–69. Filed 8–19–68.

877,487. ESCORT. National Biscuit Company. SN 306,500. Pub. 7–8–69. Filed 9–3–68.

877,488. FLA-VOR-ICE. The Jel Sert Company. SN 307,650. Pub. 7–8–69. Filed 9–18–68.

877,489. THE CALORIE CONSCIOUS CANDY. Golden Apples Candy Co., Inc. SN 307,708. Pub. 7–8–69. Filed 9–19–68.

877,490. W WESSA AND DESIGN. Wessanen's Koninklijke Fabrieken N.V. SN 310,949. Pub. 7–8–69. Filed 10–30–68.

877,491. W WESSANEN AND DESIGN. Wessanen's Koninklijke Fabrieken N.V. SN 310,950. Pub. 7–8–69. Filed 10–30–68.

877,492. THERADIET. BTI Products Ltd.-Les Produits BTI Ltee. SN 311,006. Pub. 7–8–69. Filed 10–31–68.

877,493. RIO TREAT. Rio-Tex Citrus Association. SN 311,065. Pub. 7–8–69. Filed 10–31–68.

877,494. RIO PRIDE. Rio-Tex Citrus Association. SN 311,066. Pub. 7–8–69. Filed 10–31–68.

877,495. CATS ADORE. Perk Foods Co. SN 311,173. Pub. 7–8–69. Filed 11–1–68.

877,496. FRANK'S MUSTARD GOURMET. The Frank Tea and Spice Company. SN 311,252. Pub. 7–8–69. Filed 11–4–68.

877,497. DIPPIE DOG. Dippie Dog Corporation. SN 311,358. Pub. 7–8–69. Filed 11–5–68.

877,498. SPADES. National Biscuit Company. SN 311,391. Pub. 7–8–69. Filed 11–5–68.

877,499. DIGGINS. National Biscuit Company. SN 311,393. Pub. 7–8–69. Filed 11–5–68.

877,500. LM AND WITCH AND BROOKSTICK DESIGN. Duffy-Mott Company, Inc. SN 311,584. Pub. 7–8–69. Filed 11–7–68.

877,501. SOUP-MATES. National Biscuit Company. SN 311,692. Pub. 7–8–69. Filed 11–8–68.

877,502. HOUSE SPECIAL. Allen Products Co., Inc. SN 311,807. Pub. 7–8–69. Filed 11–12–68.

877,503. OLD DOMINION. Old Dominion Candies, Inc. SN 311,912. Pub. 7–8–69. Filed 11–12–68.

877,504. LEO D'OR BRAND AND DESIGN. Omstead Fisheries 1961 Limited. SN 312,162. Pub. 7–8–69. Filed 11–14–68.

877,505. CP AND DESIGN. Canada Packers Limited. MULTIPLE CLASS (Classes 46 and 52). SN 312,716. Pub. 7–8–69. Filed 10–29–68.

877,506. MJB. MJB Co., d.b.a. MJB Company. SN 314,430. Pub. 7–8–69. Filed 12–13–68.

877,507. PACAMA. P.M.C. Company, Inc. SN 315,098. Pub. 7–8–69. Filed 12–23–68.

877,508. DIG-INS. National Biscuit Company. SN 315,433. Pub. 7–8–69. Filed 12–30–68.

877,509. STARTEIN. Food Technics, Inc. SN 315,478. Pub. 7–8–69. Filed 12–31–68.

877,510. TEE PEES (DESIGN). Kellogg Company. SN 315,571. Pub. 7–8–69. Filed 1–2–69.

877,511. CAVALIER. Mars, Incorporated. SN 319,775. Pub. 7–8–69. Filed 2–24–69.

877,512. IPC CROWN AND GLOBE DESIGN. International Proteins Corporation. SN 320,312. Pub. 7–8–69. Filed 2–28–69.

Class 47 — Wines

877,513. VAI BROS. United Vintners Inc., d.b.a. Padre Vineyard Company. SN 315,192. Pub. 7–8–69. Filed 12–26–68.

Class 49 — Distilled Alcoholic Liquors

877,514. GRAND ROUGE. Miguel Torres. SN 285,363. Pub. 7–8–69. Filed 11–21–67.

877,515. JOCQUES CARDIN. Joseph E. Seagram & Sons, Inc., d.b.a. Victor Fischel Company. SN 289,864. Pub. 5–14–68. Filed 1–30–68.

877,516. BERRY'S BEST ETC. AND DESIGN. Berry Bros. & Rudd Limited. SN 297,023. Pub. 7–8–69. Filed 5–1–68.

877,517. GLOBE TROTTER. William Sanderson & Son Limited. SN 298,870. Pub. 7–8–69. Filed 5–22–68.

Class 50 — Merchandise Not Otherwise Classified

877,518. PERMA-STEP. James W. Herber. SN 314,420. Pub. 7–8–69. Filed 12–18–68.

877,519. HARTZ MOUNTAIN. Harts Mountain Products Corp. SN 315,909. Pub. 7–8–69. Filed 1–6–69.

877,520. E-Z-SNAP. Rocéd Manufacturers Inc. SN 316,910. Pub. 7–8–69. Filed 1–17–69.

Class 51 — Cosmetics and Toilet Preparations

877,262. (See Class 3 for this trademark.)

877,521. LAHAINA WHALER'S SPREE. Hawaiian Perfumers, Inc., d.b.a. Liana of Waikiki. SN 292,930. Pub. 7–8–69. Filed 3–11–68.

877,522. FACE OFF. Helene Curtis Industries, Inc. SN 293,271. Pub. 7–8–69. Filed 3–14–68.

877,523. MOISTURELLE. Bristol-Myers Company. SN 298,697. Pub. 7–8–69. Filed 5–21–68.

877,524. DJER-KISS. The Nestle-Lemur Company. SN 302,107. Pub. 7–8–69. Filed 7–5–68.

877,525. DEPEND. Clairol Incorporated. SN 305,720. Pub. 7–8–69. Filed 8–22–68.

877,526. XILARATION. Faberge, Inc. SN 308,196. Pub. 7–8–69. Filed 9–25–68.

877,527. GOLDEN WEB. Amway Corporation. SN 308,670. Pub. 7–8–69. Filed 10–2–68.

877,528. BEAUTIFUL DREAMER. Clairol Incorporated. SN 308,868. Pub. 7–8–69. Filed 10–4–68.

877,529. HAI KARATE. Chas. Pfizer & Co., Inc. SN 316,125. Pub. 7–8–69. Filed 1–8–69.

877,530. SUPER SOFT. Helene Curtis Industries, Inc. SN 318,779. Pub. 7–8–69. Filed 2–10–69.

877,531. SURE TEXTURE. Chesebrough-Pond's Inc. SN 319,113. Pub. 7–8–69. Filed 2–14–69.

877,532. SUPER NET. La Maur, Inc. SN 319,322. Pub. 7–8–69. Filed 2–17–68.

Class 52 — Detergents and Soaps

877,262. (See Class 3 for this trademark.)

877,364. (See Class 23 for this trademark.)

877,505. (See Class 46 for this trademark.)

877,533. VOLLEY. Wyandotte Chemicals Corporation. SN 293,971. Pub. 7–8–69. Filed 3–22–68.

877,534. ARMADA. Wyandotte Chemicals Corporation. SN 293,972. Pub. 7–8–69. Filed 3–22–68.

877,535. MOISTURELLE. Bristol-Myers Company. SN 298,695. Pub. 7–8–69. Filed 5–21–68.

877,536. FANCIFUL CHARACTER. Lever Brothers Company. SN 306,786. Pub. 7–8–69. Filed 9–6–68.

877,537. EATS STAINS AND FANCIFUL CHARACTER. Lever Brothers Company. SN 306,787. Pub. 7–8–69. Filed 9–6–68.

877,538. POWDER ROOM. Carolina Company, Inc., d.b.a. The Carolina Soap & Candle Makers. SN 307,626. Pub. 7–8–69. Filed 9–18–68.

877,539. TRIPLE-CLEAN. Feller Chemical Corporation. SN 311,474. Pub. 7–8–69. Filed 11–6–68.

877,540. MOISTURY. Bristol-Myers Company. SN 312,016. Pub. 7–8–69. Filed 11–13–68.

877,541. PORCEL. Kem Manufacturing Corporation. SN 314,085. Pub. 7–8–69. Filed 12–10–68.

877,542. POWR-STEAM. Purex Corp, Ltd., d.b.a. Turco Products, Inc. SN 314,857. Pub. 7–8–69. Filed 12–19–68.

877,543. THE BIG JOB CLEANER. The Procter & Gamble Company. SN 314,940. Pub. 7–8–69. Filed 12–20–68.

877,544. SABER. Colgate-Palmolive Company. SN 319,414. Pub. 7–8–69. Filed 2–18–69.

877,545. COLOR-UP. The Procter & Gamble Company. SN 321,013. Pub. 7–8–69. Filed 3–7–69.

877,546. SKURRY. The Procter & Gamble Company. SN 321,014. Pub. 7–8–69. Filed 3–7–69.

877,547. POLICY. The Procter & Gamble Company. SN 321,016. Pub. 7–8–69. Filed 3–7–69.

877,548. WINDOW QUICK. The Procter & Gamble Company. SN 321,016. Pub. 7–8–69. Filed 3–7–69.

Service Marks

Class 100 — Miscellaneous

877,549. INTER-CONTINENTAL HOTELS AND DESIGN. Intercontinental Hotels Corporation. SN 266,888. Pub. 7–8–69. Filed 3–16–67.

877,550. MISCELLANEOUS DESIGN. Intercontinental Hotels Corporation. SN 266,889. Pub. 7–8–69. Filed 3–16–67.

877,551. CES AND DESIGN. Contract Engineering Services, Inc. SN 278,287. Pub. 7–8–69. Filed 8–15–67.

877,552. EXECUTIVE SPORTSMAN'S CLUB ETC. AND DESIGN. Chicago Association of Commerce and Industry. SN 289,969. Pub. 7–8–69. Filed 1–31–68.

877,553. GMX. EG & G International, Inc., d.b.a. Gravity Meter Exploration Company, Geophysical Associates International, GMX, and GAI-GMX. SN 291,499. Pub. 7–8–69. Filed 2–20–68.

877,554. STUFT' SHIRT AND DESIGN. Dutch Inns of America, Inc., d.b.a. Georgetown Manor. SN 296,316. Pub. 7–8–69. Filed 4–23–68.

877,555. PIDSI AND DESIGN. Property Identification Service, Inc. SN 300,002. Pub. 7–8–69. Filed 6–7–68.

877,556. BUNNY HUTCH. HMH Publishing Co. Inc. SN 303,415. Pub. 7–8–69. Filed 7–23–68.

877,557. HAM YANKEE. Jordan and Young. SN 303,681. Pub. 7–8–69. Filed 7–26–68.

877,558. GCC (DESIGN). General Cinema Corporation. MULTIPLE CLASS (Classes 100 and 107). SN 305,541. Pub. 7–8–69. Filed 8–20–68.

877,559. FANCIFUL PIG (DESIGN). Mr. Bar-B-Q, Inc. SN 319,763. Pub. 7–8–69. Filed 2–24–69.

877,560. HOME OF COUNTRY BOY. Country Kitchen Incorporated, of Middletown, Ohio. SN 321,001. Pub. 7–8–69. Filed 3–7–69.

Class 101 — Advertising and Business

877,561. PRESTO PRINT AND DESIGN. Sobolik Building Corporation. SN 289,817. Pub. 7–8–69. Filed 9–20–67.

877,562. BIG BEAR. Big Bear, Inc. SN 297,915. Pub. 7–8–69. Filed 5–18–68.

877,563. WESTERN GIRL INC. AND DESIGN. Western Girl, Inc. SN 306,084. Pub. 7–8–69. Filed 8–27–68.

Class 102 — Insurance and Financial

877,564. CREDITMASTER. The Alliance Life Insurance Company. SN 272,455. Pub. 7–8–69. Filed 5–26–67.

Class 105 — Transportation and Storage

877,565. CLUB MEDITERRANEE. Club Mediterranee, S.A. SN 277,023. Pub. 7–8–69. Filed 7–28–67.

877,566. DIAL A WAGON. Norman Hornung, d.b.a. Norman Hornung Services. SN 302,332. Pub. 7–8–69. Filed 7–9–68.

877,567. PENN CENTRAL. Penn Central Company. SN 313,830. Pub. 7–8–69. Filed 12–6–68.

Class 106 — Material Treatment

877,568. FORTIN AND DESIGN. Fortin Plastics, Inc. SN 302,065. Pub. 7-8-69. Filed 7-5-68.

Class 107 — Education and Entertainment

877,558. (See Class 100 for this trademark.)

877,569. FAMOUS WRITERS SCHOOL. Famous Writers School, Inc. SN 294,485. Pub. 7-8-69. Filed 3-29-68.

SUPPLEMENTAL REGISTER

These registrations are not subject to opposition.

Class 4 — Abrasives and Polishing Materials

877,570. The Fuller Brush Company, East Hartford, Conn. SN 307,325. Filed P.R. 9-13-68; Am. S.R. 4-14-69.

FULLSHEEN

For Synthetic Floor Polish (Int. Cl. 3).
First use Apr. 5, 1968.

Class 12 — Construction Materials

877,571. H. B. Anderson, d.b.a. Anderson Gun Shop, Yakima, Wash. SN 294,156. Filed P.R. 3-26-68; Am. S.R. 3-26-69.

GLASBED

For Glass Bedding Kits, Used for Obtaining Molded Fit Between Wood and Metal Parts of Guns and for Repairing Gun Stocks (Int. Cl. 19).
First use March 1961.

877,572. New Plastic Corporation, Los Angeles, Calif. SN 302,438. Filed P.R. 7-10-68; Am. S.R. 5-23-69.

SUPER-STRAND

For Nonconductive Fiberglass Structural Rod for Antenna, Tower and Pole Guys, Messenger Cable and Catenaries (Int. Cl. 19).
First use Mar. 20, 1968.

877,573. New Plastic Corporation, Los Angeles, Calif. SN 302,439. Filed P.R. 7-10-68; Am. S.R. 5-23-69.

MULTI-STRAND

For Nonconductive Fiberglass Structural Rod for Antenna, Tower and Pole Guys, Messenger Cable and Catenaries (Int. Cl. 19).
First use Mar. 20, 1968.

Class 21 — Electrical Apparatus, Machines, and Supplies

877,574. Erlez Manufacturing Co., Erie, Pa. SN 305,729. Filed P.R. 8-22-68; Am. S.R. 4-24-69.

SAFEHOLD

For Lifting Magnets (Int. Cl. 9).
First use Feb. 7, 1968.

877,575. General Battery and Ceramic Corp., Reading, Pa. SN 308,778. Filed P.R. 10-3-68; Am. S.R. 4-21-69.

Ever-Ful

For Batteries (Int. Cl. 9).
First use May 14, 1947.

Class 23 — Cutlery, Machinery, and Tools, and Parts Thereof

877,576. Sherrod Bros., Inc., Milwaukee, Wis. SN 305,759. Filed P.R. 8-22-68; Am. S.R. 5-14-69.

PUMPIT

For Concrete Pumps (Int. Cl. 7).
First use Jan. 28, 1966.

Class 26 — Measuring and Scientific Appliances

877,577. Datatype Corporation, Miami, Fla. SN 205,394. Filed P.R. 11-3-64; Am. S.R. 7-27-66.

DATATYPE

For Electronic Data Decoder (Int. Cl. 9).
First use May 21, 1964.

Class 37 — Paper and Stationery

877,578. Computer Papers Incorporated, d.b.a. Computer Papers Inc., Des Moines, Iowa. SN 277,026. Filed P.R. 7-28-67; Am. S.R. 12-4-68.

COPI

For Computer Record Paper (Int. Cl. 16).
First use July 7, 1967.

Class 38 — Prints and Publications

877,579. Careers Incorporated, New York, N.Y. SN 313,370. Filed P.R. 12-2-68; Am. S.R. 4-28-69.

CAREERFAX

For Quarter-Annual Newsletter Designed To Inform Business and Industry of New Methods for Recruiting Personnel (Int. Cl. 16).
First use Jan. 1, 1965.

Class 46 — Foods and Ingredients of Foods

877,580. Virginia Dare Extract Co., Inc., Brooklyn, N.Y. SN 301,516. Filed P.R. 6-27-68; Am. S.R. 6-18-69.

HI-DYE

For Food Colors (Int. Cl. 2).
First use May 6, 1968.

877,581. Bakst Foods, Inc., Brooklyn, N.Y. SN 301,582. Filed P.R. 6-28-68; Am. S.R. 7-2-69.

BAKST. BEST

For Sauerkraut (Int. Cl. 29).
First use June 24, 1968.

Class 51 — Cosmetics and Toilet Preparations

877,582. Demert & Dougherty, Inc., Chicago, Ill. SN 284,809. Filed P.R. 11-14-67; Am. S.R. 7-7-69.

REAL BODY

For Hair Spray (Int. Cl. 3).
First use on or about Oct. 16, 1967.

877,583. Yardley of London, Inc., Totowa, N.J. SN 302,551. Filed P.R. 7-11-68; Am. S.R. 4-4-69.



The mark consists of the conformation of the container in which the goods are packaged and sold.
For Cologne, After Shave Lotion, Astringent and Body Powder (Int. Cl. 3).
First use Sept. 1, 1965.

Class 52 — Detergents and Soaps

877,584. Bristol-Myers Company, New York, N.Y. SN 277,428. Filed P.R. 8-3-67; Am. S.R. 4-1-69.

REDI WIAPERS

For Tissue Impregnated With a Cleaning Agent (Int. Cl. 21).
First use June 20, 1967.

877,585. Bristol-Myers Company, New York, N.Y. SN 277,432. Filed P.R. 8-3-67; Am. S.R. 4-1-69.

TIDY WIAPERS

For Tissue Impregnated With a Cleaning Agent (Int. Cl. 21).
First use June 20, 1967.

877,586. General Foods Corporation, White Plains, N.Y. SN 321,929. Filed 3-17-69.

CLEAN 'N WHITE

For Laundry Detergent (Int. Cl. 3).
First use Dec. 7, 1966.

TRADEMARK REGISTRATIONS RENEWED

33,231. RUBY. Cl. 27 (Int. Cl. 14). 7-18-1899.
33,232. PEARL. Cl. 27 (Int. Cl. 14). 7-18-1899.
33,233. SAPPHIRE. Cl. 27 (Int. Cl. 14). 7-18-1899.
33,235. GARNET. Cl. 27 (Int. Cl. 14). 7-18-1899.
33,600. VACLITE. Cl. 15 (Int. Cl. 4). 10-17-1899.
72,373. LACO. Cl. 52 (Int. Cl. 3). 1-19-09.
74,280. SUPRARENIN. Cl. 18 (Int. Cl. 5). 6-29-09.
255,167. "PIN MONEY" AND REPRESENTATION OF A PIN. Cl. 39 (Int. Cl. 25). 4-16-29.
255,380. BROMO-VESS. Cl. 18 (Int. Cl. 5). 4-23-29.
255,648. ARMORPLATE. Cl. 23 (Int. Cl. 7). 4-30-29.
255,879. LANAIRCEL. Cl. 42 (Int. Cl. 24). 4-30-29.
257,920. "BROCKWAY" AND BACKGROUND DESIGN. Cl. 19 (Int. Cl. 12). 6-18-29.
258,513. SUPRE-MACY. Cl. 41 (Int. Cl. 18). 7-9-29.
258,619. REPRESENTATION OF ARM AND HAMMER. Cl. 51 (Int. Cl. 3). 7-9-29.
258,620. ARM & HAMMER. Cl. 51 (Int. Cl. 3). 7-9-29.
258,643. COCKTAIL. Cl. 51 (Int. Cl. 3). 7-9-29.
258,645. AMOUR AMOUR. Cl. 51 (Int. Cl. 3). 7-9-29.
258,840. "REX" ETC. AND DRAWING. Cl. 5 (Int. Cl. 1). 7-16-29.

258,966. "CANDO" AND REPRESENTATION OF CROWN. Cl. 4 (Int. Cl. 3). 7-16-29.
259,339. "AROME BENEDICTINE" ETC. WITHIN RECTANGULOR BORDER DESIGN. Cl. 46 (Int. Cl. 30). 7-30-29.
259,367. CHIPPER. Cl. 22 (Int. Cl. 28). 7-30-29.
259,660. "EXCHANGE X" AND DESIGN. Cl. 6 (Int. Cls. 3 and 29). 8-6-29.
259,661. "EXCHANGE X" AND DESIGN. Cl. 45 (Int. Cls. 29 and 32). 8-6-29.
259,775. SENSATION. Cl. 39 (Int. Cl. 25). 8-6-29.
260,349. "SALOIO" ETC. AND REPRESENTATION OF MAN. Cl. 46 (Int. Cl. 28). 8-20-29.
260,785. "RIALTO" AND ITALIAN PLEASURE BOAT SCENE. Cl. 46 (Int. Cl. 30). 8-27-29.
260,944. BANCO. Cl. 37 (Int. Cl. 16). 9-3-29.
261,096. BELTX. Cl. 44 (Int. Cl. 5). 9-3-29.
261,297. "SS STROKE SAVERS" AND DESIGN. Cl. 22 (Int. Cl. 28). 9-17-29.
262,223. DURIMET. Cl. 14 (Int. Cl. 6). 10-1-29.
262,682. TRITEX. Cl. 39 (Int. Cl. 25). 10-22-29.
263,058. DESERT FLOWER. Cl. 51 (Int. Cl. 3). 10-29-29.
263,156. SALAD BOWL. Cl. 46 (Int. Cl. 29). 10-29-29.
263,232. LUCKY STRIKE. Cl. 6 (Int. Cl. 5). 11-5-29.
263,920. "REX" ETC. AND DESIGN. Cl. 16 (Int. Cl. 1). 11-12-29.
264,102. AIR QUEEN. Cl. 27 (Int. Cl. 14). 11-19-29.
264,238. BARKEREST. Cl. 32 (Int. Cl. 20). 11-19-29.
264,371. SUNSET. Cl. 15 (Int. Cl. 4). 11-26-29.
264,829. AIRFLIGHT. Cl. 35 (Int. Cl. 12). 12-10-29.
264,872. "SIMONDS RED STREAK" AND BACKGROUND DESIGN. Cl. 23 (Int. Cls. 7 and 8). 12-10-29.
264,913. SIMPLEX. Cl. 26 (Int. Cl. 9). 12-10-29.
265,197. MATT-CREME. Cl. 51 (Int. Cl. 3). 12-17-29.
265,408. CHIFFON. Cl. 46 (Int. Cl. 30). 12-24-29.
442,515. CLA-SHEEN. Cl. 37 (Int. Cl. 16). 4-19-49.
443,173. SANI TEK AND DESIGN. Cl. 52 (Int. Cl. 3). 8-2-49.
443,509. COCOON. Cl. 16 (Int. Cl. 17). 11-1-49.
504,101. DENTON. Cl. 39 (Int. Cl. 25). 11-23-48.
505,821. CUTTRODE. Cl. 34 (Int. Cl. 1). 1-18-49.
507,018. NATCO. Cl. 37 (Int. Cl. 16). 2-22-49.
507,019. NATCORD. Cl. 37 (Int. Cl. 16). 2-22-49.
507,020. SNUGWRAP. Cl. 37 (Int. Cl. 16). 2-22-49.
508,163. DETROIT JEWEL. Cl. 21 (Int. Cl. 11). 4-5-49.
508,640. IODO-ARSON. Cl. 18 (Int. Cl. 5). 4-12-49.
508,767. PIT & QUARRY AND DESIGN. Cl. 38 (Int. Cl. 16). 4-19-49.
509,007. LEXINGTON. Cl. 29 (Int. Cl. 16). 4-26-49.
509,416. PAR-METAL. Cl. 21 (Int. Cl. 19). 5-3-49.
509,651. ELIXIR DE GUERLAIN. Cl. 51 (Int. Cl. 3). 5-10-49.
509,704. OHIO BLUE TIP MATCHES. Cl. 9 (Int. Cl. 34). 5-10-49.
509,947. BICKSON. Cl. 28 (Int. Cl. 14). 5-17-49.
509,972. KLIXON. Cls. 13, 21, 26, and 34 (Int. Cls. 6, 9, and 11). 5-17-49.
510,731. PASTENE. Cl. 18 (Int. Cl. 5). 6-7-49.
510,997. ELECTRICAL MINING. Cl. 38 (Int. Cl. 16). 6-14-49.
511,272. SUNNYFIELD. Cl. 46 (Int. Cl. 30). 6-21-49.
511,345. EVERDRY. Cl. 37 (Int. Cl. 16). 6-21-49.
511,362. GONG. Cl. 29 (Int. Cls. 16 and 21). 6-21-49.
511,363. GONG AND DESIGN. Cl. 29 (Int. Cls. 16 and 21). 6-21-49.
511,623. CHELSEA ELECRONOMETER. Cl. 27 (Int. Cl. 14). 6-28-49.
511,646. WRIGHT'S. Cl. 18 (Int. Cl. 5). 6-28-49.
511,702. NATIONAL. Cl. 6 (Int. Cl. 1). 6-28-49.
511,714. THE AWAITED HOUR. Cl. 51 (Int. Cl. 3). 6-28-49.
511,832. SPHERON. Cl. 1 (Int. Cl. 1). 7-5-49.
511,836. GUMP'S. Cl. 42 (Int. Cl. 24). 7-5-49.
511,846. CREAM OF EGG. Cl. 46 (Int. Cl. 30). 7-5-49.
511,903. OLD INNKEEPER DESIGN. Cl. 38 (Int. Cl. 16). 7-5-49.
511,912. REPRODOL. Cl. 6 (Int. Cl. 1). 7-5-49.
512,182. GUMP'S. Cl. 39 (Int. Cl. 25). 7-12-49.
512,192. MONO-FIBRIK. Cl. 12 (Int. Cl. 19). 7-12-49.
512,193. SUPER MONO FIBRIK. Cl. 12 (Int. Cl. 19). 7-12-49.
512,196. SILVERBLEND. Cl. 39 (Int. Cl. 25). 7-12-49.
512,208. M-26. Cl. 12 (Int. Cl. 19). 7-12-49.
512,209. LANCASTER. Cl. 39 (Int. Cl. 25). 7-12-49.
512,215. SENCO AND INDIAN HEAD DESIGN. Cl. 26 (Int. Cl. 9). 7-12-49.
512,449. FOODTAINER. Cl. 2 (Int. Cl. 16). 7-19-49.
512,468. LACO. Cl. 29 (Int. Cl. 21). 7-19-49.
512,553. BULL DOG. Cl. 35 (Int. Cls. 7 and 17). 7-19-49.
512,707. LM AND DESIGN. Cl. 21 (Int. Cl. 9). 7-26-49.
512,735. WESTERN. Cl. 22 (Int. Cl. 28). 7-26-49.
512,777. PRIZE MEDAL. Cl. 46 (Int. Cl. 30). 7-26-49.
513,189. VIACILINA. Cl. 18 (Int. Cl. 5). 8-2-49.
513,310. LINCOLN LOGS. Cl. 22 (Int. Cl. 28). 8-9-49.
513,311. PLAYSKOOL. Cl. 22 (Int. Cl. 28). 8-9-49.
513,332. GUMP'S. Cl. 8 (Int. Cl. 20). 8-9-49.
513,671. TITE-EDGE. Cl. 39 (Int. Cl. 25). 8-16-49.
514,121. SUNNY SIDE UP. Cl. 46 (Int. Cl. 28). 8-23-49.
514,157. HORSE AND RIDER DESIGN. Cl. 51 (Int. Cl. 3). 8-23-49.
514,810. SYNTRON. Cl. 21 (Int. Cl. 9). 9-6-49.
514,889. DANCORD. Cl. 42 (Int. Cl. 24). 9-6-49.
514,973. HALFHILL'S. Cl. 46 (Int. Cl. 28). 9-13-49.
515,046. ERES AND DESIGN. Cl. 12 (Int. Cl. 19). 9-13-49.
515,082. UNIT ARCH. Cl. 12 (Int. Cl. 19). 9-13-49.
515,271. TELSMITH. Cl. 23 (Int. Cl. 7). 9-20-49.
515,276. MULTI-LINKT. Cl. 37. Int. Cl. 16). 9-20-49.
515,387. TAHARA. Cl. 23 (Int. Cl. 7). 9-20-49.
515,427. OILHEATING & AIR CONDITIONING MERCHANDISING NEWS. Cl. 38 (Int. Cl. 16). 9-20-49.
515,439. UNICORN DESIGN. Cl. 38 (Int. Cl. 16). 9-20-49.
515,518. DOT. Cl. 13 (Int. Cl. 26). 9-27-49.
515,733. SCOTCH. Cl. 5 (Int. Cl. 1). 9-27-49.
516,166. DESIGN GODDESS OF TIME. Cl. 28 (Int. Cl. 14). 10-11-49.
516,177. MOHAWK VALLEY. Cl. 46 (Int. Cl. 28). 10-11-49.
516,203. GOLDCLAD. Cl. 27 (Int. Cl. 14). 10-11-49.
516,315. KING ALBERT. Cl. 28 (Int. Cl. 8). 10-11-49.
516,575. RUF-NEK. Cl. 39 (Int. Cl. 25). 10-18-49.
516,615. SUCHAR. Cl. 31 (Int. Cl. 9). 10-18-49.
516,734. FORSTMANN. Cl. 42 (Int. Cl. 24). 10-25-49.
516,796. ARKWRIGHT. Cl. 37 (Int. Cl. 16). 10-25-49.
516,832. TRAVEL TYKE. Cl. 22 (Int. Cl. 28). 10-25-49.
516,862. WALKER WARE. Cl. 13 (Int. Cl. 21). 10-25-49.
516,940. SEEDOX. Cl. 6 (Int. Cl. 5). 10-25-49.
516,982. WAXTEX. Cl. 40 (Int. Cl. 26). 10-25-49.
517,118. TOWIE AND DESIGN. Cl. 46 (Int. Cls. 29, 30, and 31). 11-1-49.
517,183. LUDLOW. Cl. 23 (Int. Cl. 7). 11-1-49.
517,245. TOM & JERRY. Cl. 39 (Int. Cl. 25). 11-1-49.
517,293. REEF. Cl. 26 (Int. Cl. 9). 11-1-49.
517,376. WOOD. Cl. 23 (Int. Cl. 7). 11-8-49.
517,470. ANCHORVAC. Cl. 50 (Int. Cl. 20). 11-8-49.
517,487. ROCKTEMP. Cl. 21 (Int. Cl. 9). 11-8-49.
517,531. SIS. Cl. 14 (Int. Cl. 6). 11-8-49.
517,576. QUICK SET. Cl. 26 (Int. Cl. 9). 11-15-49.
517,668. MISCELLANEOUS DESIGN. Cl. 100 (Int. Cl. 42). 11-15-49.
517,712. CAPACITROL. Cl. 26 (Int. Cl. 9). 11-22-49.
517,913. AS AND SHIELD DESIGN. Cl. 28 (Int. Cl. 14). 11-22-49.
517,955. WEST POINT. Cl. 42 (Int. Cl. 24). 11-22-49.
518,257. WASATCH. Cl. 46 (Int. Cl. 31). 11-29-49.
518,400. DURA-CURL. Cl. 23 (Int. Cl. 7). 12-6-49.
518,464. OZATRAN. Cl. 37 (Int. Cl. 16). 12-6-49.
518,478. RICH-FIELD. Cl. 46 (Int. Cl. 31). 12-6-49.
518,613. GODDESS OF TIME. Cl. 28 (Int. Cl. 14). 12-13-49.
518,633. GODDESS OF TIME DESIGN. Cl. 28 (Int. Cl. 14). 12-13-49.
518,737. CAREY. Cl. 35 (Int. Cl. 17). 12-13-49.
518,878. GRATON. Cl. 46 (Int. Cl. 29). 12-13-49.
518,880. HUNTER. Cl. 26 (Int. Cl. 9). 12-13-49.
518,898. SHUGOR AND DESIGN. Cl. 40 (Int. Cl. 24). 12-20-49.
518,904. SELF SEALING. Cl. 33 (Int. Cl. 21). 12-20-49.
518,912. SPEED-KUT. Cl. 15 (Int. Cl. 4). 12-20-49.
518,932. TUNE-IN. Cl. 26 (Int. Cl. 9). 12-20-49.
519,089. WONDERBALL. Cl. 22 (Int. Cl. 28). 12-20-49.
519,128. YORKTOWN. Cl. 17 (Int. Cl. 34). 12-20-49.
519,229. TOP-KREAM. Cl. 46 (Int. Cl. 31). 12-27-49.
519,236. FRITZAROME. Cl. 45 (Int. Cl. 30). 12-27-49.
519,292. FLA-VOR-AID. Cl. 45 (Int. Cl. 32). 12-27-49.

TRADEMARK REGISTRATIONS CANCELED

Section 7(d)

846,164. TRADE WINDS TIGER AND DESIGN. Cl. 19. 3-19-68.
872,350. PERERA EXPRESS CO. AND DESIGN. Cl. 102. 7-1-69.

Section 8

168,938. BRICO. Cl. 4. 5-29-23.
173,495. WARMSTER. Cl. 39. 9-25-23.
402,628. WARCOPEL. Cl. 6. 8-3-43.
438,622. WIREWAY. Cl. 13. 5-4-48.
753,823. BEARSKIN NECK. Cl. 46. 7-30-63.

The following registrations issued Aug. 6, 1963

753,898. DESIGN OF THREE TRIANGLES. Cl. 2.
753,899. SHOE SHAGS. Cl. 2.
753,903. STERI-CANTEEN. Cl. 2.
753,906. ACCESSORIES AMERICANA AND DESIGN. Cl. 2.
753,908. CUTLASS. Cl. 2.
753,911. PORTA-TUBS. Cl. 2.
753,912. OVAL-TAINER. Cl. 2.
753,914. PIERCENE. Cl. 2.
753,915. KEN-RIP AND DESIGN. Cl. 2.
753,916. BABYLON GARDEN. Cl. 2.
753,919. BAG-O-TRICKS. Cl. 3.
753,925. KEPHOS. Cl. 6.
753,926. WATER BUOY. Cl. 6.
753,931. FLEXIMET. Cl. 6.
753,932. CONTROL E-B. Cl. 6.
753,936. WEAVER CHOKE AND DESIGN. Cl. 9.
753,941. SUNPRUF AND DESIGN. Cl. 12.
753,942. CHORE-EASE. Cl. 12.
753,947. OCT-O-QUAD. Cl. 12.
753,949. BITUMAGIC. Cl. 12.
753,963. HUNTER ALUMINUM AND DESIGN. Cl. 14.
753,965. VL 55. Cl. 14.
753,966. MICHELDYNE. Cl. 15.
753,974. DANBURY. Cl. 17.
753,978. LONAVAR. Cl. 18.
753,980. TROLPAYN. Cl. 18.
753,982. FEVOKINE. Cl. 18.
753,985. ACUTUSS-AS. Cl. 18.
753,986. KITTY KAT. Cl. 19.
753,988. ATLAS. Cl. 19.
753,989. TULARELOFT. Cl. 19.
753,995. PERM-A-JUST. Cl. 19.
754,001. SABRINA. Cl. 20.
754,005. ATI AND DESIGN. Cl. 21.
754,006. RANDOMATIC. Cl. 21.
754,012. TANN AND DESIGN. Cl. 21.
754,018. WM ETC. AND DESIGN. Cl. 21.
754,019. MUSIC-FLAME AND DESIGN. Cl. 21.
754,023. DRAGSPARK. Cl. 21.
754,027. WESTAR. Cl. 21.
754,033. ALWAYS BEAUTY CLEAN. Cl. 21.
754,034. REVELATION AND DESIGN. Cl. 22.
754,036. STYROBIRD. Cl. 22.
754,038. BEN SOAKER. Cl. 22.
754,040. ZILK-FLOMATIC. Cl. 23.
754,048. LINGK ETC. AND DESIGN. Cl. 23.
754,051. SWECO. Cl. 23.
754,052. VUELINE. Cl. 23.
754,058. VAN GARD. Cl. 23.
754,060. WM ETC. AND DESIGN. Cl. 23.
754,065. WEB FORM. Cl. 23.
754,067. DISPENS-O-PUNCH. Cl. 23.
754,069. ROYALETTE. Cl. 23.
754,074. ABBEY-MATIC AND DESIGN. Cl. 23.
754,081. BARONET. Cl. 24.
754,083. D-PAK. Cl. 26.
754,086. GOSSEN AND DESIGN. Cl. 26.
754,088. THERMO-REF. Cl. 26.
754,090. SKIL-SCORER. Cl. 26.
754,095. THERMOTRAC. Cl. 26.
754,098. B AND DESIGN. Cl. 26.
754,101. S AND DESIGN. Cl. 26.
754,102. SAFETY ISLAND. Cl. 26.
754,106. GALA. Cl. 26.
754,109. ART FLEX. Cl. 26.
754,110. HALLEFEX. Cl. 26.
754,112. AQUA-CAM. Cl. 26.
754,117. V8. Cl. 26.
754,118. V8 AND DESIGN. Cl. 26.
754,121. VARIOMATOR. Cl. 26.
754,124. FIGURE OF A MAN. Cl. 26.
754,129. BIGGS HAMILTON. Cl. 27.
754,130. JPE AND DESIGN. Cl. 27.
754,131. ETERNAL TROTH. Cl. 28.
754,132. CK. Cl. 28.
754,135. ROBBINS. Cl. 28.
754,136. B & L AND DESIGN. Cl. 28.
754,138. F.L. Cl. 28.
754,139. MISCELLANEOUS DESIGN. Cl. 28.
754,140. FACUTE. Cl. 29.
754,142. BRUSH-EEZ. Cl. 29.
754,143. DENTALUX. Cl. 29.
754,144. JOAN OF ARC. Cl. 30.
754,147. REPRESENTATION OF MERCURY. Cl. 31.
754,148. HALO-CEILING. Cl. 32.
754,152. MERIT FRAMES AND DESIGN. Cl. 32.
754,153. STOCK-CRAFT. Cl. 32.
754,155. STOWAWAY. Cl. 32.
754,165. TIN-A-LUM. Cl. 34.
754,167. HI-VIS. Cl. 34.
754,168. ARVIN. Cl. 34.
754,170. ELIRATOR. Cl. 34.
754,172. HYDROSHADE. Cl. 34.
754,173. MISTER SMOKESTACK. Cl. 34.
754,186. TRIUMPH RECORDS AND DESIGN. Cl. 36.
754,187. RADIOETTES. Cl. 36.
754,189. KAREN. Cl. 36.
754,190. TAHITI AND DESIGN. Cl. 36.
754,191. FAR-GO AND DESIGN. Cl. 36.
754,198. SILHOUETTE OF MAN BLOWING A HORN. Cl. 36.
754,199. DACOTAH VOICES. Cl. 36.
754,202. TELEFICTION AND DESIGN. Cl. 38.
754,205. DRIZZLE BONNET. Cl. 39.
754,211. SNOOPY JUNIORS. Cl. 39.
754,212. FAMOUS MILLS BRAND. Cl. 39.
754,214. ANKLE ACTION. Cl. 39.
754,221. MISSY ARNOLD. Cl. 39.
754,223. TRIDENT. Cl. 39.
754,226. MR. H. ESQ. Cl. 39.
754,229. STAND MOLD. Cl. 39.
754,230. BARNSVILLE U.S.A. AND DESIGN. Cl. 39.
754,234. PIMA SUPREME AND DESIGN. Cl. 39.
754,236. NANA. Cl. 39.
754,237. POZZATTI KNIT. Cl. 39.
754,241. PONTI ROMA. Cl. 39.
754,248. AQUALURA. Cl. 39.
754,249. VALSHIRE. Cl. 39.
754,250. CABAS. Cl. 39.
754,251. DOLLENET. Cl. 39.
754,252. SMITTEN. Cl. 39.
754,253. MILL OF THE WEST. Cl. 39.
754,258. TRAVELQUEEN. Cl. 39.
754,260. SUN 'N SURF. Cl. 41.
754,262. MARION MFG. CO. Cl. 42.
754,263. BALMORAL. Cl. 42.
754,267. LINTON TWEEDS. Cl. 42.
754,270. LANCELOT. Cl. 42.
754,271. STRONG-HEWAT. Cl. 42.
754,272. TILOWEB. Cl. 42.
754,278. PIMALON. Cl. 42.
754,280. N. Cl. 43.
754,284. FLAMED. Cl. 43.
754,288. EXHILARATOR. Cl. 44.

754,289. UNIMED. Cl. 44.
754,290. SLUMBER TONE. Cl. 44.
754,295. THE PRINCESS. Cl. 44.
754,296. RIO RICKEY. Cl. 45.
754,297. MENU MAGIC. Cl. 46.
754,300. GOULD'S VITA-RICH. Cl. 46.
754,301. COUNTRY KITCHEN. Cl. 46.
754,311. DAIRY BROOK. Cl. 46.
754,316. ATLAS AND DESIGN. Cl. 50.
754,317. MAGNA-MASTER. Cl. 50.
754,319. ROYAL CROWN PERSONALITY LIPSTICK AND DESIGN. Cl. 51.
754,322. SCRUBBY. Cl. 52.
754,325. VIV. Cl. 52.
754,327. CRIB. Cl. 100.
754,336. FLAKEBORD. Cl. 12.
754,339. SPARKLE-BRITE. Cl. 16.
754,340. ACNE-MASQUE. Cl. 18.
754,344. FASTER-FIT. Cl. 19.
754,347. SWIM-N-SKI. Cl. 22.
754,349. SECURESTACK. Cl. 23.
754,352. INCH MARK AND DESIGN. Cl. 37.
754,355. TENPIN BOWLING AMERICA. Cl. 38.
754,357. EUROPEA. Cl. 38.
754,362. PURSWEET. Cl. 46.
754,363. L'ORIGINALE ALFREDO AND LABEL DESIGN. Cl. 46.
754,364. "MY SYRUP SO GOOD." Cl. 46.
754,371. CRYSTAL CLEAR. Cl. 52.

Section 18

254,639. P.M. Cl. 6. 3–26–29.
330,979. BETSY ROSS SPINET. Cl. 36. 12–24–35.
523,430. KEWPIE. Cl. 46. 4–4–50.
589,542. TICO TACO. Cl. 46. 5–11–54.
759,774. PRO-CAL. Cl. 46. 11–5–63.

TRADEMARK REGISTRATIONS AMENDED, DISCLAIMED, CORRECTED, ETC.

74,618. BEAVER. Cl. 2. 7–27–09. The Union Bag and Paper Company. Union Bag & Paper Corporation, New York, N.Y. Amended to appear:

BEAVER

103,357. WHEN IT RAINS IT POURS AND DESIGN. Cl. 46. 3–30–15. Morton Salt Company. Morton International, Inc., Chicago, Ill. Amended to appear:



252,469. ARCHCREST. Cl. 39. 2–5–29. McCain-Wright, Inc. Swopes Red Cross Shoes, Inc., St. Louis, Mo. Amended to appear:

Archcrest

257,371. HOUNDS AND HUNTING. Cl. 38. 6–4–29. Hounds and Hunting Publishing Company. Hounds and Hunting, Bradford, Pa. Amended to appear:

Hounds and Hunting

431,459. PEP. Cl. 38. 7–22–47. Archie Comic Publications, Inc., New York, N.Y. Amended: In the statement, column 1, line 6, after "Mo." , *now located at 1116 First Ave., New York, N.Y. 10021* is inserted, lines 8 and 9, "magazine issued quarterly" is deleted and *comic magazine* is inserted, line 15 through column 2, line 1, "The word 'Comics' is disclaimed apart from the mark as shown." is deleted, and the drawing is amended to appear:

PEP

443,044. REPRESENTATION OF WINDSHIELD WITH ELF-LIKE CHARACTERS. Cl. 19. 7–5–49. Trico Products Corporation, Buffalo, N.Y. Amended: In the statement, column 2, line 2, "The words 'Don't Squint! Squirt!,'" is deleted, lines 3 through 6 are deleted, and the drawing is amended to appear:



511,639. UMBRELLA GIRL (DESIGN). Cl. 46. 6–28–49. Morton Salt Company. Morton International, Inc., Chicago, Ill. Amended to appear:



512,528. LINCWELDER. Cl. 21. 7–19–49. The Lincoln Electric Company, Cleveland, Ohio. Amended: In the statement, column 1, lines 7 and 8, "welding heads, electric motors," is deleted.

557,486. RC AND THERMOSTAT MAN DESIGN. Cl. 26. 4–15–52. Robertshaw-Fulton Controls Company. Robertshaw Controls Company, Greensburg, Pa. Amended to appear:



563,923. LAUGH. Cl. 38. 9–9–52. Close-Up, Inc., New York, N.Y. Amended: In the statement, column 1, line 7, after "Missouri)" , *now located at 1116 First Ave., New York, N.Y. 10021* is inserted, lines 9 and 10, "magazine issued bi-monthly" is deleted and *comic magazine* is inserted, column 2, lines 5 and 6 are deleted, and the drawing is amended to appear:

LAUGH

570,384. RC AND THERMOSTAT MAN DESIGN. Cl. 21. 2–10–53. Robertshaw-Fulton Controls Company. Robertshaw Controls Company, Greensburg, Pa. Amended to appear:



571,240. RC AND THERMOSTAT MAN DESIGN. Cl. 13. 3–3–53. Robertshaw-Fulton Controls Company. Robertshaw Controls Company, Greensburg, Pa. Amended to appear:



571,355. RC AND THERMOSTAT MAN DESIGN. Cl. 34. 3–3–53. Robertshaw-Fulton Controls Company. Robertshaw Controls Company, Greensburg, Pa. Amended to appear:



580,960. RC AND THERMOSTAT MAN DESIGN. Cl. 35. 10–13–53. Robertshaw-Fulton Controls Company. Robertshaw Controls Company, Greensburg, Pa. Amended to appear:



584,209. DURAN. Cl. 16. 12–29–53. Duron Paint Manufacturing Company, Inc., Washington, D.C. Corrected: In the statement, column 1, line 1, after "Company" , *Inc.* should be inserted.

592,990. MR. CONTROLS AND DESIGN. Cl. 26. 7–27–54. Robertshaw-Fulton Controls Company. Robertshaw Controls Company, Greensburg, Pa. Amended to appear:



MR. CONTROLS

593,621. RMC. Cl. 23. 8–10–54. Rich Manufacturing Corporation. Federal-Mogul Corporation, Southfield, Mich. Amended to appear:

RMC

613,969. MR. CONTROLS AND DESIGN. Cl. 34. 10–11–55. Robertshaw-Fulton Controls Company. Robertshaw Controls Company, Greensburg, Pa. Amended to appear:



MR. CONTROLS

615,245. MR. CONTROLS AND DESIGN. Cl. 21. 11–1–55. Robertshaw-Fulton Controls Company. Robertshaw Controls Company, Greensburg, Pa. Amended to appear:



MR. CONTROLS

620,218. MR. CONTROLS AND DESIGN. Cl. 13. 1–31–56. Robertshaw-Fulton Controls Company. Robertshaw Controls Company, Greensburg, Pa. Amended to appear:



MR. CONTROLS

754,403. STAMPEDE. Cl. 4. 8–13–63. Texize Chemicals, Inc., Greenville, S.C. Corrected: In the statement, column 1, line 1, "South Carolina" should be deleted and *Delaware* should be inserted.

762,444. DESIGN OF A GLOBE. Cl. 101. 12–31–63. The E. F. MacDonald Company, Dayton, Ohio. Amended: In the statement, column 1, line 2, "115" is deleted and *129* is inserted.

762,444. DESIGN OF A GLOBE. Cl. 101. 12–31–63. The E. F. MacDonald Company, Dayton, Ohio. Corrected: In the statement, column 1, line 1, "Ohio" should be deleted and *Delaware* should be inserted.

778,302. BLAST OFF. Cl. 51. 10–6–64. Texize Chemicals, Inc., Greenville, S.C. Corrected: In the statement, column 1, line 1, "South Carolina" should be deleted and *Delaware* should be inserted.

782,711. HOUSE OF EDGEWORTH. Cl. 17. 1–5–65. Larus & Brother Company, Richmond, Va. Amended to appear:

HOUSE OF EDGEWORTH

796,035. FLAVORITE. Cl. 46. 9–14–65. Stewart's Inc., Rye, N.Y. Corrected: In the statement, column 1, line 1, "Delaware" should be deleted and *Tennessee* should be inserted.

863,603. SPOGHETTI RINGS ETC. AND DESIGN. Cl. 46. 1–14–69. American Beauty Macaroni Company, Kansas City, Kans. Corrected: In the statement, column 2, line 1, after "dinners", *the ingredients of which are in dry form* should be inserted, in line 9, "Nos." should be deleted and *No.* should be inserted and "and 575,642" should be deleted.

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Eutectic Corp.: *See*—
Eutectic Welding Alloys Corp.
Eutectic Welding Alloys Corp., New York, to Eutectic Corp., Flushing, N.Y. 505,821, ren. 9–23–69. Cl. 34.
Exchange Orange Products Co., The, to California Fruit Growers Exchange, of Los Angeles, Calif., Ontario, to Sunkist Growers, Inc., Los Angeles, Calif. 259,660–1, ren. 9–23–69. Cl. 6.
F. & M. Hat Co., Inc., Denver, Pa. 512,209, ren. 9–23–69. Cl. 39.
FMC Corp.: *See*—
Syntron Co.
Faberge, Inc., New York, N.Y. 877,526, pub. 7–8–69. Cl. 51.
Famous Writers School, Inc., Westport, Conn. 877,569, pub. 7–8–69. Cl. 107.
Farbwerke vormals Meister Lucius & Bruning, Hochst-on-the-Main, Germany, to Sterling Drug Inc., New York, N.Y. 74,280, ren. 9–23–69. Cl. 18.
Farwell, Ozmun, Kirk & Co., St. Paul, Minn. 753,942, canc. Cl. 12.
Federal Laboratories, Inc., Saltsburg, Pa. 877,271, pub. 3–25–69. Cl. 9.
Feller Chemical Corp., Jamaica, N.Y. 877,539, pub. 7–8–69. Cl. 52.
Fischel, Victor, Co.: *See*—
Seagram, Joseph E., & Sons, Inc.
Fisk Rubber Co., The, Chicopee Falls, Mass., and Cudahy, Wis., to Uniroyal, Inc., New York, N.Y. 264,829, ren. 9–23–69. Cl. 35.
Flakebord Corp., Falconer, N.Y. 754,336, canc. Cl. 12.
Flambeau Plastics Corp., Baraboo, Wis. 877,352, pub. 7–8–69. Cl. 22.
Floquil Products, Inc., Cobleskill, N.Y. 877,299, pub. 7–8–69. Cl. 16.
Florida Atlas Corp., Windermere, Fla. 754,252, canc. Cl. 39.
Flote-Aire Marine Corp., Middlebury, Ind. 753,986, canc. Cl. 19.
Food Sanitation Consultant Service, to Food Sanitation Consultant Service, Inc., New York, N.Y. 517,668, ren. 9–23–69. Cl. 100.
Food Sanitation Consultant Service, Inc.: *See*—
Food Sanitation Consultant Service.
Food Technics, Inc., Raleigh, N.C. 877,509, pub. 7–8–69. Cl. 46.
Forecast, Inc., St. Louis, Mo. 877,325–6, pub. 7–8–69. Cl. 19.
Forstmann Woolen Co., Passaic, N.J., to J. P. Stevens & Co., Inc., New York, N.Y. 516,734, ren. 9–23–69. Cl. 42.
Fortin Plastics, Inc., Saugus, Calif. 877,568, pub. 7–8–69. Cl. 106.
Frank Tea & Spice Co., The, Cincinnati, Ohio. 877,496, pub. 7–8–69. Cl. 46.
Fredericksz, Vaeveld M., Johannesburg, Republic of South Africa. 754,165, canc. Cl. 34.
Freez-No-Mor, Inc., Menasha, Wis. 877,464, pub. 7–8–69. Cl. 39.
Frito-Lay, Inc.: *See*—
Bel-e Products Co.
Fritzsche Bros., Inc., New York, N.Y. 519,236, ren. 9–23–69. Cl. 45.
Fuller Brush Co., The, East Hartford, Conn. 877,570, Cl. 4.
GAF Corp.: *See*—
General Aniline & Film Corp.
GAI-GMX: *See*—
EG & G International, Inc.
GMX: *See*—
EG & G International, Inc.
Gabriel Co., The, Cleveland, Ohio. 754,102, canc. Cl. 26.
Gallagher Corp., Glenview, Ill. 877,288, pub. 7–8–69. Cl. 13.
General Aniline & Film Corp., to GAF Corp., New York, N.Y. 511,912, ren. 9–23–69. Cl. 6.
General Aniline & Film Corp., to GAF Corp., New York, N.Y. 518,464, ren. 9–23–69. Cl. 37.
General Battery & Ceramic Corp., Reading, Pa. 877,575. Cl. 21.
General Cinema Corp., Boston, Mass. 877,558, pub. 7–8–69. Multiple Class (Classes 100 and 107).
General Electric Co., Schenectady, N.Y. 877,330, pub. 7–8–69. Cl. 21.
General Foods Corp., White Plains, N.Y. 877,586. Cl. 52.
General Hydronics Corp., Oakland, Calif. 754,172, canc. Cl. 34.
General Mills, Inc., Minneapolis, Minn. 877,357, pub. 7–8–69. Cl. 22.
Genistron, Inc., Los Angeles, Calif. 754,088, canc. Cl. 26.
Geophysical Associates International: *See*—
EG & G International, Inc.
Georgetown Manor: *See*—
Dutch Inns of America, Inc.
Gernsback, Hugo, New York, N.Y. 754,202, canc. Cl. 38.
Givaudan Corp.: *See*—
Sindar Corp.
Glasser, Jack: *See*—
Bowling America, Inc.
Godchaux, Leon, Clothing Co., Ltd., The, New Orleans, La. 877,453, pub. 7–8–69. Cl. 39.
Golden Apples Candy Co., Inc., Southport, Conn. 877,489, pub. 7–8–69. Cl. 46.
Golden Eagle Refining Co., Inc.: *See*—
Union Oil Co. of California.
Golding Bros. Co., Inc., New York, N.Y. 754,270, canc. Cl. 42.
Goodman Mfg. Co., to Westinghouse Air Brake Co., Chicago, Ill. 510,997, ren. 9–23–69. Cl. 38.
Goodwin, Dannenbaum, Littman & Wingfield Inc., Houston, Tex. 754,173, canc. Cl. 34.
Gorham Mfg. Co., to Textron Inc., Providence, R.I. 516,315, ren. 9–23–69. Cl. 28.
Gossen, P., & Co. Gesellschaft mit beschrankter Haftung: *See*—
Photoptic Import Corp.
Gould Novelties, Inc., Elmont, N.Y. 754,300, canc. Cl. 46.
Gousha, H. M., Co., The, San Jose, Calif. 877,434, pub. 7–8–69. Cl. 38.
Graboyes, Sidney: *See*—
Kay Jewelry Stores, Inc.
Gravity Meter Exploration Co.: *See*—
EG & G International, Inc.
Great Atlantic & Pacific Tea Co., The, to The Great Atlantic & Pacific Tea Co., Inc., New York, N.Y. 511,272, ren. 9–23–69. Cl. 46.
Great Atlantic & Pacific Tea Co., Inc., The: *See*—
Great Atlantic & Pacific Tea Co., The.
Greenlee Bros. & Co., from Greenlee Bros. & Co., Rockford, Ill. 877,367, pub. 2–25–69. Cl. 23.
Grooman, Homer, Chicago, Ill. 877,446, pub. 7–8–69. Cl. 38.
Grove Valve & Regulator Co., Oakland, Calif. 877,286, pub. 7–8–69. Cl. 13.
Guerlain Perfumery Corp., The, New York, N.Y. 509,651, ren. 9–23–69. Cl. 51.
Gulf States Paper Corp., Tuscaloosa, Ala. 877,256–7, pub. 7–8–69. Cl. 2.
Gump, S. & G., Co. to Gump's, Inc., San Francisco, Calif. 511,836, ren. 9–23–69. Cl. 42.
Gump, S. & G., Co., to Gump's, Inc., San Francisco, Calif. 512,182, ren. 9–23–69. Cl. 39.
Gump, S. & G., Co., to Gump's, Inc., San Francisco, Calif. 513,332, ren. 9–23–69. Cl. 8.
Gump's, Inc.: *See*—
Gump, S. & G., Co.
Gumpert, S., Co., Inc., Jersey City, N.J. 265,408, ren. 9–23–69. Cl. 46.
Gutman-Lann Glove Co., Inc., New York, N.Y. 753,919, canc. Cl. 3.
Gzn, A. Overdevest, & Sons: *See*—
Handelsvennootschap Onder de Firma A. Overdevest Gzn & Zonen.
HMH Publishing Co. Inc., Chicago, Ill. 877,556, pub. 7–8–69. Cl. 100.
Haffenden, W. W., Ltd., Sandwich, England. 754,223, canc. Cl. 39.
Halfhill Co., The, Los Angeles, to Star-Kist Foods, Inc., Terminal Island, Calif. 514,973, ren. 9–23–69. Cl. 46.
Hallberg Canning Corp.: *See*—
Hallberg, O. A., & Sons.
Hallberg, O. A., & Sons, to Hallberg Canning Corp., Sebastopol, Calif. 518,878, ren. 9–23–69. Cl. 46.
Hamilton Humidity, Inc., Chicago, Ill. 877,417, pub. 7–8–69. Cl. 34.

Hamilton Watch Co., Lancaster, Pa. 754,129, canc. Cl. 27.
Hammermill Paper Co., Erie, Pa. 877,427, pub. 7–8–69. Cl. 37.
Handelsvennootschap Onder de Firma A. Overdevest Gzn & Zonen, d.b.a. A. Overdevest Gzn & Sons, Wassenaar, Netherlands. 877,250, pub. 7–8–69. Cl. 1.
Hanlin, Hermine, New York, N.Y. 877,396, pub. 7–8–69. Cl. 28.
Harris, J. W., Co., Inc., Cincinnati, Ohio. 877,416, pub. 7–8–69. Cl. 34.
Harrison Henry B., Brooklyn, N.Y. 754,229, canc. Cl. 39.
Hartz Mountain Products Corp., New York, N.Y. 877,519, pub. 7–8–69. Cl. 50.
Hawaiian Perfumers, Inc., d.b.a. Liana of Waikiki, Honolulu, Hawaii. 877,521, pub. 7–8–69. Cl. 51.
Hayden Book Co., Inc., New York, N.Y. 877,442, pub. 7–8–69. Cl. 38.
Health Facilities, Inc., Beaverton, Oreg. 877,253, pub. 7–8–69. Cl. 2.
Heating Publishers, Inc., Montclair, N.J. 515,427, ren. 9–23–69. Cl. 38.
Herber, James W., San Antonio, Tex. 877,518, pub. 7–8–69. Cl. 50.
Herman, I. C., & Co., Inc., New York, N.Y. 754,212, canc. Cl. 39.
Herold Overseas Publishing Corp., Inc., New York, N.Y. 877,436, 7–8–69. Cl. 38.
Heyen, Johannes, Kreis Aurich, Germany. 877,276, pub. 7–8–69. Cl. 12.
Holeproof Hosiery Co., Milwaukee, Wis., to Kayser-Roth Corp., New York, N.Y. 262,682, ren. 9–23–69. Cl. 39.
Hollingshead, R. M., Corp., Camden, N.J. 443,509, ren. 9–23–69. Cl. 16.
Hornung, Norman, d.b.a. Norman Hornung Services, Yonkers, N.Y. 877,566, pub. 7–8–69. Cl. 105.
Hornung, Norman, Services: *See*— Hornung, Norman.
Horst Associates, Inc., Miami, Fla. 754,140, canc. Cl. 29.
Hounds & Hunting Publishing Co., to Hounds & Hunting, Bradford, Pa. 257,371. Am. 7(d). Cl. 38.
Huber, J. M., Corp., Borger, Tex. 877,428, pub. 7–8–69. Cl. 37.
Hummel Technical Products, Inc., New York, N.Y. 754,147, canc. Cl. 31.
Hunt-Wesson Foods, Inc.: *See*— Ohio Match Co., The.
Hunter Engineering Co.: *See*— American Metal Climax, Inc.
Hunter Engineering Co.: *See*— Hunter, Lee.
Hunter, Lee, d.b.a. Hunter Engineering Co., Bridgeton, Mo. 518,880, ren. 9–23–69. Cl. 26.
Hunter, Lee, d.b.a. Hunter Engineering Co., Bridgeton, Mo. 518,932, ren. 9–23–69. Cl. 26.
Huntingdon Mills, Inc., Philadelphia, Pa. 754,226, canc. Cl. 39.
Ihagee Kamerawerk Aktiengesellschaft, Frankfurt-Am-Main, Germany. 877,384, pub. 2–5–63. Cl. 26.
Illinois Pure Aluminum Co., Lemont, Ill. 516,862, ren. 9–23–69. Cl. 13.
Imperial Chemical Industries Ltd., London, England. 753,925, canc. Cl. 6.
Imperial Knife Associated Companies, Inc., Providence, R.I. 877,365, pub. 7–8–69. Cl. 23.
Information & Research Services, Inc., Roslyn, N.Y. 877,433, pub. 7–8–69. Cl. 38.
Intercontinental Hotels Corp., New York, N.Y. 877,549–50, pub. 7–8–69. Cl. 100.
International Platform Association, The, Cleveland Heights, Ohio. 877,432, pub. 7–8–69. Cl. 38.
International Proteins Corp., New York, N.Y. 877,512, pub. 7–8–69. Cl. 46.
International Telephone & Telegraph Corp., New York, N.Y. 877,346, pub. 7–8–69. Cl. 21.
International Textbook Co., Scranton, Pa. 877,445, pub. 7–8–69. Cl. 38.
Interpace Corp., Parsippany, N.J., from Shanango Ceramics, Inc., New Castle, Pa. 877,405, pub. 7–8–69. Cl. 30.
Interstate Engineering Corp., Anaheim, Calif. 754,033, canc. Cl. 21.
Iowa Limestone Co., Des Moines, Iowa. 877,246, pub. 7–8–69. Cl. 1.
Jeffrey Galion Inc.: *See*— Jeffrey Mfg. Co., The.
Jeffrey Mfg. Co., The, to Jeffrey Galion Inc., Columbus, Ohio. 255,648, ren. 9–23–69. Cl. 23.
Jel Sert Co., The, Bellwood, Ill. 519,292, ren. 9–23–69. Cl. 45.
Jel Sert Co., The, Bellwood, Ill. 877,488, pub. 7–8–69. Cl. 46.
Johnson & Johnson, New Brunswick, N.J., from The Dow Chemical Co., Midland, Mich. 877,317, pub. 7–8–69. Cl. 18.
Johnson & Johnson, New Brunswick, N.J. 877,475, pub. 7–8–69. Cl. 42.
Johnston, Robert A., Co., Milwaukee, Wis. 754,301, canc. Cl. 46.
Jordan & Young, Odessa, Tex. 877,557, pub. 7–8–69. Cl. 100.
Kabushiki Kaisha Hattori Tokeiten, Tokyo, Japan. 877,391, pub. 7–8–69. Cl. 27.
Kaiser Aluminum & Chemical Corp.: *See*— Mexico Refractories Co.
Karen Marie: *See*— Wilmot, June.
Kay Jewelry Stores, Inc., Washington, D.C., from Sidney Graboyes, Philadelphia, Pa. 754,131, canc. Cl. 28.
Kayser-Roth Corp.: *See*— Holeproof Hosiery Co.
Kellogg Co., Battle Creek, Mich. 877,510, pub. 7–8–69. Cl. 46.
Kem Mfg. Corp., Tucker, Ga. 877,541, pub. 7–8–69. Cl. 52.
Kennedy Car Lines & Bag Co., Shelbyville, Ind. 753,915, canc. Cl. 2.
Kern County Land Co., San Francisco, Calif. 877,484–5, pub. 7–8–69. Cl. 46.
Kerr Glass Mfg. Corp., Los Angeles, Calif. 518,904, ren. 9–23–69. Cl. 33.
Kimberly-Clark Corp., Neenah, Wis. 877,425, pub. 7–8–69. Cl. 37.
Kimberly-Clark Corp., Neenah, Wis. 877,479, pub. 7–8–69. Cl. 44.
Kinney Shoe Corp., New York, N.Y. 877,450, pub. 12–27–66. Cl. 39.
Kohinoor Watch & Diamond Corp., Birmingham, Ala. 877,395, pub. 7–8–69. Cl. 28.
Koninklijke Fabrieken Diepenbrock & Reigers N.V., Gendringen, Netherlands. 877,280, pub. 7–8–69. Multiple Class (Classes 13, 24, and 34).
Koppel, Charles, Ring Co. Inc., New York, N.Y. 754,132, canc. Cl. 28.
Koppers Co., Inc., Pittsburgh, Pa. 753,949, canc. Cl. 12.
Koppers Co., Inc., Pittsburgh, Pa. 877,248, pub. 7–8–69. Cl. 1.
Kraft Foods Co., to Kraftco Corp., Chicago, Ill. 516,177, ren. 9–23–69. Cl. 46.
Kraft, Max, Brooklyn, N.Y. 754,139, canc. Cl. 28.
Kraftco Corp.: *See*— Kraft Foods Co. Pickle Products Co.
Laco Corp.: *See*— Lockwood, Adams & Co.
Laitner Brush Co., Detroit, Mich. 512,468, ren. 9–23–69. Cl. 29.
Lakeland Plastics, Inc., Bensenville, Ill. 877,282, pub. 7–8–69. Cl. 13.
La Maur, Inc., Minneapolis, Minn. 877,532, pub. 7–8–69. Cl. 51.
Lamont, Wells, Corp., to Wells Lamont Corp., Chicago, Ill. 516,575, ren. 9–23–69. Cl. 39.
Larus & Bro. Co., d.b.a. Reed Tobacco Co., Branch, Larus & Bro. Co., to Larus & Bro. Co., Richmond, Va. 519,128, ren. 9–23–69. Cl. 17.
Larus & Bro. Co., Richmond, Va. 782,711. Am. 7(d). Cl. 17.
Lawton-York Corp., The, New York, N.Y. 877,430, pub. 7–8–69. Cl. 37.
Lee, H. D., Co., Inc., The, Shawnee Mission, Kans. 877,461, pub. 7–8–69. Cl. 39.
Lee, Wallace N., d.b.a. Master Toy Co., Bloomington, Minn. 754,034, canc. Cl. 22.
Lester Piano Co., Philadelphia, Pa. 330,979, canc. Cl. 36.
Lestrix Co.: *See*— Patton, G. E.
Lever Bros. Co., New York, N.Y. 877,536–7, pub. 7–8–69. Cl. 52.
Levy, Frank, New York, N.Y. 754,138, canc. Cl. 28.
Lawrene Products Co., Chambersburg, Pa. 877,476, pub. 7–8–69. Cl. 42.
Liana of Waikiki: *See*— Hawaiian Perfumers, Inc.
Lieba, Inc., Baltimore, Md. 877,340, pub. 7–8–69. Cl. 21.
Lilly, Eli, & Co., Indianapolis, Ind. 877,266, pub. 7–8–69. Multiple Class (Classes 6 and 10).
Lily-Tulip Cup Corp., New York, N.Y. 877,255, pub. 7–8–69. Cl. 2.
Lincoln Electric Co., The, Cleveland, Ohio. 512,528. Am. 7(d). Cl. 21.
Line Material Co., Milwaukee, Wis., to McGraw-Edison Co., Elgin, Ill. 512,707, ren. 9–23–69. Cl. 21.
Lingk Water Conditioning Equipment, Inc., Libertyville, Ill. 754,048, canc. Cl. 23.
Linton Tweeds Ltd., Carlisle, Cumberland, England. 754,267, canc. Cl. 42.
Little, George P., Co., Inc., The, Cleveland, Ohio. 877,437, pub. 7–8–69. Cl. 38.
Litton Systems, Inc., Beverly Hills, Calif. 754,027, canc. Cl. 21.
Lockwood, Adams & Co., Boston, Mass., to Laco Corp., Baltimore, Md. 72,373, ren. 9–23–69. Cl. 52.
Loeb, Ben S., Inc., New York, N.Y. 754,144, canc. Cl. 30.
Lorillard Corp., New York, N.Y. 877,300–2, pub. 7–8–69. Cl. 17.
Lowell Mfg. Co., St. Louis, Mo. 754,019, canc. Cl. 21.
Ludlow Typograph Co., to Ludlow Typograph Co., Chicago, Ill. 517,183, ren. 9–23–69. Cl. 23.
Lumapac, Inc., Kenilworth, N.J. 877,335, pub. 7–8–69. Cl. 21.
MJB Co., d.b.a. MJB Company, San Francisco, Calif. 877,506, pub. 7–8–69. Cl. 46.
MJB Company: *See*— MJB Co.
Macbeth Corp., Newburgh, N.J. 877,387, pub. 11–28–67. Cl. 26.
MacDonald, E. F., Co., The, Dayton, Ohio. 762,444. Am. 7(d). Cl. 101.
MacDonald, E. F., Co., The, Dayton, Ohio. 762,444, cor. Cl. 101.
Mack Trucks, Inc.: *See*— Brockway Motor Truck Corp.
Macy, R. H., & Co., Inc.: *See*— Bamberger, L., & Co.
Macy, R. H., & Co., Inc., New York, N.Y. 258,513, ren. 9–23–69. Cl. 41.
Maidenform, Inc., New York, N.Y. 877,465, pub. 7–8–69. Cl. 39.
Mallon Poultry & Egg Co., St. Peter, to Mallon Poultry & Egg Co., Inc., Fairmont, Minn. 514,121, ren. 9–23–69. Cl. 46.
Mallon Poultry & Egg Co., Inc.: *See*— Mallon Poultry & Egg Co.

Malsbary Mfg. Co., Oakland, Calif. 877,369, pub. 7–8–69. Cl. 23.
Manoel Moreira Rato & CA (Fos.), to Estabelecimentos Manuel da Silva Torrado & Ca. (Irmaos), Lisbon, Portugal. 260,349, ren. 9–23–69. Cl. 46.
Marathon Oil Co., Findlay, Ohio. 877,345, pub. 7–8–69. Cl. 21.
Marion Mfg. Co., Marion, N.C. 754,262, canc. Cl. 42.
Mars, Inc., Wilmington, Del. 877,511, pub. 7–8–69. Cl. 46.
Mask-O-Matic, Inc., Hawthorne, N.J. 754,067, canc. Cl. 23.
Mason Envelope Co. Inc., New York, N.Y. 754,349, canc. Cl. 23.
Master Toy Co.: *See*— Lee, Wallace N.
Mattel, Inc., Hawthorne, Calif. 877,351, pub. 7–8–69. Cl. 22.
Mattel, Inc., Hawthorne, Calif. 877,354–6, pub. 7–8–69. Cl. 22.
McCain-Wright, Inc., to Swopes Red Cross Shoes, Inc., St. Louis, Mo. 252,469. Am. 7(d). Cl. 39.
McCallum & Craigie Ltd., High Blantyre, United Kingdom. 255,879, ren. 9–23–69. Cl. 42.
McGraw-Edison Co.: *See*— American Laundry Machinery Co., The. Line Material Co.
McGraw-Edison Co., d.b.a. Alrectic Division, Elgin, Ill. 753,947, canc. Cl. 12.
McGraw-Edison Co., Elgin, Ill. 877,379, pub. 7–8–69. Cl. 23.
Meadtex Fabrics Co., Inc., New York, N.Y. 877,474, pub. 7–8–69. Cl. 42.
Meat Separator Corp., Dalton, Ga. 877,362, pub. 7–8–69. Cl. 23.
Mermet & Virthner, Villeurbanne (Rhone), France. 877,368, pub. 7–8–69. Cl. 23.
Metallgesellschaft Aktiengesellschaft, Frankfurt am Main, Germany. 753,965, canc. Cl. 14.
Mexico Refractories Co., Mexico, Mo., to Kaiser Aluminum & Chemical Corp., Oakland, Calif. 512,192–3, ren. 9–23–69. Cl. 12.
Mexico Refractories Co., Mexico, Mo., to Kaiser Aluminum & Chemical Corp., Oakland, Calif. 512,208, ren. 9–23–69. Cl. 12.
Meyer Chemical Co., to Meyer Laboratories, Inc., Detroit, Mich. 508,640, ren. 9–23–69. Cl. 18.
Meyer Laboratories, Inc.: *See*— Meyer Chemical Co.
Midwest Foil & Packaging, Inc., St. Paul, Minn. 754,065, canc. Cl. 23.
Miles Laboratories, Inc.: *See*— Dr. Miles Medical Co.
Miles Laboratories, Inc., Elkhart, Ind. 877,303, pub. 7–8–69. Cl. 18.
Milling Specialties Inc., Detroit, Mich. 877,378, pub. 7–8–69. Cl. 23.
Mini-Mates Creations, Inc., New York, N.Y. 877,398, pub. 7–8–69. Cl. 28.
Minneapolis-Honeywell Regulator Co., Minneapolis, Minn. 754,006, canc. Cl. 21.
Minnesota Mining & Mfg. Co., to Minnesota Mining & Mfg. Co., St. Paul, Minn. 515,733, ren. 9–23–69. Cl. 5.
Minnesota Mining & Mfg. Co., St. Paul, Minn. 877,360, pub. 7–8–69. Cl. 22.
Minnesota Mining & Mfg. Co., St. Paul, Minn. 877,480, pub. 7–1–69. Cl. 44.
Mr. Arnold Actualite, Inc.: *See*— Mr. Arnold, Inc.
Mr. Arnold, Inc., from Mr. Arnold Actualite, Inc., New York, N.Y. 754,221, canc. Cl. 39.
Mr. Bar-B-Q, Inc., Miami, Fla. 877,559, pub. 7–8–69. Cl. 100.
Mitchell Industries, Inc., Mineral Wells, Tex. 754,124, canc. Cl. 26.
Mobil Oil Corp.: *See*— Vacuum Oil Co.
Moline Malleable Iron Co., St. Charles, Ill. 877,281, pub. 7–8–69. Cl. 13.
Moore, Doris, of California, Inc., Long Beach, Calif. 877,451, pub. 7–8–69. Cl. 39.
Moorman Mfg. Co., Quincy, Ill. 519,229, ren. 9–23–69. Cl. 46.
Moran Shoe Co., Carlyle, Ill. 754,214, canc. Cl. 39.
Morton International, Inc., Chicago, Ill. 877,411, pub. 7–8–69. Multiple Class (Classes 32 and 46).
Morton Salt Co., to Morton International, Inc., Chicago, Ill. 103,357. Am. 7(d). Cl. 46.
Morton Salt Co., to Morton International, Inc., Chicago, Ill. 511,639. Am. 7(d). Cl. 46.
Mossberg Pressed Steel Corp., Attleboro, Mass., to Wanskuck Co., Cumberland, R.I. 518,400, ren. 9–23–69. Cl. 23.
Mosse, Inc., New York, N.Y. 754,272, canc. Cl. 42.
Mud Control Laboratories, Inc., Oklahoma City, Okla. 753,932, canc. Cl. 6.
Muir, E. O., & Co., to Muir-Roberts Co., Inc., Salt Lake City, Utah. 518,257, ren. 9–23–69. Cl. 46.
Muir-Roberts Co., Inc.: *See*— Muir, E. O., & Co.
Mulhens, Peter, d.b.a. Eau de Cologne- & Parfumerie-Fabrik, "Glockengasse No. 4711" Gegenuber der Pferedepost Von Ferd. Mulhens, Cologne-on-the-Rhine, to Ferdinand Mulhens, Cologne, Germany. 265,197, ren. 9–23–69. Cl. 51.
Murphy, Thos. D., Co., The, Red Oak, Iowa. 877,431, pub. 7–8–69. Cl. 38.
Music Specialties, Inc., Mercer Island, Wash. 877,419, pub. 7–8–69. Cl. 36.
Namm & Singer, Inc., New York, N.Y. 877,468, pub. 7–8–69. Cl. 40.
Namrah Records, Inc., Evanston, Ill. 754,187, canc. Cl. 36.
National Biscuit Co., New York, N.Y. 877,487, pub. 7–8–69. Cl. 46.
National Biscuit Co., New York, N.Y. 877,498–9, pub. 7–8–69. Cl. 46.
National Biscuit Co., New York, N.Y. 877,501, pub. 7–8–69. Cl. 46.
National Biscuit Co., New York, N.Y. 877,508, pub. 7–8–69. Cl. 46.
National Cylinder Gas Co., to Chemetron Corp., Chicago, Ill. 511,702, ren. 9–23–69. Cl. 6.
National Periodical Publications, Inc., New York, N.Y. 877,448, pub. 7–8–69. Cl. 38.
National Plastic Products Co., Inc., Odenton, Md. 754,280, canc. Cl. 43.
National Waterproofing Co., Camden, to National Waterproof Papers, Inc., Beverly, N.J. 507,018–20, ren. 9–23–69. Cl. 37.
National Waterproofing Co., Camden, to National Waterproof Papers, Inc., Beverly, N.J. 511,345, ren. 9–23–69. Cl. 37.
National Waterproof Papers, Inc.: *See*— National Waterproofing Co.
Nestle-Lemur Co., The, New York, N.Y. 877,524, pub. 7–8–69. Cl. 51.
New Plastic Corp., Los Angeles, Calif. 877,572–3. Cl. 12.
Noble, Benj., Inc., Philadelphia, Pa. 877,454, pub. 7–8–69. Cl. 39.
Norcross, Inc., New York, N.Y. 877,443, pub. 7–8–69. Cl. 38.
Norcross, Inc., New York, N.Y. 877,447, pub. 7–8–69. Cl. 38.
Norden Laboratories, Inc., Lincoln, Nebr. 877,310–11, pub. 7–8–69. Cl. 18.
North American Nutria Associates, Atlanta, Tex. 754,236, canc. Cl. 39.
Northeast Cutter Service & Mfg. Corp., Farmingdale, N.Y. 877,363, pub. 7–8–69. Cl. 23.
Novo Industrial Corp., New York, N.Y. 754,155, canc. Cl. 32.
Ohio Match Co., The, Wadsworth, Ohio, to Hunt-Wesson Foods, Inc., Fullerton, Calif. 509,704, ren. 9–23–69. Cl. 9.
Old Dominion Candies, Inc., Roanoke, Va. 877,503, pub. 7–8–69. Cl. 46.
Olin Industries, Inc., East Alton, Ill., to Olin Mathieson Chemical Corp., New Haven, Conn. 512,735, ren. 9–23–69. Cl. 22.
Olin Mathieson Chemical Corp.: *See*— Olin Industries, Inc.
Omstead Fisheries 1961 Ltd., Wheatley, Ontario, Canada. 877,504, pub. 7–8–69. Cl. 46.
O'Shaughnessy, Dewes & Klein, Inc., New York, N.Y. 754,249, canc. Cl. 39.
Ox Fibre Brush Co., Inc., Frederick, Md., to Vistron Corp., Cleveland, Ohio. 511,362–3, ren. 9–23–69. Cl. 29.
P.M.C. Co., Inc., Swedesboro, N.J. 877,507, pub. 7–8–69. Cl. 46.
Padre Vineyard Co.: *See*— United Vintners Inc.
Pan American Barter Co., Inc., New York, N.Y. 877,392, pub. 7–8–69. Cl. 27.
Pandora Productions, Inc., Wayzata, Minn. 877,440, pub. 7–8–69. Cl. 38.
Par-Metal Products Corp., Long Island City, N.Y. 509,416, ren. 9–23–69. Cl. 21.
Parrott Chemical Co., The: *See*— Parrott, William C.
Parrott, William C., d.b.a. The Parrott Chemical Co., Stamford, Conn. 263,232, ren. 9–23–69. Cl. 6.
Parsons & Baker Co., The, Phoenixville, Pa. 754,253, canc. Cl. 39.
Pastene & Co. Inc., New York, N.Y. 510,731, ren. 9–23–69. Cl. 18.
Patent Cereals Co., The, Geneva, N.Y., to Patent Cereals Corp., Danville, Ill. 258,840, ren. 9–23–69. Cl. 5.
Patent Cereals Co., The, Geneva, N.Y., to Patent Cereals Sales Corp., Danville, Ill. 263,920, ren. 9–23–69. Cl. 16.
Patent Cereals Sales Corp.: *See*— Patent Cereals Co., The.
Patou, Jean, Inc.: *See*— Patou, Jean, Societe Anonyme.
Patou, Jean, Inc., New York, N.Y. 511,714, ren. 9–23–69. Cl. 51.
Patou, Jean, Societe Anonyme, Paris France, to Jean Patou, Inc., New York, N.Y. 258,643, ren. 9–23–69 Cl. 51.
Patou, Jean, Societe Anonyme, Paris France, to Jean Patou, Inc., New York, N.Y. 258,645, ren. 9–23–69. Cl. 51.
Patterson, Wallace D., and J. Ronald Walker, d.b.a. Trails West, Milwaukee, Oreg. 877,324, pub. 7–8–69. Cl. 19.
Patton, G. E., d.b.a. Lestrix Co., Portland, Oreg. 877,349, pub. 7–8–69. Cl. 22.
Pauer, Edward E., d.b.a. Babylon Products Co., Waukesha, Wis. 753,916, canc. Cl. 2.
Pe Jay Jewelers, Inc., New York, N.Y. 754,130, canc. Cl. 27.
Pelton & Leru, Inc., New York, N.Y. 877,394, pub. 7–8–69. Cl. 28.
Penn Central Co., Philadelphia, Pa. 877,567, pub. 7–8–69. Cl. 105.
Perera Express Co., Inc., New York, N.Y. 872,350, canc. Cl. 102.
Perk Foods Co., Chicago, Ill. 877,495, pub. 7–8–69. Cl. 46.
Permag Corp., Jamaica, N.Y. 877,331, pub. 7–8–69. Cl. 21.
Permalin Products Corp., Port Washington, N.Y. 877,423, pub. 7–8–69. Cl. 37.
Petersen, Einar E., Long Beach, Calif. 754,112, canc. Cl. 26.
Pfizer, Chas., & Co., Inc., New York, N.Y. 877,321, pub. 7–8–69. Cl. 18.
Pfizer, Chas., & Co., Inc., New York, N.Y. 877,529, pub. 7–8–69. Cl. 51.
Philips Roxane, Inc., New York, N.Y. 753,985, canc. Cl. 18.
Photoptic Import Corp., New York, N.Y., from P. Gossen & Co. Gesellschaft mit beschraenkter Haftung, Erlangen, Bayern, Germany. 754,086, canc. Cl. 26.

Phylchris Corp., d.b.a. The Catamore Co., Providence, R.I. 877,401, pub. 7–8–69. Cl. 28.
Pickle Products Co., Baltimore, Md., to Kraftco Corp., Chicago, Ill. 263,156, ren. 9–23–69. Cl. 46.
Pictorial Publishers, Inc., Indianapolis, Ind. 877,359, pub. 7–8–69. Cl. 22.
Piggy Bank Stations, Inc., El Paso, Tex. 877,293, pub. 7–8–69. Cl. 15.
Pike, Robert D., Jr., Sierra Madre, Calif. 754,296, canc. Cl. 45.
Pioneer Products, Inc., Ocala, Fla. 877,294, pub. 7–8–69. Cl. 15.
Piscitelli, C. P., d.b.a. Seneca Novelty & Printing Co., Seneca Falls, N.Y., to The Acme Shear Co., Bridgeport, Conn. 512,-215, ren. 9–23–69. Cl. 26.
Pit & Quarry Publications, Inc.: *See*— Complete Service Publishing Co.
Pix of America, Inc., Miami, Fla. 877,463, pub. 7–8–69. Cl. 39.
Playskool, Inc.: *See*— Playskool Mfg. Co.
Playskool, Inc., from Playskool Mfg. Co., Chicago, Ill. 877,350, pub. 3–18–69. Multiple Class (Classes 22 and 32).
Playskool Mfg. Co., to Playskool, Inc., Chicago, Ill. 513,310–11, ren. 9–23–69. Cl. 22.
Playskool Mfg. Co.: *See*— Playskool, Inc.
Ponti Roma, Inc., New York, N.Y. 754,241, canc. Cl. 39.
Positive Products Laboratories, Inc.: *See*— Scrubbee Products Corp.
Precision Photography, Inc., Fullerton, Calif. 877,388, pub. 7–8–69. Cl. 26.
Precision Specialties, Inc., Pitman, N.J. 754,023, canc. Cl. 21.
Principle Plastics, Inc., Gardena, Calif. 754,205, canc. Cl. 39.
Procter & Gamble Co., Cincinnati, Ohio. 877,543, pub. 7–8–69. Cl. 52.
Procter & Gamble Co., The, Cincinnati, Ohio. 877,545–8, pub. 7–8–69. Cl. 52.
Property Identification Service, Inc., Portland, Oreg. 877,555, pub. 7–8–69. Cl. 100.
Pro-Phy-Lac-Tic Brush Co.: *See*— Standard Oil Co., The.
Purdue Frederick Co., The, Yonkers, N.Y. 877,318, pub. 7–8–69. Cl. 18.
Purex Corp., Ltd., d.b.a. Turco Products, Inc., Lakewood, Calif. 877,542, pub. 7–8–69. Cl. 52.
Puritan Fashions Corp., New York, N.Y. 754,230, canc. Cl. 39.
Puritan Sportswear Corp., The, Altoona, Pa. 754,248, canc. Cl. 39.
Pursweet, Inc., St. Louis, Mo. 754,362, canc. Cl. 46.
Quick-Set, Inc., Skokie, Ill. 517,576, ren. 9–23–69. Cl. 26.
Quinn, David H., Washington, D.C. 753,903, canc. Cl. 2.
Quorum Fabrics Inc., New York, N.Y. 877,470, pub. 7–8–69. Cl. 42.
RCA Corp., from Radio Corp. of America, New York, N.Y. 877,343–4, pub. 7–8–69. Cl. 21.
Radio Corp. of America: *See*— RCA Corp.
Rand Associates Inc., Boston, Mass. 754,153, canc. Cl. 32.
Reed & Prince Mfg. Co., Worcester, Mass. 877,285, pub. 7–8–69. Cl. 13.
Reed Tobacco Co., Branch, Larus & Brother Co.: *See*— Larus & Brother Co.
Reef Industries, Inc., East Detroit, to Reef Mfg. Co., Northville, Mich. 517,293, ren. 9–23–69. Cl. 26.
Reef Mfg. Co.: *See*— Reef Industries, Inc.
Renauld of France: *See*— Botany Industries, Inc.
Revlon, Inc., New York, N.Y. 754,295, canc. Cl. 44.
Reynolds, R. J., Tobacco Co., Winston-Salem, N.C. 753,974, canc. Cl. 17.
Rhode Island Textile Co., Pawtucket, R.I. 516,982, ren. 9–23–69. Cl. 40.
Rich Mfg. Corp., to Federal-Mogul Corp., Southfield, Mich. 593,621. Am. 7(d). Cl. 23.
Richelieu Corp., The, Holbrook, N.Y. 877,397, pub. 7–8–69. Cl. 28.
Rio-Tex Citrus Association, Edinburg, Tex. 877,493–4, pub. 7–8–69. Cl. 46.
Robbins Co., The, Attleboro, Mass. 754,135, canc. Cl. 28.
Robertshaw-Fulton Controls Co., to Robertshaw Controls Co., Greensburg, Pa. 557,486. Am. 7(d). Cl. 26.
Robertshaw-Fulton Controls Co., to Robertshaw Controls Co., Greensburg, Pa. 570,384. Am. 7(d). Cl. 21.
Robertshaw-Fulton Controls Co., to Robertshaw Control Co., Greensburg, Pa. 571,240. Am. 7(d). Cl. 13.
Robertshaw-Fulton Controls Co., to Robertshaw Controls Co., Greensburg, Pa. 571,355. Am. 7(d). Cl. 34.
Robertshaw-Fulton Controls Co., to Robertshaw Controls Co., Greensburg, Pa. 580,960. Am. 7(d). Cl. 35.
Robertshaw-Fulton Controls Co., to Robertshaw Controls Co., Greensburg, Pa. 592,990. Am. 7(d). Cl. 26.
Robertshaw-Fulton Controls Co., to Robertshaw Controls Co., Greensburg, Pa. 613,969. Am. 7(d). Cl. 34.
Robertshaw-Fulton Controls Co., to Robertshaw Controls Co., Greensburg, Pa. 615,245. Am. 7(d). Cl. 21.
Robertshaw-Fulton Controls Co., to Robertshaw Controls Co., Greensburg, Pa. 620,218. Am. 7(d). Cl. 13.
Roced Manufacturers Inc., Fayetteville, N.Y. 877,520, pub. 7–8–69. Cl. 50.
Rockbestos Products Corp., New Haven, Conn., to Cerro Corp., New York, N.Y. 517,487, ren. 9–23–69. Cl. 21.
Rohm & Haas Co., Philadelphia, Pa. 877,268, pub. 7–8–69. Cl. 6.
Roll-O-Matic Stage Equipment Corp.: *See*— Automatic Devices Co.
Rootes Motors Ltd., London, England. 877,322, pub. 7–8–69. Cl. 19.
Rue Publishing: *See*— Barclay, Rue G.
SCM Corp., Cleveland, Ohio. 877,298, pub. 7–8–69. Cl. 16.
STP Corp., Des Plaines, Ill. 877,292, pub. 7–8–69. Cl. 15.
Samsing, Rolf A., Braintree, Mass. 877,328, pub. 6–3–69. Cl. 19.
Sandell Co., The, Wilmington, Del. 877,381, pub. 7–8–69. Cl. 23.
Sanderson, William, & Son Ltd., Leith, Edinburg, Scotland. 877,517, pub. 7–8–69. Cl. 49.
Sanford Ink Co., Bellwood, Ill. 877,424, pub. 7–8–69. Cl. 37.
Sanitek Products Co., to Sanitek Products, Inc., Los Angeles, Calif. 443,173, ren. 9–23–69. Cl. 52.
Sanitek Products, Inc.: *See*— Sanitek Products Co.
Schlumberger Ltd., d.b.a. Virtue Bros. Mfg. Co., Compton, Calif. 877,409, pub. 7–8–69. Cl. 32.
Schoeneman, J., Inc., Baltimore, to J. Schoeneman, Inc., Owings Mills, Md. 512,196, ren. 9–23–69. Cl. 39.
Schwab, H. W., Textile Corp., New York, N.Y. 517,955, ren. 9–23–69. Cl. 42.
Scripto, Inc., Atlanta, Ga. 877,429, pub. 7–8–69. Cl. 37.
Scrubbee Products Corp., Newark, N.J., from Positive Products Laboratories, Inc., Long Island City, N.Y. 754,322, canc. Cl. 52.
Seagram, Joseph E., & Sons, Inc., d.b.a. Victor Fischel Co., New York, N.Y. 877,515, pub. 5–14–68. Cl. 49.
Searle, G. D., & Co., Skokie, Ill. 753,978, canc. Cl. 18.
Sea-Wide Industries, Inc., Philadelphia, Pa. 754,142, canc. Cl. 29.
Seidelmann, Ernst, Corp., New York, N.Y. 515,046, ren. 9–23–69. Cl. 12.
Seneca Novelty & Printing Co.: *See*— Piscitelli, C. P.
Sensation Mfg. Co., Ralston, Nebr. 877,377, pub. 7–8–69. Cl. 23.
Seton Leather Co., Newark, N.J. 877,244, pub. 7–8–69. Cl. 1.
Shenango Ceramics, Inc.: *See*— Interpace Corp.
Sherrod Bros, Inc., Milwaukee, Wis. 877,576. Cl. 23.
Shulton, Inc.: *See*— Walton, Chester E.
Siddall, Stanley G., d.b.a. Siddall's Welding & Equipment Co., Orangeville, Ontario, Canada. 754,051, canc. Cl. 23.
Siddall's Welding & Equipment Co.: *See*— Siddall, Stanley G.
Signet Corp., The, Chicago, Ill. 759,774, canc. Cl. 46.
Silver Knit Hosiery Mills, Inc., High Point, N.C. 754,234, canc. Cl. 39.
Simonds Saw & Steel Co., to Wallace-Murray Corp., Fitchburg, Mass. 264,872, ren. 9–23–69. Cl. 23.
Simplex Valve & Meter Co., Philadelphia, Pa., to Sybron Corp., Rochester, N.Y. 264,913, ren. 9–23–69. Cl. 26.
Sindar Corp., New York, N.Y., to Givaudan Corp., Clifton, N.J. 516,940, ren. 9–23–69. Cl. 6.
Singer, Arnold A., d.b.a. Zipco, Union, N.J. 877,466, pub. 7–8–69. Cl. 40.
Sirco Products Co., Inc., Mount Vernon, N.Y. 877,260–1, pub. 7–8–69. Cl. 3.
Slant/Fin Corp., The, Greenvale, N.Y. 877,418, pub. 7–8–69. Cl. 34.
Slatten, Fred, Beverly Hills, Calif. 877,456, pub. 7–8–69. Cl. 39.
Smith Engineering Works, Milwaukee, Wis., to Barber-Green Co., Aurora, Ill. 515,271, ren. 9–23–69. Cl. 23.
Smith, Jim, Columbus, Ohio. 754,364, canc. Cl. 46.
Smith, Kline & French Laboratories, Philadelphia, Pa. 877,-320, pub. 7–8–69. Cl. 18.
Smith, Miller & Patch, Inc., New York, N.Y. 877,313, pub. 7–8–69. Cl. 18.
Sobolik Building Corp., Westchester, Ill. 877,561, pub. 7–8–69. Cl. 101.
Societe Anonyme Compagnie Francaise des Parfums G'Orsay: *See*— D'Orsay Perfumeries Corp.
Societe Anonyme de la Benedictine, Distillerie de la Liqueur de l'Ancienne Abbaye de Fecamp, to Benedictine, Distillerie la Liqueur de l'Ancienne, Abbaye de Fecamp, Fecamp, France. 259,339, ren. 9–23–69. Cl. 46.
Sodastream Ltd., Harlow, Essex, England. 877,361, pub. 7–8–69. Multiple Class (Classes 23 and 45).
Solar Steel Corp., Cleveland, Ohio. 517,531, ren. 9–23–69. Cl. 14.
Sorg Paper Co., The, Middletown, Ohio. 877,422, pub. 7–8–69. Multiple Class (Classes 37 and 44).
Sosine, E. H., Co.: *See*— Sosine, Elmer H.
Sosine, Elmer H., d.b.a. E. H. Sosine Co., Seattle, Wash. 754,371, canc. Cl. 52.
South Dakota Alumnae Chapter of Zeta Phi Eta, Vermillion, S. Dak. 754,199, canc. Cl. 36.
Speed-O-Laq Products Co., Inc., St. Paul, Minn. 754,339, canc. Cl. 16.
Spencer Thermostat Co., to Metals & Controls Corp., Attleboro, Mass., to Texas Instruments Inc., Dallas, Tex. 509,-972, ren. 9–23–69. Multiple Class (Classes 13, 21, 26, and 34).
Spurlock & Carter Co., Inc., Nashville, Tenn. 753,941, canc. Cl. 12.
Squibb, E. R., & Sons, Inc., New York, N.Y. 877,312, pub. 7–8–69. Cl. 18.
Standard Oil Co., The, Cleveland, Ohio, from Pro-Phy-Lac-Tic Brush Co., Florence, Mass. 754,143, canc. Cl. 29.

Stanley Home Products, Inc., Westfield, Mass. 877,407, pub. 7–8–69. Cl. 40.
Stark, Wetzel & Co. Inc., Indianapolis, Ind. 754,297, canc. Cl. 46.
Star-Kist Foods, Inc.: *See*— Halfhill Co., The.
Starline Inc., to Starline, Inc., Harvard, Ill. 515,082, ren. 9–23–69. Cl. 12.
Stephen-Rajki, Inc., Cleveland, Ohio. 754,258, canc. Cl. 39.
Sterling Drug Inc.: *See*— Farbwerke Vormals Meister Lucius & Bruning.
Sterling Drug Inc., New York, N.Y. 877,309, pub. 7–8–69. Cl. 18.
Sternco Industries, Inc., Harrison, N.J. 877,263, pub. 7–8–69. Multiple Class (Classes 3 and 46).
Stetson, John B., Co., from John B. Stetson Co., Philadelphia, Pa. 877,449, pub. 10–4–66. Cl. 39.
Stevens, J. P., & Co., Inc.: *See*— Forstmann Woolen Co.
Stewart's Inc., Rye, N.Y. 796,035, cor. Cl. 46.
Strathmore Products Inc., Syracuse, N.Y. 877,291, pub. 7–8–69. Cl. 15.
Streater Industries, Inc., Albert Lea, Minn. 877,410, pub. 7–8–69. Cl. 32.
Stretchova Ltd., Market Harborough, England. 877,473, pub. 7–8–69. Cl. 42.
Strickland, J., & Co., Memphis, Tenn. 754,319, canc. Cl. 51.
Strong Hewat & Co., Inc., North Adams, Mass. 754,271, canc. Cl. 42.
Stuart, D. A., Oil Co., Ltd., Chicago, Ill. 518,912, ren. 9–23–69. Cl. 15.
Styro Toy Corp., McAllen, Tex. 754,036, canc. Cl. 22.
Sumitomo Shoji New York, Inc., San Francisco, Calif. 877,-269, pub. 7–8–69. Cl. 7.
Sunkist Growers, Inc.: *See*— Exchange Orange Products Co., The.
Supreme Mills, Inc.: *See*— Victorius, A. V., & Co.
Swanson, Milton R., d.b.a. Wayside Industries, Marlboro, Mass. 753,823. canc. Cl. 46.
Swift & Co., Chicago, Ill. 753,931, canc. Cl. 6.
Swimrite Mfg. Co., Inc., Van Nuys, Calif. 877,406, pub. 7–8–69. Cl. 31.
Sybron Corp.: *See*— Simplex Valve & Meter Co.
Syntron Co., Homer City, Pa., to FMC Corp., Chicago, Ill. 514,810, ren. 9–23–69. Cl. 21.
TDK Electronics Co., Ltd., Tokyo, Japan. 877,334, pub. 7–8–69. Multiple Class (Classes 21, 26, and 36).
Tahiti Musique, Los Angeles, Calif. 754,190, canc. Cl. 36.
Tann Corp., The, Detroit, Mich. 754,012, canc. Cl. 21.
Taylor, Thomas, & Sons Inc., Hudson, Mass. 518,898, ren. 9–23–69. Cl. 40.
Taylor, Warren E., d.b.a. Triumph Records, Westwood, Mass. 754,186, canc. Cl. 36.
Teen Age Republicans: *See*— Wells, Barbara M.
Tenneco Chemicals, Inc., New York, N.Y. 877,296, pub. 7–8–69. Cl. 16.
Texas Instruments Inc.: *See*— Spencer Thermostat Co.
Texize Chemicals, Inc., Greenville, S.C. 754,403, cor. Cl. 4.
Texize Chemicals, Inc., Greenville, S.C. 778,302, cor. Cl. 51.
Textron Inc.: *See*— Gorham Mfg. Co.
Tico Taco Mexican Food Products Co.: *See*— Contreras, Waldo L.
Time Products Ltd., London, England. 877,393, pub. 7–8–69. Cl. 27.
Toa Gosei Chemical Industry Co. Ltd., Tokyo, Japan. 877,265, pub. 7–8–69. Cl. 5.
Tombill Corp., Franklin Park, Ill. 877,275, pub. 5–2–67. Cl. 12.
Torres, Miguel, Barcelona, Spain. 877,514, pub. 7–8–69. Cl. 49.
Tracy, L. M., d.b.a. Tracy-Waldron Co., Phoenix, Ariz. 523,-430. canc. Cl. 46.
Tracy-Waldron Co.: *See*— Tracy, L. M.
Trade Winds Campers, Inc.: *See*— Trade Winds Co., Inc.
Trade Winds Co., Inc., from Trade Winds Campers, Inc., Manawa, Wis. 846,164, canc. Cl. 19.
Trails West: *See*— Patterson, Wallace D., and J. Ronald Walker.
Trico Products Corp., Buffalo, N.Y. 443,044. Am. 7(d). Cl. 19.
Tripper Enterprises, Inc., Freedom, Calif. 877,329, pub. 7–8–69. Cl. 19.
Triumph Records: *See*— Taylor, Warren E.
Tru-Mark Paper Corp., Long Island City, N.Y. 754,352, canc. Cl. 37.
Tulareloft, Inc., Tulare, Calif. 753,989, canc. Cl. 19.
Turco Products, Inc.: *See*— Purex Corp., Ltd.
U.F. Chemical Corp., Woodside, N.Y. 877,272, pub. 7–8–69. Cl. 10.
Uarco Inc., Barrington, Ill. 515,276, ren. 9–23–69. Cl. 37.
Unimed, Inc., Madison, N.J., from United Medical Products Co., Inc., Hopkins, Minn. 754,289–90, canc. Cl. 44.
Union Bag & Paper Co., The, to Union Bag & Paper Corp., New York, N.Y. 74,618. Am. 7(d). Cl. 2.
Union Carbide Corp., New York, N.Y. 877,258, pub. 7–8–69. Cl. 2.
Union Oil Co. of Calif., to Golden Eagle Refining Co., Inc., Los Angeles, Calif. 264,371, ren. 9–23–69. Cl. 15.
Unique Zipper Distributing Co., Seattle, Wash. 877,284, pub. 7–8–69. Cl. 13.
Uniroyal, Inc.: *See*— Fisk Rubber Co., The.
United Artists Records, Inc., New York, N.Y. 754,198, canc. Cl. 36.
United-Carr Fastener Corp., Cambridge, Mass., to United-Carr Inc., Boston, Mass. 515,518, ren. 9–23–69. Cl. 13.
United-Carr Inc.: *See*— United-Carr Fastener Corp.
United Medical Products Co.: *See*— Unimed, Inc.
United Merchants & Manufacturers, Inc., New York, N.Y. 754,278, canc. Cl. 42.
United Merchants & Manufacturers, Inc., New York, N.Y. 877,295, pub. 7–8–69. Cl. 15.
United Vintners Inc., d.b.a. Padre Vineyard Co., San Francisco, Calif. 877,513, pub. 7–8–69. Cl. 47.
U.S. Plywood-Champion Papers Inc., New York, N.Y. 877,-279, pub. 7–8–69. Cl. 12.
United States Rubber Co., New York, N.Y. 173,495, canc. Cl. 39.
United States Rubber Co., New York, N.Y. 754,069, canc. Cl. 23.
Vacuum Oil Co., Rochester, to Mobil Oil Corp., New York, N.Y. 33,600, ren. 9–23–69. Cl. 15.
Van Gard: *See*— Cobe Sales, Inc.
Vander Wilt Mfg. Co., Hospers, Iowa. 753,995, canc. Cl. 19.
Victor Comptometer Corp.: *See*— Worthington Ball Co., The.
Victorius, A. V., & Co., New York, N.Y., to Supreme Mills, Inc., Chilhowie, Va. 259,775, ren. 9–23–69. Cl. 39.
Vikoa, Inc., Hoboken, N.J. 877,333, pub. 7–8–69. Multiple Class (Classes 21, 23, and 26).
Virginia Aerosol: *See*— Chem-Pak, Inc.
Virginia Dare Extract Co., Inc., Brooklyn, N.Y. 877,580. Cl. 46.
Virtue Bros. Mfg. Co.: *See*— Schlumberger Ltd.
Vistron Corp.: *See*— Ox Fibre Brush Co., Inc.
Vitamix Pharmaceuticals, Inc., Philadelphia, Pa. 753,980, canc. Cl. 18.
Voit, W. J., Rubber Corp., Santa Ana, Calif. 877,353, pub. 7–8–69. Cl. 22.
Vueline Marking Products: *See*— Canada Stamp & Stencil Co. Ltd.
Wallace-Murray Corp.: *See*— Simonds Saw & Steel Co.
Waltham Watch Co.: *See*— American Waltham Watch Co.
Walton, Chester E., Inglewood, Calif., to Shulton, Inc., Clifton, N.J. 263,058, ren. 9–23–69. Cl. 51.
Wanskuck Co.: *See*— Mossberg Pressed Steel Corp.
Warner-Lambert Pharmaceutical Co., Morris Plains, N.J. 754,340, canc. Cl. 18.
Warrior Investments, Inc., Tuscaloosa, Ala. 877,399–400, pub. 7–8–69. Cl. 28.
Warwick Chemical Co., West Warwick, R.I. 402,628, canc. Cl. 6.
Waukesha Motor Co., Waukesha, Wis. 754,018, canc. Cl. 21.
Waukesha Motor Co., Waukesha, Wis. 754,060, canc. Cl. 23.
Wayside Industries: *See*— Swanson, Milton R.
Weaver, W. R., Co.: *See*— Weaver, William R.
Weaver, William R., d.b.a. W. R. Weaver Co., El Paso, Tex. 753,936, canc. Cl. 9.
Weaver, William R., d.b.a. W. R. Weaver Co., El Paso, Tex. 754,117–18, canc. Cl. 26.
Weil, Gabe B., Dallas, Tex. 754,325, canc. Cl. 52.
Weiss, Louis, Umbrellas Inc., New York, N.Y. 754,260, canc. Cl. 41.
Weiblit Corp.: *See*— Detroit-Michigan Stove Co.
Wellcome Foundation, Ltd., The, London, England. 753,982, canc. Cl. 18.
Wells, Barbara M., d.b.a. Teen Age Republicans, Washington, D.C. 877,439, pub. 7–8–69. Cl. 38.
Wells Lamont Corp., to Wells Lamont Corp., Chicago, Ill. 517,245, ren. 9–23–69. Cl. 39.
Welsh Co., St. Louis, Mo. 516,832, ren. 9–23–69. Cl. 22.
Wessanen's Koninklijke Fabrieken N.V., Wormerveer, Netherlands. 877,490–1, pub. 7–8–69. Cl. 46.
West Virginia Pulp & Paper Co., to Westvaco Corp., New York, N.Y. 516,615, ren. 9–23–69. Cl. 31.
Western Girl, Inc., San Francisco, Calif. 877,563, pub. 7–8–69. Cl. 101.
Westinghouse Air Brake Co.: *See*— Goodman Mfg. Co.
Westvaco Corp.: *See*— West Virginia Pulp & Paper Co.
Wheelco Instruments Co., Chicago, to Barber-Colman Co., Rockford, Ill. 517,712, ren. 9–23–69. Cl. 26.
White, D. A., Inc., New York, N.Y. 877,277, pub. 7–8–69. Cl. 12.
Wilbur Chocolate Co., Inc.: *See*— Wilbur-Suchard Chocolate Co., Inc.
Wilbur-Suchard Chocolate Co., Inc., to Wilbur Chocolate Co., Inc., Lititz, Pa. 512,777, ren. 9–23–69. Cl. 46.
Willy, John, Inc., Evanston, Ill. 511,903, ren. 9–23–69. Cl. 38.
Wilmot, June, d.b.a. Karen Marie, Oxford, Conn. 877,403, pub. 7–8–69. Cl. 28.

INDEX OF REGISTRANTS

Wilton Brass Co., Columbia, Pa. 877,270, pub. 7–8–69. Multiple Class (Classes 8, 13, and 34).
Winesett Bag Co.: *See*—
Winesett, Franklin P.
Winesett, Franklin P., d.b.a. Winesett Bag Co., Oakland, Calif. 753,914, canc. Cl. 2.
Winsor & Newton, Inc., New York, N.Y., to Winsor & Newton, Inc., Secaucus, N.J. 509,007, ren. 9–23–69. Cl. 29.
Wireway Looms Co., Charles River, Mass. 438,622, canc. Cl. 13.
Wood Industries, Inc.: *See*—
Wood Newspaper Machinery Corp.
Wood Newspaper Machinery Corp., to Wood Industries, Inc., Plainfield, N.J. 517,376, ren. 9–23–69. Cl. 23.
Woodpecker Woodware: *See*—
Burn-Strauss, Inc.
Worthington Ball Co., The, Elyria, Ohio, to Victor Comptometer Corp., Chicago, Ill. 519,089, ren. 9–23–69. Cl. 22.
Wright, J. A., & Co.: *See*—
Cando Corp., The.
Wright, Layman & Umney Ltd., London, England. 511,646, ren. 9–23–69. Cl. 18.
Wyandotte Chemicals Corp., Wyandotte, Mich. 877,533–4, pub. 7–8–69. Cl. 52.
Wyeth Inc., Philadelphia, Pa., to American Home Products Corp., New York, N.Y. 513,189, ren. 9–23–69. Cl. 18.
Yardley of London, Inc., Totowa, N.J. 877,583. Cl. 51.
Yardney Electric Corp., New York, N.Y. 877,347, pub. 7–8–69. Cl. 21.
Zapata Industries, Inc., New York, N.Y. 877,245, pub. 7–8–69. Cl. 1.
Zilk, Carl S., d.b.a. Carbonic Beverage Equipment Co., Portland, Oreg. 754,040, canc. Cl. 23.
Zipco: *See*—
Singer, Arnold A.

U.S. GOVERNMENT PRINTING OFFICE: 0—1969

U.S. DEPARTMENT OF COMMERCE
OFFICIAL GAZETTE of the UNITED STATES PATENT OFFICE
September 30, 1969 Volume 866 Number 5

PATENTS

NOTICES

Board of Appeals Decisions Rendered in the Month of August 1969

Examiner affirmed	110
Examiner affirmed in part	7
Examiner reversed	21
Total	138

Orders for Copies of Foreign Patents and/or Published Applications

Some foreign countries are not publishing their patents and/or applications in numerical order. Since the U.S. Patent Office will begin supplying orders for copies of these foreign documents from master microfilm reels made up on weekly or other periodic publishing sequences, effective immediately all orders must include the country, patent or application number, and the publication date (if known) of the ordered document. Reference should be made to Section 901 05(a) of the Manual of Patent Examining Procedure to assist in determining the publication date of the commonly encountered foreign patents and applications.

W. R. ARMSTRONG,
Aug. 21, 1969. *Director, Office of Patent Services.*

Certificates of Correction for the Week of Sept. 30, 1969

Re. 26,521	3,382,699	3,446,523
D. 206,640	3,383,284	3,446,639
D. 212,937	3,383,302	3,446,729
3,043,621	3,384,023	3,446,802
3,178,874	3,384,323	3,448,106
3,243,128	3,384,350	3,448,172
3,314,971	3,384,579	3,448,373
3,323,942	3,388,930	3,448,663
3,343,958	3,389,992	3,448,767
3,359,325	3,392,137	3,448,839
3,365,463	3,406,496	3,449,233
3,370,032	3,406,723	3,449,289
3,372,069	3,408,098	3,450,177
3,372,110	3,418,287	3,450,404
3,372,517	3,424,499	3,450,652
3,373,769	3,427,280	3,450,746
3,375,175	3,429,993	3,451,053
3,375,357	3,435,630	3,451,190
3,377,326	3,435,906	3,451,373
3,380,165	3,437,395	3,451,698
3,380,329	3,440,418	3,452,617
3,380,357	3,441,375	3,453,900
3,380,418	3,442,388	3,454,087
3,380,973	3,443,905	3,454,158
3,381,012	3,444,131	3,455,100
3,381,341	3,445,362	3,455,514
3,382,684	3,445,889	3,455,676

Termination of Daylight Saving Time

Attention is called to the Notice published in 861 O.G. 680, April 15, 1969, as to the operation of the Patent Office on Daylight Saving Time. This operation will terminate on October 26, 1969.

Adjudicated Patents

(C.A.N.Y.) Wilkenson et al. Patent No. 2,609,729 (89—1.5), for BOMBING INSTRUMENT FOR AIRCRAFT. Claims 1, 2, 5, 6, 7 and 8 *Held* not infringed. *Svenska Aeroplan Aktiebolaget (SAAB) v. Mergenthaler or Linotype Company,* 410 F.2d 979; 161 USPQ 257.

(D.C. Wis.) Baker et al. Patent No. 2,657,633 (103—8), for PUMP CONSTRUCTION. Claims 1, 3, 5 and 10 *Held* valid and infringed. *Baker Mfg. Co. v. Whitewater Mfg. Co.,* 298 F. Supp. 1389; 162 USPQ 240.

(D.C. Calif.) Stukenborg Patent No. 2,843,408 (287—60), for LOCK FOR TURNBUCKLES. Claims 5–7 *Held* invalid. *Stukenborg v. Teledyne, Inc.,* 299 F. Supp. 1152; 161 USPQ 10.

(C.A. Calif.) Bogert Patent No. 2,854,190 (235—60.49), for ACCOUNTING MACHINE APPARATUS FOR RETARDING THE START OF A FUNCTION CYCLE UNTIL THE CARRIAGE HAS STOPPED MOVING, *Held* infringed. *Purer & Co. v. Aktiebolaget Addo,* 410 F.2d 871; 161 USPQ 270.

(C.A. Calif.) Holstrom et al. Patent No. 2,985,363 (235—60), for SHOCK ABSORBING MECHANISM FOR PIN CARRIAGES, *Held* infringed. *Id.*

(D.C. Fla.) Tilton Patent No. 3,085,535 (114—56), for BOAT HULL. Claim 4 *Held* valid and infringed. *Hunt Industries, Inc. v. Fibra Boats, Inc.,* 299 F. Supp. 1145; 162 USPQ 315.

(D.C. Md.) Reiners Patent No. 3,110,293 (123—32), for INTERNAL COMBUSTION ENGINE, *Held* invalid but infringed if valid. *Cummins Engine Co. v. General Motors Corp.,* 299 F. Supp. 59; 161 USPQ 642.

(D.C. Ohio) Oliver Patent No. 3,121,649 (156—71), for METHOD OF INSTALLING ROOF INSULATION ON BUILDINGS, *Held* void. *Cleveland Fabricating Co. v. Adsure, Inc.,* 298 F. Supp. 1275; 161 USPQ 36.

(C.A.N.Y.) Holland Patent No. 3,132,561 (89—1.5), for BOMBING COMPUTER. Claims 1, 2, 5, 6, 7, and 8 *Held* not infringed. *Svenska Aeroplan Aktiebolaget (SAAB) v. Mergenthaler or Linotype Company,* 410 F.2d 979; 161 USPQ 257.

(D.C. Ohio) Oliver Patent No. 3,307,306 (52—173), for INSULATION BLANKET STRUCTURE, *Held* void. *Cleveland Fabricating Co. v. Adsure, Inc.,* 298 F. Supp. 1275; 161 USPQ 36.

New Applications Received During July 1969

Patents	8577
Designs	512
Plant Patents	15
Reissues	9
Total	9113

Issue—September 30, 1969

Patents	1300	No. 3,469,264 to No.	3,470,563, incl.
Designs	137	No. 215,399 to No.	215,535, incl.
Plant Patents	5	No. 2,922 to No.	2,926, incl.
Reissues	9	No. 26,668 to No.	26,676, incl.
Total	1451		

Disclaimers

3,334,091.—*William J. Houlihan,* Mountain Lakes, N.J. SEDATIVES. Patent dated Aug. 1, 1967. Disclaimer filed Aug. 19, 1969, by the assignee, *Sandoz Inc.*

Hereby enters this disclaimer to claims 1 and 6 of said patent.

3,454,407.—*Fritz Möller,* Bensberg-Frankenforst, *Heinz Groschopp,* Dusseldorf-Holthausen, and *Rudolf Wagenknecht,* Cologne-Lindenthal, Germany. PROCESS FOR THE DEPOSITION OF COPPER-TIN LAYERS IN THE ABSENCE OF CURRENT. Patent dated July 8, 1969. Disclaimer filed Mar. 3, 1969, by the assignee, *Gerhard Collardin G.m.b.H.*

Hereby disclaims the terminal portion of the term of the patent subsequent to Mar. 11, 1986.

3,456,158.—*Edward M. Davis, Jr.,* and *Arthur H. Mones,* Poughkeepsie, N.Y. FUNCTIONAL COMPONENTS. Patent dated July 15, 1969. Disclaimer filed Mar. 14, 1969, by the assignee, *International Business Machines Corporation.*

Hereby disclaims the terminal portion of the term of the patent subsequent to Feb. 7, 1984.

3,456,159.—*Edward M. Davis, Jr.,* Chappaqua, and *Robert D. McNutt* and *Arthur H. Mones,* Poughkeepsie, N.Y. CONNECTIONS FOR MICROMINIATURE FUNCTIONAL COMPONENTS. Patent dated July 15, 1969. Disclaimer filed Mar. 14, 1969, by the assignee, *International Business Machines Corporation.*

Hereby disclaims the terminal portion of the term of the patent subsequent to Feb. 7, 1984.

Rules of Practice in Patent Cases

[37 CFR Part 1]

Preexamination

Notice of proposed rule making regarding an amendment of Part 1, Title 37, Code of Federal Regulations by adding thereto a new center heading reading "Preexamination" and a new § 1.98 relating to the submission of a patentability brief, was published in the Federal Register of July 31, 1969 (34 F.R. 12532). As a result of further deliberations, the Patent Office has decided under the authority contained in section 6 of the Act of July 19, 1952 (66 Stat. 793; 35 U.S.C. 6), to revise the original proposal in the manner set forth below. This revised proposal would expedite the prosecution of applications and strengthen the presumption of validity of issued patents.

Parties who desire to present their views, objections, recommendations, or suggestions in connection with this revised proposal are invited to do so by letter addressed to the Commissioner of Patents, Washington, D.C. 20231, on or before October 23, 1969. Oral comments may be presented at a hearing to be held on Thursday, October 23, 1969, at 9 a.m. d.s.t., in Room 34–3D50, Building 34, 2011 Jefferson Davis Highway, Arlington, Va. All persons wishing to be heard orally are requested to notify the Commissioner of Patents of their intended appearance.

PREEXAMINATION

§ 1.98 *Patentability brief.*

(a) At the time of filing an application, or at such time as may be specified in an official notice, the applicant shall submit a patentability brief. The brief shall identify a reasonable number of patents and publications that were believed to be prior art and were specifically considered most pertinent in connection with the invention claimed in the application. The brief shall further include an explanation as to why the claims in such application are deemed patentable over the identified patents and publications. Copies of the identified patents and publications, other than patents of the United States, shall be submitted with the brief. The patentability brief shall not be construed as a representation that a search has been made or that no better art exists than that identified as having been specifically considered.

(b) If no prior art was specifically considered in connection with the invention claimed in the application, the brief shall include an express statement to that effect with an explanation as to why the claims are deemed patentable.

(c) Neither matters of judgment in identifying patents, publications, or any other prior art, whether or not required by this section, nor inadvertent failure to comply with the provisions of this section shall constitute grounds for refusing to issue a patent.

WILLIAM E. SCHUYLER, JR.,
Commissioner of Patents.

Approved: September 5, 1969.

MYRON TRIBUS,
Assistant Secretary for Science and Technology.

[F.R. Doc. 69–10756; Filed, Sept. 8, 1969; 8:48 a.m.]

Published in 34 F.R. 14176, Sept. 9, 1969

PATENT EXAMINING CORPS

R. A. WAHL, Assistant Commissioner

CONDITION OF PATENT APPLICATIONS AS OF SEPTEMBER 8, 1969

PATENT EXAMINING GROUPS	Actual Filing Date of Oldest New Case Awaiting Action
*Denotes oldest new application.	
CHEMICAL EXAMINING GROUPS	
GENERAL CHEMISTRY AND PETROLEUM CHEMISTRY, GROUP 110—M. STERMAN, Director. Inorganic Compounds; Inorganic Compositions; Organo-Metal and Organo-Metalloid Chemistry; Metallurgy; Metal Stock; Electro Chemistry; Batteries; Hydrocarbons; Mineral Oil Technology; Lubricating Compositions; Gaseous Compositions; Fuel and Igniting Devices.	9–11–67
GENERAL ORGANIC CHEMISTRY, GROUP 120—I. MARCUS, Director. Heterocyclic; Amides; Alkaloids; Azo; Sulfur; Misc. Esters; Carbohydrates; Herbicides; Poisons; Medicines; Cosmetics; Steroids; Oxo and Oxy; Quinones; Acids; Carboxylic Acid Esters; Acid Anhydrides; Acid Halides.	12–14–66*
HIGH POLYMER CHEMISTRY, PLASTICS AND MOLDING; GROUP 140—L. J. BERCOVITZ, Director. Synthetic Resins; Rubber; Proteins; Macromolecular Carbohydrates; Mixed Synthetic Resin Compositions; Synthetic Resins With Natural Polymers and Resins; Natural Resins; Reclaiming; Pore-Forming; Compositions (Part) e.g.: Coating; Molding; Ink; Adhesive and Abrading Compositions; Molding, Shaping, and Treating Processes.	4–27–67
COATING AND LAMINATING, BLEACHING, DYEING AND PHOTOGRAPHY, GROUP 160—A. P. KENT, Director. Coating; Processes and Misc. Products; Laminating Methods and Apparatus; Stock Materials; Adhesive Bonding; Special Chemical Manufactures; Special Utility Compositions; Bleaching; Dyeing and Photography.	2–24–67
SPECIALIZED CHEMICAL INDUSTRIES AND CHEMICAL ENGINEERING, GROUP 170—W. B. KNIGHT, Director. Fertilizers; Foods; Fermentation; Analytical Chemistry; Reactors; Sugar and Starch; Paper Making; Glass Manufacture; Gas; Heating and Illuminating; Cleaning Processes; Liquid Purification; Distillation; Preserving; Liquid and Solid Separation; Gas and Liquid Contact Apparatus; Refrigeration; Concentrative Evaporators; Mineral Oils Apparatus; Misc. Physical Processes.	2–13–67
ELECTRICAL EXAMINING GROUPS	
INDUSTRIAL ELECTRONICS AND RELATED ELEMENTS, GROUP 210—W. S. COLE, Director. Generation and Utilization; General Applications; Conversion and Distribution; Heating and Related Art Conductors; Switches; Miscellaneous.	1–22–68
SECURITY, GROUP 220—S. BOYD, Director. Ordnance, Firearms and Ammunition; Radar, Underwater Signalling, Directional Radio, Torpedoes, Seismic Exploring, Radio-Active Batteries; Nuclear Reactors, Powder Metallurgy, Rocket Fuels; Radio-Active Material.	12–27–66*
INFORMATION TRANSMISSION, STORAGE AND RETRIEVAL, GROUP 230—J. F. COUCH, Director. Communications; Multiplexing Techniques; Facsimile; Data Processing, Computation and Conversion; Storage Devices and Related Arts.	1–13–67
ELECTRONIC COMPONENT SYSTEMS AND DEVICES, GROUP 250—W. L. CARLSON, Director. Semi-Conductor and Space Discharge Systems and Devices; Electronic Component Circuits; Wave Transmission Lines and Networks; Optics; Radiant Energy; Measuring.	7–17–67
PHYSICS, GROUP 280—R. L. EVANS, Director. Photography; Sound and Lighting; Indicators and Optics; Measuring and Testing; Geometrical Instruments.	11–30–67
DESIGNS, GROUP 290—S. BOYD, Director. Industrial Arts; Household, Personal and Fine Arts.	12–03–68
MECHANICAL EXAMINING GROUPS	
HANDLING AND TRANSPORTING MEDIA, GROUP 310—A. BERLIN, Director. Conveyors; Hoists; Elevators; Article Handling Implements; Store Service; Sheet and Web Feeding; Dispensing; Fluid Sprinkling; Fire Extinguishers; Coin Handling; Check Controlled Apparatus; Classifying and Assorting Solids; Boats; Ships; Aeronautics; Motor and Land Vehicles and Appurtenances; Railways and Railway Equipment; Brakes; Rigid Flexible and Special Receptacles and Packages.	4–04–68
MATERIAL SHAPING, ARTICLE MANUFACTURING, TOOLS, GROUP 320—N. BERGER, Director. Manufacturing Processes, Assembling, Combined Machines, Special Article Making; Metal Deforming; Sheet Metal and Wire Working; Metal Fusion—Bonding, Metal Founding; Metallurgical Apparatus; Plastics Working Apparatus; Plastic Block and Earthenware Apparatus; Machine Tools for Shaping or Dividing; Work and Tool Holders Woodworking; Tools; Cutlery; Jacks.	12–05–67*
AMUSEMENT, HUSBANDRY, PERSONAL TREATMENT, INFORMATION, GROUP 330—A. RUEGG, Director. Amusement and Exercising Devices; Projectors; Animal and Plant Husbandry; Butchering; Earth Working and Excavating; Fishing, etc.; Tobacco; Artificial Body Members; Dentistry; Jewelry; Surgery; Toiletry; Printing; Typewriters; Stationery; Information Dissemination.	1–03–68
HEAT AND POWER ENGINEERING, GROUP 340—C. F. GAREAU, Director. Power Plants; Combustion Engines; Fluid Motors; Pumps; Turbines; Heat Generation and Exchange; Refrigeration; Ventilation; Drying; Vaporizing; Temperature and Humidity Regulation; Machine Elements; Power Transmission.	7–12–68
FIXED CONSTRUCTIONS, SUPPORTS, AND HARDWARE, GROUP 350—T. J. HICKEY, Director. Joints; Fasteners; Rod, Pipe and Electrical Connectors; Miscellaneous Hardware; Locks; Building Structures; Closure Operators; Bridges; Closures; Earth Engineering; Drilling; Mining; Furniture; Receptacles; Supports; Cabinet Structures.	6–25–68
TEXTILES, CLEANING AND FLUID HANDLING, GROUP 360—F. H. BRONAUGH, Director. Fluid Handling, including Valves; Conduits; Filling Receptacles; Lubrication; Joint Packing; Bathroom Fixtures; Centrifugal Separators; Cleaning; Coating; Pressing; Agitating; Foods; Textiles; Apparel and Shoes and their Manufacture; Sewing Machines; Winding and Reeling.	2–12–68

Total number of pending applications (excluding Designs)	184,774
Total number of Design applications pending	3,050

Expiration of patents: The patents within the range of numbers indicated below expire during September 1969, except those which may have expired earlier due to shortened terms under the provisions of Public Law 690, 79th Congress, approved August 8, 1946 (60 Stat. 940) and Public Law 619, 83rd Congress, approved August 23, 1954 (68 Stat. 764), or which may have had their terms curtailed by disclaimer under the provisions of 35 U.S.C. 253. Other patents, issued after the dates of the range of numbers indicated below, may have expired before the full term of 17 years for the same reasons, or have lapsed under the provisions of 35 U.S.C. 151.

Patents	Numbers 2,608,687 to 2,612,638, inclusive
Plant Patents	Numbers 1,124 to 1,135, inclusive

DECISIONS IN PATENT AND TRADEMARK CASES

U.S. Court of Customs and Patent Appeals

UNITED-HAGIE HYBRIDS, INC. *v.* ESCAMBIA CHEMICAL CORPORATION

No 8057. Decided January 9, 1969

[56 CCPA —; 404 F.2d 987; 160 USPQ 194]

1. TRADEMARK—CONFUSING SIMILARITY—COMPOSITE MARKS WITH KICKING MULES AND SLOGANS FOR FERTILIZER AND HYBRID SEED CORN.

On the issue of confusing similarity between composite marks comprising kicking mules and different slogans for fertilizers and hybrid seed corn, *Held* that "Viewing the respective marks of the parties in their entireties, as we must, and considering the different nature of the agricultural products, we are not persuaded of reversible error in the decision of the Board dismissing appellant's opposition."

APPEAL from Patent Office. Opposition No. 43,645.

AFFIRMED.

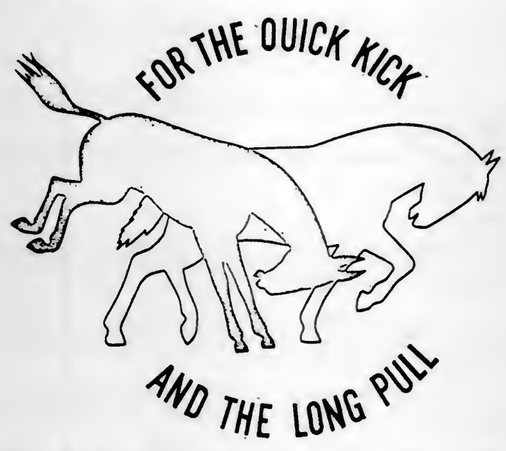
James L. Kurtz, *Mason, Fenwick & Lawrence*, *Boynton P. Livingston*, and *G. Cabell Busick*, for appellant.

Luis F. Reed and *Lee C. Robinson, Jr.* for appellee.

Before WORLEY, *Chief Judge*, RICH, ALMOND and BALDWIN, *Associate Judges*, and KIRKPATRICK, *Judge*

ALMOND, *J.*

Escambia Chemical Corporation, appellee, filed application [1] to register for fertilizers the mark reproduced below, asserting use since April 18, 1962.



United-Hagie Hybrids, Inc., appellant, registrant of the following mark for hybrid seed corn,[2] opposes the registration.



[1] Serial No. 174,756, filed August 9, 1963.
[2] Reg. No. 626,029, issued May 1, 1956.

The Trademark Trial and Appeal Board dismissed the opposition,[3] holding that no likelihood of confusion would result from the contemporaneous use of the two marks in issue, from which decision United-Hagie prosecutes this appeal. Both parties took testimony.

The record adduced by appellant disclosed that it has used the slogan "More Kick in the Spring—Bigger Ears in the Fall" and the design of a kicking and snorting mule in various formats, on hybrid seed corn since 1945. It also appears that the design feature, without the slogan, has been used by appellant on alfalfa and clover seed as well as baler twine. Substantial sales of appellant's products have been realized under these marks, stimulated through advertisement in farm papers, by the use of highway signs and promotional literature mailed out to customers both actual and prospective. Sales of the products are made through dealers who sell primarily to farmers in the central states of this country.

Appellee's mark has been used since April 1962 on ammonium nitrate fertilizers. Its products are sold through approximately 200 dealers as well as its own retail stores to farmers residing primarily in the southern portions of the United States. Appellee's products are advertised under the mark sought to be registered in trade journals and various other media.

It is clear that priority of use resides with appellant-opposer. The single issue, therefore, with which we are concerned is whether or not appellee's mark so resembles the mark of appellant as to be likely, when applied to appellee's goods, to cause confusion, or to cause mistake, or to deceive within the purview of section 2(d) of the Lanham Act, 15 U.S.C. 1052(d).

Appellant asserts that the marks are confusingly similar as both are design marks or symbols disclosing the representation of a kicking mule with slogans conveying similar connotations. Appellee advances a diametrically opposite view, pointing out distinct differences in the appearance of the symbol portions, i.e. the animal phases of the marks and the readily distinguishable language and appearance of the slogan features.

The Board's response to the contentions and arguments of the parties follows:

> While it is apparent that the marks possess some features in common in that they both contain the picturization of a kicking mule and slogans which include the word "kick," we believe that, regardless of whether or not these marks are analyzed in whole or in part, the differences therebetween far outweigh the points of similarity. It is therefore concluded that no likelihood of confusion would result from the contemporaneous use thereof. In this regard we find it unnecessary to go into any detail in describing these various differences since, in our opinion, the reproduction of the marks [is] adequate for such purpose. Finally, while it is not the decisive factor on our conclusion herein, it is apparent that the agricultural products here involved are specifically different, albeit they may move through the same trade channels to the same class of purchasers for conjoint uses.

In evaluating the testimony adduced of record and considering the arguments advanced by counsel, we think the rationale set forth by this court in *Diamond Alkali Co.* v. *Dundee Cement Co.*, 52 CCPA 1216, 343 F.2d 781, 145 USPQ 211, has significant application here. The court said:

> When symbol marks such as these are being considered, appearance is most significant. "Symbols of this kind do not sound." [Citation omitted.] Appellant re-

[3] 151 USPQ 65.

quests our consideration of the approximately equal size of the competing marks, the similar overall configuration, the central space, the thick right and left leg, and the direction or sweep of the mark with the right leg terminating above and spaced from the left. We have considered these features but agree with the Board that in appearance the marks are sufficiently dissimilar that there is no likelihood of confusion. In setting out the marks above we have not meant to convey the impression that we are making a side-by-side comparison of the marks. We find the dissimilarities persist although the marks are compared by separate recall later in time and removed in place. Contentions that the newcomer has the burden of staying clear of the established mark, and that doubts are to be resolved in favor of the prior user have been considered but are not found convincing of the opposite result.

[1] Viewing the respective marks of the parties in their entireties, as we must, and considering the different nature of the agricultural products, we are not persuaded of reversible error in the decision of the Board dismissing appellant's opposition. That decision is, accordingly, affirmed.

AFFIRMED.

WORLEY, *Chief Judge*, took no part in the decision of this case.

KIRKPATRICK, *J.*, concurring.

I concur in the result reached by the majority in the present case for the reasons set out in the two dissenting opinions in *Planters Nut & Chocolate Co.* v. *Crown Nut Co.*, 50 CCPA 1120, 305 F.2d 916, 134 USPQ 504. Viewing the symbols in their entireties the appellee's mark simply bears no resemblance to the appellant's. The only thing in which any similarity can be found is in the concept of a kicking mule, plus the use of the word "kick" in the slogan which accompanies each mark. This I think is insufficient ground on which to base a finding that the applicant's mark "so *resembles* a mark registered in the Patent Office * * * as to be likely * * * to cause confusion," etc. which is the statutory requirement. The majority evidently feels that similarity of an abstract concept is not sufficient to overcome lack of resemblance and I agree.

U.S. Court of Customs and Patent Appeals

IN RE SIGURD M. MOBERG

No. 8135. Decided April 17, 1969

[56 CCPA —; 409 F.2d 266; 161 USPQ 356]

1. PATENTABILITY—COMBINING REFERENCES—OBVIOUSNESS—USE OF COMMON PLASTICS.

"* * * we agree with the Board that making Denney's housing of a suitably soft material, such as common plastics, would be obvious in view of Sturtevant's teaching of using a soft housing material to permit embedding of a hook member of a seal. That the soft material to be used could be a plastic seems almost self evident in light of the almost universal use of plastics in modern technology, although the Examiner's citation of Schwester provides an explicit teaching if one were needed."

2. SAME—PARTICULAR SUBJECT MATTER—"IMPROVEMENT IN SEAL."

The decision of the Board of Appeals, refusing certain claims in an application entitled "Improvements in Seal" as unpatentable over the prior art, is affirmed.

APPEAL from Patent Office. Serial No. 336,953.

AFFIRMED.

Robert Henderson (*Robert I. Dennison*, of counsel) for appellant.

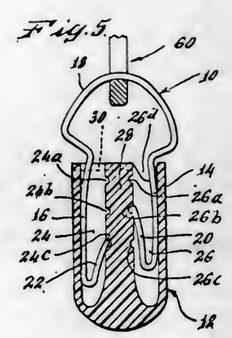
Joseph Schimmel (*Fred W. Sherling*, of counsel) for the Commissioner of Patents.

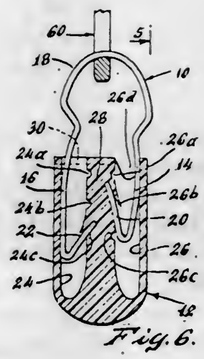
Before WORLEY, *Chief Judge*, RICH, ALMOND and BALDWIN, *Associate Judges*

WORLEY, *Chief Judge*, delivered the opinion of the court.

The issue here is whether the Board of Appeals committed reversible error in affirming the Examiner's rejection of claims 1–6 of appellant's patent application [1] in view of certain prior art under 35 U.S.C. 103.

The invention relates to a tamperproof seal of the type which may typically be used to seal electric meter housings, boxcar doors and the like. Referring to FIGURES 5 and 6 of the drawings, the seal in-





cludes a body 12 of relatively soft plastic having two pockets 24 and 26 divided by a central rib 28. The pockets receive the free ends of a shackle 10 formed of stiff spring wire. The ends of the shackle are provided with reversely bent hooks 20 and 22 engaging the central rib. A forcible attempt to separate the shackle and the seal causes the hooks to burrow into, or become embedded in, the central rib (FIGURE 6).

Claim 1 is representative:

1. A shackle seal comprising a housing of plastic material formed with a deep, narrow pocket therein and a flexible wire shackle secured at one end thereof to said housing and being reversely bent adjacent its other end to provide thereon a hook having a divergent, reversed, free end portion; said hook being resilient and of such size in relation to opposed walls of said pocket as to be insertable into the pocket and to be under compression between said opposed walls, tending to expand the hook within the pocket to urge the free end of said reversed portion into acute angular engagement with one of said opposed walls, and the wire being sufficiently stiff and thin and the material of said one opposed wall being of such a degree of hardness that a substantial part of said free end portion of the hook becomes embedded into said one opposed wall upon attempted forcible pulling of the hooked end of the shackle from within the housing, whereby strongly to oppose such pulling.

The Solicitor contends that the claims stand or fall together. Appellant's reply brief argues that the various claims may be distinguished because claim 1 recites that the wire becomes embedded in the seal while the other claims recite that it burrows into the seal material. That difference in language, at least in the present context, does not seem to us to be of sufficient significance to raise a distinction as

[1] Application of Sigurd M. Moberg, Serial No. 336,953, filed January 10, 1964 and entitled "Improvements in Seal."

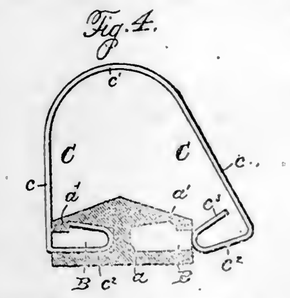
to the issue of patentability of the various claims. In the absence of more persuasive reasoning we adopt the Solicitor's position.

The references are:

Denney, 503,110, Aug. 8, 1893.
Sturtevant, 523,382, July 24, 1894.
Schwester et al., 3,186,047, June 1, 1965.

Denney discloses a tamperproof seal which, as shown in FIGURE 4,

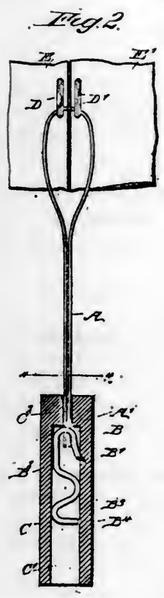
Fig. 4.



includes a wire shackle C having reversely bent hooks C^3 at its free extremities received within two pockets B in a seal body. Denney describes the seal body as being of a "hard and brittle or frangible material" such as baked clay or pottery.

Sturtevant also discloses a temperproof seal illustrated by FIGURE 2 following:

Fig. 2.



The shackle A, passing through a slot C^2 in a body or tag C, receives a hook B positioned in a channel C^1 in the body. The hook B includes a pointed member B^1 for which Sturtevant discloses that:

> It is understood that the pointed member B^1 embeds itself in the soft material of the tag and prevents the latter from being slipped inward on the strip A.

Schwester discloses a soft plastic bundling strap for electrical cables. In the words of the Examiner:

> * * * Schwester et al. clearly suggests, in a securing device, employing a plastic, Nylon for example, to be pierced by a pointed securing element, * * *.

The Examiner rejected the claims as unpatentable over Denney in view of Sturtevant when considered with Schwester. It was the Examiner's position that appellant's claims were readable on the Denney seal except for the limitation relating to the embedding of the hook and that it would be obvious to one skilled in the art to modify the Denney seal to permit embedding of the hook in soft material as shown by Sturtevant. Schwester was regarded as further evidence of the obviousness of using a soft plastic for that purpose.

Affirming the rejection of the claims, the Board stated:

> In view of the teaching of the Sturtevant patent, we consider the extent of penetration of Denney's hook terminals into the housing a matter of degree, depending on the relative hardness of the shackle and housing materials. With the development of plastic materials as we know it today, one has much to choose from in making a housing of brittle or relatively pliable plastic material. This is exemplified by the disclosure of the Schwester et al. patent.

Here appellant's main contention is that the teachings of the Sturtevant patent are insufficient taken in combination with Denney to overcome the fact that in Denney the hook does not become embedded in the housing. It is appellant's position that the material of Sturtevant's housing is not such that embedding of the hook occurs. Although we have carefully reviewed appellant's arguments on that point, the fact remains that they are flatly contradicted by the previously quoted and quite explicit statement in Sturtevant that the hook "*embeds* itself in the *soft* material of the tag." [Emphasis added.]

[1] Thus we agree with the Board that making Denney's housing of a suitably soft material, such as common plastics, would be obvious in view of Sturtevant's teaching of using a soft housing material to permit embedding of a hook member of a seal. That the soft material to be used could be a plastic seems almost self evident in light of the almost universal use of plastics in modern technology, although the Examiner's citation of Schwester provides an explicit teaching if one were needed.

[2] The decision is affirmed.

AFFIRMED.

U.S. Court of Customs and Patent Appeals

IN RE WILBUR J. MULLIKIN

No. 8112. Decided February 27, 1969

[56 CCPA —; 406 F.2d 1373; 160 USPQ 683]

1. PATENTABILITY — PARTICULAR SUBJECT MATTER — "APPARATUS TO RESTORE HEARTBEAT."

The decision of the Board of Appeals, refusing certain claims in an application entitled "Apparatus To Restore Heartbeat" as unpatentable over the prior art, is affirmed.

APPEAL from Patent Office. Serial No. 47,717.

AFFIRMED.

Hurvitz & Rose (*Hyman Hurvitz*, of counsel) for appellant.

Joseph Schimmel (*Lutrelle F. Parker*, of counsel) for the Commissioner of Patents.

Before WORLEY, *Chief Judge*, RICH, ALMOND and BALDWIN, *Associate Judges*

BALDWIN, *J.*, delivered the opinion of the court.

This appeal is from the Patent Office Board of Appeals decision affirming the Examiner's rejection of claims 46, 47, 50 and 51 of ap-

pellant's application [1] under 35 U.S.C. 103. Claims 52 through 55 have been indicated by the Examiner as allowable in substance.

The Invention

Appellant's invention provides an apparatus for restoring the heartbeat of persons whose hearts have stopped. Appellant acknowledges that it has long been known that a heartbeat may be restored by *manual* application of pressure to a patient's breastbone, followed by release of the pressure, at a cyclical rate approximately equal to a normal heartbeat. Appellant's apparatus provides the necessary effort *by mechanical means* with regularity of timing and correct range of breastbone movement.

Briefly summarized, the structure of one preferred embodiment comprises a downwardly facing U-shaped frame adapted to be disposed about and above the upwardly facing chest of a prone patient. The lower ends of the frame are releasably secured to a suitable flat reaction surface underlying the patient's back. A horizontal crosspiece of the frame supports a unidirectional, constant speed electric motor which, through a track and follower linkage, imparts a linear reciprocating motion to a vertical tube having a resilient pressure pad at its lower end adapted to contact and overlie the patient's chest above the breastbone. Rotation of the electric motor causes vertical reciprocation of the pressure pad through a uniform stroke of approximately 1″ at a uniform rate approximately equal to a normal heartbeat.

Claim 46, which is reproduced as follows, is typical of the claims on appeal; and the patentability of it is determinative of all issues in this appeal.

46. Apparatus for reactivating the heart of a human patient following cessation of heart beat, comprising a support underlying the back of said patient inclusive of the cardiac region, a resilient pressure applicator including a rigid plate and a resilient pressure pad secured to the underside of said rigid plate, said plate and pressure pad having an area only sufficient to substantially cover the human breastbone, means for positioning said pressure pad in position exteriorly of the body of the patient and substantially over the breastbone of the patient and in contact with the body of the patient, said means including a reciprocable substantially vertical shaft having said pressure applicator secured to its lower end, adjustable means for locating and maintaining said shaft and said applicator in position with said pressure pad in contact with said patient and directly overlying said breastbone, power means imparting rhythmical downward followed by upward motions to said shaft at a rate approximately equal to the normal rate of heart beat and with strokes and pressures sufficient to compress said breastbone only to the minimum extent required to effect perfusion in the heart followed by substantially complete releases of said breastbone from the pressure of said pad, and means providing a force reaction between said pad and said support, whereby the breastbone may be depressed repetitively by the same amount over a long time period while said back is retained substantially immovable with respect to the lowermost position of said pad during said rhythmical motions of said shaft.

The References

Kouwenhoven [2] describes a *manual* method of restoring a failed heartbeat, which is generally similar to that discussed earlier in this opinion.

[1] Serial No. 47,717, filed August 5, 1960, for "Apparatus To Restore Heartbeat."
[2] Kouwenhoven, W. B., Jude, James R., and Knickerbocker, G. Guy, "Closed Chest Cardiac Massage," J.A.M.A., 173(10) : 1064–67, July 9, 1960.

Walker [3] discloses an apparatus for resuscitating drowned persons which includes a downwardly facing U-shaped frame disposed about and above the chest of a prone patient lying on a flat reaction surface. A mechanically driven vertical shaft movably connected with the frame, has a "vacuum or breast cup" at its lower end which is placed on the chest of the patient. Vertical reciprocation of the shaft causes corresponding vertical reciprocation of the breast cup contacting the patient's chest. Other additional mechanism not relevant here further assists in collapsing and expanding the patient's lungs to restore natural breathing.

Johnson [4] discloses another mechanical respirator having a frame for overlying a prone patient together with a vertical shaft reciprocated by a mechanism including a cam and spring system. Chest engaging members at the lower end of the shaft contact the patient's chest. The chest engaging members of Johnson are, however, spaced laterally to contact the lung portions on either side of the breastbone, unlike the central contact of appellant's device necessary to reciprocate the breastbone.

The Rejection

Claims 46 and 47 are rejected as unpatentable over Walker in view of Kouwenhoven or, in the alternative, Kouwenhoven in view of Walker under 35 U.S.C. 103. The Examiner held that the operation of the Walker machine at the normal heart-beat rate would be obvious in view of Kouwenhoven; or, alternatively, the carrying out of Kouwenhoven's method with Walker's machine would be obvious. Claims 50 and 51, which further recite a cam with a spring means, are rejected for the same reasons as stated in the rejection of claim 46, further in view of Johnson.

With regard to the claims on appeal, the Board affirmed the rejection, stating:

While claims 46, 47, 50 and 51 present increments of a mechanical nature in their "apparatus" recitations the substance of such apparatus is so general as to amount to no more than an obvious adaptation of the old structures of Walker or Johnson to heart massage rather than resuscitation. The change in use is guided by the requirements as to timing of the two treatments and does not appear to us to involve any apparatus changes within the scope of the mechanisms recited by these claims. The timing and use changes urged by appellant, particularly in the reply brief, as rendering the machines of distinctive character are not seen by us as creative of any "apparatus" novelty. * * *

Opinion

On appeal here, appellant concedes the change in timing of the apparatus of the references from a respiratory to a pulse rate would be obvious but argues the following claimed apparatus changes would not be:

(1) use of a resilient pressure pad under a rigid plate,
(2) the specified area of the pressure pad as "*only* sufficient to substantially cover the human breastbone,"
(3) the contact of the pad with the breastbone and *directly* overlying the breastbone,
(4) use of strokes "sufficient to compress said breastbone *only* to the minimum extent necessary to effect perfusion in the heart followed by substantially *complete releases* of said breastbone from the pressure of said pad" * * * and "means for locating and *maintaining* said pressure pad * * * in *contact* with said patient and directly *overlying* said breastbone."

[3] U.S. Patent 587,891, issued August 10, 1897.
[4] U.S. Patent 1,918,546, issued July 18, 1933.

On this matter we disagree with appellant. Kouwenhoven makes the following description of how pressure is to be applied to the patient's breastbone:



Fig. 2—Position of hands during massage of adult.

The method of application is shown in FIGURE 2. With the patient in a supine position, preferably on a rigid support, the heel of one hand with the other on top of it is placed on the sternum just cephalad to the xiphoid. Firm pressure is applied vertically downward about 60 times per minute. At the end of each pressure stroke the hands are lifted slightly to permit full expansion of the chest. The operator should be so positioned that he can use his body weight in applying the pressure. Sufficient pressure should be used to move the sternum 3 or 4 cm. toward the vertebral column.

It appears to us that the apparatus features stressed above by appellant are no more than the obvious mechanical expedients necessary to ensure that the contact provided against the patient's chest by the reciprocating power shaft corresponds generally in location and physical characteristics with the heel of the human hand set forth in Kouwenhoven.

[1] The decision of the Board is affirmed.

AFFIRMED.

WORLEY, *Chief Judge*, took no part in the decision of this case.

U.S. Court of Customs and Patent Appeals

IN RE ANDRE JAN CONIX AND URBAIN LEOPOLD LARIDON

No. 8062. Decided January 23, 1969

[56 CCPA —; 405 F.2d 1315; 160 USPQ 420]

1. PATENTABILITY—DOUBLE PATENTING—OBVIOUSNESS.

"Although appellants are correct in their contention that the present situation is not one in which the term of the monopoly over exactly the same claimed subject matter of the patent would be extended, extention of term is only one of the several heads of the Hydra of double patenting. We have had occasion before to consider other significant problems raised in a situation

where two separate inventions are claimed, one in a patent and the other in a pending application of the same inventor, but wherein the inventions are not *patentably* distinct over each other. * * * From those previous decisions, a rule for testing the patentability of the claims of the pending application, in the absence of a terminal disclaimer, is to determine whether or not the claimed invention is merely an obvious modification of the *invention defined in the claims of the patent*. There is sound reason supporting this rule. Upon issuance of the patent, if there is no restriction requirement or cross-reference in the record to show that other related applications may be pending, the public should be able to assume that on expiration of the patent there is freed from its monopoly not only what is embraced by the patent claims but as well as *obvious* modifications thereof and that the latter are free of protection through any *later issued, full-term* patents of the patentee."

2. CLAIM—CONSTRUCTION OF CLAIMS—PROCESS.

"In looking at [process] claim 16 of appellants' application, we feel free to disregard the limitation of the resultant polyester having an intrinsic viscosity of at least about 0.5 dl/g. measured in tetrachloroethane at 25° C. as being a property of the product rather than a limitation affecting the performance of the process."

3. PATENTABILITY—EVIDENCE—COMPARATIVE TESTS WITH PATENT NOT RELIED ON IN REJECTION.

"* * * we are not persuaded by appellants' attempt to refute the teachings of Wagner by submitting affidavits showing better results than those obtained by following the teachings of Magat, a reference not relied upon by the Examiner before the Board. We are not impressed by an attack on Wagner based on setting up and knocking down Magat as a straw man."

APPEAL from Patent Office. Serial No. 435,079.

AFFIRMED.

William J. Daniel, *Watson*, *Cole*, *Grindle & Watson* for appellants.

Joseph Schimmel (*Raymond E. Martin*, of counsel) for the Commissioner of Patents.

Before WORLEY, *Chief Judge*, RICH, SMITH, ALMOND, and BALDWIN, *Associate Judges*

BALDWIN, *J.*, delivered the opinion of the court.

This appeal is from the Patent Office Board of Appeals decision affirming the rejection of claims 16, 17, 19, and 20 of appellants' application [1] on the ground of double patenting. Claims 1, 21, 22, and 23 stand allowed.

The issue in this appeal relates to an "obviousness" type "double patenting" rejection wherein no terminal disclaimer has been filed and wherein the appealed claims and the patent claims are mutually exclusive.

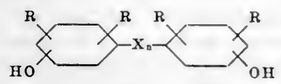
The present invention relates to the formation of high molecular weight linear aromatic polyesters of the polysulfonate type. More particularly, the invention involves reacting an alkali metal alcoholate of a bisphenol with a dihalide of a polybasic acid selected from the group consisting of aromatic disulfonic acids and aromatic monocarboxy-sulfonic acids. The reaction is carried out in the presence, as catalysts, of one or more onium compounds, such as quaternary compounds.

Product claims have been allowed, and process claims have been rejected. Process claim 16 is illustrative and reads:

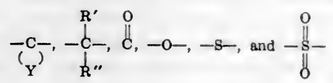
16. A process of preparing a high molecular weight linear polyester of a polybasic acid and a polyhydric alcohol, said polybasic acid comprising essentially at least one acid selected from the group consisting of aromatic disulfonic acids and aromatic monocarboxysulfonic acids, and said polyhydric alcohol

[1] Serial No. 435,079, filed February 24, 1965, for "Production of Linear Aromatic Polyesters," allegedly a continuation of Serial No. 62,076, filed October 12, 1960, now abandoned, allegedly a continuation-in-part of Serial No. 797,587, filed March 6, 1959, now abandoned.

comprising essentially at least one bis-phenolic compound selected from the group consisting of the following formulae:

(1) 

where n is an integer from 0 to 1, each R is selected from the group consisting of hydrogen, alkyl and halogen and X is selected from the group consisting of



Y representing the atoms necessary to close a lower cycloaliphatic ring and R′ and R″ each representing a member of the group consisting of hydrogen, alkyl, haloalkyl, a phenyl radical, and a cycloakyl radical, alkyl in all instances being lower alkyl and halo- and halogen in all instances being a halogen atom of atomic weight less than 100; and (2) HO—Ar—OH, where Ar is a member of the group consisting of a phenyl radical and a naphthalene radical; said method comprising the steps of agitating a solution of a dihalide of such acid in a liquid halogenated hydrocarbon which is a solvent for the resultant polyester in contact with a solution of an alkali metal alcoholate of such bis-phenolic compound in a liquid immiscible with said liquid hydrocarbon and in the presence of a catalyst of the group consisting of a quaternary ammonium compound, a tertiary sulfonium compound, a quaternary phosphonium compound and a quaternary arsonium compound, and recovering from liquid hydrocarbon the resultant polyester having an intrinsic viscosity of at least about 0.5 dl/g. measured in tetrachloroethane at 25° C.

The Conix patent,[2] to the same entity as the present appellants, was filed prior to the appealed application and was copendent with it. The Conix patent discloses preparing highly polymeric linear polyesters by reacting an alkali metal salt of a bisphenol with a diacid halide of an aromatic dicarboxylic acid, in the presence of a catalyst of the quaternary ammonium type. Claims 1 and 2 of the Conix patent read:

1. A process for preparing highly polymeric linear polyesters, having an intrinsic viscosity of at least 0.4 when measured in a solution of a chlorinated hydrocarbon, which comprises condensing a diacid halide of an aromatic dicarboxylic acid, dissolved in an alkyl halide which is a solvent for the polyester formed, with an alkali metal salt of a bis-phenol dissolved in water, the aromatic dicarboxylic acid is a member of the group consisting of

HO—CO—Ar′—Ar′—CO—OH

and HO—CO—Ar′—R′—Ar′—CO—OH, and the bisphenol is a member of the group consisting of HO—Ar—Ar—OH and HO—Ar—R—Ar—OH, in which formulae each of the links Ar and Ar′ represents a bivalent aromatic radical selected from the group consisting of an unsubstituted para-phenylene radical, a metaphenylene radical, a methyl substituted paraphenylene radical and R and R′ each represents a bivalent radical selected from the group consisting of an ether radical, a carbonyl radical, a sulphonyl radical, a saturated lower hydrocarbon radical, and a carbon atom which forms part of a cycloaliphatic ring, at least one of the radicals R and R′ is a bivalent saturated lower hydrocarbon radical selected from the group consisting of a lower alkyl-substituted methylene group, an aryl substituted methylene group, a lower alkyl- and aryl substituted methylene group, a halo-methyl substituted methylene group, a halogen-substituted methylene group and a carbon atom which forms part of a cycloaliphatic ring, whereby the polyester is dissolved in the alkyl halide as it is formed, permitting the formation of highly polymeric linear polyesters.

2. A process according to claim 1, wherein the condensation is carried out in the presence of a catalyst selected from the group consisting of the quaternary ammonium compounds.

[2] U.S. Patent 3,028,364, issued April 3, 1962.

The Wagner reference [3] discloses the preparation of aromatic polyesters from a polyhydric phenol and the acid halide of an organic polybasic acid such as a polycarboxylic, a polysulfonic or a sulfonic-carboxylic acid. Wagner states:

This invention also contemplates resins in which the

groups of the polycarboxylic acid halide are replaced wholly or in part by

groups. These resins, however, are not so valuable as those prepared from polycarboxylic acid halides. They are frequently darker in color, have poorer water resistance and poorer solubilities. They are nevertheless new and useful for many purposes. The following compounds may be given as examples of suitable disulfone chlorides; $(CH_2)_4(SO_2Cl)_2$, p-benzene disulfonic acid chloride, toluene disulfonic acid chlorides, methane disulfone chloride (the diacid chloride of methane disulfonic acid), and the sulfone chlorides of naphthalene 2,6-disulfonic acid, diphenyl 4,4′-disulfonic acid, benzene, 1,3,6-trisulfonic acid, the naphthalene trisulfonic acids, and the naphthol disulfonic acids.

The Examiner rejected the appealed claims as unpatentable over patent claim 2 of Conix in view of Wagner. The Board characterized that rejection as an "obviousness" type "double patenting" rejection, stating:

This rejection may be termed a "double patenting" rejection in that the claims herein differ from claim 2 of the patent in an obvious manner; namely, in the application of the patented contribution, the employment of a quaternary ammonium compound as catalyst to permit formation of highly polymeric linear polyesters, to esterification of aromatic disulfonic acids or aromatic monocarboxy sulfonic acids instead of the aromatic dicarboxylic acids specified in the patent claim. The claimed methods are otherwise substantially identical, as pointed out by the Examiner.

The Board proceeded to the following reasoning:

We agree with the Examiner that the art is well aware of the alternative production of polyesters by the reaction of aromatic dicarboxylic acids or corresponding aromatic disulfonic or carboxylic sulfonic acids with phenols in the general manner claimed. This is substantiated by the Wagner patent cited by the Examiner. Although the latter indicates some differences in the value of the polyesters thus produced, the substitution of sulfonic acids for carboxylic acids in polyester formation is, nevertheless, clearly taught to the polymer chemist. * * * In the situation at bar, the art is well aware of the substitution of aromatic sulfonic acids for aromatic carboxylic acids in the process of forming polyesters by reaction with phenols. Since the major distinction between the method claims herein at issue and the patented method claim is obvious to the polymer chemist, we do not believe that a second patentable invention has been delineated. * * *

Thereafter, the Board affirmed the decision of the Examiner.

In resolving this appeal, the first issue to be determined is the availability of the earlier filed, copending Conix patent as the basis for the rejection of the claims of the present application of the same inventors. Quite definitely, the disclosure of the Conix patent is not available as prior art under 35 U.S.C. 102 or 103.

Moreover, appellants argue, there is no reason to make the Conix patent available under the double patenting doctrine because the claims of the application and of the patent are distinct, mutually exclusive, and nonoverlapping; hence, the subject matter embraced by the claims

[3] U.S. Patent 2,035,578, issued March 31, 1936.

of the patent cannot fall within the scope of the claims of the application. It therefore follows, say appellants, that there can be no question of the monopoly, over the claimed subject matter of the patent, being extended beyond 17 years by the claims of the application, if they should be allowed.

[1] Although appellants are correct in their contention that the present situation is not one in which the term of the monopoly over exactly the same claimed subject matter of the patent would be extended, extension of term is only one of the several heads of the Hydra of double patenting. We have had occasion before to consider other significant problems raised in a situation where two separate inventions are claimed, one in a patent and the other in a pending application of the same inventor, but wherein the inventions are not *patentably* distinct over each other. *In re Zickendraht*, 50 CCPA 1529, 319 F.2d 225, 138 USPQ 22 (1963); *In re Ockert*, 44 CCPA 1024, 245 F.2d 467, 114 USPQ 330 (1957); *In re Ward*, 43 CCPA 1007, 236 F.2d 428, 111 USPQ 101 (1956). From those previous decisions, a rule for testing the patentability of the claims of the pending application, in the absence of a terminal disclaimer, is to determine whether or not the claimed invention is merely an obvious modification of the *invention defined in the claims of the patent*. There is sound reason supporting this rule. Upon issuance of the patent, if there is no restriction requirement or cross-reference in the record to show that other related applications may be pending, the public should be able to assume that on expiration of the patent there is freed from its monopoly not only what is embraced by the patent claims but as well all *obvious* modifications thereof and that the latter are free of protection through any *later issued, full-term* patents of the patentee.[4]

Therefore in the present appeal, it is necessary for us to consider whether appellants' invention, as defined in the appealed claims, is merely an obvious variation of the invention defined in patent claim 2 in view of the teaching of Wagner.

[2] In looking at claim 16 of appellants' application, we feel free to disregard the limitation of the resultant polyester having an intrinsic viscosity of at least about 0.5 dl/g. measured in tetrachloroethane at 25° C. as being a property of the product rather than a limitation affecting the performance of the process. Absent this limitation, the main distinction between the present invention and the invention defined in claim 2 of the Conix patent is that the halide reactant of the present invention is a dihalide of an "acid selected from the group consisting of aromatic disulfonic acids and aromatic monocarboxysulfonic acids" whereas the halide of the invention claimed in the Conix patent is "a diacid halide of an aromatic dicarboxylic acid * * * a member of the group consisting of HO—CO—Ar′—Ar′—CO—OH and HO—CO—Ar′—R′—Ar′—CO—OH * * *."

It follows that what we have to consider is whether there is sufficient teaching that the sulfonic acids of the present application may be the equivalent of the dicarboxylic acids of the patent claims for the process of reaction with polyhydric alcohols to produce polyesters, to make it obvious to one skilled in the art to substitute one for the other in the process defined in patent claim 2. After considering the Wagner patent, and in particular the portions of it quoted previously, in the light of the arguments advanced by the parties, we believe Wagner

[4] See also *In re Rogers*, 55 CCPA 1092, 394 F.2d 566, 157 USPQ 569 (1968); *In re Robeson*, 51 CCPA 1271, 331 F.2d 610, 141 USPQ 485 (1964).

provides a sufficient teaching to make the present invention obvious in the light of the invention defined in the patent claims.

[3] Furthermore, we are not persuaded by appellants' attempt to refute the teachings of Wagner by submitting affidavits showing better results than those obtained by following the teachings of Magat,[5] a reference not relied upon by the Examiner before the Board. We are not impressed by an attack on Wagner based on setting up and knocking down Magat as a straw man.

The Board's decision is affirmed.

AFFIRMED.

Judge Smith participated in the hearing of this case but died before a decision was reached.

[5] U.S. Patent 2,708,617, issued May 17, 1955.

U.S. Court of Customs and Patent Appeals

ALLAN ROBERT ANDREW BEEBER AND DANIEL S. SPECHLER *v.*
LESTER C. KROGH AND RICHARD E. BRINK

No. 8005. Decided November 21, 1968

[56 CCPA —; 403 F.2d 743, 159 USPQ 594]

1. INTERFERENCE—PATENT AND APPLICATION—MODIFIED PATENT CLAIMS—MANUAL OF PATENT EXAMINING PROCEDURE, SECTION 1101.02.

"* * * the interferences were declared with the patent claims as the counts and with the competing claims of Krogh and Brink designated as modifications of the counts. The latter claims are broader than the corresponding patent claims due to omission of, and substitution for, certain recitations. It thus appears that the practice followed here is at variance with the instructions in the Manual of Patent Examining Procedure, third ed., section 1101.02, which states that '[w]here a patent claim must be modified, the count of the interference should be the broader claim as between the patentee and the applicant.' However, this apparent departure from the established practice does not affect our determination here in view of the particular basis on which we find the appeal must be decided."

2. SAME—REDUCTION TO PRACTICE—CORROBORATION.

"* * * it is of course true that testimony of an inventor is not by itself effective to prove reduction to practice in the absence of corroboration."

3. SAME—SAME—SAME.

"* * * recent decisions [of the U.S. Court of Customs and Patent Appeals] direct us to review all of the evidence and consider it as a whole in determining whether the testimony of an inventor is corroborated."

4. SAME—SAME—SAME—*Patterson* v. *Hauck* CONSTRUED.

"The *Patterson* case itself is particularly helpful in the application of the proper standard to the evidence here. Noting that the invention there related to a simple process, as is plainly true of the present invention also, the court found corroborative significance in such factors as independent proof that the involved materials had been known and used in the assignees' operations and that the inventor had been assigned to work out a better process for using such materials."

5. SAME—SAME—EVIDENCE.

"Two other contentions of appellees remain for consideration. One of them is that the actions of Beeber and Spechler and their assignee, after the activities relied on, are inconsistent with an actual reduction to practice having taken place as asserted. We find nothing in the record to give any substantial support to that contention. The fact, advanced by appellees, that the application for the earlier Beeber and Spechler patent for the coated "Mylar" product lacking acid pretreatment was filed on March 24, 1955 without disclosing the invention presently involved, is plainly of no significance. The earlier patent relates to a product which Keuffel & Esser apparently had already developed and was either marketing or about to market. On the other hand, the patent here involved relates to an improvement process which the assignee

might well be expected to patent separately and which, at the time, was not subject to any urgency because of public use."

6. SAME—SAME—SAME—THIRD PARTY INVENTORSHIP.

"Appellees next urge that 'the complete absence of contribution by the co-party Beeber to the subject matter' is perhaps 'one of the most significant indications of lack of success at K & E in 1955.' They contend that there is an inference that Beeber made his contribution after the period in early 1955 covered by the evidence. Such contention is entirely too remote to be given any weight and plainly cannot overcome the substantial evidence of actual reduction to practice already discussed. Moreover, it is clear that a question of third party inventorship cannot be raised in these proceedings. *Huang* v. *Cheney*, 53 CCPA 1355, 362 F.2d 816, 150 USPQ 295."

APPEAL from Patent Office. Interference No. 92,283.

REVERSED.

J. Russell Juten (*Peter F. Willig*, *Lionel N. White*, *Hobart N. Durham*, *John C. Vassil*, *Roger T. McLean*, of counsel) for appellants.

Stanley G. De La Hunt, *Richard E. Brink*, *Kinnery*, *Alexander*, *Sell*, *Steldt & De La Hunt* for appellees.

Before WORLEY, *Chief Judge*, RICH, SMITH, ALMOND, and BALDWIN, *Associate Judges*

BALDWIN, *J.*, delivered the opinion of the court.

This appeal is from the decision of the Board of Patent Interferences awarding priority to Krogh and Brink in Interference No. 92,283, into which Interference No. 92,284 has been consolidated.[1] The three counts in issue correspond to claims 5, 1 and 2, respectively, of U.S. Patent No. 2,893,896, granted to Beeber and Spechler on July 7, 1959 on application Serial No. 656,513, filed May 2, 1957. The appellees, Krogh and Brink, are involved on the basis of claims constituting modifications of the aforementioned patent claims which they copied in their application Serial No. 552,684, filed November 7, 1955.[2]

The parties in interest are Keuffel & Esser Co., assignee of Beeber and Spechler, and Minnesota Mining and Manufacturing Co., assignee of Krogh and Brink.

The invention relates to a method of treating an oriented polyethylene terephthalate film with a halogenated fatty acid to render the film receptive to a coating of an organic material. Polyethylene terephthalate is also referred to throughout the record by the term "Mylar," identified as a trademark of the Du Pont Company.

Counts 1 and 2 are representative:

1. The method of pre-treating a high molecular weight oriented polyethylene terephthalate film to make it receptive to coatings of organic materials comprising the steps of coating said film with a solution of trichloracetic acid in an inert organic solvent compatible therewith which wets the surface of said polyethylene terephthalate film, the concentration of the trichloracetic acid in said solution being selected at an effective concentration which will not produce visible etching of said polyethylene terephthalate film under the particular process conditions employed, and heating said coated film to a temperature in the range from 100° F. to 300° F. to remove said organic solvent, react said trichloracetic acid with the surface of said polyethylene terephthalate film and remove the excess trichloracetic acid.

[1] The consolidation followed the elimination of a third party originally in Interference No. 92,283.

[1] [2] As noted, the interferences were declared with the patent claims as the counts and with the competing claims of Krogh and Brink designated as modifications of the counts. The latter claims are broader than the corresponding patent claims due to omission of, and substitution for, certain recitations. It thus appears that the practice followed here is at variance with the instructions in the Manual of Patent Examining Procedure, third ed., section 1101.02, which states that "[w]here a patent claim must be modified, the count of the interference should be the broader claim as between the patentee and the applicant." However, this apparent departure from the established practice does not affect our determination here in view of the particular basis on which we find the appeal must be decided.

2. The method of pre-treating a high molecular weight oriented polyethylene terephthalate film to make it receptive to coatings of organic materials comprising the steps of coating said film with a solution of an halogenated fatty acid in an inert organic solvent compatible therewith which wets the surface of said polyethylene terephthalate film, the concentration of said halogenated fatty acid in said solution being in the range from 0.2% to a completely saturated solution.

Appellees, Krogh and Brink, took no testimony and thus are restricted to their November 7, 1955 filing date for conception and constructive reduction to practice. As junior party, Beeber and Spechler introduced evidence directed to proving conception and reduction to practice prior to that date. Their evidence includes testimony of the co-inventor Spechler, a research supervisor in the chemical laboratory of Keuffel & Esser, and other employees of that company, along with a number of exhibits.

In awarding priority to appellees, the Board held that Beeber and Spechler have failed to prove actual reduction to practice prior to appellees' filing date. Although Beeber and Spechler raise other issues also, we find the matter of whether they have proved reduction to practice to be controlling. Therefore, we will confine our opinion to that issue.

The basis for the holding in question was that the evidence does not include sufficient corroboration of reduction to practice. The Board stated:

Spechler's testimony and the evidence of page 149 of his notebook is to the effect that the process was carried out and that the process rendered the Mylar film receptive to coatings of organic materials; but question of corroboration arises. * * *

It ruled that the corroboration was inadequate after discussing in particular what it deemed the shortcomings of the testimony of Kosar and Kastner, two research chemists associated with Spechler. The Board also referred to testimony of other witnesses including Kappler, manager of a Keuffel & Esser department manufacturing products including drafting materials known as Stabilene products, and Ritchie and Eck, both of whom were employed in Kappler's department in connection with the application of coatings in the production of such materials. Also testifying were Stein, who was employed in the laboratory from 1953 to about 1956, Burke, a draftsman, and Rampulla, a purchasing clerk.

As background, by 1953 or 1954 Keuffel & Esser had developed drafting materials [3] under the name of "Stabilene" products, which materials included a coating of a drafting surface on a polyethylene terephthalate base. Beeber and Spechler filed, on March 24, 1955, a patent application disclosing such a product in the form of a polyethylene terephthalate or "Mylar" base provided with an overcoat of a film forming resinous material.[4]

The adhesion between the base film and its resin coating was not at all times as firm as required, and steps were taken to solve that problem. Those steps included tests directed to applying a precoating to the film in the form of halogenated aliphatic or fatty acids, and the practice of using trichloroacetic [5] acid in solution in toluene for pretreatment was eventually adopted.

Spechler, a coatings chemist in the laboratory at the time involved, in late 1954 and early 1955, testified concerning original work done

[3] One use for the materials was as a replacement for conventional tracing paper and cloth.

[4] U.S. Patent No. 2,999,016 was granted on that application on September 5, 1961.

[5] Alternately spelled "trichloracetic," as in count 1.

by him with the aid of his assistant, Kastner, to determine the effect on adhesion of coatings obtained by use of various pretreatments on the polyethylene terephthalate film. He stated that the work started using trichloroacetic acid in water solutions but such solutions did not give very good results, and he and Kastner decided to use organic solutions, with best results being obtained with a solution of approximately 5% trichloroacetic acid in toluene. The decision that toluene was a desirable solvent for use in the process was made prior to March of 1955. Spechler further stated that, in the early laboratory tests, the film was dried in a small laboratory oven after the solution was applied and that it was determined that "an elevated temperature about above 100 Fahrenheit up to about 300 Fahrenheit" appeared to give them good results. It was also testified by Spechler that they "made a run on a production size machine" in March of 1955.

Spechler produced certain pages of his laboratory notebook (Exhibit 2) in support of his testimony regarding the tests. Of particular interest is page 149 of that notebook. The subject matter handwritten on that page is set out below:

Trichloroacetic acid treatment of Mylar

3-7-55

1) 4½ gal.| 3 gal. Toluol—(22 lbs. Approx.) 14.5
1.45 lbs.| 1.1 lb. Trichloroacetic .74

Dip coated in #9 machine at 80 yds./hr.
coverage 150 yds. per gallon—RMC $0.80/gal.
T-175 at top of machine.—$.0053 per yd.

Try Plexigum J-16—Rohm & Haas
Plexigum MB 319
Epikote 1004+DBP—Shell

2) Pencil surface BCV over 1 on Mylar
3) Regular pencil over untreated Mylar
4) Pencil BCV over 1 on Swedlow plastic cloth

Notes—adherence of (2) excellent, cannot be removed by "Scotch" tape or crumpling.

Adherence of (3) fair—not easily removed by tape over most areas but some spots tend to have spotty adherence. No noticeable difference on Swedlow cloth.

The gist of Spechler's testimony regarding page 149 is that the first part thereof was initially made for a proposed experiment to be carried out on a dip coating machine and that the complete entry in its final form, as reproduced above, represents the conditions and results of experiments actually carried out in furtherance of the proposal on the date of "3-7-55" or March 7, 1955 set out thereon or "a few days later." The figures in certain of the data, such as "#9 machine" and "80 yds./hr.," represent changes from the proposal to correspond to the actual conditions of the experiments performed. Spechler identified "T-175" on the page as referring to the drying temperature, on the Fahrenheit scale, in the No. 9 machine at the time. He further identified items 2 and 3 on the page as representing tests of materials with coatings applied to trichloroacetic acid treated film and untreated film, respectively, with the results at the bottom of the page showing "excellent" adhesion as demonstrated by "Scotch" tape and "crumpling" tests for item 2 and only fair adhesion for 3. In his testimony, Spechler stated that "crumpling of the sheet [in 2] did not result in any flaking or loss of coating adhesion" and explained the "Scotch" tape test as follows:

This was a common test used in coating evaluation. It consists of the application of a general cellulose base adhesive tape to the film, rubbing it down well, and removing it with a snap to try to remove the coating. It gives some evaluation of adhesion of coatings.

Spechler also testified that he described the subject matter of the invention to others. He specifically referred to Kosar, who "was interested in a related field," to his own assistant Kastner, and to Kappler and Ritchie, who were involved with the machine used in the experiments he recounted. Typewritten reports, giving specifications for trichloroacetic acid treatment of "Mylar" were identified by Spechler. Exhibit No. 3, dated August 4, 1955, was signed by Spechler and initialed by Beeber. Exhibit No. 4, dated June 12, 1956 and thus too late to be of direct interest here, was signed by Spechler and sets forth substantially the same data as Spechler's notebook page 149, to which it makes reference.

The preceding summarizes the evidence of Spechler which the Board found, in the portion of its opinion previously quoted, to be "to the effect that the process was carried out and that the process rendered the Mylar film receptive to coatings of organic materials." [2] While that evidence in our judgment obviously is to the effect stated by the Board,[6] it is of course true that testimony of an inventor is not by itself effective to prove reduction to practice in the absence of corroboration. *Collins* v. *Olsen*, 26 CCPA 1017, 102 F.2d 828, 41 USPQ 220 (1939), the only authority cited by the Board on the present point, relates to a case in which corroborating testimony was found inadequate. However, the facts there are so clearly distinguished from the present situation as to render it of scant assistance here.

Of greater significance in the present case are certain more recent decisions of this court which have benefited from a larger number of prior decisions to draw from and thus are able to present a more complete and more timely analysis of the law regarding adequacy of corroboration. [3] Those recent decisions direct us to review all of the evidence and consider it as a whole in determining whether the testimony of an inventor is corroborated. Applying such a standard to the present case convinces us that Beeber and Spechler have demonstrated by legally sufficient proof that the invention in issue was conceived and reduced to practice well before appellees' filing date of November 7, 1955.

A decision particularly in point is *Mann* v. *Werner*, 52 CCPA 1578, 347 F.2d 636, 146 USPQ 199 (1965). There the court stated:

This court has rejected the notion that each individual act in the reduction to practice of a count must be proved in details by an unbroken chain of corroboration. See *Patterson* v. *Hauck*, 52 CCPA 987, 341 F.2d 131, 144 USPQ 481; *Gianladis* v. *Kass*, 51 CCPA 753, 324 F.2d 322, 139 USPQ 300; *Hasselstrom* v. *McKusick*, 51 CCPA 1008, 324 F.2d 1013, 139 USPQ 511. As we said in the latter case, "the purpose of corroborative evidence is to confirm and to strengthen the testimony of the inventor." The proper approach, we believe, involves a reasoned examination, analysis and evaluation of all the pertinent evidence bearing on the question, to the end that a reasoned determination as to the credibility of the inventor's story may be reached. * * *

Patterson v. *Hauck* (1965), cited in the above quotation, analyzes the other two cases cited therein as well as additional leading cases of both early and recent vintage. It plainly shows the criterion we apply of reviewing all of the evidence and considering it as a whole.

[6] The Board found "the Scotch tape test, if not the crumpling test" to be adequate to demonstrate the practice of the process to be successful. It does not appear that appellees contend to the contrary before us.

[4] The *Patterson* case itself is particularly helpful in the application of the proper standard to the evidence here. Noting that the invention there related to a simple process, as is plainly true of the present invention also, the court found corroborative significance in such factors as independent proof that the involved materials had been known and used in the assignees' operations and that the inventor had been assigned to work out a better process for using such materials.

Returning to the evidence here, testimony and supporting documents of Kappler and Stein show that they participated, along with Beeber and Spechler, in a conference on December 15, 1954, involving a Stabilene product made up of a polyethylene terephthalate or "Mylar" base film coated with a drafting surface. Pretreatment of the "Mylar" base with trichloroacetic acid to improve adhesion of the coating was considered there, although the evidence does not establish that Beeber and Spechler had conceived the subject matter defined by the counts by that date.

Kastner, who began work for Keuffel & Esser as Spechler's assistant on February 1, 1955, testified that shortly thereafter he and Spechler worked on trichloroacetic acid treatment of "Mylar" film. He stated that they made up laboratory bench solutions, tried them on the film, "tried various coatings" they had made, lacquers that they had "established," and checked them for improvement in adhesion. Kastner also stated that they "settled on" a formulation for the treating solution at that time and ran "a series of tests and evaluations on various coatings." He further referred to Spechler's notebook as "the only notebook at that time in our lab," stated that it was available for reference work during working hours and that he used it, as when he "needed it to make up a machine batch or, say, 5 gallons for a testing solution." According to Kastner, the formulation set out on page 149 of the notebook which includes toluene as the solvent, was the standard one used for making up trichloroacetic acid solution for the initial tests.

Concerning machine tests, Kastner stated that the pilot coating on the machine was usually done by production people, supervised by laboratory personnel including Spechler and himself. He described the No. 9 dip coating machine used therefor as completely immersing the film in the acid solution and including radiant heaters for drying the material as it emerged. According to Kastner, the temperature was a maximum of 200 degrees in the upper part of the machine and about 130 degrees at the bottom, with the purpose of the heat being "to drive off the excess toluene and eliminate any residual amounts of acid that were left on the sheet."

Kastner testified that treated film was tested for adhesion, stating:

> It would be dipped into a lacquer which was currently being used on some testing, a frost lacquer, which we called it, with a resin base. We would dip it in, bake it in an oven for a specific period of time, to cure it, and we would check it with "Scotch" tape, or wrinkle it, fold it, and check the adhesion of the coating along the seam of the fold.

He then described the "Scotch" tape test the same as it was described by Spechler. The witness also stated that the film was transparent after the trichloroacetic acid treatment and that the treatment caused "[n]o apparent etching."

Ritchie stated that he had the responsibility of setting up work for the coaters in 1955 and testified, with the aid of contemporaneous records, concerning numerous instances of treating "Mylar" film with trichloroacetic acid during the period in that year prior to appellee's filing date. The acid treatment was described as accomplished on the No. 9 machine, referred to on Spechler's notebook, page 149, and the drying temperature was specified as about 185 degrees with the speed of 80 yards per hour for the film through the machine being established the "first part of April, 1955." Spechler and Kastner were designated as having done some of the coating or treating themselves and as having made tests on treated films after coatings were applied to them.

Ritchie testified that the film that was treated came from rolls with labels having "Du Pont Mylar" on them and insisted, despite vigorous questioning by counsel for appellees, that such identification was correct. While the solutions of trichloroacetic acid used were prepared by others, Ritchie testified to the trichloroacetic acid having arrived at the shop in cartons identifying it as that product from Dow Chemical Company.[7]

The witness Eck, a coater in the same department as Ritchie, also testified to the treating of "Mylar" film with trichloroacetic acid solution on the No. 9 machine during early 1955.

Turning to Kosar, he testified that his first assignment, after commencing employment with Keuffel & Esser on January 31, 1955, was to find a way to adhere photographic emulsion to polyester cloth. He requested suggestions on that problem from Spechler and his description of the latter's response to the request is set out in the following testimony:

> Q34. Tell us what you can remember of what he told you.
>
> * * * * * * *
>
> A. Well, he told me that he has a similar problem, only that instead of polyester cloth he was using polyester film, and he told me about his experiments with trichloroacetic acid, which he dissolved in solvents, about some other chlorinated or halogenated acids, trichloro, and he just showed me, he had on his bench. Now, I really cannot recall now that he showed me the exact experiment what he did and he proved to me, but I would not be satisfied with less than what does he show me, so I recall this very clearly, that his lacquer stick very well to the Mylar, so I obtained the formula from him and I tried the same thing on the polyester cloth.
>
> Q35. I am not completely clear in my own understanding of your answer, Doctor, as to whether you recall his performing the experiment or whether you do not recall his performing the experiment. A. Well, I do not recall the exact way how he showed this experiment to me, but I am sure that on some way he had to satisfy me that this method works.

Kosar testified also that Spechler used a "Scotch" tape test to demonstrate that the adhesion of the lacquer to the Mylar was good. Testimony and records of Kosar demonstrate that he carried out similar trichloroacetic acid treatment and adhesion tests on polyester cloth in February of 1955.

The Board dismissed Kastner's testimony as "very general" and stated that it "does not establish any specific instance of carrying out the process defined in the counts and the satisfactory testing of the coated material in that instance."

However, we consider it apparent from our review of Kastner's testimony that it has very significant corroborative value. It substantiates that Spechler and Kastner worked on the problems of pretreatment of "Mylar" film and that the problem was solved by the treat-

[7] Kappler testified that "Mylar" was purchased from DuPont Company in the early stages of the work treating such film. He also stated that trichloroacetic acid was purchased from Dow Chemical.

ment testified to by Spechler. The fact that specific conditions required by the counts prevailed during the experimental work is supported by Kastner, and he confirms that pertinent activities took place well before the earliest date to which appellees are entitled. Kastner's testimony plainly serves the purpose of corroborative evidence, in the language of *Hasselstrom* v. *McKusick*, supra, "to confirm and strengthen the testimony of the inventor." The answer to the objection that a "specific instance" of carrying out the invention and satisfactorily testing the invention is not established by Kastner's testimony is also indicated in that case where it is stated in finding corroborated reduction to practice:

> We have not overlooked the fact that the testimony does not cover the passage of a *specific sample* of ammonium acetate through all the steps of the process. However, the instant record satisfactorily establishes a system or pattern whereby, over a period of approximately six months, *many samples* were prepared, irradiated, and analyzed, and amino acids isolated therefrom.

It is our judgment that the record here establishes not only that the particular work described in connection with page 149 of Spechler's notebook took place within the time in question, but that there were also other instances in which "Mylar" film was treated as required by the counts and provided with coatings which showed satisfactory adhesion on testing during the early part of 1955 and before appellees' effective date.

That conclusion is further reinforced by the testimony of Kappler, Stein, Ritchie and Eck. Thus, Kappler and Stein provide corroboration that the problem of adhesion of coatings to "Mylar" film was recognized by several persons at Keuffel & Esser, including both Beeber and Spechler, at the time of the activities relied on here. Ritchie and Eck substantiate the testimony of both Spechler and Kastner regarding their practice of the treatment and testing of coated material embodying the treatment. In particular, Ritchie provides significant corroboration of the operations on machine No. 9 taking place within the critical period and further corroborates the evidence as to many specific aspects of the process.

Concerning Kosar's testimony, the Board stated:

> The record * * * shows that Kosar testified that Spechler took a strip of transparent film, dipped it in a solution, then dried it, coated it with something else, dried it and checked the adhesion. Kosar agreed that that was the substance of what he could recall of that experiment.

The deficiency it finds in that testimony is that Kosar did not have independent knowledge that the materials used in Spechler's demonstration to him were what Spechler said they were. We need not determine whether Kosar's testimony alone constitutes adequate corroboration. The testimony plainly recounts circumstances which tend to confirm and strengthen the testimony given by Spechler, and, taken with the evidence of the other witnesses, it satisfies us that Spechler's account of the activities is true.

Appellees argue in their brief that:

> * * * no entry is found in the notebook in the specificity of the counts, which, as shown above, Spechler, himself, considered necessary to the complete practice of the invention. * * *

The "as shown above" apparently is based essentially on testimony of Spechler concerning a portion of the Beeber and Spechler specification. The portion of the specification reads:

> According to the present invention, the polyethylene terephthalate film is coated with a solution of a halogenated fatty acid in an organic solvent and then the coated film is heated to a temperature in the range from 100° F. to 300° F. to remove the organic solvent, to react the halogenated fatty acid with the surface of the polyethylene terephthalate film, and to remove the excess halogenated fatty acid by evaporating it from the surface.

The testimony includes the following question which Spechler answered affirmatively:

> Can we agree, then, that in order to achieve a surface on the polyethylene terephthalate film which is receptive to a firm bond between it and an overlying organic coating, that there is more to the process than just dumping on a solution of halogenated fatty acid; namely, you have to do these other things that are referred to in this sentence; is that correct?

Appellees further urge that the Board expressly considered page 149 and found it inadequate.

We do not find those arguments persuasive. Spechler not only identified his notebook but testified regarding it and the activities it covered. It would be futile to consider either the notebook alone or the testimony alone. Considering the notebook and the testimony together, the Board did not find any feature of the count lacking. It only concluded that adequate corroboration has not been provided. On that point, we consider the Board to be in error for the reasons already stated.

Appellees further rely on *Thurston* v. *Wulff*, 35 CCPA 794, 164 F.2d 612, 76 USPQ 121 (1947) and *Vandenberg* v. *Reynolds*, 46 CCPA 938, 268 F.2d 744, 122 USPQ 381 (1959) as supporting their position that there is not adequate corroboration of reduction to practice. In *Patterson* v. *Hauck*, we pointed out how the Board there drew unduly rigid principles of law from *Thurston* v. *Wulff*, and we think appellees have fallen into the same error here. In the present case, as in *Patterson*, the question is whether a simple process using known materials was practiced and does not involve the complexity of establishing the identity of a chemical compound as was the case in *Thurston*. The principles set out in *Patterson* thus govern here.

As to the *Vandenberg* case, appellees do not point out any specific analogy in the factual situations but instead rely on a statement made therein as follows:

> We cannot, however, accept mere probability or likelihood as proof of an actual reduction to practice.

We see no reason to disagree with that pronouncement in the context of that case. However, the burden on Beeber and Spechler here is to prove priority by a preponderance of the evidence. They need not prove their case beyond a reasonable doubt. Since we think they have met their proper burden so far as proving the facts asserted by Spechler is concerned, the issue must be decided in their favor.

[5] Two other contentions of appellees remain for consideration. One of them is that the actions of Beeber and Spechler and their assignee, after the activities relied on, are inconsistent with an actual reduction to practice having taken place as asserted. We find nothing in the record to give any substantial support to that contention. The fact, advanced by appellees, that the application for the earlier Beeber and Spechler patent for the coated "Mylar" product lacking acid pretreatment was filed on March 24, 1955 without disclosing the invention presently involved, is plainly of no significance. The earlier patent relates to a product which Keuffel & Esser apparently had already developed and was either marketing or about to market. On the other hand, the patent here involved relates to an improvement process

which the assignee might well be expected to patent separately and which, at the time, was not subject to any urgency because of public use.

[6] Appellees next urge that "the complete absence of contribution by the coparty Beeber to the subject matter" is perhaps "one of the most significant indications of lack of success at K & E in 1955." They contend that there is an inference that Beeber [8] made his contribution after the period in early 1955 covered by the evidence. Such contention is entirely too remote to be given any weight and plainly cannot overcome the substantial evidence of actual reduction to practice already discussed. Moreover, it is clear that a question of third party inventorship cannot be raised in these proceedings. *Huang* v. *Cheney*, 53 CCPA 1355, 362 F.2d 816, 150 USPQ 295.

In summary, we are convinced that Beeber and Spechler have demonstrated by legally sufficient proof that the process in issue was successfully performed in the early part of 1955 and well before the filing date of appellees. Hence the Board erred in not awarding priority to Beeber and Spechler.

The decision of the Board is reversed.

REVERSED.

Judge Smith participated in the hearing of this case but died before a decision was reached.

[8] The record establishes that Beeber, who was in charge of the laboratory group during the period in question, left Keuffel & Esser subsequent to May of 1957 and indicated in 1960 that no further cooperation by him with the company could be expected.

U.S. Court of Customs and Patent Appeals

IN RE DIETER OSSWALD

No. 8066. Decided February 6, 1969

[56 CCPA —; 405 F.2d 908; 160 USPQ 545]

1. PATENTABILITY—PARTICULAR SUBJECT MATTER—"DEVELOPER FOR THE DRY DEVELOPMENT OF ELECTROPHOTOGRAPHIC MATERIAL."

The refusal of certain claims in an application entitled "Developer for the Dry Development of Electrophotographic Material," as unpatentable over the prior art, is affirmed.

APPEAL from Patent Office. Serial No. 232,241.

AFFIRMED.

James E. Bryan for appellant.

Joseph Schimmel (*Raymond E. Martin*, of counsel) for the Commissioner of Patents.

Before WORLEY, *Chief Judge*, and Judges RICH, ALMOND, BALDWIN, and KIRKPATRICK [1]

ALMOND, *J.*, delivered the opinion of the court.

This is an appeal from the decision of the Patent Office Board of Appeals affirming the final rejection of claims 1 to 34 all of the claims of appellant's application entitled "Developer for the Dry Development of Electrophotographic Material." [2]

The invention relates to an electrophotographic dry developer and a process for developing an electrostatic image using the developer. The established process of making and developing electrophotographic images comprises the steps of electrostatically charging a photoconductive insulating material, subsequently exposing the material

[1] Senior District Judge, Eastern District of Pennsylvania, sitting by designation.
[2] Serial No. 232,241, filed October 22, 1962.

to a light image whereupon the charge leaks away in the exposed areas, followed by treatment with a developer that renders the resultant electrostatic image visible to the eye. The developer consists of a mixture of finely divided resins loosely held by finely divided inorganic substances due to electrostatic charges of opposite polarity. When the developer cascades over the electrostatic image, the resin particles are attracted by the image to be developed while the inorganic particles roll away.

The quality of the electrostatic images produced with these developers depends to a considerable extent upon the relative atmospheric humidity, and where the humidity is greater than 65 percent, reproduction is said to be inadequate.

Appellant's invention comprises a dry developer containing finely divided resins, synthetic or natural, and finely divided oxidation products of metals or metalloids, preferably the elements of the main and subgroup IV of the Periodic System, such as silicon, tin, titanium and zirconium. Additional elements located in groups III, V and VI of the Periodic System are also usable. The metal or metalloid oxides, prior to mixing with the resins, are treated in a known manner with any of a group of compounds known generally as halogen silanes. The silanes disclosed are halogenated silicon compounds substituted with hydrocarbon substituents.

Appellant's developer allegedly gives electrostatic powder images well covered with the resin component and having sharp margins, even in a relative atmospheric humidity of 65 to 95 percent. The advantages are said to result primarily from the fact that the charge acquired by the particles of oxidation products, with respect to the resin powders, is so much increased that the two components adhere more firmly to each other than is the case with the known developers.

The independent claims, 1 and 18, are illustrative:

1. An electrophotographic developer comprising an effective amount of a finely divided resin in admixture with an effective amount of a finely divided oxidation product of the group consisting of metals and metalloids the surface of which has been treated with a halogen silane.

18. A process for developing an electrostatic image which comprises contacting the image with a developer comprising an effective amount of a finely divided resin in admixture with an effective amount of a finely divided oxidation product of the group consisting of metals and metalloids the surface of which has been treated with a halogen silane.

Claims 2 and 3 are limited respectively to a natural and a synthetic resin. Claims 4 and 12 specify subgenerically the class of metals or metalloids used, while claims 6 to 11 recite specific individual materials as the oxidation product component of the developer. Claim 5 adds to the developer a dyestuff. Claims 13 to 17 include specific limitations as to the halogen silane used to treat the oxidation product. Claims 19 to 34, dependent from method claim 18, essentially parallel, as to the specificity of developer composition, the composition claims discussed above.

The references relied upon are:

Safford, 2,424,853, July 29, 1947.
Walkup et al., 2,638,416, May 12, 1953.
Kienle et al., 2,717,246, Sept. 6, 1955.
Greig I, 2,874,063, Feb. 17, 1959.
Wielicki, 2,986,521, May 30, 1961.
Greig II, 3,060,021, Oct. 23, 1962.

Greig II discloses electrostatic printing with an improved developer powder consisting of finely divided particles of a semiconductive zinc oxide which has been coated with a film-forming material such as wax.

Wielicki discloses a dry developer, the electroscopic material of which is composed of low-melting synthetic resins or waxes. Zinc oxide may also be used; however, then a film-forming thermoplastic coating is first applied to the material. The developer material is then coated with colloidal silica to provide reversal type developer powders.

Greig I relates to electrostatic printing with a developer mix consisting of finely divided resins, gums or waxes and a ferromagnetic carrier such as iron or magnetite particles. The carrier particles may be coated with an organic insulating film or metal film to alter the triboelectric effect.

Walkup teaches preparation of a dry developer by mixing an electroscopic powder and a granular carrier. The electroscopic powders are insulating materials consisting of modified resins and may be colored with suitable pigments. The granular carriers are materials of either a conducting or insulating nature, provided only that when in close contact with the electroscopic powder, the carriers acquire a charge that is opposite to the powder, and may consist of a wide variety of materials ranging from synthetic resins to inorganic salts or inorganic oxides such as zircon.

Safford discloses the treatment of titanium dioxide with organosilicon halides to render the oxide water repellent. The halogen silane treatment produces a water-repellent dielectric material whose electrical properties are uniform and substantially independent of changing humidity conditions. A dielectric sheet prepared by compounding the treated oxide with a synthetic resin is disclosed.

Kienle discloses coating titanium dioxide with a water-insoluble polyvalent metal hydrous oxide and a super-imposed coating of a polyorganosiloxane to give increased resistance to water wetting. In addition to being water repellent, the oxide is characterized as being a free-flowing powder that does not cake, agglomerate or cohere on storage due to the fact that the silicon coatings provide the particle with a smooth, nontacky surface. The patentee indicates that the hydrous oxide coating is necessary for the desired hydrophilic properties.

The Board affirmed the Examiner's final rejection of all the claims on two grounds: (1) that the claims were unpatentable over Greig II in view of Wielicki, Greig I, Walkup, Safford and Kienle, under the terms of 35 U.S.C. 103, and (2) that under 35 U.S.C. 112 the claims were rejected as failing to properly define the invention.

In sustaining the Examiner's rejection on prior art, the Board took the position that:

> The primary novel concept presented in this application involves the use of a halogen silane for the treatment of an oxidation product of a metal or metalloid for the purpose of avoiding the deleterious effects of high atmospheric humidity of greater than 65% due to the effect of the moisture on the developer. The composition without the silane treatment appears to be old in the art as shown by the references and from appellant's explanation of the subject matter involved.
>
> As pointed out by the Examiner, it is old to treat an oxidation product of the type claimed with a halogen silane for the precise purpose in view of rendering it water-repellent so that electric charges thereon will not be affected by changing humidity and this is shown by Safford * * *.

The Board's response to appellant's contention that Safford and Kienle were nonanalogous references was that:

> * * * we do not find such arguments persuasive as the particular purpose for treating the oxide in the references is for the same purpose as in appellant's composition, which is to render the oxide independent of changing humidity conditions.

The rejection based on 35 U.S.C. 112 was affirmed by the Board because the recitation "an effective amount" was considered to be indefinite on its face, in view of the fact that it failed to recite the function that was to be rendered effective, citing *In re Frederiksen*, 41 CCPA 927, 213 F.2d 547, 102 USPQ 35, and *In re Caldwell*, 50 CCPA 1464, 319 F.2d 254, 138 USPQ 243.

Appellant challenges the correctness of the Board's decision by contending that the Safford and Kienle references are from arts completely nonanalogous to the electrophotographic art and accordingly it is improper to combine these two with the other four references which are said to be irrelevant to the present invention. Furthermore, it is contended that there is no suggestion that any of the references can be combined to meet the recitation of the claims.

Appellant argues that the purpose of treating the oxide in his invention is "to only a minor degree concerned with 'changing humidity conditions,'" relying on the statement in the specification that:

> The advantages to be gained by the use of the developer of the invention instead of the developers hitherto known result primarily from the fact that the charge acquired by the particles of oxidation products, with respect to the resin powder, is so much increased that the two components adhere more firmly to each other than is the case with the developers hitherto known.

We cannot accept this argument. More convincing is the Solicitor's observation that:

> * * * other portions of the specification speak in other terms, such as that "above all," sharp images are produced with appellant's developer, "even in a relative atmospheric humidity of 65 to 90 percent" * * *, and * * * emphasize that the utility of the specific developers is found when used under relatively high humidity conditions. Further, the disclosure in the specification of the prior art and its disadvantages * * * makes it abundantly clear that appellant, recognizing the problems when the relative atmospheric humidity exceeded approximately 65 percent, devised a developer to eliminate those problems, as is evident from the various specification statements referred to above.

We feel that it is fairly established that appellant was seeking to solve a problem relating to the adverse effects of moisture on developer powders. The question then is whether one having ordinary skill in the art of making and developing electrophotographic images, faced with the problem above, would reasonably look to what the prior art taught relative to protecting the components of such developers from the effects of atmospheric humidity. We think he would and furthermore, having done so, would find that Safford is concerned with overcoming the hydrophilic properties of titanium dioxide, one of the oxidation products disclosed by appellant, by treating it with a halogenated silane, as does the appellant, obtaining thereby "material whose electrical properties are uniform, [and] substantially independent of changing humidity conditions * * *." Thus, we feel, the reference renders obvious appellant's solution to the humidity problem.

We can find no persuasive argument in support of appellant's contention that the patents to Greig, Wielicki and Walkup are irrelevant to the present invention. While appellant contends that the Examiner

and Board failed to address themselves to the dependent claims but merely made a blanket rejection of all the claims without pointing out wherein the specific limitation of the dependent claims are obvious in view of the references, we observe that the Board did consider that "the recital of such old known materials in the various claims does not patentably distinguish them over the references" and concluded that the claims were not patentable over the references cited. The Solicitor, in his brief, has clarified the Board's statement by a more detailed discussion of the reasons for considering the dependent claims obvious; however, appellant has not effectively rebutted this position by providing the court with the benefit of his views as to the unobviousness of the specific recitations in the dependent claims. In view of the record and arguments presented, we are constrained to agree with the Board that "[t]he composition without the silane treatment appears to be old in the art as shown by the references and from appellant's explanation of the subject matter involved."

Failing to find error in the Board's affirmance of the rejection of claims 1 to 34, under 35 U.S.C. 103, as obvious in view of prior art, we deem it unnecessary to consider the rejection of the claims under 35 U.S.C. 112.

[1] The decision is affirmed.

AFFIRMED.

KIRKPATRICK, *J.*, took no part in the decision of this case.

U.S. Court of Customs and Patent Appeals

STEER INN SYSTEMS, INC. *v.* LAUGHNER'S DRIVE-IN, INC.

No. 8086. Decided February 13, 1969

[56 CCPA —; 405 F.2d 1401; 160 USPQ 626]

1. TRADEMARK—CONFUSING SIMILARITY—OPPOSITION.

"* * * all that opposer needs to establish is *likelihood* of confusion, to be determined after considering the marks and the services of the respective parties. *Fred W. Amend Co.* v. *American Character Doll Co.*, 42 CCPA 983, 223 F.2d 277, 106 USPQ 187 (1955)."

2. SAME—SAME—"STEER-IN" AND "STEER INN" FOR DRIVE-IN RESTAURANTS.

"Both parties are operating drive-in restaurants wherein hamburgers, cheeseburgers, beverages, and the like are featured. The use of the same or similar marks in connection with these services could well lead persons to mistakenly assume that there is some connection between the two operations. 'STEER-IN' and 'STEER INN' are substantially identical designations. Opposer has used the name 'LAUGHNER'S' in association with the designation 'STEER-IN' on its menus, signs, and the like; but it is also apparent from the record, as indicated above, that 'STEER-IN' has on occasion been used separate and apart from 'LAUGHNER'S' to identify opposer's restaurant and the food served therein."

APPEAL from Patent Office. Opposition No. 43,121.

AFFIRMED.

Arthur H. Seidel, John Justin McCarthy, Edward C. Gonda, Seidel & Gonda for appellant.

Harold R. Woodard, C. David Emhardt, Woodard, Weikart, Emhardt & Naughton for appellee.

Before WORLEY, *Chief Judge*, and Judges RICH, ALMOND, BALDWIN, and KIRKPATRICK [1]

BALDWIN, *J.*, delivered the opinion of the court.

[1] Senior District Judge, Eastern District of Pennsylvania, sitting by designation.

This is an appeal from the Trademark Trial and Appeal Board decision [2] sustaining an opposition by Laughner's Drive-In, Inc. to Steer Inn Systems, Inc.'s application [3] to register the service mark STEER INN for "Restaurant Services."

The record shows that opposer has been incorporated under the laws of Indiana since December 21, 1958, and that, under the name LAUGHNER'S STEER-IN, it operates a drive-in restaurant in Indianapolis, Indiana, specializing in hamburgers, cheeseburgers, steaks and the like. The designation STEER-IN was first used on the construction site of LAUGHNER'S STEER-IN drive-in restaurant in February, 1959. The restaurant was opened for business on June 29, 1960, under the name LAUGHNER'S STEER-IN and has continued to operate under that name. Opposer has used the mark STEERBURGER on one of its products since June 29, 1960, and TWIN STEER on another since July 6, 1960.[4] Opposer's restaurant has been advertised in newspapers and on radio and television.

The applicant owns and operates sixteen STEER INN drive-in restaurants in New York, New Jersey, Pennsylvania, and Delaware. There is testimony that it decided, in January, 1960, to engage in the drive-in restaurant business under the name STEER INN. The designation STEER INN was displayed on applicant's business office from January, 1960, to September, 1960, when the applicant was incorporated under the laws of Pennsylvania.

We agree with appellee's synopsis of the Board's findings that:

(*a*) "Opposer's record supports its use of the designation 'STEER-IN' in connection with the rendering of drive-in restaurant services in Indianapolis, Indiana since as early as June 29, 1960. While applicant was incorporated in September 1960, the record is silent as to when applicant first rendered its drive-in services under the mark 'Steer Inn.'"

(*b*) "In either event, we find on the record that opposer is the prior user * * *"

(*c*) "'Steer-In' and 'Steer Inn' are substantially identical designations."

(*d*) "Opposer has used the name 'Laughner's' in association with the designation 'Steer-In' on its menus, signs, and the like; but it is also apparent from the record as indicated above, that 'Steer-In' has on occasion been used separate and apart from 'Laughner's' to identify opposer's restaurant and the food served therein."

The record is clear that the opposer first engaged in the drive-in restaurant business as early as June 29, 1960, under the name STEER-IN and that the applicant first engaged in *that* business some time after opposer. Also, the opposer has testimony to the effect that it first displayed a sign showing the mark STEER-IN on its construction site in February, 1959. The applicant has claimed first use of the mark STEER INN from January to September, 1960; but *that* use was on a business office door sign, letterheads, architectural drawings, etc., all prior to applicant's opening its first drive-in restaurant under the mark. Under these facts, we think that the opposer was the prior user for purposes of service mark registration.

The opposer urges that confusion as to source is likely because of the similarity in sound and appearance of the marks STEER-IN and STEER INN and because both marks are used in connection with drive-in restaurant services. The applicant argues that there is no

[2] Reported at 151 USPQ 650.

[3] Serial No. 133,422, filed December 5, 1961.

[4] From the record, it appears that opposer's only use has been in *intra*state commerce, not *interstate*. Opposer is the present owner of the following Indiana registrations: No. 5005–525 for STEER-IN, August 25, 1960; No. 5006–042 for TWIN STEER, February 26, 1963; No. 5005–526 for STEERBURGER, August 25, 1960; and No. 5005–524 for a composite mark consisting of a steer holding a plaque and the words LAUGHNER'S STEER-IN, August 25, 1960. No arguments concerning the intrastate-interstate dichotomy have been presented here; thus, we will not discuss the matter.

likelihood of confusion because the design of its restaurants is distinct and distinguishable from opposer's and because the business operations are basically different as to menu, price, service, and accommodations. Applicant also argues that opposer's restaurant is promoted as *LAUGHNER'S* STEER-IN, rather than STEER-IN per se.

[1] However, all that opposer needs to establish is *likelihood* of confusion, to be determined after considering the marks and the services of the respective parties. *Fred W. Amend Co.* v. *American Character Doll Co.*, 42 CCPA 983, 223 F.2d 277, 106 USPQ 187 (1955).

[2] Both parties are operating drive-in restaurants wherein hamburger, cheeseburgers, beverages, and the like are featured. The use of the same or similar marks in connection with these services could well lead persons to mistakenly assume that there is some connection between the two operations. "STEER-IN" and "STEER INN" are substantially identical designations. Opposer has used the name "LAUGHNER'S" in association with the designation "STEER-IN" on its menus, signs, and the like; but it is also apparent from the record, as indicated above, that "STEER-IN" has on occasion been used separate and apart from "LAUGHNER'S" to identify opposer's restaurant and the food served therein.

The Board's decision is affirmed.

AFFIRMED.

KIRKPATRICK, *J.*, took no part in the decision of this case.

PATENT SUITS

Notices under 35 U.S.C. 290; Patent Act of 1952

2,544,246, G. H. Butterfield, CORNEAL CONTACT LENS, **filed** May 7, 1969, D.C., C.D. Calif. (Los Angeles), Doc. 69–872–FW, *George H. Butterfield, Sr.* v. *Cal Optics.*

2,604,359, F. L. Zybach, SELF-PROPELLED SPRINKLING IRRIGATION APPARATUS, **filed** Apr. 14, 1969, D.C. Nebr. (Omaha), Doc. C–03266, *Valmont Industries, Inc. et al.* v. *Gifford-Hill & Company, Inc.* **Same, filed** July 10, 1969, D.C. Kans. (Wichita), Doc. W–4192, *Valmont Industries, Inc. et al.* v. *Gifford-Hill & Company, Inc.*

2,614,916, Hoffman and Schoene, AGRICULTURAL CHEMICAL COMPOSITIONS COMPRISING 1,2-DIHYDROPYRIDAZINE-3,6-DIONE AND ITS SALTS, **filed** June 10, 1969, D.C.N.J. (Newark), Doc. C–659–69, *Uniroyal, Inc.* v. *Fairmount Chemical Co., Inc.*

2,648,428, White and Scott, SHIPPING CONTAINER, **filed** May 25, 1966, D.C., N.D. Calif. (San Francisco), Doc. 45148, *Fabricated Metals Inc.* v. *Hoover Ball & Bearing Company.* Summary judgment entered against the defendant, Hoover Ball & Bearing; patent is invalid, May 28, 1968.

2,650,732, Cusic and Robinson, QUATERNARY AMMONIUM SALTS OF DIALKYL AMINOALKYL XANTHENE-9-CARBOXYLATES AND THE PRODUCTION THEREOF, **filed** Dec. 5, 1967, D.C., E.D.N.Y. (Brooklyn), Doc. 67–C–1143, *G. D. Searle & Co.* v. *Generic Formulae Inc.*

2,683,901, H. W. Griswold, FLY PREVENTION FOR CARDS, **filed** May 20, 1966, D.C., W.D.N.C. (Charlotte), Doc. 2132, *Jenkins Metal Shops, Inc. and Southern Suction & Equipment Corp.* v. *Pneumafil Corporation.* Final judgment, plaintiffs have not infringed, June 24, 1969.

2,742,462, G. Gever, NEW N-(5-NITRO-2-FURFURYLIDENE)-3-AMINO-2-OXAZOLIDONES, **filed** June 24, 1969, D.C., W.D. Ark. (Fort Smith), Doc. FS–69–C–72, *Morton-Norwich Products, Inc.* v. *Joe N. Pless, Sr., doing business as Joe N. Pless Company.*

2,796,370, Ostrander and Congiundi, COMPOSITION AND METHOD FOR PRODUCING CORROSION RESISTANT PROTECTIVE COATING ON ALUMINUM AND ALUMINUM ALLOYS, **filed** Mar. 5, 1965, D.C., N.D. Ill. (Chicago), Doc. 65c337, *Allied Research Products Inc. and Amchen Products Inc.* v. *Heatbath Corporation and Berg Manufacturing & Sales Co.* Consent judgment, counterclaims are dismissed without prejudice, Nov. 14, 1968. Amended decree, patent is valid. Defendant, Heatbath Corporation has infringed claims 3 and 17. Defendant, Berg Manufacturing and Sales Co. has infringed claims 3, 6, 16 and 17. Defendants, Heatbath Corporation and Berg Manufacturing and Sales Co. permanently enjoined. Defendants' counterclaim for violation of Sections 1 and 2 of the Sherman Antitrust Act is dismissed with prejudice, Apr. 10, 1969.

3,095,277, Free and Kercher, DIAGNOSTIC COMPOSITION, **filed** Nov. 19, 1968, D.C., N.D. Ind. (South Bend), Doc. 4276, *Albert S. Keston and Miles Labs., Inc.* v. *Alfred H. Free, Mary Lou Kercher and Miles Labs., Inc.*

3,175,256, R. C. Horton, WEATHER STRIP, **filed** June 23, 1969, D.C., S.D. Ohio (Dayton), Doc. 3706, *The Schlegel Mfg. Co.* v. *King Aluminum Corp.*

3,289,527, Gilford and Emary, FLOW-THROUGH CELL INCLUDING MEANS FOR PROVIDING A UNIFORM FLOW PATTERN THERETHROUGH, **filed** June 20, 1969, D.C., N.D. Ill. (Chicago), Doc. 69c1313, *Gilford Instrument Laboratories, Inc.* v. *Beckman Instruments, Inc.*

3,307,708, R. S. Halstead, DISPLAY RACKS FOR PHONOGRAPH RECORDS IN ENVELOPES OR JACKETS, OR SIMILAR ARTICLES, **filed** June 16, 1969, D.C., S.D.N.Y., Doc. 69–C–2582, *Ken Wire & Metal Products Inc.* v. *Columbia Broadcasting Systems Inc.*

3,312,124, Meier and Meier, STEERING-WHEEL ASSEMBLY FOR AUTOMOTIVE VEHICLES, **filed** June 26, 1969, D.C. Minn. (St. Paul), Doc. 3–69–119–C, *Sterling Products Company, Inc.* v. *Superior Industries, Inc. and Kamei-Autokomfort.*

3,313,545, J. R. Bartsch, UNITARY MOLDED GOLF BALL, **filed** Dec. 9, 1968, D.C., W.D. Mich. (Kalamazoo), Doc. CA–124, *PCR Patent Development Corporation* v. *Shakespeare Co., Inc. and Plymouth Golf Ball Co., Inc.*

3,315,691, J. E. Widner, VEHICLE POWER WASHING APPARATUS, **filed** June 30, 1969, D.C., N.D. Ala. (Birmingham), Doc. 69–411, *Robo-Wash, Inc., and Citation Manufacturing Company, Inc.* v. *Roy Pinkston and Gladys H. (Mrs. Roy) Pinkston, doing business as Pinkston Gyro Wash.*

3,318,854, Honn and Sims, FLUORINATED ELASTOMERIC COPOLYMERS, **filed** June 13, 1969, D.C., N.D. Ill. (Chicago), Doc. 69c1260, *Minnesota Mining and Manufacturing Co.* v. *E. I. du Pont de Nemours and Company, Inc.*

3,323,437, J. V. Knab, FILTER SYSTEM, **filed** Sept. 7, 1967, D.C., W.D.N.Y. (Buffalo), Doc. C–1967–334, *Westinghouse Electric Corp.* v. *Walter Kidde & Company, Inc.* Stipulation of dismissal, June 24, 1969.

3,324,062, G. S. Y. Poon, TEXTILE TREATING COMPOSITION COMPRISING A MIXTURE OF A UREA-FORMALDEHYDE CONDENSATE AND A TRIAZONE-FORMALDEHYDE CONDENSATE, **filed** Mar. 26, 1969, D.C.S.C. (Greenville), Doc. C.A. 69–244, *Dan River Mills, Incorporated* v. *Sun Chemical Corporation.*

3,324,954, W. J. Westendorf, LOADER DEVICE AND METHOD OF MOUNTING SAME ON TRACTOR, **filed** June 26, 1969, D.C. Mont. (Great Falls), Doc. 2864, *Walter J. Westendorf* v. *John C. Gill, doing business as Renn (Calgary) Ltd.*

3,348,698, K. McConnell, PALLET RACK, **filed** May 21, 1969, D.C., N.D. Ill. (Chicago), Doc. 69c1097, *Interlake Steel Corporation* v. *Unarco Industries, Inc.* On motion of plaintiff, cause dismissed without prejudice, June 25, 1969.

3,361,652, Korpiun, Sedlacek Steeg, ELECTRODEPOSITION OF BRIGHT TIN, **filed** July 1, 1969, D.C. Conn. (New Haven), Doc. 13241, *Conversion Chemical Corporation* v. *Lea-Ronal, Inc.*

3,364,664, D. H. Doane, GREASE EXTRACTOR FOR VENTILATING SYSTEMS, **filed** June 27, 1969, D.C., S.D. Tex. (Houston), Doc. 69–H–613, *Cockle Ventilator Co. Inc.* v. *Vent Master Corp. and Industrial Metal Fixtures, Inc.*

3,376,515, W. G. Dilley, SINGLE-ENDED, PUSH-PULL TRANSISTOR AUDIO AMPLIFIER, **filed** June 23, 1969, D.C., N.D. Ohio (Cleveland), Doc. C69–482, *William G. Dilley, doing business as Spectra-Sonics* v. *Daniel L. Flickinger & Associates.*

3,379,534, H. Gablinger, PREPARATION OF A LOW DEXTRIN BEER BY USING AMYLOGLUCOSIDASE, **filed** July 22, 1968, D.C.N.J. (Newark), Doc. C–745–68, *Amylase A.G.* v. *P. Ballantine & Sons, Inc.* Order of dismissal of action, June 16, 1969.

3,380,236, E. S. Shepardson, APPARATUS FOR HARVESTING GRAPES, **filed** June 3, 1969, D.C., W.D. Pa. (Erie), Doc. 47–69 Erie CA, *Chisholm-Ryder Co., Inc., and N.Y. State Concord Grape Production Research Fund, Inc.* v. *Leo J. Lewis, Mark Lewis and William L. Lewis and Lewis Manufacturing Co.*

3,430,450, R. R. Hill, ADJUSTABLE ADVANCE LIMITER FOR IGNITION SYSTEMS, **filed** June 26, 1969, D.C., N.D. Calif. (San Francisco), Doc. 51626, *Raymond Roger Hill* v. *Goodies Speed Shop.*

3,451,706, F. D. Brooks, SECURITY APPARATUS, **filed** June 23, 1969, D.C., S.D. Tex. (Houston), Doc. CA 69–H–578, *F. Don Brooks & Leedon Corp.* v. *Chadwick-Miller et al.*

Re. 24,954, H. Church, APPARATUS FOR FILTERING SOLIDS FROM GAS-SOLIDS SUSPENSIONS, **filed** Jan. 12, 1968, D.C. Md. (Baltimore), Doc. 19106, *Slick Industrial Company* v. *R.M.R. Corporation.* Stipulation, dismissed without prejudice, Apr. 25, 1969.

D. 171,963, L. Blum, RAIL, **filed** June 25, 1969, D.C., N.D. Ga. (Atlanta), Doc. 12847, *Blumcraft of Pittsburgh* v. *Kawneer Co., Inc. et al.* **Same, filed** June 25, 1969, D.C., S.D. Fla. (Miami), Doc. 69–797–C–TC, *Blumcraft of Pittsburgh* v. *Metallic Engineering Co., Inc.*

D. 201,793, J. K. Rains, SWIMMING POOL, **filed** Mar. 22, 1966, D.C., S.D.N.Y., Doc. 66–C–812, *John K. Rains* v. *Cascade Industries, Inc. and Jil-Mic, Inc.* Notice of settlement, patent is invalid; complaint dismissed with prejudice, June 4, 1969.

D. 212,602, R. A. Gera, SECTIONAL SOFA, **filed** June 19, 1969, D.C., S.D. Tex. (Houston), Doc. 69–H–554, *Schnadig Corporation* v. *Sherman-Bertram, Inc., Consolidated Furniture Industries Inc., doing business as Sherman-Bertram of Texas.*

D. 212,825, R. A. Claridge, PITCHER; **D. 212,826**, COMBINED PITCHER AND COVER THEREFOR, **filed** May 6, 1969, D.C., W.D.N.C. (Charlotte), Doc. 2475, *Alprod Corporation* v. *Southeastern Plastics Corporation.*

D. 212,826. (See D. 212,825.)

D. 213,358, E. J. Bocade, DRAWER HANDLE, **filed** July 2, 1969, D.C. Oreg. (Portland), Doc. C–69–379, *Keeler Brass Company* v. *Winter Products Co.*

Erratum

In the OFFICIAL GAZETTE of May 27, 1969 (862 O.G. 1007), the paragraph beginning with 3,121,066 should read:

3,121,006, Middleton and Reynolds, PHOTO-ACTIVE MEMBER FOR XEROGRAPHY, **filed** Feb. 13, 1969, D.C., S.D.N.Y., Doc. 69–C–546, *Xerox Corporation* v. *Nashua Corporation et al.*

DEFENSIVE PUBLICATIONS

PUBLISHED SEPTEMBER 30, 1969

Published at the request of the applicant or owner in accordance with Notice of Apr. 11, 1968, 849 O.G. 1221. The abstracts are identified by serial number of the applications and arranged in chronological order. The heading of each abstract of application published herein indicates the number of pages of specification, including claims and sheets of drawing contained in the application as originally filed. The files of these applications are available to the public for inspection and reproduction may be purchased for 30 cents a sheet.

Applications published under the Defensive Publication Program have not been examined as to the merits of alleged invention. The Patent Office makes no assertion as to the novelty of the disclosed subject matter.

753,705

DUAL PRIMER COATING PROCESS

Werner S. Zimmt, Wynnewood, Pa., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Continuation-in-part of application Ser. No. 383,242, July 16, 1964. This application Aug. 19, 1968. Published Sept. 30, 1969

Int. Cl. B44d *1/34, 1/14, 1/22*
U.S. Cl. 117—75

No Drawing. 24 Pages Specification

A process for applying a primer to metal or a glass fiber reinforced plastic substrate in which a highly pigmented subcoat having a pigment volume concentration of about 50–90% is applied to the substrate and is then shaped, for example, by sanding; a second primer coat which has a pigment volume concentration of about 0–20% is applied over the highly pigmented subcoat to seal the pigmented subcoat to the substrate. Any conventional vehicle which forms durable coatings and adheres to metal or plastic substrates can be used in this invention. Such vehicles include alkyd resins, epoxy resins, vinyl cyclic acetal resins, acrylic resins, polyurethane resins, hydrofluorocarbon resins, cellulose esters, resins of diisocyanate reaction products, vinyl resins and a variety of polyester resins. The pigments used in the dual primer composition can be any of the types well known in the coating art such as metal oxide pigments, lead and zinc chromates and metallic pigments. Extender pigments can be included with the metal oxide pigment.

785,025

HOT MELT ADHESIVE

Gerald Dougherty, Wilmington, Lewis W. Hall, Jr., Claymont, and John A. Hedge, Wilmington, Del. (all c/o Sun Oil Company, P.O. Box 426, Marcus Hook, Pa. 19061)

Continuation of application Ser. No. 554,992, June 3, 1966. This application Dec. 9, 1968. Published Sept. 30, 1969

Int. Cl. C08f *37/16*
U.S. Cl. 260—27

No Drawing. 15 Pages Specification

This invention relates to hot melt adhesive compositions. In particular, it relates to hot melt adhesive compositions produced from low-cost materials and suitable for bonding a variety of materials together. More particularly, it relates to compositions comprising atactic propylene-ethylene copolymer and a suitable tackifier. The copolymer has a molecular weight in the range between 80,000 and 225,000 and is predominantly polypropylene with small amounts of polyethylene in the range between .5 and 49 weight percent in the propylene polymer chain. Suitable tackifiers are rosin, hydrogenated rosin, disproportionated rosin, polymerized rosin, the esters of rosin, the esters of hydrogenated rosin, the esters of disproportionated rosin, the esters of polymerized rosin and terpene resin.

805,938

ACID-CATALYZED PROCESS FOR CYCLODEHYDRATION OF SHAPED POLYHYDRAZIDE STRUCTURES

Donald Richard Wilson, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Continuation of application Ser. No. 582,531, Sept. 28, 1966. This application Feb. 14, 1969. Published Sept. 30, 1969

Int. Cl. C08g *33/04*
U.S. Cl. 260—78.4

No Drawing. 12 Pages Specification

An acid-catalyzed process for the cyclodehydration of shaped polyhydrazide structures, such as filaments, to the corresponding poly(1,3,4-oxadiazoles). The process comprises incorporating into a shaped polyhydrazide structure between about 0.1 and 5.5 mole percent of sulfonic, phosphonic, phosphonous, boronic, sulfuric or phosphoric acid, and heating the structure to a temperature of between 170° C. and the melting point of the polyhydrazide for a length of time sufficient to effect substantially complete conversion of the polyhydrazide to the corresponding poly(1,3,4-oxadiazole). Preferably, the polyhydrazide is isophthaloyl terephthaloyl copolyhydrazide and the acid is benzenesulfonic acid. Preferably, the structure is heated at a temperature of between 250° and 320° C.

673,959

LINEAR POLYMERS OF 2,2-DIMETHYL-5-AMINOPENTANOL-1

James Cuthbert Martin, Sarah Joelle Rush, and Russell Gilkey, all of P.O. Box 511, Kingsport, Tenn. 37662

Filed Oct. 9, 1967. Published Sept. 30, 1969

Int. Cl. C08g *17/06, 17/08, 17/13*
U.S. Cl. 260—77.5

No Drawing. 16 Pages Specification

Highly polymeric linear condensation polymers are prepared from 2,2-dimethyl-5-aminopentanol-1 and at least one bifunctional carboxy compound or derivative thereof. Examples of carboxy compounds or derivatives thereof are cycloaliphatic dicarboxylic acid, cycloaliphatic dicarboxylic acid ester, aromatic dicarboxylic acid, aromatic dicarboxylic acid ester, carbonic acid, and derivatives of carbonic acid. Exemplary is the product of the condensation of diphenyl terephthalate with 2,2-dimethyl-5-aminopentanol-1 in the presence of dibutyl tin oxide. This and other products of the invention are amorphous, non-crystallizable polymers possessing a low processing temperature and a high use temperature. The polymers are useful in the production of molded objects, sheeting and film. The polymers also can readily be applied as hot-melt adhesives.

732,021

POLYMERIC COATING COMPOSITION AND COATED SUBSTRATES

Jack W. Lowe, Jr., 520 Rambling Road, Kingsport, Tenn. 37663, Larry G. Curtis, 3606 Cimarron Drive, Johnson City, Tenn. 37601, and Roy G. Foulk, 1357 Garden Drive, Kingsport, Tenn. 37664

Filed May 27, 1968. Published Sept. 30, 1969

Int. Cl. C08f *15/18;* C09d *5/32, 3/80*
U.S. Cl. 117—64

No Drawing. 11 Pages Specification

Coating compositions, coated substrates, and coating process are disclosed which provide improved stability with respect to degradative effects of ultraviolet light. The coating composition comprises a film-forming material which includes as the principal film-forming material, a polymer derived from at least two copolymerizable monomers, one of which is methyl methacrylate and the other a monomeric ultraviolet light inhibitor, namely 4-benzoyl-3-hydroxyphenoxyethyl acrylate or 4-benzoyl-3-hydroxyphenoxyethyl methacrylate, and a volatile solvent therefor. Combinations of these monomeric inhibitors may also be used. Monomeric methyl methacrylate may be used in amounts between about 38.0% and 80.0% by weight with about 0.1% to 5.0% by weight of the monomeric ultraviolet light inhibitor and about 19.0% to 60.0% by weight of other monomeric materials. The coating compositions are applied to substrates and initially baked at about 150–225° F. for a time sufficient to volatilize the solvent. The coating is then smoothed to remove surface imperfections, and finally baked at about 275°–325° F. to soften and reflow the coating into a smooth finish.

732,043

COATING COMPOSITIONS AND COATED SUBSTRATES

Larry G. Curtis, 3606 Cimarron Drive, Johnson City, Tenn. 37601, and Roy G. Foulk, 1357 Garden Drive, Gerald R. Lappin, 4047 Skyland Drive, Jack W. Lowe, Jr., 520 Rambling Road, and Wayne V. McConnell, 1509 Ardmore Place, all of Kingsport, Tenn. 37664

Filed May 27, 1968. Published Sept. 30, 1969

Int. Cl. C08f *15/18;* C09d *5/32, 3/80*
U.S. Cl. 117—33.3

No Drawing. 12 Pages Specification

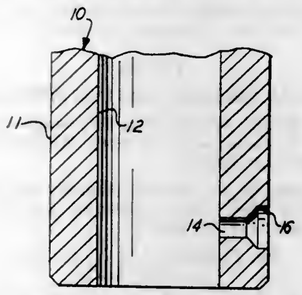
Coating compositions, coated substrates, and coating process are disclosed which provide improved stability with respect to degradative effects of ultraviolet light. The coating composition comprises a film-forming material which includes a polymer of methyl methacrylate, a polymeric ultraviolet light inhibitor, and a volatile solvent therefor. The polymers of methyl methacrylate include homopolymers of methyl methacrylate, copolymers of methyl methacrylate and a minor proportion of other copolymerizable materials, or mixtures of the homopolymers and copolymers. The polymeric ultraviolet light inhibitors according to this invention are defined as copolymers of (I) 4-benzoyl-3-hydroxyphenoxyethyl acrylate or methacrylate with (II) an alkyl acrylate or methacrylate wherein the alkyl group has 4–18 carbon atoms. The volatile solvents according to this invention include aliphatic, cycloaliphatic and aromatic hydrocarbons, esters, ethers, ketones and alcohols. The coating process includes applying the above-described coating composition to a substrate and baking it at about 150–225° F. to volatilize the solvent, sanding the coated substrate to remove surface imperfections, and again baking at about 275–325° F. to soften and reflow the coating.

737,915

PROCESS FOR FORMING PASSAGES IN THREADED MEMBERS

Robert C. Johns, Fostoria, Ohio, assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware

Filed June 18, 1968. Published Sept. 30, 1969
Int. Cl. H01t *13/00*
U.S. Cl. 29—25.12
1 Sheet Drawing. 4 Pages Specification



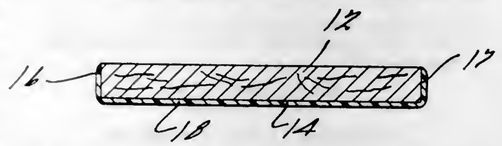
Shells of spark plugs intended to have staked side electrodes are drilled before threads are formed thereon and the passages are counterbored on the surface to be threaded. During thread rolling, metal is deformed into the counterbore but does not interfere with the size of the hole or produce burrs on the threads. The side electrode then can be located in the passage without interference from such deformed metal and the spark plug can be installed in an engine head made of soft metal such as aluminum without the risk of burrs or other irregularities destroying the corresponding threads in the head. In a typical spark plug having rolled 14 mm. threads, a counterbore 0.1285 inch in diameter and 0.030 inch deep for a passage 0.069 inch in diameter adequately absorbs metal deformed during thread rolling. The same procedure can be used wherever an accurate passage is desired in the threaded portion of a member.

756,771

HAND IMPLEMENT WITH POLYMERIC MATERIAL COATED SURFACE

John M. Pietila, Detroit, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware

Filed Sept. 3, 1968. Published Sept. 30, 1969
Int. Cl. B23k *37/06;* B05c *11/02*
U.S. Cl. 228—57
1 Sheet Drawing. 3 Pages Specification



A wooden hand tool for spreading, shaping or smoothing molten solder. The molten solder engaging surface **14** is coated with a heat stable polymeric material **18** to which the solder is nonadherent.

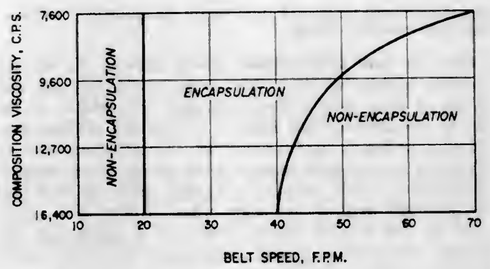
799,289

METHOD OF ENCAPSULATING ARTICLES USING A CURTAIN COATER

Travis L. Gordy, 209 N. 12th, and Lloyd G. Becraft, 2013 Wildwood, both of Ponca City, Okla. 74601

Filed Feb. 14, 1969. Published Sept. 30, 1969
Int. Cl. B65b *33/00;* B44d *1/02;* B32b *31/00*
U.S. Cl. 117—105.3
2 Sheets Drawing. 12 Pages Specification

Articles of manufacture (e.g. automobile moldings) are provided with an encapsulating protective coating of a wax-polymer composition using a curtain coater. The important operating conditions are viscosity of the wax-polymer composition at the application temperature, the speed at which the article is passed through the curtain of wax-polymer, and the trough width. The trough refers to the area where the curtain is falling and where the article is not being supported. Trough width refers to the distance from the plane of the curtain to the support forward of the curtain. Other operating conditions of some significance are width of the article and outfeed belt design.



818,819

REMOVAL OF CARBONACEOUS IMPURITY FROM AMMONIATED PHOSPHORIC ACID SOLUTIONS

Wendell D. Burch, 1705 N. 7th, Ponca City, Okla. 74601

Filed Apr. 23, 1969. Published Sept. 30, 1969
Int. Cl. C05b *7/00, 11/16*
U.S. Cl. 71—34
No Drawing. 6 Pages Specification

Black carbonaceous impurity is settled from ammoniated phosphoric or superphosphoric acid fertilizer solution by admixing with said solution a minor amount of finely divided phosphate rock as a settling aid. The sedimentation results in a clear supernatant liquid product layer, which may be adapted to fertilizer use, and a lower settled sludge layer, highly concentrated in carbonaceous impurities, that may be blended into a suspension fertilizer. The supernatant and sludge layers may be separated by simple decantation, filtration or centrifugation.

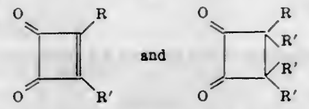
822,017

CYCLIC DIONES AS EMULSION STABILIZERS AND ANTIFOGGANTS

Dorothy J. Beavers, % Kodak Park Division, Rochester, N.Y. 14650

Filed May 5, 1969. Published Sept. 30, 1969
Int. Cl. G03c *1/34, 1/86*
U.S. Cl. 96—85
No Drawing. 10 Pages Specification

The stabilization against fog of photographic silver halide emulsions and elements is obtained through the use of cyclic diones wherein there are four carbon atoms in the ring. The stabilizing compounds contain at least one radical or atom selected from the group consisting of hydroxy, alkoxy and halogen. The useful compounds are represented by the following structural formulas:


and

wherein each R can be hydroxy, alkoxy or halogen and each R′ can be hydrogen, alkyl, aryl, hydroxy, alkoxy or halogen. A useful range for the concentration of the stabilizer is from about 0.5 gram to about 20 grams per mole of silver halide. Examples of suitable compounds include 3,4 - dihydroxy - 3 - cyclobutene - 1,2 - dione, 3 - methoxy-4 - phenyl - 3 - cyclobutene - 1,2 - dione, 3 - hydroxy - 4-phenyl - 3 - cyclobutene - 1,2 - dione, 3,4 - diethoxy - 3-cyclobutene - 1,2 - dione, 3,4 - diethoxy - cyclobutane - 1,2-dione, 3 - bromo - 4 - phenyl - 3 - cyclobutene - 1,2 - dione, and 3,4-dihydroxycyclobutane-1,2-dione.

Photographic silver halide emulsions and elements stabilized as described can be chemically sensitized, e.g., with noble metal sensitizers alone or in combination with sulfur or selenium sensitizers. They can contain spectral sensitizers, incorporated color forming couplers, incorporated developing agents, other antifoggants, hardeners, plasticizers, coating aids, and other suitable photographic addenda, such as described in U.S. Patent 3,297,446 (columns 4–9).

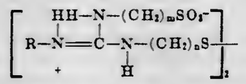
823,507

SILVER HALIDE EMULSIONS CONTAINING DISULFIDES AS FOG INHIBITORS

Norman W. Kalenda and Dorothy J. Beavers, both % Kodak Park Division, Rochester, N.Y. 14650

Filed May 9, 1969. Published Sept. 30, 1969
Int. Cl. G03c *1/34*
U.S. Cl. 96—109
No Drawing. 10 Pages Specification

Photographic silver halide emulsions and photographic elements containing as an antifoggant and fog stabilizer a compound represented by the general formula:



wherein R is an alkyl or aryl and *m* and *n* are each positive integers of 1 to 6.

Silver halide emulsions and elements stabilized and inhibited against the effects of fog as described can be chemically sensitized, e.g., with noble metal sensitizers alone or in combination with sulfur or selenium sensitizers. They can contain spectral sensitizers, incorporated color-forming couplers, incorporated developing agents, other antifoggants, stabilizers, hardeners, plasticizers, coating aids, vinyl polymers, and other suitable photographic addenda such as described in U.S. Patent 3,297,446 of Dunn issued Jan. 10, 1967 (columns 4–9).

REISSUES

SEPTEMBER 30, 1969

Matter enclosed in heavy brackets [ ] appears in the original patent but forms no part of this reissue specification; matter printed in italics indicates additions made by reissue.

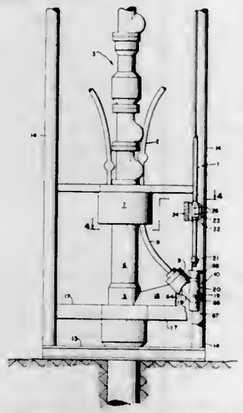
26,668
METHOD AND APPARATUS FOR INSTALLING FLOW LINES AND THE LIKE IN UNDERWATER WELL INSTALLATIONS

William W. Word, Jr., and Michael A. Walker, Houston, Tex., assignors to Armco Steel Corporation, Middletown, Ohio, a corporation of Ohio

Original No. 3,336,975, dated Aug. 22, 1967, Ser. No. 438,294, Mar. 9, 1965. Application for reissue Nov. 27, 1967, Ser. No. 694,761

Int. Cl. E21b *7/12;* **F16l** *55/00*

U.S. Cl. 166—.5 **18 Claims**



A method and apparatus are disclosed for installing flow lines in *underwater installations such as* well installations of the type wherein the wellhead is located at a substantial distance beneath the surface of a body of water. A flow line connector is provided at the wellhead for installation of the wellhead and comprises a stationary connector portion, which communicates with the well tubing, and a movable connector portion which can be swung from an initial upright position to a laterally projecting position. After installation of the wellhead, the flow line is initially supported on a vessel at the surface of the body of water and in the location generally above the wellhead. The end of the flow line is lowered to the wellhead and connected to the upwardly opening movable portion of the flow line connector unit. The flow line is then laid on the floor of the body of water by moving the vessel away from the location of the well while paying out the flow line, so that the resultant movement of the flow line toward the floor of the body of water causes the movable connector portion to swing into its laterally projecting position. The movable portion of the flow line connector is then locked to the stationary portion and, with the parts in this position, the connector unit establishes communication between the well tubing and the flow line.

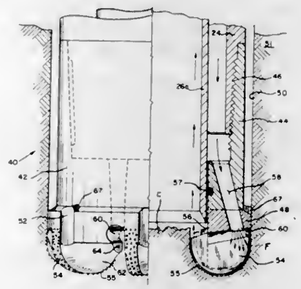
26,669
DRILLING BIT

Homer I. Henderson, 2220 Live Oak St., San Angelo, Tex. 76901

Original No. 3,308.896, dated Mar. 14, 1967, Ser. No. 391,834, Aug. 20, 1964. Application for reissue May 9, 1968, Ser. No. 741,833

Int. Cl. E21b *9/36, 41/00*

U.S. Cl. 175—330 **12 Claims**



A drilling bit for use in dual tube drill pipe earth boring. The drilling fluid descends in the annulus between the dual tubes, thence passes through the bit and ascends within the inner tube, carrying the cuttings, and cores, if any, to the earth's surface. The shank of the bit is substantially full hole to restrict the drilling fluid from ascending in the hole annulus. The bit's shank may be fluted to permit fluid passage when the bit is off bottom. Such flutes, if any, may carry cutting blades at their tops to facilitate drilling upwardly when a bore hole caves. The bit has bottom cutting blades of a width that will permit intrusion into soft formations to effect cutting action as a drag bit. These same blades are impregnated with hard particles, such as diamonds, which particles protrude and penetrate hard rock formations, that are too hard for the complete blade to penetrate, thus assuring that the bit will cut both soft and hard formations. The base of the bit has tapered sections that progressively place more and more bit surface on the hole bottom as the blades penetrate deeper into soft formations, thereby safeguarding complete watercourse blocking when a bit is overloaded in soft formations. An additional feature to prevent bit blocking is a series of auxiliary transverse water courses within the body of the bit, said auxiliary water courses being transversely slotted to communicate with the bottom of the bit. The bit's jets pass vertically through these auxiliary water-courses.

26,670
SAFETY BINDING

Thomas G. Smolka and Gottfried Schweizer, Vienna, Austria, assignors to Wiener Metallwarenfabrik Smolka & Co., Schwechat, Austria, a corporation of Austria

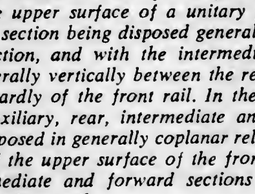
Original No. 3,333,859, dated Aug. 1, 1967, Ser. No. 554,449, June 1, 1966. Application for reissue Nov. 29, 1967, Ser. No. 689.734

Claims priority, application Austria, June 2, 1965, A 5,025/65

Int. Cl. A63c *9/10, 9/22*

U.S. Cl. 280—11.35 **9 Claims**

A safety binding for a ski boot having a pivotable holding down device, which snaps into operative position when engaged by a ski boot being positioned for clamping and which can be released voluntarily by a light pressure from a ski stick comprising a base plate secured to a ski, a slide member slidably carried by the base plate, the slide member pivotally carrying the holding down device and a locking means for the holding down device, and the locking means being positioned to engage with the holding down device to maintain the same in its operative clamping position, and being spring-biased by a spring positioned between an extension of the base plate of the locking means to thereby urge the locking means in clamping position and holding down device into engagement in clamped position and the slide and holding down device against the boot.



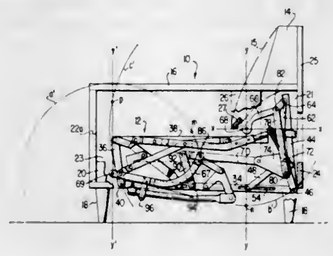
26,671
SOFA BED

Walter Clark Rogers, Jr., High Point, N.C., assignor to General Steel Products, Inc., High Point, N.C., a corporation of North Carolina

Original No. 3,298,041, dated Jan. 17, 1967, Ser. No. 393,571, Sept. 1, 1964. Application for reissue Sept. 26, 1967, Ser. No. 682,693

Int. Cl. A47c *17/13*

U.S. Cl. 5—13 **17 Claims**



A sofa bed including pivotally connected auxiliary, rear, intermediate and forward bed sections, with the bed sections being movable between a retracted position and an extended position. In the retracted position, the auxiliary section is disposed generally upright rearwardly of a cross rail of a sofa back; and the rear, intermediate and forward sections are disposed generally below the plane of the upper surface of a unitary front rail, with the forward section being disposed generally parallel with the rear section, and with the intermediate section extending generally vertically between the rear and forward sections inwardly of the front rail. In the extended position, the auxiliary, rear, intermediate and forward sections are disposed in generally coplanar relationship above the plane of the upper surface of the front rail; with the rear, intermediate and forward sections extending forwardly of the front rail.

26,672
DEEP FAT PRESSURE COOKER

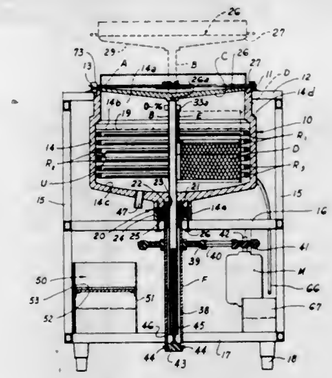
Robert G. Wilson, 643 E. Faris Road, and Raymond W. Roger, 414 Potomac Ave., both of Greenville, S.C. 29605

Original No. 3,364,845, dated Jan. 23, 1968, Ser. No. 564,102, July 11, 1966. Application for reissue Aug. 16, 1968, Ser. No. 771,678

Int. Cl. A47j *37/12, 27/62*

U.S. Cl. 99—336 **11 Claims**

A deep fat pressure cooker has a cover, a basket, a pot having a lower recess with heating means therein forming a central basket receiving space for accommodating a maximum amount of edibles, said cover having a conical lower surface, and means for automatically raising the cover and for fixing same in sealing position when pressure obtains in the pot.



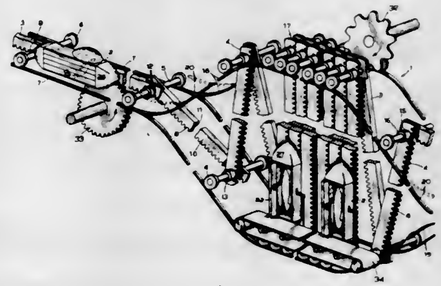
26,673
ARTICULATED TRAIN SYSTEMS

Ernst G. Knolle, 2691 Sean Court, South San Francisco, Calif. 94080

Original No. 3,320,903, dated May 23, 1967, Ser. No. 478,586, Aug. 10, 1965. Application for reissue May 2, 1968, Ser. No. 728,090

Int. Cl. B61k *1/00;* **B61b** *13/00*

U.S. Cl. 104—20 **3 Claims**



The present invention relates to the mass transportation of passengers. Substantially, this train resembles a link chain in a closed circuit with regions of relative slow motion with the moving links folded and densely packed for stations for passenger entrance and exit. Other regions of the circuit find the moving links spread apart and in high rate of motion.

26,674
DISPOSABLE PLASTIC BAG

John C. Ilg, Fitzwilliam, N.H., assignor to Elliot Laboratories, Inc., Fitzwilliam, N.H., a corporation of New Hampshire

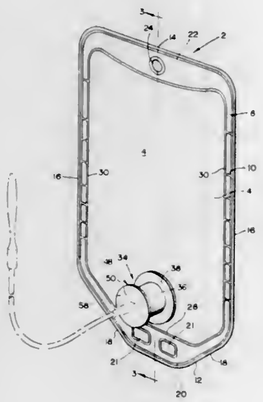
Original No. 3,306,327, dated Feb. 28, 1967, Ser. No. 387,367, Aug. 4, 1964. Application for reissue Aug. 9, 1968, Ser. No. 753.815

Int. Cl. A61f *7/04, 7/10;* **A61m** *3/00*

U.S. Cl. 150—2.1 **13 Claims**

A disposable, collapsible, flexible, transparent or translucent plastic enema bag having thin, flexible wall panels of thermoplastic sheet material sealed at their peripheries

and having a spout of semi-flexible, elastic, yieldable, heat sealable, molded thermoplastic resin which is mounted on a wall panel over a hole in the wall panel, the spout comprising a hollow neck, which is substantially more rigid and thicker than the wall panels, which extends sideways



from the wall panel and which is secured to the wall panel in this position by an integral flange, which is sealed flush against the wall panel around the hole, which is thicker and more rigid than the wall panels but which is of substantially lesser thickness and rigidity than the neck, the neck being provided with a removable closure.

26,675

PNEUMATIC COMPACTION OF ASPHALT COMPOSITIONS

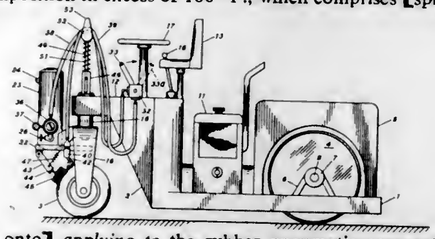
Richard L. Ferm, Lafayette, and Robert J. Schmidt, El Cerrito, Calif., assignors to Chevron Research Company, San Francisco, Calif., a corporation of Delaware

Original No. 3,344,721, dated Oct. 3, 1967, Ser. No. 479,521, Aug. 13, 1965. Application for reissue Oct. 10, 1968, Ser. No. 771,677

Int. Cl. *E01c 19/26, 21/00*

U.S. Cl. 94—22 **14 Claims**

A method and apparatus for pneumatically compacting asphalt concrete at temperatures of the asphalt concrete composition in excess of 180° F., which comprises [spraying onto] *applying to* the rubber pneumatic compacting wheels a dilute unstable oil-in-water emulsion.



26,676

METHOD OF MAKING BAND SAW BLADE

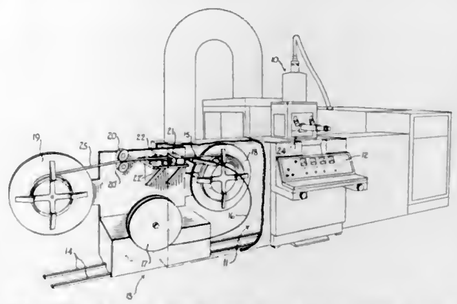
Royal A. Anderson, Northbrook, Ill., and Eugene N. Connoy, Minneapolis, Minn., assignors to Contour Saws, Inc., Des Plaines, Ill., a corporation of Illinois

Original No. 3,315,548, dated Apr. 25, 1967, Ser. No. 416,367, Dec. 7, 1964. Application for reissue Apr. 25, 1969, Ser. No. 822,078

Int. Cl. *B23d 63/00*

U.S. Cl. 76—112 **6 Claims**

A method of making bi-metal band saw blades which consists in electron beam welding a wire of high speed steel to one edge of a band of alloy steel, annealing and straightening the resulting bi-metal band stock, milling saw teeth into the bi-metal band stock with only the tips of the teeth of high speed steel, and hardening the thus formed saw blade to the critical hardening temperature of high speed steel followed by tempering.



PLANT PATENTS

GRANTED SEPTEMBER 30, 1969

Illustrations for plant patents are usually in color and therefore it is not practicable to reproduce the drawing.

2,922

AFRICAN VIOLET PLANT

Hermann Holtkamp, Sr., 5–7 Werther Strasse, Isselburg, Rhineland, Germany

Filed Feb. 8, 1968, Ser. No. 704,184

Claims priority, application Germany, May 23, 1967, H 62,828

Int. Cl. A01h *5/02*

U.S. Cl. Plt.—69 **1 Claim**

1. A new and distinct variety of African violet plant, substantially as herein shown and described, characterized particularly as to novelty by the unique combination of an excellent and decorative growth habit, with good sprouting capability, a habit of bearing its medium to dark green leaves in the form of a bushy but flat rosette, an upright, solid and dense flower head closed within itself and remaining upright even in a mature state, an unusual habit of the ovaries, both fructified and unfructified, in pushing through the blossoms so that the receptacle remains in solid cohesion with the ovary and holds the flower until it has completely faded, with consequent avoidance of damage or destruction due to dropped blossoms which tend to cause mildew (botrytis), a long blooming period, and a distinctive and attractive luminous steel-blue flower color.

2,923

POINSETTIA PLANT

Paul Ecke, Encinitas, Calif., assignor to Paul Ecke, Inc., Encinitas, Calif., a corporation of California

Filed Feb. 27, 1968, Ser. No. 708,728

Int. Cl. A01h *5/12*

U.S. Cl. Plt.—86 **1 Claim**

1. A new and distinct variety of poinsettia plant, substantially as herein shown and described, characterized particularly as to novelty by the unique combination of a very vigorous, tough, and durable plant habit, with the plant being of medium height and having the ability to grow well as a multiple stem and multiple bloom plant, a very vigorous and extensive root system, stiff stems which do not require staking, many very wide bracts of a distinctive shape and arrangement that give the plant a full and complete appearance, retention of the bracts, foliage and inflorescences for an unusually long period of time after reaching maturity, a habit of not requiring light to delay bud set, a habit of setting buds quite easily under higher night temperatures and longer day lengths than other poinsettia varieties, a well-pinching habit which produces 3 or more breaks, a normally later blooming habit, but having the ability to be satisfactorily brought into bloom and full maturity in every month of the year through the exercise of proper greenhouse cultural techniques, a distinctive and attractive, slightly ruffled appearance of the bracts and their absence of any tendency to droop with age, a distinctive and attractive general color tonality of the bracts corresponding to near Cardinal Red, absence of drooping and retention of the inflorescence position relative to the bracts without rising as occurs in other varieties as the influorescence approaches maturity, and excellent keeping qualities and consequent suitability for home decoration.

2,924

POINSETTIA PLANT

Paul Ecke, Encinitas, Calif., assignor to Paul Ecke, Inc., Encinitas, Calif., a corporation of California

Filed Feb. 27, 1968, Ser. No. 708,729

Int. Cl. A01h *5/12*

U.S. Cl. Plt.—86 **1 Claim**

1. A new and distinct variety of poinsettia plant, substantially as herein shown and described, characterized particularly as to novelty by the unique combination of a very vigorous, tough and durable plant habit, stiff stems which do not require staking, a very vigorous and extensive root system, attractive, vivid bright red bracts extending down the stem, with some bracts extending in an upward plane giving a slightly cupped appearance, with the total presentation giving a greater depth in appearance, a short growing habit when grown naturally, an exceptionally well pinching habit which produces an unusually large number of breaks, usually more than 4, a compact, bright and exaggerated flower center giving a crowned effect to each bloom, said center of the flower corresponding in color to Chrome Yellow, an early blooming habit, usually 8 weeks after start of short days, but having the ability to be satisfactorily brought into bloom and full maturity in every month of the year through exercise of proper greenhouse cultural techniques, a distinctive and attractive general color tonality of the bracts corresponding to Currant Red, absence of drooping and retention of the inflorescence position relative to the bracts without rising as occurs in other varieties as the inflorescence approaches maturity, exceptional suitability for the production of multiple bloom plants, and excellent keeping qualities and consequent suitability for home decoration.

2,925

POINSETTIA PLANT

Paul Ecke, Encinitas, Calif., assignor to Paul Ecke, Inc., Encinitas, Calif., a corporation of California

Filed Feb. 27, 1968, Ser. No. 708,730

Int. Cl. A01h *5/12*

U.S. Cl. Plt.—86 **1 Claim**

1. A new and distinct variety of poinsettia plant, substantially as herein shown and described, characterized particularly as to novelty by the unique combination of a very vigorous, tough, and durable plant habit, stiff stems which do not require staking, a very vigorous and extensive root system, an early blooming habit, usually 9 weeks after start of short days, but having the ability to be satisfactorily brought into bloom and full maturity in every month of the year through the exercise of proper greenhouse cultural techniques, a medium height but vigorous growing habit when grown naturally, the ability to pinch well, well defined very wide bracts surrounding a rather tight center, giving a particularly attractive, symmetrical appearance, a distinctive and attractive, slightly ruffled appearance of the bracts and their absence of any tendency to droop with age, a distinctive and attractive general color tonality of the bracts corresponding to Geranium Lake, absence of drooping and retention of the inflorescence position relative to the bracts without rising as occurs in other varieties as in the inflorescence approaches maturity, a suitability for the production of multiple bloom plants, and excellent suitability for home decoration.

2,926

POINSETTIA PLANT

Paul Ecke, Encinitas, Calif., assignor to Paul Ecke, Inc., Encinitas, Calif., a corporation of California

Filed Feb. 27, 1968, Ser. No. 708,731

Int. Cl. A01h *5/12*

U.S. Cl. Plt.—86 **1 Claim**

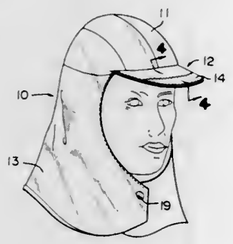
1. A new and distinct variety of poinsettia plant, substantially as herein shown and described, characterized particularly as to novelty by the unique combination of a very vigorous, tough and durable plant habit, thin but stiff stems which do not require staking, a very vigorous and extensive root system, retention of the bracts, foliage and inflorescences for an unusually long period of time after reaching maturity, a normally earlier blooming habit usually 9 weeks after start of short days, but having the ability to be satisfactorily brought into bloom and full maturity in every month of the year through the exercise of proper greenhouse cultural techniques, a distinctive and attractive appearance of the bracts, with the smaller inner bracts being horizontal and the larger outer bracts twisting and giving an overall umbrella appearance, a distinctive, attractive and unusual general color tonality of the bracts corresponding to Delft Rose, a medium-tall growing habit when grown naturally, the ability to pinch well, a suitability for the production of multiple bloom plants, and excellent keeping qualities and consequent suitability for home decoration.

PATENTS

GRANTED SEPTEMBER 30, 1969

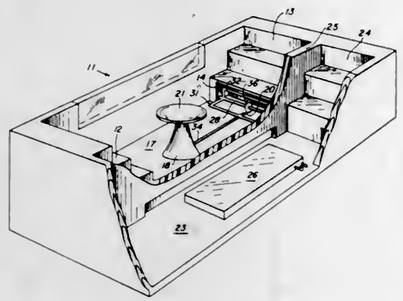
GENERAL AND MECHANICAL

3,469,264
PLASTIC RAINWEAR HOOD
Charles J. Harris, 4508 Crenshaw St., Los Angeles, Calif. 90043
Filed May 17, 1966, Ser. No. 550,690
Int. Cl. A42b *1/04, 1/18*
U.S. Cl. 2—187 **4 Claims**



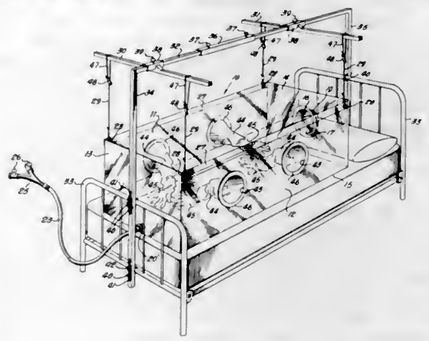
This provides a headgear for protection of the head, face and neck of the wearer during inclement weather. The headgear includes crown and protective portions comprising a light weight pliable material and a brim portion comprising a heavy, stiff material. The brim portion not only protects the face of the wearer but also eyeglasses when worn. The headgear is especially adapted for masculine wear.

3,469,265
BAPTISTRY FOR IMMERSION
Guy L. Bradley, Chula Vista, Calif.
(3908 Cooney Way, Bakersfield, Calif. 93309)
Filed Sept. 26, 1967, Ser. No. 670,645
Int. Cl. A47k *3/022, 3/12, 3/16*
U.S. Cl. 4—1 **4 Claims**



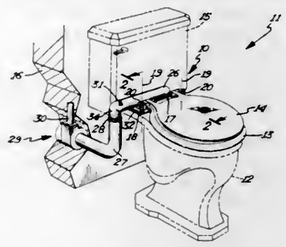
A baptistry for immersion having complementary steps on each end thereof with a seat in between the two sets of steps which is adjustable in height, the bottom step on each set of steps having an adjustable foot-hold means for accommodating persons of differing sizes during the immersion process and an adjustable platform adjacent the baptistry for accommodating ministers of various heights during the baptismal ceremony.

3,469,266
COLLAPSIBLE BATH TUB
Burt E. Hyde, 800 N. Industrial Blvd., Euless, Tex. 76039
Filed Oct. 13, 1967, Ser. No. 675,096
Int. Cl. A47k *3/06*
U.S. Cl. 4—177 **3 Claims**



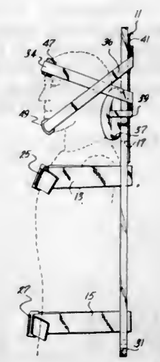
The invention comprises a fluid-tight container formed of polyethylene, or other suitable material, which may be transparent or opaque as desired, being pliable so that it may be collapsed and folded. The container is rectangular in form, having a bottom, side and end walls, and having proper dimensions to accommodate a patient lying in a prone position therein, and having an opening in one end wall through which the patient's head is extended. The pliable walls are supported vertically by cords or cables attached to each corner of the container and suspended from an overhead support, such as an adjustable frame which may be attached to a bed.

3,469,267
ODOR REMOVING DEVICE FOR TOILETS
John Ray Kuklok, Rte. 1, Rice, Minn. 56367
Filed Sept. 15, 1966, Ser. No. 579,578
Int. Cl. E03d *9/04*
U.S. Cl. 4—213 **2 Claims**



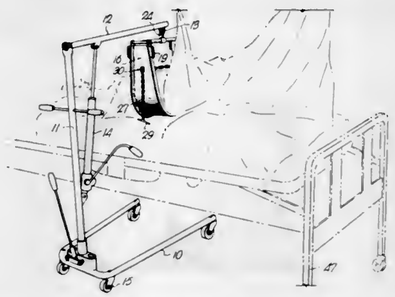
An odor removing device for toilets comprising an odor receiving duct adapted to be contained within the space between a toilet bowl rim and the overlying toilet seat and communicating with a laterally extending vent conduit. The aforesaid vent conduit serves to direct vented vapors around the toilet waterbox and communicates with a blower which functions to draw vapors out of the toilet bowl through the odor collecting duct.

3,469,268
FRACTURE BOARD
Warren D. Phillips, 17944 Pond Road, Ashton, Md. 20702
Filed Oct. 23, 1967, Ser. No. 677,118
Int. Cl. A61g *1/00*
U.S. Cl. 5—82 **8 Claims**



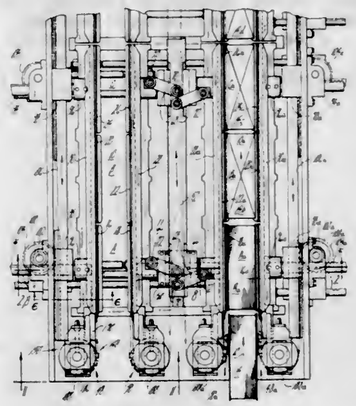
For the handling of injured persons at the site of accident preparatory to transportation to a medical center for treatment, a sheet of rigid material such as plywood, shaped and sized to support the back, head and neck, is provided with strap means to secure the patient's torso, neck and head in relatively immobile position in order to avoid the possibility of causing further injury. The several strap means over the torso are fastened by friction buckles; the neck is supported by a cushion, and the head is held steady by bands passing over the head and chain and attached to the rigid sheet member. A neck pad is provided to support the neck. Maximum security is insured by adjustability of the straps both with respect to length and point of attachment to the rigid member. The point of attachment to the rigid member is longitudinally continuous.

3,469,269
HOSPITAL AND AMBULANCE PATIENT HANDLING EQUIPMENT
Roy L. Brown, 323 W. 2nd St., Sedalia, Mo. 65301
Filed Oct. 9, 1967, Ser. No. 673,820
Int. Cl. A61g *7/10*
U.S. Cl. 5—86 **10 Claims**



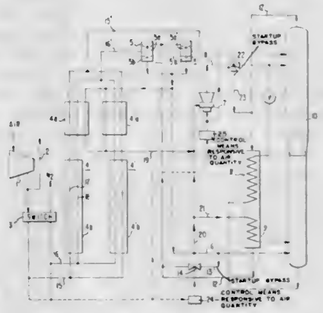
Hospital and ambulance patient lifting and handling equipment comprised of two depending grasping and engaging arms substantially J-shaped in end view, with the arcuate portions thereof forming a cradle, said arms pivotally supported from the ends opposite the cradle by a horizontal crossbar thereby enabling the arms to be pivoted in diverging and converging manner with means provided to restrict diverging motion, said crossbar readily attachable and removable from either a novel and portable carrying bar included as a part of the invention or a standard hospital lifting and carrying dolly.

3,469,270
BOOK PRESSING MACHINE WITH IMPROVED PRESSER PLATE AND CONVEYOR MECHANISM AND WITH IMPROVED DUAL CHANNEL ARRANGEMENT
James H. Thorp, West Hartford, Conn., assignor to The Smyth Manufacturing Company, Bloomfield, Conn., a corporation of Connecticut
Filed Oct. 20, 1967, Ser. No. 676,769
Int. Cl. B42C *19/00*
U.S. Cl. 11—1 **14 Claims**



A book pressing machine with a series of pressing and creasing stations and with an intermittently movable continuous conveyor of the slatted type. Presser plates and creaser irons engage and press part of the book side area and the conveyor engages and presses the remaining portion of the side area. The machine is of the dual channel type and all presser plates move to engage and disengage books, a common drive being provided for adjacent inner series of plates.

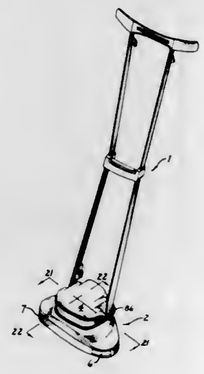
3,469,271
PROCESS AND APPARATUS FOR LOW BOILING GAS MIXTURES
Kiyoshi Ichihara and Junzo Kitamura, Hitachi-shi, Japan, assignors to Hitachi, Limited, Tokyo-to, Japan
Filed Nov. 14, 1966, Ser. No. 593,883
Claims priority, application Japan, Nov. 15, 1965, 40/69,748
Int. Cl. F25j *5/00*
U.S. Cl. 62—13 **11 Claims**



The present disclosure is directed to a process and apparatus for separating gas mixtures by utilizing liquefi-

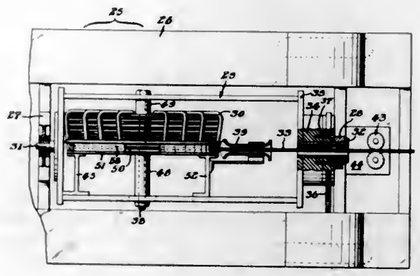
cation, and rectification including a reversible heat exchanger, wherein the improvement comprises the step of adding such an amount of compressed gas mixtures to the separated product gas during the starting period of the process so that the heat exchanger is provided with substantially the same flow therethrough during starting as the normal rate flow so as to avoid undesired partial deposit of water and carbon dioxide in the heat exchanger during the starting operation.

3,469,272
FLOOR AND RUG TREATING APPARATUS
Paul E. Gaudry, Laval des Rapides, Quebec, Edouard Gaudry, Cite St. Laurent, Quebec, Raymond Descarries, Montreal, Quebec, and James Anderson, Baie d'Urfe, Quebec, Canada, assignors to Electrolux Corporation, Fairfield, Conn., a corporation of Delaware
Filed June 20, 1967, Ser. No. 647,378
Int. Cl. A47l *11/14, 11/34*
U.S. Cl. 15—50 **23 Claims**



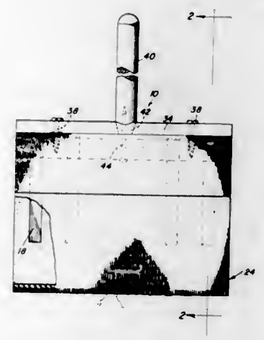
A combined floor polisher-rug scrubber of unitized and integrated construction to facilitate assembly during manufacture and parts replacement for repair by unskilled persons including a motor having readily removable and replaceably stator and rotor ball bearings, and brush block assembly; readily assembled and disassembled parts including a ball bearing having an easily manufactured, inexpensive ball retainer; a skew axis gear train for the spring motor which drives the cordwinder reel to wind-up or reel-in a cord; electric circuit components which automatically couple the motor and cordwinder cord during manufacturing assembly and disassembly and replacement for repair, and including a weighted switch to prevent accidental operation of the machine when an operator is changing the cleaning brushes; a cam action latch to facilitate removal of brushes from the associated driving spindle; rug scrubbing brush having a foam generating sponge material disc to prevent wetting the rug backing which causes staining; a thrust bearing for a floor polisher having one disc of "nylon" material and a juxtapositioned disc of "Delrin" material combined with a sintered bronze sleeve for feeding lubricant to the shaft of a brush and the interface between these discs for supporting the weight of the machine on a low friction bearing; labyrinth seals to prevent entry of wax and cleaning liquids into the motor and cordwinder compartment along the brush driving spindles projecting into the well or recess containing the cleaning brushes; an articulated handle having a spring biased bar for securely latching the handle sections in extended position and to facilitate carrying and storage of the machine when not in use, and a handle having a pair of spaced side rails provided with mounting pads for a shampoo container which is automatically connected with a shampoo discharge control lever integral with the handle to vary the dispensing valve on the separable container.

3,469,273
SEWER RODDING MACHINE
Charles B. Caperton, Montgomery Court Apartments, Narberth, Pa. 19072
Continuation-in-part of application Ser. No. 549,762, Apr. 22, 1966. This application Dec. 30, 1966, Ser. No. 613,703
Int. Cl. F28g *3/00*
U.S. Cl. 15—104.3 **6 Claims**



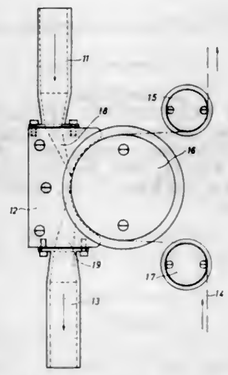
A drive for a sewer rodding machine includes a torsion-taking arcuate surface, such as the flanged periphery of a wheel, over which the rod is passed to prevent the twist of the twisting rod from getting back into the storage reel. In a preferred form of drive, a chain belt carrying driving dogs embraces at least a portion of the periphery of the torsion-taking wheel.

3,469,274
CLEANING IMPLEMENT
Chester O. Snapp, P.O. Box 865, Lodi, Calif. 95240
Filed Oct. 20, 1967, Ser. No. 683,426
Int. Cl. A46b *3/00*
U.S. Cl. 15—228 **12 Claims**



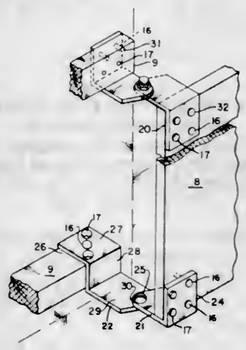
A plurality of flexible bars project in a common plane from a mounting member to elastically stiffen enclosing panel sections of a rug-like material for floor cleaning purposes. An elongated handle extends from the mounting member perpendicular to a lower edge formed by said panel sections spaced from the ends of the flexible bars.

3,469,275
APPARATUS FOR THE CONTACTLESS REMOVING OF DUST FROM WEBS
Lucien Roger Deschuttere, Antwerp, Ludo Adriaan Scharpe, Mortsel-Antwerp, Walter Malvine Schaltin, Muizen, and Gustaaf Joannes Peeters, Wilrijk-Antwerp, Belgium, assignors to Gevaert-Agfa N.V., Mortsel, Belgium, a Belgian company
Filed Nov. 22, 1966, Ser. No. 596,156
Claims priority, application Great Britain, Nov. 22, 1965, 49,536/65
Int. Cl. A47l *5/38, 5/14, 15/00*
U.S. Cl. 15—306 **8 Claims**



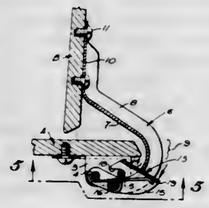
An apparatus for removing dust from a moving web passing over a convexly curved supporting surface, such as a roller, in which a housing constructed to direct an air stream against the curved web in a more or less tangential direction and withdraw the air under suction in a generally opposite direction extends across the web in close proximity thereto, the housing being contoured for a close fit with a portion of the curved supporting surface and the supporting surface and the housing are formed adjacent the lateral limits of the web with opposed generally radially directed surfaces which overlap with one another in tight relation so as to minimize lateral escape of the air from the housing. Such surfaces can be formed as flanges at the sides of the houses and as flanges or shoulders on the supporting surface or roller.

3,469,276
DOOR HINGE ASSEMBLY
Robert T. Dickson, El Cajon, Calif., assignor to Dickson Smith, Incorporated, El Cajon, Calif., a corporation of California
Filed Jan. 24, 1967, Ser. No. 611,394
Int. Cl. E05d *5/06*
U.S. Cl. 16—135 **1 Claim**



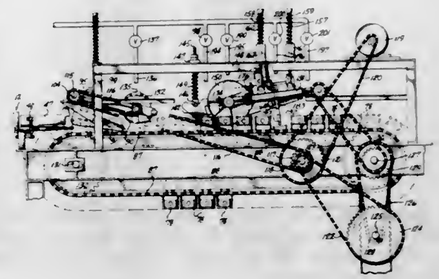
This invention relates to a door hinge assembly and more particularly to an upper and lower hinge assembly structure having installation aligning features facilitating mass production and installation of doors on cabinets and the like and providing ease of movement of doors to different locations, and which hinge structure is installed in a manner that forces on the hinge structure do not tend to pull the hinge structure from the doors and the door supporting rails.

3,469,277
SELF-LOCKING CONCEALED HINGE
Bernard W. Henrichs, Northridge, and Frank A. Brown, Granada Hills, Calif., assignors to Hartwell Corporation, Los Angeles, Calif., a corporation of California
Filed Feb. 18, 1966, Ser. No. 528,509
Int. Cl. E05d *11/10*
U.S. Cl. 16—145 **4 Claims**



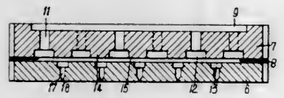
A concealed hinge having a fixed mounting plate fastened inside a door frame and carrying a hinge pin and a keeper bar, and a movable hinge member in the form of an open loop, one end of which is joined to the hinge pin and the other end of which is attached to a mating door; the open loop pivotally supporting a latch lever for operative engagement with the keeper bar to hold the door in an open position, the latch lever being manually releasable.

3,469,278
FISH BEHEADING AND CLEANING MACHINE
Norford L. Oates, Seattle, Wash., assignor to Smith-Berger Manufacturing Corporation, Seattle, Wash., a corporation of Washington
Filed Nov. 10, 1965, Ser. No. 507,148
Int. Cl. A22c *25/14*
U.S. Cl. 17—59 **8 Claims**



Moving cradles carrying fish on their sides past a rotary-beheading knife include a pivoted trailing section which can swing relative to the leading section to provide a dwell for the fish as the knife passes through them. Channels engageable with the tails of fish move the fish through a cleaning section in which the fish belly is slit open by a slitter saw while a fish is held down resiliently by a channel-shaped holding shell, after which upwardly diverging rotating gutter disks scoop the entrails from the fish cavity and a final gut-stripper hook completes the separation of the entrails.

3,469,279
SPINNERET FOR HETEROFILAMENTS
Alfred William David Hudgell, Abergavenny, England, assignor to British Nylon Spinners Limited, Pontypool, Monmouthshire, England
Filed Oct. 15, 1964, Ser. No. 404,017
Claims priority application Great Britain, Oct. 19, 1963, 41,382/63
Int. Cl. D01d *5/18*
U.S. Cl. 18—8 **7 Claims**



A spinneret assembly for the manufacture of uniform side-by-side heterofilaments comprises a spinneret plate having a plurality of extrusion orifices and a polymer distribution plate parallel to and spaced closely adjacent the spinneret plate. The different polymers flow through separate ports in the distribution plate and are directed across the upstream face of the spinneret plate by special contours of the adjacent faces of the two plates in such a manner that a straight-line interface between the two streams is effected and maintained before the two streams are extruded as heterofilaments.

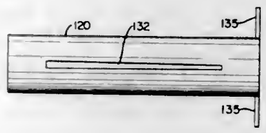
3,469,280
SPINNERETTE DISK FOR EXTRUSION OF SYNTHETIC POLYMER FIBERS
Lambert H. Mott, 15 Poplar Hill Drive, Farmington, Conn. 06032
Filed June 19, 1967, Ser. No. 647,061
Int. Cl. D01d *3/00*
U.S. Cl. 18—8 **4 Claims**



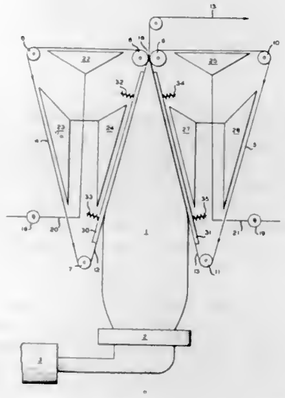
A spinnerette disk having extrusion orifices therethrough with a porous metal oil reservoir disposed about each orifice behind the forwardly disposed exit surface surrounding each orifice.

3,469,281
METHOD AND APPARATUS FOR EXTRUDING AND APPLYING PLASTIC MATERIALS
Le Roy Payne, Arvado, Colo., assignor, by mesne assignments, to Weverhaeuser Company, Tacoma, Wash., a corporation of Washington
Filed Sept. 10, 1965, Ser. No. 486,511
Int. Cl. B29f *3/01*
U.S. Cl. 18—12 **2 Claims**

An extrusion die having a sleeve with an elongated discharge opening. A rotatable housing on the sleeve includes a control slot which may be rotated into registry with the discharge opening. The slot increases progressively in width away from the opening to the extrusion die.



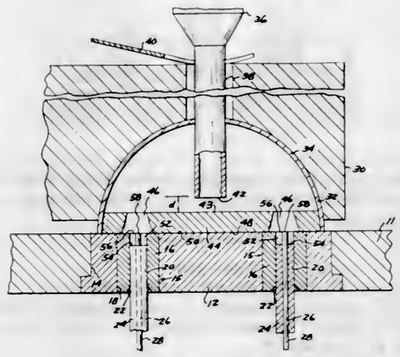
3,469,282
TUBE COLLAPSING APPARATUS
Bruce E. Barnes, Spartanburg, S.C., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed July 11, 1966, Ser. No. 564,422
Int. Cl. B29c *17/07, 15/00*
U.S. Cl. 18—14 **3 Claims**



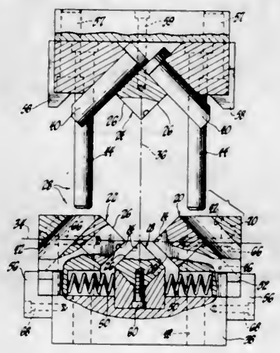
Apparatus for collapsing tubing which comprises contacting the tubing with a pair of movable surfaces having opposed, converging, substantially straight sides which move at substantially the same speed as the tubing so that there is relatively no movement between the surfaces and the tubing and artificially cooling the movable surfaces when they are in contact with the tubing and at a zone remote from the zone where the surfaces are in contact with the tubing.

3,469,283
POWDER HOPPER FOR POWDER COMPACTING PRESS
Paul Vinson, Costa Mesa, Calif., assignor to Wolverine-Pentronix, Inc., a corporation of Michigan
Filed Feb. 24, 1966, Ser. No. 529,736
Int. Cl. B29c *3/00*
U.S. Cl. 18—16 **4 Claims**

A powder hopper for powder compacting press consisting of a primary hopper connected by way of a flexible conduit to a gravity fed secondary hopper displaceable over a die plate having die cavities to be filled with powder. The secondary hopper has an inlet disposed at a predetermined distance above the die plate and has a closure plate provided with apertures disposed to correspond to the die cavities when the secondary hopper is displaced thereover. The powder flowing by gravity from the primary hopper into the secondary hopper is held at a substantially constant level in the secondary hopper and, preferably, the secondary hopper is vibrated during filling of the die cavities to improve the powder flow into such cavities.

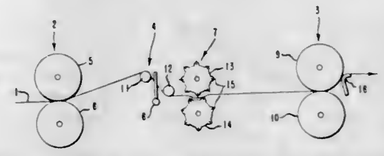


3,469,284
CHAIN-MAKING APPARATUS
Robert V. Ross, 1641 Wordsworth St., Ferndale, Mich. 48220
Filed Jan. 11, 1967, Ser. No. 608,595
Int. Cl. B29c *1/00;* **B22c** *9/30*
U.S. Cl. 18—42 **9 Claims**



A mold having a first plurality of spaced endless passages for forming alternate links of a chain and a second plurality of spaced endless passages each extending about and interlocking adjacent ones of the first plurality of endless passages to form the other alternate links of the chain, the mold being separable into four components along a first plane of separation which bisects the first plurality of endless passages and along a second plane of separation which bisects the second plurality of endless passages, the first of the components being disposed on a support platform with second and third of the components being slidably disposed on the support platform for movement into and out of engagement with the first component and the fourth component being movable into and out of engagement with the other components, the components being oriented so that they simultaneously move relative to one another along two lines which are disposed at right angles with one another and which are 45° from the two planes of separation.

3,469,285
APPARATUS AND PROCESS FOR STRETCH BREAKING FILAMENTARY TOW
Dale Leroy Garrison, Newark, and Arthur Lulay, Wilmington, Del., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Oct. 23, 1967, Ser. No. 677,107
Int. Cl. D01g *1/08*
U.S. Cl. 19—.37 **3 Claims**

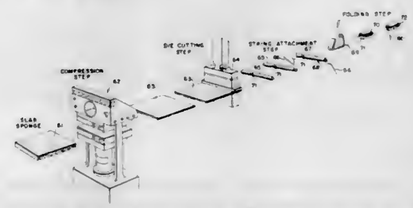


An improvement is provided in means for stretch breaking a moving continuous synthetic filament tow to staple fiber sliver. Prior art means comprises differentially driven feed and forwarding means with breaker means in the zone between them. The improvement comprises snubbing means between the feed and breaker means to apply additional tension to the filaments before they are broken. An improved method providing for passing of the fiber sheet is contact with at least one guide to change the angle of movement of the fiber sheet is disclosed.

A preferred ratch setting and the utilization of rebreaker means are also disclosed.

The improvements result in a reduction in the incidence of fibers shorter than the average desired length.

3,469,286
METHOD FOR FABRICATING COMPRESSED AND FOLDED ABSORBENT TAMPONS
Joseph R. Crockford, Flushing, N.Y., assignor to Kimberly-Clark Corporation, Neenah, Wis., a corporation of Delaware
Original application Mar. 31, 1965, Ser. No. 444,258, now Patent No. 3,369,544, dated Feb. 20, 1968. Divided and this application Sept. 19, 1967, Ser. No. 668,895
Int. Cl. A61f *13/20*
U.S. Cl. 19—144.5 **1 Claim**

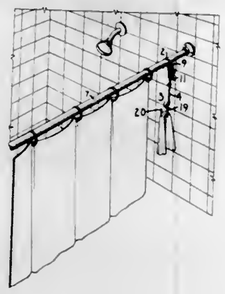


A method for making compressed catamenial tampons in which a thick mat of absorbent material is compressed to form a thin self-sustaining sheet. The sheet is cut into narrow strips and folded on itself to a size suitable for insertion in the vaginal cavity. The tampon is held in its folded form by temporary restraining means which may comprise a withdrawal string and a cooperating slot in an adjacent fold; a sleeve of water-soluble film; or an applicator tube from which the folded tampon may be ejected.

3,469,287
HOOK AND LINE STRUCTURE
Thomas M. Hamline, 9505 Grand, Kansas City, Mo. 64114
Filed Oct. 16, 1967, Ser. No. 675,421
Int. Cl. A47k *10/12*
U.S. Cl. 24—73 **5 Claims**

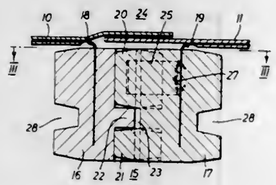
A hook and line structure includes a first hook having an elongated shaft, a cleat mounted on the elongated

shaft, a fastener portion, a second hook having an eye at the end of a shaft, and a line having one end secured to the fastener portion and the other end secured to the



second hook eye. A rope guiding eye is positioned adjacent the free end of the first hook elongated shaft to engage and maintain the rope adjacent the elongated shaft.

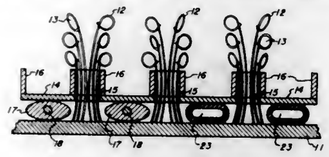
3,469,288
OVERHEAD CONVEYOR WITH A SUBSTANTIALLY TROUGH-SHAPED CONTAINER OF FLEXIBLE MATERIAL HAVING A SLIDE FASTENER TYPE CLOSURE
Werner Schaeffer, Hoverweg 8, Hoffnungsthal Bezirk Cologne, Germany
Filed Dec. 19, 1967, Ser. No. 691,752
Claims priority, application Germany, Dec. 20, 1966, Sch 39,989
Int. Cl. B65g *65/58;* **A44b** *19/04*
U.S. Cl. 24—205.1 **10 Claims**



An overhead conveyor in which elongated edge portions of a trough-shaped container of flexible material are releasably connected by a slide fastener type closure means so that, when the closure means is opened, material carried in the container may be discharged therefrom, and in which the interlocking elements of said closure means are constructed and arranged to remain in engaged position under the pressure they are subjected to by the load in the container.

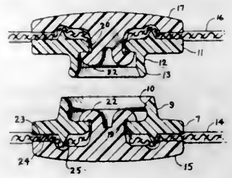
3,469,289
QUICK RELEASE HOOK TAPE
Horace E. Whitacre, Pasadena, Tex., assignor to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration
Filed Feb. 6, 1969, Ser. No. 797,056
Int. Cl. A44b *13/00*
U.S. Cl. 24—205.17 **9 Claims**

Two relatively large and rigid surfaces may be secured together with hook and loop fastener surfaces in a manner allowing relative rapidity and ease of separation by providing expansible means distributed over the pile of one of the surfaces in such a manner as to apply substantially



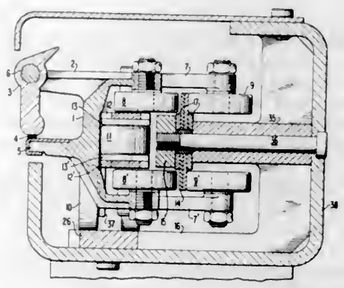
uniformly distributed separation forces between the two mating pile surfaces when separation of the respective surfaces is desired.

3,469,290
PLASTIC SNAP FASTENER
Hugh Hill Andrews, Cheshire, Conn., assignor to Scovill Manufacturing Company, Waterbury, Conn., a corporation of Connecticut
Filed Dec. 8, 1967, Ser. No. 689,081
Int. Cl. A44b *17/00*
U.S. Cl. 24—208 **1 Claim**



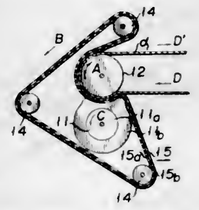
In the attachment of a plastic snap fastener element, a series of nibs project from the gripping face of a fastener element base to cooperate with a single large radiused groove in a post element base, to prevent turning of the fastener and to align the bases, as well as preventing sidewise pullout of a piece of fabric gripped between such bases.

3,469,291
CHAIN TRACK ASSEMBLY FOR TENTER CLIPS
Fritz Gageur, Lindau, Germany, assignor to Lindaure Dornier Gesellschaft m.b.H., Lindau, Bodensee, Germany, a limited-liability corporation of Germany
Filed June 29, 1967, Ser. No. 650,007
Claims priority, application Germany, Aug. 25, 1966, L 54,401
Int. Cl. D06c *3/04*
U.S. Cl. 26—61 **10 Claims**



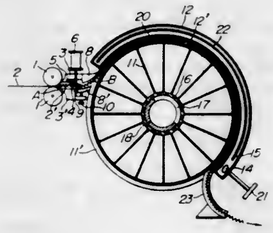
A vertical guide rail is secured to a mounting means so as to define an upper bearing surface above the mounting means and a lower bearing surface below the mounting means. Each of a plurality of similar tenter clips includes roller means disposed on opposite sides of the upper and lower bearing surface portions of the guide rail. Each tenter clip includes chain rollers for engaging a drive means. Adjacent tenter clips are interconnected by link means to form an endless chain, and vertical roller means is supported by each link means for engaging an underlying substantially horizontal support surface.

3,469,292
PRESHRINKING MACHINE FOR FABRICS AND THE LIKE
Iwajiro Hojyo, Kyoto-shi, Japan, assignor to Kinyosha Company Limited, Tokyo, Japan, a corporation of Japan
Filed June 6, 1967, Ser. No. 644,020
Int. Cl. D06c *21/00*
U.S. Cl. 26—69 **2 Claims**



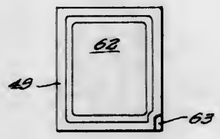
Preshrinking machine for fabrics and the like comprising a rotary heating drum, a rubber roller pressed against the heating drum and a relatively thin resilient belt intervening between said rotary heating drum and said rubber roller, wherein a fabric or the like to be preshrunk is introduced between the peripheral surface of the heating drum and the surface of the resilient belt disposed on the peripheral surface of said rubber roller so that the material may be compacted in passing between the heating drum and the rubber roller.

3,469,293
METHOD OF AND APPARATUS FOR CRIMPING SYNTHETIC FIBRES
Hideyuki Tsuzimoto, Toyonaka-shi, and Megumi Ikeda, Akashi-shi, Japan, assignors to Asahi Kasei Kogyo Kabushiki Kaisha, Kita-ku, Osaka, Japan, a corporation of Japan
Filed June 8, 1967, Ser. No. 644.697
Claims priority, application Japan, June 18, 1966, 41/39,152
Int. Cl. D02g *3/30*
U.S. Cl. 28—1 **5 Claims**



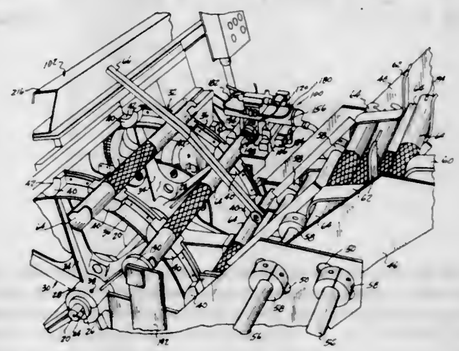
A stuffing box type crimping method for synthetic fibres comprising the steps of stuffing and heat setting the synthetic fibres, in which a crimped fibre mass formed in a stuffing box is transferred into a stuffing chamber formed between the stuffing box and heat setting means, wherein the stuffiness of said crimped fibre mass is maintained from 40 to 90% of that in the stuffing box and then taken up for heat treatment with a heating medium penetrating through said crimped fibre mass, and an apparatus for practicing said method.

3,469,294
METHOD OF MAKING SOLID STATE ELECTROLYTIC CAPACITORS
Chisayo Hayashi, % Aoki-so, 709–9 Chofu-Ohtsuka, Ohta-ku, Tokyo, Japan; Yusuke Chiba, 895 Kogasaki, Matsudo-shi, Chiba-ken, Japan; Eiji Tanaka, % 25–208 Kodan-jutaku, 48–1 Myojindai, Hodogaya, Yokohama-shi, Kanagawa-ken, Japan; Shigeyuki Ochi, % Nishi, 1523 Takagi-cho, Meguro-ku, Tokyo, Japan; Yuzuru Yanagisawa, 17–104 Fujisawa-danchi, Daigiri, Fujisawa-shi, Kanagawa-ken, Japan; and Masaaki Ayabe, % Saito, 578 Kugahara-cho, Ohta-ku, Tokyo, Japan
Filed Sept. 29, 1966, Ser. No. 582,897
Claims priority, application Japan, Sept. 30, 1965, 40/61,102; Oct. 11, 1965, 40/62,248; May 24, 1966, 41/33,394
Int. Cl. H01g *9/00, 13/00*
U.S. Cl. 29—25.42 **2 Claims**



Method of making solid capacitors which involves electrolytically depositing a dielectric oxide layer on the surface of an anodizable metal strip, applying an insulating grid over the surface of the dielectric oxide, electrolytically depositing a semiconductor oxide onto the dielectric oxide layer through the grid, forming a cathode structure on each of the areas in which the semiconductor oxide has been deposited, and then severing the strip along the grid to provide a plurality of individual capacitors.

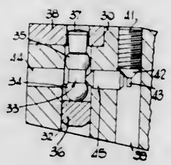
3,469,295
WORKPIECE INDEXING AND FEED APPARATUS
William J. De Gain, Detroit, Mich., assignor to Koppy Tool Corporation, Ferndale, Mich., a corporation of Michigan
Filed Apr. 13, 1967, Ser. No. 630,698
Int. Cl. B23b *25/00;* **B23q** *17/18*
U.S. Cl. 29—57 **12 Claims**



An apparatus for serially transferring workpieces one at a time from a loading station to an unloading station through an indexing station and a machining station.

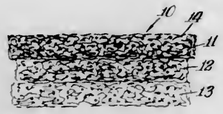
The workpieces are elongated and substantially cylindrical and are provided with an indexing notch or recess at one end for engagement, at the orienting station, with an orienting head which angularly orients each workpiece around its longitudinal axis to a predetermined angular position, and the machining station is provided with a feeding mechanism for subsequently and serially feeding each oriented workpiece one at a time to an appropriate position for effecting a machining operation upon the workpiece, after which the feed mechanism returns the workpiece to the apparatus for transfer to the unloading station.

3,469,296
TOOLHOLDERS FOR USE WITH DETACHABLE INSERTS
Leonard Reeve, Leicester, Stanley Clifford Brown, Coventry, and Harold Beckett, Berkswell, England, assignors to Wickman Wimet Limited
Filed June 21, 1965, Ser. No. 465,272
Claims priority, application Great Britain, June 30, 1964, 26,907/64
Int. Cl. B26d *1/00*
U.S. Cl. 29—96 **2 Claims**



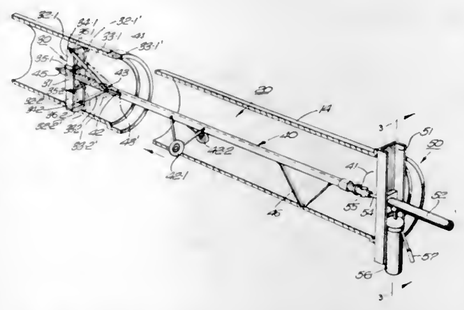
The improved toolholder including a shank having a surface for accommodating a detachable cutting insert and which insert has an aperture therethrough for accommodating one end of a clamping bar, the shank having a bore accommodating such bar and the bar having an arcuate surface portion fitting rather flush within the bore so that clamping or setting means can be urged against another surface portion of the bar to cause the same to pivot within the bore and clamp the insert in position.

3,469,297
POROUS METAL STRUCTURE
Harold H. Webber, Groton, Mass., assignor to Brunswick Corporation, a corporation of Delaware
Filed Apr. 20, 1966, Ser. No. 543,980
Int. Cl. B32b *15/18, 5/26;* **B23p** *17/06*
U.S. Cl. 29—180 **35 Claims**



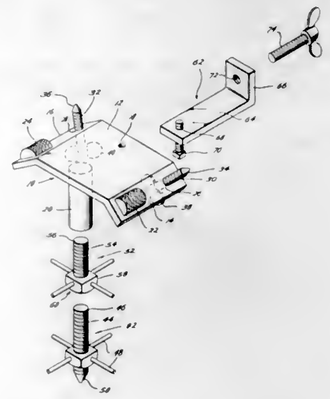
A porous metal structure made from a plurality of relatively short fracture-free substantially non-straight rough surfaced metal fibers distributed in either a two-dimensional or a three-dimensional orientation. The fibers have preselected cross sections with the porous structure containing either uniform cross-section fibers or different cross-sectioned fibers. The fibers may be in a stress relieved condition or a cold worked condition. The porous metal structure fibers have a mean cross-sectional dimension of under approximately fifty microns and said fibers have an average length of at least approximately two inches.

3,469,298
PIPE PULLING APPARATUS
Remo R. Pizzagalli, Shelburne, Vt., assignor, by mesne assignments, to Atlas Pipe Popper Corporation, Farmingdale, N.Y., a corporation of New York
Filed Oct. 4, 1966, Ser. No. 584,196
Int. Cl. B23p *19/04*
U.S. Cl. 29—237 **7 Claims**



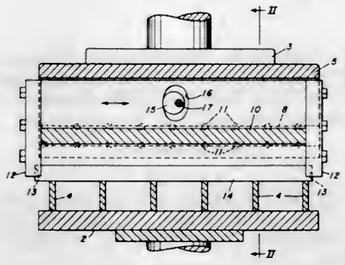
This application discloses a method and apparatus for forcing one end of a pipe section into the end of a previously laid pipe section while in a trench, by using mechanical jacking means.

3,469,299
INTERIOR LINE-UP CLAMP
Dick Rogers, Magnolia, Ark., assignor of fifty percent to Dwight W. Isaacks, Houston, Tex.
Filed Dec. 29, 1966, Ser. No. 605,804
Int. Cl. B23k *37/04;* **B23q** *3/00*
U.S. Cl. 29—200 **2 Claims**



Generally, the present invention relates to a clamp to be used to properly position and support, or in some cases to aid in the positioning and support of, pipe fittings while they are being welded to pipes. The clamp is mounted on the inside of the pipe and a portion of the clamp extends out of the pipe for the support and positioning of the fittings.

3,469,300
METHOD FOR FRICTION WELDING METAL BARS
Harold Nagin, Pittsburgh, Pa., assignor to Reliance Steel Products Company, McKeesport, Pa., a corporation of Pennsylvania
Filed Sept. 30, 1966, Ser. No. 583,270
Int. Cl. B23k *29/00, 31/02*
U.S. Cl. 29—470.3 **3 Claims**



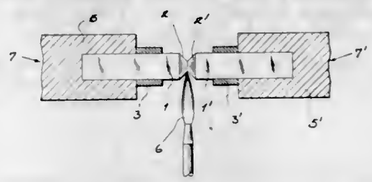
This invention relates to a method of making a metal grating in which a transversely-extending cross bar intersects and makes contact with a plurality of longitudinally-extending bearing bars. The cross bar is friction welded to the bearing bars at the intersections therewith by means of reciprocating the cross bar rapidly while applying pressure uniformly thereto and thereby effecting surface melting only at the contacting surfaces of the bars, continuing the reciprocating motion until the cross bar has been pressed to the desired depth in all of the bearing bars, and then stopping the reciprocating motion while continuing the pressure until the molten metal has set.

3,469,301
PROCESS FOR THE PRODUCTION OF BONDED METAL STRUCTURES
Donald L. Freyberger, Coatesville, and John F. Longenecker, Downingtown, Pa., assignors to Lukens Steel Company, Coatesville, Pa., a corporation of Pennsylvania
No Drawing. Continuation-in-part of application Ser. No. 305,519, Aug. 29, 1963. This application Dec. 30, 1966, Ser. No. 606,026
The portion of the term of the patent subsequent to Jan. 24, 1984, has been disclaimed
Int. Cl. B23k *31/02*
U.S. Cl. 29—480 **7 Claims**

A coated steel or iron article is produced by spraying a non-refractory molten metal with an oxy-acetylene gas. The non-refractory metal can be nickel, copper or mixtures of nickel and copper. The metal is sprayed on a plate and a second plate sandwiches the sprayed layer between the plates so that the sprayed metal becomes bonded upon being heated under reducing atmosphere conditions.

3,469,302
METHOD OF WELDING BARS OF COPPER AND COPPER ALLOYS
Walter Anders, Halle (Saale), Hans Strakosch, Hettstedt, Molmeck, Horst Porth, Vatterode, and Hartmut Bethge, Hettstedt, Germany, assignors to VEB Vereinigte NE-Metall-Halbzeugwerke Hettstedt, Hettstedt, Sudharz, Germany, a corporation of Germany
Filed Oct. 24, 1966, Ser. No. 588,889
Int. Cl. B23k *5/00; 31/02*
U.S. Cl. 29—481 **3 Claims**

A method of welding copper or copper-alloy bars together wherein the bars are tapered at their joint and are butt welded under axial pressure in a gas flame so that, in spite of the tapering configuration, beads of metal are extruded outwardly and contain substantially all of the



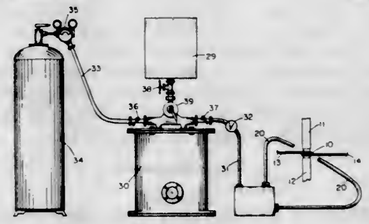
contaminants of the weld. The beads are confined between collars on the bars and are machined off in a subsequent operation.

3,469,303
METHOD OF UNITING MECHANICAL PARTS BY WELDING
Pierre Carvallo, Amposta, Tarragone, Spain
Filed Mar. 4, 1966, Ser. No. 531,979
Claims priority, application France, Mar. 8, 1965, 8,277
Int. Cl. B23k *31/02*
U.S. Cl. 29—484 **9 Claims**



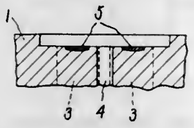
A method of uniting mechanical parts by depositing, along a junction line between the parts, a sequence of weld regions forming a line intersecting with the surface of one part which has transverse undulations relative to said junction line.

3,469,304
FLUXED GAS FOR RESISTANCE AND INDUCTION WELDING AND BRAZING
George A. Medsker, Elyria, Ohio, assignor to The Gasflux Company, a corporation of Ohio
Filed Dec. 28, 1966, Ser. No. 605,398
Int. Cl. B23k *31/02*
U.S. Cl. 29—494 **4 Claims**



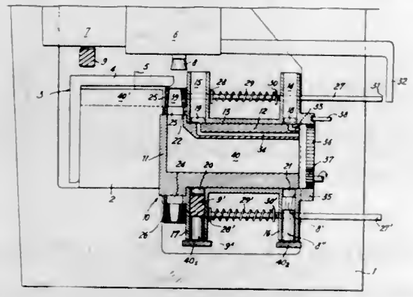
The present invention pertains to the field of resistance and induction welding and brazing using a non-combustible carrier gas wherein flux vapor is incorporated to carry the flux vapor to the work zone to facilitate and improve the weld or braze. This invention is not applicable to arc welding processes. It is applicable to the joining or fusing of two parent metals in which, if a third metal is used to facilitate the joining, it has a lower melting temperature than either of the two parent metals.

3,469,305
METHOD FOR PREVENTING CRACKING OF MACHINE PARTS
Hajime Tamura, Kawasaki, Japan, assignor to Mitsubishi Jukogyo Kabushiki Haisha, Tokyo, Japan
Filed Aug. 6, 1964, Ser. No. 387,926
Int. Cl. B23p *7/04, 17/00*
U.S. Cl. 29—527.4 **3 Claims**



A method for preventing the formation of cracks emanating from the valve openings and fuel injection openings in the cylinder head of a diesel engine due to thermal stresses includes the step of forming bevels in the region of the openings where the body is subject to the formation of the cracks. The bevels are then filled with a welded metal of higher ductility than the head.

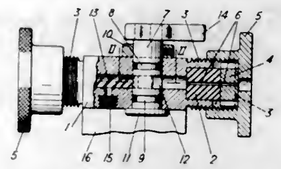
3,469,306
COMBINED PUNCHING AND REAMING TOOL
Francis Jean Gabriel Cloup, Paris, France, assignor to Promat S. a R.L., Latresne-Bordeaux, France, a company of France
Filed Dec. 26, 1967, Ser. No. 693,288
Claims priority, application France, Jan. 6, 1967, 90,198
Int. Cl. B23p *23/02*
U.S. Cl. 29—564 **10 Claims**



A machine tool of which the purpose is the making of accurately sized round holes in metal plate-like elements such as angle iron; it consists of a combined and successively operating punch which initially makes the hole and a rotary bit which bores or reams it to the required accurate dimension; the head which supports these tools moves between two locations over the workpiece and may also move to a position whereat the tools are changeable for others which are held in store for use.

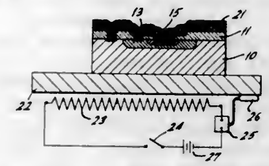
3,469,307
MINERAL INSULATED ELECTRIC CABLES
Hermann Richard Lorch, Southport, and Gideon Sorsky, Liverpool, England, assignors to British Insulated Callender's Cables Limited, London, England, a British company
Filed Nov. 3, 1965, Ser. No. 506,200
Claims priority, application Great Britain, Nov. 6, 1964, 45,340/64
Int. Cl. H01r *43/00;* **H05k** *13/00*
U.S. Cl. 29—573 **11 Claims**

A mineral insulated cable is cut for jointing or terminating at a position, judged to be uncontaminated by atmospheric moisture, temporarily hermetically sealed in a chamber which protects the cut end from the atmosphere. Inert gas under pressure passes from the chamber into the cut end to impregnate the mineral insulation and after the cut end has been removed from the chamber the escape



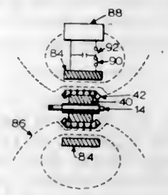
of this gas provides an atmosphere that protects the exposed end of the insulation and the exposed conductor or conductors for at least part of the time until the end is capped or otherwise sealed, as in a sealing pot.

3,469,308
FABRICATION OF SEMICONDUCTIVE DEVICES
Robert L. Luce, North Wales, Pa., assignor to Philco-Ford Corporation, Philadelphia, Pa., a corporation of Delaware
Filed May 22, 1967, Ser. No. 639,986
Int. Cl. H01l *7/00;* **B23k** *31/02*
U.S. Cl. 29—589 **5 Claims**



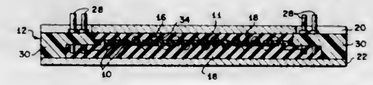
A process for heat treating the aluminum metal contact layer and underlying surface portions of a silicon transistor or microcircuit. The aluminum is alloyed, or sintered, with contacting underlying regions of the silicon by raising the temperature of the region to a value (e.g., about 400° C.) substantially below the silicon-aluminum eutectic temperature, through application of a quantity of heat for a relatively short period (e.g., about 2 to 4 seconds) to the side of the body of silicon opposite to the aluminized side.

3,469,309
METHOD OF MANUFACTURING SQUIRREL-CAGE ROTOR
Morton Sagalow, West Orange, N.J., assignor to Singer-General Precision, Inc., Little Falls, N.J., a corporation of Delaware
Original application Mar. 1, 1965, Ser. No. 436,111, now Patent No. 3,360,669, dated Dec. 26, 1967. Divided and this application July 19, 1967, Ser. No. 663,911
Int. Cl. B23p *17/00;* **H02k** *15/02*
U.S. Cl. 29—598 **1 Claim**



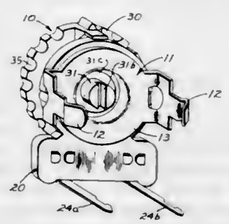
A squirrel-cage rotor is made by positioning a hollow tube with inwardly projecting elongated projections over a core with corresponding grooves, the ends of the tube overhanging the core, and, applying a high-intensity pressure to the tube radially-outer surface to cause the tube projections to fill the core grooves.

3,469,310
METHODS FOR MAKING MAGNETIC CORE MEMORY STRUCTURES
Bruce E. Peck, Natick, Mass., and Calvin Fujimoto, Compton, Calif., assignors to The National Cash Register Company, Dayton, Ohio, a corporation of Maryland
Original application Sept. 17, 1959, Ser. No. 840,629, now Patent No. 3,181,128, dated Apr. 27, 1965. Divided and this application Mar. 8, 1965, Ser. No. 437,683
Int. Cl. H01f *7/06*
U.S. Cl. 29—604 **10 Claims**



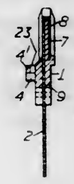
A method of forming a core plane for magnetic storage and retrieval of binary data which comprises the steps of placing magnetic cores in an array in seats provided therefor in a rigid carrier plate; passing individual conductors through the apertures of the cores and opposing openings in the carrier which are aligned with the core apertures to provide read, write and sense windings for the storage and retrieval of data, and connecting the conductors to terminals about the periphery of the carrier; forming a matrix for protecting the cores from vibration and shock by surrounding the cores and windings with uncured elastomeric material to form a continuous mass of said elastomeric material in which the cores and windings therefor are completely embedded in the continuous mass of elastomeric material; curing the elastomeric material to its elastomeric state to provide an elastomeric suspension medium in which the continuous mass thereof isolates the cores from vibration and shock; and increasing the stiffness of this assembly to reduce the effects of resonance by securing a metal cover plate to the assembly.

3,469,311
METHOD OF MAKING AN ELECTRICAL CONTROL
John D. Van Benthuysen and Wayne A. Barden, Elkhart, Ind., assignors to CTS Corporation, Elkhart, Ind., a corporation of Indiana
Original application May 11, 1964, Ser. No. 366,542, now Patent No. 3,375,478. Divided and this application Nov. 20, 1967, Ser. No. 684,451
Int. Cl. H01c *17/00*
U.S. Cl. 29—620 **10 Claims**



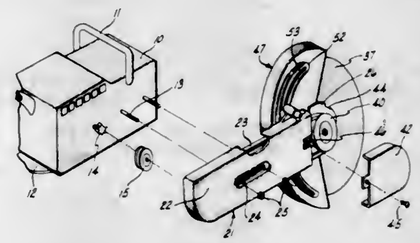
A method of making a variable resistance control having a resistance element by positioning an electrically conductive bracket integral with a collector on one side of the resistance element, and a contactor on the other side of the resistance element. An electrically nonconductive heat-deformable shaft connected to a rotatable member is positioned in an aperture or bearing provided in the bracket. After properly positioning the parts of the control heat swaging of the shaft is effected, thereby increasing the diameter of the shaft, improving the fit between the shaft and a bearing therefor, and securing the shaft in the bearing with a portion of the rotatable member stabilizing the rotatable member relative to the resistance element. The method may further include nestedly disposing an equalizing contractor having a pair of arms in a space between the shaft and the portion of the rotatable member stabilizing the rotatable member relative to the resistance element.

3,469,312
METHOD OF MANUFACTURING MULTICONTACT PLUG-IN CONNECTORS
Francois Jeanne Charles Leyssens, Borgerhout, and Lodewijk Viktor Hendrik Maria Ghys, Edegem, Belgium, assignors to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware
Filed Jan. 14, 1966, Ser. No. 520,576
Claims priority, application Netherlands, Jan. 20, 1965, 6500682
Int. Cl. B23p *17/00;* **H05k** *3/00*
U.S. Cl. 29—629 **5 Claims**



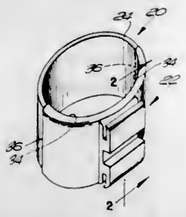
A method is provided for manufacturing plug-in connectors formed of short strips of conductive tape supported by an insulating moulding material. In practicing the method, conductive tapes are cut and bent to desired forms, the tapes are placed in a mould, and the moulding material is placed into the mould. When the mould is disassembled, the desired connectors are formed.

3,469,313
PORTABLE SAW
Bill V. Martin, P.O. Box 506, Bloomington, Ill. 61702
Filed Oct. 12, 1966, Ser. No. 586,268
Int. Cl. B23d *45/16;* **B26b** *29/00*
U.S. Cl. 30—167 **7 Claims**



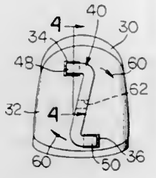
This invention contemplates the utilization of a power unit for a portable chain saw as the power unit for a portable circular saw capable of cutting wood, metal, or masonry. The drive sprocket of the chain-saw power unit is convertible in the field to a drive pulley which, in turn, is used to power a circular saw for cutting metal, masonry, and any less resistant material.

3,469,314
ORTHODONTIC DEVICE
Lawrence Pearlman, East St., Sharon, Mass. 02067
Filed Sept. 14, 1966, Ser. No. 579,321
Int. Cl. A61c *7/00*
U.S. Cl. 32—14 **8 Claims**



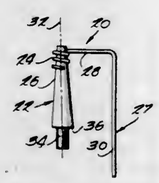
An orthodontic tooth band with a metallic tooth encircling band portion and plastic facing layer is provided for carrying an orthodontic attachment. Improved orthodontic attachments which are removably secured to teeth are also provided. In addition, improved bracket means having gauge means for accurately positioning brackets on teeth and orthodontic procedures are also provided.

3,469,315
ORTHODONTIC APPLIANCE
Patrick C. Russ, 4319 Drury Lane, Fort Wayne, Ind. 46807
Filed Feb. 8, 1967, Ser. No. 614,654
Int. Cl. A61c *7/00*
U.S. Cl. 32—14 **6 Claims**



An orthodontic appliance comprising means for securing detachably a bracket to a tooth, said bracket having a lingually opening notch for receiving an arch wire interposed between a tooth and the bracket, said means including two anchoring devices spaced apart vertically on the labial surface of a tooth, said bracket having opposite end portions secured to said anchoring devices, respectively, said bracket having said notch located between the ends thereof.

3,469,316
DOWEL POSITIONING MEANS
Alfred J. Stern, 5307 Valkeith St. 77035, and Harold L. Stern, 6906 Van Etten St. 77021, both of Houston, Tex.
Filed Oct. 27, 1966, Ser. No. 595,557
Int. Cl. A61c *9/00*
U.S. Cl. 32—17 **8 Claims**

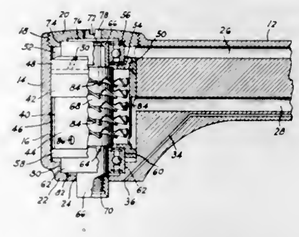


A reusable dowel holder is provided for holding an elongated, tapered dowel in making a positive replica of a tooth from a negative impression of the tooth formed in an impression material. The dowel holder includes an elongated leg portion which is adapted to engage the impression material and extend generally upwardly therefrom. A holding portion extends from the upper end of the leg portion over the negative impression, and the holding portion is provided with a central opening for receiving and releasably gripping the tapered end of the dowel when the dowel is inserted into the opening in a direction generally opposite to the direction in which the leg extends away from the holding portion. After die material is poured into the negative impression about the lower end of the dowel and the die material sets, the dowel holder can be disengaged from the dowel by pulling the dowel holder upwardly away from the dowel to disengage the leg portion from the impression material.

3,469,317
MATERIAL FOR FILLING CAVITIES
Sven Jarby, Schloss Forsteck, Salez, St. Gall, Switzerland
No Drawing. Filed Jan. 29, 1965, Ser. No. 429,167
Int. Cl. A61k *5/02*
U.S. Cl. 32—15 **11 Claims**

Filling of dental cavities is accomplished by placing into the prepared cavity a water insoluble, physiologically inactive, pressure mouldable polymeric synthetic resin, e.g., polyethylene, polymonochlorotrifluoroethylene or polytetrafluoroethylene, in finely divided form, or as a coherent pellet of the finely divided resin, and then mechanically working and compacting the resin within the cavity to transform the divided resin within the cavity into a solid mass.

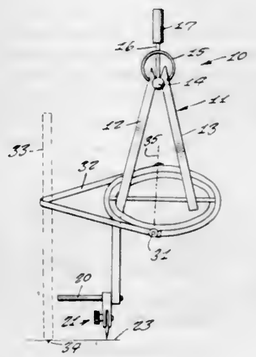
3,469,318
DENTAL HANDPIECE INSTRUMENT
Jacob A. Saffir, Los Angeles, Calif., assignor to Dentsply International Inc., York, Pa., a corporation of Delaware
Filed Oct. 28, 1964, Ser. No. 407,006
Int. Cl. A61c *1/05, 1/12*
U.S. Cl. 32—27 **6 Claims**



1. A dental handpiece comprising in combination, a handle, a contra-angle hollow head on one end of said handle having a first bore of uniform diameter extending inward from one end thereof, a plurality of conduit means in said handle arranged respectively to deliver driving air under pressure to said head and exhaust at least a portion thereof from said head, bearings mounted within said head adjacent the upper and lower ends of said first bore, a turbine rotor supported rotatably by said bearings and having a second bore extending axially from one end to receive a dental tool shank for rotation by said turbine, a series of similar circular disc-like turbine blades in excess of two each having radial vanes on the peripheries thereof all sloping in similar angular directions relative to the axis of the rotor and mounted upon said turbine rotor between said bearings, said blades being closely spaced axially therealong in stacked multi-stage relation-

ship, sleeve-like stator means extending axially within said first bore of said head and surrounding said blades in closely spaced relationship to the peripheral edges of said vanes of said blades and terminating adjacent the opposite ends of said stack of blades, the outer surface of the lower portion of said sleeve-like stator being reduced in diameter to provide an annular plenum exhaust chamber between said stator and the housing surface which defines said first bore, air delivery means in one end of said stator means adjacent one end of said turbine communicating with said air delivery conduit to receive air therefrom and operable to discharge air in a generally axial direction against the vanes of the blade nearest said air delivery means and then successively and directly engage the vanes of the succeeding blades and expand between said blades to effect driving rotation of said rotor, and means on the opposite end of said stator means to direct at least a substantial portion of spent driving air from the opposite end of said rotor to said plenum exhaust chamber for passage to said exhaust conduit means in said handle.

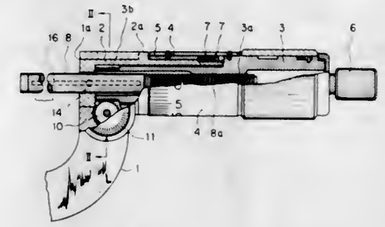
3,469,319
ELLIPSE CIRCLE DRAWING INSTRUMENT
Hooshang Iravani, Detroit, Mich. (P.O. Box 652, East Lansing, Mich. 48823)
Filed May 7, 1968, Ser. No. 727,149
Int. Cl. B43l *11/04*
U.S. Cl. 33—30 **3 Claims**



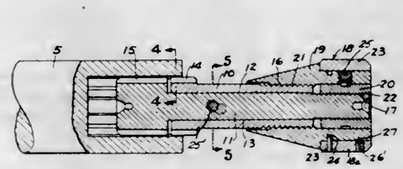
An ellipsoidal compass for selectively drawing either circles or ellipses of varied shapes and sizes, the device comprising a pair of spaced legs extending at an angle respective to each other, the legs being retained to rotate within a circular ring which when being retained in a plane parallel to the drawing surface will cause the compass to draw a circle, but wherein if the ring is inclined at an angle respective to the drawing surface will cause the compass to draw an ellipse, the particular shape of the ellipse being defined by the amount of inclination of the ring.

3,469,320
STRAIGHT-MOVING MICROMETER
Goro Nishikata, Kawasaki, Japan, assignor to Yehan Numata, Yokohama, Japan
Filed Nov. 13, 1967, Ser. No. 682,314
Claims priority, application Japan, Mar. 4, 1967, 42/17,926
Int. Cl. G01b *3/18*
U.S. Cl. 33—166 **5 Claims**

A micrometer characterized by the fact that the spindle moves longitudinally without being rotated and the amount of movement is read from a scale plate and a thimble-type vernier scale; wherein, an internally threaded cylinder engages the threads on the spindle, and external threads on the cylinder engage a gear which drives the scale plate.



3,469,321
SPLINE GAUGE
Vernon A. Riddell, Farmington, Mich., assignor to Vinco Corporation, Detroit, Mich., a corporation of Michigan
Filed Oct. 19, 1967, Ser. No. 676,494
Int. Cl. G01b *3/14*
U.S. Cl. 33—179.5 **4 Claims**

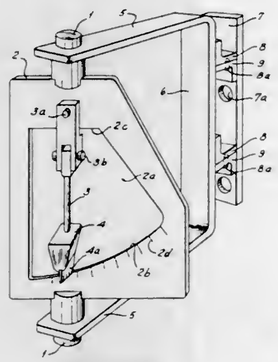


A spline gauge having a pair of telescoping members each of which has circumferentially spaced spline engaging teeth thereon. A nut engages threads on each of the members, the number of threads per inch differing on each of the members, so that when the nut is rotated, one of the members is moved axially relative to the other of the members. The members are interconnected so that when they are moved axially relative to one another, rotation of the members occurs to cause the teeth thereon to rotate relative to one another and thereby engage the opposite sides of the teeth of a spline to be gauged. Indicia on the gauge indicate the tooth thickness. After the gauge has been engaged with the spline, a portion thereof can be used to measure concentricity of the spline.

3,469,322
INCLINOMETER FOR A ROCK DRILLING MACHINE
Bengt Gosta Eriksson, Bygardesvagen 3, Spanga, Sweden
Filed June 7, 1967, Ser. No. 644,384
Int. Cl. G01c *9/12, 9/16*
U.S. Cl. 33—215 **1 Claim**

An instrument for adjusting the inclination or angular position or an inclinometer of specific design for facilitating proper angular adjustment of a device such as for instance a feeding mechanism or other part of a rock drilling machine comprises a pendulum having two de-

grees of freedom of motion mounted to pivot around an axis orthogonal to the two degrees of freedom in an aperture in a body carrying a graduated arc. A scale on



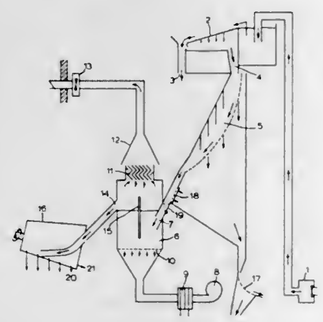
the arc body and a second scale at the bottom of the pendulum indicate the inclination of the rock drilling machine or any other device to which the inclinometer is secured.

3,469,323

PROCESS AND DEVICE FOR SCREENING AND DRYING A PLASTICS GRANULATE OBTAINED BY WET GRANULATION

Johannes Jongbloed, Hoensbroek, Jan G. Gardeniers, Valkenburg, Hubertus W. Nüsser, Born, and Pierre H. Peeters, Oirsbeek, Netherlands, assignors to Stamicarbon N.V., Heerlen, Netherlands

Filed Mar. 21, 1968, Ser. No. 714,984
Claims priority, application Netherlands, Mar. 25, 1967, 6704379
Int. Cl. F26b *3/06*
U.S. Cl. 34—9 **13 Claims**



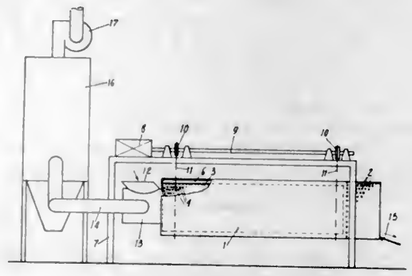
Process and apparatus for screening and drying a thermoplastic granulate obtained by a wet granulation process wherein extruded hot thermoplastic granules are introduced into an aqueous cooling agent including feeding the mixture of granules and cooling agent to a sieve bend. The granules which are the oversize fraction of the sieve bend are then introduced into a fluid bed drier wherein residual surface moisture is removed from the granules. Thereafter the dried granules are screened to a predetermined size.

3,469,324

ROTARY DRUM FOR COOLING CASTINGS

Herbert Vissers, Nieuw-Vennep, Netherlands, assignor to Landbouwwerktuigen- en Machinefabriek H. Vissers N.V., Nieuw Vennep, Netherlands, a company of the Netherlands

Filed Jan. 16, 1968, Ser. No. 698,320
Claims priority, application Netherlands, Feb. 1, 1967, 6701529
Int. Cl. F26b *11/04, 7/00*
U.S. Cl. 34—13 **3 Claims**



A rotary drum adapted to receive the hot castings and mold sand contents of mold flasks is provided near its discharge end with a circumferentially perforate section for separating the dried sand with its remaining section imperforate. A perforated lining is positioned within the and spaced from the drum and extends over at least part of the length of the imperforate section so as to improve tumbling contact between sand and castings in that section by cycling sand continuously into the space between the liner and drum and then back into the liner as the drum and liner rotate.

ERRATA

For Class 34—92 see:
Patent No. 3,469,327

For Class 34—99 see:
Patent No. 3,469,328

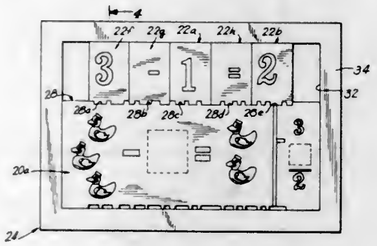
For Class 34—137 see:
Patent No. 3,469,329

3,469,325

COORDINATED GROUP OF ELEMENTS CONSTITUTING A TEACHING AID

Malvin Greenberg, Commack, N.Y., assignor to Schoolhouse Industries, Inc., Commack, N.Y., a corporation of New York

Filed Aug. 10, 1967, Ser. No. 659,804
Int. Cl. G09b *3/00, 19/00*
U.S. Cl. 35—9 **6 Claims**



A teaching aid composed of a group of correlated elements which constitute several problem cards, several answer cards, a frame and a workbook. Each answer card has a single edge of coded configuration which is unique to information printed on that card and each problem card has one edge of coded configuration to match answer cards that correspond to the information required by stimulus printed on the problem card. There are sufficient answer cards from which selections can be made to match the coded edge of any selected problem card. The frame has a shallow recess to receive a single problem card with an elongated space left alongside the coded edge of such card, which space is just wide enough to admit a row of matching answer cards. The workbook is coordinated to the problems presented by the problem cards having pages on which such problems are printed along with adjacent blank spaces for inscriptions of answers by a pupil.

3,469,326

SNOW SHOVELLING APPARATUS

Ephraim Malickson, R.D. 1, Phoenixville, Pa. 19460

Filed May 16, 1967, Ser. No. 638,975
Int. Cl. E01h *5/06, 3/02;* **B62b** *11/00*
U.S. Cl. 37—53 **9 Claims**



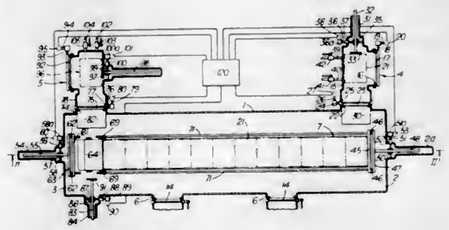
A portable snow shovelling apparatus comprising a scoop which is movably mounted on a body and guided for movement from a snow scooping position upwardly to a snow discharge position by way of a flipping action in response to a downward movement of an actuating handle means connected to the scoop.

3,469,327

FREEZE DRYING APPARATUS

Viacheslav Jansen Janovtchik, London, England, and Camillo Catelli, Parma, Italy, assignors to H. J. Heinz Company Limited

Filed Dec. 5, 1967, Ser. No. 688,210
Claims priority, application Great Britain, Dec. 7, 1966, 54,835/66
Int. Cl. F26b *15/12, 19/00*
U.S. Cl. 34—92 **14 Claims**



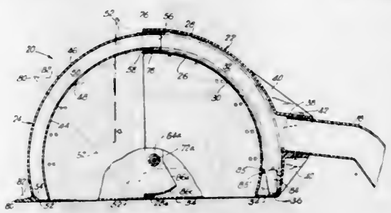
Apparatus for the continuous drying of frozen products in containers comprises a vacuum chamber through which the containers are advanced from an entrance airlock to an exit airlock. A series of parallel heating plates extend through the chamber, which plates are one above another and define a tortuous path along which the containers are pushed, and transfer devices are mounted relative to the ends of the heating plates to transfer a container from one heating plate to the next in said path after a container has been introduced into the chamber.

3,469,328

ADJUSTABLE HAIR-DRYER HOODS

Martin M. Handler, Middle Village, N.Y., Jon Gulfo, Roselle Park, N.J., and Jerome B. Bonat, Manhattan, N.Y., assignors to Samuel Bonat & Bro. Inc., West Paterson, N.J., a corporation of New York

Filed June 21, 1968, Ser. No. 738,897
Int. Cl. A45d *20/32, 20/24*
U.S. Cl. 34—99 **22 Claims**



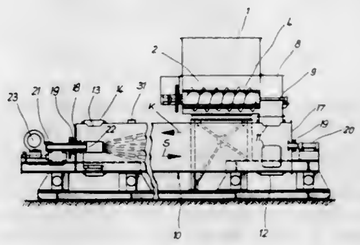
A hair-dryer hood which is adjustable within a given range of drying positions as well as between drying and non-drying positions. The hood has fixed and movable quadrispheroidal telescopable sections each provided with inner and outer interconnected walls defining between themselves in fully extended position of the movable section a hemispheroidal chamber to receive a gaseous drying medium. These hood sections respectively terminate in cooperating open ends which overlap each other to provide communication between the quadrispheroidal chambers of the two sections. The inner and outer walls of the movable section are movable along the inner and outer walls of the fixed section between a fully extended position where the section walls overlap each other to a minimum extent and a retracted position where the section walls overlap each other to a maximum extent. The movable section, when in extended position, provides the hood with a configuration substantially surrounding a body of hair which is to be dried, while, when the movable section is in its fully retracted position, it provides the hood with a configuration giving free, substantially unobstructed movement of the body of hair to and from the hood.

3,469,329

METHOD AND APPARATUS FOR THERMALLY DRYING FINE GRANULAR MATERIAL OR MUD, ESPECIALLY HIGHLY STICKY POND MUD

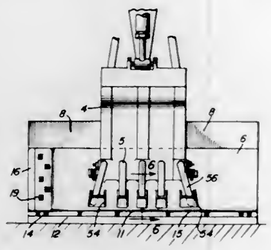
Günther K. H. R. Unger, Essen, Germany, assignor to N. V. Handelsonderneming Ploum, Kerkrade, Netherlands

Filed Oct. 13, 1967, Ser. No. 675,176
Claims priority, application Germany, Oct. 18, 1966, U 13,186
Int. Cl. F26b *11/04;* **F27b** *7/00*
U.S. Cl. 34—137 **12 Claims**



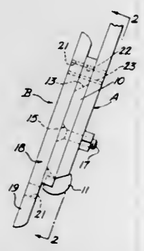
The present invention relates to a method of and apparatus for drying fine granular material or mud, according to which the material to be dried is received by and rotated in a drum, dried therein and then discharged.

3,469,330
BACKHOE AND AUXILIARY BLADE THEREFOR
John W. Hood, Box 236, Iron River, Wis. 54847, and Arne W. Johnson, Box 140, Brule, Wis. 54820
Filed Oct. 27, 1967, Ser. No. 678,631
Int. Cl. E02f 3/76, 3/00
U.S. Cl. 37—117.5 8 Claims



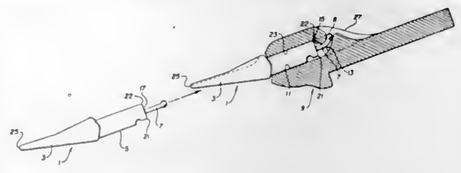
A contoured rectangular earth moving blade attachment with pockets attached to the convex surface of the blade. In order to mount the blade upon a toothed backhoe bucket, the convex blade surface is positioned on the ground facing upwardly. The teeth of a backhoe bucket are then lowered into the corresponding pockets. The weight of the teeth is directed against the convex surface causing the blade to pivot upwardly about the blade cutting edge thereby facilitating full engagement of the teeth with the pockets and performing a commensurate positioning of the convex blade surface against the bucket entrance. Bolts are employed to fasten the blade to the bucket in this position thus preparing the blade attachment for an earth moving operation.

3,469,331
REVERSIBLE EDGE BIT STRUCTURE FOR BLADE OF EARTH WORKING IMPLEMENT
Jay J. Wood, 110 Mariposa, Watsonville, Calif. 95076
Filed Oct. 21, 1965, Ser. No. 499,196
Int. Cl. E02f 9/28, 5/00
U.S. Cl. 37—141 3 Claims



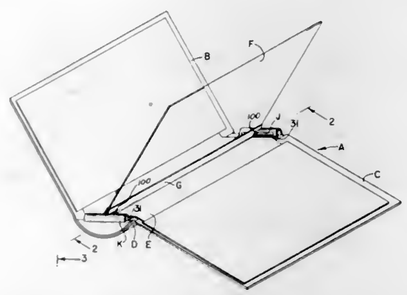
A mounting plate is mounted along the working edge of the mold board of an earth working implement such as a bulldozer, the mounting plate having a plurality of notches at selected spaced intervals in the edge thereof toward the working edge of the mold board. The edges of the notches are undercut, and the mounting plate has a plurality of holes therein for receiving anchor pins. A plurality of edge bits are provided for mounting in either of two relatively reversed, aligned positions along the mounting plate. Each bit has a plurality of marginally undercut keys projecting from the rear face thereof and spaced to enter, and to fit into and in interlocking engagement with the notches in the mounting plate in either of two relatively reversed positions of the bits. Holes are provided in each bit in position to register with the anchor pin holes in the mounting plate in either of the two relatively reversed positions of each bit, and anchor pins are inserted into the registering holes to retain the bits with the keys fully inserted in their respective notches.

3,469,332
RETAINING MEANS FOR EXCAVATING TEETH
Earl W. Leffingwell, Hayward, Calif.
(P.O. Box 131, Union City, Calif. 94587)
Continuation-in-part of application Ser. No. 640,736, May 23, 1967. This application Sept. 28, 1967, Ser. No. 671,377
Int. Cl. E02f 9/28, 3/12
U.S. Cl. 37—142 8 Claims



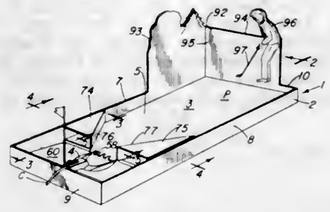
A locking means for releeasably reetaining an excavating tooth in a socket mounted on earth digging equipment wherein the tooth is formed with a hardened distal portion for cutting and a proximal end having a malleable portion which is deformable to interlock with the socket.

3,469,333
ALBUM PAGE STABILIZATION SYSTEM
Robert Herman Roberts, 69—22 185th St., Flushing, N.Y. 11365
Continuation-in-part of application Ser. No. 540,956, Apr. 7, 1966, which is a continuation of application Ser. No. 384,919, July 24, 1964. This application Nov. 30, 1966, Ser. No. 611,193
Int. Cl. B42f 5/00, 11/00; G09f 11/063
U.S. Cl. 40—104.17 1 Claim



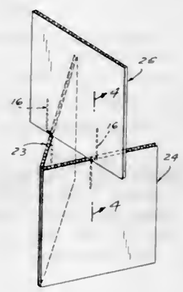
Album leaves are mounted on the back of an album by means of a wire attached to an edge of each leaf and inserted in slotted elements secured to the opposite ends of the back of the album. Right angular cut-outs are provided in corners of each leaf adjacent the ends of the mounting wire, with one side of each right angular cutout tangentially contacting the top of each slotted element to stabilize the album leaf.

3,469,334
DISPLAY DEVICES
Nick C. Kategian, Chicago, Ill., assignor to Brandell Products Corporation, Chicago, Ill., a corporation of Illinois
Filed Sept. 20, 1968, Ser. No. 761,252
Int. Cl. G09f 19/10; A63b 57/00
U.S. Cl. 40—106.25 16 Claims



A putting display device embodying an inclined ramp and a ball return device for continuously "putting" a golf ball and returning the ball to the "putting" position.

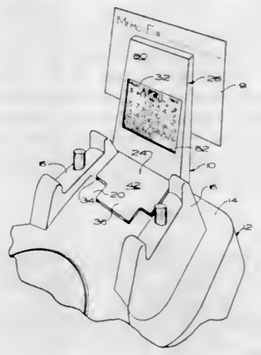
3,469,335
KNOCK-DOWN DISPLAY ASSEMBLY
Jonathan W. Leigh, New York, N.Y., assignor to Einson Freeman and De Troy Corporation, a corporation of New Jersey
Filed Dec. 15, 1967, Ser. No. 691,019
Int. Cl. G09f 1/10, 7/18
U.S. Cl. 40—124.1 6 Claims



At least three display panels formed of corrugated board, all panels arranged with corrugations extending vertically. Two of the panels arranged on substantially the same horizontal level and preferably converge forwardly. Third panel above these two in plane intersecting both lower panels, and wire connectors accommodated by panel corrugations extend between third panel and both lower panels.

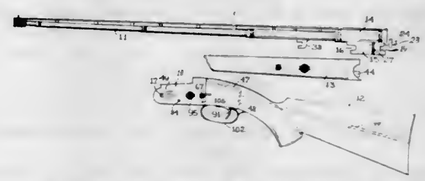
3,469,336
CALENDAR ATTACHMENT FOR TELEPHONES
Edward B. Halperin, Wayland, Mass., assignor to Perin Products Corporation, Randolph, Mass., a corporation of Massachusetts
Filed May 27, 1969, Ser. No. 828,227
Int. Cl. G09f 3/00
U.S. Cl. 40—336 10 Claims

A calendar attachment for telephones of the type having a housing which includes a finger-grip opening bounded by a wall having a bead at the edge of the opening, the calendar attachment including a base member which supports a calendar holder, a tongue projecting from the base member and a pair of fingers, one adjacent each side of the tongue, projecting from the base member in the same general direction as the tongue, each including a lateral depression and each being resiliently deflectable in a direction away from the tongue such that



the wall of the housing may be engaged between the tongue and the fingers with the bead seated within the depression to lock the base member to the housing.

3,469,337
BREECH-LOADING GUN
Nicolaos C. Christakos, 2832 N. Austin Ave., Chicago, Ill. 60634
Filed Oct. 4, 1967, Ser. No. 672,850
Claims priority, application Greece, Feb. 28, 1967, 31,748, Patent 8,528
Int. Cl. F41c 15/02, 15/04
U.S. Cl. 42—47 4 Claims



A breech-loading gun having a finger operated releasable latch by which the gun is opened to automatically eject any shell or cartridge, and cock the gun for firing. An indicator responsive to the cocked or uncocked condition of the gun when it is cocked either by the opening of the gun or by a dual purpose, finger-operated, safety lever operatable directly upon the hammer of the gun.

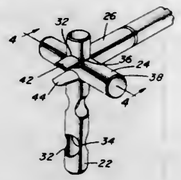
3,469,338
FISHING ROD
Bernard T. Hills, Cassopolis, Mich., assignor to Victor Comptometer Corporation, Chicago, Ill., a corporation of Illinois
Filed Jan. 25, 1968, Ser. No. 700,572
Int. Cl. A01k 87/02
U.S. Cl. 43—18 12 Claims



A multi-section fishing rod comprising a plurality of elongated and substantially cylindrical fiber glass rod sections, and ferrule means for detachably securing the adjacent ends of the rod section together in a manner such that the rod sections are disposed in substantial coaxial alignment; each of the ferrule means having a

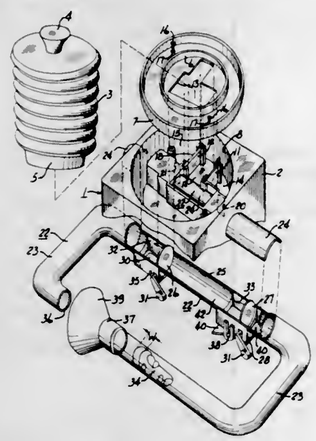
first bore portion adapted to telescopically and frictionally engage one end portion of one of the rod sections and a second bore portion adapted to telescopically receive one end portion of another of the rod sections; each of the ferrule means also comprising a plurality of reinforcing fibers embedded in a resinous bonding agent, with at least some of the fibers extending in one direction relative to the longitudinal axis of the fishing rod and other fibers extending in a direction different from the direction of the first mentioned fibers, whereby to provide for multi-directional reinforcement of the ferrule means and associated rod sections against splitting or cracking during normal flexing action of the rod.

3,469,339
INTERCONNECTING TUBES
John M. Thomas, 631 E. Chestnut St., Shamokin, Pa. 17872
Filed Apr. 15, 1966, Ser. No. 542,810
Int. Cl. A63h *33/06*
U.S. Cl. 46—28 **6 Claims**



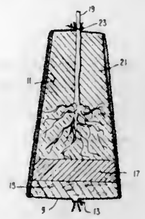
As assembly toy comprising a series of cylindrical resilient members. The first and second intersecting members include intersecting openings for receiving a bifurcated end portion of a third locking member. The bifurcated end portion is formed by inwardly tapering longitudinal slots terminating in an inward portion thereof by a transversely disposed aperture.

3,469,340
PNEUMATIC TOY VEHICLE PROPULSION SYSTEM
Jack L. Breneman, 9400 Babcock Blvd. at Kummer Road, Allison Park, Pa. 15101, and Milan Gruber, 3012 Green Garden Road, Aliquippa, Pa. 15001
Filed July 12, 1967, Ser. No. 652,775
Int. Cl. A63h *29/16*
U.S. Cl. 46—44 **24 Claims**



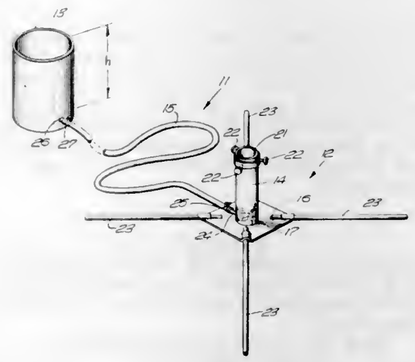
A pneumatic toy vehicle propulsion system wherein a toy vehicle is pneumatically propelled through a tube which may be either open at both ends or continuous. A pneumatic pump is connected to the tube intermediate its ends to move the vehicle through the tube and a one-way valve mechanism is provided in the tube to permit the vehicle to travel throughout the length of the tube and to readily pass the pump connections.

3,469,341
TRANSPLANTING PLANTS
Maurice Louis Bourget, 2 Rue Lafontaine, 26 Valence, France, André Paul Gesnel, 21 Rue Pierre Dupont, 69 Collonges-au-Mont-d'Or, France; and Joseph Antoine Louis Orard, Route Nationale, 38 Feyzin, France
Filed May 31, 1967, Ser. No. 642,462
Claims priority, application France, June 2, 1966, 47,359
Int. Cl. A01c *11/04*
U.S. Cl. 47—37 **1 Claim**



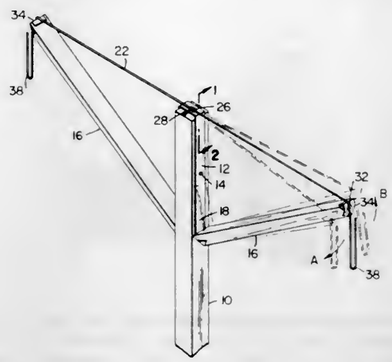
Plants are transplanted by uprooting them, packing the roots in an inert particulate soilless carrier, and encasing the carrier in a perforated shell. Preferably, a sheet of cardboard or the like is formed as a truncated cone within a perforated net sleeve of plastic threads, with the ends of the sleeve gathered and fastened. The plant stem extends out of the small end of the truncated cone and the particulate carrier is prevented from escaping from the large end of the cone by a layer of wood fibers.

3,469,342
CHRISTMAS TREE STAND
Drew W. Morris, 5 Plymouth River Road, Hingham, Mass. 02043
Filed May 22, 1967, Ser. No. 640,080
Int. Cl. A01g *27/00*
U.S. Cl. 47—38 **3 Claims**



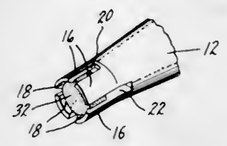
A stable Christmas tree stand having a nonporous tree support cylinder which is connected by a flexible hose to a remote water reservoir. The reservoir is easily refilled with water so that the tree trunk is continuously immersed in water in the cylinder, thereby preserving the freshness of the tree and reducing the fire hazard.

3,469,343
SUPPORTING DEVICE
Wallace J. S. Johnson and Robert E. Fisher, Berkeley, Calif., assignors to Up-Right, Inc., Berkeley, Calif., a corporation of California
Continuation-in-part of application Ser. No. 612,959, Jan. 31, 1967. This application Nov. 22, 1967, Ser. No. 689,232
Int. Cl. A01g *17/06;* **G09f** *17/00;* **F16m** *13/02*
U.S. Cl. 47—46 **9 Claims**



A supporting device which includes a standard, arms pivotally connected to the standard, and a flexible, non-extensible member fixed to the arms and to the standard, whereby the member limits the downward movement of the arms under weight applied thereto while allowing their movement in directions other than downward.

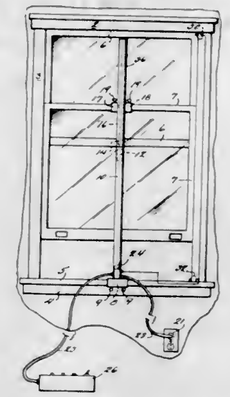
3,469,344
SPILE
John H. Garvey, Union City, N.J., assignor to Custom Packaging, Inc., Newark, N.J., a corporation of New Jersey
Filed Aug. 7, 1967, Ser. No. 658,870
Int. Cl. A01g *23/10, 7/06*
U.S. Cl. 47—53 **18 Claims**



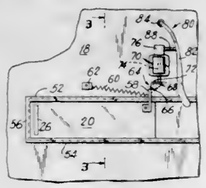
There is disclosed a spile having a chamber at the end thereof which is insertable into a tap hole in the tree so that a pellet of a bactericide received therein will be in effective contact with the tissues of the tree about the tap hole. The pellet receiving chamber may be in the path or conduit for sap flowing through the spile so that it may provide some germicidal or fungicidal action upon the sap flowing through the spile.

3,469,345
DEVICE FOR OPENING AND CLOSING WINDOWS
Fletcher Hanks, P.O. Box 70, Easton, Md. 21601
Filed June 21, 1968, Ser. No. 739,012
Int. Cl. E05f *15/20*
U.S. Cl. 49—2 **2 Claims**

A clamping bracket on the window ledge of the lower window sill supports the lower end of a vertically disposed reversible electric motor, the shaft of which drives an elongate screw-threaded shaft engaging a nut carried by a clamping bracket attached to the upper transverse member of the window sash; and remotely controlled means are provided for operating the reversible electric motor both thermostatically and manually.

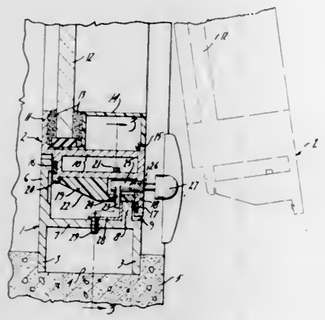


3,469,346
ACCESS CONTROL FOR DISPENSERS AND THE LIKE
Curtis Lane, Riverdale, N.Y., and Leon Greenstein, Cranford, N.J., assignors to Lanex Importing Company, Union, N.J.
Filed Mar. 26, 1968, Ser. No. 716,045
Int. Cl. E05b *65/00;* **E05d** *13/04*
U.S. Cl. 49—35 **16 Claims**



Access control for dispensers and the like, particularly for dispensers of edible products. A door of the dispenser is movable from a closed, access-preventing position to an open, access-affording position, but a blocking means prevents movement of the door to its open position until the blocking means is momentarily displaced by a displacing means to a non-blocking position, a holding means responding to displacement of the blocking means to its non-blocking position to releasably maintain the latter in its non-blocking position. The door upon movement to its open position moves the holding means to a release position releasing the blocking means for return to its blocking position, and upon return of the door to its closed position an engaging means carried by the door engages and moves the blocking means only part of the way toward its non-blocking position through a distance which is too small to permit the holding means to again assume its holding position.

3,469,347
WINDOW CONSTRUCTION
John Ringle III, Wausau, Wis., assignor to Wausau Metals Corporation, Wausau, Wis., a corporation of Wisconsin
Filed May 14, 1968, Ser. No. 728,467
Int. Cl. E05c *11/00*
U.S. Cl. 49—394 **9 Claims**



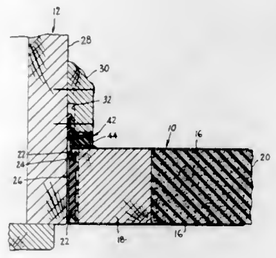
A sash aligning and locking mechanism for a window. The window sash is hinged to the frame, and a series of locking units are employed to lock the sash within the frame. Each locking unit includes a camming block secured to the sash and the block has inclined camming surface which is adapted to engage the frame as the sash is pivoted to the closed position to cam or wedge the sash into proper alignment within the frame. A locking member is located within a recess in the block and is pivotable by an operating member from an unlocked position, in which the locking member is located wholly within the recess, to an operative or locking position in which the member projects outwardly of the block and engages a strike plate on the frame to lock the sash to the frame.

3,469,348
COMPOUND GLASS FOR WINDOWS
Ricardo Camilleri Maiques, Avenida de Roma No. 155, Barcelona, Spain
Filed Mar. 16, 1967, Ser. No. 623,580
Int. Cl. E06b *3/00, 5/00*
U.S. Cl. 49—413 **1 Claim**



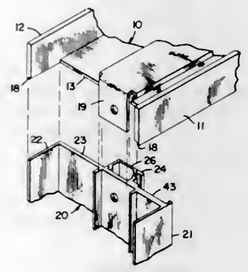
A window glass includes a static element which can be fixed to the frame of a window and a movable element. Both elements consist of a plurality of spaced rectangular pieces of glass of the same size. The static element has top and bottom edges covered by U-shaped metal guides. The top and bottom edges of the movable element carry L-shaped guides and fit into the U-shaped guides of the static element. The open spaces between the glass pieces have a smaller width than the width of the glass pieces.

3,469,349
MAGNETIC WEATHERSTRIP AND DOOR ASSEMBLY
Howard C. Multer, Hartford, Conn., assignor to The Stanley Works, New Britain, Conn., a corporation of Connecticut
Filed Feb. 26, 1968, Ser. No. 714,155
Int. Cl. E06b *7/23*
U.S. Cl. 49—478 **12 Claims**



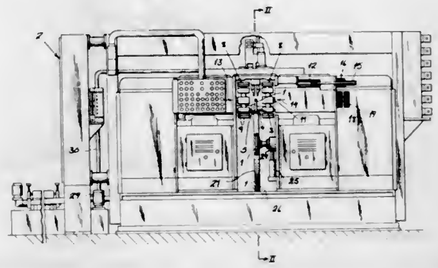
An elongated magnetic weatherstrip for use in conjunction with a door having at least a portion of a strip of magnetically attractable metal. The weatherstrip has an integrally formed elongated support member providing a hollow body portion, a hinge portion connected to one side of the body portion adjacent the inner surface thereof and a tail portion connected to the other side of the hinge portion and extending away from the body portion and generally to the side thereof. A magnetic strip in the cavity of the body portion of the support member pivots the weather-strip about the hinge portion into magnetic engagement with the door to provide the desired sealing action.

3,469,350
DOOR FRAME ASSEMBLY AND METHOD FOR MAKING SAME
Herbert Lange, San Mateo, Calif., assignor to Soule Steel Company, San Francisco, Calif., a corporation of California
Filed Sept. 14, 1967, Ser. No. 667,682
Int. Cl. E06b *1/18*
U.S. Cl. 49—504 **6 Claims**



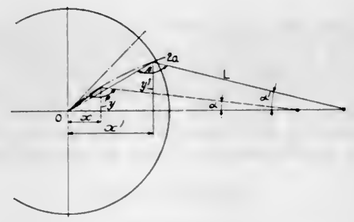
A door frame assembly in which a head bar having depending tabs is fastened to the jamb bars and the jamb bars secured within overlapping flanges on the head bar. The jamb bars are provided with a raised outer lip and a parallel raised shoulder, the lips being notched to receive door hinge butts and a lock strike which abut the raised shoulders.

3,469,351
METHOD OF AND APPARATUS FOR MACHINING DISK-SHAPED WORKPIECES
Ernst Thielenhaus, Wuppertal-Barmen, Germany, assignor to Firma Ernst Thielenhaus Maschinenfabrik, Wuppertal-Barmen, Germany, a corporation of Germany
Filed July 29, 1966, Ser. No. 568,785
Claims priority, application Germany, Apr. 15, 1966, M 69,163; M 69,164
Int. Cl. B24b *5/02, 1/00, 47/02*
U.S. Cl. 51—118 **9 Claims**



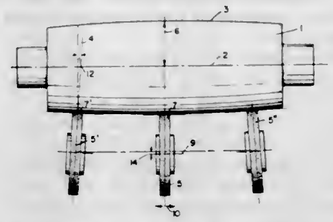
An apparatus and a method for the machining of disk-shaped workpieces (e.g. brake disks) in which two abrasive rotatable tools are brought into contact with the workpiece from oppoiste sides. The tools are simultaneously advanced during rotation of the tools and the workpiece and are halted while the rotation of the tools continues with respect to the workpiece. Rotation of the workpiece presents a different angular portion of the work to the tools which are then further advanced.

3,469,352
DEVICE FOR GRINDING CRYSTAL
Vital Charles Marius Jacon, 2 Impasse de la Paix, St. Etienne, Loire, France
Filed June 16, 1966, Ser. No. 557,940
Claims priority, application Switzerland, June 21, 1965, 8,629/65
Int. Cl. B24b *7/00, 9/00, 1/00*
U.S. Cl. 51—121 **4 Claims**



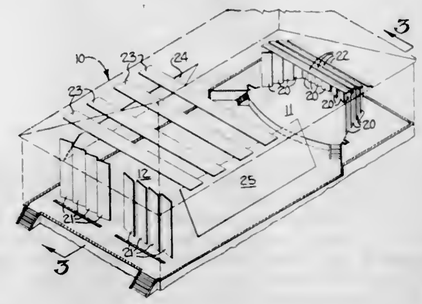
An apparatus for cutting a crystal having preferential wear directions such as a diamond, wherein the crystal is supported on an arm which is movable on the abrasive surface of a grinding wheel and wherein one end of the arm is guided along a reference line while the crystal is guided along curved lines passing through the axis of the grinding wheel and wherein the curved line is the locus of points situated at the apex of an invariable angle, one side of which is of variable length and passes through the axis of the grinding wheel while the other side is formed by a straight line joining the two ends of the arm.

3,469,353
PROCESS OF POLISHING SMOOTH ROLLS WITH CURVED SUPERFICIES
Artür Klein, Netphen, Kreis Siegen, Germany, assignor to H. A. Waldrich G.m.b.H., Siegen, Westphalia, Germany, a limited-liability firm of Germany
Filed Aug. 29, 1966, Ser. No. 575,508
Claims priority, application Germany, Sept. 23, 1965, W 39,957
Int. Cl. B24b *1/00, 5/00*
U.S. Cl. 51—289 **1 Claim**



Curved smooth superficies of rolls are polished by polishing discs which are swung during the polishing so that their middle planes are always perpendicular to tangents to the superficies at the places of contact between the superficies and the discs.

3,469,354
SERVO-SYSTEM AND MULTIPLE-USE BUILDING INCLUDING THE SAME
Grover C. Meetze, Jr., 104 Hillside Drive, Davidson, N.C. 28036
Filed Nov. 18, 1966, Ser. No. 595,399
Int. Cl. E04h *3/24;* **E04b** *1/99;* **F21p** *5/02*
U.S. Cl. 52—1 **11 Claims**



1. In a building having multiple uses and having a plurality of accessories each movable to a plurality of predetermined positions to vary the characteristics of said building to adapt the same to its multiple uses and a plurality of motive means each connected to a corresponding one of said accessories for moving the same to its various positions; the combination therewith of an electrical servo-system including

a master variable resistor having a positionally adjustable member effective to vary the resistance of said master variable resistor upon positional adjustment thereof and having the various positions thereof correlated to the positions to which said accessories may be moved,

a plurality of slave variable resistors each having a positionally movable member operatively connected to a corresponding one of said accessories for correlated movement therewith and being effective to vary the resistance of said slave variable resistor upon positional movement thereof,

selector means electrically connected to said master variable resistor and to each of said slave variable resistors for selectively electrically interconnecting said master variable resistor with each of said slave variable resistors one at a time and independently of each other,

means operatively associated with said master variable resistor and said slave variable resistors for generating an electrical signal in response to a deviation from a predetermined correlated positional relationship between the positionally adjustable member of said master variable resistor and the positionally movable member of a selected one of said slave variable resistors, and

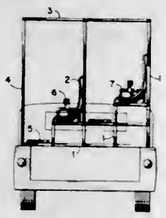
means responsive to said generated electrical signal for energizing the motive means connected to the accessory corresponding to said selected slave variable resistor to move the accessory and the positionally movable member of said selected slave variable resistor connected thereto into said predetermined correlated positional relationship with said positionally adjustable member of said master variable resistor.

3,469,355

SEATING ATTACHMENT FOR LAND VEHICLES

John J. McGann, Jr., 2325 S. Atlantic Ave., Cocoa Beach, Fla. 32931

Filed Mar. 20, 1967, Ser. No. 629,856
Int. Cl. B62d *47/00, 39/00*
U.S. Cl. 52—8 **2 Claims**



The unitary vehicle attachment comprises a rigid framework defining an elongated rectangular device having open ends, a top, base, front and rear sides and which provide a seating enclosure having upright partitioning framework or railing extending longitudinally thereof throughout the length thereof dividing the interior thereof into compartments of like depth from front to rear. The front portion of each compartment has a walkway extending the length thereof and the rear portion of each compartment has a framework extending the length thereof spaced upwardly of its respective walkway and defining an elevated planar seat support on which seats with backs are supported. The walkway of the adjacent rearward compartment is elevated above that of the forward compartment and is carried by and substantially in the plane of the framework defining the planar seat support of the forward compartment.

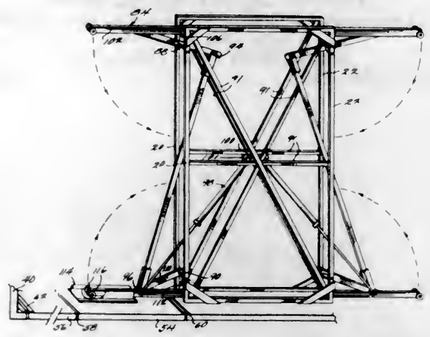
3,469,356

EXPANDABLE HOUSE TRAILER

Darrell N. White, Dalhart, Tex., assignor of one-half to Bruce Henderson, Amarillo, Tex.

Filed Mar. 11, 1968, Ser. No. 711,982
Int. Cl. E04b *1/344;* **B60p** *3/34*
U.S. Cl. 52—71 **4 Claims**

A laterally-expandable house trailer includes permanently vertical opposite side walls connected to a central trailer body by pivoted roof and floor panels which fold and unfold accordion-like as the side walls move inwardly and outwardly. A mechanical linkage powered by hydraulic rams and carried within the central body acts on the innermost roof and floor panels to effect retraction and expansion.

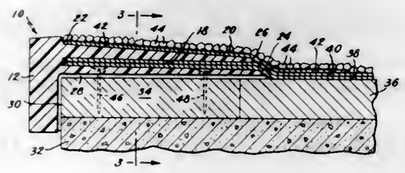


3,469,357

GRAVEL STOP CONSTRUCTION

Migdonio Seidler, 408 N. Walnut, Pittsburg, Kans. 66762

Filed May 19, 1967, Ser. No. 639,868
Int. Cl. E04b *7/00;* **E04d** *3/40, 13/00*
U.S. Cl. 52—94 **4 Claims**



A gravel stop construction that is applied to the marginal edge of a roof deck and that includes a front edge portion that extends over the marginal edge of the roof deck, spaced flanges being joined to the front edge portion and extending rearwardly with respect thereto, and the space between the flanges defining a pocket into which built-up roofing material extends for sealing therein.

3,469,358

METHOD FOR PUMPING A COLUMN

Bill Archer, Meridian, and John Lewis Low III, Laurel, Miss., assignors to Arlo, Inc., Jackson, Miss., a corporation of Mississippi

Continuation-in-part of application Ser. No. 676,286, Oct. 13, 1967. This application Feb. 1, 1968, Ser. No. 702,406
Int. Cl. E04h *12/34, 12/12*
U.S. Cl. 52—115 **10 Claims**

Method for pumping a telescoping column or utility pole by pumping concrete into one of several aligned, telescoping portions, so as to longitudinally extend said sections from a rigid base within which the sections are anchored. The telescoping sections may be removed or left in place, as the concrete sets.

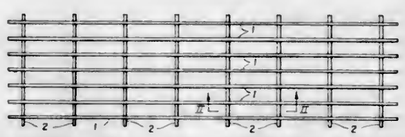


3,469,359

FRICTION LOCKED GRATING AND OTHER OPEN GRID STRUCTURES

Leon Nagin, Churchill Borough, Pa., assignor to Reliance Steel Products Company, McKeesport, Pa., a corporation of Pennsylvania

Filed July 13, 1965, Ser. No. 471,588
Int. Cl. E04c *2/42;* **E04f** *11/16*
U.S. Cl. 52—177 **5 Claims**



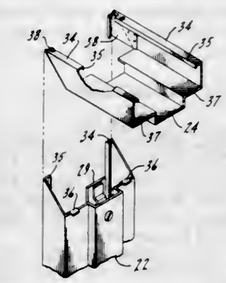
The invention is concerned with an open grid or grating whose bearing bars are slotted to slidably receive angularly disposed cross bars embodying an enlarged portion, which cross bars are subsequently rotated to final position and during rotation the said enlarged portions are deformed, locking the cross and bearing bars in assembled relation.

3,469,360

DOOR FRAMES

Bulow A. Peterson, Kewanee, and Gale K. Carlson, Princeton, Ill., assignors to Kewanee Manufacturing Company, a corporation of Illinois

Filed Aug. 4, 1967, Ser. No. 658,479
Int. Cl. E06b *1/18*
U.S. Cl. 52—217 **12 Claims**



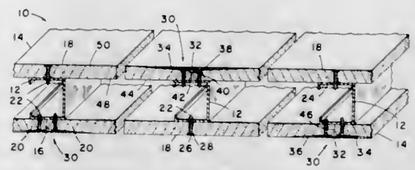
Quickly assembled door frames with improved corner joints between the head and jambs and improved connecting facilities for connecting the jambs to the wall structure to facilitate a flush appearance of the header and jambs and a tight and flush assembled door frame and wall.

3,469,361

GYPSUM WALLBOARD, WALLBOARD CONSTRUCTION METHOD AND WALL STRUCTURE

Daniel A. Winkowski, Tonawanda, N.Y., assignor to National Gypsum Company, Buffalo, N.Y., a corporation of Delaware

Filed Feb. 9, 1968, Ser. No. 704,288
Int. Cl. E04c *2/30;* **E04b** *2/28*
U.S. Cl. 52—416 **6 Claims**



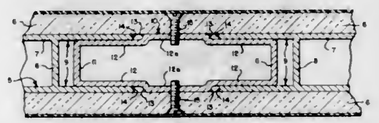
A method of constructing a gypsum board wall and the improved wall, wherein the paper-covered gypsum board is formed of a uniform cross section throughout its length including a uniformly thick center portion, and two opposed tapered, beveled edges. Application includes affixing a pair of boards with tapered, beveled edges substantially abutting, followed by applying a coat of joint compound over substantially the full extent of the taper, thoroughly filling the bevel groove and embedding a narrow, thin reinforcing tape in this first coat of joint compound. Two additional coats of joint compound are applied over the respective dried prior coat, forming a final joint compound dried surface substantially flush with the surface of the center portion.

3,469,362

WALL CONSTRUCTION ASSEMBLY

Leland J. La Tart, Rome, N.Y., assignor to Revere Copper and Brass Incorporated, New York, N.Y., a corporation of Maryland

Filed Feb. 21, 1968, Ser. No. 707,223
Int. Cl. E04b *2/00*
U.S. Cl. 52—586 **2 Claims**

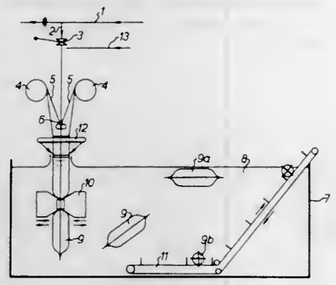


A wall construction assembly comprising at least two extruded metal panel sections having spaced parallel skin members, an extruded metal joiner tube the side portion of which lie partially within the channel-shaped longitudinal edges of the panels and having outwardly displaced central portions adapted to lie in the plane of the skin members, and a fire-resistant panel positioned adjacent each skin member of the wall panel sections and secured to the outwardly displaced central portions of the joiner tube to permit expansion of the metal panel sections independently of the fire-resistant panels.

3,469,363
METHOD AND APPARATUS FOR PACKAGING SOLID OR SEMISOLID MATERIAL

Philemon J. L. Berckmoes, Mercksem, Belgium, assignor to Esso Research and Engineering Company, a corporation of Delaware

Filed Aug. 22, 1966, Ser. No. 580,137
Claims priority, application Great Britain, Aug. 20, 1965, 35,858
Int. Cl. B65b *63/08, 9/02*
U.S. Cl. 53—25 **8 Claims**



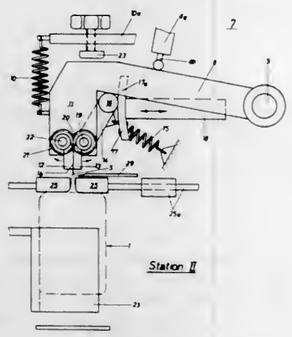
A method for packaging normally solid or semisolid material which comprises liquefying the said material and feeding it in a liquid state to a container, said filling process being performed while the portion of the container being filled is substantially surrounded, supported and cooled by a liquid, and while cooling means are also being applied to the portion of the container which is above the surface of said liquid.

Apparatus for carrying out said method.

3,469,364
METHOD AND APPARATUS FOR FILLING BAGS OR THE LIKE

Karl Bischoff, Schwaikheim, Germany, assignor to Hofliger & Karg, Waiblingen, Germany

Filed May 15, 1967, Ser. No. 638,515
Claims priority, application Germany May 17, 1966, H 59,416
Int. Cl. B65b *9/16, 1/22*
U.S. Cl. 53—37 **16 Claims**

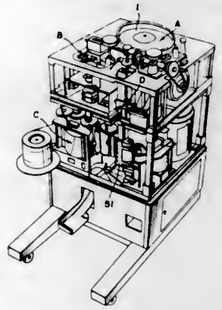


The present invention relates to a method and apparatus for filling bags or other types of deformable receptacles with flowable materials, particularly with pulverulent or granular substances. More particularly, the invention relates to a method and apparatus for filling bags or like deformable receptacles with flowable material in such a way that the charge of material in the interior of a bag is tightly enclosed by the material of the bag so that the latter can more readily assume and retain a desired shape and can be more readily stacked in boxes or other types of containers for shipment or storage.

3,469,365
COIN HANDLING APPARATUS AND MEANS TO DETECT IRREGULARITIES IN THE OPERATION THEREOF

Isamu Uchida and Shigeru Miyayama, Tokyo, Kenkichi Watanabe, Kanagawa-ken, Eilchi Kokubo, Saitama-ken, and Kyoichi Osako, Tokyo, Japan, assignors to Tenshin Manicounting Machine Co. (Tenshin Kahei Keisanki K.K.), Tokyo, Japan

Filed Oct. 25, 1967, Ser. No. 678,082
Claims priority, application Japan, Oct. 27, 1966, 41/70,962
Int. Cl. B65b *57/10, 57/18*
U.S. Cl. 53—54 **15 Claims**



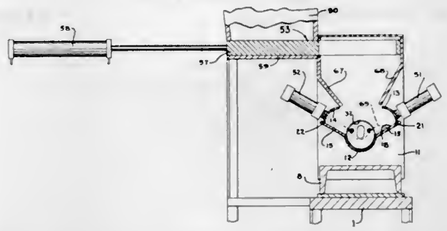
A coin handling machine with a centrifugal coin supply feeding a coin selector which passes selected coins through a counting means to a coin stacking device wherein the stacks of coins are measured and if of proper size are transported to a wrapping device whereat the stacks are wrapped. Two sources of power are provided one of which drives the coin supply, the other source of power driving the wrapping and transport means. A monitoring device is provided responding to irregularities in the operation of the machine to perform certain control functions. According to one aspect of the monitoring device, it responds to the monitoring device to detect a short stack of coins after a predetermined number of coins has been counted. According to another aspect, a supply of wrapping material used in the wrapping operation is used to control a switch in order to detect when the supply of wrapping material is not being properly effected. In addition, at least one of the sources of power includes a shaft on which are mounted cams which control electrical switches in turn controlling the electrical circuit of the device, this electrical circuit including interdependent relays which control the operation of the machine.

3,469,366
PACKAGING DEVICE HAVING A FIXED CENTER, SLIDING SPLIT COVER

Robert J. Broersma, Spring Lake Township, Ottawa County, Mich., assignor, by mesne assignments, to Royer Foundry and Machine Co., Kingston, Pa., a corporation of Pennsylvania

Filed Nov. 3, 1966, Ser. No. 591,918
Int. Cl. B65b *63/02, 7/04, 23/04*
U.S. Cl. 53—124 **11 Claims**

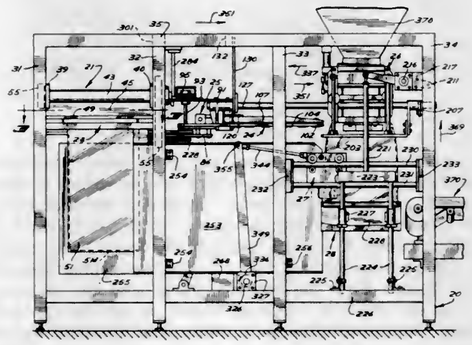
A packing machine having a casing formed of at least three arcuate sections, the lower section being fixed and the upper sections being mounted for reciprocal movement toward and away from the lower section. The casing sections permit the packing material placed in the casing sections to be shaped into a generally cylindrical form. A pusher element is provided to push the packing material and the nursery object packed therein out of the casing. Intermittent feed means is provided for transporting a measured charge of packing material from a supply hopper to the casing. Guide means is provided adjacent the movable casing sections to guide same into mating relationship with the fixed section. The latter guide means also acts as a receiving means for a portion of the packing material whereby the movable sections fold the packing material over the nursery object when the casing sections are closed.



3,469,367
BAG FEEDING AND FILLING APPARATUS

Richard H. Ayres and Gaylerd M. Lieder, Minneapolis, Minn., assignors to Bemis Company, Inc., Minneapolis, Minn., a corporation of Missouri

Filed May 31, 1966, Ser. No. 553,990
Int. Cl. B65b *3/03, 39/02, 43/04*
U.S. Cl. 53—187 **46 Claims**

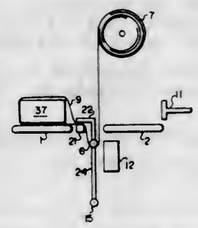


Apparatus having means to feed a continuous tubular web adjacent a knife that severs a tubular member from the web while the web is partially supported from a first conveyor, a second endless conveyor that receives and moves the tubular member past a second knife to spread its upper marginal edge portions and thence transfers the partially opened tubular member to a horizontally reciprocal hopper assembly that includes gripper means to supportingly hold the tubular member and a spout vertically movable to open the tubular member, and saddle and pusher means to receivingly support the filled tubular member released by the hopper assembly and move it to another conveyor assembly.

3,469,368
WRAPPING MACHINE

Ivan F. Churchill, Greenville, Homer A. Searcy, Spartanburg, and Monroe F. Taylor, Greenville, S.C., assignors to W. R. Grace & Co., Duncan, S.C., a corporation of Connecticut

Filed July 20, 1967, Ser. No. 654,868
Int. Cl. B65b *11/48, 41/12, 51/26*
U.S. Cl. 53—229 **4 Claims**

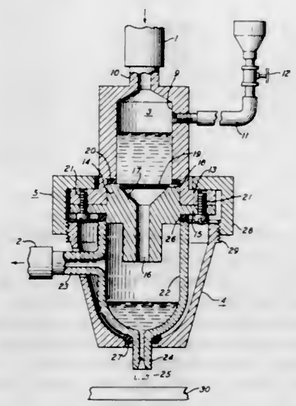


A machine for sleeve wrapping articles in a single sheet of heat shrinkable thermoplastic film having means for advancing an article into a vertically disposed sheet of film to cover the leading side and bottom of the article, a stroke roller for bringing film down behind the trailing side of the article thus covering the top and trailing side and pulling additional film from a film supply, a heated ribbon for sealing the film to itself, and means for severing the film. A secondary stroke from the roller wipes the lower portion of the unsevered film against a vacuum plate to hold the film vertically in place for a succeeding article.

3,469,369
METHOD FOR PREPARING AND APPLYING A VISCOUS FLUID

George E. Helmke, Bernards Township, Somerset County, N.J., assignor to Bell Telephone Laboratories, Incorporated, Murray Hill and Berkeley Heights, N.J., a corporation of New York

Filed Dec. 29, 1966, Ser. No. 605,690
Int. Cl. B01d *19/00*
U.S. Cl. 55—46 **1 Claim**



A process is disclosed for introducing a viscous epoxy resin at a temperature range of 50 to 60° C. into the upper of two chambers which are separated by a membrane-type filter of pore size in the range of 0.05 to 10.0 microns

and outgassing the filter and the lower of said two chambers. The resin is thereafter forced through the filter by inert gas pressure. Degassing the resin in the lower chamber by maintaining the vacuum therein for about 5 to 10 minutes is then followed by applying the resin directly from the lower chamber onto a substrate.

3,469,370

PURIFICATION OF HYDROGEN CHLORIDE PRODUCED DURING THE ALKYLATION OF BENZENE WITH CHLOROPARAFFINS

Matthew L. Becker, Philadelphia, Pa., assignor to Atlantic Richfield Company, Philadelphia, Pa., a corporation of Pennsylvania

No Drawing. Filed May 31, 1968, Ser. No. 733,256

Int. Cl. B01d *19/04, 59/28*

U.S. Cl. 55—71 **9 Claims**

The hydrogen chloride gas produced as a by-product in the alkylation of benzene with chloroparaffins is purified by scrubbing the gas with a hydrocarbon boiling above about 275° F.

3,469,371

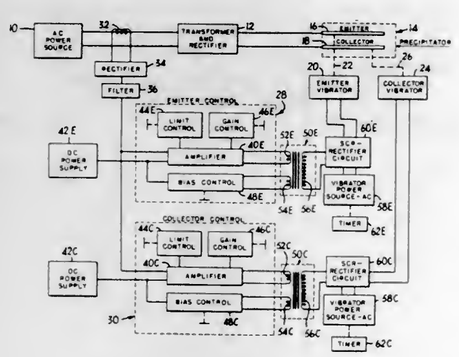
APPARATUS FOR CONTROLLING THE REMOVAL OF PARTICLE ACCUMULATIONS FROM THE ELECTRODES OF AN ELECTRIC PRECIPITATOR

Peter C. Gelfand, Lebanon, Pa., assignor to Buell Engineering Company, Inc., Lebanon, Pa., a corporation of Delaware

Filed May 2, 1967, Ser. No. 635,601

Int. Cl. B03c *3/76*

U.S. Cl. 55—110 **9 Claims**



A system for the removal of particle accumulations from the emitter and collector electrodes of an electric precipitator by rapping or vibrating them periodically in which the intensity of rapping or vibration of each electrode is individually controlled in accordance with the input power to the electrode pair. The intensity of rapping or vibration of the collector electrode is decreased in accordance with a decrease in input power, and vice versa, whereas the intensity of rapping or vibration of the emitter is increased in accordance with a decrease in input power, and vice versa. The system makes it possible to keep particle re-entrainment ("puffing") at a minimum but also provides for optimum efficiency of removal at all times.

3,469,372

HYDROGEN PERMEABLE MEMBRANE AND HYDROGEN PERMEATING ASSEMBLY

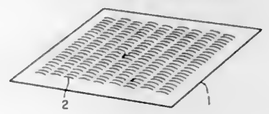
Saburo Yamauchi and Teruchika Taura, Tokyo, and Yuzuru Isogai and Hideki Seino, Yokohama, Japan, assignors to Japan Gas-Chemical Company, Inc., Tokyo, Japan

Filed June 13, 1966, Ser. No. 557,078

Claims priority, application Japan, June 18, 1965, 40/35,955; Sept. 13, 1965, 40/55,989

Int. Cl. B01d *13/00*

U.S. Cl. 55—158 **9 Claims**



A hydrogen permeable membrane composed of a palladium or a palladium alloy, the surface of the membrane having a wavy configuration as a result of being stamped with the surface of a plain dutch weave wire netting of 20 to 200 meshes.

3,469,373

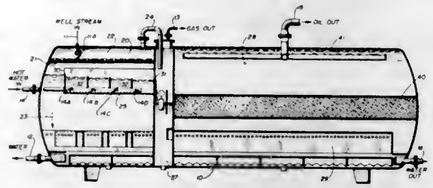
MEANS FOR DEHYDRATING CRUDE OIL WITH HOT WATER

Charles A. Lavery and Paul E. Meyer, Tulsa, Okla., assignors to Combustion Engineering, Inc., New York, N.Y., a corporation of Delaware

Filed Apr. 8, 1966, Ser. No. 541,369

Int. Cl. B01d *50/00, 47/00*

U.S. Cl. 55—174 **1 Claim**



A horizontal vessel is connected to receive oil well production. A first compartment of the vessel is connected to a source of heated water and the production so these fluids will mix on a tray mounted in the first compartment. A passage conducts the washed and heated emulsion from the tray into a coalescing compartment of the treater. Both the washing water and the coalesced water are removed from the vessel. A part of the total water is passed through a heater and returned to the tray as the source of heated water which is mixed with additional production.

3,469,374

STEAM CONDENSER

Gianluigi Lanzoni, Via Civitali 13, Milan, Italy

Filed Apr. 20, 1967, Ser. No. 632,309

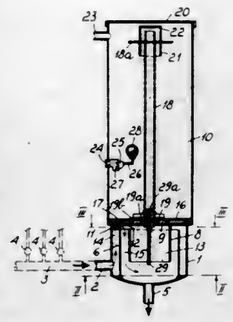
Claims priority, application Italy, Apr. 23, 1966, 17,105

Int. Cl. B01d *53/24*

U.S. Cl. 55—199 **7 Claims**

A steam condenser of expansion chamber type for heating systems comprises a lower chamber with deflector means imparting a rising and descending eddy motion to the hot liquid entering said chamber and an upper

chamber communicating through a pipe with the lower chamber and partly filled with the liquid. During the eddy motion of the liquid in the lower chamber steam bubbles collect, move upwardly and pass through the central pipe into the upper chamber which communicates with the atmosphere allowing expansion and condensation of the steam. An insulated partition wall between the upper and lower chambers maintains the upper chamber at a lower temperature.



3,469,375

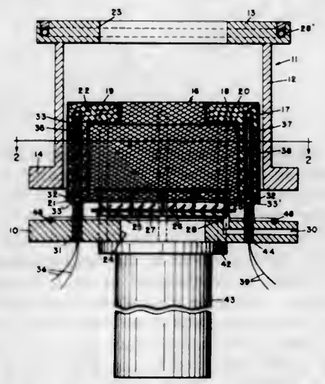
SORPTION VACUUM TRAP

Alfred E. Barrington, Lexington, and Anthony J. Caruso, Medfield, Mass., assignors to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration

Filed Oct. 16, 1967, Ser. No. 676,375

Int. Cl. B01d *19/00, 53/00*

U.S. Cl. 55—208 **6 Claims**



A sorption vacuum trap having a housing with a plurality of reentrant wall portions which project into an internal gas-pervious container filled with sorbent material. The reentrant wall portions accommodate external heaters which permit bake-out and outgassing of the sorbent material.

3,469,376

BAFFLING FOR ROTARY MOWER

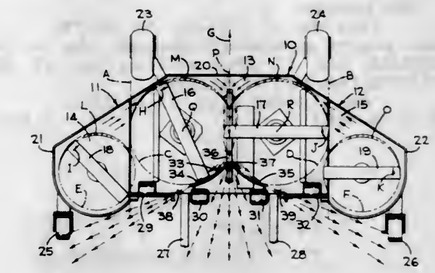
Roger J. Bacon, Port Washington, Wis., assignor to FMC Corporation, San Jose, Calif., a corporation of Delaware

Filed Apr. 20, 1967, Ser. No. 632,405

Int. Cl. A01d *35/26, 75/30*

U.S. Cl. 56—6 **4 Claims**

A sectionalized grass mower distributes grass clippings evenly over a wide area. The mower has a depending skirt at the sides and front. Two side-by-side blades are suspended from the center base section of the mower. A V-shaped baffle depends from the center base section and has an apex on an imaginary line extending between the blades thereof. The baffle has a central opening, and each side plate of the baffle, which slants rearwardly as it extends outwardly from the apex, terminates at a rear opening spaced from the central opening in the baffle.



3,469,377

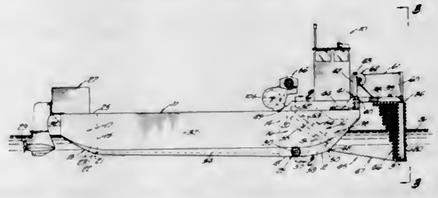
APPARATUS FOR CUTTING MARINE PLANTS

John O. Hatton, Chula Vista, Calif., assignor to Kelco Company, San Diego, Calif., a corporation of Delaware

Filed June 3, 1966, Ser. No. 555,076

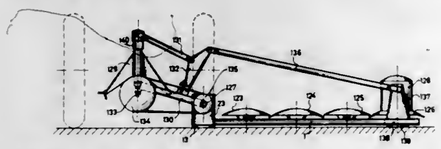
Int. Cl. A01d *45/08;* **B63b** *35/02*

U.S. Cl. 56—9 **19 Claims**



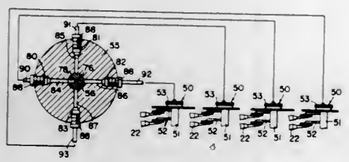
An apparatus for cutting marine plants in which a mower is rotatably suspended from a barge at the bow thereof such that the mower can rotate rearwardly and upwardly about its axis of rotation to permit the mower to move out of the way of underwater rocks and other obstructions and prevent damaging collisions therewith, and including return means to yieldingly resist rotational movement of the mower and to return the mower to an upright position. Positioned behind the mower at the bow of the barge is a cut seaweed receiving means which may include a conveyor fixed to the bow, there being no connection between the conveyor and the mower such that the mower is able to move inwardly without contacting the conveyor. The mower may include a rectangular frame having at least one set of fixed knife sections and one set of movable knife sections, and the bow of the barge may have a hole extending rearwardly and downwardly therethrough, said hole being positioned behind the conveyor to convey water away from the cut seaweed which is lifted upwardly and deposited in the hull of the barge. A flexible net may be connected between the mower and the barge so as to provide for movement of the mower with respect to the barge and to prevent loss of cut seaweed during its movement from the mower to the barge.

3,469,378
ROTATING DISC TYPE MOWING MACHINE
Johannes L. Heesters, Laurentius C. Heesters, and Adrianus L. Heesters, Haaren, and Petrus W. Zweegers, Geldrop, Netherlands, assignors to P. J. Zweegers and Zonen Landbouwmachinefabriek N.V., Postbus, Geldrop, Netherlands, a limited liability company
Filed May 17, 1966, Ser. No. 550,785
Claims priority, application Netherlands, May 20, 1965, 6506452; Sept. 17, 1965, 6512120; Dec. 23, 1965, 6516802; Dec. 24, 1965, 6516880
Int. Cl. A01d *35/26, 75/30, 55/18*
U.S. Cl. 56—25.4 31 Claims



Machine includes flat case-like support housing transmission means for rotating shafts projecting through top wall of support. Disks mounted on shaft carry radial cutters. Paths of cutters overlap at point in front of support and each path extends under adjacent disk. Top surfaces of disks serve to support and move cut crop rearwardly.

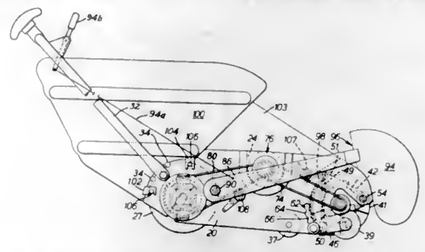
3,469,379
COTTON HARVESTER
Arthur Lowell Hubbard, Des Moines, Iowa, assignor to Deere & Company, Moline, Ill., a corporation of Delaware
Filed June 23, 1966, Ser. No. 559,952
Int. Cl. A01d *45/20*
U.S. Cl. 56—41 4 Claims



A moistener mechanism for use in a cotton harvester that has a vertically disposed picking drum that is rotatable by a centrally located drive shaft. The moistener mechanism includes a fluid dispensing device composed of inner and outer concentric members with the inner member being supported and coupled to the drum shaft and the outer member being held against rotation. The inner member has a fluid inlet passage and the outer member has angularly spaced outlet passages leading to the moistener mechanisms on the harvester. As the inner member rotates the inlet passage intermittently comes into registry with the outlet passages.

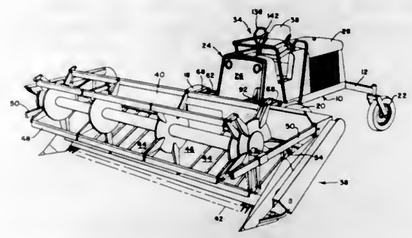
3,469,380
MACHINES FOR CUTTING GRASS OR OTHER VEGETABLE MATTER
Rex. R. Howlett, Henley-on-Thames, England, assignor to Wilkinson Sword Limited, London, England, a British company
Filed June 20, 1966, Ser. No. 558,991
Claims priority, application Great Britain, Apr. 6, 1966, 15,429/66
Int. Cl. A01d *35/22, 53/06*
U.S. Cl. 56—202 2 Claims

The invention relates to a machine for cutting grass and like vegetable matter, comprising a frame, ground engaging support means mounted in the frame, a cutting member rotatably mounted in the frame for cutting grass and like vegetable matter as the machine moves in a forward direction, a first open box mounted on the frame and moveable between a first position adjacent to the cutting member, in which it receives cut grass and like vegetable matter cut by the cutting member, and a second



position, and a second open box mounted on the frame and positioned so that cut grass and like vegetable matter in the said first box falls therefrom into the second box when the first box is in the said second position.

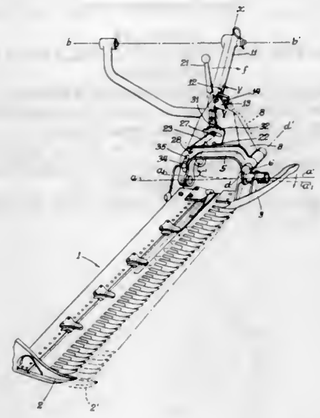
3,469,381
HYDRAULIC DRIVE AND CONTROLS FOR A SELF-PROPELLED WINDROWER
Donald E. Burrough, Raymond Harry Fairbank, and Gust Soteropulos, Ottumwa, Iowa, assignors to Deere & Company, Moline, Ill., a corporation of Delaware
Filed Dec. 9, 1966, Ser. No. 600,599
Int. Cl. A01d *69/00*
U.S. Cl. 56—209 14 Claims



A self-propelled windrower has right and left independently rotatable drive wheels and a forward transversely elongated harvesting platform mounted on the frame for independent vertical adjustment of its opposite ends by means of independently actuatable hydraulic cylinders. Each drive wheel is driven by the engine through a separate hydrostatic drive enclosed in an L-shaped housing and including a variable displacement pump disposed in one leg of the housing and connected to the engine by an enclosed power distribution transmission, a variable displacement motor mounted in the other leg of the housing, and a separate charge pump also mounted in the housing. The speed and direction of travel of the windrower are controlled by adjusting the displacement of the pumps and motors in the respective hydrostatic drives and the fluid pressure is respectively supplied to the two separate platform adjusting cylinders from the separate charge pumps.

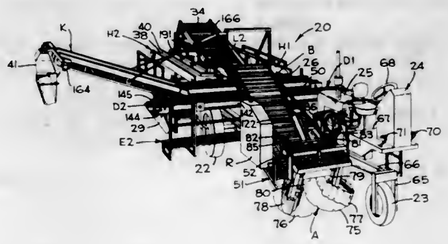
3,469,382
TILT-CONTROL OF A TRACTOR-MOUNTED MOWER
Jacques E. Bouet, Rambouillet, France, assignor to International Harvester Company, Chicago, Ill., a corporation of Delaware
Filed July 9, 1968, Ser. No. 743,361
Int. Cl. A01d *55/02, 35/12, 55/28*
U.S. Cl. 56—282 6 Claims

A mower having a coupler bar, a pair of pivotally interconnected elements one connected to the coupler bar, a mower connected to the other element, and the axis of pivot of the elements being substantially horizontal and



proximate to the leading edge of the cutter bar, and a linkage interconnecting the elements to adjust the position of the cutter bar about said axis.

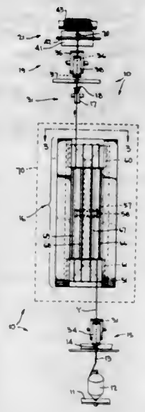
3,469,383
VINE CROP HARVESTING MACHINE
Ben L. Manfre, San Jose, Calif., assignor to FMC Corporation, San Jose, Calif., a corporation of Delaware
Filed Aug. 16, 1966, Ser. No. 572,827
Int. Cl. A01d *45/00;* A01g *19/00*
U.S. Cl. 56—327 15 Claims



A tomato harvester has laterally adjustable sorting conveyors for accommodating the fall of loose fruit and clods directly from the elevator conveyor to an undershaker conveyor. Also provided are side sort conveyors with chutes for returning material directly to the harvested bed.

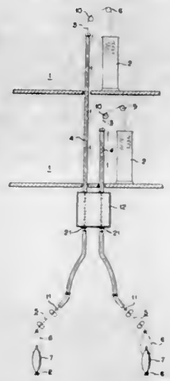
3,469,384
YARN HEATER
Nicholas J. Stoddard and Robert W. Stoddard, Berwyn, Pa., assignors to Leesona Corporation, Warwick, R.I., a corporation of Massachusetts
Filed Aug. 8, 1967, Ser. No. 659,181
Int. Cl. D01h *13/26;* D02g *3/02*
U.S. Cl. 57—34 43 Claims

A yarn heater of elongated annular, generally tubular, shape having a rotatable hollow tube in its central opening and a pair of friction twisters fixedly mounted on the respective extremities of the tube for rotation therewith may be used in a false-twist yarn texturing apparatus. The yarn being heated before reaching the primary twisting head of the apparatus is passed in several turns about the outside of the heater and through its central opening while



the friction twisters are rotated to propagate the false twist in more uniform fashion to the entire length of yarn being heated.

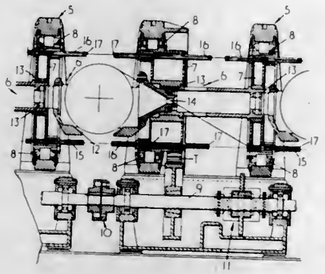
3,469,385
METHOD FOR FEEDING SPINNING MATERIAL TO SPINNING MACHINE AND ITS APPARATUS
Ryohei Tsuzuki, 1–130 Kameiri, Aza, Tashirocho, Chikusa-ku, Nagoya-shi, Japan
Filed Mar. 21, 1967, Ser. No. 624,811
Claims priority, application Japan, Feb. 15, 1967, 42/9,195
Int. Cl. D01h *13/26, 13/30*
U.S. Cl. 57—34 10 Claims



Apparatus for feeding in the form of roving or sliver strands of fibers from packages having a plurality of upstanding pipes for individually receiving strands of fibers from the packages for advancement therethrough in a downward direction at a substantially uniform speed in each pipe under control of gravity through a variable restriction within each pipe defined by a plurality of plates in each pipe increasing and decreasing the restriction within a pipe in response to the weight of the fibers

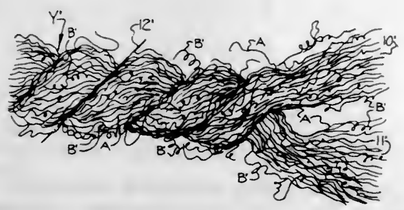
in the individual pipes upstream of the restriction therein. A moisture-content control device treats the strands as they are advanced longitudinally through the pipes.

3,469,386
STRANDING MACHINES
Samuel McGonigal, Benllech, Anglesey, Wales, assignor to Barcro-Olympic Stranders Limited, Eastleigh, Hampshire, England, a British company
Filed May 20, 1968, Ser. No. 730,361
Claims priority, application Great Britain, May 19, 1967, 23,463/67
Int. Cl. D01h *7/90;* **D07b** *3/04*
U.S. Cl. 57—58.36 **7 Claims**



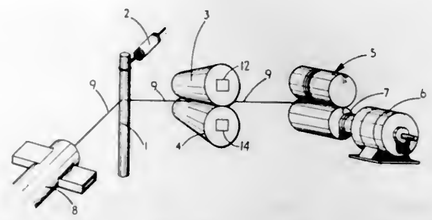
A wire stranding machine including a series of independent and coaxially aligned heads, with each head having a rotatable carrier section, cradles for supporting wire supply bobbins and extending therebetween and being supported in bearings on the rotatable carrier sections of adjacent heads, means for transmitting a drive to each carrier section such that the carrier sections are rotatable synchronously, a brake in each head for arresting rotational movement of the rotatable carrier section thereof, and wire guide means at the periphery of each head in the form of forwardly and rearwardly extending tubes.

3,469,387
BULKY TEXTILE YARN AND METHOD OF FORMING SAME
Julius J. Chamberlain, Jr., McAdenville, and Kenneth C. Botts, Lowell, N.C., assignors to Pharr Yarns, Inc., McAdenville, N.C., a corporation of North Carolina
Filed June 26, 1967, Ser. No. 648,780
Int. Cl. D02g *3/02;* **D04h** *17/00;* **D05c** *15/00*
U.S. Cl. 57—140 **6 Claims**



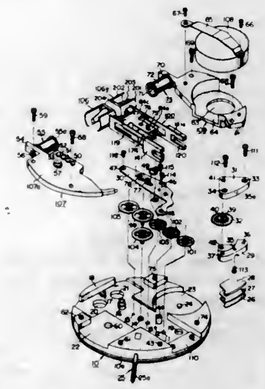
The bulky yarn is produced by blending a relatively high percentage of mechanically crimped thermoplastic staple fibers with a relatively small percentage of substantially straight, self-crimpable, bi-component staple fibers having an inherent ability to coil and shrink when heated in unrestrained condition. The blended fibers are then spun with a sufficient strength to the spun yarn. The yarn is subsequently heated to activate the bi-component fibers and thereby cause the yarn to "bloom" or increase in bulk.

3,469,388
PROCESS FOR TREATING FILAMENTARY MATERIAL
Peter Reeves Lord, Cheadle Hulme, England, assignor to National Research Development Corporation, London, England, a corporation of Great Britain
Filed Oct. 26, 1967, Ser. No. 678,229
Claims priority, application Great Britain, Nov. 2, 1966, 49,095/66
Int. Cl. D02g *3/02;* **D01h** *7/00, 13/00*
U.S. Cl. 57—157 **6 Claims**



A process for the treatment of spun filamentary or other material, especially but not exclusively yarn, comprising the steps of drawing-off the material from a spinning device under tension, which is dependent upon the thickness of the material, and controlling the evenness of the material by varying the speed of draw-off by means sensitive to changes of said tension.

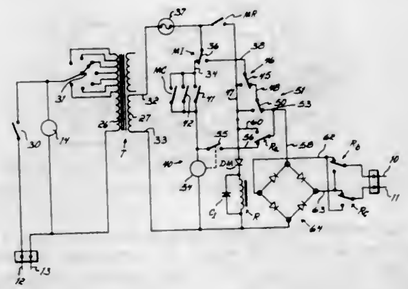
3,469,389
ELECTROMECHANICAL VIBRATOR ASSEMBLY FOR A TIMEPIECE
Akira Nakai, Kei Nakagawa, Kazunari Kume, and Tadayoshi Aida, Tokyo, Japan, assignors to Citizen Tokei Kabushiki Kaisha, Tokyo, Japan
Filed Dec. 27, 1966, Ser. No. 604,372
Claims priority, application Japan, Dec. 30, 1965, 40/108,403; July 12, 1966, 41/66,386
Int. Cl. G04c *3/04*
U.S. Cl. 58—23 **10 Claims**



An improved vibrator assembly for an electronic timepiece which has a substantially modified W-shaped element

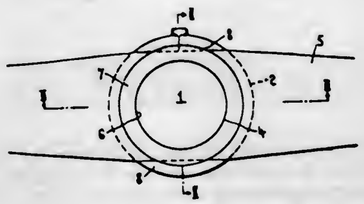
upon which are mounted the feed magnets, yoke assemblies, and the counterweights. These elements form the main or central units of the timepiece with the battery package mounted on one side thereof and the electronic drive circuit mounted on the other side thereof.

3,469,390
SELF-CORRECTING CLOCK SYSTEM
Ernest B. Zimmer, Cincinnati, Ohio, assignor to Cincinnati Time Recorder Co., Cincinnati, Ohio, a corporation of Ohio
Filed Dec. 19, 1966, Ser. No. 602,746
Int. Cl. G04c *13/04*
U.S. Cl. 58—34 **15 Claims**



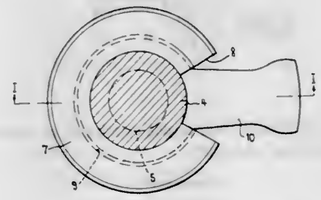
A clock system including a master clock with its own timekeeping mechanism; a plurality of remotely located secondary clocks having a pulse-responsive mechanism for displaying the time; and control means associated with the master clock for producing pulses at the rate of one pulse per minute for transmission to the secondary clock mechanism for advancing the secondary clock to display the proper time, and for generating correction pulses at a significantly higher repetition rate for transmission to the secondary clocks to cause the pulse-responsive mechanisms thereof to advance the secondary clocks at a rapid rate to bring them into synchronism with the master clock should the secondary clocks be displaying the wrong time.

3,469,391
DEVICE FOR FIXING A WRISTBAND TO A WATCH-CASE
Raymond Thévenaz, Geneva, Switzerland, assignor to Omega Louis Brandt & Frere S.A., Biel, Switzerland
Filed Apr. 12, 1968, Ser. No. 721,013
Claims priority, application Switzerland, May 1, 1967, 6,193/67
Int. Cl. G04b *37/14;* **A44c** *5/00*
U.S. Cl. 58—88 **10 Claims**



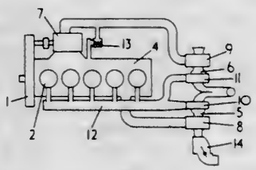
A device for fixing a wristband to a watch-case, in which the wristband has a hole by which it is engaged on a projection of the watch-case, a removable fixing member, bearing on the watch-case, axially pressing the wristband portion surrounding said hole against a portion of the watch-case, said projection being situated on the rear face of the watch-case and the watch-case presenting guiding means for preventing the wristband from turning with respect to the watch-case.

3,469,392
BALANCE STAFF FOR A ROSKOPF WATCH
Paul Tuetey, Le Locle, Switzerland, assignor to Les Fabriques d'Assortiments Reunies, Le Locle, Switzerland
Filed Sept. 23, 1968, Ser. No. 761,735
Claims priority, application Switzerland, Oct. 10, 1967, 14,133/67
Int. Cl. G04b *13/02, 31/00*
U.S. Cl. 58—140 **3 Claims**



A balance staff for a Roskopf watch, provided with a finger performing the functions of the roller jewel of a lever escapement, the balance staff comprising a split collet, driven on the balance staff, the collet having a chamber in which is accommodated the finger, thus ensuring the exact position of the latter, whereas the split of the collet is adapted to cooperate with the guard-pin of the fork.

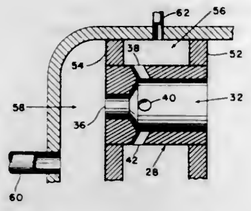
3,469,393
TURBOCHARGED INTERNAL COMBUSTION ENGINE
Donald Wilfred Tryhorn, St. Margarets, England, assignor of one-half to Sir W. G. Armstrong Whitworth & Company (Engineers), London, England
Filed Mar. 6, 1967, Ser. No. 620,743
Claims priority, application Great Britain, Mar. 11, 1966, 10,732/66
Int. Cl. F02b *37/04, 33/34;* **F02d** *39/04*
U.S. Cl. 60—13 **6 Claims**



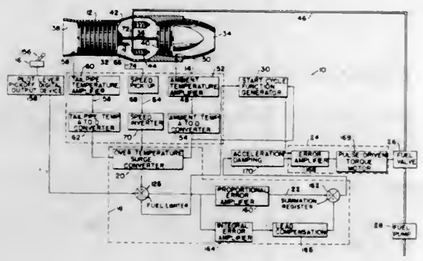
A multi-cylinder two-stroke cycle turbocharged compression ignition engine in which in each cylinder, the closure of the air ports by the piston effects termination of the scavenge process and the air then trapped serves as a charge for the cylinder including a charging system containing a two-stage combination of compressors, of which only one stage is exhaust gas turbine driven and the other is a series charger thereby providing improved running conditions with a smaller series charger than that employed for the known series charged engine.

3,469,394
ROCKET PROPELLANT INJECTION
Rudolf P. Beheim, 18514 Springdale Ave., Cleveland, Ohio 44135
Continuation of application Ser. No. 493,590, Oct. 6, 1965. This application Nov. 24, 1967, Ser. No. 685,472
Int. Cl. F02g *3/00;* **F02k** *9/02*
U.S. Cl. 60—39.06 **5 Claims**

Rocket propellant injection by introducing a central stream of liquid propellant axially into an atomization chamber and a second stream of propellant tangentially into the same chamber. The propellant is finely atomized without producing a reaction so that the mixture is unburned as it enters the rocket combustion chamber from the atomization chamber.



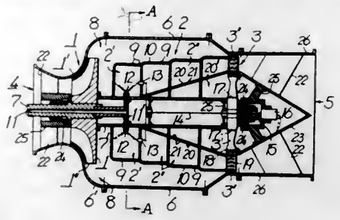
3,469,395
GAS TURBINE ENGINE DIGITAL FUEL CONTROL
Merlin D. Spitsbergen and Edward K. Ranke, Rochester, Mich., assignors to Holley Carburetor Company, Warren, Mich., a corporation of Michigan
Filed Oct. 22, 1965, Ser. No. 501,000
Int. Cl. F02c *9/04, 7/26;* **F15c** *1/12*
U.S. Cl. 60—39.28 **14 Claims**



A digital fuel control for a turbine engine or the like having electronic and pure fluid implementation capability, wherein means are provided for producing digital signals proportional to engine tail pipe temperature, ambient temperature and engine speed and for combining them in an over-temperature surge converter to provide an output digital signal representing the maximum allowed engine speed at the operating speed and temperatures. The output signal from the over-temperature surge converter is then compared with a requested engine speed in a fuel limiter to provide a digital error signal. The digital error signal is used to actuate a fuel valve metering fuel to the engine in accordance with a digital signal provided from a proportional plus integral governor having lead compensation means connected to receive the digital error signal to a fuel valve actuator.

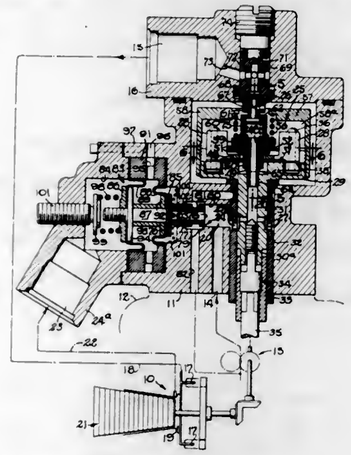
The fuel control includes a start cycle function generator for providing a digital signal to the fuel valve actuator during engine start-up, The digital error signal is then used to actuate a fuel valve for metering fuel to the engine through a proportional plus integral governor having lead compensation means which governor is connected to receive the digital error signal and a fuel valve actuator connected to the governor.

3,469,396
GAS TURBINE
Shigeru Onishi, 14–3 Hyotan-cho, Ishikawa-ken, Kanazawa-shi, Japan, and Saburo Yui, 12 3-chome Himonya, Meguro-ku, Tokyo, Japan
Filed Mar. 27, 1967, Ser. No. 626,146
Claims priority, application Japan, July 2, 1966, 41/43,107
Int. Cl. F02c *3/16;* **F02g** *3/00;* **F01d** *5/18*
U.S. Cl. 60—39.35 **3 Claims**



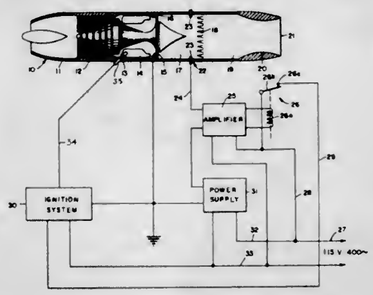
A gas prime mover consisting of a compressor, a combustor and a turbine in which the combustor is arranged and disposed between the rotary members including the compressor and the turbine and the combustor rotates on the same axis with the compressor and the turbine.

3,469,397
GAS TURBINE SPEED GOVERNOR WITH ACCELERATION FUEL SCHEDULE
George E. Parker, Rockford, Ill., assignor to Woodward Governor Company, Rockford, Ill., a corporation of Illinois
Filed Jan. 12, 1968, Ser. No. 697,506
Int. Cl. F02c *9/10*
U.S. Cl. 60—39.28 **11 Claims**



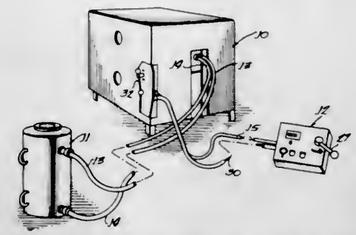
During acceleration of the gas turbine, the fuel flow is scheduled in accordance with the increasing pressure of the compressor discharge and under the control of a speed sensor of the flyweight type which first limits the flow to a slow rate and then increases the flow rapidly to normal operating speed. Thereafter, the speed sensor coacts with a throttling valve to govern the flow and maintain an approximately constant turbine speed.

3,469,398
REIGNITION SYSTEM FOR JET ENGINE
Curtiss R. Schafer, Newtown, Conn., assignor to John Oster Manufacturing Co., Milwaukee, Wis., a corporation of Wisconsin
Filed May 29, 1967, Ser. No. 641,957
Int. Cl. F02c *7/26;* **G08b** *21/00*
U.S. Cl. 60—39.82 **4 Claims**



A system for detecting flameout in a jet engine and for automatically reigniting the engine immediately after the flameout has occurred.

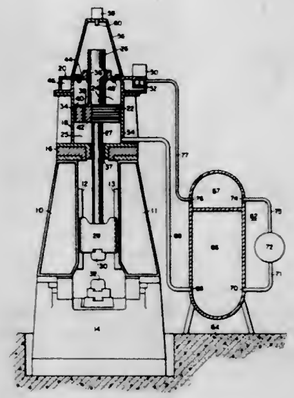
3,469,399
CONCRETE STRESSING APPARATUS AND REMOTE CONTROL UNIT THEREFOR
Donald Victor Krantz, Joliet, Ill., assignor to Templeton, Kenly & Co., Broadview, Ill., a corporation of Illinois
Filed Feb. 16, 1968, Ser. No. 706,142
Int. Cl. F15b *15/18, 15/04;* **E04c** *3/26*
U.S. Cl. 60—52 **8 Claims**



Apparatus for stressing tendons in concrete including a pumping unit having a de-tensioning valve in fluid communication with a hydraulic jack and a portable or stationary remote control de-tensioning unit having a means thereon for activating the pumping unit and for actuating the de-tensioning valve whereby the pressure in the jack can be released under precise and full control and tension on the tendons can be gradually reduced.

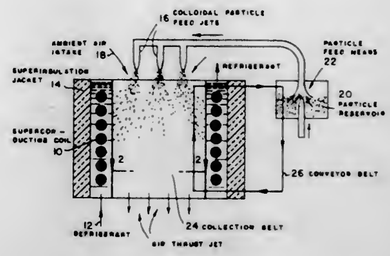
3,469,400
HIGH SPEED FORGING HAMMER APPARATUS
Tadashi Oikawa and Hiroyasu Yaguchi, Muroran, Japan, assignors to Kabushiki Kaisha Nihon Seikosho, Tokyo, Japan
Continuation-in-part of application Ser. No. 570,342, Aug. 4, 1966. This application June 3, 1968, Ser. No. 736,545
Claims priority, application Japan, Aug. 19, 1965, 40/50,139
Int. Cl. F01b *1/02;* **F15b** *15/22*
U.S. Cl. 60—57 **4 Claims**

A high speed forging hammer apparatus comprising a fluid pressure cylinder and a piston forming a part of a forging drop body. Two cylinder spaces separated by the piston communicate with each other through a small hole extending through the piston or through an external pipe.



Both cylinder spaces and the hole or the pipe are connected in a pressure line of a closed loop type through which an operating fluid circulates.

3,469,401
MAGNETIC COLLOID PROPULSOR
William F. Hassel, Woodland Hills, Calif., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed Nov. 8, 1967, Ser. No. 681,468
Int. Cl. F03h *5/00;* **F04b** *19/00*
U.S. Cl. 60—204 **2 Claims**

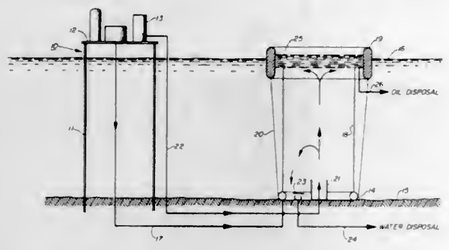


Method of producing an air thrust jet by introducing ferromagnetic particles into one end of the hollow core of an electromagnet, which accelerates the particles through the core, producing drag on induced ambient air, accelerating it through the core, and recovering the particles for recirculation, whereby only air is discharged from the other end of the core.

3,469,402
OFF-SHORE TANK SYSTEM
Judson D. Lowd, Tulsa, Okla., assignor to Combustion Engineering, Inc., New York, N.Y., a corporation of Delaware
Filed Jan. 4, 1968, Ser. No. 695,603
Int. Cl. E02b *3/00, 17/00;* **B65d** *89/10*
U.S. Cl. 61—1 **4 Claims**

A gas discharge distributor is disclosed at a subsurface location within a body of water generating an ascending curtain of bubbles as an effective retainer of liquid.

Liquid is being introduced near the bottom of the enclosure. The liquid is contained as it ascends by the bubble curtain until the liquid reaches the surface. A floating ring at the surface is receiving the bubbles and ascended liquid and retaining the liquid while it is drained for disposal by a system not shown.

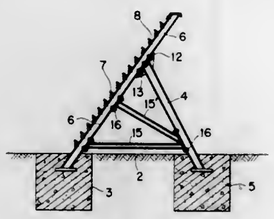


3,469,403

BUTTRESS TYPE STEEL DAM FOR COLLECTING DEBRIS

Shigefumi Tanaka and Jiro Ishikawa, Tokyo, and Tosiaki Matumoto, Kawasaki, Japan, assignors to Yawata Iron and Steel Co., Ltd., Tokyo, Japan

Filed Feb. 9, 1967, Ser. No. 614,888
Claims priority, application Japan, Mar. 16, 1966, 41/23,302
Int. Cl. E02b 3/10, 3/04
U.S. Cl. 61—3 4 Claims



A buttress type steel dam as a debris barrier having great durability and stability against water pressure and debris pressure acting on the surface of dam body and particularly suitable for a dam to be constructed on the bed of a river having swift stream in mountainous region, which can be constructed very rapidly and economically by assembling on a spot steel materials ready made in a factory.

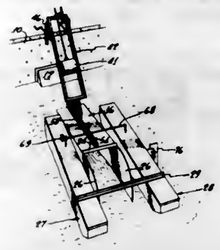
3,469,404

SELF-REGULATING SKIMMING WEIR APPARATUS HAVING A CONSTANT DISCHARGE AT ANY DESIRED SETTING

Sam F. Griggs, 160 N. Webster St., Independence, Calif. 93526

Filed Apr. 22, 1968, Ser. No. 723,079
Int. Cl. E02b 7/40
U.S. Cl. 61—23 31 Claims

A skimming weir apparatus comprising a pivoted water chute the intake end of which is a rounded-rested weir so constructed that the characteristics of the crest, the throat and the nappe remain constant regardless of the stage (depth) of the water. Cam, push-rod and compensator means are provided to maintain the head of water constant despite very substantial variations in the stage. Because of the stated factors, the discharge remains constant at any setting. A ballast system is employed to permit selection of various discharge rates, and gauge means are provided to indicate the discharge rate.

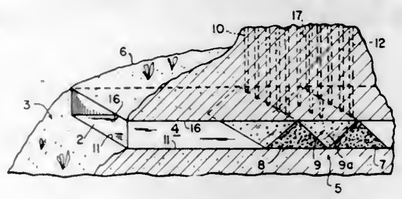


3,469,405

MINE WATER BARRIER

Richard H. Reinhold, Pittsburgh, Pa., assignor to Layne-New York Company, Inc., a corporation of New York

Filed Aug. 14, 1968, Ser. No. 752,683
Int. Cl. E02d 19/12; E21f 17/16; E02b 7/02
U.S. Cl. 61—35 7 Claims



A method of constructing a mine water barrier in an underground mine entry by making two substantially parallel rows of borings transversely of the entry, feeding mineral aggregate into the entry through the borings, and grouting the aggregate. The grouted aggregate sets up to form a pair of walls spaced longitudinally in the entry. A number of holes are drilled between and parallel to the borings into the entry. Additional mineral aggregate and/or cementitious fill material is fed under pressure through the holes into the entry between the walls and permitted to set up to form a substantially water impervious barrier.

3,469,406

TREATMENT OF CLAY-CONTAINING SOIL

William B. Braden, Jr., and Joseph T. Carlin, Houston, Tex., assignors to Texaco Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Dec. 5, 1967, Ser. No. 687,982
Int. Cl. E02d 3/12, 3/14
U.S. Cl. 61—36 6 Claims

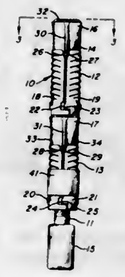
Improved method of treating soil containing a water sensitive clay to stabilize the clay against swelling by mixing the soil with a guanidine salt in a polar oxygenated aliphatic hydrocarbon solvent of a prescribed type and compacting the treated admixture.

3,469,407

MINE ROOF SUPPORT

Lajos J. Kovacs, Mansfield, Ohio, assignor to The Ohio Brass Company, Mansfield, Ohio, a corporation of New Jersey

Filed Dec. 22, 1967, Ser. No. 692,847
Int. Cl. E21d 21/00; E04b 1/38; F16b 13/06
U.S. Cl. 61—45 6 Claims



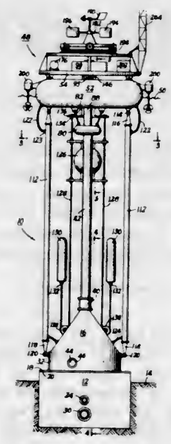
A shield assembly for mine roofs in which the roof is composed of soft or non-resistant layers or strata, comprising a plurality of bail-type expansion shells arranged in tandem on a single bolt with a common bail.

3,469,408

APPARATUS FOR LAUNCHING AND EXTRACTING SPHEROIDS IN UNDERWATER PIPELINES

Walter J. Bloembard, Hicksville, N.Y., assignor to Columbia Gas System Service Corporation, New York, N.Y., a corporation of Delaware

Filed Jan. 5, 1968, Ser. No. 696,051
Int. Cl. B63c 11/38; B08b 9/04; F17d 1/00
U.S. Cl. 61—69 10 Claims



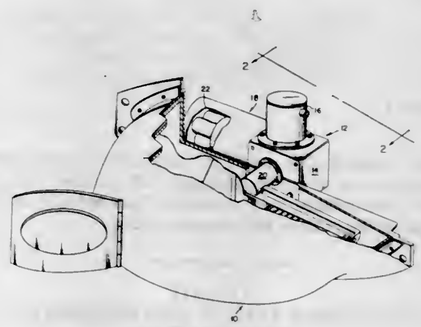
An apparatus for launching and extracting spheroids in underwater pipelines is disclosed wherein the launching and extracting units are positioned in a chamber below the water surface at pipeline level. Storage for the extracted spheroids and for the spheroids to be inserted in the pipeline is provided in a floating platform which is moored to the submerged chamber. The launching and extracting is accomplished automatically with the extracted spheroids rising to the platform to be stored and launching spheroids descending to the pipeline from the platform. Provision is also made to allow maintenance of the submerged equipment and to continuously retain the platform in proper orientation over the submerged chamber.

3,469,409

CRYOGENIC REFRIGERATOR ARRANGEMENT

Kenneth W. Cowans, Los Angeles, Calif., assignor to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware

Filed Apr. 3, 1967, Ser. No. 627,985
Int. Cl. F25b 9/00
U.S. Cl. 62—6 10 Claims



A cryogenic refrigerator is provided which uses a sealed housing and closed loop circulation of a cryogenic fluid to produce extremely low temperatures. The refrigerator comprises a cold cylinder and a hot cylinder having out-of-phase reciprocating displacers therein. Energy input is provided by a decaying radioactive isotope in a capsule in thermal transfer relation with the hot cylinder. The capsule is provided with a surrounding envelope of insulation comprising an evacuated vacuum chamber having a plurality of spaced shells of high radiation-reflective material. During refrigerator operation, substantially all of the heat created by the decaying isotope is transferred by conduction, convection, and radiation to the refrigerating fluid in the hot cylinder. Upon refrigerator shutdown, substantially all of the heat energy continually created in the isotope capsule is dissipated to ambient by virtue of radiation from the insulating structure defined.

ERRATUM

For Class 62—13 see:
Patent No. 3,469,271

3,469,410

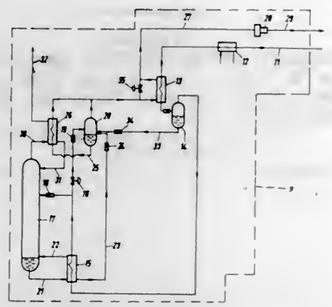
PROCESS AND APPARATUS FOR THE REMOVAL OF TRACES OF IMPURITIES FROM CARBON DIOXIDE

Walter Schramm and Wolfgang Baldus, Munich, Germany, assignors to Linde Aktiengesellschaft, Wiesbaden, Germany

Continuation-in-part of application Ser. No. 290,446, June 25, 1963. This application Apr. 14, 1967, Ser. No. 634,025
Claims priority, application Germany, July 4, 1962, G 35,374
Int. Cl. F25 3/02
U.S. Cl. 62—28 10 Claims

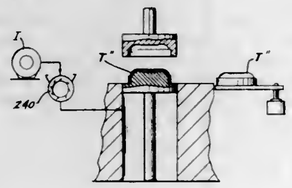
Impurities contained in carbon dioxide heat transfer medium, circulating through an atomic reactor, are removed by withdrawing a portion of the impurity contain-

ing CO_2 from the reactor cycle and liquefying the withdrawn CO_2 portion by heat exchange with pure CO_2 from distillation column bottoms before separation. A portion



of the liquefied CO_2 enters the distillation column where impurities are removed overhead and purified CO_2 bottoms is recombined with remaining liquefied CO_2 and returned to the reactor heat transfer cycle.

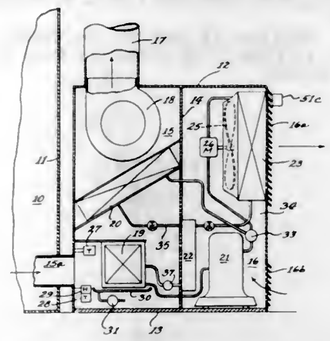
3,469,411
FRANGIBLE TARGET AND METHOD OF MANUFACTURE
Joseph W. Silva, New Haven, Conn., assignor to Olin Mathieson Chemical Corporation, a corporation of Virginia
Original application Mar. 9, 1964, Ser. No. 350,296, now Patent No. 3,359,001, dated Dec. 19, 1967. Divided and this application Aug. 16, 1966, Ser. No. 589,781
Int. Cl. F25c *1/00;* **F41j** *9/16;* **B30b** *13/00*
U.S. Cl. 62—66 **2 Claims**



A method for producing frangible trap shooting targets out of ice wherein crushed ice particles are mixed with binder material and the resulting mixture is tightly compressed by opposing die member so as to form the desired target.

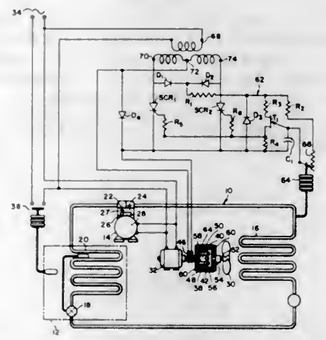
3,469,412
HUMIDITY AND TEMPERATURE CONTROL APPARATUS
Anthony A. Giuffre, 4344 N. 70th St., Milwaukee, Wis. 53216
Filed Nov. 9, 1967, Ser. No. 681,656
Int. Cl. F24f *1/02, 11/08*
U.S. Cl. 62—173 **10 Claims**

Humidity and temperature control apparatus arranged so that air to be conditioned is first passed by an evaporator and then into heat exchange relation with a condenser so that the evaporator first cools and dehumidifies the air while the condenser in the air flow path heats up the air before returning it to the space being conditioned. A control system is used with a second condenser so as to bypass the first condenser when heat



is not needed. A humidistat and a thermostat control the operation of the compressor.

3,469,413
REFRIGERANT APPARATUS CONTROL
Robert G. Miner, La Crosse, Wis., assignor to The Trane Company, La Crosse, Wis., a corporation of Wisconsin
Filed Dec. 27, 1967, Ser. No. 693,814
Int. Cl. F25b *39/04*
U.S. Cl. 62—184 **10 Claims**

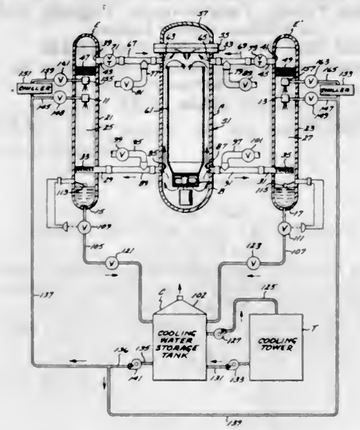


A vapor compression system having a condenser fan which is variably magnetically coupled to a motor for varying the condenser fan speed wherein the magnetic intensity of the coupling is varied in response to an electric control signal derived in response to variations in refrigerant pressure at the high pressure side of the system.

3,469,414
AUTOCLAVE COOLING SYSTEM
James H. Schmidt, Berkeley, and Warren W. Hedstrom, Rolling Hills, Calif., assignors to Fuel Engineering, Torrance, Calif., a corporation of California
Filed Jan. 23, 1968, Ser. No. 699,972
Int. Cl. F25d *17/06;* **F28d** *5/00*
U.S. Cl. 62—309 **2 Claims**

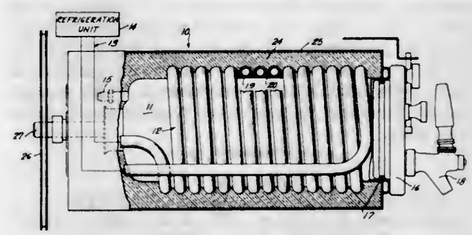
An autoclave cooling system including an autoclave connected with a heat exchanger and a blower for circulating gas through the heat exchanger. The heat exchanger includes a cooling chamber having a spray head disposed in the upper portion thereof and a drain in the bottom thereof. The drain is connected with the inlet of a water cooling means and the outlet of such water cooling means is connected with the spray head whereby cold water can be pumped through the spray head to form a

mist in the chamber to cool gas circulated upwardly in such cooling chamber by said blower, and the water col-



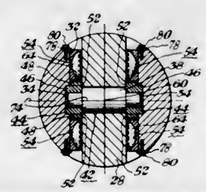
lected in the drain for recirculation through the water cooling means.

3,469,415
HEAT EXCHANGER FOR A BEVERAGE DISPENSING MACHINE
Richard T. Cornelius, Minneapolis, Minn., assignor to The Cornelius Company, Anoka, Minn., a corporation of Minnesota
Filed Dec. 8, 1967, Ser. No. 689,073
Int. Cl. B67d *5/62*
U.S. Cl. 62—394 **2 Claims**



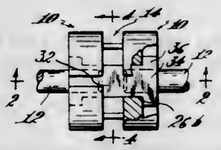
A beverage dispensing device has a heat exchanger including a product cylinder surrounded by a cooling coil of D-shaped cross-section, the flat side of the coil being bonded as by a tin-solder to the outside of the cylinder.

3,469,416
UNIVERSAL SPINDLE COUPLING AND THE LIKE
Peter J. Snyder, 6723 Smithfield St., McKeesport, Pa. 15135
Filed Jan. 16, 1967, Ser. No. 609,617
Int. Cl. F16d *3/76*
U.S. Cl. 64—7 **5 Claims**



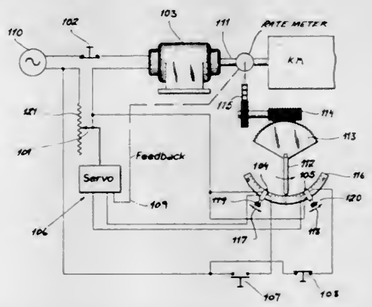
The universal coupling is intended primarily for transmission of large forces such as occurring in steel rolling mills. The coupling is provided with bearings which are removable without disassembling the entire coupling. Previously, pin and slipper bearings have been utilized, which require frequent coupling disassembly to replace worn-out slippers. The disclosed coupling utilizes a modified guide pin and slipper arrangement, positioned so as not to be subject to wear. Torque forces are transmitted through symmetrical bearings which are not subject to the fractures usually occuring in conventional slipper bearings and, therefore, last considerably longer. The disclosed bearings can be inserted and removed at the sides of the coupling without disassembling the coupling. When inserted, the bearings are retained by removable retaining plates. In rolling mill couplings, the existing coupling heads can be used without modification as parts of the new coupling.

3,469,417
TORQUE TRANSMITTING COUPLING
John Russell Wakelin, 8 Red Gate Lane, Southboro, Mass. 01772
Filed Dec. 7, 1967, Ser. No. 688,835
Int. Cl. F16d *3/50*
U.S. Cl. 64—12 **15 Claims**



A coupling comprising parts adapted to be secured to the adjacent ends of two shafts and flexible transmitting elements connecting the two parts to each other for transmitting rotation of one part to the other while permitting movement of the parts relative to each other.

3,469,418
APPARATUS FOR THE REGULATION OF KNITTING MACHINES
Eberhard Stäbeler, Reichenbach, Vogtl., and Alfred Dunger, Pausa, Germany, assignors to VEB Gardinen-u. Dekowerke Zwickau, Zwickau, Germany, a corporation of Germany
Filed Dec. 29, 1966, Ser. No. 610,720
Int. Cl. D04b *9/00*
U.S. Cl. 66—56 **3 Claims**



A method of controlling the starting and stopping of a knitting machine such as a raschel, flat-bed or circular knitting machine having a drive motor connected to the cam or needle-bank assemblies whereby loose loops are avoided at certain critical speeds, at which such loose loops commonly occur, between zero speed and maximum

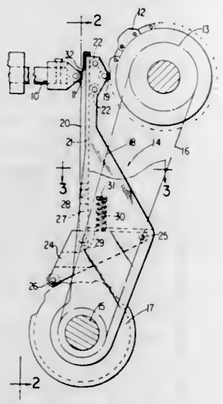
speed by continuously accelerating or decelerating the knitter drive at a constant rate to maintain a tension on the threads or yarns preventing the development of lost loops, slack or the like. The apparatus includes electrical or mechanical acceleration-control means cooperating with a servomechanism for sensing the actual speed of the machine to ensure the constant-rate acceleration or deceleration of the drive.

3,469,419
RASCHEL KNITTING MACHINE AND METHOD OF OPERATING THE SAME
Karl Kohl, Offenbacher Landstr. 20, Hainstadt am Main, Germany
Filed Oct. 13, 1967, Ser. No. 675,100
Claims priority, application Germany, Oct. 13, 1966, M 71,247
Int. Cl. D04b *11/14*
U.S. Cl. 66—83 **4 Claims**



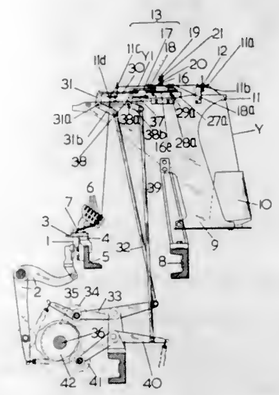
A raschel knitting machine having a fall plate and guide bars rearwardly and forwardly offset from the fall plate respectively, the yarn guides of the rearwardly offset guide bar being at least twice as far from the fall plate as those of the forwardly offset bar, and the former yarn guides moving longitudinally of the needle bar away from the associated needle before each overlapping movement, thereby permitting the guides of both guide bars to lap about the associated needles in the same direction.

3,469,420
GUIDE BAR LAPPING MECHANISM FOR WARP KNITTING MACHINES
Harold C. Noe, Upper Montclair, N.J., assignor, by mesne assignments, to Walter Kidde & Company, Inc., Belleville, N.J., a corporation of New York
Original application Sept. 2, 1965, Ser. No. 484,532, now Patent No. 3,350,901, dated Nov. 7, 1967. Divided and this application Nov. 6, 1967, Ser. No. 705,576
Int. Cl. D04b *23/16*
U.S. Cl. 66—86 **4 Claims**



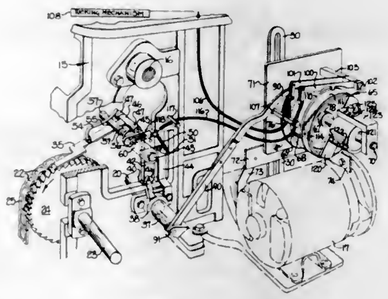
A cam and lever system for shogging a guide bar of warp knitting machines including cam means for providing patterning motion of the guide bar and cam means for superimposing a lapping motion on the patterning motion.

3,469,421
YARN TAKE-UP MECHANISM FOR STRAIGHT BAR KNITTING MACHINES
Dennis Alan Cozens, Loughborough, England, assignor to William Cotton Limited
Filed Mar. 27, 1967, Ser. No. 626,142
Claims priority, application Great Britain, Apr. 16, 1966, 16,767/66
Int. Cl. D04b *15/52*
U.S. Cl. 66—129 **4 Claims**



Yarn take up mechanism for a straight bar knitting machine in which a pair of horizontal yarn gripper plates, between which yarn extends horizontally, are mounted on a first cam operated slide to have varied horizontal movements, and for the opening and closing of the gripper plates having a second cam operated slide arranged for horizontal movements and having inclined slot and pin connections with a stationary member to provide raising and lowering movements which are imparted to the upper gripper plate relative to the lower gripper plate.

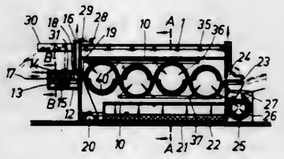
3,469,422
KNITTING MACHINE SIZE CHANGER
Clarence W. Minton, 4802 Dakota Ave., Nashville, Tenn. 37209
Continuation of application Ser. No. 585,839, Oct. 11, 1966. This application May 9, 1968, Ser. No. 728,083
Int. Cl. D04b *15/66*
U.S. Cl. 66—155 **14 Claims**



In a circular knitting machine a size change mechanism which, at selected portions of the machine cycle, increases the rate of racking of the main pattern chain to knit a shorter stocking. A cam follower lever, actuated by a

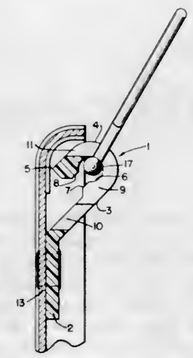
cam carrying drum, controls the pattern chain racking pawl for either one or two tooth racking. The cam carrying drum is started in rotation by an electric motor and then moved by a racking pawl. The period of increased speed of racking of the chain is variable by the axial shifting of the drum to bring different length cams into engagement with the follower. The manual placement of a pin in one of a series of apertures selects the stocking length as a cam engages the pin and axially shifts the drum accordingly.

3,469,423
APPARATUS FOR THE TREATMENT OF MATERIALS
Heinz Fleissner, Egelsbach, near Frankfurt am Main, Germany, assignor to Vepa AG., Basel, Switzerland
Filed June 23, 1967, Ser. No. 648,315
Claims priority, application Germany, June 23, 1966, V 31,335; July 1, 1966, V 31,410
Int. Cl. D06f *39/04, 29/00, 87/00*
U.S. Cl. 68—5 **27 Claims**



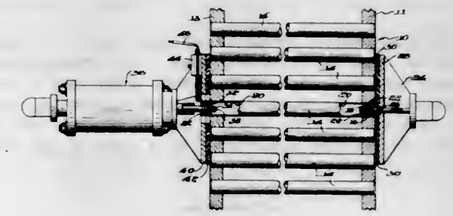
A closed treatment housing, at least one conveying means disposed within said housing, inlet means for introducing the material to be treated to said conveying means, fan means for circulating the treatment medium, heating means provided in the circulation zone of the treatment medium, steam-generating means disposed within said housing, means for supplying and discharging drying air to and from said housing, said means capable of being closed in a steam-tight manner and outlet means for removing the material from the apparatus.

3,469,424
KEY RETAINER
Stuart T. Shears, Belmont, Mass., assignor, by mesne assignments, to United-Carr Incorporated, Boston, Mass., a corporation of Delaware
Filed Sept. 20, 1967, Ser. No. 669,366
Int. Cl. A45c *11/32*
U.S. Cl. 70—456 **6 Claims**



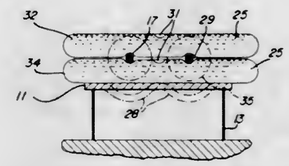
A retainer for pivotally securing key loops to a key case. A base which is attached to the key case has a loop-receiving section extending angularly upwardly and outwardly beyond one end of the base. An arcuate loop-retaining section which defines a loop head holding chamber extends still further outwardly from the loop-receiving section and terminates in a free end which extends downwardly toward an imaginary planar extension of the base. A portion of the free end of the loop-retaining section and portions of the loop-receiving section cooperatively define a constricted entrance to the loop head holding chamber. A slot in the loop-receiving section communicates at one end with a slot in the loop-retaining section and at the other end with an enlarged opening in the loop-receiving section whereby the head of the loop can be passed through the opening and snapped into the loop-retaining section. The head is thus snappedly retained in the chamber and the loop is pivotable in the communicating slots.

3,469,425
APPARATUS FOR STRETCHING TUBING
Eugene V. Spurr, Yalesville, Robert R. Walker, and George W. Steiniger, Wallingford, Conn., assignors to Allegheny Ludlum Steel Corporation, Brackenbridge, Pa., a corporation of Pennsylvania
Filed Mar. 20, 1968, Ser. No. 714,651
Int. Cl. B21c *23/24;* **B21d** *11/02, 17/02*
U.S. Cl. 72—46 **5 Claims**



Apparatus for stretching metal tubing beyond its elastic limit without causing any appreciable change in tube diameter or wall thickness.

3,469,426
EXPLOSIVE FORMATION
Gilbert C. Whitney, Jr., Dansville, N.Y., and Joseph W. Schroeder, Clark, N.J., assignors to Foster Wheeler Corporation, Livingston, N.J., a corporation of New York
Original application Mar. 8, 1966, Ser. No. 532,647, now Patent No. 3,431,763, dated Mar. 11, 1969. Divided and this application Apr. 11, 1968, Ser. No. 740,009
Int. Cl. B21d *26/08, 13/02;* **B21j** *5/04*
U.S. Cl. 72—56 **10 Claims**



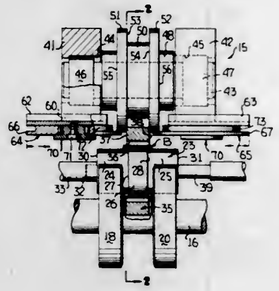
This disclosure is directed to the formation of ductile materials by explosive forces. A workpiece is supported in a horizontal position and has a bag placed thereon. An explosive charge is placed on said bag and the bag is filled with a fluid medium. A flexible medium is placed over the bag and is filled with a liquid to shape the flexible medium about the charge. The charge is detonated to form the workpiece to the desired configuration.

3,469,427

METHOD AND APPARATUS FOR COLD-ROLLING ANNULAR MEMBERS

James W. Rollins, Winsted, Conn., assignor to The Torrington Company, Torrington, Conn., a corporation of Maine

Filed Mar. 10, 1967, Ser. No. 622,312
Int. Cl. B21d *15/00*
U.S. Cl. 72—91 18 Claims



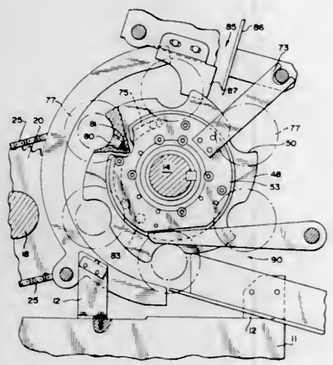
This disclosure relates to an apparatus for forming bearing races by imparting relative movement and rotation between a core and an annular sizing ring to transform an annular blank into a bearing race having a pair of radially inwardly directed flanges. Rollers are provided for flowing material at axial ends of the blank toward the center thereof to form the flanges.

3,469,428

MACHINE FOR SPIN FLANGING OF CONTAINERS

Anton A. Aschberger, Oak Lawn, Ill., assignor to Continental Can Company, Inc., New York, N.Y., a corporation of New York

Filed Dec. 1, 1966, Ser. No. 598,449
Int. Cl. B21d *3/06*
U.S. Cl. 72—94 9 Claims



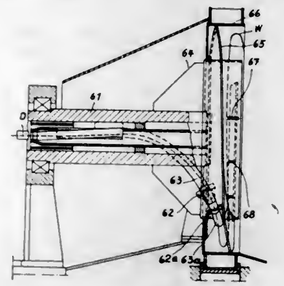
An apparatus for flanging the open ends of containers. Spaced apart turrets are rotatably driven and each turret is provided with recesses for retaining the container bodies. The can bodies are held in the recesses by vacuum valve discs.

3,469,429

TURN-LAYERS WITH AN EDENBORN ROTATING LAYING TUBE

Otto Döpper, Krefeld, Georg Bollig, Buderich, Egbert Schröder, Lank, Klaus Küppers, Dusseldorf, and Alfred Schulz, Kaarst, Germany, assignors to Schloemann Aktiengesellschaft, Dusseldorf, Germany, a German company

Filed Feb. 13, 1967, Ser. No. 615,707
Claims priority, application Germany, Feb. 17, 1966, Sch 38,500; Nov. 12, 1966, Sch 39,810; Jan. 21, 1967, Sch 40,125
Int. Cl. B21c *47/08*; B21f *3/04*
U.S. Cl. 72—134 17 Claims



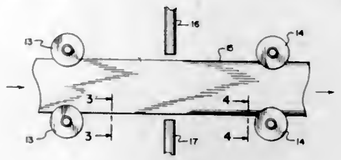
This invention relates to a device for continuously forming rod or wire into a series of helical turns. A rotary laying tube is utilized for bending the rod or wire into the turns, and the tube has an inlet opening located adjacent the axis of rotation of the tube, and an outlet opening rotatable in a circular path. There is a rotary worm thread guide coaxial with and immediately following the tube, and the guide has a diameter corresponding to the diameter of the circular path of the outlet opening. Moreover, there are drive means which rotate the tube and the worm thread guide at the same speed.

3,469,430

EDGE CONTOURING OF METAL STRIP AND METAL STRIP PRODUCT

Robert S. Bray, Cheshire, Luis J. Lozano, Southington, and Peter J. Kabelka, Torrington, Conn., assignors to Anaconda American Company, Waterbury, Conn., a corporation of Connecticut

Filed Sept. 15, 1967, Ser. No. 668,096
Int. Cl. B21d *19/00*; C21c *9/56*
U.S. Cl. 72—200 6 Claims



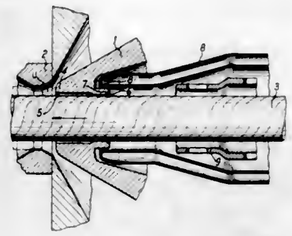
The edges of a metal strip are melted to a liquid state and the inherent surface tension is used to produce a rounded cross-sectional configuration at the liquid edges of the strip and to hold the liquid metal to the flat board faces; the edge is retained in its rounded configuration by removing the edge area from the heat source to solidify it before the force of gravity exceeds the surface tension force holding the volume of the liquid metal and a smooth rounded semicircular in cross-section edge segment is produced which is characterized by long columnar grains extending laterally outward in the plane of the strip.

3,469,431

CABLE SHEATHING PRESS

Rudolf Deina, Rheinhausen, Germany, assignor to Hydraulik GmbH, Duisburg, Germany

Filed Aug. 22, 1966, Ser. No. 574,010
Int. Cl. B21c *25/02*; H01b *7/20*
U.S. Cl. 72—268 4 Claims



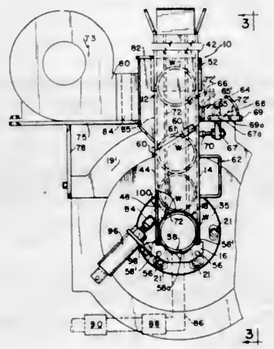
A mandrel, through which a cable to be sheathed is passed, comprises a hollow mandrel body which has a sheathing die entry end with an outer tip portion which is adapted to be located directly adjacent the sheathing die for the delivery of the cable therethrough to the die. The mandrel includes a guide for the cable formed on the interior of the mandrel which include means for cooling the cable on the mandrel side before the cable is delivered to the location at which the sheathing material is added to the exterior of the cable. The cooling is such that the mandrel tip which is directly adjacent the sheathing die, will remain hot so that the metal flowing to the sheathing point will be unaffected. The cooling is necessary in order that the guide for the cable functions to permit feeding of the cable uniformly and without burning the insulation covering over the cable.

3,469,432

PNEUMATIC FEEDING DEVICE

Arthur Dean Smith, San Lorenzo, and Cornelis Langewis, Walnut Creek, Calif., assignors to Kaiser Aluminum & Chemical Corporation, Oakland, Calif., a corporation of Delaware

Filed July 10, 1967, Ser. No. 652,211
Int. Cl. B21d *22/00*
U.S. Cl. 72—361 13 Claims



A pneumatic device for successively feeding an endmost workpiece of a plurality of stacked workpieces to a forming apparatus which is generally comprised of a forming ram and a die means spaced from and cooperatively aligned with the ram. The feeding device per se is generally comprised of a closed chute, the discharge end of which is selectively cut away to define a transverse opening alignable with the forward end of the ram and die means. Workpieces deposited in the chute are constantly urged forward under the influence of air toward the discharge end thereof so that during the ram's advancement it can engage the workpiece located at the discharge end of the chute and then pass the same through the die means. As the ram continues its advancement past the chute, a portion of the ram advantageously acts to close off the discharge or exit end of the chute while it slidingly contacts the next succeeding workpiece in the chute.

3,469,433

METAL-WORKING PROCESS

Eugene E. Fresch, 2544 McCoy Road; Jerome Nakrin, 2743 Barnaby Drive; and Thomas G. Pillifant, 2639 Donna Drive, all of Columbus, Ohio 43220

No Drawing. Filed June 4, 1965, Ser. No. 461,510
Int. Cl. B21d *31/00*
U.S. Cl. 72—364 2 Claims

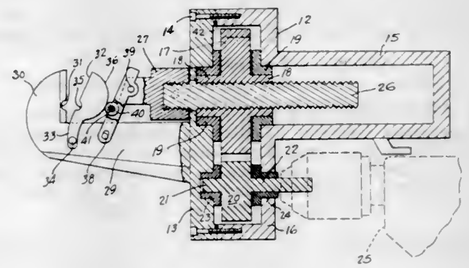
This disclosure relates generally to a method of manufacturing metal components and parts from a high alloyed (hard) stock comprising heating the stock to a temperature to render the material ductile but below a temperature that destroys the material hardness, working the material within the temperature range and then cooling the material.

3,469,434

POWER-DRIVEN CRIMPING TOOL

Robert H. Davis, Box 6, Rufus, Oreg. 97050

Filed Jan. 5, 1968, Ser. No. 696,032
Int. Cl. B21j *9/18*
U.S. Cl. 72—452 7 Claims

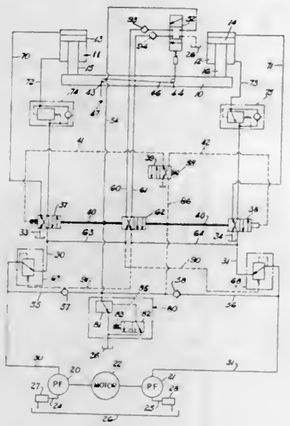


A power tool for crimping metal sleeves on wires. The tool consists of a housing in which a main gear is journaled. Also journaled in the housing is a pinion gear meshing with the main gear and having a shaft projecting so as to be receivable in the chuck of an electric drill. The housing has a fixed arm provided with an upstanding first crimping jaw. A second crimping jaw is pivoted to the fixed arm, facing the first crimping jaw. The pivoted crimping jaw has a camshaped back edge. A pair of link arms are pivoted to the fixed arm and a roller is journaled between the link arms engaging the camshaped back edge of the pivoted crimping jaw. The top portions of the link bars are pivoted to a head member secured on a bolt which is threaded axially through the main gear so as to be moved axially responsive to rotation of the main gear.

3,469,435
LEVEL CONTROL FOR HYDRAULIC PRESS BRAKES AND THE LIKE

George H. Trautman, Jr., Kenmore, N.Y., assignor to Niagara Machine & Tool Works, Buffalo, N.Y.

Filed Aug. 8, 1966, Ser. No. 571,032
Int. Cl. B21j 9/14
U.S. Cl. 72—453 16 Claims

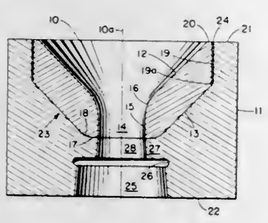


A level control for a machine having a member of substantial width movable toward and away from an opposed member by means of a pair of hydraulic motors which act simultaneously against laterally spaced points on the movable member when supplied with operating pressure fluid through a pair of supply conduits from a pump. A valve is provided with a pair of outlet conduits to the supply conduits and an input conduit to the pump. The valve is normally blocked but shiftable to supply additional pressure fluid from the input conduit to the supply conduit of whichever of the motors is lagging, in response to the operation of mechanical means connected to the movable member for sensing unequal movements of laterally spaced points thereon.

3,469,436
EXTRUSION DIE FOR REFRACTORY METALS

Charles A. Gyorgak, Middleburg Heights, and Robert J. Hoover, Cleveland, Ohio, assignors to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration

Filed June 14, 1967, Ser. No. 646,124
Int. Cl. B21c 3/00
U.S. Cl. 72—467 9 Claims

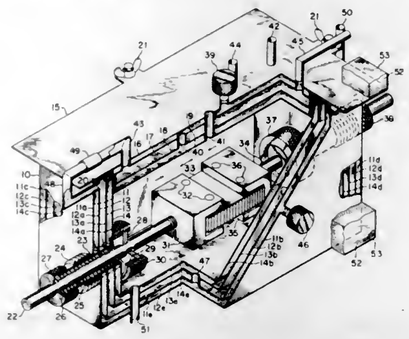


An extrusion die for refractory metals comprising a frusto-conical die nib fitted into a frusto-conical receptacle in a die nib holder, a cylindrical throat in the small end of the die nib opening into a cup in the lower surface of the die nib holder, a tapered passage being disposed between the throat and the cup in the die nib and contiguous with the throat.

3,469,437
HORIZONTAL CRYOSTAT FOR FATIGUE TESTING

Orvil Y. Reece, Huntsville, Ala., assignor to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration

Filed June 2, 1967, Ser. No. 644,447
Int. Cl. G01n 25/02
U.S. Cl. 73—15.6 5 Claims

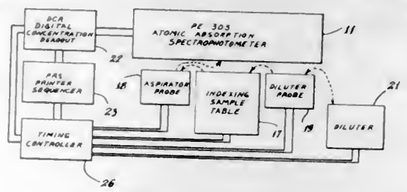


A cryostat for use with horizontal testing machines. The cryostat, a rectangular Dewar vessel, is apertured on opposite sides for entry of horizontal load rods. At each aperture the load rod is held in position and a seal is provided by an outer sleeve joined to the walls, an inner Teflon sleeve and a Teflon washer. The Teflon sleeve contracts tightly around the load rod at cryogenic temperatures to minimize cryogen loss, while allowing free longitudinal movement of the rod.

3,469,438
AUTOMATICALLY CONTROLLED MULTIPLE SAMPLING MEASUREMENT SYSTEM

Marvin W. Gaumer, Ridgefield, Conn., assignor to The Perkin-Elmer Corporation, Norwalk, Conn., a corporation of New York

Filed Apr. 12, 1967, Ser. No. 630,394
Int. Cl. G01n 11/00
U.S. Cl. 73—53 11 Claims



Fluid sample testing apparatus that measures a predetermined characteristic of a fluid sample and produces an output signal which is a function of the measured characteristic. The sample is tested until a predetermined period of output signal initiates the indexing of the sample handling table and the next sample is withdrawn and tested.

3,469,439
MEANS FOR MEASURING DISTRIBUTED FORCES USING MICROCAPSULES

Sanford B. Roberts, 8014 Cozycroft Ave., Canoga Park, Calif. 91306, and Lewis P. Felton, 10603 Butterfield Road, Los Angeles, Calif. 90064

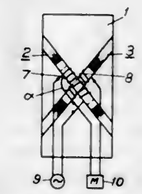
No Drawing. Filed Feb. 21, 1968, Ser. No. 707,323
Int. Cl. G01n 3/00; B01j 13/00
U.S. Cl. 73—88 7 Claims

An article of manufacture for measuring distributed forces over a surface comprising a substantially homogeneous mixture of discrete groups of microcapsules of differing pressure sensitivity. Such article, when applied to a pressure-subjected surface, is capable of providing a permanent record of the pressure to which each portion of the surface is subjected. The size and wall characteristics of the groups of the microcapsules are controlled to provide groups of microcapsules breaking at different pressures and the internal phase, which may be solid or liquid, is chosen to provide a color record corresponding to the different breaking pressures of the microcapsules.

3,469,440
STRESS MEASURING DEVICE

Ingemar Löfgren, Vasteras, Sweden, assignor to Allmänna Svenska Elektriska Aktiebolaget, Vasteras, Sweden, a Swedish corporation

Filed Mar. 21, 1967, Ser. No. 624,832
Claims priority, application Sweden, Apr. 4, 1966, 4,469/66
Int. Cl. G01n 33/18
U.S. Cl. 73—88.5 2 Claims



For measuring torque or stress in a body of magnetostrictive material having a hole therein, a measuring device comprises a body of insulating material insertable in the hole and having a core system with at least four pole surfaces situated in the same transverse plane of the body.

3,469,441
METHODS OF MEASURING STRAIN

Herbert Ackland Pohl, Uppsala, Sweden, assignor to Sci-Tech Corporation, Princeton, N.J., a corporation of New Jersey

No Drawing. Continuation-in-part of application Ser. No. 192,967, May 7, 1962. This application July 21, 1964, Ser. No. 384,249
Int. Cl. G01n 27/02
U.S. Cl. 73—88.5 6 Claims

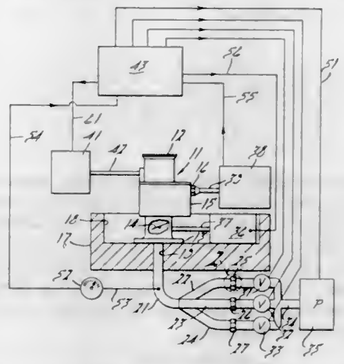
A process of measuring changes in strain which comprises the step of determining the change in resistance on a change of strain applied to a molded, microscopically-homogeneous, electronically-conductive, eka-conjugated, covalently bonded, polymeric, organic molecular solid having a specific conductivity between about 10^{-12} and 10^{+3} mhos per centimeter at 25° C. and a molecular weight of over 500.

3,469,442
APPARATUS FOR CALIBRATING CARBURETORS

Alexander W. Brueckner, Farmington, Mich., assignor to Lynch Corporation, a corporation of Indiana

Filed Apr. 10, 1967, Ser. No. 629,790
Int. Cl. G01m 13/02
U.S. Cl. 73—118 5 Claims

This application discloses a method and apparatus for accurately calibrating and adjusting charge forming devices for internal combustion engines. The apparatus is comprised of a stand for supporting the charge forming device, an apparatus for manipulating the charge forming device throttle valve, a fuel delivery and flow measuring unit, a vacuum pump or other structure for inducing an air flow through the charge forming device and a plurality of sonic nozzles and control valves therefor interposed in the flow path between the charge forming device and the vacuum pump. The operation of each of the aforenoted elements is controlled by a master control unit. In operation, this master control unit sequentially selects a flow path through one or more of the sonic nozzles, operates the throttle valve positioning apparatus to maintain sufficient upstream pressure upon the selected nozzle or nozzles to generate a sonic velocity at its throat whereby a finite mass flow rate is established through the

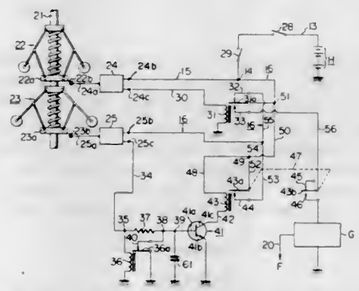


charge forming device and senses a reading from the fuel flow measuring unit at this mass flow rate. After accomplishing the aforenoted test at a given mass flow rate, the master control selects another mass flow rate by switching the flow through a different sonic nozzle or nozzles and the fuel flow measuring unit measures the fuel flow at this new mass flow rate. Thus, the charge forming device is accurately calibrated at a plurality of points, the number of which depends upon the number of test points desired.

3,469,443
AUTOMATIC VEHICLE STOP SENSING DEVICE

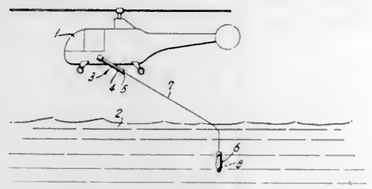
Shuzo Moroto, Tsuneo Kawabe, and Naozi Sakakibara, Asahi-machi, Japan, assignors to Aisin Seiki Company Limited, Aichi-ken, Japan

Filed Nov. 15. 1967, Ser. No. 683,291
Claims priority, application Japan, Nov. 17, 1966, 41/75,692; Nov. 26, 1966, 41/108,408
Int. Cl. G01l 5/28; G01p 3/04, 15/08
U.S. Cl. 73—121 10 Claims



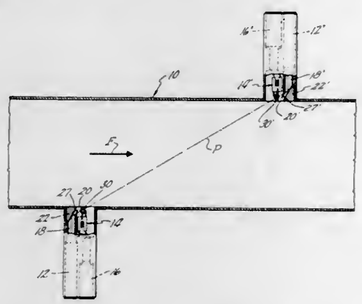
Device for the automatic sensing of stoppage of a wheeled vehicle, comprising means operatively connected with a wheel of said vehicle for sensing near-stop condition of said wheel; means operatively connected with said wheel for sensing a predetermined running speed of said wheel, said latter speed being selected to be higher than said near-stop speed; and a comparator arranged for receiving outputs from said both sensing means.

3,469,444
LAUNCHING APPARATUS
William H. Ayer, Scituate, Mass., assignor to Buzzards Corp., Marion, Mass., a corporation of Massachusetts
Filed July 17, 1967, Ser. No. 653,806
Int. Cl. G01w *1/08*
U.S. Cl. 73—170 10 Claims



The present invention includes a launching apparatus having an adjustable support assembly, a housing portion integral with said support assembly for containing a canister assembly, a tubular member secured to said housing portion for guiding a probe initially contained within the canister and a breech assembly secured to the housing portion for electrically connecting the canister assembly to remote measuring apparatus.

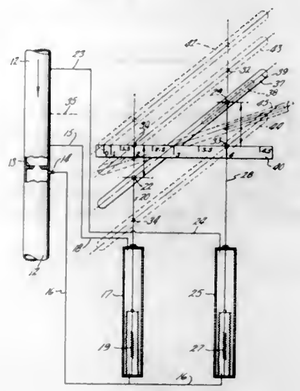
3,469,445
GAS FLOW MEASURING SYSTEM
Elbert Marston Moffatt, Glastonbury, Conn., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware
Filed July 20, 1967, Ser. No. 654,786
Int. Cl. G01f *1/02*
U.S. Cl. 73—194 14 Claims



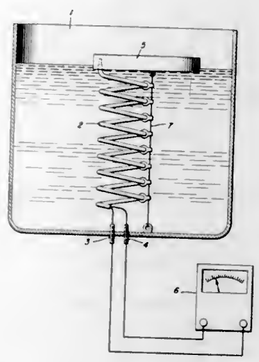
This disclosure relates to a system for measuring gas flow in a conduit by alternately sending shock pulses upstream and downstream in the flow and measuring the travel time for the pulses moving in each direction. For accuracy, a piezoelectric pulse detector which is energized by pulses moving both upstream and downstream is used at each end of the conduit. The detector is specially constructed to produce a large voltage signal with a short rise time.

3,469,446
VOLUMETRIC FLUID FLOWMETER
Edward L. Kochey, Jr., Colebrook, Conn., assignor to Combustion Engineering, Inc., Windsor, Conn., a corporation of Delaware
Continuation-in-part of application Ser. No. 140,850, Sept. 26, 1961. This application Sept. 30, 1965, Ser. No. 491,567
Int. Cl. G01f *1/00*
U.S. Cl. 73—196 18 Claims

An instrument for measuring volumetric flow of the fluid independent of its density. A pressure difference is sensed between two locations in the conduit with the locations being selected such that pressure drop due to fluid flow and the pressure drop due to static head are equal in magnitude but opposite in direction at a first preselected velocity. The second pressure differential is obtained between two locations in the conduit with these locations being selected such that the pressure drop due to fluid flow and the pressure drop due to static head are equal in magnitude but opposite in direction at a different second preselected velocity. These sensed pressure differentials are related to the first and second predetermined velocities in order to determine the actual volumetric flow rate.

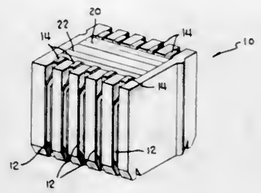


3,469,447
DEVICE FOR MEASURING THE TEMPERATURE OF A LIQUID
Winfried Becker, Arolo di Leggiuno, Italy, assignor to European Atomic Energy Community (Euratom), Brussels, Belgium
Filed Apr. 27, 1967, Ser. No. 634,233
Claims priority, application Germany, Aug. 4, 1966, E 32,211
Int. Cl. G01k *3/02*
U.S. Cl. 73—342 2 Claims



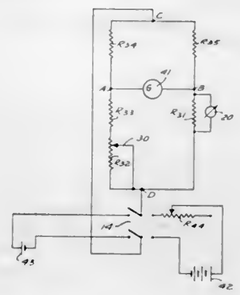
A device for measuring the average temperature of a liquid contained in a vessel or a container including a helically shaped wire connected to a float on the surface of the liquid and extending down to the bottom of the vessel or container to a Wheatstone bridge or the like.

3,469,448
MODULE SYSTEMS
Robert Charles Swengel, Sr., Hellam, Pa., assignor to AMP Incorporated, Harrisburg, Pa.
Original application Oct. 26, 1959, Ser. No. 848,568. Divided and this application Mar. 24, 1967, Ser. No. 625,856
Int. Cl. G01k *11/12*
U.S. Cl. 73—356 3 Claims



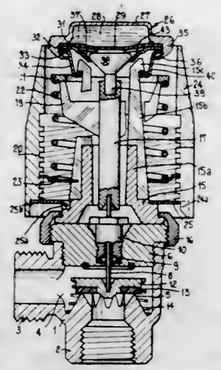
Two adjacent strips on a modular circuit unit for incorporation in an electrical system. One strip varies its color as temperature of the unit varies. The other strip is insensitive to temperature and is made to have the color that the sensitive strip assumes under normal operating temperature conditions. Variation of the color of the sensitive strip from its color under normal operating temperature is thereby noted. Both above or below normal temperatures can thus be indicated.

3,469,449
ELECTRONIC THERMOMETER
George H. Keller, Ridgewood, N.J., assignor to Dickinson Becton, and Company, East Rutherford, N.J., a corporation of New Jersey
Filed May 22, 1967, Ser. No. 640,002
Int. Cl. G01k *5/18, 5/52, 5/72*
U.S. Cl. 73—362 3 Claims



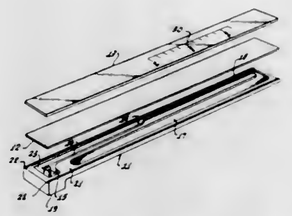
A thermistor probe, preheated to a temperature at or near the temperature to be measured or instantaneously heated to this temperature, is electrically located in one leg or branch of a balanced Wheatstone bridge circuit to sense body temperature. A difference between measured temperature and preheat temperature causes an imbalance of the bridge. The bridge is rebalanced by a digital readout potentiometer which displays, upon rebalance, the measured temperature digitally to 0.01° C. accuracy. A shunt resistor is used to stabilize the non-linear temperature resistance characteristic of the thermistor.

3,469,450
THERMOSTATIC DEVICES
Jean Piemontesi, Plan-les-Ouates, Switzerland, assignor to Kugler Fonderie et Rolinetterie S.A., Geneva, Switzerland, a corporation of Switzerland
Filed Apr. 15, 1968, Ser. No. 721,342
Claims priority, application Switzerland, Apr. 17, 1967, 5,394/67
Int. Cl. G05d *23/02*; F16k *1/42*
U.S. Cl. 73—368.3 3 Claims



A thermostatic valve comprises a chamber filled with a volatile liquid and having a flexible diaphragm extending across an aperture formed in one wall thereof. An actuating member for a valve bears on a central part of the diaphragm and the space between the actuating member and the chamber wall is bridged by a plurality of rigid segments which support the diaphragm while allowing it to flex freely. The chamber is provided in a cap which is supported by three horns of insulating material extending from the valve body so that the cap is thermally insulated from liquid passing through the valve.

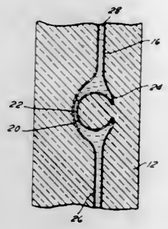
3,469,451
DISPOSABLE THERMOMETER
Arthur Eizenberg, Tarzana, Calif., assignor of one-third each to Aaron L. Raznick and David L. Raznick, both of Tarzana, Calif.
Filed June 26, 1967, Ser. No. 648,686
Int. Cl. G01k *1/04*
U.S. Cl. 73—371 15 Claims



A disposable thermometer comprising a flat cover member and a base member having molded therein a liquid reservoir, a channel communicating with the liquid reservoir and a gas expansion chamber communicating with the channel. The cover and base member are bonded together to form a thermometer housing which is partially filled with a temperature-expansible organic liquid having a relatively low vapor pressure. The temperature-

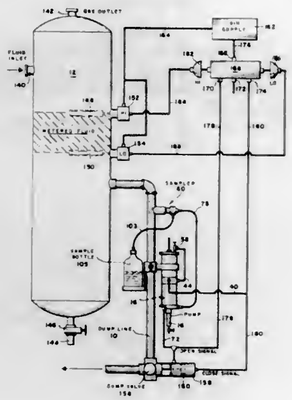
expansible liquid is carried in the liquid reservoir and expands as the temperature of the measured medium increases.

3,469,452
CLINICAL THERMOMETER WITH NON-METALLIC LIQUID MEDIUM
Waldemar A. Ayres, Rutherford, N.J., assignor to Becton, Dickinson and Company, Rutherford, N.J., a corporation of New Jersey
Filed Jan. 2, 1968, Ser. No. 695,269
Int. Cl. G01k *1/04*
U.S. Cl. 73—371 **11 Claims**



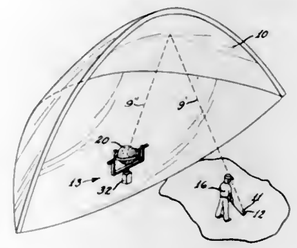
A maximum reading constriction type clinical thermometer having a non-metallic thermal liquid medium within its bore. The liquid medium displaying a greater surface tension or energy than that of the immediate containing surface thereby obviating wetting of the same by the liquid medium.

3,469,453
FLUID SAMPLING APPARATUS
Norman A. Nelson, P.O. Box 26595, Houston, Tex. 77032
Filed Oct. 8, 1965, Ser. No. 494,013
Int. Cl. G01n *1/10*
U.S. Cl. 73—422 **8 Claims**



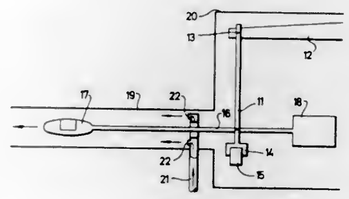
Fluid sampling apparatus for taking a continuous sample of a flowing fluid and for the taking of a continuous sample during periods of flow of a fluid which flows intermittently and discontinuing the taking of the sample when no flow is taking place. The apparatus includes a sample taking cylinder and piston, means for moving the piston in one direction to take a sample and in the other direction to discharge the sample and means for regulating the rate of movement of the piston in the sample taking direction. Valving mechanism is provided by which sampling takes place during each period of intermittent flow and the sample is discharged upon the cessation of flow.

3,469,454
GOLF GAME APPARATUS
William D. Cornell, Grand Haven, Mich., assignor to Brunswick Corporation, a corporation of Delaware
Filed Jan. 9, 1967, Ser. No. 607,930
Int. Cl. G01p *15/00*
U.S. Cl. 73—432 **17 Claims**



Spin detecting means for a golf game having a target for rebounding golf balls therefrom including a spherical surface located in the path of rebounding balls together with means associated with the surface for generating an electrical signal when a rebounding ball striking the surface has a trajectory which, when extended, does not pass through the center of the spherical surface so that the electrical signal is representative of the spin on the ball.

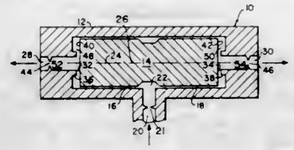
3,469,455
APPARATUS FOR MEASURING CHANGES IN THE WEIGHT OF A SAMPLE
Shigeo Iwata, Kyoto, Japan, assignor to Chyo Balance Corporation, Kyoto, Japan, a corporation of Japan
Filed Apr. 7, 1967, Ser. No. 629,192
Claims priority, application Japan, Apr. 12, 1966, 41/23,052; Dec. 24, 1966, 41/84,628; Dec. 27, 1966, 42/78
Int. Cl. G01d *21/00*
U.S. Cl. 73—432 **13 Claims**



Apparatus for measuring changes in the weight of a sample in which the sample container is supported at the outer end of an elongated support bar laterally extending from a sample loading member included in a weighing mechanism, the support bar being covered by a tube through which a fluid flows, so that the weighing mechanism can be prevented from being affected by the conditions and atmospheres in which the sample is placed.

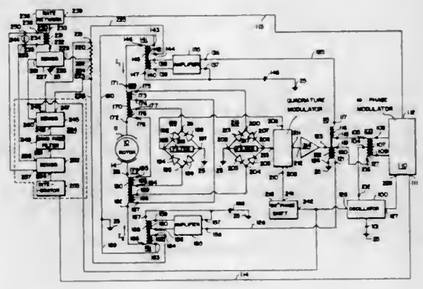
This invention relates to apparatus for measuring changes in the weight of a sample which is placed in various conditions and atmospheres.

3,469,456
DIGITAL FLUID ACCELEROMETER
Hugh E. Riordan, Wyckoff, and Robert Joseph Ganther, Kinnelon, N.J., assignors to Singer-General Precision, Inc., a corporation of Delaware
Filed Dec. 9, 1966, Ser. No. 600,417
Int. Cl. G01p *15/00;* **G06m** *1/12*
U.S. Cl. 73—515 **6 Claims**



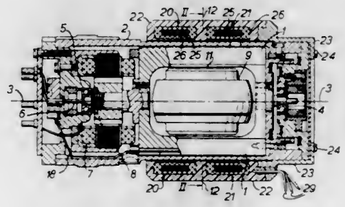
A proof mass is suspended so that its displacement along an axis differentially varies the volume of a pair of chambers having fluid inlets and restricted outlets. The damping of the proof mass and dimensions of the parts are so chosen that the proof mass oscillates when there is no acceleration, and in the presence of acceleration at a frequency that is a function of the acceleration. The pressures in the chambers may be sensed as an output.

3,469,457
ELECTROSTATICALLY SUPPORTED ROTOR FOR INERTIAL SYSTEM
Robert S. Staats, Fridley, Minn., assignor to Honeywell Inc., a corporation of Delaware
Filed Dec. 5, 1962, Ser. No. 242,549
Int. Cl. G01c *19/54*
U.S. Cl. 74—5.4 **25 Claims**



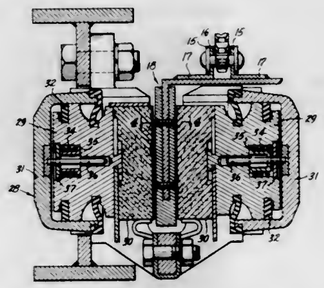
1. In an inertial instrument:
a housing having insulative means defining a generally hollow spherically shaped cavity;
a plurality of pairs of electrically isolated electrodes mounted on said insulative means of said housing and adjacent to said cavity with the electrodes of each pair having substantially the same area of surface exposed to said cavity and being arranged so that the center of the area of one electrode of one of said pairs is substantially diametrically opposite the center of the area of the other electrode of said one of said pairs;
an electrically conductive substantially spherically shaped nonmagnetic member positioned within said cavity;
means connected to said electrodes for establishing electric fields between said electrodes and said member so that said member is levitated free of physical contact of said electrodes, said field establishing means including means for controlling the electric fields between said member and both electrodes of each of said electrode pairs so that the sum of the square of the magnitudes of said fields for each of said pairs is substantially constant and also substantially equal to the sum of the squares of the fields of each of the other of said pairs;
an automatic rotor sag control network connected to said electrodes for providing compensating forces on the rotor to eliminate rotor sag; and
means connected to said electrodes of each electrode pair for detecting the magnitudes of said currents at said electrodes and providing an output signal indicative of acceleration along the axis of each electrode pair.

3,469,458
RATE GYROSCOPES
Brian William Griffin and William Richard Simons, Cheltenham, England, assignors to Smiths Industries Limited, London, England, a British company
Filed Nov. 4, 1966, Ser. No. 592,203
Claims priority, application Great Britain, Nov. 8, 1965, 47,342/65
Int. Cl. G01c *19/30, 19/28*
U.S. Cl. 74—5.46 **13 Claims**



A rate gyroscope is encircled by two electromagnets that are energized with direct current alternately to check freedom for precession, the electromagnets attracting a ferromagnetic spindle of the gyro rotor in opposite senses about the precession axis. Speed of rotation of the rotor is checked by detecting the modulation component induced in the electric supply to a hysteresis motor driving the rotor, energization of the electromagnets being inhibited in the absence of such component.

3,469,459
DRIVE MECHANISM
Joseph C. Morin, Edmonton, Alberta, Canada, assignor to Cupples Container Company, Austin, Tex., a corporation of Missouri
Filed Feb. 26, 1968, Ser. No. 708,381
Int. Cl. F16h *19/06;* **F16d** *25/00*
U.S. Cl. 74—37 **12 Claims**



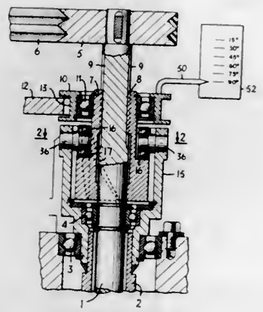
A drive mechanism is provided for advancing a driven device, such as the mold carriage of a thermoforming machine, at an accurately predetermined constant speed. An endless flexible member, such as a drive chain, is equipped with a plurality of clutch elements

which are disposed in a series lying in a single plane when traversing one portion of the closed path of travel of the endless member. A power operated clutch device, which can be secured to the device which is to be driven, is disposed so as to accomplish a clamping engagement with the clutch elements carried by the endless member.

3,469,460
PHASE DISPLACEMENT DEVICE OF TWO SHAFTS

Georges Mersch, 18 Rue Franz Liszt, Luxembourg, Luxembourg

Continuation-in-part of application Ser. No. 508,311, Nov. 17, 1965. This application Aug. 15, 1968, Ser. No. 752,830
Claims priority, application Luxembourg, Nov. 24, 1964, 47,431; Oct. 7. 1965, 49,650
Int. Cl. F16h *25/12, 29/20*
U.S. Cl. 74—57 **9 Claims**

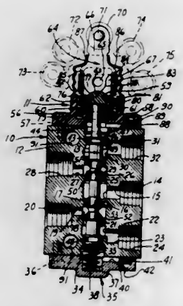


The phase relation between two concentric shafts normally rotating together is shifted, to perform a control function, by rollers on an axially slidable hub on one shaft received in helical grooves in a bell-shaped skirt fixed on the other shaft. The phase relation between the shafts is indicated by a mechanical indicator or by a photo-electric indicator.

3,469,461
CAM OPERATOR

Walter D. Ludwig, Bloomfield, Mich., assignor to Mac Valves, Inc., Oak Park, Mich., a corporation of Michigan

Filed May 11, 1967, Ser. No. 637,750
Int. Cl. F16h *21/44, 21/54, 25/18*
U.S. Cl. 74—107 **4 Claims**

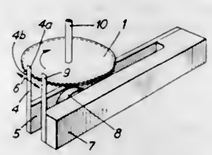


A cam operator having a pivotally mounted actuator member that carries a cam follower on the outer end thereof for engagement with a reciprocating machine slide or spindle, and a cam optionally contoured on the inner end for pushing or not pushing, as desired, an operating member, as a valve spool, when the actuator member is displaced in either direction from a central or neutral position by reciprocation, and means independent of said operating member for biasing the pivotal actuator member to a central or neutral position.

3,469,462
PAWL AND RATCHET MECHANISM DRIVEN BY VIBRATORY MEANS

Samuel Steinemann, Waldenburg, Switzerland, and Oswald Tschudin, Weil am Rhein, Germany, assignors to Institut Dr. Ing. Reinhard Straumann, A.G., Waldenburg, Switzerland

Filed Oct. 17, 1967, Ser. No. 675,869
Claims priority, application Switzerland, Oct. 17, 1966, 5,065/66
Int. Cl. F16h *27/02;* **G04b** *15/14*
U.S. Cl. 74—142 **9 Claims**

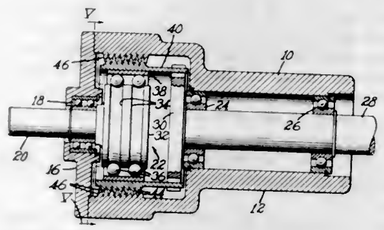


A pawl and ratchet mechanism, for operation by one or more vibratory members, is disclosed as including a ratchet wheel, preferably having sawteeth, and operated by one or more pawls. The feature of the disclosure is that the longitudinal center lines of the pawls extend substantially perpendicular to the diametric plane of the ratchet wheel, or parallel to the axis of the ratchet wheel. Each pawl comprises a relatively elongated rectangular blade rigidly attached to a vibratory member, and is so arranged that one of its narrow longitudinal edges faces in the direction of thrust, the blade being so designed that it is rigid in the direction of thrust but elastic in a direction at right angles to the plane of the thrust. Thus, the free end of the blade, which acts on the ratchet wheel, can perform elastic excursions from the position of rest, but with these excursions being only at right angles to the plane of the blade and not within or parallel to the plane of the blade.

3,469,463
FRICTIONAL DRIVE SPEED CHANGER

Shoichi Ishikawa, Yokohama-shi, Japan, assignor to United Shoe Machinery Corporation, Boston, Mass., a corporation of New Jersey

Filed Nov. 6, 1967, Ser. No. 680,884
Int. Cl. F16h *13/06, 33/02*
U.S. Cl. 74—206 **5 Claims**



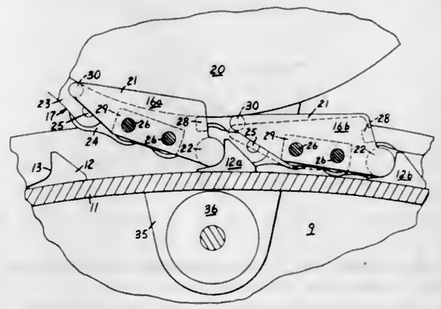
A rotary actuator employs a wave of radial deflection to mesh circumferentially extending grooved surfaces respectively formed in coaxial tubular members, one of which is a reaction element and is deflectable to a different degree than the other, at spaced circumferential localities of engagement, and thereby frictionally convert an input

speed to a changed output speed. In contrast to known toothed harmonic drive mechanisms, a minimum of only one groove per tubular member is required, successive grooves may be unequally spaced, for both members the pitch is zero, i.e., their grooves extend normal to the axis of rotation, and the drive may be impositive.

3,469,464
DRIVE MECHANISM INCLUDING CHAIN

John L. Peterson and George H. Pettis, Spokane, Wash., assignors to Atlas Spokane, Inc., a corporation of Washington

Filed June 10, 1968, Ser. No. 735,797
Int. Cl. F16h *21/62, 7/06, 7/18*
U.S. Cl. 74—221 **8 Claims**



A drive mechanism for an endless driven member wherein power is applied to equally spaced teeth on the driven member by means of dogs carried by a flexible endless chain or other support. The normal pitch of the dogs is slightly less than the pitch of the teeth on the driven member. The spacing between dogs is modified by shift of position of an engaging dog so as to match the tooth pitch during the period in which the dog engages a tooth and takes over the transfer of force to the driven member. The mechanism is designed specifically for high load applications where normal separating forces encountered with equally pitched driving and driven elements result in unacceptable structural requirements, power demands and wear.

ERRATUM

For Class 74—223 see:
Patent No. 3,469,512

3,469,465
COMPOSITE DRIVE WHEEL

John Bebbington, Jr., and Edward Cozzarin, Ithaca, N.Y., assignors, by mesne assignments, to Borg-Warner Corporation, Chicago, Ill., a corporation of Delaware

Filed Oct. 30, 1967, Ser. No. 678,832
Int. Cl. F16h *55/30, 55/12*
U.S. Cl. 74—243 **8 Claims**

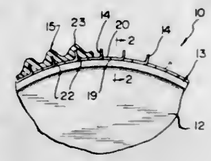


Composite sprocket and drive wheel devices are disclosed herein to provide illustrations of this invention. These wheels include a circular plate body which is stamped and provided with radially extending segments along the periphery thereof. The segments are formed into tooth roots and a plastic toothed rim is molded thereover.

3,469,466
COMPOSITE DRIVE WHEEL

Hewart H. Heathwaite, Robert H. Mead, and William T. Paul, Ithaca, N.Y., assignors, by mesne assignments, to Borg-Warner Corporation, Chicago, Ill., a corporation of Delaware

Filed Oct. 30, 1967, Ser. No. 678,833
Int. Cl. F16h *55/30, 55/12*
U.S. Cl. 74—243 **5 Claims**

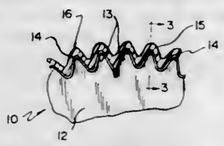


Composite sprocket and drive wheel devices are disclosed herein to provide an illustration of this invention. This wheel includes a circular plate body which is stamped and formed with a laterally extending flange along the periphery thereof. Portions of the flange provide tooth roots over which a plastic toothed rim is molded.

3,469,467
COMPOSITE DRIVE WHEEL

Thomas R. Seaman, Baldock, England, assignor, by mesne assignments, to Borg-Warner Corporation, Chicago, Ill., a corporation of Delaware

Filed Oct. 30, 1967, Ser. No. 678,800
Int. Cl. F16h *55/12, 55/30*
U.S. Cl. 74—243 **1 Claim**

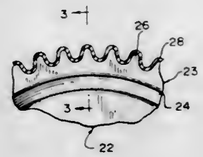


A composite drive wheel device is disclosed herein to provide an illustration of this invention. This wheel provides a stamped circular plate having a complemental peripheral tooth root ribbon secured to said teeth with a plastic toothed rim which may be molded over the ribbon tooth roots.

3,469,468
COMPOSITE DRIVE WHEEL

Edward Cozzarin, Ithaca, Emery Nemeth, Trumansburg, and William T. Paul, Ithaca, N.Y., assignors, by mesne assignments, to Borg-Warner Corporation, Chicago, Ill., a corporation of Delaware

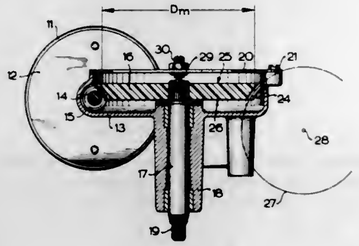
Filed Oct. 30, 1967, Ser. No. 678,801
Int. Cl. F16h *55/30, 55/12*
U.S. Cl. 74—243 **3 Claims**



Composite drive wheel devices are disclosed herein to provide illustrations of this invention. These wheels

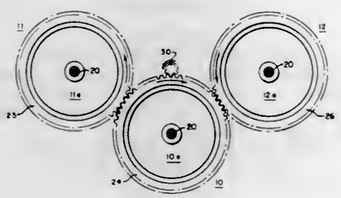
include stamped circular plates having tooth roots on the periphery thereof with a plastic toothed rim molded over the tooth roots.

3,469,469
WORM GEARING WITH ANTI-BACKLASH MEANS
Karl-Heinz Burger, Buhl, Germany, assignor to Robert Bosch GmbH, Stuttgart, Germany
Filed Apr. 24, 1968, Ser. No. 723,679
Claims priority, application Germany, May 5, 1967, B 92,364
Int. Cl. F16h *55/18, 55/22, 1/16*
U.S. Cl. 74—409 **12 Claims**



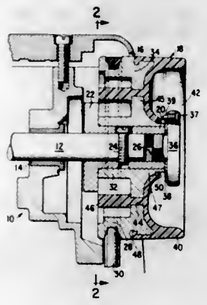
A drive arrangement for windshield wipers includes a rotatable worm gear and a rotatable worm wheel arranged adjacent to the worm gear. The worm wheel is mounted with slight freedom of axial movement toward and away from the worm gear and has one axial side which faces the latter, and an other axial side facing away from the worm gear. An annulus of gear teeth is provided on the one side of the worm wheel meshing with the worm gear and continuously diverging in direction from the one towards the other side of the worm wheel. Biasing means maintains the worm wheel in mesh with the form gear by preventing the movement of the worm wheel in axial direction away from the worm gear.

3,469,470
NOISE REDUCTION OF GEAR TRAIN
Edouard Gaudry, St. Laurent, Quebec, Canada, assignor to Electrolux Corporation, Old Greenwich, Conn., a corporation of Delaware
Filed Oct. 24, 1967, Ser. No. 677,662
Int. Cl. F16h *55/14, 55/12;* **A63d** *5/10*
U.S. Cl. 74—443 **3 Claims**



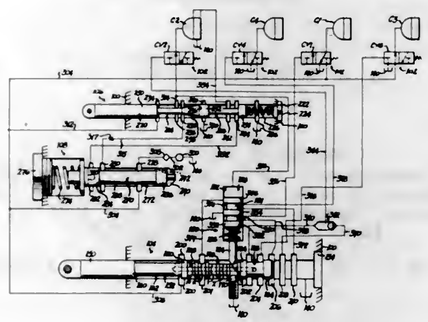
A gear train for a floor polisher or the like apparatus having a steel pinion gear meshed with a nylon gear wheel which is in turn meshed with a pair of "Texin" gear wheels. The gear wheels each have an aluminum insert carrying a molded tire having peripheral gear teeth. One gear tire is constituted of nylon and the remaining pair of molded tires are constituted of "Texin 355D" material (a urethane elastomer resin produced by Mobay Chemical Co.). In addition the nylon gear tire is "normalized" by immersion in water at 160° F. for four hours.

3,469,471
SEWING MACHINE HANDWHEEL
William Watson, Duntocher, Scotland, assignor to The Singer Company, New York, N.Y., a corporation of New Jersey
Filed Sept. 13, 1967, Ser. No. 667,552
Int. Cl. G05g *1/12*
U.S. Cl. 74—552 **4 Claims**



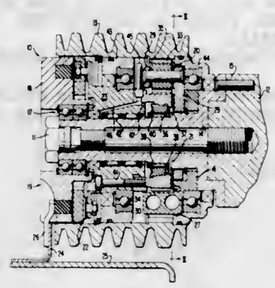
A handwheel for a sewing machine is described as being so formed that, when embodied in a sewing machine, the cost of manufacturing such machine is lessened. The handwheel in question has the necessary moment of inertia and the heavy duty requirements of a painted casting, but is substantially aesthetically damage-proof. The handwheel of the invention integrates a plastic exterior with a pulley casting, doing so in a way that not only causes the plastic to adhere directly to the pulley, but in a way that precludes cracking of the plastic as it grips the pulley.

3,469,472
TRANSMISSION CONTROL
John E. Bislew, Racine, Wis., assignor to J. I. Case Company, Racine, Wis., a corporation of Wisconsin
Filed Jan. 26, 1967, Ser. No. 612,013
Int. Cl. F16h *3/08, 37/00;* **F16d** *67/04*
U.S. Cl. 74—761 **15 Claims**



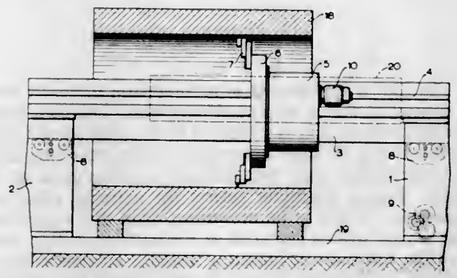
A vehicle transmission having a main speed range unit combined with a hydraulic transmission unit for varying the speed in any range. A valve system is provided for regulating the hydraulic unit and includes a modulating valve for "inching" or stopping the vehicle in any range and a foot pedal control for automatically conditioning the hydraulic unit in the slowest forward speed of the range after stopping or "inching."

3,469,473
DRIVE FOR AUXILIARY UNITS OF AN INTERNAL COMBUSTION ENGINE, ESPECIALLY IN MOTOR VEHICLES
Hans-Joachim M. Förster, Stuttgart-Riedenberg, and Wolfgang Zaiser, Althutte Kreis Welzheim, Germany, assignors to Daimler-Benz Aktiengesellschaft, Stuttgart-Riedenberg, Germany
Filed Sept. 25, 1967, Ser. No. 670,259
Claims priority, application Germany, Sept. 27, 1966, D 51,183
Int. Cl. F16h *3/44, 57/10, 3/74*
U.S. Cl. 74—781 **18 Claims**



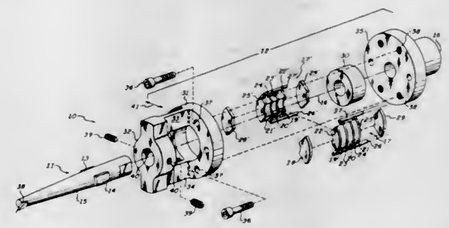
A drive arrangement for the auxiliary aggregates of an internal combustion engine, especially in motor vehicles, which comprises between the belt pulley and the end of the crankshaft, a planetary gear transmission adapted to operate as a direct drive transmission with rotational speeds of the engine above a certain speed and which provides an overdrive when the speed of the engine drops below the predetermined rotational speed by the engagement of a brake holding fast the reaction member of the planetary gear; the planetary gear transmission is so constructed that it is accommodated on the inside of the pulley and forms a structural unit, closed with respect to the outside, so as to obviate the need for external lubrication. The planet carrier serves as driving member and carries planet gear wheels in meshing engagement with a ring gear connected to the pulley and a sun gear which is either connected by way of a free-wheeling device with the crankshaft or is held fixed upon engagement of the brake when the engine drops below a certain speed.

3,469,474
HORIZONTAL BORING MACHINE FOR MACHINING THE INTERIOR OF HOUSINGS
Hans O. Wagner, Dusseldorf, Germany, assignor to Schiess Aktiengesellschaft, Dusseldorf, Germany
Filed July 21, 1967, Ser. No. 655,053
Claims priority, application Germany, July 21, 1966, Sch 39,294
Int. Cl. B23b *39/00, 29/08*
U.S. Cl. 77—3 **7 Claims**



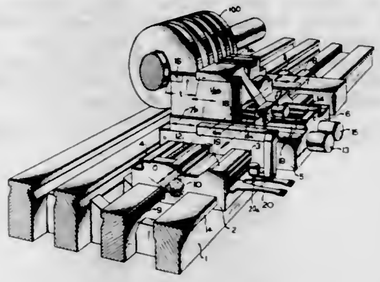
The present invention relates to a horizontal boring machine for machining the interior of large, preferably one-piece generator housings, turbine housings or the like, which comprises two stands between which the housing to be bored can be counted, through which housing the boring head is to be moved.

3,469,475
APPARATUS FOR MAINTAINING POSITIONAL STABILITY BETWEEN A TOOL MEMBER AND A WORKPIECE
Gordon J. Watt, Hopkins, Minn., assignor to Sperry Canada Limited, Toronto, Ontario, Canada
Filed Apr. 14, 1967, Ser. No. 631,034
Claims priority, application Canada, Feb. 27, 1967, 983,916
Int. Cl. F16h *5/40, 25/12, 25/18*
U.S. Cl. 77—4 **7 Claims**



A material removal control apparatus for use in a machine tool system to provide dynamic positional stability of a work contacting member relative to a workpiece so that machining operations may be performed to tolerances on the order of microinches, the positional stability being provided by an actuator mechanism responsive to a signal from a transducer which is sensitive to relative motion between the workpiece and work contacting member.

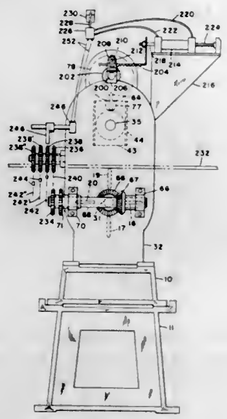
3,469,476
TURNING LATHE
Wilhelm Engelbrecht, Dortmund-Kirchhorde, Germany, assignor to Hoesch Maschinenfabrik Deutschland AG, Dortmund, Germany
Filed Apr. 13, 1967, Ser. No. 630,603
Claims priority, application Germany, Nov. 26, 1966, H 61,112
Int. Cl. B23b *3/28*
U.S. Cl. 82—14 **8 Claims**



A programmable heavy-duty rough-turning or finish-turning lathe wherein the main slide is arranged to reciprocate along the bed but is normally stationary. The main slide supports a first carriage which, in turn, supports a second carriage for one or more tool holders. The main slide and the first carriage are reciprocable in parallelism with the axis of the workpiece, and the second carriage is reciprocable at right angles to the axis

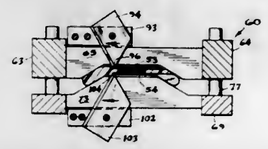
of the workpiece. The drives for the two carriages comprise motor-driven feed screws and the ways for the two carriages are armored with polished plates of hardened metal.

3,469,477
BOARD PERFORATOR AND CUTTER
George D. Welch and Leonard L. Donahe, Fort Dodge, Iowa, assignors to National Gypsum Company, Buffalo, N.Y., a corporation of Delaware
Filed May 10, 1967, Ser. No. 637,496
Int. Cl. B26f *1/00;* **B26d** *9/00*
U.S. Cl. 83—8 **1 Claim**



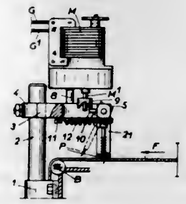
Relative to a board perforator and cutter, as disclosed in U.S. Patent 2,345,072, there is disclosed herein an improvement wherein the lowering and raising of the axis of the upper rotary knife blade, for respectively cutting a board or perforating a board passing between it and a lower knife blade, is accomplished by the sequence of advancing or retracting an air cylinder piston and an attached spur gear each, which rotates, approximately 180° one way or the other, a spur gear, rotating a cam, and causing lowering or raising of the two slidable, spring loaded slide plates in which the upper knife rotor is journalled.

3,469,478
APPARATUS FOR FABRICATING AUTOMATIC CLOSURES
Albert M. Herzig, 9565 Wilshire Blvd., Beverly Hills, Calif. 90212, and Benjamin David Menkin, 11527 W. Washington Blvd., Los Angeles, Calif. 90066
Original application Jan. 25, 1967, Ser. No. 611,639, now Patent No. 3,426,629, dated Feb. 11, 1969. Divided and this application Nov. 12, 1968, Ser. No. 774,717
Int. Cl. B26d *3/08*
U.S. Cl. 83—9 **4 Claims**



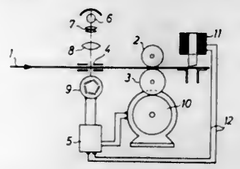
Apparatus for making cuts and score lines in the material of the closure means of a squeeze container to provide a tear-off strip. Cuts are made through the side edges of the material aligned with score lines in the surface of the two layers of material, heat sealed together. A tool or die is provided for effectively making these cuts and score lines in a simple operation. The tool provides dies for holding the material of the closure means so as to deform side portions of it out of the plane of the intermediate part. Upper and lower knives or cutting edges are then moved transversely so that one knife cuts completely through the deformed portions to provide the side cuts and the knives to form the scores in the upper and lower surfaces. Modified forms of die configurations are provided for deforming material out of the plane of the closure means.

3,469,479
METHODS AND APPARATUS FOR DIVIDING THERMO-FUSIBLE SYNTHETIC PLASTIC MATERIALS
François Calemard, 15 Rue Buffon, Saint-Etienne, Loire, France
Filed Mar. 31, 1967, Ser. No. 627,368
Claims priority, application France, Apr. 29, 1966, 9,452
Int. Cl. B26d *7/10*
U.S. Cl. 83—16 **10 Claims**



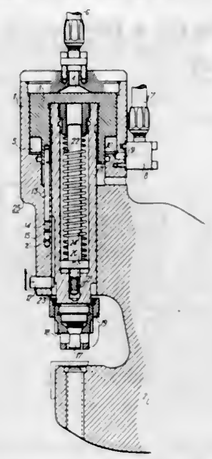
Method and apparatus for dividing thermo-fusible synthetic plastic material by a heated pin which is pivotally reciprocated in the direction of the line of cut during passage of the material past the pin.

3,469,480
METHOD AND SYSTEM FOR AUTOMATIC DETERMINATION OF THE LOCATION OF THE FRAME LINES DIVIDING A FILM STRIP INTO CONSECUTIVE FRAMES
Heinrich Nassenstein, Hegelstrasse 6, Leverkusen, Germany; Hubert Dedden, Johannisberg 39, Leichlingen, Germany; and Rudolf Paulus, Perlacher Strasse 19, Munich, Germany
Filed Feb. 27, 1967, Ser. No. 618,894
Claims priority, application Germany, Feb. 25, 1966, A 51,683
Int. Cl. B26d *5/34*
U.S. Cl. 83—50 **29 Claims**



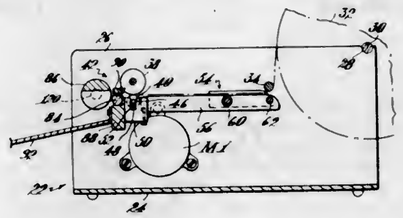
The film is transported in a lengthwise direction from a measuring station to a marking station. The light transmissivity of the film is measured at the measuring station by measuring the light transmitted through the film. Since this transmitted light will have an extreme value at the frame lines, a computer selects the extreme value and generates a signal at its occurrence such that a punching mechanism will be activated at the marking station when the film has been advanced a distance corresponding to the distance between the two stations, unless the punching mechanism is locked because the computer has determined that the picture is unexposed.

3,469,481
HYDRAULIC PUNCHING MACHINE
Francis J. Cloup, 91 Rue de Seine, Paris, France
Filed Dec. 12, 1966, Ser. No. 600,992
Claims priority, application France, Dec. 11, 1965, 41,889
Int. Cl. B26f *1/14*
U.S. Cl. 83—140 **2 Claims**



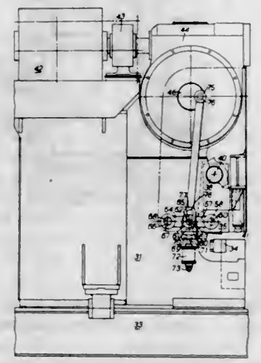
A hydraulic punching machine for punching metal sheets in which knocks and shocks produced by punching are automatically eliminated. This is achieved in a hydraulic punching machine in which the upper face of the hydraulic piston is subjected to a high hydraulic pressure by supplying means which apply a permanent damping fluid pressure to the lower face of the piston, said damping pressure being lower than the high pressure which is applied to the upper face of the piston. The means for applying this permanent pressure includes a modification of the fluid chamber of the machine. The damping pressure fluid penetrates into said chamber which contains the lower part of the piston through an opening having a cross section small enough to cause the necessary pressure loss between the upper face and the lower face of the piston.

3,469,482
MACHINE FOR CUTTING STRIP MATERIAL
Richard G. Lee, Weston, Mass., assignor, by mesne assignments, to Alves Photo Service, Inc., Braintree, Mass., a corporation of Massachusetts
Filed Nov. 30, 1966, Ser. No. 597,920
Int. Cl. B26d *5/32*
U.S. Cl. 83—210 **9 Claims**



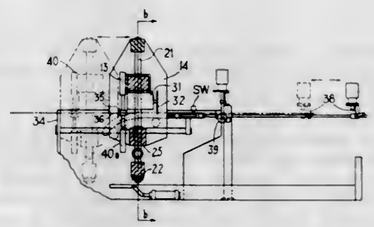
A machine embodying a cutter, feed rolls for advancing a strip of processed photographic film to the cutter for cutting between successive prints and/or transparencies, a circuit including strip feeding means and strip cutting means, and sensing means responsive to indicia on the strip to control the circuit so that the cutting takes place between successive prints or transparencies.

3,469,483
PLATE SIDE TRIMMING SHEAR
David Hobson, Sheffield, and Derek Hattersley, Dronfield, near Sheffield, England, assignors to Davy and United Engineering Company Limited, Sheffield, England
Filed Oct. 4, 1966, Ser. No. 584,209
Claims priority, application Great Britain, Oct. 6, 1965, 42,401/65
Int. Cl. B26d *5/08, 5/20*
U.S. Cl. 83—216 **10 Claims**



This disclosure relates to a shear of the type used to side trim metallic plate. The shear comprises a pair of blade holders, each having a cooperative blade. The upper blade holder is reciprocated towards and away from the other blade holder, which is stationarily mounted. The upper blade holder is carried in a pivotal guide to which there is connected a backing-off device. The backing-off device is made up of a first link having one end pivotally connected to the guide and the other end to a second link, which is pivotally carried by the shear frame. A connecting rod is also provided, which is connected to the links and the main drive of the shear.

3,469,484
FLYING CUTTER WITH CAMWAY CONTROLLED ACTUATING MEANS
Lucien Diolot, Neuilly-sur-Seine, France, assignor to Societe Nouvelle Spiden, Paris, France
Filed Feb. 3, 1967, Ser. No. 613,915
Claims priority, application France, Feb. 7, 1966, 48,684
Int. Cl. B26d *1/56;* **B23d** *25/16*
U.S. Cl. 83—294 **6 Claims**



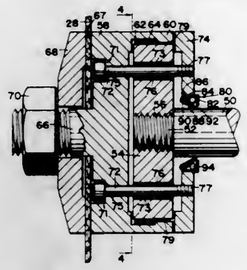
An apparatus for cutting lengths from advancing sheet material by a transversely movable rotary disc supported on a longitudinally movable carriage. The advancing sheet

material carries with it the carriage and after a predetermined period the rotary disc is caused to move transversely to cut a sheet of material to length.

3,469,485
OSCILLATING CUT-OFF MACHINE

Ralph L. Avery, Buffalo, N.Y., assignor to The Carborundum Company, Niagara Falls, N.Y., a corporation of Delaware

Filed Jan. 3, 1967, Ser. No. 606,719
Int. Cl. B23d *19/00;* **B26d** *1/14*
U.S. Cl. 83—491 **11 Claims**

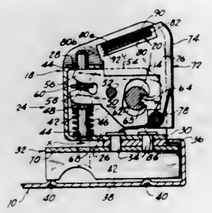


A vibrating spindle assembly for a cut-off tool having a clearance space between a drive member and the radial flange of a driven member to provide radial oscillatory movement therebetween. Clearance shims may be selectively employed to adjust this clearance space. A strip of yieldable material is disposed in the clearance space to maintain the drive and driven members in coaxial alignment when the tool is not engaged with a workpiece. A dust-proof seal assembly prevents foreign matter from entering into the spindle assembly.

3,469,486
PAPER PUNCHING DEVICE

Hildaur L. Neilsen, 2 Juniper St., Metuchen, N.J. 08840

Filed Sept. 27, 1967, Ser. No. 670—859
Int. Cl. B26f *1/02*
U.S. Cl. 83—522 **11 Claims**

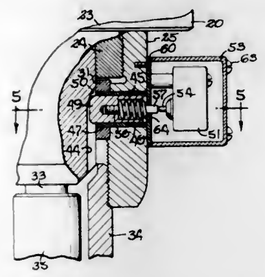


A horizontal, longitudinally grooved rod has a handle for manual actuation thereof and plural punch assemblies are slidably carried upon said rod for movement to adjusted relative positions. Each punch assembly includes a frame, a punch member, and a lever coacting between the rod's groove and the punch member to actuate the latter. A notched, elongate plate extends through slots in the punch member's frames and said assemblies include yieldable detents, releasably engageable in notches of said plate to hold said assemblies in adjusted relative positions. Said groove is interrupted at one or more points to deactivate the mentioned lever coaction with a punch member in a punch assembly located at one of said points. The plate bears indicia thereon indicating the location of said deactivation points and also indicating commonly used punch spacing.

3,469,487
PRESS WITH FLUID-OPERATED ACTUATOR

Theodore F. Brolund, Rockford, Ill., assignor to W. A. Whitney Corporation, Rockford, Ill., a corporation of Illinois

Filed Oct. 4, 1967, Ser. No. 672,831
Int. Cl. B26d *5/12*
U.S. Cl. 83—527 **8 Claims**

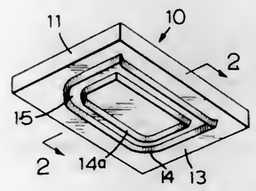


For reciprocating a tool element of a punch press, a fluid-operated actuator includes a cylinder, a piston slidable up and down in the cylinder in response to the admission of pressure fluid alternately into opposite ends of the cylinder, and a ram anchored at one end to the piston and attached at its opposite end to the tool element. A key slidable radially in a sleeve surrounding and guiding the ram holds the latter in a fixed angular position relative to the sleeve and is slid outwardly of the sleeve by the ram as the piston approaches the bottom of the cylinder. Movement of the key is detected by a limit switch which controls the flow of pressure fluid to the cylinder and commands reversal of the direction of movement of the piston before the piston engages the bottom of the cylinder and causes an overload of the components of the fluid actuating system of the actuator. The key may be lengthened or shortened so as to actuate the switch at any predetermined point in the downstroke of the piston thereby to enable selective adjustment of the length of stroke of the tool element.

3,469,488
STENCILLING DIE

Anthony M. Gaspari, 3181 8th Ave., Chomedy, Montreal, Quebec, Canada

Continuation-in-part of application Ser. No. 649,496, June 28, 1967. This application July 22, 1968, Ser. No. 752,115
Int. Cl. B26d *3/08;* **B26f** *1/14*
U.S. Cl. 83—652 **7 Claims**



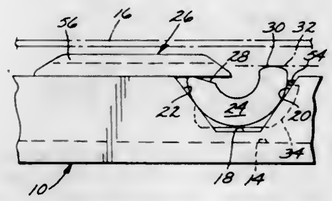
This invention relates to a die for cutting indicia through soft, abrasion-resistant material, especially that having a harder plastic film backing sheet which is not intended to be cut. The die is sufficiently stiff and hard to cut through the soft, abrasion-resistant material, but not so hard or stiff as to readily cut through the harder plastic film backing sheet.

The invention also relates to a process for using such die to cut out stencils from such soft, abrasion-resistant material having a hard backing sheet.

3,469,489
SYSTEM OF MOVABLE FRETS FOR STRINGED MUSICAL INSTRUMENT

Carl Barth, 2486 E. Skyline Drive, La Habra, Calif. 90631

Filed May 27, 1968, Ser. No. 732,227
Int. Cl. G10d *3/06*
U.S. Cl. 84—314 **9 Claims**

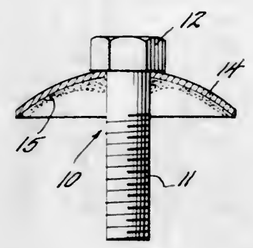


A system of movable frets for incorporation in the fingerboard of a stringed musical instrument, and in which each fret is independently movable toward its adjacent string by displacement of an actuator located adjacent the string and automatically operated by the playing finger of the musician on usual depression of the string toward the fret.

3,469,490
SELF-SEALING MECHANICAL FASTENER

Malcolm B. Pearce, Jr., Durham, Conn., assignor to Loctite Corporation, Newington, Conn., a corporation of Connecticut

Filed Oct. 18, 1967, 676,336
Int. Cl. F16b *29/00, 19/04, 43/00*
U.S. Cl. 85—1 **4 Claims**

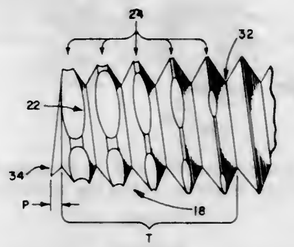


Self-sealing mechanical fasteners including a head portion having a flattenable or collapsible dish-shaped portion and a liquid sealant retained in the hollow of the dished head, preferably via a pressure rupturable shell. In use, the dished head seals around its periphery against the surface of the item to be fastened before the fastener is completely seated in place, and upon further tightening the dished portion flattens, and the liquid sealant is released from the shell and forced under pressure into any clearance around the fastener.

3,469,491
SELF-TAPPING SCREW

Robert J. Munsey, Verona, Pa., assignor to Eaton Yale & Towne Inc., Cleveland, Ohio, a corporation of Ohio

Filed May 10, 1966, Ser. No. 549,018
Int. Cl. F16b *33/02;* **B23g** *9/00;* **B21h** *3/02*
U.S. Cl. 85—47 **3 Claims**

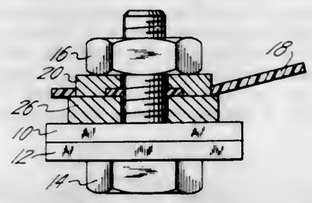


A self-tapping screw including head and shank portions for securing members together comprising a continuous threaded tapping portion at one end of the shank portion. The tapping portion is tapered with concave threaded relief portions, polygonal in radial cross section, and has a continuous incomplete thread extending to the end of the body member. The thread of the tapping portion has a plurality of noncutting lobular thread turning portions intermediate the threaded relief portions for swaging threads in the worked material to thereby obtain improved securing power.

3,469,492
PRE-LOAD INDICATOR

Warren F. Dahl, Philadelphia, Pa., assignor to Standard Pressed Steel Co., Jenkintown, Pa., a corporation of Pennsylvania

Filed July 11, 1967, Ser. No. 652,543
Int. Cl. F16b *31/02;* **G01d** *21/00*
U.S. Cl. 85—62 **5 Claims**



A method and device for indicating a predetermined load on a fastener wherein a piece of extrudable sheet material is placed under the reacting surface of a threaded fastener, such as a bolt or nut, so that when the desired value of induced load is reached the sheet material will be extruded from under the seating surface and sheared off.

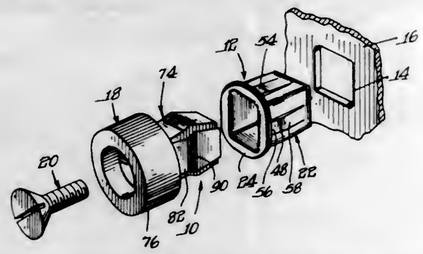
3,469,493
SEALING DEVICE

Julian V. Fisher, Carpentersville, Ill., assignor to Illinois Tool Works Inc., Chicago, Ill., a corporation of Delaware

Filed Feb. 14, 1968, Ser. No. 705,368
Int. Cl. F16b *33/04, 19/00, 13/04*
U.S. Cl. 85—72 **7 Claims**

There is disclosed a resilient plastic cup-like device having a hollow body portion insertable into an aperture in a workpiece and a head portion for overlying the outer

surface of the workpiece and sealing the aperture. The device is adapted to receive expandable shank of an

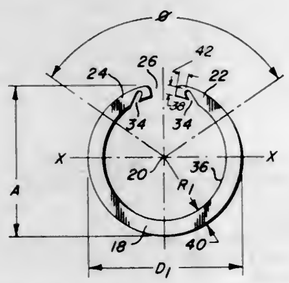


anchor or fastener member and to be expanded thereby for securing the assembly within the workpiece aperture.

3,469,494
INTERNAL RETAINING RING

Nicholas D. Frailly, Massillon, Ohio, assignor to Eaton Yale & Towne Inc., Cleveland, Ohio, a corporation of Ohio

Filed Dec. 12, 1966, Ser. No. 600,974
Int. Cl. F16b *21/00*
U.S. Cl. 85—8.8 **5 Claims**



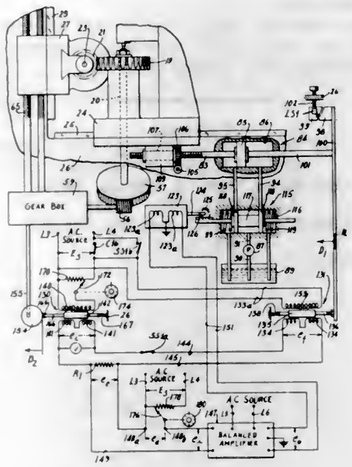
A retaining ring of uniform cross-section for insertion into a groove within a bore for axial placement or retention of a workpiece within the bore. The ring having an elliptical free configuration for obtaining ring circularity less than bore diameter when the ring is compressed for insertion into the bore and further having notches near the free ends of the ring for ring tool reception.

3,469,495
HOBBING MACHINE FOR CUTTING SPECIAL GEAR TOOTH FORMS SUCH AS CROWNED OR TAPERED TEETH

Peter W. Kelly, Rockford, Ill., assignor to Barber-Colman Company, Rockford, Ill., a corporation of Illinois

Filed Dec. 20, 1967, Ser. No. 692,032
Int. Cl. B23f *5/22, 5/24*
U.S. Cl. 90—4 **19 Claims**

For generating special types of gear tooth forms such as crowned or tapered teeth on a cylindrical workpiece while the teeth are being cut by a hob, a servo-controlled hydraulic actuator feeds the workpiece continuously along its radius to positions which vary (a) as a predetermined function of, and (b) at a predetermined ratio with, changes in the position of the hob as the latter is fed axially of the workpiece, the function being commanded by a rotatably driven cam which controls operation of the actuator in timed relation with the axial feed of the hob and which is selectively adjustable to vary the function and cause the generation of different types of tooth forms. To enable the use of the same cam for the production of many different shapes and sizes of specially formed teeth of any one type, the function commanded by the cam is converted into an electrical signal providing ultimate control of the actuator and capable of being selectively modified not only to cause changes in the posi-

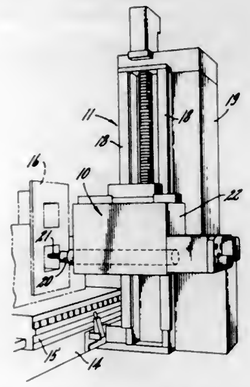


tion of the workpiece to occur at various selected ratios with respect to changes in the position of the hob but also to change the amount of material removed from the workpiece by the hob at any selected ratio.

3,469,496
QUILL SUPPORT FOR MACHINE TOOL SPINDLES

Walter L. McCann and Earl E. Johnson, Fond du Lac, Wis., assignors to Giddings & Lewis Inc., a corporation of Wisconsin

Filed Nov. 18, 1966, Ser. No. 595,504
Int. Cl. B23c *9/00*
U.S. Cl. 90—14 **9 Claims**



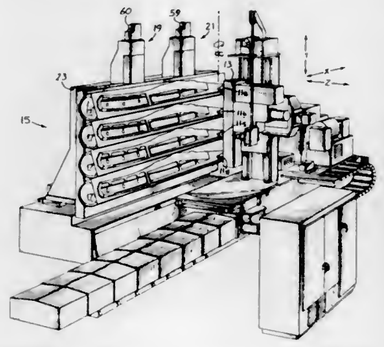
A headstock assembly having a quill type spindle support mounted in the headstock on hydrostatic bearings which permit substantially friction-free axial movement of the quill while providing rigid radial support capable of maintaining accurate axial alignment of the quill and spindle when the quill is overhanging said bearing support by as much as one-half the length of the quill and the spindle is axially extended with respect to the quill. To facilitate even more accurate support and axial alignment of the extended quill and spindle, the quill has disposed at one end a depending guide key which is in a hydrostatic bearing relationship with guide surfaces in

the headstock, and a hydraulic clamp is provided to rigidly secure the quill feed screw when the quill is in its extended position.

3,469,497
MULTIPLE TABLE SWIVELING WORK SUPPORT

Walter L. McCann, Fond du Lac, Wis., assignor to Giddings & Lewis, Inc., Fond du Lac, Wis., a corporation of Wisconsin

Filed Jan. 3, 1968, Ser. No. 695,429
Claims priority, application Great Britain, May 2, 1967, 20,397/67
Int. Cl. B23c *7/00*
U.S. Cl. 90—58 **14 Claims**

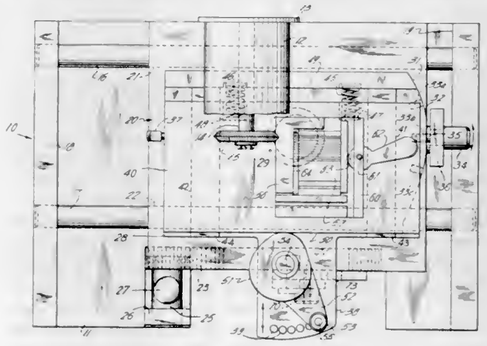


A series of horizontally extending work tables are pivotably mounted in a vertical array upon a pair of laterally spaced support columns mounted on a vertical support surface. Steel bands anchored on slides moving along the support columns swival the tables in unison. Two layers of shielding are provided against contaminants, an outer layer of rubber sheets attached to the edges of the tables, and an inner layer formed of a set of recessed trays and intersecting walls.

3,469,498
CODE KEY CUTTER DEVICE

Norman R. Adler, Fitchburg, Raphael W. Godin, Leominster, and Henry J. Le Blanc, Fitchburg, Mass., assignors to Ilco Corporation, Fitchburg, Mass., a corporation of Massachusetts

Continuation-in-part of applications Ser. No. 663,024 and Ser. No. 663,083, Aug. 24, 1967. This application Aug. 24, 1967, Ser. No. 663,094
Int. Cl. B23c *1/16*
U.S. Cl. 90—13.05 **6 Claims**

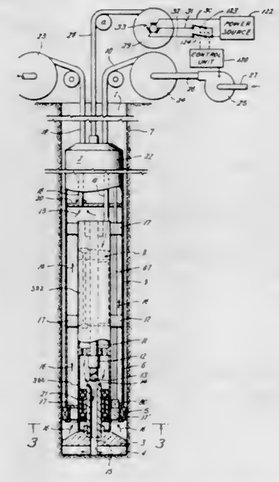


A code key cutter for forming cuts of different heightwise extents, said cutter, in addition, being capable of forming the cuts at an angle as respects the plane described by the key blank itself.

3,469,499
DRILLING SYSTEM

Clyde E. Bannister, 2727 Carolina Way, Houston, Tex. 77005

Original application Nov. 9, 1964, Ser. No. 409,735, now Patent No. 3,381,766, dated May 7, 1968. Divided and this application July 31, 1967, Ser. No. 668,979
Int. Cl. F01c *1/00, 9/00*
U.S. Cl. 91—58 **6 Claims**

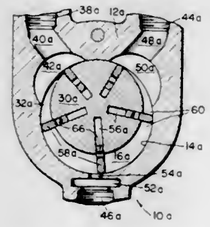


The present invention in one embodiment is arranged to minimize the force required to operate the inlet valves in a fluid motor. A relief hole is provided in each of the inlet valve closure members and a closure means is provided for each relief hole. The closure means is removed by a valve rod prior to unseating the valve closure member. Each valve rod has lengthwise spaced abutments that successively jar and unseat the closure means and then the inlet closure member, to alternately permit fluid to enter the fluid through the inlet valves.

3,469,500
VANE-TYPE FLUID MOTOR

John G. Lutz, London, England, and Emanuel G. Spyridakis, Belle Mead, N.J., assignors to Ingersoll-Rand Company, New York, N.Y., a corporation of New Jersey

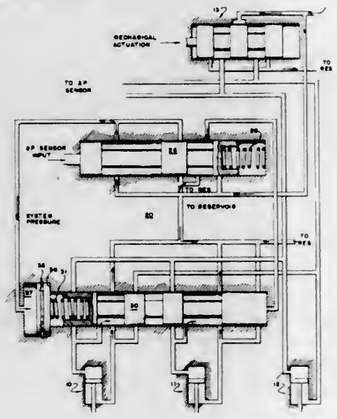
Filed Nov. 6, 1967, Ser. No. 680,859
Int. Cl. F01c *1/00;* **F04c** *1/00*
U.S. Cl. 91—121 **6 Claims**



A vane-type fluid motor provided with normally closed passages which, upon predetermined vane wear, cause sufficient pressurized fluid to pass at least one of the vanes whereby the speed of the rotation of the rotor, and

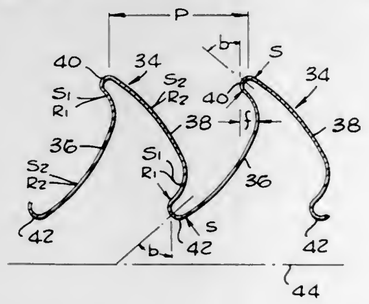
hence the power of the motor, is substantially reduced to denote such vane wear. In one embodiment, the passages are formed in the rotor in communication with the vane slots and are normally closed by the vanes. In another embodiment, the passages are formed through the vanes and normally closed by the rotor.

3,469,501
BYPASS SYSTEM FOR CONTROL SURFACE ACTUATOR CYLINDERS
Ralph E. Middleton, Bremerton, Wash., assignor to the United States of America as represented by the Secretary of the Army and/or the Administrator of the Federal Aviation Agency
Filed Feb. 9. 1968, Ser. No. 706,747
Int. Cl. F15b *13/06*
U.S. Cl. 91—411 **2 Claims**



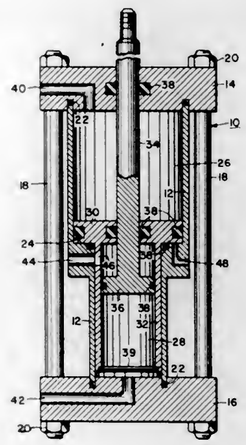
This invention relates to hydraulic operation of control surfaces on aircraft and more particularly to a method and apparatus for bypassing parallel actuator cylinders for a control surface responsive to the power requirement. By more efficient use of multiple actuators the bypass will operate to reduce the hydraulic horsepower requirement for displacement of the control surface.

3,469,502
BELLOWS
Robert I. Gardner, 9750 Amestoy Ave., Northridge, Calif. 91324
Filed Feb. 9, 1967, Ser. No. 614,901
Int. Cl. F01b *19/04;* **F16j** *3/00;* **B23p** *15/28*
U.S. Cl. 92—34 **7 Claims**



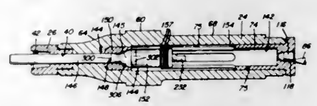
A flexible bellows characterized by a nesting convolution contour and a relatively large deflection ratio on the order of 20 to 30 or higher.

3,469,503
DOUBLE STROKE CYLINDER
Meryle D. W. Adler, Painted Post, Joseph Halderman, Jr., Corning, and Lawrence A. Pauls, Horseheads, N.Y., assignors to Corning Glass Works, Corning, N.Y., a corporation of New York
Filed Oct. 16, 1967, Ser. No. 675,604
Int. Cl. F01b *7/16, 7/10*
U.S. Cl. 92—62 **2 Claims**



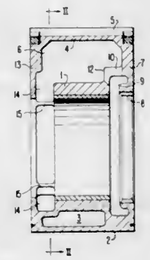
A fluid-operated cylinder construction having a floating piston positioned so as to accurately stop the travel of a piston rod in a predetermined intermediate position between a fully extended and fully retracted position.

3,469,504
IMPACT DISSIPATING DEVICE
Roy G. Neighorn, Portland, Oreg., assignor to Omark Industries, Inc., Portland, Oreg., a corporation of Oregon
Continuation of application Ser. No. 554,610, Apr. 19, 1966, which is a continuation of application Ser. No. 304,463, Aug. 26, 1963. This application Dec. 14, 1967, Ser. No. 716,676
Int. Cl. F01b *11/02;* **F16j** *1/00*
U.S. Cl. 92—85 **4 Claims**



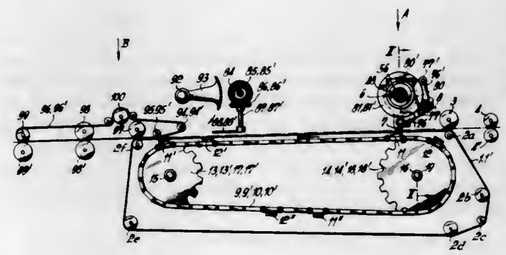
A captive piston having a hard, enlarged head, a hard, reduced ram portion and a ductile tapered portion is adapted to have the tapered junction portion extruded by a tapered stop when the piston is overdriven. The bore of the barrel is slightly enlarged just beyond the stop and is closer fitting in a guide portion (**38**). This enlarged portion of the barrel bore permits slight expansion of extruded portions of the junction portion so that the piston is reusable. A headed power plug (**74**) has spring fingers frictionally engaging the piston to withdraw the piston from the barrel when the power plug is withdrawn from the barrel. The breech portion of the tool is removably joined to the barrel by a hinge ring (**190**) and a hinge shaft (**202**) splined to the breech to permit pulling the breech portion away from the barrel after the hinge ring is rotated on the barrel. The hinge shaft (**202**) also permits rotation of the breech portion to a position out of alignment with the barrel after the breech portion has been pulled away from the barrel.

3,469,505
POLYGONAL PISTON FOR A ROTARY PISTON INTERNAL COMBUSTION ENGINE
Wolf-Dieter Bensinger, Stuttgart-Riedenberg, Germany, assignor to Daimler-Benz Aktiengesellschaft, Stuttgart-Unterturkheim, Germany
Filed Sept. 5, 1967, Ser. No. 665,398
Claims priority, application Germany, Sept. 7, 1966, D 51,042
Int. Cl. F16j *1/00;* **F02b** *55/06*
U.S. Cl. 92—177 **22 Claims**



A polygonal piston for a rotary piston internal combustion engine, particularly of trochoidal construction, which is provided with closed chambers underneath the piston flanks and cooling chambers arranged in the piston corners; the piston is additionally provided with apertures on both sides of the hub within the area of the cooling chambers so as to enable the cooling medium to enter and leave the cooling chambers, thereby effectively cooling the piston corners.

3,469,506
BOTTOM CREASING AND CLOSING APPARATUS IN MACHINES FOR MAKING OPEN, CROSSED-BOTTOM SACKS
Willi Stork, Tecklenburg, Germany, assignor to Windmoller & Holscher, Lengerich, Westphalia, Germany
Filed Mar. 21, 1967, Ser. No. 624,815
Claims priority, application Germany, Apr. 2, 1966, W 41,281
Int. Cl. B31b *1/54, 39/04*
U.S. Cl. 93—27 **9 Claims**



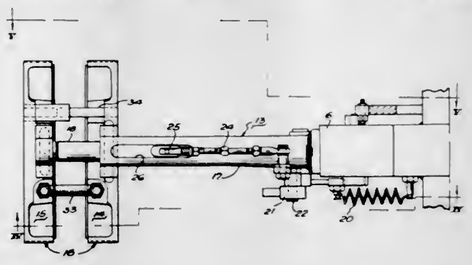
The workpiece is acted upon by creasing devices while it is moved along a substantially flat path by conveyor elements, which consist only of creasing grippers, which cooperate with creasing knives to form the leading and trailing bottom creases. The grippers grip the workpieces at the bottom creases and move them under the closing tools.

3,469,507
LID CONSTRUCTION AND METHOD OF MANUFACTURING IT
John B. West, Pikesville, Md., assignor to Maryland Cup Corporation, Owings Mills, Md., a corporation of Maryland
Filed July 21, 1967, Ser. No. 655,096
Int. Cl. B31d *17/60*
U.S. Cl. 93—39.1 **5 Claims**



A cardboard lid is made by joining the flange of a disc to an overlapping and beaded marginal portion of a cylindrical member with glue between the outer edge of the flange and the inner wall of the marginal portion. The glue, typically, may be applied by placing a nozzle on the inside of the cylinder and rotating the cylinder relative to the nozzle as the glue is discharged therethrough. This places the glue between surfaces which are conventionally not printed or treated in a way to adversely affect the adhesion of the glue and permits the use of less cardboard material.

3,469,508
APPARATUS FOR FORMING GLUED OR COATED FOLDING BOX STOCK
Heinz Klapp, Schwelm, Germany, assignor to Gebr. Eickhoff, Maschinenfabrik und Eisengiesserei m.b.H., Bochum, Germany, a corporation of Germany
Filed Apr. 5, 1967, Ser. No. 628,715
Claims priority, application Germany, Apr. 9, 1966, E 31,436
Int. Cl. B31b *1/02, 1/26*
U.S. Cl. 93—44.1 **7 Claims**

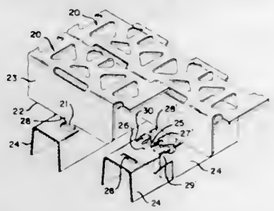


Apparatus is described for forming pre-glued or coated box stock into rectangular boxes by means of a plurality of forming blocks, all rotatable about a central axis, which force the stock between folding fingers and then between parallel guideways at spaced points in the circular path of travel of the forming blocks to thereby form the box. After forming, the boxes pass through a heating zone which cures the glue, a cooling zone and then to a discharge conveyor, all within the circumferential path of travel of the forming blocks.

3,469,509
METAL DECKING
George Hutchinson, Canonsburg, Pa., assignor to The Howard Meinhardt Company, Pittsburgh, Pa.
Filed Nov. 15, 1966, Ser. No. 594,543
Int. Cl. E01c *5/16;* **E04f** *11/16;* **E04c** *1/10*
U.S. Cl. 94—13 **7 Claims**

A metal decking comprised of a plurality of angular units having integral interlocking joints. The joints be-

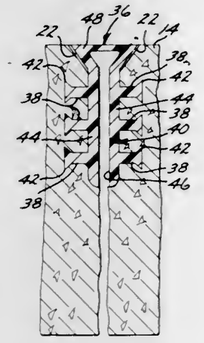
tween angular units transmit substantially all transverse loading and torque loading without the aid of separate fastening means. The angular units may be placed in paralleled array and supported by I-beams for bridge construction, and the angular units may be placed in staggered array and supported by interlocking them with channel members which themselves are fastened together by integral interlocking joints without the aid of separate fastening means for airstrip construction.



3,469,510
WEAKENED PLANE JOINT FORMER AND SEAL

Lee Worson, Long Beach, Calif., assignor to Edoco Technical Products, Inc., Long Beach, Calif., a corporation of California

Filed Jan. 24, 1966, Ser. No. 522,669
Int. Cl. E01c *11/10*
U.S. Cl. 94—18 **2 Claims**



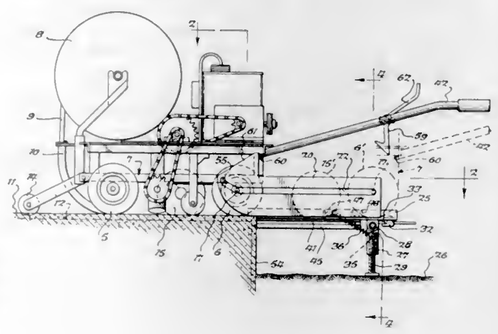
A weakened plane expansion joint former and seal comprising an elongated, vertically oriented body in which at least the upper exterior portions of the sides are coated with adhesive for adherence to the adjacent portions of a concrete slab, the body being characterized by a capability of its sides to move laterally away from each other so that the fracture or joint in the concrete slab effectively passes substantially through the vertical centerline of the body rather than through the adhesive coating areas.

3,469,511
ADJUSTABLE BRIDGE FOR SEALING MACHINES

Alfred F. Crone, Williamsville, N.Y., assignor to Acme Highway Products Corporation, Buffalo, N.Y.

Filed Nov. 21, 1967, Ser. No. 684,659
Int. Cl. E01c *23/02, 23/06*
U.S. Cl. 94—51 **11 Claims**

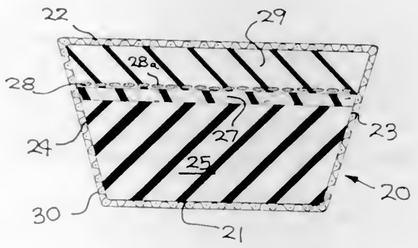
When installing elastic sealing strips or the like in transverse pavement joints between slabs or blocks of concrete in a highway, airport or other structure, an apparatus is employed that is movable across the pavement from side to side thereof and this apparatus must therefore start the strips beyond one edge of the pavement. The purpose of this disclosure is to provide means mounted on the apparatus for supporting the same beyond one edge of a pavement before starting the installation of a sealing strip and then enabling the apparatus to be returned to the pavement for installing the strips.



3,469,512
DRIVE BELT CONSTRUCTION

Alfred Marzocchi and Albert J. Garbin, Cumberland, R.I., assignors to Owens-Corning Fiberglas Corporation, a corporation of Delaware

Filed June 27, 1967, Ser. No. 649,164
Int. Cl. F16g *5/16*
U.S. Cl. 74—233 **14 Claims**



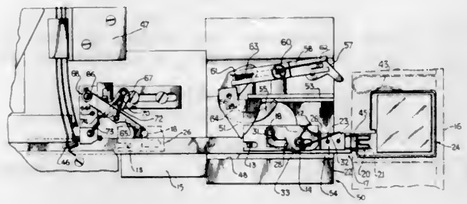
An annular rubber V-belt construction featuring a continuous reinforcement in the form of a 800–2,000 fiber glass filament assembly of flat to oval cross-sectional configuration, proceeding in a spiral path longitudinally of the belt; the belt also featuring a thin interior band of stiffer rubber material serving as a support for the glass reinforcement precluding displacement of the glass assembly and distributing load evenly to all fibers.

3,469,513
SLIDE AND MECHANISM FOR PHOTOGRAPHIC DRAFTING MACHINES

Walter Hansen, Cold Spring Harbor, and Karl Heidenreich, Brooklyn, N.Y., assignors to Eltra Corporation, Brooklyn, N.Y.

Filed Jan. 25, 1967, Ser. No. 611,648
Int. Cl. B41b *13/06, 19/00*
U.S. Cl. 95—4.5 **4 Claims**

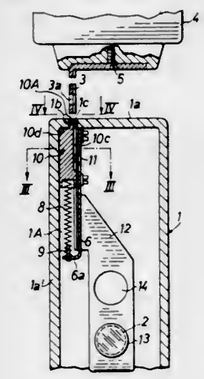
A special symbol slide for use in a photographic drafting machine and a slide actuating device for removing the slide from a storage magazine, bringing it to a photographic position, and restoring it to the storage magazine after the slide symbol has been photographed.



3,469,514
PHOTOGRAPHIC CAMERA FOR USE WITH DETACHABLE FLASH UNITS

Richard Denk, Munich, Germany, assignor to Agfa-Gevaert Aktiengesellschaft, Leverkusen, Germany

Filed Dec. 14, 1966, Ser. No. 601,614
Claims priority, application Germany, Dec. 17, 1965, A 24,922
Int. Cl. G03b *19/02, 19/18*
U.S. Cl. 95—11 **10 Claims**



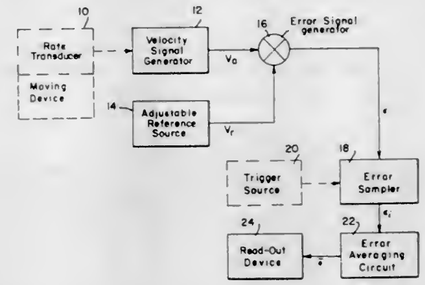
The top wall of the housing in a photographic camera is provided with a slot which can receive a portion of a detachable flash unit. When the flash unit is detached, the slot is automatically sealed against entry of foreign matter by a plug which is reciprocable in the housing and is biased into the opening by a spring.

3,469,515
VELOCITY COMPARATOR FOR DEVICES HAVING INTERMITTENT MOTION

Murray J. Hillman, West Covina, Calif., assignor to Hycon Mfg. Company, Monrovia, Calif.

Filed Sept. 12, 1966, Ser. No. 578,642
Int. Cl. G03b *29/00*
U.S. Cl. 95—12.5 **12 Claims**

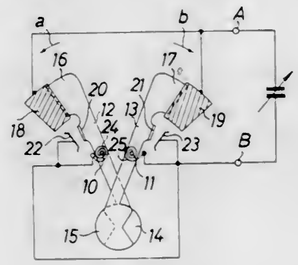
Apparatus is provided for testing image motion compensation devices which include moving elements that operate at different velocity for limited periods of time. A transducer signals the actual velocity during the interval of interest and the velocity signal is compared with a previously calibrated signal representing a desired velocity. An output error signal is sampled during successive intervals corresponding to the intervals of interest, only, and the sampled error signals are accumulated and averaged to provide an output signal corresponding to and representative of the velocity error during the interval of interest.



3,469,516
ELECTROSTATIC CONTROL ARRANGEMENT OF A CAMERA DIAPHRAGM

Helmut Mayr and Richard Pelte, Munich, Germany, assignors to Agfa-Gevaert Aktiengesellschaft, Leverkusen, Germany

Filed Aug. 30, 1966, Ser. No. 576,006
Claims priority, application Germany, Sept. 18, 1965, A 50,293
Int. Cl. G03b *9/02*
U.S. Cl. 95—64 **9 Claims**



An arrangement for setting and controlling the opening of a diaphragm of a photographic camera by varying the potential applied across movable electrostatic members, The voltage potential for the electrostatic members is derived from a low voltage source containing a photosensitive element in its circuit. Through the use of a transformer circuit, the low voltage, varying as a function of the light intensity, is converted to a high potential suitable for applying across the electrostatic members. With variation in the resulting applied voltage, the size of the diaphragm opening is correspondingly varied as a function of the prevailing light intensity.

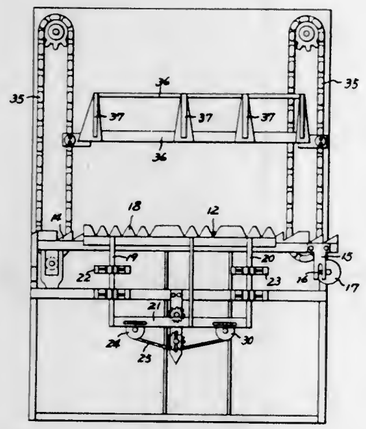
3,469,517
VERTICALLY RECIPROCATING APPARATUS FOR CARRYING FILM HANGERS IN A DEVELOPING TANK

Kan-ichi Nishimoto, 369 Sekido, Wakayama Prefecture, Wakayama, Japan

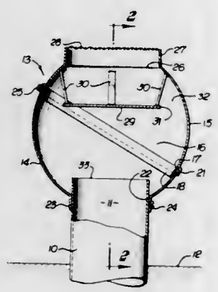
Filed Jan. 3, 1967, Ser. No. 606,838
Int. Cl. G03d *3/12*
U.S. Cl. 95—94 **5 Claims**

A film developing apparatus including a film reciprocating structure adapted to be mounted in conjunction with the upper edges of a film development and treating tank.

The reciprocating structure includes opposed pairs of relatively oscillatable and relatively reciprocable serrated edged plates, the action of which resembles that generally of a reciprocable sawtoothed sickle bar mechanism, whereby a film support rod disposed transversely across the tank with the ends resting in the serrated edges of said plates, starting from one end of the tank is sequentially oscillatably lifted and moved from tooth to tooth of said plates during longitudinal movement along said tank.

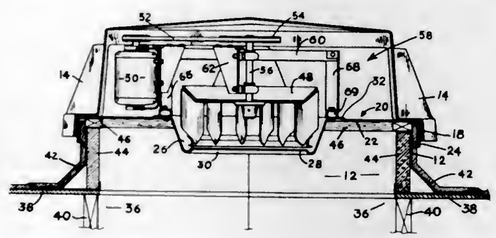


3,469,518
OMNIDIRECTIONAL VENTILATOR
Ben O. Howard, 12954 Washington Blvd., Los Angeles, Calif. · 90066
Continuation-in-part of application Ser. No. 479,734, Aug. 16, 1965, now Patent No. 3,382,792. This application Oct. 6, 1967, Ser. No. 673,485
Int. Cl. F24f *13/08*
U.S. Cl. 98—42 **13 Claims**



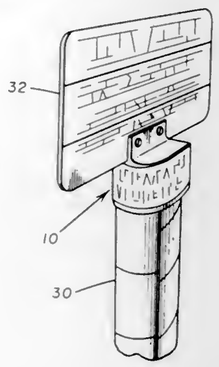
The invention resides in an omnidirectional ventilator the parts of which are so joined together that the rim of the outlet can always be parallel to any surface upon which the device is mounted and over which air flows. To provide adequate structure, the ventilator is constructed as an oblate spheroidal assembly with opposite matching sections, for greatest convenience, joined to each other at substantially the location of greatest diameter. There is an inlet opening into one of the sections and an outlet opening in the other of said sections in an angular relationship such that when the device is mounted above a surface, the outlet opening is substantially parallel to the surface.

3,469,519
ROOF VENTILATOR
Phillip Painter, Indianapolis, Ind., assignor to Jenn-Air Corporation, Indianapolis, Ind., a corporation of Indiana
Continuation-in-part of applicaion Ser. No. 690,255, Dec. 13, 1967. This application Mar. 26, 1968, Ser. No. 716,127
Int. Cl. F24f *7/02*
U.S. Cl. 98—43 **4 Claims**



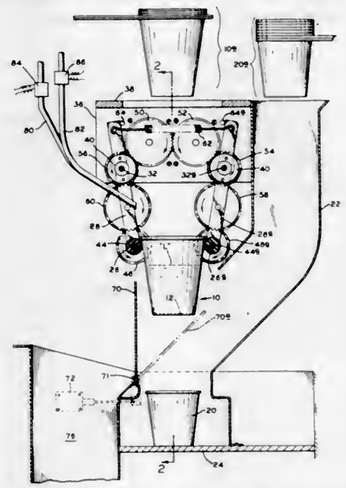
This invention relates to a low contour power driven roof ventilator which is adapted to lie atop and be supported on a building curb which frames an opening in a building roof. The ventilator is arranged to include a portion positioned below the top of the curb so as to reduce the overall height. A cover for the arrangement is adapted to overlie and be supported in nestled relationship at its corners with the corners of the building curb.

3,469,520
VENT CAP
Leonard A. Foy, Dallas, and Thomas K. Provence, Jr., Wills Point, Tex., assignors to Mobil Oil Corporation, a corporation of New York
Filed Nov. 1, 1967, Ser. No. 679,857
Int. Cl. F23l *17/02*
U.S. Cl. 98—122 **4 Claims**



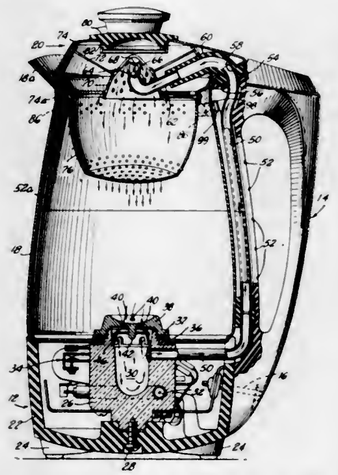
This specification discloses a vent cap which may be utilized to provide a mount for a display sign. The vent cap is in the form of a tubular housing having an open lower end and a closed upper end. The housing includes a plurality of ribs in the interior thereof which function as spacing elements. The ribs terminate in stop shoulders adjacent the closed upper end of the housing. A flange extends across the closed upper end of the housing and provides a bracket whereby a display sign may be secured to the vent cap.

3,469,521
APPARATUS FOR PREPARING A BEVERAGE
Luther G. Simjian, Laurel Lane, Greenwich, Conn. 06830
Filed Mar. 15, 1966, Ser. No. 534,535
Int. Cl. A47j *31/00*
U.S. Cl. 99—287 **10 Claims**



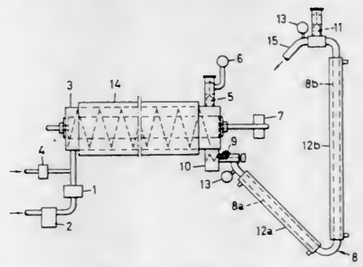
A beverage brewing apparatus uses a single-use infusion container having a filter bottom portion and water impervious side walls. After depositing the beverage substance (coffee powder) and water in the infusion container, the side walls are flexed toward each other to provide a closure and then rollers engaging the walls continue to reduce the container volume, the pressure exerted upon the liquid forcing the brewed beverage through the filter bottom into another dispensing container. The used infusion chamber is removed to a waste receptacle.

3,469,522
DEVICE FOR BREWING BEVERAGE
Gildo G. Prosen, 5356 N. Washtenaw Ave., Chicago, Ill. 60625
Filed Feb. 16, 1967, Ser. No. 616,568
Int. Cl. A47j *31/00*
U.S. Cl. 99—308 **11 Claims**



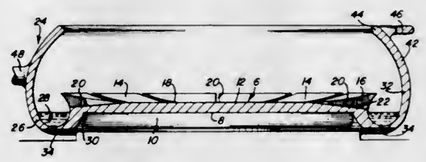
A percolator including a bowl open at the top and having a bottom port with a pump and a conduit extending from the bottom port to the open top and bypassing the bowl for circulating hot water from the bottom outlet, through the top opening and into a removably mounted cover assembly including a brewing basket and a hood for directing water into the basket. The pump includes a vertically sliding inverted cup-shaped valve member and a water heating chamber below the valve member, and a check valve can be provided at the conduit outlet.

3,469,523
COOKING APPARATUS
Johannes Andreas Jakobsen, Lysoysundet, Norway, assignor to A/S Lysosund Slidolje & Kraftforfabrik, Lysoysundet, Norway
Filed May 22, 1968, Ser. No. 731,219
Claims priority, application Norway, May 22, 1967, 168,242
Int. Cl. A47j *37/12*
U.S. Cl. 99—404 **9 Claims**



Apparatus for continuously cooking of fat fish species in order to produce fat and oil. The apparatus comprises a cooking vessel provided with a conveyor for passing the cooking material through the vessel from an inlet opening to a discharge opening. The discharge opening is connected with a pipe being first led downwards and thereafter upwards to a point at a level several meters, for instance 5 to 10 meters above the highest point of the cooking vessel, whereby is obtained that the cooking will take place at increased pressure. Means for heating the cooking vessel may consist of a steam jacket encompassing the vessel. The apparatus may be provided with one or more oil separators.

3,469,524
FRY PAN
Marion A. Trozzolo, 502 Delaware St., Kansas City, Mo. 64105
Filed Feb. 6, 1968, Ser. No. 703,356
Int. Cl. A47j *37/10, 27/10*
U.S. Cl. 99—425 **9 Claims**



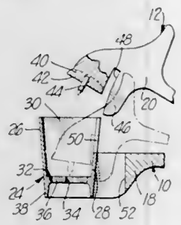
The fry pan disclosed herein is characterized by a disk-like bottom having a flat underneath surface capable of being firmly seated atop an electric stove burner. The top surface provides a bed or platform for the foods to be cooked. This platform is marginally encompassed by inwardly tapering lugs or risers segmental in plan and divided by radial open end grease gravitating and draining grooves. This bottom is surrounded by an annular concavo-convex rim whose lower half defines a semicircular grease collecting trough and whose upper half

defines a turned-in anti-splattering guard or shield. The trough also provides a limit stop shoulder to assist in seating the bottom of the pan. Radial kerfs provide keeper seats when the pan is placed atop the radial bars of a gas burner grid.

ERRATUM

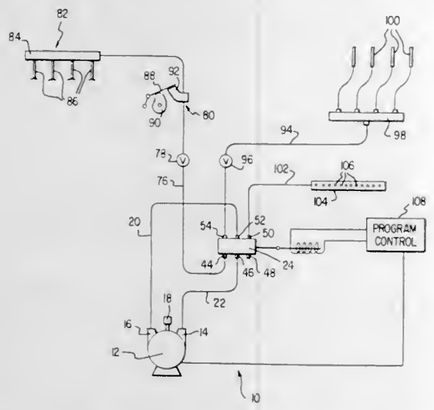
For Class 100—215 see:
Patent No. 3,469,530

3,469,525
FRUIT SEGMENT SQUEEZER
Royal E. Coons, 306A Park St., Alhambra, Calif. 91801
Filed Feb. 15, 1968, Ser. No. 705,795
Int. Cl. B30b *7/00;* **A47j** *17/04, 19/02*
U.S. Cl. 100—234 **8 Claims**



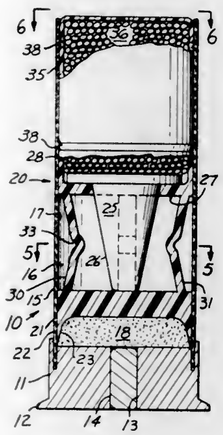
A lower lever working end of scissor-connected levers has a transversely elongated cup with a perforate bottom adapted for receiving a mating squeezing plate of an upper lever working end downwardly therein. The cup and lever working ends have interfitting slots and projections permitting full movement of the squeezing plate into the cup while preventing fruit juice escape, and the cup is downwardly flanged below the perforate bottom for proper direction of said juice. The perforations of the cup perforate bottom are patterned in elongated slots to minimize clogging during the squeezing operation.

3,469,526
AIR AND VACUUM CONTROL MECHANISM FOR A DUPLICATING MACHINE
John P. Gallagher, Park Ridge, Ill., assignor to A. B. Dick Company, Chicago, Ill., a corporation of Illinois
Filed Sept. 22, 1966, Ser. No. 581,209
Int. Cl. B41f *9/00, 13/24;* **B65h** *5/22*
U.S. Cl. 101—142 **13 Claims**



The air and vacuum control mechanism is adapted to provide both air under pressure and vacuum for a duplicating machine. A single control unit having two separated internal compartments, one for vacuum and one for air under pressure, is connected to both the inlet and outlet of an air pumping unit so that one compartment receives vacuum from the inlet while the remaining compartment receives air under pressure from the outlet. This control mechanism then selectively provides either air, vacuum, or both to a blanket cylinder drying unit and a sheet pickup unit for the duplicating machine.

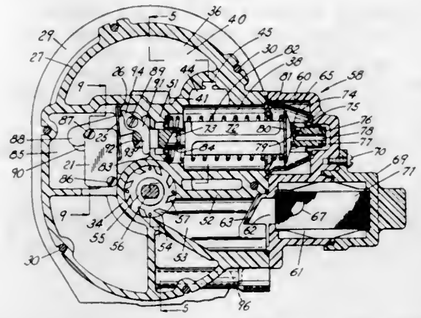
3,469,527
SHOTGUN WAD
Leland A. Pace, 2000 College View, Monterey Park, Calif. 91754
Filed Mar. 7, 1968, Ser. No. 711,347
Int. Cl. F42b *7/08, 7/00*
U.S. Cl. 102—42 **11 Claims**



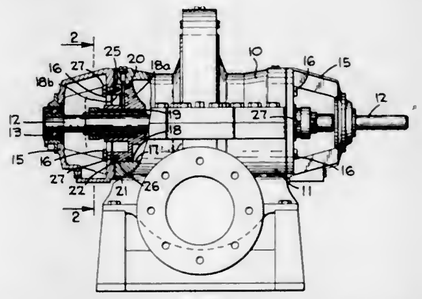
This invention relates to a wad for a shotgun shell and to a shotgun shell assembly including said wad. The wad is adapted to be used with a standard shell which includes a base member and a tubular casing which form an interior cylindrical cavity. The wad fits within this cavity and includes a pressure-responsive sliding piston which shoves ahead of it a plunger that reacts against a charge of shot on the opposite side of a divider member, which divider member and piston are joined together in such a manner that the structure is unitary. The piston can move toward the divider member in order to move the plunger and open the enclosure means to release the shot. The result is a unitary construction which can be used in the reloading of a shotgun shell which can be dropped into a standard shell without the need for crimping the wall of the shell. If desired, a powder charge can be provided in a cavity in the piston so that the wad carries all elements except the primer.

3,469,528
SELF-PRIMING IMPELLER PUMP WITH FLOW DEMAND CONTROL AND SELECTIVE PRIMER AND RUNNING CIRCUITS
Robert D. East, Galesburg, Mich., assignor to General Gas Light Company, Kalamazoo, Mich.
Filed May 20, 1968, Ser. No. 730,262
Int. Cl. F04b *49/06;* **F04d** *9/02;* **H01h** *35/40*
U.S. Cl. 103—25 **13 Claims**

Impeller delivers through raised chamber to check valve so chamber provides priming liquid when valve closes. Flow chamber on downstream side of check valve has control member subject to force differential between pump delivery and back pressure of system. Control member is connected to stop pump in two opposite extreme positions, and start pump in intermediate position when back pressure in system falls. Spring biases control member to one extreme off position on failure of liquid supply to create force differential. Control member actuates two switches connected through two selective circuits to automatically stop pump after priming.



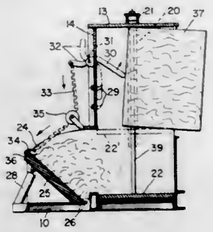
3,469,529
SEALING AND ALIGNING SYSTEM FOR A CENTRIFUGAL PUMP
Alexander Bashenow and Ramon Volpatti, Marion County, Ind., assignors to FMC Corporation, San Jose, Calif., a corporation of Delaware
Filed Aug. 14, 1967, Ser. No. 660,298
Int. Cl. F04d *29/08, 1/14*
U.S. Cl. 103—111 **1 Claim**



A system for aligning and sealing a bearing bracket and a stuffing box of a split-casing centrifugal pump wherein the stuffing box has a body portion that accurately pilots in the casing bore and an annular extension that protrudes axially outward of said casing bore, a bearing bracket having a blind bore seated and aligned on the annular extension of the stuffing box, cap screws fastening the bearing bracket to the stuffing box such that it forms a sub-assembly that upon insertion in the casing bore is accurately aligned, and a second set of capscrews for fastening the sub-assembly to the casing halves.

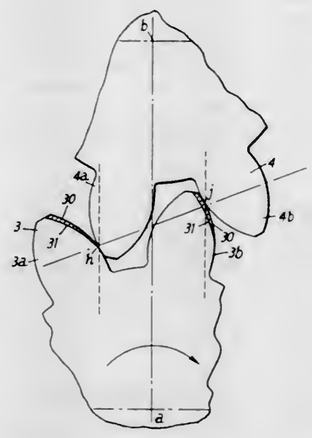
3,469,530
RUBBISH BALING APPARATUS
Robert Emmett Walker and Donald Lee Walker, Ventura, Calif., assignors to Tamaker Corporation, Ventura, Calif., a corporation of California
Filed Feb. 7, 1968, Ser. No. 703,706
Int. Cl. B30b *15/30, 15/32, 1/34*
U.S. Cl. 100—215 **3 Claims**

A rubbish baling apparatus is provided for compressing trash such as cardboard cartons and the like into cubical type bales. The structure includes first and second hydraulically controlled lifting cylinders for moving a platform receiving the trash against a stationary top wall in an enclosure thereby compressing the same into the desired bale. Trash is fed into the enclosure through an hydraulically operated front door which swings outwardly and downwardly for receiving the trash and the bale itself is ejected from an upper rear door. The ejection



of the bale is accomplished by employing hydraulic power utilized to operate the front door to in turn swing an ejecting bar mounted in the front wall of the enclosure so that economy is realized in the number of components for the apparatus. In addition, split-flow control members are employed for supplying hydraulic fluid to and from the lifting cylinders so that equal pressures are always assured to prevent canting or jamming of the structure.

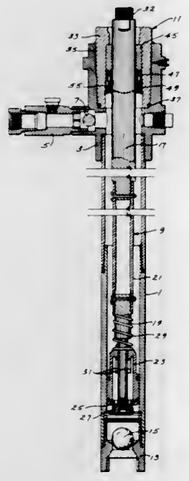
3,469,531
INTERMESHING GEARS, MORE PARTICULARLY IN GEAR PUMPS
Robert S. Wood, Ilford, Essex, England, assignor to The Plessey Company Limited, Ilford, England, a British company
Filed Nov. 30, 1967, Ser. No. 686,885
Claims priority, application Great Britain, Dec. 7, 1966, 54,693/66
Int. Cl. F04c *1/08*
U.S. Cl. 103—126 **3 Claims**



To even out wear of the pumping-gear flanks, tip relief is applied to the flank of the driver gear only, thus increasing, due to elastic deformation, the wear at the root portion of the driver gear and at the tip portion of the driven gear at the beginning of each engagement while

reducing the wear near the tip of the driver gear and the root of the driven gear near the end of each tooth engagement.

3,469,532
PUMP
Jerome B. Wegmann, Florissant, and John R. Graef, Defiance, Mo., assignors to McNeil Corporation, Akron, Ohio, a corporation of Ohio
Filed Mar. 25, 1968, Ser. No. 715,643
Int. Cl. F04b *21/04, 19/22;* **F16j** *15/16*
U.S. Cl. 103—178 **7 Claims**



A head assembly for a pump of the so-called lance type in which a highly viscous and sticky material is pumped by reciprocation of a piston in a pump tube. The piston is carried by a plunger extending upward through the head assembly for connection to a reciprocating motor. The head assembly comprises a tubular body threaded in the upper end of the tube with a bushing for the plunger within the body and a packing ring in the body below the bushing. A coil spring scraper, held by a retainer in the body, surrounds the plunger below the packing ring for scraping the plunger free of the material being pumped and for reducing the pressure of the material on the packing ring.

3,469,533
TRACK LINING MACHINE
Franz Plasser and Josef Theurer, both of Johannesgasse 3, Vienna I, Austria
Filed Sept. 20, 1967, Ser. No. 669,008
Claims priority, application Austria, Sept. 26, 1966, A 8,969/66
Int. Cl. E01b *33/06*
U.S. Cl. 104—7 **12 Claims**



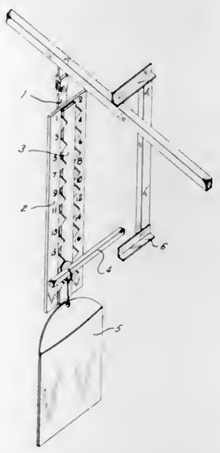
A track liner wherein the track shifting means comprises an elongated carrier whereon track gripping elements are mounted. One end of the carrier is power-driven for lateral movement in respect of the track and the other carrier end is held in fixed relationship to the track.

3,469,534
MOBILE TRACK LINER AND TAMPER
Franz Plasser and Josef Theurer, both of Johannesgasse 3, Vienna I., Austria
Filed Sept. 20, 1967, Ser. No. 669,009
Claims priority, application Austria, Sept. 26, 1966, A 8,974/66, A 8,970/66
Int. Cl. E01b *27/17, 29/04, 29/16*
U.S. Cl. 104—7 **9 Claims**



A mobile track liner and tamper comprising two frames mounted on wheels for mobility on the track, track shifting means being mounted on one frame and tamping means being mounted on the other frame.

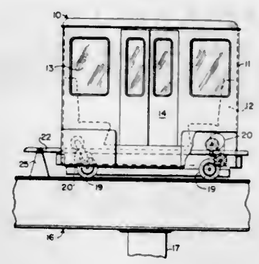
3,469,535
CONVEYOR SORTING DEVICE FOR SMALL LOADS
Kent F. Warner, 42 Sammis Lane, White Plains, N.Y. 10605
Filed Feb. 16, 1967, Ser. No. 616,635
Int. Cl. B61k *1/02*
U.S. Cl. 104—88 **1 Claim**



A device for carrying and automatically sorting small bags and containers of parts. Such device with no moving parts is carried on a simple over-head chain conveyor.

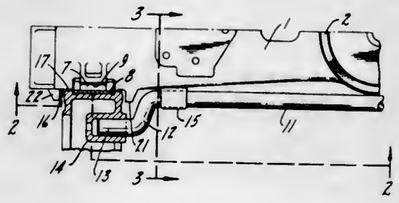
3,469,536
GRIPPING DRIVE VEHICLE
James W. McCracken, % Leechburg Lumber Company, Inc., Leechburg, Pa. 15656
Filed Sept. 13, 1967, Ser. No. 667,429
Int. Cl. B61c *11/00;* **B61b** *5/02*
U.S. Cl. 105—30 **8 Claims**

A gripping drive mechanism for a rail guided self-propelled vehicle movable over a transportation bed having laterally spaced guide rails. One such drive mechanism is provided on opposite sides of the vehicle, and each includes a reversible motor universally coupled to a drive gear supported for rotation by a lever arm. The drive gear engages a driven gear which is rotatably supported by a lever arm, and the drive gear, in turn, is coupled to a drive wheel which is engageable with the underside of a guide rail. An idler wheel is rotatably supported by the lever arm opposite the drive wheel and above the guide



rail. An arm is connected to an upper portion of the lever arm and is arranged to selectively turn the lever arm so that the drive and idler wheels can engage or disengage the guide rail.

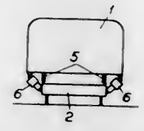
3,469,537
TORSION DAMPENED RAILWAY TRUCK SPRING BOLSTER
Franklin D. Barber, Flossmoor, Ill., assignor to Standard Car Truck Company, Chicago, Ill., a corporation of New Jersey
Continuation-in-part of application Ser. No. 608,893, Jan. 12, 1967, which is a continuation-in-part of application Ser. No. 580,027, Sept. 16, 1966. This application Nov. 1, 1967, Ser. No. 679,715
Int. Cl. B61f *5/30;* **F16f** *1/06*
U.S. Cl. 105—197 **1 Claim**



In a railroad car truck including windowed side frames and a spring supported bolster, means for constraining both ends of the bolster to parallel uniform up and down motion in the window which includes a torsion bar extending across the truck parallel with the bolster, crank arms at the ends thereof terminating in crank pins rotatable in bearings on the side frames, lugs projecting outwardly from the side of the bolster horizontally slotted to slidably and rotatably receive the torsion bar adjacent the cranks at each end thereof, the relationship being such that when the bolster is lowered in the window beyond the usual spring supported position, the torsion bar rotates out of the lugs and out of contact with the bolster to hang freely clear of the bolster.

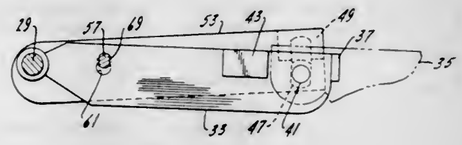
3,469,538
SPRING SUPPORTED RAILWAY VEHICLE
Fredrik Schmiterlow, Vasteras, Sweden, assignor to Allmänna Svenska Elektriska Aktiebolaget, Vasteras, Sweden, a Swedish corporation
Filed Feb. 13, 1967, Ser. No. 615,600
Int. Cl. B61f *5/02*
U.S. Cl. 105—199 **1 Claim**

A rail vehicle is carried by two-axled bogies pivoted to it, four shock absorbers only for damping the movements of the body of the vehicle are arranged between the body and each bogie; these are placed on both sides



of the transverse and logitudinal axes of the bogie at a relatively great distance from the transverse axis and are arranged at an angle to the horizontal.

3,469,539
RAILWAY HOPPER CAR DOOR ACTUATING AND LOCKING MECHANISM
Eduardo M. Damy, Apartado Postal 2041, Guadalajara, Jalisco, Mexico
Filed Oct. 30, 1967, Ser. No. 678,798
Int. Cl. B61d *7/02*
U.S. Cl. 105—249 **4 Claims**



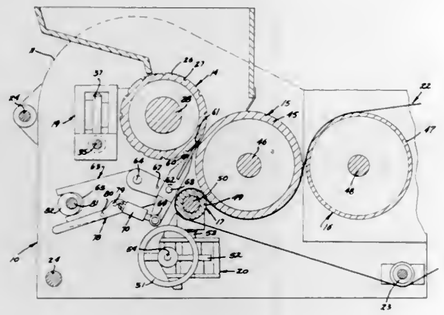
A hopper car having pairs of oppositely disposed discharge chutes with outlets inclined to the vertical and equipped with doors hinged along the upper edges thereof. The opposed doors are opened and closed in unison by a pair of arms which are pivotally connected to each other and to the doors. When the arms extend generally horizontally, the doors are held closed and when the arms are folded unwardly, the doors are held open. A first locking mechanism is provided to prevent rotation of the pivotal connection between the arms when the doors are closed and a second locking mechanism is provided to prevent accidental release of the first locking mechanism. A door opening arrangement is provided which sequentially releases the second and first locking mechanisms and then rotates the door operating arms from the horizontal to the upward folded position.

3,469,540
MACHINE FOR SHAPING DOUGH-LIKE MATERIALS
Frank Charles Werner, Grand Rapids, Mich., assignor to Werner Machinery Company, Grand Rapids, Mich., a corporation of Michigan
Filed May 5, 1967, Ser. No. 636,306
Int. Cl. A21c *3/00*
U.S. Cl. 107—12 **12 Claims**

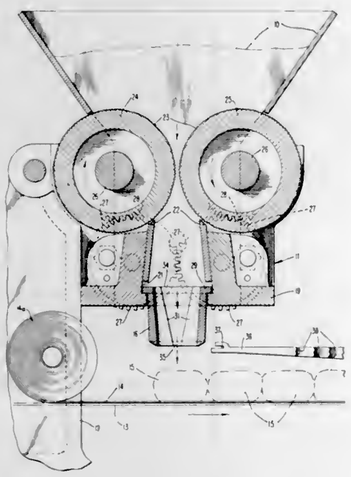
A rotary cookie machine having a feed roll and a die roll rotatably mounted within a frame. The feed roll is adjustable with respect to the die roll along a plane which does not connect the rotational axes of the two components, thus preventing increased pressure on a scraping knife contacting the die roll during the adjustment.

The scraping knife adjustment assembly employs a parallelogram-like arrangement of pivotable components. The knife holder is pivoted to one leg of the arrangement

and the opposite leg is formed from an adjustable tension spring. The tension spring force varies in accordance with the die roll peripheral position of the scraping knife such that the increase in abutment pressure resulting from a change in the peripheral location of the scraping pressure caused by the relaxation of the tension spring and, similarly, a decrease in abutment pressure resulting from a change in the peripheral location of the scraping knife equals the increase in abutment pressure caused by the change in length of the spring.

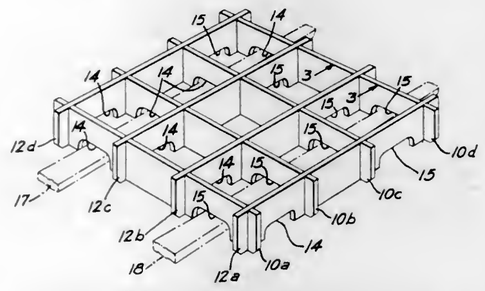


3,469,541
METHOD FOR PREPARING COOKIES FOR PACKAGING AND FREEZING
John J. Simoneau, Cinnaminson, N.J., assignor to National Biscuit Company, a corporation of New Jersey
Filed Oct. 2, 1967, Ser. No. 672,221
Int. Cl. A21c *11/00*
U.S. Cl. 107—54 **6 Claims**



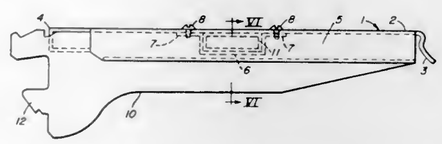
A method for producing food products so that they can be readily packaged before freezing, and thereafter for baking by the consumer. The formation of the products may be continuous through die extruding means of unique shape and is characterized in that they are extruded in nested form to save packaging space, can be separated into individual pieces without damage and in manufacture can be produced at high speed and in selected groups, as desired.

3,469,542
KNOCK DOWN PALLET
Uno A. Ahlenius, 550 Kenwood Drive, Menlo Park, Calif. 94025
Filed May 15, 1968, Ser. No. 729,237
Int. Cl. B65d *19/16, 19/26, 19/38*
U.S. Cl. 108—56 **4 Claims**



A knock-down pallet for use with a fork-lift truck comprises a grid-like assembly of two sets of inter-notched, upright, board-like members, all of the members of each set being of equal length and in laterally spaced, parallel relation. The two sets of members are assembled, at the point of use if desired, in interfitted, internotched relation, with the members of the two sets disposed at a selected angle to each other. The members of each set also have two rows of aligned, lift-arm-receiving notches in their lower edges to receive the lift arms of a fork-lift truck.

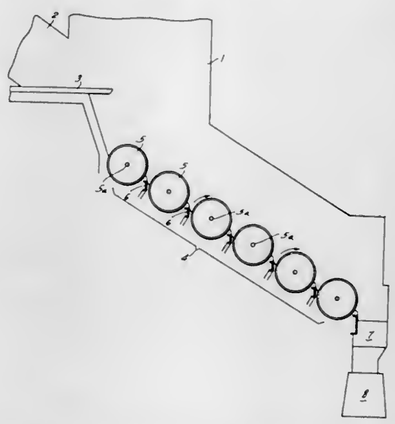
3,469,543
SHELF CONSTRUCTION
Lynn E. Everett, New Philadelphia, Ohio, assignor to Childs Equipment Co., Pittsburgh, Pa., a corporation of Pennsylvania
Filed June 2, 1967, Ser. No. 643,180
Int. Cl. A47b *57/16, 5/00*
U.S. Cl. 108—144 **3 Claims**



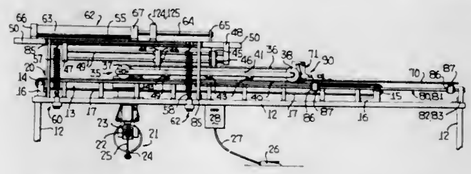
The invention is directed to a display shelf mounting bracket assembled with the shelf whereby the bracket is selectively locked in shelf supporting position or foldable flat upon the shelf for shipment.

3,469,544
INCINERATOR
Heinrich Kremer, Krefeld, Germany, assignor to Vereinigte Kesselwerke A.G., Dusseldorf, Germany
Filed Mar. 14, 1968, Ser. No. 713,045
Claims priority, application Germany, May 23, 1967, V 33,696
Int. Cl. F23b *1/24;* **F23g** *5/06*
U.S. Cl. 110—35 **6 Claims**

In a rotary drum-shaped grate of an incinerator onto whose peripheral surface combustible refuse is so deposited that the refuse has greater density towards the center of the grate than towards the axial ends thereof, interstices for admitting combustion air are so arranged in the circumferential surface that their combined surface area is greater per unit area of the peripherial surface in the median region of the grate than in the marginal regions thereof.



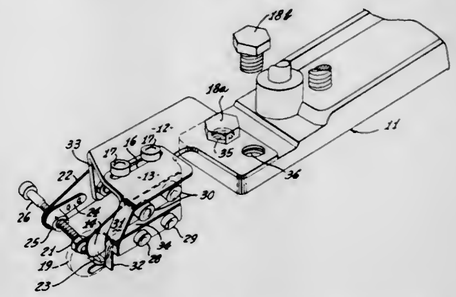
3,469,545
CONVEYOR SEWING UNIT WITH SHIFTABLE TOP FEED BELT AND WORK LOADING ARRANGEMENT
Arthur N. Hale, Park Ridge, and Robert L. Kosrow, Hoffman Estates, Ill., assignors to Union Special Machine Company, Chicago, Ill., a corporation of Illinois
Filed June 14, 1967, Ser. No. 646,042
Int. Cl. D05b *27/00;* **B65g** *15/14;* **B65h** *23/04*
U.S. Cl. 112—2 **28 Claims**



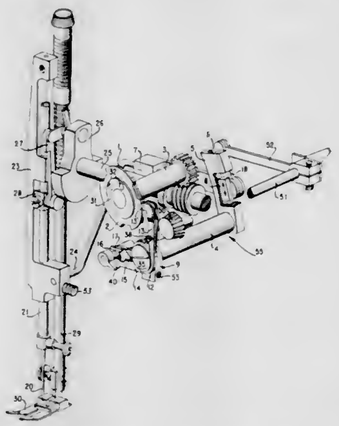
A sewing unit having a lower conveyor for moving work pieces to a sewing machine, an upper clamping conveyor, a work piece loading platform and a work piece guiding device. The upper clamping conveyor, work piece loading platform and guiding device are movable in the conveying path, toward and away from the sewing machine. Control means control the power input to the conveyor and sewing machine and, further, control the movement of the upper clamping conveyor, loading platform and guiding device toward and away from the sewing machine.

3,469,546
SHANK BUTTON TACKER ATTACHMENT FOR INDUSTRIAL SEWING MACHINES
James C. Giuliano 10237 S. Van Ness Ave., Inglewood, Calif. 90303
Filed May 16, 1968, Ser. No. 729,646
Int. Cl. D05b *3/16*
U.S. Cl. 112—114 **3 Claims**

An accessory for industrial sewing machines to facilitate sewing shank buttons to garments that are in production, said accessory comprising: a bracket (**12**) to be mounted on the attachment arm (**11**) of an industrial sewing machine, said bracket carrying opposed fingers (**14** and **15**) for guiding each contacting shank button (**19**) toward a position in which the eyelet (**23**) in its shank portion will receive the sewing machine needle on its next downward stroke, there being a spring-loaded pressure foot (**21**) for urging the button toward said fingers, and means for varying the tension applied by said pressure foot.



3,469,547
CAM SELECTOR MECHANISM IN AN ORNAMENTAL STITCH SEWING MACHINE
Masao Tajima, Utsunomiya, Tochigi, Japan, assignor to The Singer Company, New York, N.Y., a corporation of New Jersey
Filed Dec. 12, 1966, Ser. No. 601,151
Int. Cl. D05b *3/02*
U.S. Cl. 112—158 **7 Claims**

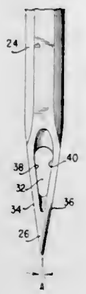


This invention relates to ornamental stitch sewing machines and in particular to a novel and improved mechanism whereby one of a plurality of pattern forming discs may be selected to transmit a predetermined needle-jogging motion by way of a cam follower and transmission means so that the needle is transversely shifted in conformance with the pattern sensed by the cam follower and thereby resulting in the desired stitch pattern.

3,469,548
NEEDLE FOR SEWING OR THE LIKE
Josef Zocher, Haaren, near Aachen, Germany, assignor to The Singer Company, New York, N.Y., a corporation of New Jersey
Filed June 1, 1967, Ser. No. 642,923
Int. Cl. D05b *85/02*
U.S. Cl. 112—222 **14 Claims**

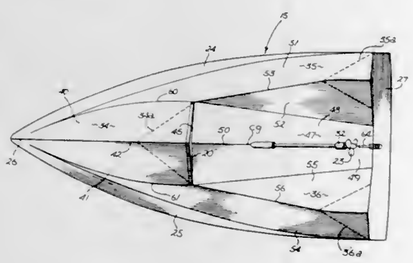
The following disclosure relates to the art of sewing needles or the like wherein a thread or yarn is carried

by the needle for passage through a material to form a seam, design, pile, etc. The needle disclosed herein is particularly adapted for use in the tufting art, although it should be understood that it is not restricted thereto.



The disclosure sets forth a needle structure wherein the penetration force required to pass the needle through a material is substantially minimized as well as minimizing the destruction of the material penetrated by the needle.

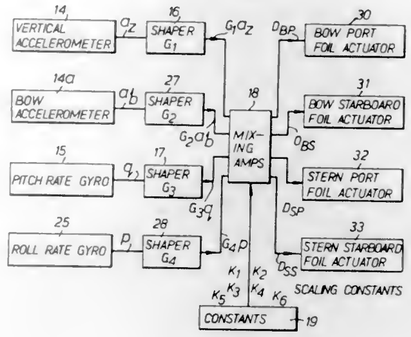
3,469,549
PLANING BOAT
Randolph S. Rae, 858 Production Place, Newport Beach, Calif. 92660
Filed Jan. 11, 1968, Ser. No. 697,043
Int. Cl. B63b *1/20*
U.S. Cl. 114—66.5 **6 Claims**



The planing boat has a bottom formed into three separate planing hulls comprising a front hull and two back planing hulls at each side of the boat. An after body extends rearwardly behind the aft end of the front planing hull and between the two back planing hulls. The back hulls extend forward to and beyond the front hull to provide low level pre-planing drag. During planing, there is a break away at the aft end of the front hull so that the boat planes on three points and has very low drag at high planing speed.

3,469,550
STABILIZATION SYSTEMS
Eric Priestley, Lewisham, London, England, assignor to Elliot Brothers (London) Limited, London, England, a British Company
Filed Aug. 9, 1967, Ser. No. 659,457
Claims priority, application Great Britain, Aug. 10, 1966, 35,874
Int. Cl. B63b *1/28, 39/06*
U.S. Cl. 114—66.5 **2 Claims**

A hydrofoil vehicle having sensors sensing pitch, roll and heave of the vehicle and control means to combine the outputs of the sensors so as to control the control surfaces of the vehicle to reduce pitch, roll and heave of the vehicle.

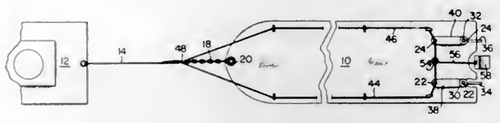


3,469,551
GEOPHYSICAL TOW BUOY
Rene L. Lefebvre, 2507 Lazybrook, Houston, Tex. 77008
Filed Mar. 11, 1968, Ser. No. 712,185
Int. Cl. B63b *21/52*
U.S. Cl. 114—235 **1 Claim**



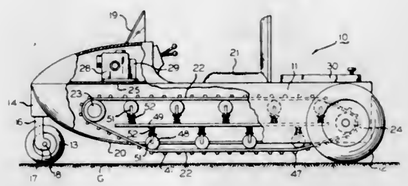
A buoy characterized by its light weight and continued buoyancy even though the buoy may be damaged, such buoy having a lifting eye at substantially its center of gravity. A pair of fins are mounted on the aft portion of the buoy.

3,469,552
HAWSER STEERING ANTI-YAWING AND SAFETY MECHANISM FOR TOWED BARGES AND THE LIKE
Jean V. Patrick, 205 Locust St., Newtown Square, Pa. 19073
Filed Apr. 5, 1968, Ser. No. 719,075
Int. Cl. B63b *21/04*
U.S. Cl. 114—236 **2 Claims**



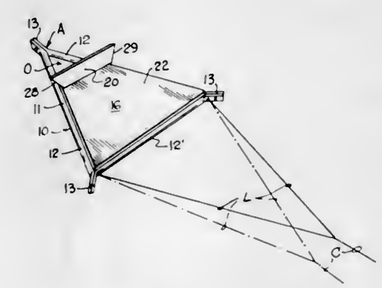
A mechanism which automatically counteracts the tendency to yaw and which slows down a towed barge, should the towline become slack. A pair of rudders are mounted on a barge and connected by two lines to a towing hawser forward of the barge's bow. A brake is connected to the two lines so as to be operative when there is no tension in the hawser.

3,469,553
AMPHIBIOUS VEHICLE
Archie R. Gagne, 25 W. 164 Denise Ave., Rte. 3, Box 96, Naperville, Ill. 60540
Filed July 31, 1967, Ser. No. 657,291
Int. Cl. B60f *3/00;* **B62d** *55/02*
U.S. Cl. 115—1 **3 Claims**



An amphibious vehicle characterized by endless crawler treads and ground engaging wheels, the former over normal terrain being out of contact therewith and driving the wheels, and being adapted in a snow covered or marshy and swampy terrain to provide tractive effort to the vehicle. The structure according to the invention is also characterized by outrigger pontoons adapted to be detachably secured thereto and enabling with paddle members secured to the ground engaging wheels to move the vehicle over the surface of a body of water.

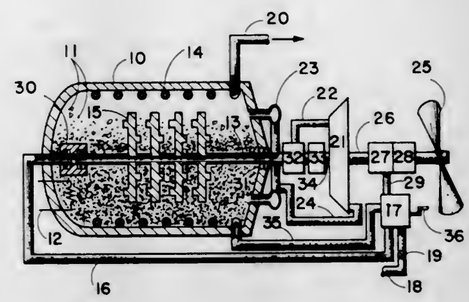
3,469,554
SURF TOWBOARD
David L. Cole, San Jose, Calif. (P.O. Box 487, Waterford, Calif. 95386)
Filed Sept. 5, 1968, Ser. No. 757,743
Int. Cl. B63h *19/04*
U.S. Cl. 115—4 **6 Claims**



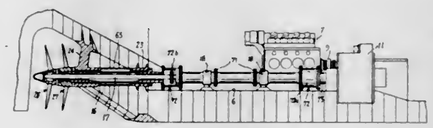
An apparatus utilizing offshore currents for propelling a device attached thereto seaward. A semi-buoyant device which when cast into the incoming waves of a surf utilizes the offshore under currents for propelling the device seaward.

3,469,555
UNDERWATER POWER PLANT
Leonard Greiner, Palo Alto, Calif., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware
Filed Oct. 6, 1967, Ser. No. 673,417
Int. Cl. F01k *25/08;* **B63c** *11/46*
U.S. Cl. 115—6.1 **8 Claims**

A power plant insensitive to back pressures encountered at depth is provided. A fluid reactant and another reactant which react exothermically to produce low vapor pressure reaction products are employed, with the fluid reactant also serving as the working fluid for the prime mover. A reaction chamber is provided in which the reaction occurs. The fluid component is passed in heat exchange relationship with the reaction chamber to generate a hot pressurized gaseous working fluid which is passed through a prime mover and then into the reaction chamber wherein the exothermic reaction occurs.



3,469,556
CONTRA-ROTATING PROPELLER DRIVE FOR SURFACE AND SUBMARINE VESSELS
George T. R. Campbell and Norman V. Laskey, Montreal, Quebec, Canada, assignors, by mesne assignments, to Algoship International Limited, Nassau, Bahamas, a corporation of the Bahamas
Filed Feb. 6, 1968, Ser. No. 703,323
Int. Cl. B63h *5/10, 1/14*
U.S. Cl. 115—34 **13 Claims**

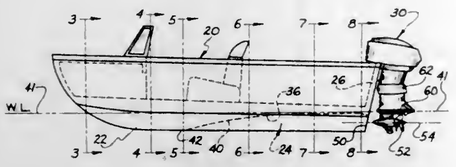


Two concentrically oriented tail shafts are arranged so that contra-rotating propellers can be secured, one on the tapered outer end of each tail shaft, with rotary shaft seals on each tail shaft to prevent the ingress of sea water to the bearings supporting the tail shafts. Reversible collars and associated rubber and jacking rings, backed by grease under pressure are used, in one position, to force the propellers on to the tapered ends of their respective tail shafts and, when reversed, will force the propellers off their tail shafts. Single or multiple prime movers are connected, through suitable reduction gearing, to concentric power shafts which, in turn are connected to the concentric tail shafts.

3,469,557
CHANNEL STERN POWER BOAT
Donald L. Wollard. Rte. 1. Box 56, Islamorada, Fla. 33036
Filed May 1, 1967, Ser. No. 635,231
Int. Cl. B63h *5/16;* **B63b** *1/04*
U.S. Cl. 115—39 **20 Claims**

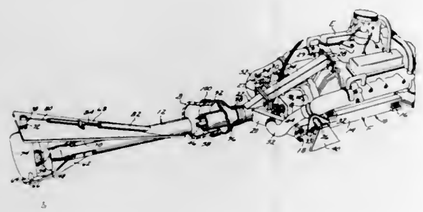
A power boat for high speed shallow draft operation that is characterized by a hull provided with a fore foot portion and a longitudinally extending channel in the bottom that extends from said fore foot portion to a rear

channel opening in the transom. The boat is further characterized by a power means including a propeller shaft



and propeller disposed in the path of flow established by said channel.

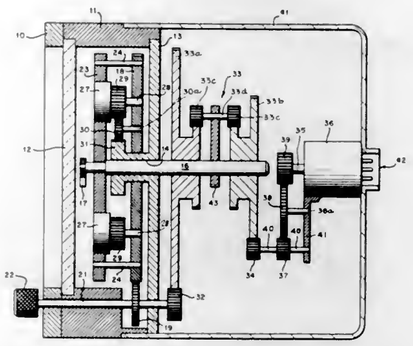
3,469,558
MARINE PROPULSION UNIT
Mario J. Puretic, 259 6th Ave. N., Monte Cristo Isle, Tierra Verde, Fla. 33715
Filed Oct. 25, 1967, Ser. No. 677,893
Int. Cl. B63h *5/12, 5/16*
U.S. Cl. 115—41 **4 Claims**



A propulsion unit for a boat utilizing a conventional inboard engine. The inboard engine is carried by the front end of a longitudinally extending rigid frame, the rear end of such frame taking the form of a hollow tube. The propeller shaft extends through the tube from the drive shaft of the engine. The intermediate portion of the frame is pivotally attached to the boat hull for vertical movement relative thereto. The rear end of the tube carries a skid. The tube is urged upwardly into a longitudinal tunnel formed in the boat hull when the skid engages the ground. The bottom of the tunnel is closed during normal operations by a cavitation plate carried by the tube to provide minimum drag. A rudder is supported between the rear end of the cavitation plate and the skid and the steering mechanism may be carried by the unit.

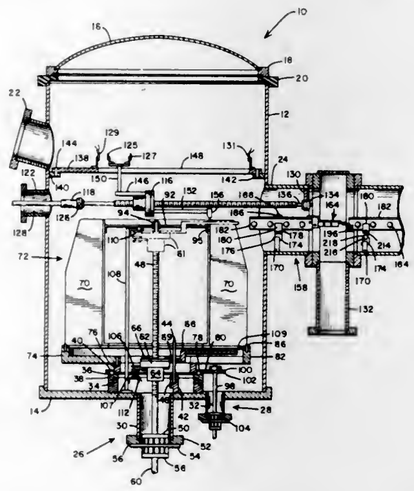
3,469,559
SETTABLE DIAL INDICATOR
William G. Mulley, Warminster, Pa., assignor to the United States of America as represented by the Secretary of the Navy
Filed May 31, 1967, Ser. No. 643,320
Int. Cl. G09f *9/00*
U.S. Cl. 116—129 **8 Claims**

An angle of attack indicator for an aircraft having a circular, graduated scale, main dial which can be manually set in the plane thereof to any orientation while maintaining the symbology in constant orientation. At cardinal points in the graduated scale, smaller dials indicating the corresponding angle of attack or other alpha or numeric symbology are flush-mounted in the main dial and rotatable by a planetary gear arrangement at the same angular rate as the main dial but in the opposite direction. Another differential gear arrangement enables rotation of the indicator pointer with adjustment of the main dial or independently thereof with changes in aircraft angle of



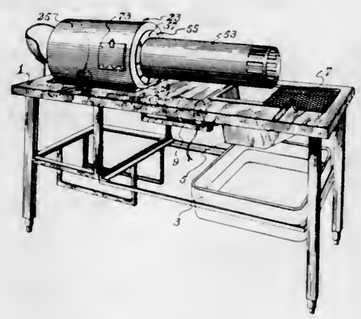
attack. Thus, the symbology on the smaller dials can be initially set and remain in constant orientation for optimum readability.

3,469,560
CONTINUOUS VACUUM DEPOSITION APPARATUS
Charles J. Bukkila and Donald T. Eyberg, Minneapolis, Minn., John S. Lemke, Phoenix, Ariz., and Raymond M. Olson, Minneapolis, Minn., assignors to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed May 4, 1966, Ser. No. 547,619
Int. Cl. C23c *13/04, 13/08*
U.S. Cl. 118—6 **10 Claims**



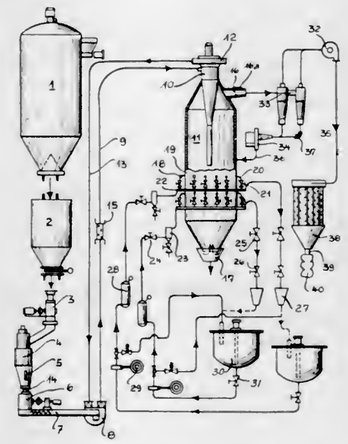
A tri-stage continuous process evaporation system comprising loading, evaporating and unloading chambers, each chamber being independently evacuatable, with interconnection between chambers for the transfer of substrates achieved by a tube-enclosed track system is described. Contained within the loading chamber is a mechanism for supporting and serially inserting a large plurality of substrates onto the track leading to the deposition station. Similarly, the unloading station includes a mechanism for accepting the substrates from the track and storing them in suitable cartridges.

3,469,561
TUMBLING DEVICE INCLUDING PLURAL COATING-SOURCE MEANS
Jerry D. Gordon, 6911 E. 66th St., Tulsa, Okla. 74133
Filed Jan. 12, 1968, Ser. No. 697,408
Int. Cl. A23l *1/31;* **B05c** *5/02*
U.S. Cl. 118—16 **9 Claims**



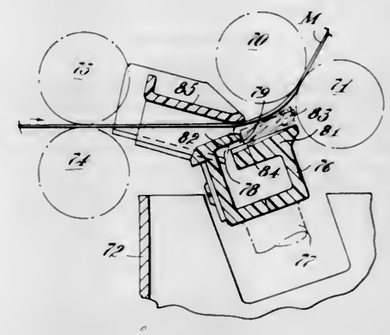
A breader for fried foods comprises a rotating cylinder containing a central screened duct and a draining cone and a final breading and discharge duct. Food to be breaded before frying is fed into the central screened duct and liquid such as milk is supplied to one portion of the cylinder outside the screen, and the flour and seasoning are supplied to another portion of the cylinder outside the screen and outside a conical drainage duct for the liquid. The flour and seasoning are thus fed to the breading and discharge duct by rotation of the cone.

3,469,562
APPARATUS FOR TREATING POWDERED OR GRANULATED SUBSTANCES
Gustav Grun, Lissberg, Upper Hesse, Germany
Continuation-in-part of application Ser. No. 93,011, Mar. 1, 1961. This application July 22, 1965, Ser. No. 474,134
Claims priority, application Germany, Mar. 2, 1960, G 29,141; July 23, 1964, G 41,164
Int. Cl. B05c *5/02;* **B05b** *17/04*
U.S. Cl. 118—24 **9 Claims**



Apparatus for treating substances in powder or granulate form with substances in gaseous, liquid or solid form includes an upwardly extending treatment chamber having an outlet at its lower end and a separator extending downwardly from the upper end to below the midpoint. The first substances, suspended in a moving air current, are injected into the upper end of the separator. The chamber has peripherally spaced apertures in its side wall above its outlet and below the lower end of the separator, and spray nozzles are each associated with a respective aperture to spray the gaseous, liquid or solid form substances toward the axis of the chamber. A common annular conduit is connected to the spray nozzles to supply substances thereto. A flow of air is directed into the chamber through the outlet and upwardly through the chamber, and is so proportioned that only the treated particles of the powder or granulate substances flow to the outlet.

3,469,563
APPARATUS FOR DEVELOPING ELECTROSTATIC IMAGES
Donald D. Sloan, Weston, Mass., assignor to Dennison Manufacturing Company, Framingham, Mass., a corporation of Nevada
Filed July 18, 1967, Ser. No. 654,194
Int. Cl. B05c *5/00*
U.S. Cl. 118—325 **3 Claims**

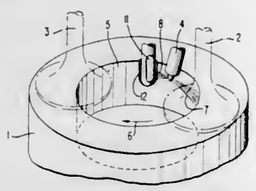


Apparatus for developing electrostatic images comprising means for feeding exposed material over a roller with the image side of the material bearing on the roller and a nozzle for directing a stream of developer against the roller in the crotch between the roller and material, the nozzle comprising two opposed walls with a passageway therebetween for said stream, one wall being disposed between the material and stream and being shorter than the opposite wall to provide said turbulence space between the material and said opposite wall at the outer end of the nozzle, said passageway comprising grooves in said opposite wall which extend lengthwise of the stream, and the depth of said grooves decreasing toward the outer end of the nozzle.

3,469,564
PISTON-TYPE INTERNAL COMBUSTION ENGINE WITH FUEL INJECTION
Hermann Hiereth, Stuttgart-Lederberg, Germany, assignor to Daimler-Benz Aktiengesellschaft, Stuttgart-Unterturkheim, Germany
Filed Oct. 9, 1967, Ser. No. 673,767
Claims priority, application Germany, Oct. 11, 1966, D 51,272
Int. Cl. F02b *3/10*
U.S. Cl. 123—30 **13 Claims**

A piston-type internal combustion engine with fuel injection which is provided with a cylindrical piston combustion space into which fuel is injected during the compression stroke by means of an injection nozzle having two apertures mutually displaced by about 180° to provide

essentially oppositely directed jets; one fuel jet is thereby injected through one of the apertures approximately tangentially and in the same direction as the rotating inflowing air against the combustion space wall while the other jet, serving as ignition jet, is injected into a portion of the combustion space of the internal combustion engine;



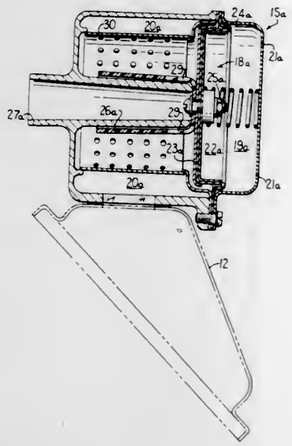
the two fuel jets simultaneously form a chord of a circularly shaped transverse surface of the cylindrical piston combustion space whose length amounts to about 40 to 60% of the combustion space diameter. The chord itself is thereby subdivided into two sections of unequal length with the shorter section associated with the ignition jet and the longer section associated with the main jet.

3,469,565

CRANKCASE VENTILATING MEANS FOR INTERNAL COMBUSTION ENGINES

Robert L. Weber, Lacon, and Thomas M. Albright, Chillicothe, Ill., assignors to Caterpillar Tractor Co., Peoria, Ill., a corporation of California

Filed Aug. 17, 1967, Ser. No. 661,470
Int. Cl. F02m *25/06*
U.S. Cl. 123—119 **5 Claims**



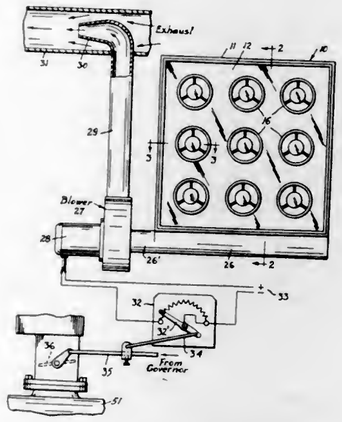
A ventilator valve is arranged to communicate "blow-by" gases from the crankcase of an internal combustion engine to the intake manifold thereof for reburning purposes when such gases exceed a predetermined pressure level. The valve comprises a normally retracted valve means arranged to extend automatically when the pressure level is exceeded to effect such communication through the valve means. The valve means comprises a tubular sleeve slidably mounted on a tubular extension attached to a housing have a flexible diaphragm assembly mounted therein. The diaphragm assembly defines first and second chambers continuously communicating with atmospheric pressure and the crankcase, respectively, whereas the tubular extension defines a third chamber in continuous communication with the intake manifold.

3,469,566

CENTRIFUGAL AIR PRECLEANER WITH BLOWER

James W. Wilkinson, Middleville, and Robert J. Shaltis, Hastings, Mich., assignors to Hastings Manufacturing Company, Hastings, Mich., a corporation of Michigan

Filed Jan. 19, 1967, Ser. No. 610,424
Int. Cl. F02m *35/04*
U.S. Cl. 123—119 **2 Claims**



A centrifugal type air precleaner for an internal combustion engine, the precleaner having an air inlet, a clean air outlet and a dirty air discharge. A blower driven by an electric motor delivers dirty air through the discharge at optimum velocity which may be either constant or variable by a rheostat in circuit with the blower driving motor. If a rheostat is provided, it is actuated automatically by the throttle linkage of the engine, so that the optimum velocity of the dirty air discharge is maintained even at engine idling speeds. The blower may be provided either at the air inlet or at the dirty air discharge of the precleaner, and the dirty air discharge may be either into the atmosphere or into an exhaust pipe of the engine.

3,469,567

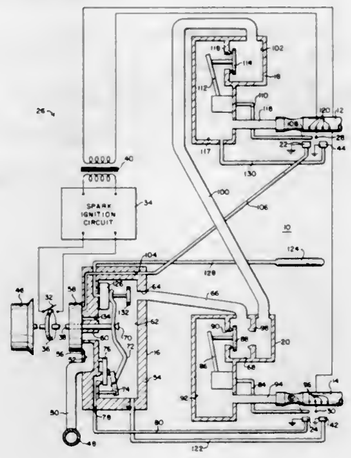
DOUBLE BURNER OVENS

Frank H. Bergquist, Justice, Ill., assignor to Harper-Wyman Company, Hinsdale, Ill., a corporation of Illinois

Filed Dec. 14, 1967, Ser. No. 690,629
Int. Cl. F24c *3/00;* **F23n** *1/00;* **G05d** *23/00*
U.S. Cl. 126—39 **16 Claims**

A gas oven system includes a broil and a bake burner, and a safety valve system with a common inlet supplies gas to the bake or broil burner in response to a heater flame at a bake or broil heater pilot respectively. A control movable to bake and broil positions supplies gas to the safety valves and to the heater pilots. Electrical ignition operates when the control is moved to bake or broil to accomplish ignition of the heater pilot either directly or indirectly for ignition of the bake and broil burners.

Ignition transfer pilots are ignited by the electrical ignition and ignite or maintain the ignition of the bake and



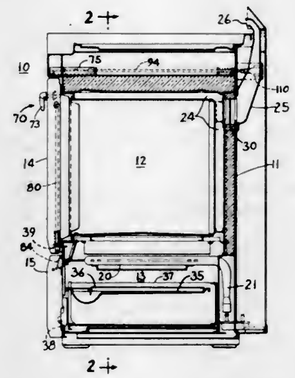
broil burners during thermal delay periods after the control is moved between positions and pending operation of the safety valves.

3,469,568

DOOR LOCKING MEANS AND ASSOCIATED CONTROL CIRCUIT FOR SELF-CLEANING OVEN

Sumner H. Torrey and Donald J. Dubuque, Kankakee, Norman R. Sloan, St. Anne, and Robert L. Morris, Kankakee, Ill., assignors to Geo. D. Roper Corporation, Kankakee, Ill., a corporation of Delaware

Filed May 31, 1968, Ser. No. 733,422
Int. Cl. F24c *3/00, 15/02;* **A21b** *1/00*
U.S. Cl. 126—39 **10 Claims**



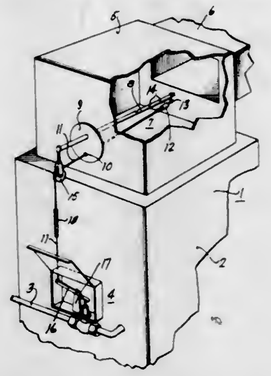
A self-cleaning range having an oven cavity and a broiler cavity with a mechanical lock for locking both of them simultaneously during the cleaning cycle and with a control circuit so arranged that both doors must be closed and locked for a cleaning cycle to be initiated. Electrical interlock switches are associated with the doors and enablingly connected to the thermostat when the later is turned to the upper end of its range.

3,469,569

AUTOMATIC SAFETY SYSTEM AND THERMAL SENSOR FOR HEATING SYSTEMS

Lucas T. Brockbank, 1718 Randolph Road, Schenectady, N.Y. 12308

Filed Nov. 20, 1967, Ser. No. 684,414
Int. Cl. F24h *3/00;* **F23n** *5/02, 3/04*
U.S. Cl. 126—116 **5 Claims**



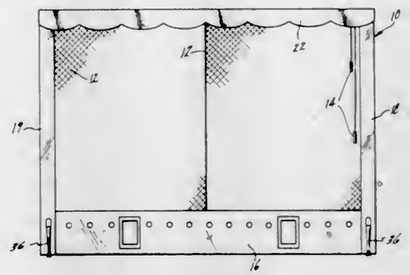
An automatic safety system for heating systems, includes a biased shut-off valve in a fuel supply line to a heater, a fusible thermal sensor which is positioned in a plenum connected to the heater to receive the working fluid at its point of maximum temperature, the sensor having one end attached to a rod which extends into the plenum, and its other end connected through a flexible cable to the shut-off valve.

3,469,570

FIREPLACE SCREEN WITH REMOVABLE DECORATIVE TRIM MEMBERS

Robert E. Wright, Stamford, Conn., assignor to The Geo. W. Fleming Company, Mount Carmel, Conn., a corporation of Connecticut

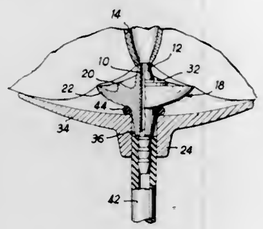
Filed Dec. 28, 1967, Ser. No. 694,296
Int. Cl. F24c *15/36, 15/10*
U.S. Cl. 126—202 **5 Claims**



A fireplace screen having means for making various ornamental portions, including the valance piece across the top, removable so that valances of different design and/or finishes can be selected at will in the retail store. A pair of mounting lugs are provided on the valance for engagement in key-hole slots in a frame member of the screen. A locking tab is provided within each of the key-hole slots to prevent the mounting lugs from accidentally becoming disengaged. The locking tab is posi-

tioned so that it does not interfere with the insertion and removal of the lug from the key-hole slot, but it prevents accidental removal thereof by blocking the mounting lug until it is maneuvered in the correct way to release it from the key-hole slot.

3,469,571
DEVICE FOR ADMINISTERING A FLUID INTO THE INTESTINAL TRACT
Alexander A. Vass, 309 E. 87th St., New York, N.Y. 10028
Filed May 11, 1967, Ser. No. 637,713
Int. Cl. A61m *7/00, 31/00*
U.S. Cl. 128—2 **8 Claims**



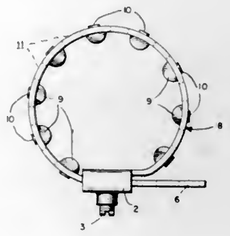
A device for administering a fluid into the intestinal tract, consisting of a nozzle having a tapered head whose end portion will fit into an anus and its inner portion overlie its edges; a base outwardly of the head portion and connected thereto, to contact the sides of a cleft between buttocks over the annus, to inhibit penetration of the head into the anus, and a retaining plate removably fitted over the nozzle to bear against the said base and extending over the buttocks to each side of the cleft, whereagainst such retaining plate ends are securable.

3,469,572
APPARATUS FOR TAKING MULTIPLE FLUID SAMPLES
John Richard Nehring, Linden, N.J., assignor to Becton, Dickinson and Company, Rutherford, N.J., a corporation of New Jersey
Filed Aug. 18, 1966, Ser. No. 573.283
Int. Cl. A61b *5/10;* **A61m** *25/00*
U.S. Cl. 128—2 **6 Claims**



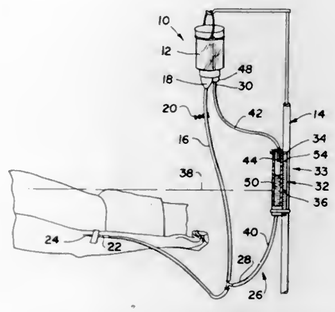
A fluid sampling device having a housing which includes a double ended cannula, one end of said cannula being adapted to connect with a fluid source and the other end having valve means in the form of a thin walled sleeve mounted thereon which normally covers the cannula opening, said sleeve being compressible so as to uncover said opening and thus allow fluid to pass through the cannula from the fluid source to a fluid collection container, thus facilitating collection of multiple fluid samples.

3,469,573
ORTHOPEDIC CLAMP
Michael A. Florio, 180 E. Delaware, Chicago, Ill. 60611
Filed May 4, 1966, Ser. No. 547,484
Int. Cl. A61f *5/04*
U.S. Cl. 128—92 **1 Claim**



A clamping device for use by orthopedic surgeons in connection with the fixation of bone fractures and which serves to not only perform the main function of securing the portions of the fractured bone together during bone growth, but which enables a reduction in the area of pressurized conduct between the clamp and the bone.

3,469,574
PHYSIOLOGICAL FLUID INFUSION SYSTEM HAVING AUTOMATIC CUTOFF
Gerald Durkan. 6 Emerson St., Uniontown, Pa. 15401
Filed Sept. 29, 1966, Ser. No. 582,920
Int. Cl. A61m *5/20;* **B67d** *5/08, 5/14*
U.S. Cl. 128—214 **11 Claims**



A physiological fluid infusion system which includes a source of physiological fluid to be infused. Additionally, conduit means are supplied for communicating with said source for conveying said physiological fluid to the patient. Furthermore, manometer means are provided included a manometer fluid for measuring venous pressure with the manometer fluid standing in the manometer means at a fluid level which is indicative of venous pressure. Finally, cut-off means are provided which is actuated by the manometer fluid and responsive to a pre-selected manometer fluid level which is indicative of abnormal venous pressuer for terminating the flow of the physiological fluid into the conduit means and, hence, to the patient.

3,469,575
RECTAL NOZZLE ASSEMBLY
Alexander A. Vass and Clara Vass, both of 309 E. 87th St., New York, N.Y. 10028
Filed Sept. 26, 1967, Ser. No. 670,603
Int. Cl. A61m *3/00, 7/00*
U.S. Cl. 128—245 **7 Claims**



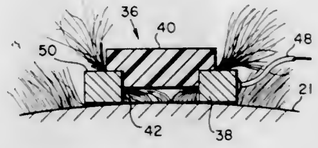
In a nozzle for administering fluid into the rectum, a tube having a head to fit snugly in the rectum opening and a cupped member on the tube, spaced from the head, pressable against the peri-anal area to create suction for holding the nozzle on the body, the wall of the cupped member enlarging posteriorly laterally and having an indentation at the center of the enlargement; the tube also provided with diametrically opposed curved projections arranged to overlie the peri-anal area surface anteriorly and posteriorly of the anal opening; the anteriorly extending projection having an indented end edge. Lateral tilting of the nozzle is prevented by a slotted sleeve fitting over the tube and an apertured plate adjustably interengaged with the sleeve.

3,469,576
FOOTWEAR
Henry M. Smith, 26 Minnesota Ave., Buffalo, N.Y. 14214, and Jack A. Everts, 441 Stolle Road, Elma, N.Y. 14059
Filed Oct. 5, 1966, Ser. No. 584,542
Int. Cl. A43b *3/04, 13/20*
U.S. Cl. 128—595 **4 Claims**



An article of footwear wherein the inner sole structure of the shoe includes a flexible envelope conforming in outline to the wearer's foot and having an upward extension at the heel portion. The envelope has a plurality of lengthwise channels and contains a flowable material consisting of solid particles such as phenolic beads in a lubricative liquid material such as mineral oil. The channels retard flow of the material under pressure from a wearer's foot and direct the flow generally lengthwise of the shoe.

3,469,577
SCALP CONTACTING BIOELECTRODE
John A. R. Kater, Diamond Bar, Calif., assignor to Beckman Instruments, Inc., a corporation of California
Filed Mar. 2, 1967, Ser. No. 620,011
Int. Cl. A61b *5/04;* **A61m** *35/00*
U.S. Cl. 128—2.1 **9 Claims**



A bioelectrode for attachment to the scalp of a subject without removing hair from the scalp. The bioelectrode is generally in the form of a ring, having a slot therein so that hair on the scalp can be readily passed through the slot into the opening in the ring. Means are provided for securing the ring to the hair so that the ring is held in physical contact with the scalp.

3,469,578
INFUSION DEVICE FOR AMBULATORY PATIENTS WITH FLOW CONTROL MEANS
Howard R. Bierman, 300 Hilgard Ave., Westwood, Calif. 96137
Filed Oct. 12, 1965, Ser. No. 495,074
Int. Cl. A61m *37/00;* **B65d** *35/28*
U.S. Cl. 128—214 **20 Claims**

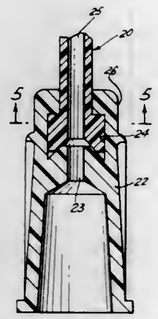


A device for expelling a liquid at an extremely slow rate over a period ranging from several hours to days with the liquid being expelled from a distended relatively-thick-walled elastic bladder member solely by pressure induced on the liquid by the internal stresses of the distended bladder member. The device is comprised of an outer rigid housing having a thick-walled elastic bladder therein which dispenses liquid therefrom through a flow controlled outlet means attached to the outer housing. A porous-type flow-control means in the outlet means prolongs the flow and controls the flow rate. The device is particularly useful in administering parenteral infusions to ambulatory patients over a predetermined period of time at a controlled flow rate.

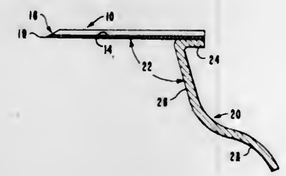
3,469,579
CATHETER NEEDLE
Franz Hans Hubert, Carlstadt, N.J., assignor to Becton, Dickinson and Company, Rutherford, N.J., a corporation of New Jersey
Filed May 5, 1967, Ser. No. 636,485
Int. Cl. A61m *5/32, 25/00*
U.S. Cl. 128—214.4 **3 Claims**

A catheter needle having its hub and its catheter formed of different plastic materials thereby providing a plastic

material for each part having the most desirable properties. Due to different melting points, heating the parts above the melting point of one plastic but below the melting point of the other allows the one plastic component to be mechanically deformed and connected to the other plastic component. When cooled, the result is a permanent, strong and leak-proof catheter needle.

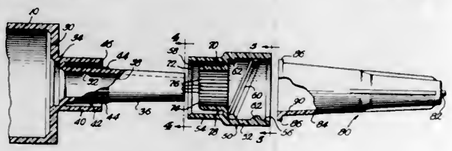


3,469,580
INTRODUCER FOR EPIDURAL NEEDLE
Robert A. Huddy, Arcadia, Calif., assignor to Sierra Engineering Company, Sierra Madre, Calif., a corporation of California
Filed Mar. 9, 1967, Ser. No. 621,854
Int. Cl. A61m *5/00*
U.S. Cl. 128—215 **1 Claim**



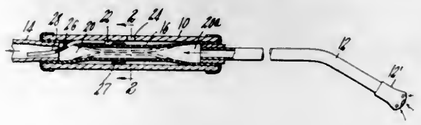
A generally semicircular needle for piercing flesh and guiding a blunt epidural needle into operative position in the epidural space for the purpose of administering anesthetic.

3,469,581
SYRINGE AND NEEDLE ADAPTER ASSEMBLY
George K. Burke, Bethlehem, Pa., assignor to Burron Medical Products, Inc., Bethlehem, Pa., a corporation of Pennsylvania
Filed Oct. 23, 1967, Ser. No. 677,253
Int. Cl. A61m *5/32*
U.S. Cl. 128—221 **8 Claims**



A needle adapter is supported on the boss of a syringe, the needle adapter serving to mount a hypodermic needle having attaching flanges on the hub thereof. The needle adapter and the boss on the syringe have interengaging locking serrations to prevent relative rotation of the adapter and associated needle with respect to the syringe.

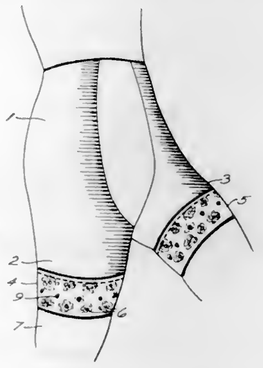
3,469,582
HAND-HELD SURGICAL AIRFLOW INSTRUMENT
Richard Robert Jackson, Marblehead, Mass. 01945
Continuation-in-part of application Ser. No. 489,481, Sept. 23, 1965. This application Jan. 24, 1968, Ser. No. 703,844
Int. Cl. A61m *1/00*; **F16k** *15/00, 31/12*
U.S. Cl. 128—276 **17 Claims**



A hand-held medical airflow instrument having supply and ambient openings and a movable member responsive to changes in air pressure to move from a first to a second position, to open and close a main passage. There is a control chamber to which the movable member (e.g., polyethylene film) is exposed for actuation, a control opening adapted to connect the control chamber also to ambient pressure (the control opening located in a position to be opened and closed by the operator) and a tap passage (e.g. through the diaphragm itself) connecting the control chamber to the supply end of the main passage. The pressure in the control chamber can be controlled by the operator to move the movable member between the first and second positions.

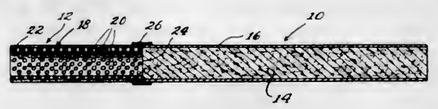
Surgical suckers employing this principle, and important constructional techniques are shown.

3,469,583
GIRDLE-STOCKING COMBINATION
Michael Gottlieb, New York, N.Y., assignor to Liberty Fabrics of New York, Inc., a corporation of New York
Filed Apr. 14, 1967, Ser. No. 631,035
Int. Cl. A41c *1/00*; **A41b** *9/04*
U.S. Cl. 128—519 **3 Claims**



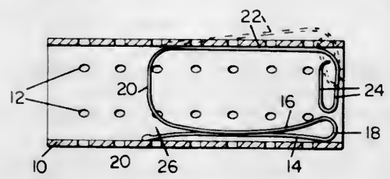
A girdle and stocking combination comprising a girdle with depending leg portions made of stretch lace having a plurality of eyelets, a stocking, and means, such as buttons, hooks or the like, attached to the upper end of the stocking for engaging the eyelets of the girdle, the leg portion of the girdle extending over the upper end of the stocking so that the stocking is maintained in an extended position and a smooth decorative line is formed by the stocking and the bottom edge of the leg portion of the girdle.

3,469,584
CIGARETTE
Max J. Doppelt, 1920 W. Sunnyside Ave., Chicago, Ill. 60640
Filed Feb. 9, 1967, Ser. No. 614,974
Int. Cl. A24d *1/04*
U.S. Cl. 131—10 **1 Claim**



A cigarette having a tobacco section and a mouthpiece section, with the mouthpiece section formed of hollow tubular member provided with a plurality of circumferentially spaced openings or perforations, with a paper or the like covering the tubular member and openings or perforations, which paper or the like is porous and absorbent and permits outside air to be drawn into the tubular member through said covered openings to admix with the smoke drawn into the tubular member for the purpose of reducing the quantity of particulate or tar and nicotine and providing a cooler smoke.

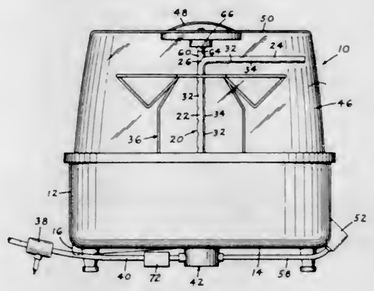
3,469,585
SELF-STORING HAIR-CLIP DEVICE FOR HAIR ROLLERS
Daisy E. Clifford, 394 W. Main St., Northboro, Mass. 01532
Filed Mar. 18, 1968, Ser. No. 713,843
Int. Cl. A45d *2/00, 8/00*
U.S. Cl. 132—40 **8 Claims**



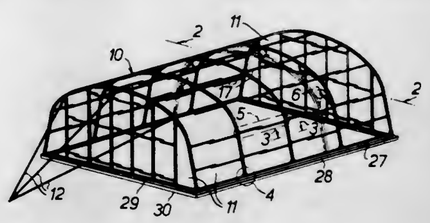
A hair roller and a hair-clip therefore, the latter having a pair of resilient legs spaced apart slightly greater than the interior diameter of the hair roller, said hair-clip being positioned wholly within and held in the hair roller by the resiliency of said legs, but having a third leg selectively positionable at the exterior of the hair roller for holding a strand of hair in place thereon, said hair-clip embodying a handle extending generally diametrically of the hair roller when the hair-clip is held therein.

3,469,586
PORTABLE DISHWASHER
Hugo Berson, 1362 New York Ave., Brooklyn, N.Y. 11203, and Solomon S. Stolove, Brooklyn, N.Y.; said Stolove assignor to said Berson
Filed Apr. 26, 1967, Ser. No. 633,820
Int. Cl. B08b *3/00*
U.S. Cl. 134—93 **5 Claims**

A portable diswhasher adapted to be connected to a water faucet of a basin is provided with a base member and a cover adapted to fit over the base enclosing dishes stacked within the base member. The base member is provided with a bottom wall having at least one aperture to permit the drainage of water therefrom after the water has been directed against dishes stacked within the base member. A valve arrangement is connected to the base member and supports within the base a water dispensing unit which is rotatably connected thereto. A hose is connectable between the water facuet and a basin and the valve arrangement thereby bringing water to the water dispensing unit. A soap container is connected to the base member and communicates with the valve arrangement thereby delivering soap to the water dispensing unit so that it may be dispensed against the dishes to be cleaned.



3,469,587
COLLAPSIBLE WEATHERPROOF COVER FOR SWIMMING POOLS
David Folkes, Hamilton, Ontario, Canada, assignor to Foldway Covers Limited
Continuation-in-part of application Ser. No. 503,690, Oct. 23, 1965. This application Dec. 22, 1967, Ser. No. 692,805
Int. Cl. A45f *1/00*; **E04b** *1/347*
U.S. Cl. 135—1 **10 Claims**

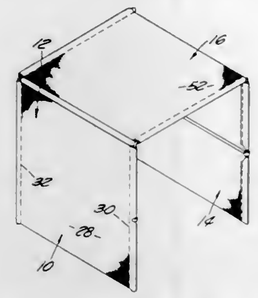


This specification discloses a collapsible cover for swimming pools and the like in which a framework of arch-shaped supports mounted on parallel rails at each side of the cover, and extendable struts between the supports, the cover being formed of a series of separable sheets of plastic attached to the supports and means retaining the supports on the rails when the cover is collapsed.

3,469,588
ARTICULATED MULTISECTION SHELTER OR FRAME STRUCTURE
Orman M. Rainwater, 1817-B South St., North Long Beach, Calif. 90805
Continuation-in-part of application Ser. No. 532,402, Mar. 7, 1966. This application Sept. 14, 1967, Ser. No. 667,799
Int. Cl. E04f *10/04*
U.S. Cl. 135—5 **9 Claims**

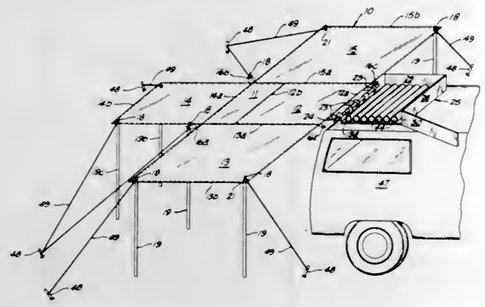
The portable shelter structure comprises a series of sections. Each section includes a flexible sheet of mate-

rial **28**, a pair of rods **18** and **20**, seams **30** and **32** or other means attaching the rods in spaced parallel relationship to the flexible sheet when the sheet is taut. A single brace **22** having an effective link corresponding to



the spacing between the rods when the sheet is taut, and swivel joints **24** and **26** or other means attachably connecting the brace **22** to intermediate portions of the rods **18** and **20**.

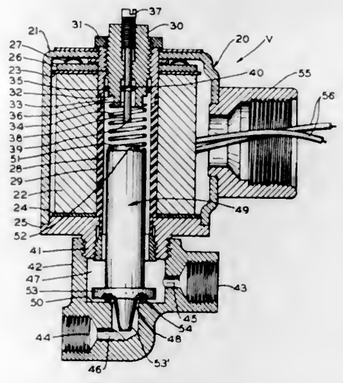
3,469,589
TENT/CANOPY AND HOUSING THEREFOR
Eugene P. Mitchell, 123 S. Portola Lane, Santa Ana, Calif. 92705
Filed Apr. 8, 1968, Ser. No. 719,607
Int. Cl. E04f *10/02*
U.S. Cl. 135—5 **9 Claims**



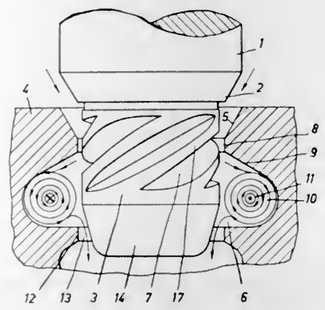
A tent/canopy having a housing adapted for mounting atop a vehicle. The front of the housing is openable to expose a pair of looped straps adapted to support a pole horizontally. The fabric tent/canopy includes a substantially rectangular central portion, to respective edges of which are attached four rectangular flap panels. One edge of the central portion is provided with projecting tab members, the horizontal pole passing through grommets in the tab members, thereby supporting one edge of the tent/canopy. The opposite edges of the central portion is supported by tent poles storable within tubes situated in the housing. Additional tent poles may be used to support the flap panels horizontally, thereby providing a canopy.

3,469,590
MODULATING CONTROL VALVE
George E. Barker, St. Louis, Mo., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware
Filed Oct. 17, 1966, Ser. No. 587,236
Int. Cl. E03b *1/00;* **F16k** *31/02*
U.S. Cl. 137—1 **9 Claims**

A furnace control system employing a unique type of control valve for regulating the flow of fuel to the heating member. The valve includes a movable plunger which will move from the valve seat to the open position when a control signal to the solenoid coil of the valve exceeds a predetermined set point value. The plunger will move to a position of minimum modulation which is established between the upper limit of plunger travel and the valve seat. The upper limit of the plunger movement is defined by a nonmagnetic element. When the plunger reaches the position of minimum modulation, it can thereafter be modulated by signals to the solenoid coil. During the travel from the valve seat to the position of minimum modulation, the plunger moves through a magnetically unstable region and during the position of modulation the plunger moves through a magnetically stable region. A second type of valve plunger including two sections which are attached but nevertheless movable with respect to each other is also disclosed.

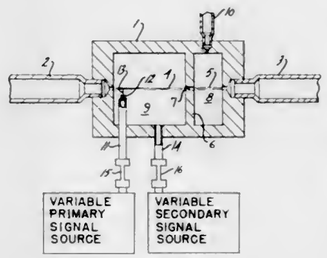


3,469,591
METHOD OF REDUCING FLUID PRESSURE AND DEVICE FOR SAME
Wilhelm Odendahl, Hoemerichstrasse 46, Gummersbach-Steinenbruck, Germany
Filed Feb. 21, 1967, Ser. No. 617,553
Claims priority, application Germany, Feb. 25, 1966, O 11,473
Int. Cl. F15d *1/10*
U.S. Cl. 137—14 **9 Claims**



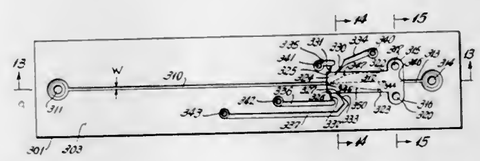
A method of reducing fluid pressure as embodied in five illustrative throttling valves. The reduction in pressure is done by splitting the stream into a family of inclined jets equally spaced around an axis, such as a valve plug. These jets then discharge to form a ring vortex rotating around the axis. The various embodiments shown provide valves having multiple families of jets and rotating vortices to accomplish pressure reduction in stages.

3,469,592
FLUID SIGNAL SUMMING MODULATOR AND AMPLIFIER
Frank A. Kuczkowski, Glendale, and Richard N. Laakaniemi, Milwaukee, Wis., assignors to Johnson Service Company, Milwaukee, Wis., a corporation of Wisconsin
Filed Dec. 27, 1965, Ser. No. 526,653
Int. Cl. F15c *1/10*
U.S. Cl. 137—81.5 **16 Claims**



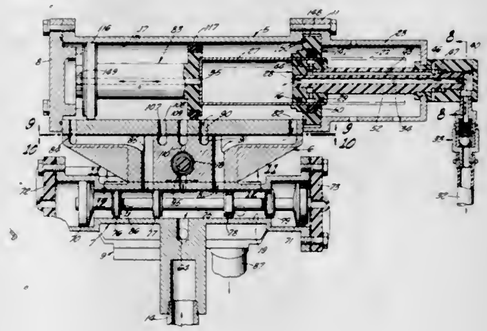
The disclosure includes an impacting fluidic amplifier having a primary signal nozzle located normal to a main stream within a reference chamber. The nozzle establishes a deflecting signal stream. A secondary signal line terminates in the wall of the chamber for establishing a pressure in the reference chamber whereby a differential pressure across the orifice of the signal nozzle controls the deflection stream strength.

3,469,593
FLUIDIC DEVICE
Robert F. O'Keefe, Trumbull, Conn., assignor to Pitney-Bowes, Inc., Stamford, Conn., a corporation of Delaware
Continuation-in-part of applications Ser. No. 436,411, Mar. 2, 1965, Ser. No. 451,377, Apr. 28, 1965, and Ser. No. 471,164, July 12, 1965. This application June 1, 1966, Ser. No. 554,463
Int. Cl. F15c *1/18*
U.S. Cl. 137—81.5 **50 Claims**



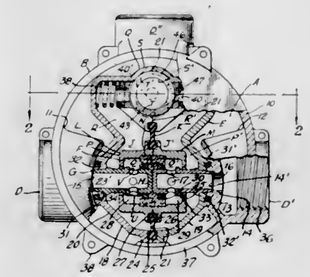
In turbulence type fluid amplifiers, one ore more of the following features can be included to improve and/or modify the operation of such amplifiers, namely: switching the amplifier to its laminar flow condition by applying a control signal at a point upstream from the downstream end of the emitter of the amplifier; causing a portion of the energy in the turbulent mainstream to be fed back through the amplifier interaction chamber so as to maintain the amplifiier in its turbulent flow condition; utilizing an off-set low pressure region in the interaction chamber and a plurality of selective operable fluid control jets; and most importantly, providing a common guide surface along which both laminar and turbulent fluid flow may take place in flowing through an enlarged interaction chamber.

3,469,594
HYDRAULIC-OPERATED FLUID MIXING PUMP
Donald C. Porter, Los Angeles, Calif., assignor to D. M. McCaffrey and Patricia Ann McCaffrey, both of Clermont, Fla.
Filed Feb. 1, 1966, Ser. No. 524,308
Int. Cl. G05d *11/035;* **F04b** *21/00;* **F16j** *15/34*
U.S. Cl. 137—99 **5 Claims**



A pump for injecting a fluid such as fertilizer into water flowing through a pipe. A reciprocating pump motor powered by water pressure in the pipe drives a slave pump which injects a metered amount of fluid into the water downstream of the pump motor. A seal between chambers containing water and the injection fluid has a pair of sealing members spaced by an intermediate area vented to the atmosphere.

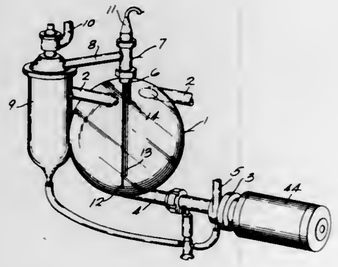
3,469,595
FLUID-PRESSURE EQUALIZING AND MIXING VALVES
Sigurdur G. Petursson, Cooksville, Ontario, Canada, assignors to Danfosss Manufacturing Co. Ltd., Port Credit, Ontario, Canada, a corporation of Canada
Filed Mar. 10, 1967, Ser. No. 622,372
Int. Cl. G05d *23/13, 11/20;* **F16k** *11/16*
U.S. Cl. 137—100 **6 Claims**



The entitled invention wherein an annular diaphragm secured in a casing divides it into hot and cold water chambers. A valve housing having hot and cold water chambers is slidable on stationary aligned co-axial delivery tubes spanning the casing and intersecting the diaphragm, the housing being sealed to the inner rim of the diaphragm.

Ports in the tubes communicate with the housing chambers, and valve seats on the housing and tubes co-operate to control volume discharged from the housing chambers into the casing chambers. An associated stem valve has opposite annular tapering hot and cold water slots so that rotation increases the temperature ratio without appreciably changing volume.

3,469,596
LIQUID TRANSFER APPARATUS
Donald L. Branton, Delavan, Wis., assignor to Sta-Rite Industries, Inc., Delavan, Wis., a corporation of Wisconsin
Filed Oct. 2, 1967, Ser. No. 672,254
Int. Cl. B67c *3/16;* **A01j** *5/00, 3/00*
U.S. Cl. 137—205 **7 Claims**



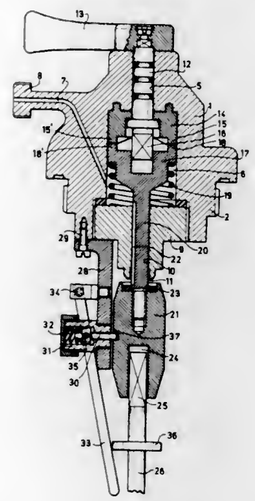
The invention relates to a milk transfer apparatus which receives milk from a pipeline and periodically transfers the milk to a bulk storage tank. The apparatus includes a jar having an inlet connected to the pipeline and an outlet connected to the suction side of a pump. In addition, a vacuum line is connected to the jar and the vacuum acts through the pipeline to draw the milk from the individual milkers and convey the milk to the jar.

Upper and lower probes are provided in the jar and during the milking cycle, when the milk level increases to the level of the upper probe, the pump is operated to pump milk from the jar and when the level of the milk falls beneath the lower probe, the pump is stopped.

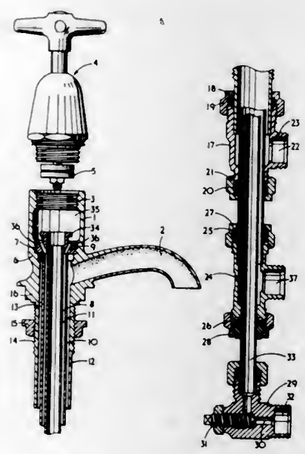
During the washing cycle, after completion of the milking, a time delay element is incorporated in the control circuit and acts to delay energization of the pump motor for a pre-set time after the wash solution has reached the level of the upper probe. This delay permits the wash solution to rise to the upper end of the jar and spill over into the milk trap to sanitize the trap before the pump motor is started.

3,469,597
SAFETY DEVICE FOR LIMITING THE AMOUNT OF GAS DISCHARGED FROM A CONTAINER CONTAINING A LIQUEFIED GAS TO A PREDETERMINED VOLUME
Luigi Bagnulo, Via A. Volta 18, Milan, Italy
Filed Nov. 2, 1967, Ser. No. 680,072
Claims priority, application Italy, Nov. 7, 1966, 782,751/66
Int. Cl. F16k *21/16;* **F17c** *7/02, 9/02*
U.S. Cl. 137—209 **14 Claims**

A safety device for limiting the amount of gas discharged from a container containing a liquefied gas to a predetermined volume after each opening of a gas discharge valve connected to the container and including a float floating on the liquefied gas in the container and following the liquid level variations during discharge of gas therefrom, and an intermediate member connectible to the float for movement therewith when the valve means is moved to an open position and cooperating with the valve means to move the latter to a closed position when the float and the intermediate member connected thereto has moved during discharge of gas downwardly a predetermined distance.

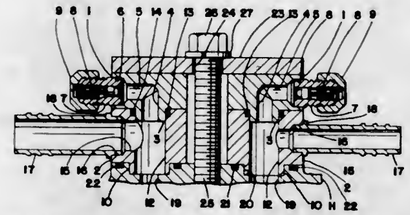


3,469,598
TAPS
Albert Fletcher Wigley, Middleton Lodge, Lower Middleton St., Ilkeston, England
Filed May 10, 1966, Ser. No. 548,915
Claims priority, application Great Britain, May 11, 1965, 19,750/65
Int. Cl. E03c *1/044*
U.S. Cl. 137—334 **2 Claims**



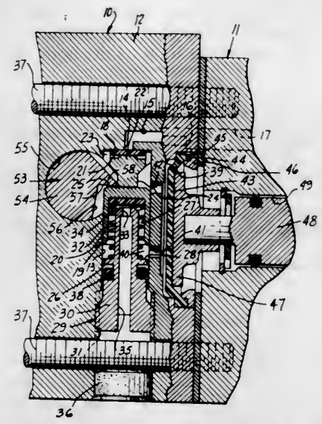
A control valve for a domestic water supply system including a cold water inlet, an outlet leading to a thermal storage heater, an inlet for the supply of hot water from the heater and a discharge outlet, with a valve closure member for controlling the water flow.

3,469,599
UNIVERSAL FITTINGS FOR ATTACHMENT TO COMPRESSOR HEADS AND THE LIKE
Arthur S. Kish, Lyndhurst, Ohio, assignor to Murray Corporation, Cockeysville, Md., a corporation of Maryland
Filed Sept. 12, 1967, Ser. No. 667,161
Int. Cl. F16k *45/00;* **F17d** *3/00;* **F04b** *39/10*
U.S. Cl. 137—587 **9 Claims**



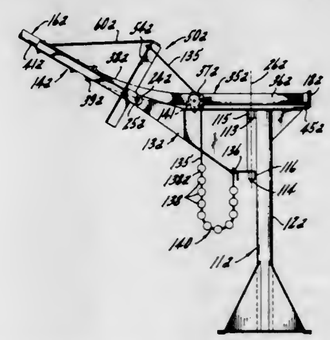
The invention is concerned with the provision of fittings for attachment to the compressor heads of automotive air-conditioning systems, wherein each fitting comprises an adapter having a tube extending radially therefrom and a top cap having a valve extending radially therefrom, and the adapter and top cap are rotatable relatively to each other to adjust the angularities between the tubes and valves, for the purpose of accommodating the angular positions of these parts to the positions of the refrigerant lines or conduits.

3,469,600
SOLENOID OPERATED VALVE
Walter D. Ludwig, Bloomfield Township, Oakland County, Mich., assignor to Mac Valves, Inc., Oak Park, Mich., a corporation of Michigan
Filed Jan. 15, 1968, Ser. No. 697,882
Int. Cl. F16k *11/24, 31/04*
U.S. Cl. 137—596.17 **22 Claims**



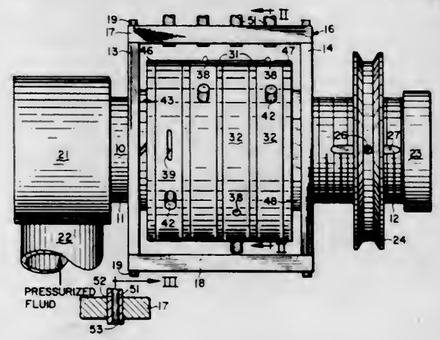
A three-way double poppet valve having a valve chamber with an inlet orifice at one end of the valve chamber connected to a source of fluid under pressure, fluid passage means communicating with the valve chamber for conveying fluid under pressure into operative engagement with a fluid pressure operated member of an apparatus to be operated by the valve, an adjustable member in the valve chamber providing an outlet orifice disposed in spaced alignment with the inlet orifice, a movable cylindrical valve member interposed between the inlet orifice and the outlet orifice, said valve member having a deep pocket facing the outlet orifice and a shallow pocket facing the inlet orifice and having a centrally located external groove. two identical flat circular valve elements of resilient material, the one loosely inserted in the shallow pocket of the valve member and adjacent to the inlet orifice and the other loosely inserted in the deep pocket of the valve member and adjacent to the outlet orifice, a spring means located in the deep pocket of the valve element for normally biasing the movable cylindrical valve member to a first position closing the inlet orifice and opening the outlet orifice, a rotary actuator engaging the centrally located external grove of the movable cylindrical valve member for moving the same against the action of the biasing spring to a second position opening the inlet orifice and closing the outlet orifice, and means for rotating the rotary actuator comprising a toggle spring means and an electrical solenoid means.

3,469,601
CONDUIT SUPPORT APPARATUS
John D. Harper, 111 W. Washington St., Chicago, Ill. 60602
Filed July 22, 1966, Ser. No. 567,099
Int. Cl. E03b; E03c; F17d
U.S. Cl. 137—615 **6 Claims**



A fluid handling apparatus consisting of a frame supporting flexible metallic hose. The support allows sections of the hose to either flex about a horizontal or vertical axis.

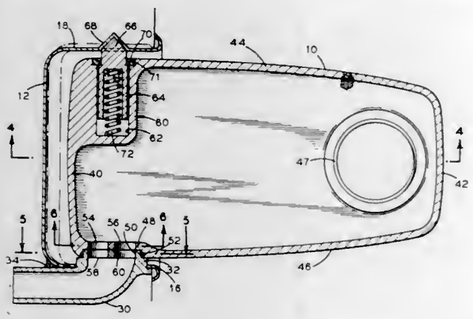
3,469,602
TIMING APPARATUS
Robert F. Wiley, Corning, N.Y., assignor to Corning Glass Works, Corning, N.Y., a corporation of New York
Filed Mar. 10, 1967, Ser. No. 622,259
Int. Cl. F15c *3/00*
U.S. Cl. 137—624.2 **4 Claims**



An adjustable timing apparatus for actuation of fluid amplifiers in accordance with a desired program therefor. A hollow rotatable shaft having a plurality of rings

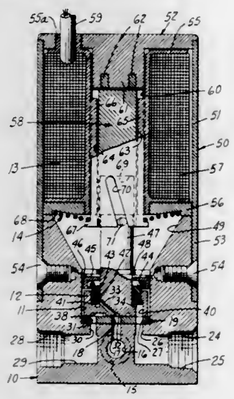
thereabout and normally rotatable therewith, the rings and shaft embodying fluid passages leading from said hollow to orifices in the outer periphery of the rings to supply pressurized fluid supplied to said hollow to input tubes of fluid amplifiers, such rings being rotatively adjustable about said shaft to vary the sequence of receipt of the pressurized fluid by the input tubes.

3,469,603
FOLD-UP TUB SPOUT
Robert W. Nagel, Floyds Knobs, Ind., assignor to American Standard Inc., New York, N.Y., a corporation of Delaware
Filed Feb. 23, 1967, Ser. No. 618,150
Int. Cl. E03b; E03c; F17d
U.S. Cl. 137—625.11 **12 Claims**



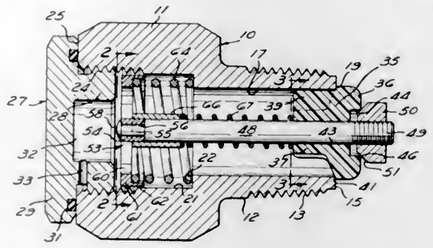
This invention relates in general to water spout constructions, and in particular to a new and useful fold-up spout for bathtubs whereby the spout itself may be operated to direct liquid into the tub by merely moving the spout downwardly so that the discharge opening is aligned with the bathtub.

3,469,604
ROTARY VALVE
Walter D. Ludwig, Bloomfield Township, Oakland County, Mich., assignor to Mac Valves, Inc., Oak Park, Mich., a corporation of Michigan
Filed Dec. 12, 1966, Ser. No. 600,965
Int. Cl. E03b *9/02*; **E03c**; **F17d**
U.S. Cl. 137—625.43 **33 Claims**



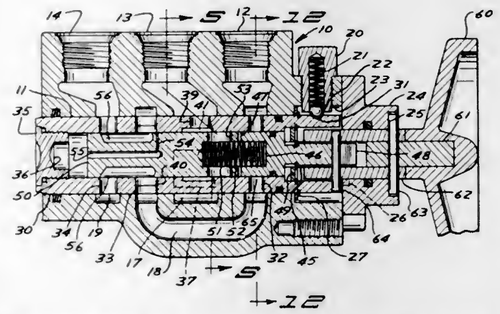
A four-way reversing valve which incorporates a valve element rotatable between working positions by either a linear actuating means or a rotary actuating means, and wherein said linear actuating means may be manually operated or power operated, and said rotary actuating means may be manually operated. The power operated linear actuating means may be actuated in two directions by a dual solenoid means, a solenoid means in one direction and a return spring in the other direction, or by an air pilot or vacuum pilot in one direction and a return spring in the other direction.

3,469,605
LOCK TYPE EXCESS FLOW VALVE
Louis B. Courtot, Euclid, and Willard C. Gibson, Mentor, Ohio, assignors, by mesne assignments, to Textron Inc., Providence, R.I., a corporation of Rhode Island
Filed Jan. 27, 1966, Ser. No. 523,309
Int. Cl. F16k *17/30, 21/02*
U.S. Cl. 137—630 **9 Claims**



A combination liquid eduction valve and excess flow check valve including a body having a bore therethrough and a valve seat adjacent one end of the bore. A poppet is slidably guided within the bore and is adapted to make sealing engagement with the valve seat. A valve stem extends through the body bore and is slidably carried by a bore through the poppet. A stop member is secured on the outer end of the valve stem and is adapted to make sealing engagement with the poppet to prevent fluid leakage through the poppet bore. A helical spring urges the stop member into sealing engagement with the poppet and the poppet into sealing engagement with the valve seat. Another helical spring carried by the stem urges the poppet against the stop with a constant force independent of the relative position of the body and stem.

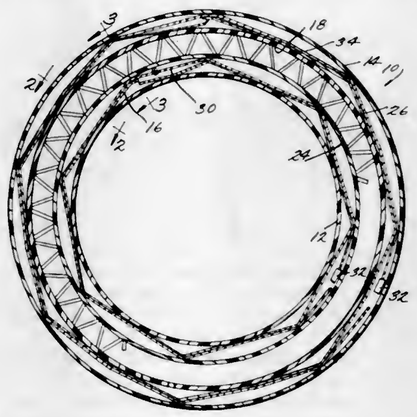
3,469,606
MULTI-PORT ROTARY AND RECIPROCATING FLUID CONTROL VALVE
Ronald K. Getman, Minnetonka Village, Minn., assignor to Gresen Manufacturing Company, Minneapolis, Minn., a corporation of Minnesota
Filed July 13, 1967, Ser. No. 653,115
Int. Cl. F16k *11/12*
U.S. Cl. 137—636.4 **10 Claims**



A rotary fluid valve incorporating selective and reversible modes of operation for controlling the direction and speed of operation of a fluid motor and including flow dividing means for operation in a fluid control system

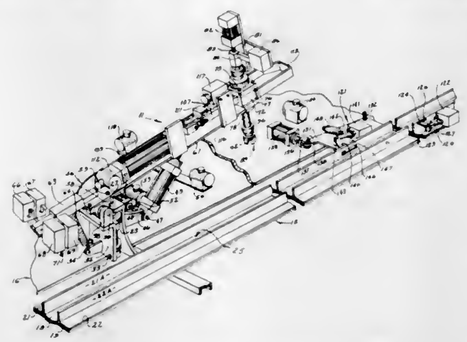
in which the source of fluid may be further utilized in the operation of one or more other fluid utilization devices simultaneously with operation of the valve and its associated fluid operated device.

3,469,607
RADIALLY DEFLECTABLE CONCENTRIC PIPE SUPPORT
James H. Anderson, 1615 Hillock Lane, York, Pa. 17403
Filed Mar. 8, 1967, Ser. No. 621,575
Int. Cl. F16l *9/18, 11/04*
U.S. Cl. 138—113 **12 Claims**



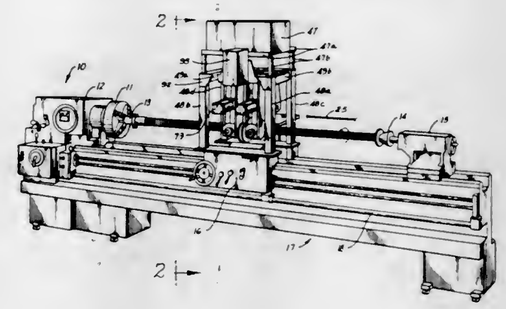
A vacuum-jacketed pipeline comprising an inner pipe, an outer pipe and a suspension system for maintaining the pipes in spaced-apart relationship. The suspension system includes axially spaced-apart support rings each associated with a radially expanded spring member which permits some eccentric movement of the inner pipe. The pipeline is wave-shaped as an aid in converting thermal contraction and expansion of the inner pipe into eccentric movement.

3,469,608
COIL SPRING POSITIONING DEVICE
Carl O. Kirchner, Carthage, and John T. King, McDonald Township, Jasper County, Mo., assignors to Leggett and Platt Incorporated, Carthage, Mo., a corporation of Missouri
Filed July 26, 1967, Ser. No. 656,109
Int. Cl. B21f *27/00*; **A47c** *31/04*
U.S. Cl. 140—3 **10 Claims**



An apparatus including a magazine for holding coil springs, a platform supporting the magazine and a mechanism mounted adjacent said platform and having a head engageable with a coil spring held in a magazine, whereby the coil spring can be removed from the magazine and then returned to the magazine in a different position. The apparatus includes means for moving the magazine to a machine in which the coil springs become part of a spring assembly.

3,469,609
APPARATUS FOR MAKING WELL SCREEN
Howard F. Smith III, Houston, Tex., assignor to Howard Smith Co., Houston, Tex.
Filed July 11, 1967, Ser. No. 652,443
Int. Cl. B21f *15/08, 27/10*
U.S. Cl. 140—112 **4 Claims**

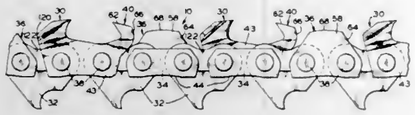


The apparatus described makes well screen by mounting a perforated tube between the head stock and the tail stock of an engine lathe for rotation around its longitudinal axis. One end of a wire is anchored to the tube, or adjacent one end of the tube, to be wrapped around the tube as it is rotated. Rods may or may not be spaced around the outside of the tube to space the wire away from the tube. The wire is fed through rollers that are moved parallel to the tube by the lathe carriage to cause the wire to wrap around the tube in spaced helical coils. A welding machine having two electrode wheels is carried by the carriage to weld the wire to the tube or to the rods, if spacer rods are used. The welding electrode engages the wire as it is initially bent around the tube. If no rods are present the welding electrode continuously welds the wire to the tube, as the wire passes between the electrode and the tube. If spacer rods are used, the electrode welds the wire to each spacer rod as the wire and each rod passes between the electrode and the tube. The second electrode provides a ground connection for the welding current. It travels with the first electrode and is located to roll along the already welded wire a few coils from the welding electrode. The speed of travel of the carriage can be varied independently of the speed of rotation of the tube to allow the gage of the screen to be varied as desired. Two back-up rollers are provided, each being positioned on the other side of the tube from one of the electrodes. The back-up rollers move with the electrodes and equalize the lateral forces imposed on the tube by the electrodes.

3,469,610
TOP SHARPENABLE SAW CHAIN
Kay Silvon, Portland, Oreg., assignor to Omark Industries, Inc., Portland, Oreg., a corporation of Oregon
Filed Oct. 21, 1966, Ser. No. 588,429
Int. Cl. B27b *33/14, 17/00*
U.S. Cl. 143—135 **13 Claims**

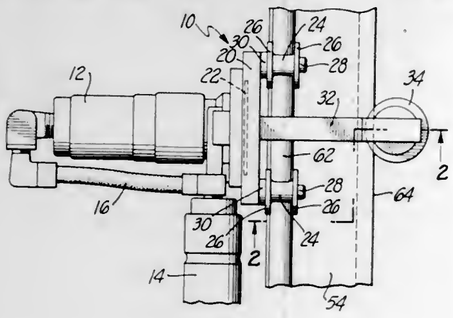
A top sharpening saw chain has cutter links each having a steeply sloping top plate having a hard chromium plating on its forward face only, a side plate having a hard chromium plating on its outer face only and a deep

gullet formed by a sloping forward edge of the side plate, a sloping top edge of the body and a sloping rear edge of the depth gauge. The cutter links are allochiral and



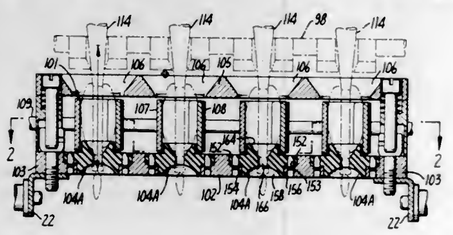
guard links are positioned in the chain so that each guard link is on the same side of the chain as the side plate of the immediately preceding cutter link.

3,469,611
TOOL GUIDE AND MOVABLE SUPPORT
Laurel E. Dunlap, 4510 Mary Ellen Ave., Sherman Oaks, Calif. 91403
Filed Feb. 13, 1967, Ser. No. 615,446
Int. Cl. B27c *5/00, 9/00*
U.S. Cl. 144—144 **5 Claims**



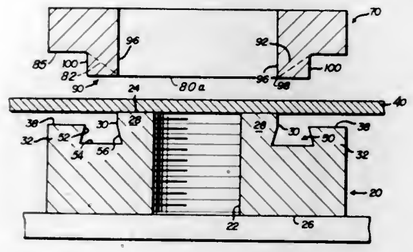
A guide and support having transversely spaced guide rollers supporting a tool movable along a longitudinally extending path of working operation, said guide rollers being retained through resilient transverse tensioning therebetween engaged with parallel guide tracks guiding said tool movement.

3,469,612
CHUCKS FOR FRUIT PITTING MACHINES
John L. Margaroli and Earl J. Hesse, Oakland, Calif., assignors to Geo. W. Ashlock Co., San Leandro, Calif., a corporation of California
Filed Apr. 17, 1967, Ser. No. 631,488
Int. Cl. A23n *3/00;* **A47j** *23/00*
U.S. Cl. 146—17 **2 Claims**



For the support of the lower ends of dates and prunes while pits are being removed from the lower ends, a rubber chuck having a centrally disposed pit ejector opening, an annular upstanding wall defining a frusto-conical fruit support pocket having an included angle of about 35–45° for prunes and about 65–75° for dates, the pocket being wider at its mouth than it is deep.

3,469,613
NUT-PANEL ASSEMBLY AND METHOD OF MAKING SAME
Jerry H. Steward, Bloomfield Hills, Mich., assignor to Multifastener Corporation, Detroit, Mich., a corporation of Michigan
Filed Dec. 19, 1967, Ser. No. 691,899
Int. Cl. F16b *39/34;* **B23p** *11/00*
U.S. Cl. 151—41.73 **1 Claim**



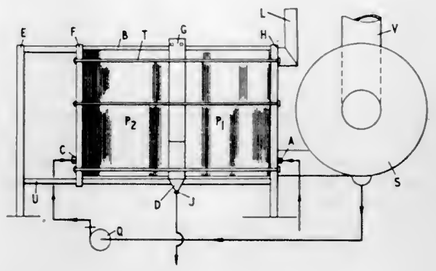
A nut and panel assembly in which all of the deformation of the panel to secure the panel to the nut is within the confines of the nut. The nut includes a central portion having outwardly directed flanges forming a nut body portion having an upper surface spaced below the free end of the pilot portion. The surfaces of two of the opposed flanges have undercut grooves formed therein adjacent the pilot portion, while the surfaces of another pair of opposed flanges have a rectangular groove with all of the grooves receiving deformed portions of the panel.

3,469,614
SEMIRADIAL PNEUMATIC TIRES
Takashi Kobayashi, Hiratsuka-shi, Japan, assignor to The Yokohama Rubber Company, Limited, Tokyo, Japan, a corporation of Japan
Filed Oct. 4, 1966, Ser. No. 584,155
Claims priority, application Japan, Oct. 29, 1965, 40/66,098
Int. Cl. B60c *9/10*
U.S. Cl. 152—355 **2 Claims**



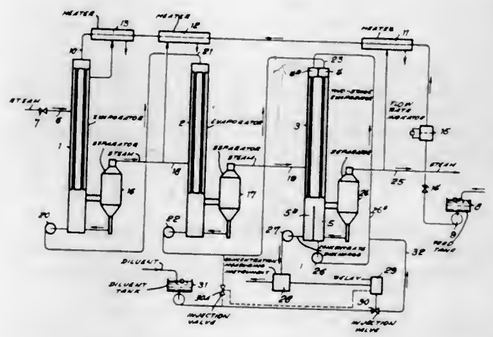
A pneumatic tire in which a breaker layer including cords which extend at an angle in the range from 22–29° to the circumferential line around the tire is placed on a carcass layer including cords which extend in the crown portion at an angle in the range of from 50–65° with respect to the circumferential line around the tire, with an intermediate layer of a rubber material having relatively high fluidity, when unvulcanized, interposed between the carcass and breaker layers, the layers being shaped and vulcanized on the drum in a single operation to form the tire.

3,469,615
RECIRCULATION PLATE TYPE EVAPORATORS
John Dennis Usher, Redhill, Surrey, England, assignor to The A.P.V. Company Limited, Crawley, Eng.and, a British company
Filed Feb. 21, 1967, Ser. No. 617,616
Claims priority, application Great Britain, Mar. 15, 1966, 11,232/66
Int. Cl. B01d *1/22*
U.S. Cl. 159—13 **3 Claims**



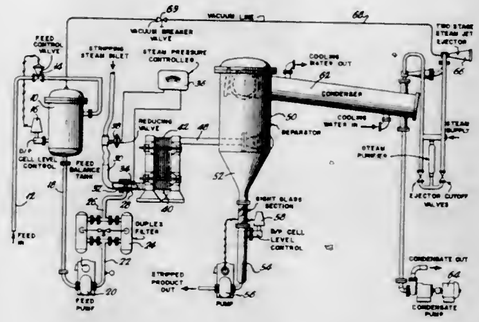
A plate evaporator, particularly of the rising and falling film type for heat sensitive liquids, wherein the plates are divided into two groups by a partition having an aperture for the passage of the vapour and concentrate to link the vapour and concentrate discharge ports in the two groups, the said aperture being associated with a sump type outlet for dischargeing the bulk of the liquid passing into the said aperture, the two groups being connected in series as far as the product to be concentrated is concerned.

3,469,616
METHOD FOR REGULATING CONCENTRATION IN EVAPORATORS, IN PARTICULAR IN MULTIPLE-EFFECT EVAPORATORS
Pierre Robert Laguilharre, 6 Rue Robin, Enghien-les-Bains, Val-d'Oise, France
Filed Jan. 31, 1967, Ser. No. 612,985
Claims priority, application France, Feb. 2, 1966, 48,138; May 20, 1966, 62,325
Int. Cl. B01d *1/30*
U.S. Cl. 159—47 **12 Claims**



A process for regulating the final outlet concentration in a multiple-effect evaporator having a plurality of groups of evaporation tubes. The concentration is controlled by injecting a suitable diluent into the product from one of the groups of tubes at a point upstream of the last group of evaporation tubes. The injection of diluent is controlled by measuring the concentration of the product at a point downstream of the point of injection, whereby the measured concentration automatically regulates the amount of diluent injected into the system.

3,469,617
METHOD FOR STRIPPING OF VOLATILE SUBSTANCES FROM FLUIDS
Einar Henry Palmason, Fort Lauderdale, Fla., assignor to Parkson Industrial Equipment Company, Fort Lauderdale, Fla., a corporation of Delaware
Filed Mar. 20, 1967, Ser. No. 624,583
Int. Cl. B01d *1/14*
U.S. Cl. 159—47 **15 Claims**

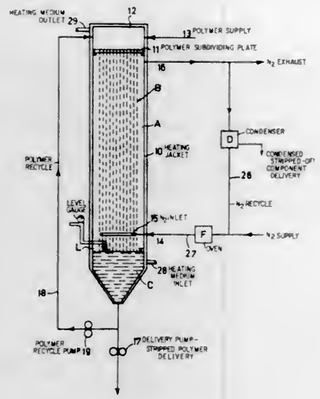


A method for removing volatiles from feed materials having strippable substances in them by first initiating a continuous vapor phase flow having a temperature below the critical temperature of the feed material within the confines of a tortuous passageway and injecting into this vapor flow at the beginning portion of the passageway the feed material in a manner so as to form a homogenous mixture of small feed material particles dispersed in and surrounded by the vapor phase and flowing the particles and the vapor through the tortuous passageway so as to fragment the particles by impact on the wall of the passageway causing continuous stripping of the volatiles from the particles by the frequent presentation of new surfaces under increasing velocity and reducing pressure as the material and vapor flow through the passageway and exit, the vapor laden with the strippable substances and the feed material being stripped of the volatile substances.

3,469,618
SOLVENT REMOVAL FROM POLYMERIC MATERIALS
Francesco Siclari, Cesano Maderno, and Sergio Fulmini, Milan, Italy, assignors to Snia Viscosa Società Nazionale Industria Applicazioni Viscosa S.p.A., Milan, Italy, a company of Italy
Filed Oct. 19, 1965, Ser. No. 497,709
Claims priority, application Italy, Oct. 30, 1964, 23,346
Int. Cl. B01d *1/16, 1/14*
U.S. Cl. 159—48 **8 Claims**

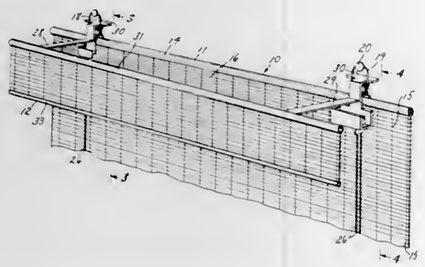
A process and apparatus are disclosed for stripping volatile fractions from polyamides and polyesters to increase their viscosity. The liquid polyamide or polyester to be treated is fed into the top of a container at a temperature above the melting point of the material, and the material is passed through a foraminous plate to subdivide it into liquid threads, and then allowed to fall freely in nitrogen, which is counterflowed to the falling material. The falling material separates into droplets to pro-

vide the maximum surface exposure of the material to the counter-flowing nitrogen. At least part of the fallen



material is recycled to the upper part of the container and its free fall is repeated to increase the exposure to the inert gas.

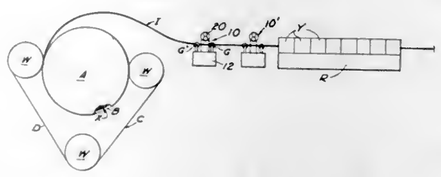
3,469,619
SHADE AND VALENCE CONSTRUCTION
Stanley D. Barnett, Mount Vernon, N.Y., assignor to Venetianaire Corporation of America, Yonkers, N.Y.
Filed Aug. 7, 1968, Ser. No. 750,821
Int. Cl. E04b *9/08;* **E04f** *10/06*
U.S. Cl. 160—19 **1 Claim**



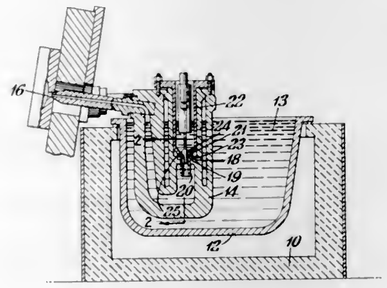
A valence suitable for use in conjunction with a roller blind construction of a type normally suspended on nails or screws passing through looped means engaging therewith, to at least partially conceal the conventional cord and pulley means used for raising the blind from the lower edge thereof. The valence is mounted by brackets which engage the above mentioned loops and rest on the outer surface of the pulley means.

3,469,620
CASTING PROCESS
George C. Ward, Chester F. Todd, Dale D. Proctor, and Daniel B. Cofer, Carrollton, Ga., assignors to Southwire Company, Carrollton, Ga., a corporation of Georgia
Filed Apr. 19, 1967, Ser. No. 631,980
Int. Cl. B21b *15/00;* **B23p** *23/04*
U.S. Cl. 164—70 **1 Claim**

Continuous casting process including the casting of a copper-base molten metal in a casting wheel to obtain a cast metal bar for hot-forming in a hot-forming means and the removing of fin or flash material from the cast metal bar as the cast metal bar passes between the casting wheel and the hot-forming means and while the temperature of the cast metal bar is still within the hot working temperature range of the cast metal so as to provide a cast metal bar having a crystalline grain structure which is substantially unaltered by the removing of the fin and flash material.



3,469,621
DIE CASTING APPARATUS
Crescenzo F. Fulgenzi, Parma, Ohio, assignor to Union Carbide Corporation, a corporation of New York
Filed Sept. 29, 1966, Ser. No. 582,848
Int. Cl. B22d *17/04;* **B67d** *5/46*
U.S. Cl. 164—316 **4 Claims**

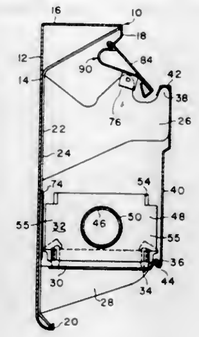


The subject application concerns a novel shot cylinder-gooseneck assembly wherein the shot cylinder is positioned within a hollow gooseneck in such a manner as to define a void between the inner wall of the gooseneck and the outer wall of the shot cylinder so that as a piston is forced into the shot cylinder the fluid pressure generated by the molten metal in the assembly is exerted equally on both the inner and outer walls of the shot cylinder which does not contain the advancing piston.

3,469,622
HEAT EXCHANGER CONVECTOR
Gerald R. Yehle, La Crosse, Wis., assignor to The Trane Company, La Crosse, Wis., a corporation of Wisconsin
Filed Nov. 29, 1967, Ser. No. 686,530
Int. Cl. F24h *9/04;* **F28f** *1/30, 3/02*
U.S. Cl. 165—55 **5 Claims**

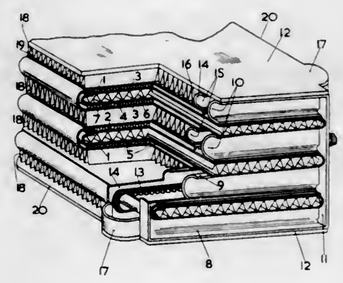
A baseboard convector having a tubular heat exchanger element provided with a plurality of parallel spaced rectangular air contacting fins wherein tabs struck from each corner thereof extend between the fins to form columns merely at the corners thereof for supporting the fins with minimum obstruction to air flowing around said tubular element. The heat exchanger element and fins are supported for sliding movement upon a bracket

via a plastic cradle which is attached to the fin tabs. An optional damper mounting arrangement permits the



use of either an infinitely adjustable or merely a two position damper for controlling the convection air current over the heat exchanger.

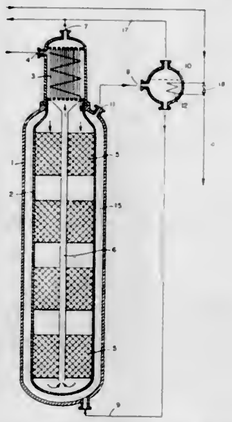
3,469,623
PLATE-TYPE HEAT EXCHANGER
Bernard Samuel Rawlings, Wolverhampton, England, assignor to Marston Excelsior Limited, Wolverhampton, England, a corporation of Great Britain
Filed Oct. 23, 1967, Ser. No. 677,229
Claims priority, application Great Britain, Nov. 18, 1966, 51,842/66
Int. Cl. F28f *11/00, 3/00*
U.S. Cl. 165—70 **4 Claims**



A plate-type heat exchanger in which the plates are provided by parallel portions of a plurality of tubes, the tubes being arranged in sets and in each set an inner tube is disposed within an outer tube, the inner tubes of the sets defining within them passages of a first group while passages of a second group are defined between the inner and outer tubes of the sets.

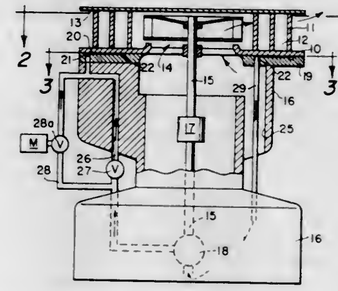
3,469,624
COOLING SYSTEM FOR THE SHELL OF A REACTOR
Rolf Koppe, Ludwigshafen (Rhine), Germany, assignor to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany
Filed Oct. 19, 1967, Ser. No. 676,593
Claims priority, application Germany, Oct. 20, 1966, B 89,459
Int. Cl. F28d *15/00;* **F28f** *3/12;* **B01j** *9/00*
U.S. Cl. 165—105 **2 Claims**

A cooling system for the shell of a large high-pressure reactor containing a catalyst vessel, wherein for the purpose of reducing stress on the wall of the catalyst vessel the space between this wall and the shell of the



reactor is partly or completely filled with indirectly cooled water and in communication through pipe means with the interior of the catalyst vessel for equalizing the pressures.

3,469,625
HEAT EXCHANGER FOR COOLING LIQUIDS
Edward H. Phillips, Los Altos, Calif., assignor to Tydeman Machine Works, Inc., Redwood City, Calif., a corporation of California
Filed Nov. 20, 1967, Ser. No. 684,329
Int. Cl. F28f *13/12, 1/12;* **F04d** *29/58*
U.S. Cl. 165—125 **11 Claims**

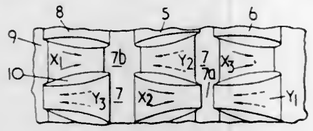


A heat exchanger comprises a plurality of cooling fins arranged to form intercommunicating chambers and a fan rotatably mounted adjacent to the fins to circulate ambient air therethrough. Passage means are formed at the underside of a plate having the fins mounted thereon to circulate a heated fluid therethrough to transfer the heat through the plate and fins and to the air circulated in the chambers.

3,469,626
PLATE HEAT EXCHANGERS
Felix William Wright, Copthorne Bank, near Crawley, and Alan Herbert Wilson, Redhill, England, assignors to The A.P.V. Company Limited, Crawley, England, a British company
Filed Jan. 15, 1968, Ser. No. 697,802
Claims priority, application Great Britain, Jan. 19, 1967, 2,902/67; July 31, 1967, 35,026/67
Int. Cl. F28f *3/00*
U.S. Cl. 165—166 **15 Claims**

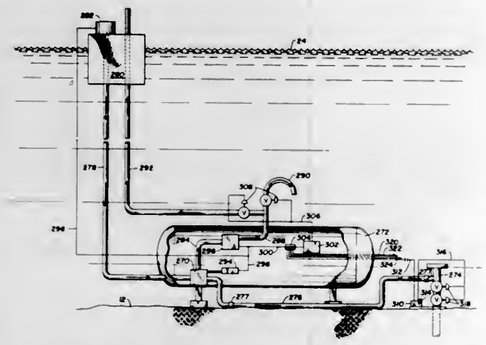
A heat exchanger of the type built up from corrugated plates has the flow continually subdivided and recombined

by means of elongated flow restrictions spaced along the corrugations. The restrictions are formed by localised elongated zones of reduction in height or depth of the



corrugations which co-operate with the normal height or depth of the corrugations in the adjacent plates to form the restrictions.

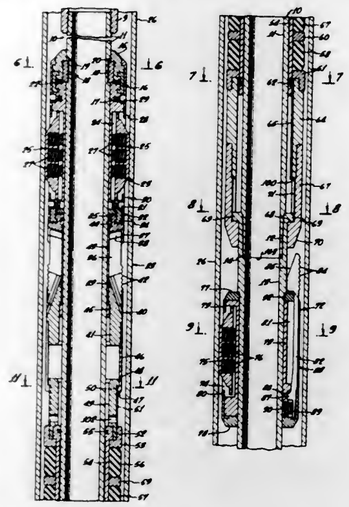
3,469,627
SUBSEA PRODUCTION SYSTEM
Charles Ovid Baker, Garland, Tex., assignor to Mobil Oil Corporation, a corporation of New York
Filed June 29, 1967, Ser. No. 649,934
Int. Cl. E21b *33/035, 7/12, 43/01*
U.S. Cl. 166—.5 **7 Claims**



This specification discloses a subsea system for the production of fluid minerals. The system includes a product gathering network provided with production satellites in which the gas-oil-water ratios of each well are periodically tested and the flow rates are automatically controlled. A power distribution network connects a central power station, either floating or bottom supported, at the site or on land nearby, with the various saellite stations and submerged wellhead units. Provision is made for entry into the satellites and diver maintenance at the submerged wellheads. General purpose submersible vehicles with articulated manipulators, as well as specialized robot submersibles such as pipe welders, permit diverless installation of equipment.

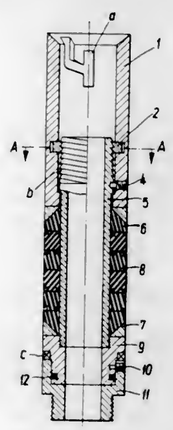
3,469,628
WELL PACKER HAVING TWO SETS OF SLIPS
Martin B. Conrad, P.O. Box 568, Carpinteria, Calif. 93013
Filed Jan. 2, 1968, Ser. No. 695,130
Int. Cl. E21b *33/129*
U.S. Cl. 166—134 **15 Claims**

A well packer including a mandrel carrying two independent sets of slips and drag blocks together with axially compressible packing elements in between. The first slips can be set by movement of the mandrel in one direction after it is within the well, also compressing the packing means to cause it to seal against the well casing. When the pressure on the packer exceeds a predetermined value, the tubing string elongates, the resulting movement of the mandrel releasing the first set of slips and setting the second set. The tool can be used with either end up, operating as either a tension or a compression tool. It is always free to move in one direction to free the tool in response to axial loading rather than rotation. The mandrel is in two sections threaded together, with a set of slips and drag blocks on each. The second mandrel



section is coupled to the first slips so that with the first slips set the threaded joint between the mandrel sections may be separated to assure release of and retraction of both sets of slips during removal of the tool from the well.

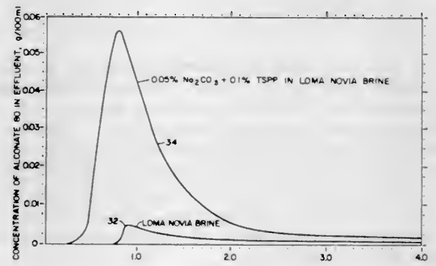
3,469,629
RECUPERABLE PACKER
Ion Adamache and Ioan Iacob, Cimpina, Rumania, assignors to Ministerul Petrolului, Bucharest, Rumania
Filed Dec. 4, 1967, Ser. No. 687,764
Claims priority, application Rumania, Dec. 6, 1966, 52,673
Int. Cl. E21b *33/128, 33/129, 23/06*
U.S. Cl. 166—182 **5 Claims**



A packer with a blocking system made up of a split sleeve having an interior thread, with such a profile, that when an axial force, necessary for the compression of the elastic tightening elements is applied to the packer this sleeve opens and moves downward. The sleeve engages

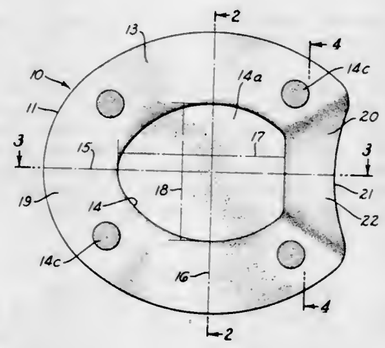
successive teeth of a thread provided the interior surface of the upper end of the central tube of the packer, this packer thus remaining in a blocked state on the pipe string. For the recuperation of the packer from the wall, a bayonet-type system is used for coupling and uncoupling, which couples the packer, while by a clockwise rotation of about seven turns, the split sleeve is unscrewed from the central tube. The elastic tightening elements are distended and thus permit the disengagement of the packer from the pipe string, by a lifting of the extraction pipes.

3,469,630
METHOD OF MINIMIZING ADSORPTION OF SURFACTANT FROM FLOODING WATER
Billy G. Hurd and William R. Foster, Dallas, Tex., assignors to Mobil Oil Corporation, a corporation of New York
Filed Oct. 9, 1967, Ser. No. 673,685
Int. Cl. E21b *43/20, 43/22*
U.S. Cl. 166—250 **27 Claims**



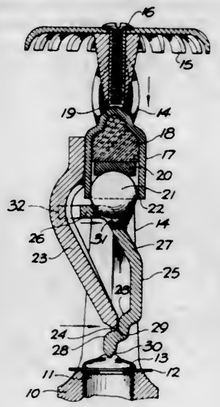
This specification discloses a method of waterflooding to recover oil from a subterranean formation. The method comprises injecting into the formation a solution of sacrificial inorganic additive in advance of a surfactant solution to minimize adsorption of the surfactant onto the surfaces of the subterranean formation. Preferably, the sacrificial inorganic additive is additionally injected concurrently with and behind the surfactant solution.

3,469,631
PLASTIC HORSESHOE
Wayne M. Becker, 11314 Canton Drive, Studio City, Calif. 91604
Filed Feb. 2, 1968, Ser. No. 702,718
Int. Cl. A01l *5/00*
U.S. Cl. 168—4 **5 Claims**



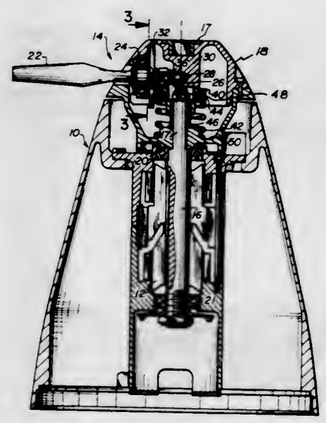
As an article of manufacture, a horseshoe of plastic material having a transverse heel which includes an inwardly concave central portion.

3,469,632
CENTER STRUT SPRINKLER
Wayne Edward Ault, Youngstown, Ohio, assignor to "Automatic" Sprinkler Corporation of America, Cleveland, Ohio, a corporation of Ohio
Filed July 7, 1967, Ser. No. 651,910
Int. Cl. A62c *37/16, 37/08*
U.S. Cl. 169—39 **3 Claims**



A fire extinguishing sprinkler including a discharge orifice and a spaced deflector and means normally closing said discharge orifice and responsive in opening to predetermined heat conditions.

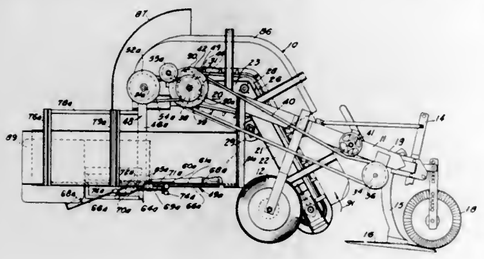
3,469,633
CONTROL MEANS FOR AIR DRIVEN TURBINES
Leo Avondoglio, North Caldwell, N.J., assignor to General Dynamics Corporation, a corporation of Delaware
Filed Oct. 19, 1967, Ser. No. 676,487
Int. Cl. F03d *7/04*
U.S. Cl. 170—160.16 **7 Claims**



A variable pitch air driven turbine desired to be operative at a constant, preselected speed within design limits under conditions of varying air speed or load is provided with an automatic speed governor system including centrifugal flyweights attached to each turbine blade, the flyweights being designed to offset centrifugal twist-

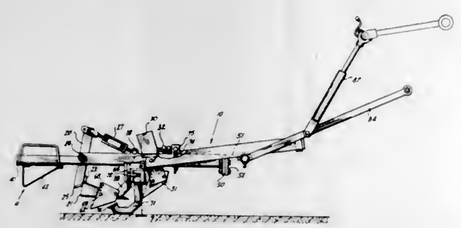
ing forces acting on each blade as well as to cooperate directly with a regulating balance spring for precisely controlling the pitch of each blade to maintain desired r.p.m. of the turbine.

3,469,634
DIGGER-SHAKER INVERTER
Jack C. Whitesides, Albany, Ga., assignor to Lilliston Implement Company, Albany, Ga., a corporation of Georgia
Filed Apr. 19, 1967, Ser. No. 631,981
Int. Cl. A01d *29/00, 17/00*
U.S. Cl. 171—101 **14 Claims**



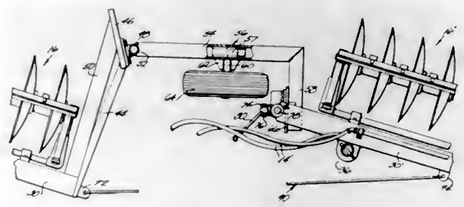
Digger, shaker and inverter apparatus for use in harvesting peanuts, wherein mature peanut laden plants are simultaneously removed from adjacent rows in the ground, elevated above the ground and shaken to remove the dirt from the plants, and deposited back on the ground in a single row, with the foliage adjacent the ground and the nuts above the ground so as to be exposed to sun and ambient air for drying purposes. A pair of plows remove the plants from the ground, a conveyor elevates and shakes the plants and deposits the plants on an inverting apparatus, and the inverting apparatus moves the plants in an arc, at first in the direction of movement of the plows and then to a point at the rear of the apparatus, whereat the plants are deposited upon the ground in inverted position.

3,469,635
SOD CUTTING MACHINES
John J. Hartl, 2200 2nd St. SW., Cedar Rapids, Iowa 52404
Filed June 1, 1965, Ser. No. 460,093
Int. Cl. A01b *45/04, 39/20, 15/00*
U.S. Cl. 172—19 **2 Claims**



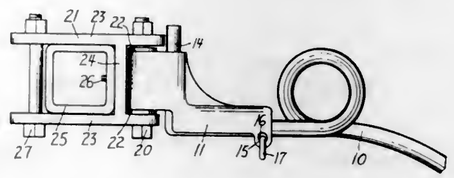
A sod cutter having parallel bars forming a main frame and a cutting share mounted on the lower end of a tilting support pivotally attached between the parallel bars, and a turnbuckle at the upper end for tilting the support and thus the cutting share as desired to determine the depth of cut and draft according to the hardness characteristics of the ground beneath the sod. The knife is triangular to cut two strips of sod at a time, and knives are provided to cut and define the outer edges of the two strips. Other means are provided to regulate the depth of cut and the apparatus is preferably supported by supporting arms from the tractor.

3,469,636
PLOW ASSEMBLY
Roy R. Kurz, Box 34, Rte. 1, Kendall, Kans. 67857
Filed Apr. 1, 1966, Ser. No. 539,539
Int. Cl. A01b *49/00;* **B62d** *53/00*
U.S. Cl. 172—314 **7 Claims**



A device for connecting consecutive gangs of a tandem arranged series of gang plows, said device comprising an L-shaped frame member; means at the free end of the longer leg for pivotal connection with a drawbar on a preceding gang; means on the shorter leg for pivotal connection to the plow beam of a subsequent gang, the axes of both pivotal connections being substantially vertical, and a land wheel mounted on an axle secured intermediate the extremities of the long leg and having a substantially horizontal axis.

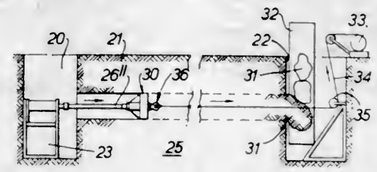
3,469,637
SPRING TOOTH MOUNTING
Jack R. Kennedy, % Kennedy Chemicals, Box 356, Wilbur, Wash. 99185
Filed Dec. 27. 1966, Ser. No. 604,811
Int. Cl. A01b *39/20, 35/20, 25/00*
U.S. Cl. 172—709 **8 Claims**



A mounting apparatus for a spring tooth of the type used in the application of liquid fertilizer. The mounting device comprises a bracket secured to a transverse tool bar and a specially designed casting pivotally connected to the bracket about a vertical axis. The casting includes a vertical aperture and an intersecting channel which respectively receives a vertical extension and horizontal portion of the bent shank of the spring tooth mounted thereby. Side biasing springs and a compound pivotal connection for the mounting are also disclosed.

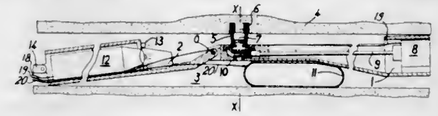
3,469,638
METHOD OF EARTH CORING
Stanley G. Atkins, 804 Stewart St., and Stanley B. Ballie, 824 Muriel St., both of Winnipeg, Manitoba, Canada
Filed Feb. 23, 1967, Ser. No. 617,884
Int. Cl. E21c *23/00;* **E21d** *1/06;* **E21b** *11/02*
U.S. Cl. 175—53 **4 Claims**

The invention relates to a method of earth coring for sewer pipes, water pipes and the like which consists of forming a pilot hole in one direction through the earth to be cored, expanding this pilot hole so as to compress the walls and then pulling an earth cutter back through the



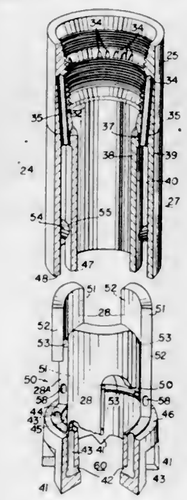
pilot hole in the opposite direction and then reversing the direction of the earth cutter to extrude the plug of earth cut thereby.

3,469,639
MACHINE FOR TAKING SAMPLES FROM A CONDUIT WALL
Jean Charlade, Gard, France, assignor to Commissariat a l'Energie Atomique, Paris, France
Filed Ju.y 8, 1966, Ser. No. 563,817
Claims priority, application France, July 22, 1965, 25,693
Int. Cl. E21b *7/04, 49/06*
U.S. Cl. 175—78 **1 Claim**



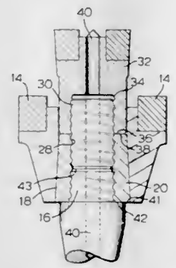
Apparatus for taking a core sample through the wall of a passageway where a rotary cutting tool is applied against the wall by pneumatic means and the cutting is monitored by a television camera.

3,469,640
SELECTIVELY VENTED CONNECTORS FOR PERCUSSION BITS
Floyd Walter Becker, Calgary, Alberta, Canada, assignor to Becker Drilling (Alberta) Ltd., Calgary, Alberta, Canada
Filed Feb. 12, 1968, Ser. No. 704,814
Int. Cl. E21b *17/04*
U.S. Cl. 175—321 **7 Claims**



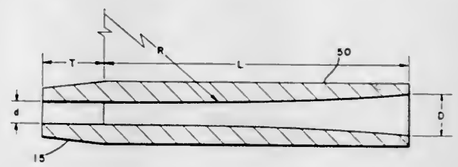
An apparatus for drilling a borehole which consists of an annular toothed bit and a double walled drill pipe having an annular space and a central passage. A sleeve connector having double walls defining a chamber is connected between the bit and the lower end of the drill pipe. Fluid is supplied through the annular space and the chamber and discharged from the bit teeth to entrain fragments and transport them up the central passage. The bit has elongated holding elements guidedly movable in the sleeve connector so that when the bit is in an extended position ports are opened between the elements in communication with the sleeve connector chamber and the central passage and with the annulus of the borehole so that fluid currents scour the borehole annulus. Fragments accumulated in the borehole annulus are thereby cleared and transported up the central passage.

3,469,641
REAMING BIT ASSEMBLY
John Windley Reynolds, Kimberley, British Columbia, Canada, assignor to Cominco Ltd., Montreal, Quebec, Canada, a company of Canada
Filed Dec. 11, 1967, Ser. No. 689,581
Int. Cl. E21b *9/22;* **E21c** *23/00*
U.S. Cl. 175—389 **22 Claims**



A drill bit assembly comprising a tapered plug for axially interconnecting a pilot bit with a reaming bit and a drill rod. The reaming bit has a tapered axial opening for frictional engagement with the plug.

3,469,642
HYDRAULIC DRILLING BIT AND NOZZLE
Robert J. Goodwin, Oakmont, and Joseph L. Pekarek, Penn Hills Township, Allegheny County, Pa., assignors to Gulf Research & Development Company, Pittsburgh, Pa., a corporation of Delaware
Continuation-in-part of application Ser. No. 591,758, Nov. 3, 1966. This application Oct. 15, 1968, Ser. No. 771,382
Int. Cl. E21b *21/04, 7/18*
U.S. Cl. 175—393 **13 Claims**



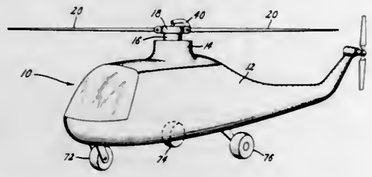
Nozzles for drill bits used in the hydraulic jet drilling of wells. The nozzles have a long converging entrance section formed by a convex surface of large radius of curvature opening at its outlet end into a throat section of constant diameter. Data are presented showing reduced rates of wear of the nozzles and increased rates of penetration as compared with nozzles heretofore used.

3,469,643
DRILL, PARTICULARLY FOR ROTARY PERCUSSION DRILLING
Roelof Jan Willem Ter Horst, Enschede, Netherlands, assignor to Netherlands Tool Manufacturing Co., Hengelo, Netherlands, a corporation of the Netherlands
Filed May 9, 1967, Ser. No. 637,116
Claims priority, application Germany, June 8, 1966, N 28,656
Int. Cl. E21c *13/04, 13/00, 13/06*
U.S. Cl. 175—394 10 Claims



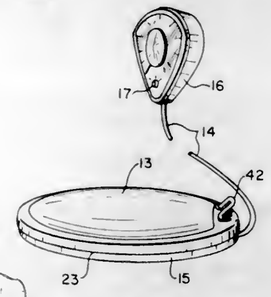
A masonry drill having a reduced peripheral surface area to reduce friction with the wall of the drill hole, a carbide tip not exceeding the diameter of the fluted part of the drill to avoid poor centering, the diameter of the shank portion being smaller than the diameter of the fluted part to permit holes of any depth being drilled while retaining proper removal of the drillings. The design of the drill permits its manufacture by means of forging rather than cutting.

3,469,644
WEIGHT INDICATING MECHANISM
David G. Harding, Brookhaven, Pa., assignor to The Boeing Company, Seattle, Wash., a corporation of Delaware
Filed Feb. 29, 1968, Ser. No. 709,401
Int. Cl. G01g *19/08*
U.S. Cl. 177—136 19 Claims



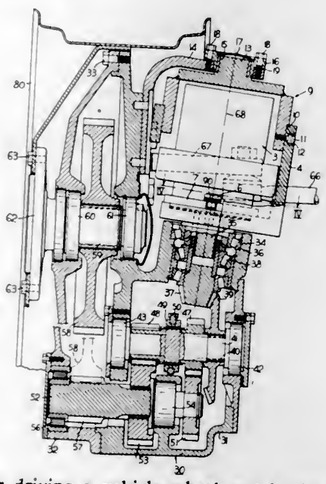
Apparatus for measuring the weight of a vertical lift aircraft. Signals representing the rotational speed and the position of a rotor blade about a flapping axis are measured and summed to determine the thrust imparted by the rotor blade to the aircraft and therefore the weight of the aircraft. The measured weight is appropriately modified in the event the aircraft is ascending, descending, or resting on a supporting surface.

3,469,645
BATHROOM SCALE WITH ELECTRONICALLY OPERATED READOUT INSTRUMENT
Mike A. Provi, George E. Stinson, and Lawrence V. Lang, Rockford, Ill., assignors to The Brearley Company, Rockford, Ill., a corporation of Illinois
Filed Aug. 5, 1968, Ser. No. 750,108
Int. Cl. G01g *3/14*
U.S. Cl. 177—210 20 Claims



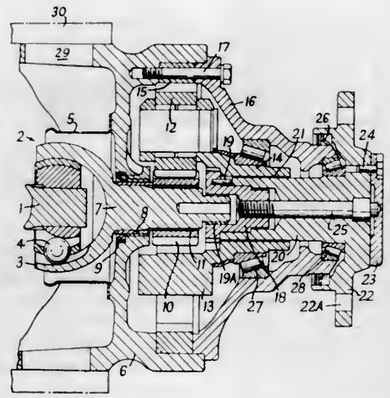
A switch in the bathroom scale is closed automatically when the platform is depressed in a weighing operation, to complete an electrical circuit for a low voltage battery connected with a potentiometer and a meter that is in more or less remote relationship to the scale and serves as the readout instrument, giving readings directly and accurately in terms of the person's weight as the sweep arm of the potentiometer, mechanically connected indirectly with the scale platform, is moved in direct proportion to the stretching of a weighing spring as the platform is depressed. In one form, each weight range must be first selected by the operator turning a knob on the readout instrument the knob cutting into the circuit a different resistance to offset the potentiometer for each weight range, so that the meter can give the correct weight reading directly.

3,469,646
HYDRAULIC MOTOR DRIVEN STEERABLE WHEEL
John W. O'Connor, Milwaukee, Wis., assignor to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.
Filed Mar. 29, 1967, Ser. No. 626,875
Int. Cl. B62d *7/00*; B60k *3/00, 9/00*
U.S. Cl. 180—43 4 Claims



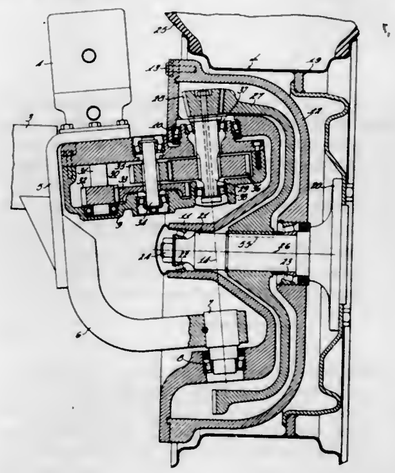
A motor driving a vehicle wheel and having an axis of rotation coincidental with a pivotal steering axis of the vehicle wheel.

3,469,647
STEERABLE PLANETARY DRIVE WHEEL
David J. B. Brown, Stroud, England, assignor to Winget Limited, Rochester, Kent, England
Filed Mar. 14, 1967, Ser. No. 623,130
Claims priority, application Great Britain, Mar. 15, 1966, 11,284/66
Int. Cl. B62d *9/00, 7/18*; B60k *17/80*
U.S. Cl. 180—43 5 Claims



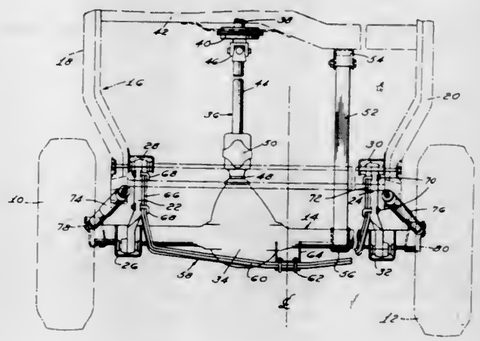
A driving, steering axle comprises a constant velocity joint through which rotary power is supplied to an epicyclic gear from a drive shaft. The constant velocity joint is preferably attached to the sun wheel and the planet gears to drive a stub axle to which a wheel and its braking assembly may be attached.

3,469,648
HYDRAULIC MOTOR DRIVEN STEERABLE WHEEL
Craig W. Cannon, New Berlin, Wis., assignor to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.
Filed May 15, 1967, Ser. No. 638,404
Int. Cl. B60k *1/00, 3/00, 17/30*
U.S. Cl. 180—43 4 Claims



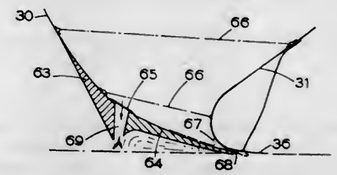
A vehicle wheel drive having a coincidental kingpin axis and power transmitting axis. The wheel means is pivotally connected to the front axle on an axis coincidental with the rotating axis of the drive pinion which drives the wheel.

3,469,649
REAR SUSPENSION SYSTEM FOR A MOTOR VEHICLE
Kenneth L. Hoyt, Dearborn, and Achille C. Sampietro, Bloomfield Hills, Mich., assignors to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed July 7, 1967, Ser. No. 651,738
Int. Cl. B60g *21/04, 11/32*
U.S. Cl. 180—71 15 Claims



A rear suspension system for a motor vehicle having a solid rear axle housing positioned by a pair of conventional upper suspension arms and a pair of lower suspension links. One of the lower links is the vehicle drive shaft which performs the dual function of transmitting torque and positioning the axle housing. A laterally extending leaf spring interconnects the two upper suspension arms and is loaded in torsion to support the chassis on the axle housing.

3,469,650
AIR CUSHION VEHICLE HAVING A FLEXIBLE SKIRT PROVIDED WITH AUTOMATIC AIR LUBRICATION MEANS
Derek James Hardy, Cowes, Isle of Wight, and Lavis Albert Henry Riddle, East Cowes, Isle of Wight, England, assignors, by mesne assignments, to British Hovercraft Corporation Limited
Original application Oct. 7, 1965, Ser. No. 493,650, now Patent No. 3,410.241, dated Nov. 12, 1968. Divided and this application Mar. 11, 1968, Ser. No. 711,965
Claims priority, application Great Britain, Oct. 28, 1964, 44,006/64
Int. Cl. B60v *1/16*; B63b *1/34*
U.S. Cl. 180—128 4 Claims



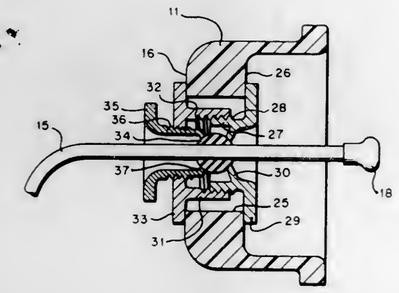
An air cushion vehicle is provided with air holes or jets carried by the flexible skirt wall to provide an air film on the skirt wall when the skirt contacts the surface, especially water, over which the vehicle is traveling. Parts of the lower margin of the skirt wall are arranged to be hingeable about horizontal axes, the air holes or jets being arranged to be closed when the skirt is out of the water and the lower margin is hinged downwardly,

and to be opened when the lower margin is hinged upwardly due to contact with the water.

3,469,651
ADJUSTABLE STETHOSCOPE EARMUFF SHELL

Emanuel S. Mendelson, Harleysville, Pa., and Raymond Wilson, Westville, N.J., assignors to the United States of America as represented by the Secretary of the Navy

Filed Jan. 25, 1968, Ser. No. 700,645
Int. Cl. A61b *7/02*
U.S. Cl. 181—24 **6 Claims**

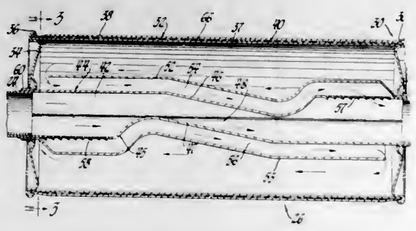


A binaural stethoscope having a protective earmuff shell with a positioning and locking device for the eartubes entering the shell at a fixed position to provide comfortable and effective placement of the stethoscope eartips in the ears of an examiner during auscultation.

3,469,652
ACOUSTIC RESONATOR WITH GAS RECIRCULATION TUBES

David R. McLellan, Pontiac, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed June 17, 1968, Ser. No. 737,744
Int. Cl. F01n *1/08*
U.S. Cl. 181—44 **4 Claims**

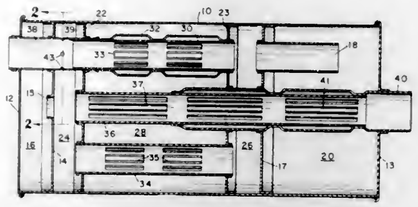


A resonator of the type having a chamber tuned to attenuate low frequency sound waves in a motor vehicle exhaust system characterized by a tuning chamber being acoustically coupled in parallel by a pair of tuning tubes having inlets fluidly and acoustically communicating with opposite ends of the resonator conductor duct. A restricted channel in the conductor duct produces a pressure drop between the inlets that induces a flow of heated exhaust gases through the tuning tubes and in the tuning chamber that raises the temperature of the resonator above a range wherein exhaust gases corrosively react with the interior surface of the resonator shell.

3,469,653
MUFFLER

Robert L. Vautaw and Richard C. Wilcox, Columbus, Ind., assignors to Arvin Industries, Inc., Columbus, Ind., a corporation of Indiana

Filed Feb. 13, 1967, Ser. No. 615,482
Int. Cl. F01n *1/08*
U.S. Cl. 181—54 **3 Claims**

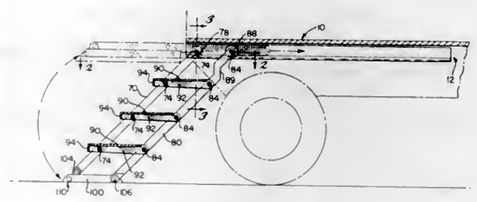


A muffler for silencing exhaust gases provided with an inlet and an outlet connected to a reversing section in said muffler. The reversing section has a pair of end chambers and at least one of said inlet and outlet is perforated within the extent of one of said end chambers to provide direct gas flow thereto through the perforation or perforations.

3,469,654
RETRACTABLE FOLDING STEPS

Charles A. Dohrman, P.O. Box 128, Sunnyside, Wash. 98944

Filed Jan. 12, 1968, Ser. No. 697,377
Int. Cl. E06c *9/00, 5/00*
U.S. Cl. 182—88 **6 Claims**



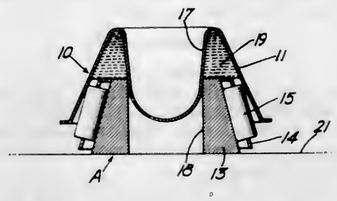
A pair of support channel members are provided, and the folding steps include a pair of upper side rails and a pair of lower side rails having a plurality of steps pivotally interconnected therewith. A lower base member is pivotally interconnected with the lower end of the side rails. An anti-friction roller is supported at the upper end of each of said side rails and is adapted to ride along the support channels when moving from retracted to operative position. Means is provided for holding the step means in either its operative position or its stored position.

3,469,655
GREASE PACKER FOR AUTOMOBILE FRONT WHEEL BEARING

John S. Moreno, 997 Prevost St., San Jose, Calif. 95125

Filed Jan. 26, 1968, Ser. No. 700,839
Int. Cl. F16n *1/00;* **F01m** *1/00;* **B65d** *35/04*
U.S. Cl. 184—1 **5 Claims**

For packing with grease tapered roller bearings, such as those used on the front wheels of automobiles, a cup made of grease retentive material is of a size and shape to fit over a selected bearing and is provided with a central portion to fit into and substantially seal off the central opening of the inner race or cone of such bearing. A quantity of grease is contained in the cup, and a strip-off protective cover is provided over the grease. To use the invention, a bearing assembly, consisting of cone, rollers and roller cage, is removed from an automobile, cleaned, and placed on a clean surface. The protective cover is then

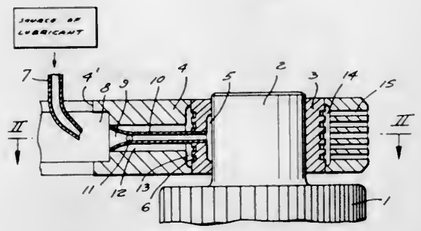


stripped off, the cup is inverted over the bearing, and is pressed down to force the cup down onto the bearing. Thereupon the central portion of the cup seals off the axial opening in the bearing, and the grease is forced down around the rollers.

3,469,656
LUBRICATING ARRANGEMENT

Henrich Benthake, Lintorf, Lothar Futterer, Mulheim (Ruhr), and Josef Kunnen, Lank, near Krefeld, Germany, assignors to Rheinstahl Huttenwerke AG., Essen, Germany

Filed Nov. 14, 1966, Ser. No. 594,274
Claims priority, application Germany, Nov. 13, 1965, R 41,980
Int. Cl. F01m *1/00;* **F16n** *17/06;* **F16c** *1/24*
U.S. Cl. 184—6 **9 Claims**



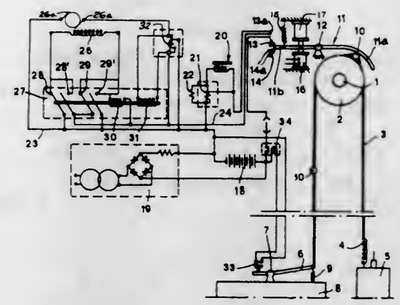
A lubricating arrangement has a rotary member journalled in a support. The cylindrical surface of rotation of the rotary member faces a cylindrical first surface of the support in sliding contact therewith and defines with the same a lubricating chamber. The support has a second surface concentric with the first surface and provided with cooling channels having an outlet. A source of lubricant communicates with the lubricating chamber and the cooling channel via conduit means provided for this purpose in such a manner as to supply lubricant firstly to the lubricating chamber and only secondarily to the cooling channels.

3,469,657
AUTOMATIC EMERGENCY RELEVELLING DEVICE FOR LIFTS

Salvatore Sgroi, 38 Via Ausonia, Palermo, Italy

Filed May 8, 1967, Ser. No. 636,951
Claims priority, application Italy, May 9, 1966, 10,544/66
Int. Cl. B66b *1/50*
U.S. Cl. 187—29 **12 Claims**

The invention aims at dispensing with the need for providing a high power motor or large counterweight system for bringing up or down to a landing a lift car which has stopped between landings for untoward reasons. The invention relies on the use of a low power motor to displace the lift car either up or down in dependence upon the power capabilities of the motor. A reversing

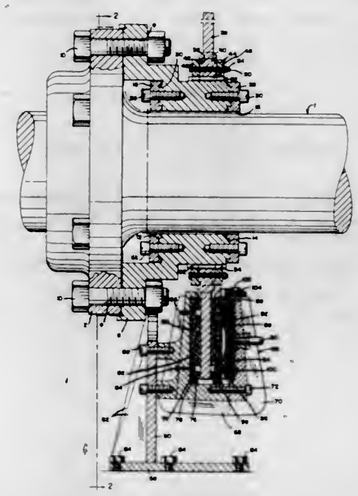


relay arrangement is provided to ensure that if this low power motor cannot displace the lift in one direction the power supply to the motor will be reversed and it will displace the lift car in the other and easier direction.

3,469,658
SELF-ALIGNING, CALIPER TYPE BRAKE

Bobbie G. Forsythe, Iowa Park, Tex., assignor to Wichita Clutch Company, Inc., Wichita Falls, Tex.

Filed Jan. 29, 1968, Ser. No. 701,176
Int. Cl. F16d *55/224, 69/04*
U.S. Cl. 188—73 **9 Claims**



A brake which may be installed onto a shaft intermediate the bearings on which the shaft is mounted, without having to remove the shaft from the bearings. The brake is so designed that the pressure to a disc is applied by one or more caliper elements, each of which caliper elements has two pucks or friction elements therein which are nonrotatable, but yieldable so as to be self-aligning with respect to the disc, which disc is also longitudinally movable on the shaft to permit further alignment so that the pucks will wear evenly, and without distortion or binding. Each caliper element utilizes a pancake type tube therein to which air is supplied for pneumatic actuation of

the braking elements. The disc and all of the elements installed around the shaft are split to enable installation onto the shaft and removal therefrom, without removing the shaft from the bearing mounts, thereby enabling disassembly and replacement of parts.

3,469,659

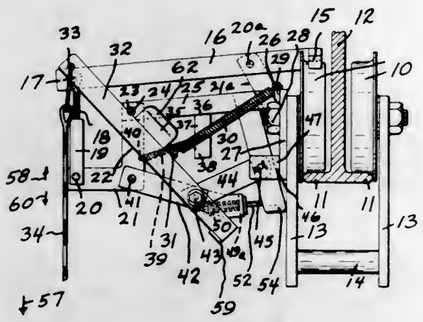
REMOTE CONTROLLED ACTUATING AND RELEASE TOGGLE

Henry L. Sundermann, Rte. 4, Box 79, Sioux Falls, S. Dak. 57107

Filed Aug. 21, 1967, Ser. No. 662,165

Int. Cl. F16d *51/00;* **G05g** *1/04*

U.S. Cl. 188—74 **2 Claims**



A toggle device particularly useful in controlling brakes for an overhead trolley device. The mechanism provides by means of a linkage and cam arrangement for a pull control both to set and release the brakes.

3,469,660

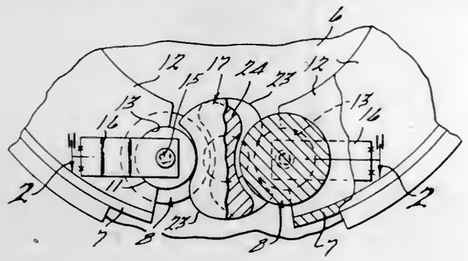
DOUBLE ACTING S-CAM FOR WHEEL BRAKES

Robert V. Mathers, Grosse Pointe Farms, Mich., assignor to Fruehauf Corporation, Detroit, Mich., a corporation of Michigan

Filed Dec. 28, 1967, Ser. No. 694,192

Int. Cl. F16d *65/22;* **F16h** *53/00*

U.S. Cl. 188—78 **5 Claims**



The two halves of brake shoes have a pair of adjacent ends disposed in pivotal relation within a brake drum with an S-cam engaging rollers at the other ends which expands the diameter of the bands when the S-cam is angularly adjusted. To obtain a greater length of expansion while maintaining substantially the same applied force, a double acting S-cam on the same diameter cam body engages rollers having portions of different diameters. One S-cam section engages the roller portions of smaller diameter to initially spread them apart before the other S-cam section engages the roller portions of larger diameter to increase their separation and produce pressure on the brake drum surface.

3,469,661

HYDRAULIC SHOCK ABSORBER AND FLUID RESERVOIR MEANS THEREFOR

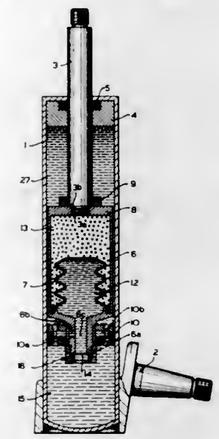
Hans-Jürgen Hoffmann and Manfred Löhr, Hohenlimburg, Germany, assignors to Hoesch Aktiengesellschaft, Dortmund, Germany

Filed Feb. 27, 1967, Ser. No. 618,769

Claims priority, application Germany, Feb. 26, 1966, H 58,664

Int. Cl. F16d *57/06*

U.S. Cl. 188—100 **20 Claims**



A shock absorber wherein the connection between the piston rod and the piston consists of an inner cylinder which is received with clearance in the pressure cylinder and defines a compartment for reception of liquid in response to thermal expansion of liquid or in response to deeper penetration of the piston rod into the pressure cylinder. The inner cylinder takes up space which is necessary to provide a minimum distance between the piston and the point where the piston rod extends from the pressure cylinder so that the piston rod can take up greater bending stresses. The moment of resistance of the inner cylinder at least equals the moment of resistance of the piston rod.

3,469.662

VEHICLE ANTI-SKID BRAKING SYSTEMS

Douglas Dewar, Rugby, England, assignor to The Dunlop Company Limited, London, England, a corporation of Great Britain

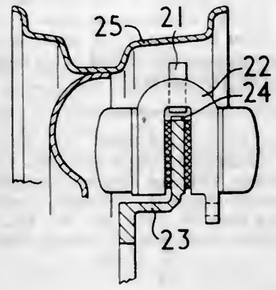
Filed Jan. 17, 1967, Ser. No. 609,823

Claims priority, application Great Britain, Jan. 21, 1966, 2,790/66

Int. Cl. B60t *8/12, 8/02;* **G01r** *11/00*

U.S. Cl. 188—181 **4 Claims**

An electrical speed-sensing device for a vehicle, normally intended to form part of an anti-skid system, comprising a rotatable member of the vehicle drivably associated with a wheel of the vehicle and having an interrupted surface. An inductive transducer is mounted adjacent the rotatable member so that the passage of the



interrupted surface past the transducer produces an alternating electrical signal proportional to wheel speed.

3,469,663

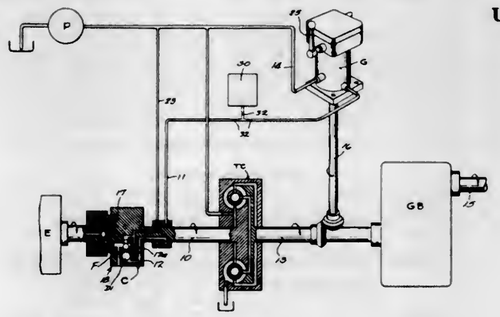
CONSTANT SPEED CLUTCH AND TORQUE CONVERTER TRANSMISSION

Conrad R. Hilpert, Winnebago, Ill., and Roger G. De Long, Racine, Wis., assignors to Twin Disc, Incorporated, Racine, Wis., a corporation of Wisconsin

Filed May 2, 1968, Ser. No. 725,974

Int. Cl. F16d *37/00, 23/10, 43/24*

U.S. Cl. 192—3.33 **6 Claims**



A power transmission having a governor controlled friction clutch and torque converter for maintaining constant ground speed of a vehicle.

3,469,664

COMBINED COUPLING AND BRAKE MECHANISM

Otto Ortlinghaus, Wermelskirchen, Adolf Ortlinghaus, Remscheid, and Jurgen Lemp, Wermelskirchen, Germany, assignors to Gebr. Ortlinghaus, Wermelskirchen, Germany

Filed July 13, 1967, Ser. No. 698,992

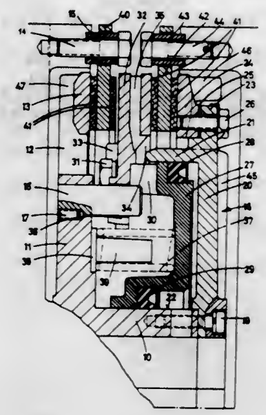
Claims priority, application Germany, July 14, 1966, O 11,805

(Filed under Rule 47(a) and 35 U.S.C. 116)

Int. Cl. F16d *11/04*

U.S. Cl. 192—18 **4 Claims**

A pressure fluid operated combined clutch and brake mechanism for selectively coupling a shaft to a rotating flywheel or for braking the shaft, in which a pair of friction rings respectively connected to the flywheel for rotation therewith and to a stationary machine frame are moved in axial direction in frictional engagement with a pair of oppositely arranged abutment disks connected to the shaft for rotation therewith by fluid-operated cylinder and piston means coaxially arranged with the shaft.



3,469,665

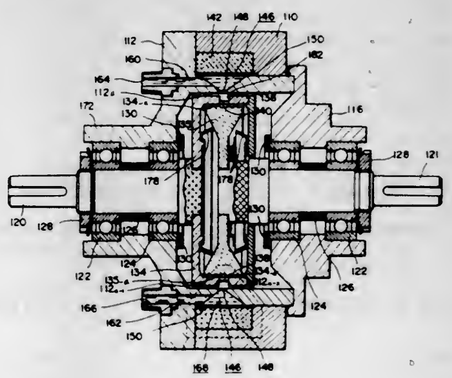
ELECTROMAGNETIC CONNECTOR

Toshiya Murata, Toshiyuki Takahashi, and Yoshiharu Kobayashi, Himeji, Japan, assignors to Mitsubishi Denki Kabushiki Kaisha, Tokyo, Japan

Filed Aug. 22, 1967, Ser. No. 662,453

Int. Cl. F16d *27/02, 13/74, 65/78*

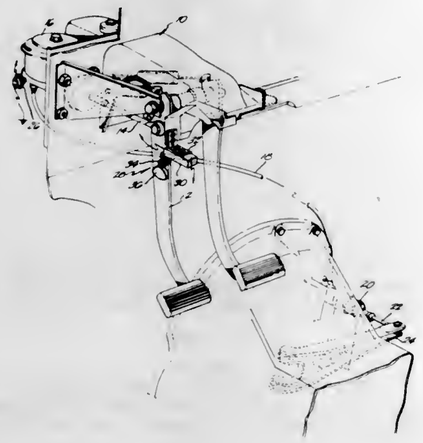
U.S. Cl. 192—21.5 **5 Claims**



In electromagnetic brake, a stator including an electromagnetic winding in it is provided on that portion facing a rotor with a space to magnetically divide the stator surface into two surface portions. A magnetic flux from the electromagnetic winding forcedly flows from the stator through one of the surface portions into a gap between the stator and rotor and then through the other surface portion back to the stator ensuring that magnetic particles in the gap are agglomerated into a rigid body to firmly connect the rotor to the stator. In electromagnetic clutches, a housing surrounding two clutch flanges is provided with an electromagnetic winding and a space similar to those in the brake to force a magnetic flux to flow through a gap between the two

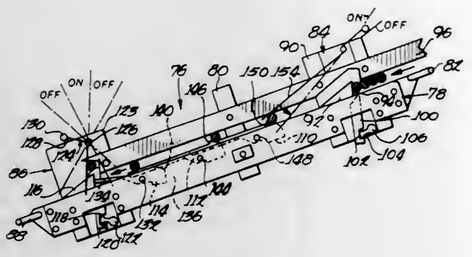
clutch flanges. In either case, a coolant circulates through the space.

3,469,666
CLUTCH RELEASE BEARING CLEARANCE MONITOR DEVICE
Wilson R. Goode, 163 B, Rte. 1
Indian Head. Md. 20640
Filed Apr. 1, 1968, Ser. No. 718,022
Int. Cl. F16d *11/00, 23/00, 13/60*
U.S. Cl. 192—30 **3 Claims**



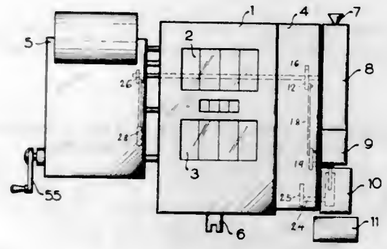
A spring engaged friction clutch which has a release bearing operated by a foot pedal. A first normally closed switch operated by pedal movement is connected in series with a second normally open switch operated by the bearing and an indicator light. Excessive wear of the clutch discs causes the second switch to close so that when the pedal is in normal position, the indicator light is turned on.

3,469,667
ARTICLE SPACING APPARATUS
Rudolph F. Gerisch, 1317 Portsmouth Ave., Westchester, Ill. 60156
Continuation-in-part of application Ser. No. 499,421, Oct. 21, 1965. This application Oct. 5, 1967, Ser. No. 673,171
Int. Cl. B65g *11/00*
U.S. Cl. 193—40 **29 Claims**



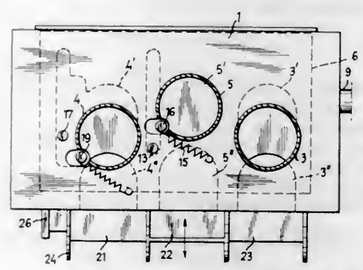
Disclosed herein is an apparatus for maintaining a plurality of articles, such as hangers, in a spaced apart relationship on an elongated support while permitting sequential movement of the articles along the support. The articles are held in a spaced apart relationship by engagement with first end sections of pivotally mounted levers. Each lever is held against pivoting movement by engagement of a preceding or downstream articles with a second end section of the lever until a next adjacent downstream lever is released for pivoting movement by movement of a downstream article out of engagement with the next adjacent downstream lever.

3,469,668
RECEIPT PRINTER FOR VENDING MACHINES
Manfred Bottling, Villingen, Germany, assignor to Kienzle Apparate G.m.b.H., Villingen, Germany
Filed Dec. 20, 1967, Ser. No. 692,196
Claims priority, application Germany, Dec. 24, 1966, K 61,028
Int. Cl. G07f *13/00, 15/00*
U.S. Cl. 194—3 **10 Claims**



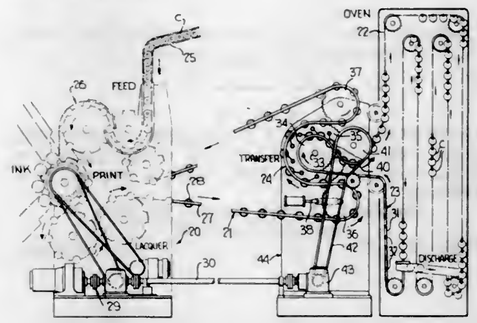
The receipt printer of a coin operated liquid fuel vending machine has a first printing register for representing the price of the actually dispensed and sold fuel. Sensing means sense the monetary value of coins inserted into and retained by the vending machine, and control a second printing register to represent the monetary value of the retained coins. A receipt printed by the first and second printing registers, indicates an overpayment as the difference between the actually paid amount and the amount due for the actually dispensed amount of fuel.

3,469,669
COIN OPERATED MACHINE FOR MAKING CHANGE
Lauri Martti, Helsinki, Finland, assignor to Raha-Automaattiyhdistys, Helsinki, Finland
Filed Nov. 22, 1967, Ser. No. 685,050
Claims priority, application Finland, Nov. 22, 1966, 3,087/66
Int. Cl. G07f *11/20, 11/22*
U.S. Cl. 194—58 **7 Claims**



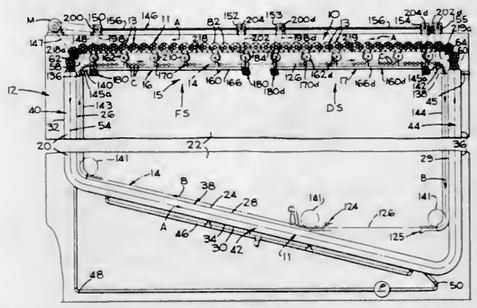
A coin operated machine for making change having a receiver for the coin to be changed and at least one storage tube for the change coins with a slide below the storage tubes to feed coins to the customer or to a cashbox. A rotatable guide plate receives the coins from the slide and, according to positioning of a guide pin in the path of movement of the coin, deposits the coin in the cash box or dispenses it to the customer.

3,469,670
CAN TRANSFER MECHANISM
William J. Cartwright, Palos Park, Ill., assignor to Continental Can Company, Inc., New York, N.Y., a corporation of New York
Filed Jan. 30, 1967, Ser. No. 612,670
Int. Cl. B65g *47/00*
U.S. Cl. 198—22 **23 Claims**



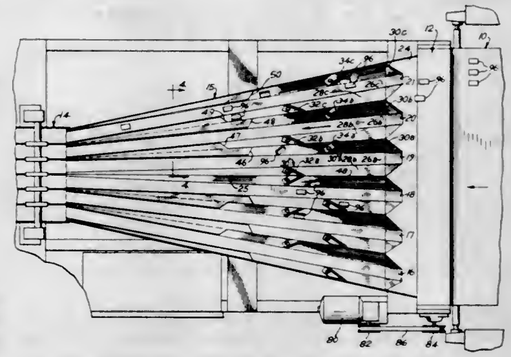
This disclosure has to do with a transfer mechanism which includes first and second endless conveyors moving in like direction along adjacent paths around a fixed axis and wherein each conveyor has article supports uniformly spaced therealong with the spacing of the supports of the two conveyors being different. A transfer unit is also mounted for rotation about the fixed axis and includes a plurality of arms which are swingable from positions aligned with the supports of one of the conveyors to positions aligned with the supports of the other of the conveyors to effect the transfer of articles from one of the conveyors to the other of the conveyors.

3.469.671
HYDROSTATIC COOKER CONVEYOR SYSTEM
Samuel A. Mencacci, Antwerp, and John G. Hagerborg, St. Niklaas-Waas, Belgium, assignors to International Machinery Corporation, S.A., St. Niklaas-Waas, Belgium, a corporation of Belgium
Filed Apr. 14, 1967. Ser. No. 631,049
Int. Cl. B65g *47/00*
U.S. Cl. 198—25 **9 Claims**



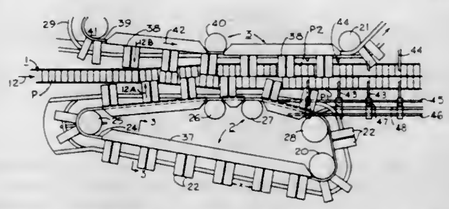
A conveying system for a hydrostatic cooker including a continuously driven processing conveyor moving in one direction and having a plurality of evenly spaced multipocketed carriers thereon, and an endless bar conveyor that is continuously driven in the opposite direction for accommodating rows of containers and moving them between the upper and lower ends of the cooker. A container feed and discharge apparatus is associated with the conveyors for transferring the rows of containers between the bar conveyor and the pockets of the carriers when at the upper end of the cooker.

3,469,672
VIBRATORY GROUPING APPARATUS
William A. Stutske, Toledo, Ohio, and Kenneth J. Henry, Anderson, Ind., assignors, by mesne assignments, to Lynch Corporation, Anderson, Ind., a corporation of Indiana
Filed Sept. 27, 1967, Ser. No. 670,907
Int. Cl. B65g *47/24*
U.S. Cl. 198—30 **9 Claims**



A vibratory grouping apparatus which receives, for example, eighteen rows of articles from a belt conveyor, columnates those articles, reduces the eighteen rows into six and discharges them in single file columns. The apparatus includes six troughs arranged in a side-by-side, fan-shaped array. Each trough is formed from a single planar bottom surface and two side surfaces. Each trough is inclined downwardly in the direction of article travel, and vane blades are attached to the side surfaces to divert articles onto the main planar surface. A vibratory motor vibrates the troughs to cause the rows of articles to move along the length of the troughs to be reduced in number, form single file columns and ultimately be discharged therefrom.

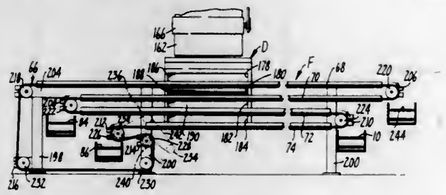
3,469,673
CORRELATOR APPARATUS
Hermond G. Gentry, Atlanta, Ga., assignor to The Mead Corporation, a corporation of Ohio
Filed June 27, 1967, Ser. No. 649,158
Int. Cl. B65g *47/71*
U.S. Cl. 198—31 **3 Claims**



The correlator apparatus as disclosed herein is for the purpose of forming a plurality of rows of objects from a single row of continuously moving objects and may constitute a convenient adjunct to a packaging machine. The apparatus comprises transport means for moving the objects in a single row together with two sets of spaced apart transfer elements arranged to move for a substantial dis-

tance alongside the path of movement of the objects, the transfer elements being arranged to move in a converging relation from opposite sides of the path of movement of the objects and being spaced so as to engage alternate ones of the objects in a complementary synchronous fashion and to impart transverse movement thereto. The speed of movement of the objects is correlated with the speed of movement of an outgoing conveyor means so as to cause transverse alignment of the objects in the different rows.

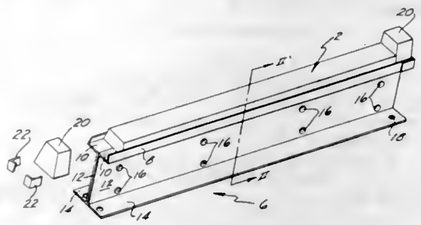
3,469,674
DISTRIBUTION SYSTEM AND COMPONENTS THEREFOR
Bentley B. Mathews, Box 335, Arbuckle, Calif. 95912, and Paul T. Frentzen, Arbuckle, Calif.; said Frentzen assignor to said Mathews
Filed Aug. 28, 1967, Ser. No. 663,835
Int. Cl. B65g *47/18, 47/22, 15/22*
U.S. Cl. 198—54 **4 Claims**



A system for collecting separated material from a separating apparatus having a plurality of outputs; selectively directing the material to further processing stations while maintaining it in separated condition; and, finally directing the material to a plurality of final distribution points while maintaining it in separated condition. The system comprises, as its leading component, a collecting tower having a tubular column adapted to simultaneously receive material from all of the outputs of the separating apparatus. The tower is provided with a receiving chamber for each output directed thereinto and alternatively operable baffled discharge outputs adapted to be selectively opened to direct material received in each of the chambers to any one of a number of processing stations. The final directing apparatus of the system comprises a conveyor having a continuous belt arranged in a zig-zag pattern to provide a plurality of reaches, the downstream end of each of which defines a discharge; and a tower for selectively loading material onto any one of the reaches. The tower comprises a tubular column having an inlet for the receipt of material; and an outlet disposed in communication with each of the reaches of the belt. Movable baffles are provided to selectively open any one of the outlets while maintaining the others in closed condition.

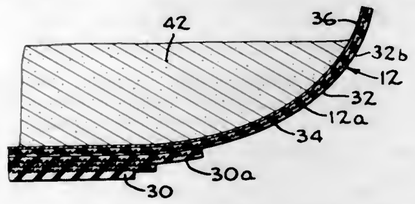
3,469,675
CONVEYOR SYSTEMS HAVING COMPRESSED SLATS AND SLATS THEREFOR
Robert M. Scanlon, Grand Rapids, Mich., assignor to Granco Equipment, Inc., Grand Rapids, Mich., a corporation of Delaware
Filed Nov. 28, 1967, Ser. No. 686,191
Int. Cl. B65g *15/42*
U.S. Cl. 198—195 **8 Claims**

This disclosure relates to a conveyor system for handling hot extruded products such as aluminum in which system a plurality of graphite slats carry hot extruded products from an extrusion die orifice. The graphite slats have inclined side surfaces which are compressed by upwardly slanted slat-supporting flanges. The upwardly slanted sides of the slat-supporting flanges are held together in compressing relationship through a pair of upstanding structural members which are spaced from each other at the top portion thereof and are held in urging relationship towards each other through mechani-



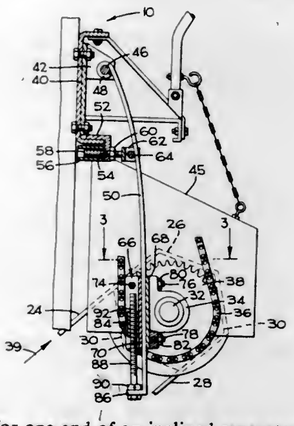
cal fastening means which are spaced downwardly at the top of the upstanding structural members.

3,469,676
SELF-TROUGHING SELF-RELEASING CONVEYOR
Thomas Percy Wheeler, Los Gatos, Calif., assignor to FMC Corporation, San Jose, Calif., a corporation of Delaware
Filed Sept. 22, 1967, Ser. No. 669,916
Int. Cl. B65g *15/40*
U.S. Cl. 198—201 **5 Claims**



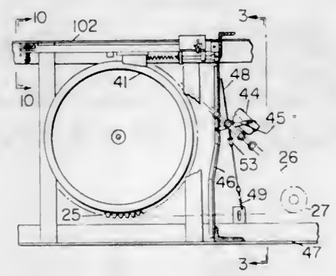
An endless belt-type conveyor having a substantially flat, conveying surface and inwardly curling, resiliently flexible side edges having a plastic surface, providing a self-troughing and self-releasing conveyor for use in continuously producing frozen liquid material in slab form.

3,469,677
YIELDING MOUNT FOR SEPARATOR CONVEYOR ON LEGUME HARVESTER
Dennis R. Schultz, Rossville, Ill., assignor to FMC Corporation, San Jose, Calif., a corporation of Delaware
Filed Apr. 27, 1967, Ser. No. 634,143
Int. Cl. B65g *15/30*
U.S. Cl. 198—208 **4 Claims**



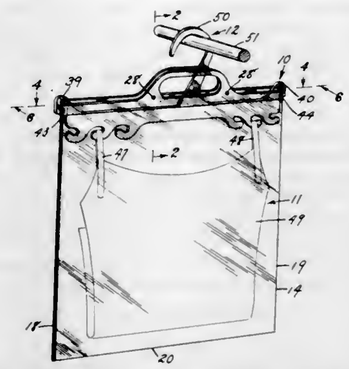
A mount for one end of an inclined separator conveyor of a portable legume harvester is disclosed as being adjustable for setting the inclination of the separator within a desired range and includes a resilient member which automatically adjusts the belt tension throughout the range of position adjustment.

3,469,678
EMERGENCY BRAKE FOR CONVEYORS
Joris Theodor Schröder and Gerd-Günther Dube, Berlin, Germany, assignors to Otis Elevator Company, New York, N.Y., a corporation of New Jersey
Filed July 25, 1967, Ser. No. 655,885
Int. Cl. B65g *43/00*
U.S. Cl. 198—232 **11 Claims**



An emergency brake for a conveyor in which the braking force is obtained by the engagement of the tapered rim of a brake disk with a groove in a brake shoe which shoe is wedged into engagement with the disk when the brake is applied.

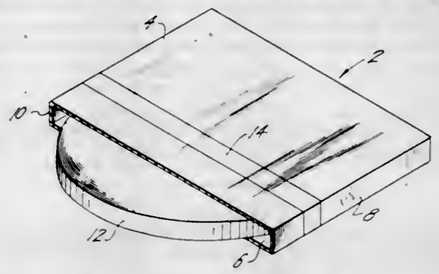
3,469,679
PROTECTIVE HANGING UNIT FOR GARMENTS
Seymour Kamins and Norman Rosenberg, both of 1019 E. 46th St., Brooklyn, N.Y. 11203
Filed Apr. 27, 1967, Ser. No. 634,168
Int. Cl. B65d *85/18*
U.S. Cl. 206—7 **4 Claims**



A combination synthetic resinous handle bag and hanger selectively positionable within the mouth of said bag, and retained therein by the interconnection of a pair of oppositely disposed handle members.

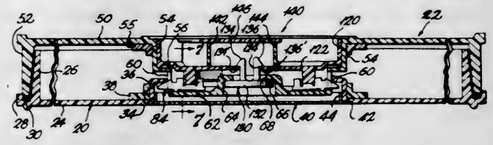
3,469,680
PACKAGE OF TAPE
Harry George Walz, Harrison, N.Y., assignor to The Borden Company, New York, N.Y., a corporation of New Jersey
Filed Mar. 24, 1967, Ser. No. 625,698
Int. Cl. B65d *35/67, 65/16*
U.S. Cl. 206—52 **1 Claim**

This invention relates to a package having an article of constant width within the package, and on at least the



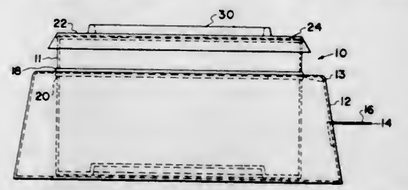
face of the package, a simulation of the width of the article within the package.

3,469,681
TAPE REEL CONTAINER
John D. Norman, Jr., Auburn, Ala., assignor to Perfection Plastics, Inc., Opelika, Ala., a corporation of Alabama
Filed Nov. 2, 1967, Ser. No. 680,170
Int. Cl. B65d *75/02, 85/67*
U.S. Cl. 206—52 **14 Claims**



A pair of plastic body portions are interconnected by unique locking mechanism including a plurality of separate lock members which are cammed inwardly and outwardly by interengagement with rotatable actuating means having cam portions thereon. The lock members are supported by one of the body portions and engage an annular lip portion on the other of the body portions, the cam portions having a plurality of cam surfaces thereon which are interengageable and cooperate with portions of the lock members for holding them in the desired operative positions.

3,469,682
FOOD DISPLAY PACKAGE
Jack V. Cline, Hinsdale, Ill., assignor to Tee-Pak, Inc., Chicago, Ill., a corporation of Illinois
Filed Dec. 11, 1967, Ser. No. 689,681
Int. Cl. B65d *75/00, 75/04, 73/00*
U.S. Cl. 206—56 **3 Claims**



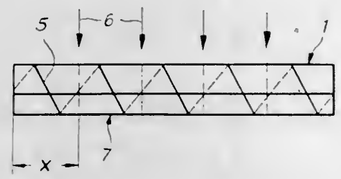
A food package is provided with features allowing for easy stacking and hanging under display conditions and providing additional surfaces for advertising indicia. The construction of the display package comprises a generally cylindrical semi-rigid plastic container having a snap-on cover, a thin sealing film beneath the cover and an adjustable bottom plate for aiding in the removal of food product from the package. The container has spaced peripheral ribs or beads adjacent to the upper end thereof. A jacket of sheet material, such as cardboard, sheet plastic, or the like, is snapped on to the container and held be-

tween the aforementioned peripheral beads or ribs. The jacket is of truncated pyramidal shape or frusto-conical shape and provides a peripheral space for advertising indicia and other identifying data. The snap-on jacket also includes a tab with a hole for hanging the display vertically on a hook with the tab located over the center of gravity of the container when filled. The package is provided with a recessed bottom adapted to fit over the cover of an adjacent package for improved stacking.

3,469,683
TOILET PAPER ROLL COMPRISING ONE OR MORE LAYERS OF PAPER, AND METHOD OF MAKING SAME

Robertus C. J. M. Rijssenbeek, Nijmegen, Netherlands, assignor to Page Zellstoffkrepp GmbH, Dusseldorf, Germany

Filed May 15, 1968, Ser. No. 729,353
Claims priority, application Germany, May 23, 1967, P 42,194
Int. Cl. B65h *75/28;* **B65d** *85/67*
U.S. Cl. 206—58 **6 Claims**



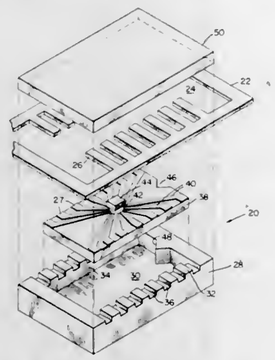
A toilet paper roll and method of making same according to which the outer end of the toilet paper web is connected to the nearest toilet paper web winding therebelow by means of a thread, band or the like.

The present invention relates to a toilet paper roll comprising one or more layers of paper, in which the end of the outer layer is connected with the nearest inner paper layer or layers. The present invention furthermore concerns a method of producing a toilet paper roll of this type.

3,469,684
LEAD FRAME PACKAGE FOR SEMICONDUCTOR DEVICES AND METHOD FOR MAKING SAME

William L. Keady and Michael J. St. Clair, Woodside, and James T. Hazen, Palo Alto, Calif., assignors to Advalloy, Inc., Woodside, Calif., a corporation of California

Filed Jan. 26, 1967, Ser. No. 611,944
Int. Cl. B65h *75/02;* **H05k** *5/02*
U.S. Cl. 206—59 **5 Claims**

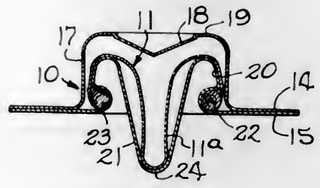


A package for semiconductor devices is formed on a lead frame preferably integral with similar frames in the form of a flexible strip, the package comprising a connector chip supporting an attached semiconductor device whose terminals engage and are thereby electrically connected to the inner ends of conductive paths on the connector chip. The latter is supported in a substrate so that the outer ends of its conductive paths are in register with and electrically connected to the lead portions of the surrounding lead frame. Also included in the invention is the method for assembling the aforesaid package.

3,469,685
SHEATH PACKAGE AND METHOD OF APPLICATION

Walter P. Baermann, Raleigh, N.C., assignor, by mesne assignments, to Medical Supply Company, Rockford, Ill., a corporation of Missouri

Filed Oct. 23, 1967, Ser. No. 677,128
Int. Cl. A61l *17/02;* **B65d** *85/20, 85/30*
U.S. Cl. 206—63.2 **9 Claims**



A package for a sheath for protecting a thermometer including an outer cover with the sheath positioned inside the cover to receive the thermometer through one side of the package and to be extended by the instrument through the opposite side. In the first form, the cover comprises upper and lower plastic sheets sealed together around two domes, the dome of the upper sheet having a weakened depression in its top wall for insertion of the thermometer and the dome of the bottom wall including an internal rib around which the coiled sheath is fitted for uncoiling around the thermometer as the latter is pushed through the central nose portion of the lower dome. The nose portion and the depression are weakened by score lines. The alternate forms have longitudinally collapsed sheaths integrally joined to an intermediate sheet sealed between the two cover sheets in alinement with depressions on the upper sheets and disposed inside domes in the lower sheets. Two of the domes are weakened by score lines as in the first form, and another has a flat end wall substantially surrounded by a score line permitting separation of the end wall from the remainder of the dome.

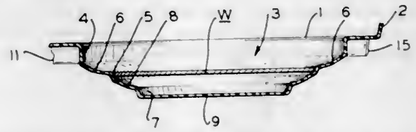
3,469,686
RETAINING TRAYS FOR SEMICONDUCTOR WAFERS AND THE LIKE

Henry W. Gutsche, St. Louis, Darrel M. Harris, Kirkwood, and Robert J. Walsh, Ballwin, Mo., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware

Filed Feb. 8, 1967, Ser. No. 614,656
Int. Cl. B65d *85/70, 21/02, 1/34*
U.S. Cl. 206—65 **22 Claims**

A series of marginally registrable plastic trays having a plurality of wells and wherein each well is provided with a tapered wall for supporting a wafer within the well. The wall is tapered so that the bottom thereof is smaller

than the wafer and this prevents the polished face of the wafer from contacting any surface of the tray. Each tray

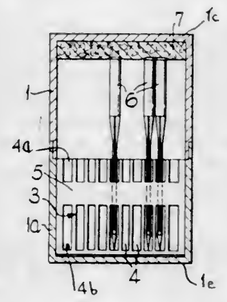


is nestable within a like tray so that a series of the trays can be stacked, wrapped and shipped as a unit.

3,469,687
CONTAINER FOR PACKING NEEDLES

Joseph Schneider, Eupen, Belgium, assignor to Manufacture Belge d'Aiguilles S.A., Eupen, Belgium

Filed June 28, 1967, Ser. No. 649,602
Claims priority, application France, July 5, 1966, 68,152
Int. Cl. B65d *85/24, 85/54;* **A45c** *11/26*
U.S. Cl. 206—66 **4 Claims**

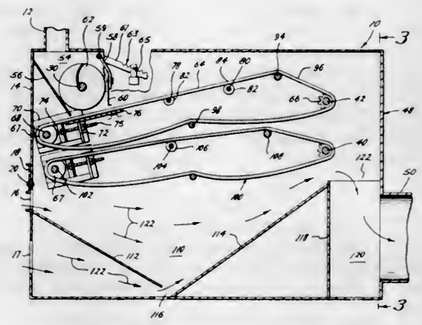


A container used for the packing of needles, particularly sewing machine needles, the container comprising cooperating hollow parts or sections, and stacked small flat boxes disposed in one of the hollow parts and having longitudinally directed sockets for the needles, the other hollow part being cushioned at its closed end for taking up the longitudinal play between said closed end and the needle heads.

3,469,688
GRAIN SCALPER

Neal E. Stallman, Garwood, Tex., assignor to P and S Grain Equipment, Inc., Cuero, Tex., a corporation of Texas

Filed Dec. 19, 1966, Ser. No. 602,682
Int. Cl. B07b *1/10, 1/00*
U.S. Cl. 209—10 **8 Claims**

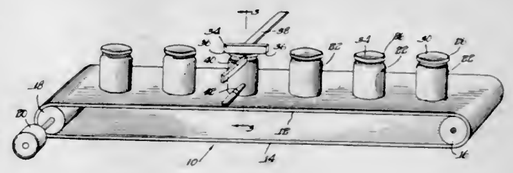


An improved apparatus for the separation of grain from the foreign matter such as chaff straw and the like, that becomes intermixed with the grain as the grain is harvested. It utilizes a controlled feed, vibrating belts and air streams to bring about this separation, as well as improved features in various elements making up the device.

3,469,689
IMPROPERLY-SEALED-CONTAINER REJECTOR

Thomas F. O'Neill, Jr., Lombard, Ill., assignor to Bron Electronics, Incorporated, Lombard, Ill., a corporation of Illinois

Filed Apr. 28, 1966, Ser. No. 546,009
Int. Cl. B07c *5/34*
U.S. Cl. 209—80 **3 Claims**

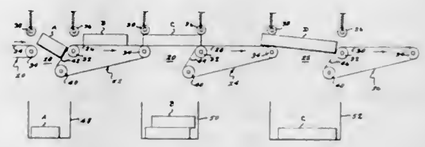


Apparatus for electronically detecting and rejecting improperly sealed containers utilizing a proximity detector which controls the frequency of an oscillator in response to the distance between the detector and container top.

3,469,690
METHOD AND MEANS FOR SORTING OBJECTS ACCORDING TO LENGTH

Evander M. Ervin, Florence, S.C. (% Terleco, Inc., 3000 Southwest Blvd., Charlotte, N.C. 28208)

Continuation-in-part of application Ser. No. 640,733, May 23, 1967. This application July 28, 1967, Ser. No. 667,020
Int. Cl. B07c *5/04, 1/10;* **B07b** *13/04*
U.S. Cl. 209—102 **4 Claims**



An arrangement for sorting elongate objects of equal length from an indiscriminate mixture of such objects having varying lengths that differ discriminately within a selected length variation pattern; the sorting being effected by causing objects of the mixture to travel in lengthwise succession while providing for successive discriminate escape of objects from this succession in progressive relation to increasing length. The method and apparatus disclosed are applied representatively for sorting wooden, tubular sawn, billets obtained through cropping of imperfect cut stock to recover usable billets of selected shorter lengths therefrom.

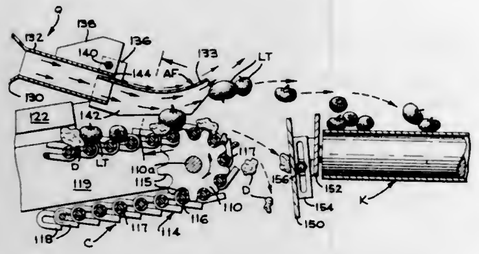
3,469,691
AERODYNAMIC SORTING

John Boyce, San Jose, Calif., assignor to FMC Corporation, San Jose, Calif., a corporation of Delaware

Filed Dec. 6, 1967, Ser. No. 688,484
Int. Cl. B07b *7/01, 7/00*
U.S. Cl. 209—133 **15 Claims**

Apparatus and method for separating smooth objects from rough contoured objects. A slatted endless conveyor

has its discharge end spaced from a receiving conveyor. A blower nozzle and curved deflector are positioned to direct a stream of air over the discharge end for aerodynamically lifting and carrying the objects across the space and to the receiving conveyor. The rough contoured objects are not so lifted and fall through the space.



3,469,692

USE OF ORGANIC DITHIOLS AS FLOTATION REAGENTS

Wilfred Lawson Freyberger, Houghton, Mich., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed Nov. 18, 1966, Ser. No. 595,343

Int. Cl. B03d *1/00*

U.S. Cl. 209—166 **5 Claims**

When the froth flotation of zinc from zinc-containing ores is carried out in the presence of a dithiol of the formula HS—R—SH, wherein R is a hydrocarbon radical of from 6 to 18 carbon atoms, such as p-menthane-2,9-dithiol, a substantial reduction in the required amounts of copper sulfate and lime conditioning agents is realized and, in some instances, the need for these agents is eliminated entirely.

3,469,693

BENEFICIATION OF ORES BY FROTH FLOTATION USING SULFOSUCCINAMATES

Nathaniel Arbiter, 7020 N. Camino de Fray. Marcas, Tucson, Ariz. 85718

No Drawing. Continuation-in-part of application Ser. No. 699,765, Jan. 23, 1968, which is a continuation-in-part of application Ser. No. 529,267, Feb. 23, 1966. This application Nov. 4, 1968, Ser. No. 773,310

Int. Cl. B03d *1/14*

U.S. Cl. 209—166 **13 Claims**

Various ores, particularly tin ores, oxide iron ores, and also some sulfide and other non-sulfide ores, are beneficiated by froth flotation using N-alkyl sulfosuccinamates as flotation collectors.

3,469,694

VIBRATORY SEPARATOR WITH SLOPING DISCHARGE DOME

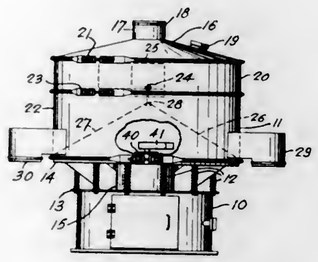
Charles G. M. Dickson, Toronto, Ontario, Canada, assignor to Separator Engineering Ltd., Montreal, Quebec, Canada, a corporation

Filed Aug. 4, 1967, Ser. No. 658,473

Int. Cl. B07b *1/06*

U.S. Cl. 209—255 **5 Claims**

Vibratory screen separators which have a horizontal screen mounted in a peripheral casing and means for vibrating the screen and casing. The vibration causes material delivered to the screen to be separated into a coarse fraction which is retained upon the screen and subsequently discharged and a fine fraction which is discharged after passing through the screen. In accordance with the disclosure the separator comprises guide means located beneath the screen for directing material which has passed through the screen to the outlets. The guide means includes surfaces sloping downwardly towards each outlet from an apex region located intermediate the outlets. The sloping surfaces are joined in the apex region along a straight line and each surface slopes downwardly from the straight line and toward the outlets.



3,469,695

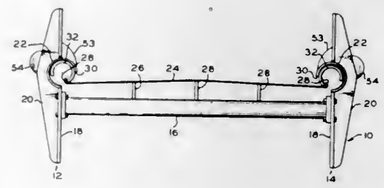
SCREEN-TIGHTENING APPARATUS

Carroll D. Greeninger, Rte. 2, Box 42, Astoria, Oreg. 97103

Filed Oct. 20, 1967, Ser. No. 676,969

Int. Cl. B07b *1/28*

U.S. Cl. 209—403 **14 Claims**



A screen cloth in a vibrating screen apparatus is held in place between two freely rotatable members pivotally attached to the sides of the screen frame. These rotatable members are adapted to selectively grip hooked margins of the screen cloth as each such member is rotated in a predetermined direction. Means are provided for applying leverage to the rotatable members for rotating the same to a desired position whereby tension is applied to the cloth, after which the rotatable members are locked in position.

3,469,696

FILTRATION APPARATUS

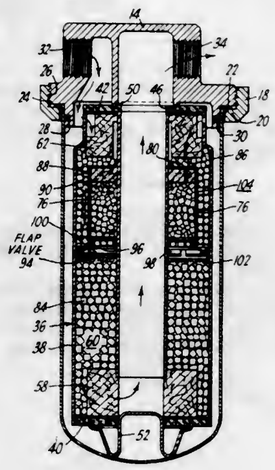
Raymond Mark Petrucci, Waterbury, and Marcel Clarence Sicard, Cheshire, Conn., assignors to American Machine & Foundry Company, a corporation of New Jersey

Filed Jan. 22, 1968, Ser. No. 699,504

Int. Cl. B01d *25/30*

U.S. Cl. 210—97 **5 Claims**

A cartridge type water treatment device employing means for selectively removing solid, taste and odor and scale forming agents including means for controlling flow through the scale forming agent.



3,469,697

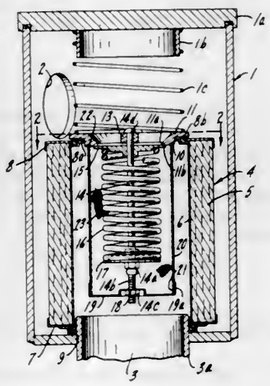
FILTER AND BY-PASS VALVE ASSEMBLY

Walter J. Kudlaty, Elmhurst, Ill., assignor to Marvel Engineering Company, Chicago, Ill., a corporation of Delaware

Filed Dec. 14, 1966, Ser. No. 601,763

Int. Cl. B01d *27/10*

U.S. Cl. 210—132 **1 Claim**



A fluid filtering structure having a first filter element for normal filtration, a by-pass valve openable in response to clogging of the first filter element and a second filter element arranged in a replaceable cartridge assembly with the by-pass valve to insure filtration of the by-passing fluid.

3,469,698

CONTROLLED FLOW DRAIN

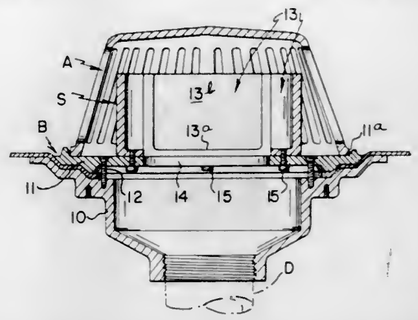
Louis Blendermann, North Palm Beach, Fla., assignor to Josam Manufacturing Co., a corporation of Delaware

Filed Apr. 5, 1967, Ser. No. 628,658

Int. Cl. E03f *5/06, 5/04*

U.S. Cl. 210—163 **21 Claims**

A roof drain having a circumferential adjustable weir structure controlling the rate of flow of water through the drain from the surrounding drained area for heads of water up to the height of the weir; the weir structure being either automatically adjusting responsive to head by displacement of resilient elements deflecting to enlarge weir openings with increasing head, or presettably adjustable by relative displacement of telescoped slotted collars angularly or of elements radially or angularly to vary slots defined between adjacent plate edges.



3,469,699

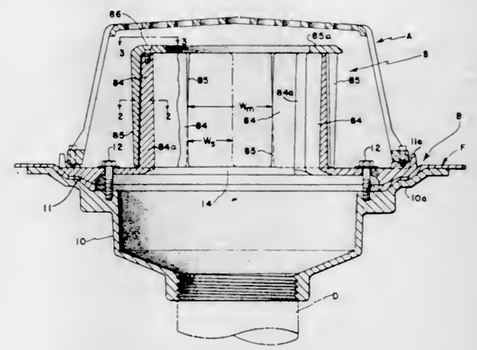
ROOF DRAIN

Louis Blendermann, North Palm Beach, Fla., and Nicholas G. Scheuer, Michigan City, Ind., assignors to Josam Manufacturing Co., a corporation of Delaware

Filed Oct. 23, 1967, Ser. No. 677,369

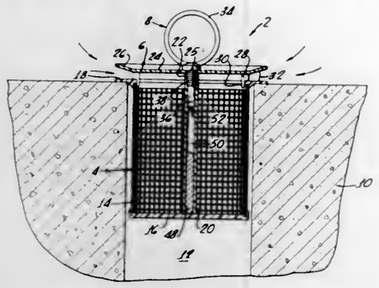
Int. Cl. E03f *5/14, 5/06*

U.S. Cl. 210—166 **5 Claims**



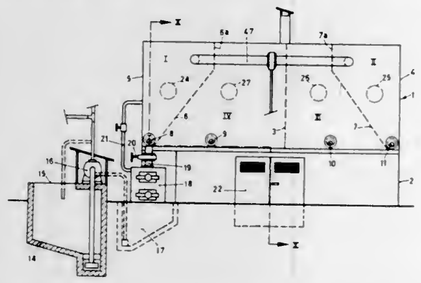
A controlled flow roof drain comprised of a bowl and an annular flashing clamp plate forming a drain body, a dome grate over an inlet through the plate, and an adjustable flow control, open top barrier within dome; the barrier comprising in effect a vertically plural slotted sleeve about the inlet integral with the plate providing rectangular weir openings between fixed vanes, and a similarly slotted rotationally shiftable collar surrounding the sleeve having an end ring supported on the fixed vanes with movable dependent vanes defined between the collar slots; with a flow-index-marked bolt-and-slot connection of the collar ring to the fixed vanes for rotational adjustment of vane overlap setting the flow controlling weir area for heads up to the level overflowing the barrier top.

3,469,700
STRAINER AND FLOW-DIRECTING APPARATUS FOR SWIMMING POOL FLOOR DRAINS
Lawrence E. Johnson, 15847 Imperial Highway, La Mirada, Calif. 90638
Filed Aug. 14, 1967, Ser. No. 660,502
Int. Cl. E04h *3/20*; **B01d** *35/28*
U.S. Cl. 210—238 **5 Claims**



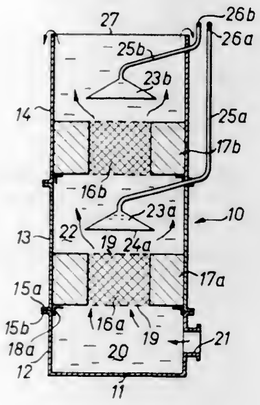
A strainer apparatus including a strainer element in the shape of an open-top basket, which basket is mounted within the mouth of a swimming pool floor drain by means of a support lip attached to the top of the basket. A solid, disc-shaped lid is connected to the top of the basket in spaced-apart relationship relative to the support lip, thus defining an annular entrance channel. The purposes of the lid (and of the annular entrance channel defined thereby) are to (1) hide the debris caught in the strainer basket, (2) minimize any chance of losing debris from the basket when it is lifted out of the pool, and (3) act as a flow-directing means to cause the water entering the drain to pick up any debris deposited on the floor of the swimming pool in the region adjacent the drain. The lid is removably secured to the basket by a screw, the screw including a relatively large ring handle which can be easily hooked in order to raise the strainer for cleaning purposes.

3,469,701
INSTALLATION FOR PURIFYING SPENT FUEL OIL
Richard Siebenmann, 6 Chemin de l'Union, 1008 Prilly, Lausanne, Switzerland
Filed Mar. 18, 1968, Ser. No. 713,617
Int. Cl. B01d *21/02*
U.S. Cl. 210—258 **5 Claims**



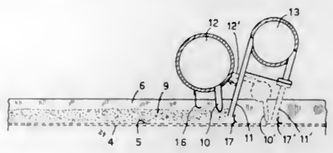
This disclosure concerns an installation for treating spent oils to render them suitable for use as fuel constituted by a decantation system divided into four compartments forming a progressive decantation chain, the spent oils passing during their treatment all or some of these compartments, characterized by the fact that the system is rectangular and is divided into two parts divided in two by a wall which is oblique at least on its greater part, the oblique walls converging each upwardly toward the corresponding lateral wall of the cistern in order to form a first compartment contiguous to one of the lateral walls of the cistern, the second compartment contiguous to the other lateral wall of the cistern, a third compartment located between the transversal wall of the cistern and the second compartment and a fourth compartment between the first and the third compartment, intended respectively for sand and other particle removal, for the removal of water and of oily mud, for an intermediate decantation and for the finish of the decantation and the storage of the decanted oil.

3,469,702
APPARATUS FOR SEPARATING FLUID EARTH-OIL PRODUCTS FROM AN EARTH-OIL-IN-WATER MIXTURE
Benno Perren, Wettingen, Switzerland, assignor to Hectronic AG, Aarau, Switzerland
Filed Sept. 25, 1967, Ser. No. 670,215
Claims priority, application Switzerland, Sept. 26, 1966, 13,950/66
Int. Cl. B01d *23/10*
U.S. Cl. 210—265 **15 Claims**



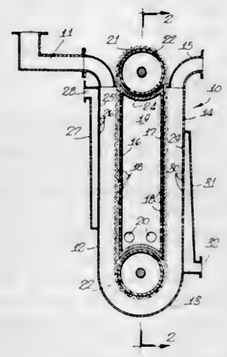
An apparatus for the separation of liquid petroleum products from a mixture of such products and water and comprising a container having a material contactable by the liquid having a higher wetting ability or affinity than water. The apparatus has separate outlets for the water freed from the petroleum products and the separated petroleum products.

3,469,703
METHOD AND APPARATUS FOR REGENERATING THE FILTER CLOTH OF A ROTARY FILTER TABLE
Alfred Henri Parmentier, 3 La Bruyere, Lillois, Belgium
Filed Apr. 26, 1966, Ser. No. 545,328
Claims priority, application Luxembourg, Apr. 28, 1965, 48,489; Aug. 3, 1965, 49.232; Mar. 21, 1966, 50,704
Int. Cl. B01d *35/16*
U.S. Cl. 210—393 **4 Claims**



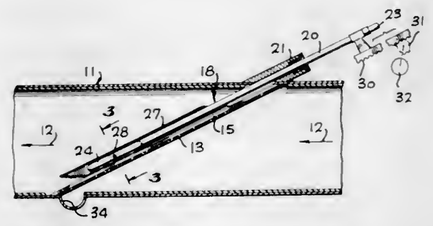
Apparatus for regenerating the filter cloth of a rotray filter wherein the filter cloth bounds a closed chamber in which a repulping liquid is introduced to form a pulp with solids remaining on the cloth, and the reformed pulp is removed from the chamber by suction in concurrence with the formation of the pulp.

3,469,704
SLURRY WASHING APPARATUS
Ola Sepall, Quebec, Quebec, Canada, assignor to Anglo Paper Products, Limited, Quebec, Quebec, Canada
Filed Sept. 19, 1967, Ser. No. 669,364
Int. Cl. B01d *33/38, 33/04*
U.S. Cl. 210—401 **3 Claims**



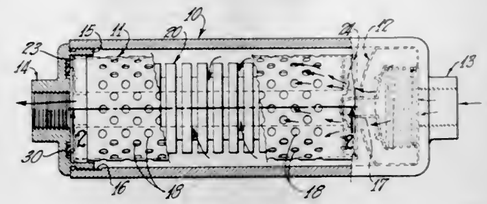
A slurry washing apparatus is disclosed which comprises an elongated vessel of rectangular cross-section. Slurry is fed into one end and the washed material discharged from the other end. At least one pair of opposed wall sections of the vessel are perforated and a travelling foraminous belt overlies a first one of such wall sections. Washing liquid is supplied to the vessel through the other wall section, and a filtrate collecting chamber is provided exteriorly of the first section.

3,469,705
MEANS FOR CLEANING SCREENS IN PLACE IN A PIPELINE
Robert S. Thomas, 12239 E. 214th St., Artesia, Calif. 90701
Filed Mar. 17, 1967, Ser. No. 628,800
Int. Cl. B01d *35/16*
U.S. Cl. 210—411 **6 Claims**



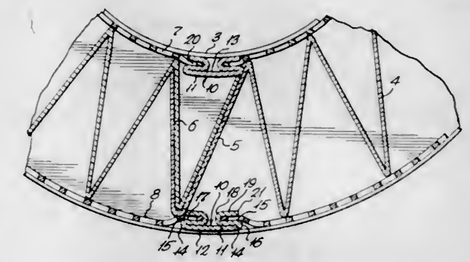
The application discloses devices having movable nozzle head assemblies adapted to be supplied with liquid under high pressure mounted in a pipe carrying a liquid to traverse a screen in the pipe for the purpose of cleaning the same and a drainage outlet for the material removed from the screen.

3,469,706
FILTER CARTRIDGE
Ronald E. Kissell, Newark, Ohio, assignor to Owens-Corning Fiberglas Corporation, a corporation of Delaware
Filed Dec. 2, 1966, Ser. No. 598,840
Int. Cl. B01d *27/02, 25/20*
U.S. Cl. 210—448 **3 Claims**



A cylindrical filter cartridge for fluids having an outer rigid cage and an inner filter insert of a fibrous material. The filter insert is secured within the shell between a first end cap secured to the edges of one end of the shell and a second end cap placed within said shell at an axial distance from said first end cap determined by the axial length of said fibrous insert when under compression at a predetermined axial pressure. The end caps include adhesive and mechanical means for sealingly engaging the adjacent ends of the fibrous inserts to prevent fluid leakage therebetween.

3,469,707
FILTER STRUCTURE
Kingsley E. Humbert, Jr., and James A. Rush, Gastonia, N.C., assignors to Wix Corporation, Gastonia, N.C., a corporation of North Carolina
Filed Oct. 6, 1967, Ser. No. 673,416
Int. Cl. B01d *27/08*
U.S. Cl. 210—484 **1 Claim**

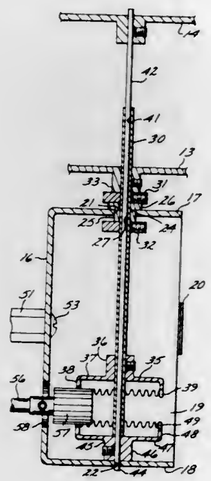


A filter structure wherein the filter media is placed between a center tube and an outer casing with the tube and casing being of a relatively thick and heavy reticulated material, the cut ends of which produce sharp edges that damage the filter media. A clip receives and holds the cut ends serving a dual purpose to hold the tube and casing in the desired shape and to protect the filter media against the aforesaid damage.

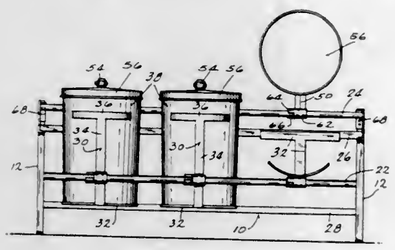
3,469,708
COUNTERREVOLVING DISPLAY MECHANISM
Davis W. Pennington, 208 S. Sycamore St., Santa Ana, Calif. 92701
Filed Nov. 3, 1967, Ser. No. 680,478
Int. Cl. A47f *3/08, 3/10*; **A47b** *11/00*
U.S. Cl. 211—1.5 **6 Claims**

A counterrevolving display mechanism including a first tubular shaft rotatably mounted on a frame by bearing means, and having a second shaft rotatably received with-

in it, there being provided on said first shaft collars which hold said first shaft against upwardly or downwardly movement; said second shaft extending below the end of said first shaft and carrying a gear having a plurality of circularly disposed upwardly facing teeth; said first shaft carrying at a point near said first mentioned gear a second gear which has a plurality of circularly disposed downwardly facing teeth; and a spur gear disposed between the teeth of said first and second mentioned gears and engaging them so that rotation of said spur gear rotates said first shaft in one direction and the second shaft in the opposite direction.

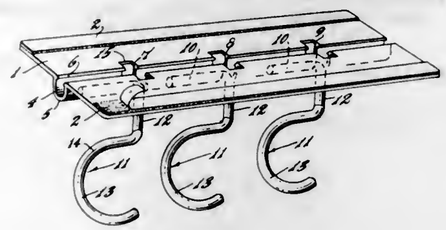


3,469,709
RECEPTACLE HOLDER
Neltson P. Wood, 1319A N. 23rd St., Milwaukee, Wis. 53204
Filed June 16, 1967, Ser. No. 646,686
Int. Cl. A47g *29/00;* **A47f** *5/12*
U.S. Cl. 211—82 **8 Claims**



Disclosed herein is a receptacle holder particularly adapted for use with garbage cans or trash cans or the like, which includes a frame which pivotally supports a plurality of receptacle carriers with seat portions and side rest portions. The receptacle carriers are movable from an upright vertical position to a tilted horizontal position for cleaning and removal of contents. The receptacle lid carriers are also pivotally mounted to the frame for movement between a horizontal and substantially vertical position. The lid carriers are mounted on a vertically adjustable frame member to accommodate receptacles of various sizes.

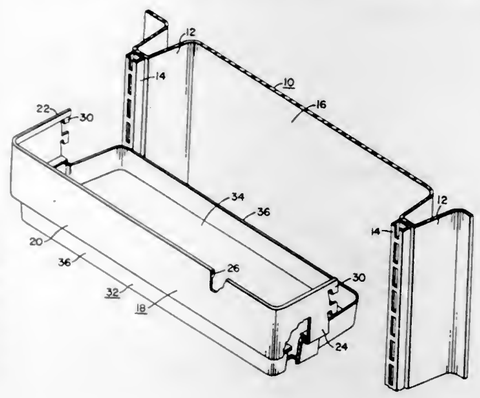
3,469,710
BRACKET AND HOOK ASSEMBLY
Samuel P. Vosbikian, 1315 Cumberland St., Huntingdon Valley, Pa. 19006
Filed Aug. 7, 1967, Ser. No. 658,843
Int. Cl. A47f *5/08;* **A47g** *1/20*
U.S. Cl. 211—116 **4 Claims**



This invention consists of a novel bracket and hook assembly wherein the bracket is in the form of a plate which is deformed along its longitudinal axis to form beads on the front face of the plate and to form a channel on the rear face of the plate, having flexible sides within an opening at the rear of less width than the width of the base of the hook. The plate has a desired number of slots leading to the channel, and the hook or hooks having their shank terminating in a lateral extension forming a base portion which when inserted through a slot, will snap through the opening in the channel so that the hook or hooks are pivotally mounted and can be swung to the right or left, so that if a plurality of hooks are employed they will be out of alignment with each other.

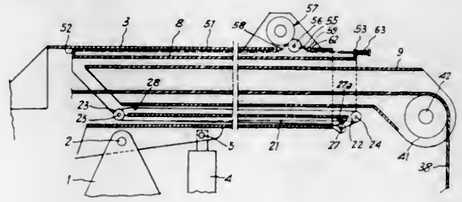
The back of the bracket is provided with any desired type or means to secure it to a wall or other support, and as disclosed, it might be adhesive material on the back of the bracket or fastening devices such as for example screws.

3,469,711
SHELF CONSTRUCTION FOR REFRIGERATOR DOOR
Anthony J. Swaneck, Columbus, and Charles A. Wilcox, Upper Arlington, Ohio, assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Oct. 23, 1967, Ser. No. 677,388
Int. Cl. A47f *5/08;* **A47g** *29/00;* **A47b** *57/20*
U.S. Cl. 211—176 **4 Claims**



A refrigerator door shelf formed of a one-piece metallic member bent into a shallow U-shape to form the front and end walls, and a molded plastic one-piece member forming the floor of the shelf with the plastic member being secured to the metallic member through flanges received by grooves on the metallic member and stacked together at selected places.

3,469,712
TELESCOPIC BOOM CRANE
Arthur Haulotte, 21 Rue Duguesclin, Lyon, Rhone, France
Filed Feb. 5, 1968, Ser. No. 703,042
Claims priority, application France, Feb. 10, 1967, 9,478; Dec. 12, 1967, 131,904
Int. Cl. B66c *23/06*
U.S. Cl. 212—55 **4 Claims**

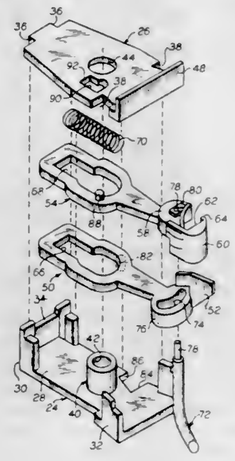


A crane in which the telescopic boom consists of tubular members of decreasing cross-section which are slidably mounted within each other. The outer members form a boom casing which is pivotally mounted on a horizontal pin carried by the frame of the crane. The outward travel and withdrawal of at least the inner member of the boom is carried out by means of a system of endless operating cables or chains. The cable or chain which serves to operate the inner telescopic member is connected to the boom casing by detachable fastening means so that said cable or chain can be selectively attached either to said boom casing or to the intermediate sliding member in order that the inner sliding member which has the lowest strength is not subjected to bending stresses when the boom is not extended to its maximum reach. Safety means are provided in order to prevent one of the telescopic members from moving back abruptly in the event of a break in the cable or chain. The lifting hook carried by the cable which is suspended by means of a guide pulley from the front end of the inner telescopic member is maintained at the same level even during the movements of outward travel or of withdrawal of the telescopic boom.

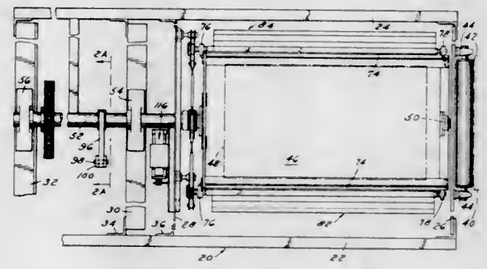
3,469,713
MODEL RAILROAD COUPLER AND RELATED MECHANISM
Clarence K. Edwards, 865 Morrison St., and Lawrence D. Edwards, 2816 Rosemont Ave., both of Medford, Oreg. 97501
Filed Nov. 13, 1967, Ser. No. 687,083
Int. Cl. B61g *5/02, 7/06, 3/02*
U.S. Cl. 213—75 **9 Claims**

A coupler is provided for model railroad equipment which includes the features of automatic coupling, magnetic uncoupling and delayed uncoupling. When miniaturized, the coupler can be used with model railroad equipment of much smaller gauge than could ever before be provided with a coupler having the features referred to.

The coupler is characterized by a knuckle and an opposed lip, unitary, respectively, with separate, superposed, slotted shanks. A longitudinally extending compression spring is located within the shank slots and exerts an inward, lengthwise thrust on each of the shanks. Fixed abutment means at opposite sides of the shanks stand in opposed relation to abutment means on the respective shanks, so that, in response to the spring thrust, the knuckle and lip are yieldingly rocked, scissors fashion, toward one another, being arrested by direct interaction of the balanced shanks, to stand in potentially automatic coupling relation, or in coupled relation.

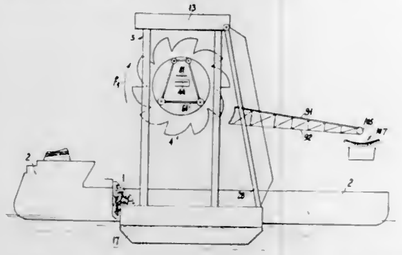


3,469,714
STACKING MACHINE
Cyril D. Paquette, Grosse Pointe Park, Mich., assignor to Taylor & Gaskin, Inc., Detroit, Mich., a corporation of Michigan
Filed Nov. 13, 1967, Ser. No. 682,277
Int. Cl. B65k *29/40;* **B65g** *57/08*
U.S. Cl. 214—6 **6 Claims**



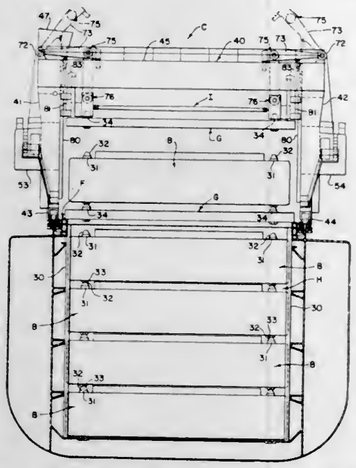
A machine for receiving from a traveling conveyor in rapid succession sheets of material, and operable to deposit the sheets in a uniform stack for subsequent transfer to a remote location in a stacked condition, including an invertible table communicating with the downstream end of the conveyor for receiving successive sheets, means for oscillating the table through 180°, clamping means for retaining a sheet on the table during movement thereof and shiftable to release a sheet for gravity fall to the stack when the table stops, and control means for synchronizing movement of the table and the clamping means. The table upper and lower surfaces each are designed to accept the sheets of material, whereby upon movement of the table to deposit one sheet, the opposite table surface moves into position to accept the next successive sheet from the conveyor.

3,469,715
UNLOADING DEVICE FOR BULK MATERIALS
Hyacinthe M. Bocchietti, 13 Ave. du Clos 94, La Varenne, France
Filed Nov. 9, 1967, Ser. No. 681,658
Claims priority, application France, June 23, 1967, 111,609
Int. Cl. B63b *27/00;* **B65g** *37/00*
U.S. Cl. 214—14 **3 Claims**



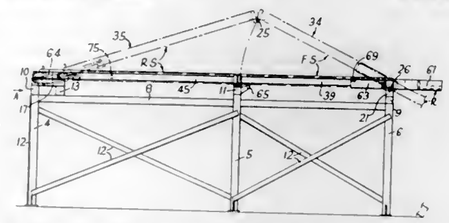
A bulk material unloading device having a vertically movable and rotatable bucket-wheel mounted for lateral movement on a gantry having side frames between which a vessel to be unloaded is navigated. Once in position under the gantry, the bucket-wheel is lowered on the side frames into the hold of the vessel and is caused to rotate, moving laterally to cover the full width of the hold. The bulk material scooped up by the buckets on the bucket-wheel falls through an open side of the buckets as they reach the top of the circle through which the buckets rotate and onto a series of co-operating conveyor belts, by means of which the bulk material may be transported to a discharge point.

3,469,716
SYSTEM FOR HANDLING CARGO LIGHTERS AND CARGO HATCH COVERS ABOARD SHIP
Raimunds Auzins, Canton, and Earl H. Sigman, Alliance, Ohio, and Alfred Schneider, Bremen, Germany, assignors to United Industrial Syndicate, Inc., a corporation of New York
Filed Apr. 16, 1968, Ser. No. 721,821
Int. Cl. B63b *27/12*
U.S. Cl. 214—15 **5 Claims**



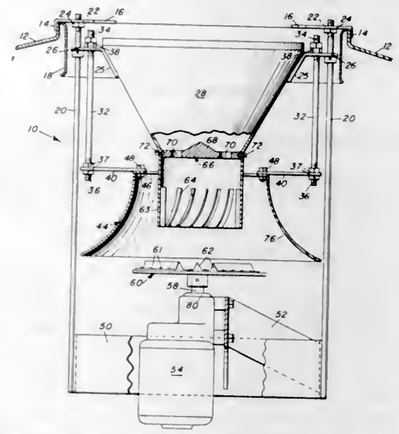
A shipboard system for transporting, guiding and positioning lighters and cargo hatch covers during vertical and horizontal travel of the lighter between a floating position outboard of a ship and a storage location in the cargo hold of a ship and vertical and horizontal travel of a cargo hatch cover between a cargo hatch and a storage location, while the lighter or hatch cover are suspended by a hoist mechanism. The vertical and horizontal travel is accomplished by a shipboard gantry crane which travels longitudinally of a lighter carrying transport ship from a position on outboard cantilevers over a loading well at the stern of the ship, across the cargo holds with the gantry legs spanning the cargo hatches.

3,469,717
PIVOTAL PLATFORM AND SLIDABLE RAMP PARKING DEVICE
Harold Bolt, 2 Vernon Ave., Peachaven, England
Filed Aug. 24, 1966, Ser. No. 574,720
Claims priority, application Great Britain, Sept. 4, 1965, 37,895/65
Int. Cl. E04h *6/00*
U.S. Cl. 214—16.1 **8 Claims**



A vehicle parking structure which permits optimum use of the area available for parking. A raised platform, high enough to provide parking beneath it has a forward section and a pivotally connected rear section, the forward section being pivoted to the supporting framework about an axis close to one end of that section and having mounted beneath it a ramp which can be slid out and lowered to pivot the forward section upwardly to permit a vehicle to be driven up the ramp and to pass over the axis to cause the forward section to pivot downwardly so that the platform assumes a horizontal position.

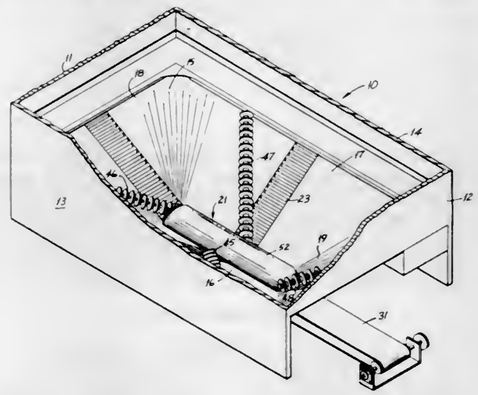
3,469,718
SPREADER FOR GRAIN BINS
Paul C. Felix and Allen A. Johnson, Taylorville, Ill., assignors to Grove Manufacturing Company, Shady Grove, Pa., a corporation of Pennsylvania
Filed Feb. 1, 1968, Ser. No. 702,370
Int. Cl. B65g *65/30;* **A01c** *17/00*
U.S. Cl. 214—17 **8 Claims**



A material spreading apparatus of a type in which a funnel directs grain against a rotating disc which propels the grain against the interior surface of a bell-shaped shroud wherein the shroud deflects the grain in a wide

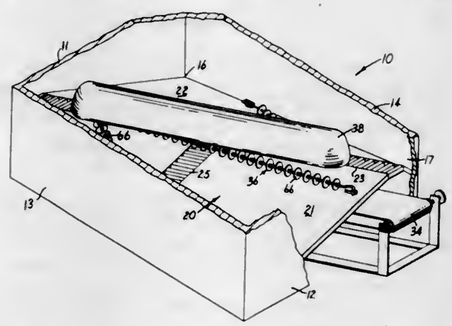
distribution pattern to insure that a bin or granary with which the apparatus will be used is evenly and uniformly filled.

3,469,719
NONCYLINDRICAL PARTICLE STORAGE FACILITY
John L. Peterson, Spokane, Wash., assignor to Atlas Spokane, Inc., a corporation of Washington
Filed Mar. 29, 1968, Ser. No. 717,241
Int. Cl. A01f *25/00;* **B65g** *65/30*
U.S. Cl. 214—17 **6 Claims**



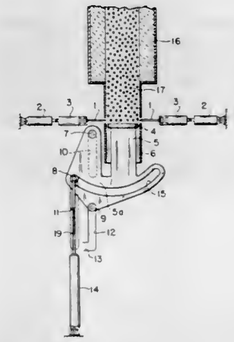
A noncylindrical particle storage facility is described for storing sawdust or other nonflowing material in a pile and for systematically removing the same from the base of the pile. The particle storage facility has a floor with inclined surfaces that slope to the center for biasing the free end of flexible drag lines toward the center and against the base of the pile. Each drag line has a plurality of disc assemblies coaxially mounted about a flexible cable that is attached to a chain encircling the pile. The chain rides in a track that is affixed adjacent the walls of the facility. A drive means engages the chain to move the chain to drag the disc assemblies over the floor to remove sawdust from the pile and transfer the sawdust to apertures formed in the floor.

3,469,720
CENTRAL PARTICLE REMOVING SYSTEM FOR NONCYLINDRICAL STORAGE FACILITIES
John L. Peterson, Spokane, Wash., assignor to Atlas Spokane, Inc., a corporation of Washington
Filed Apr. 18, 1968, Ser. No. 722,361
Int. Cl. B65g *65/30*
U.S. Cl. 214—17 **7 Claims**



The disclosure describes a particle removing and transfer system mounted in the center of a rectangular storage facility for removing particles from a particle pile and transferring the particles to apertures formed in the storage floor. The storage floor has inclined surfaces that extend downward from the center to the walls. The transfer system includes a plurality of drag lines or drag means each having one end thereof attached to a continuous chain that follows an elongated path about a diagonal axis. The drag lines have digging elements mounted thereon for moving against the base of the pile to remove particles therefrom.

3,469,721
APPARATUS FOR VERTICAL EXTRACTION OF MATERIAL
Jacques Crignon, Levallois, and Jean Delcoustal, Asnieres, France, assignors to Societe Generale de Produits Refractaires, Paris, France, a corporation of France
Filed Aug. 22, 1967, Ser. No. 662,411
Claims priority, application France, Sept. 2, 1966, 75,049
Int. Cl. F23k *3/00*
U.S. Cl. 214—18 **4 Claims**

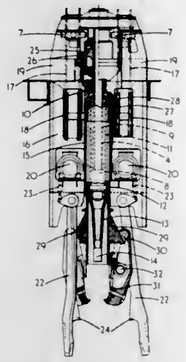


A vertical extraction apparatus particularly adapted for use in vertical furnaces having a collar of the same cross sectional design as the lower part of the furnace in which the solid material to be extracted is located and a bearer plate adapted for movement within the collar and having a shape substantially the same as the collar for moving and extracting the material to a lower level. Positioned within the collar and between the bearer plate and the lower end of the furnace is a horizontal fragmenting or sectioning mechanism for retaining the flow of material when said bearer plate is carrying a portion of said material to the lower part of the vertical furnace.

3,469,722
APPARATUS FOR REMOVING INGOTS FROM MOULDS
Stanley Burrows, Dukinfield, England, assignor to The Adamson Alliance Company Limited, London, England, a British company
Filed Nov. 24, 1967, Ser. No. 685,373
Claims priority, application Great Britain, Nov. 24, 1966, 52,643/66
Int. Cl. B65b *69/00;* **B28b** *13/06;* **B22d** *29/00*
U.S. Cl. 214—309 **5 Claims**

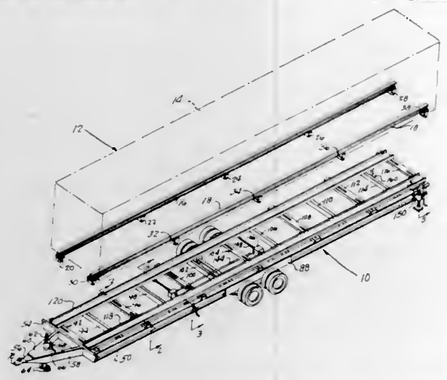
Apparatus for removing an ingot from a mould comprising a member arranged to be moved into engagement with an ingot whilst the mould is held fixed. The ingot-engaging member is advanced mechanically by screw-

threaded means and if the force applied by the screw-threaded means is insufficient to remove the ingot, the



ingot-engaging member is subsequently advanced by hydraulic means until the ingot is removed.

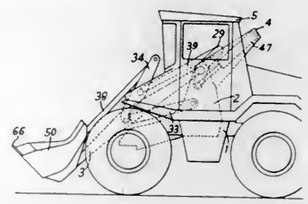
3,469,723
MOBILE HOME SYSTEM
Harry W. Mathley and John L. Dwinell, Louisville, Ky., assignors, by direct and mesne assignments, of fifty-one percent to said Mathley, nineteen percent to said Dwinell, and ten percent each to Robert J. Berman, Bernard S. Berman, and Leon J. Shaikun, all of Louisville, Ky.
Filed Oct. 5, 1967, Ser. No. 673,203
Int. Cl. B60p *1/64, 3/32;* **B62d** *23/00*
U.S. Cl. 214—516 **7 Claims**



A mobile home having a housing unit for providing permanent quarters for human occupancy including a plurality of rollers on the bottom thereof arranged in parallel rows and received in parallel tracks on a running gear assembly including a frame for movably supporting the tracks, a wheel assembly for transporting the frame and a gear assembly for laterally adjusting the tracks in spaced relation about a center point simultaneously.

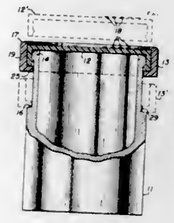
3,469,724
MODIFICATION OF FRONT-END LOADERS
David John Bowes Brown, Stroud, England, assignor to Winget Limited, Rochester, Kent, England
Filed Nov. 13, 1967, Ser. No. 682,484
Claims priority, application Great Britain, Nov. 14, 1966, 50,926/66
Int. Cl. E02f *3/62*
U.S. Cl. 214—776 **4 Claims**

There is provided an improved construction for a front-end loader wherein a single beam is pivotally mounted to a chassis so as to be raised or lowered. At the forward end of the beam is mounted a working member such as a bucket or scraper. An inter-lever has one end mounted to the beam intermediate the ends of the beam, with a cranked lever connected to the inter-lever intermediate its ends and a forward crowbar con-



necting the free end of the inter-lever with the bucket. The geometry of the linkages of the beam with respect to the chassis is such that movement of the beam during the raising or lowering of the bucket or scraper has a roll-back of five degrees at maximum out-reach of the beam and returns to the initial position as the out-reach diminishes toward the maximum height.

3,469,725
SAFETY CONTAINER CLOSURE
Lloyd S. Turner, Los Gatos, Calif., assignor to The Basic Products Development Company, Oakland, Calif., a corporation of California
Filed Aug. 8, 1967, Ser. No. 659,130
Int. Cl. B65d *55/02, 45/16;* **A61j** *1/00*
U.S. Cl. 215—9 **5 Claims**

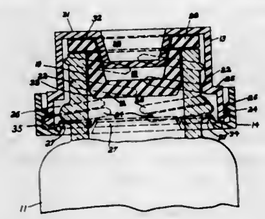


A safety closure for a bottle or like container includes a pliable cap and an outer retainer ring which normally holds the cap compressed over the bottle. Mating grooves and shoulders between the bottle and the cap secure the cap to the bottle until the retainer ring or collar is depressed, to permit expansion of the cap

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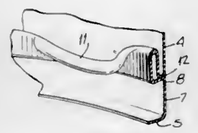
3,469,726
SAFETY CLOSURE FOR CONTAINERS
John Donald Slack, 520 Park Crescent, Fairport Beach, Ontario, Canada, and Walter Joseph Stoeckl, 45 Fordover Drive, West Hill, Ontario, Canada
Filed Aug. 22, 1967, Ser. No. 666,539
Int. Cl. B65d *55/12, 41/04*
U.S. Cl. 215—9 **3 Claims**

This invention relates to new and useful improvements in tamperproof safety closures for containers, and more specifically to a closure device for containers, which may contain dangerous chemicals or drugs, and where it is desired to prevent children from removing the cap, or to prevent the removal of the closure by any person inadvertently. Closure caps have traditionally been provided with screw threads of various designs as a means of securing them upon the container. Although this in itself is sufficient to provide a tight seal on the container, it does not offer any safeguards against accidental removal. We believe we have overcome these prior deficiencies by employing a cap bearing opposite handed segments of screw threads. Internal thread segments are used to screw the cap onto the container neck which bears a particular de-



sign of thread segments. An external thread is used for fastening closure cap to a locking collar which is held captive upon container neck. This results in a unit capable of being rotated in either direction but cannot be removed endwise and without unlocking or losing its sealing action.

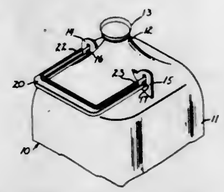
3,469,727
LUG TYPE CLOSURE CAP HAVING TEAR-OFF SKIRT PORTION
Daniel D. Acton, Lancaster, Ohio, assignor to Anchor Hocking Glass Corporation, Lancaster, Ohio, a corporation of Delaware
Filed Sept. 1, 1967, Ser. No. 664,982
Int. Cl. B65d *41/32*
U.S. Cl. 215—42 **11 Claims**



A closure cap having an inwardly rolled bead around its skirt in a zone spaced from the lower edge of the skirt, which bead is flattened against the skirt to give a substantially smooth outer skirt surface and has spaced lugs thereon which are hidden inside the skirt. The lower portion of the skirt may be crimped about a bead on the container to be sealed, creating a barrier against contamination and insect infestation between the container finish and closure skirt, and may be used as a tear strip for unsealing the package by forming a score line in the skirt below the lug forming portion. The method of forming the hidden lugs comprises rolling the bead inwardly from the skirt, flattening the bead and holding spaced portions while folding the intermediate portions against the side of the skirt.

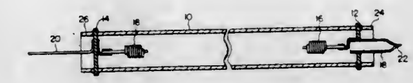
3,469,728
HANDLE DEVICE
Robert L. Bailey, Spokane, Wash., assignor to National Distillers and Chemical Corporation, New York, N.Y.
Filed Apr. 21, 1967, Ser. No. 632,754
Int. Cl. B65d *33/06*
U.S. Cl. 215—100 **1 Claim**

The disclosure describes a handle device for a plastic jug **10** that is especially designed as a container for milk. Tab members **14** and **15** are integrally molded with the jug **10**. Elongated apertures **16** and **17** are formed perpendicularly through tab members **14** and **15** respectively for receiving a handle **20**. The handle **20** has a U-shaped body portion with resilient ends **23** and **24** extending therefrom. Each of the ends **22** and **23** is angularly displaced in relationship with the orientation



of the apertures **16** and **17**. Each end **22** and **23** has a tip portion **28** that is dart-shaped for inserting through one of the apertures and an intermediate portion **31** for residing in the apertures to permit the ends to spring back to interlock the tip portions with the tab members.

3,469,729
SEALING COMPOSITIONS FOR BONDING CERAMICS TO METALS
Richard B. Grekila and Shih-Ming Ho, Pittsburgh, Pa., William J. Knochel, West Orange, N.J., and Francis C. M. Lin, New York, N.Y., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed June 30, 1966, Ser. No. 562,016
Int. Cl. H01k *1/42;* **C04b** *37/00, 39/00*
U.S. Cl. 220—2.3 **10 Claims**

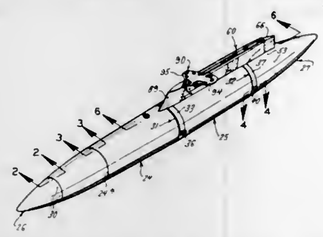


9. A sealed discharge device comprising:
(a) a hollow elongated ceramic envelope,
(b) refractory metal or alumina closure members positioned proximate to each end portion of said ceramic envelope, and
(c) a sealing composition hermetically bonding said closure members to said ceramic envelope, said sealing composition principally comprising from about 44 to 55% by weight CaO, from about 40 to 50% by weight Al_2O_3, and from about 0.5% to 10% by weight of at least one material selected from the modifying group consisting of BaO, SiO_2, ZrO_2, SrO, TiO_2, BeO, ThO_2 and Y_2O_3.

3,469,730
NESTABLE SHAPED CARGO CARRIER CONSTRUCTION
Charles W. Neff, St. Louis, Mo., and Raleigh L. Huntsman, Titusville, Fla., assignors, by mesne assignments, to McDonnell Douglas Corporation, St. Louis, Mo., a corporation of Maryland
Filed Nov. 18, 1966, Ser. No. 595,383
Int. Cl. B65d *7/04, 7/32*
U.S. Cl. 220—5 **2 Claims**

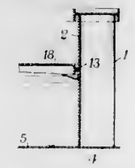
A nestable shaped cargo carrier construction which includes a plurality of fixed circular sections having conically shaped configurations to permit complete nestability of the sections wherein no two sections to be joined are prevented from nesting one within the other, so that the

components of a plurality of complete cargo carriers can be broken down into individual components and slidably nested into a compact package which has approximately



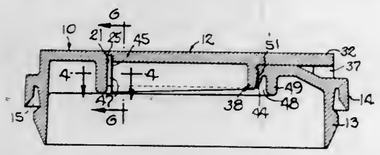
the same circular dimension of the components but is considerably shorter in length than any individual completely erected cargo carrier.

3,469,731
LARGE-CAPACITY LIQUID STORAGE TANKS
Jacques Brucker, Paris, France, assignor to Constructeurs Associes Pour Le Montage d'Ouvrages Metalliques (C.A.M.O.M.) Societe Anonyme, Paris, France
Filed Oct. 4, 1967, Ser. No. 672,758
Claims priority, application France, Oct. 25, 1966, 81,500, Patent 1,504,728
Int. Cl. B65d *87/18*
U.S. Cl. 220—26 **5 Claims**



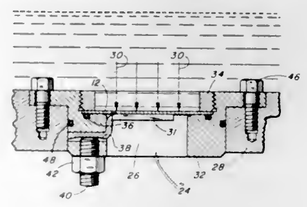
Large-capacity metal tank for the storage of liquids, which comprises a cylindrical vertical side wall of thin corrugated sheet made of a succession of adjacent channels opening toward the center of the tank and interconnected by semi-cylindrical sections of relatively small radius, an upper annular belt covering the side wall channels, an annular bottom belt made of radially disposed welded sheets, a fixed or floating roof having the same cross-sectional contour as the inner face of the vertical side wall, and a bottom made of thin sheets having overlapping welded joints which is connected to said bottom belt.

3,469,732
PLASTIC CLOSURE
John A. Foster, Rockford, Ill., assignor, by mesne assignments, to J. L. Clark Manufacturing Co., Rockford, Ill., a corporation of Delaware
Filed Apr. 1, 1968, Ser. No. 717,764
Int. Cl. B65d *43/16*
U.S. Cl. 220—31 **15 Claims**



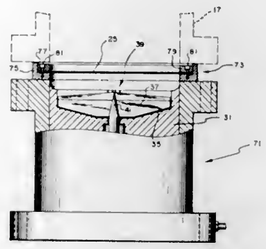
A single-piece molded plastic closure adapted to be mounted on a spice can and having a segmental spoon opening closed by a flap integrally hinged to one side of the opening, and a segmental sifter opening similarly closed by an integrally hinged flap. Depending from the underside of each flap is a rib that interfits with the side surfaces of the respective opening from one end of the hinge to the other, the rib on the sifter flap having sifter openings therein. Each flap is latched releasably in the closed position by interfitting abutments, and is sealed by a resiliently flexible fin of plastic molded on the side surface of the opening, completely around the rib, and inclined downwardly and inwardly for interfering engagement with the rib during closing motion of the flap. Finlike compressible extensions on the ends of the ribs abut against alined, opposed surfaces on the straight sides of the openings to form pressure seals from the hinges downwardly to levels below the fin seals, and clearances are formed between the edges of the ribs adjacent the hinges and the opposed edge surfaces of the openings and covered by wings on the flaps.

3,469,733
RUPTURE DISC UNIT
Rayner A. Montgomery, Silver Spring, and Earl E. Kilmer, College Park, Md., assignors to the United States of America as represented by the Secretary of the Navy
Filed Oct. 31, 1967, Ser. No. 679,321
Int. Cl. B65d *47/36, 25/38*
U.S. Cl. 220—89 **3 Claims**



A rupture disc unit having a plate in which is scored a groove in the shape of a U. A strip of explosive material is bonded over the groove and a detonator is positioned in close proximity to the explosive material.

3,469,734
BURST DIAPHRAGM FLOW INITIATOR
John W. Davis and Olen E. Hill, Huntsville, Ala., assignors to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration
Filed Dec. 28, 1967, Ser. No. 694,340
Int. Cl. B65d *25/00*
U.S. Cl. 220—89 **5 Claims**



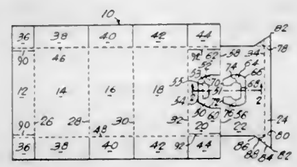
A flow initiator for installation in a short duration wind tunnel or other facility for instantaneously starting the flow of gas from a high pressure reservoir into a lower pressure receiver. A multiple element grid is disposed in a tube section with the grid elements extending transversely of the tube and supporting a Mylar diaphragm that closes the tube separating the high pressure gas from the lower pressure gas. An air-actuated multibladed cutter is housed within the supporting grid, and shears the diaphragm into several distinct petals. The higher pressure gas forces the petals of the diaphragm to the full open position in a few milliseconds.

3,469,735
PROTECTOR AND RESEALER FOR PAINT CANS AND THE LIKE
Owen H. Burt, 21039 Harvard, Southfield, Mich. 48075
Filed July 31, 1967, Ser. No. 657,136
Int. Cl. B65d *25/20*
U.S. Cl. 220—90 **3 Claims**



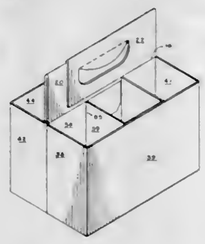
A combined protector and lid-reapplying tool for cans having press-on lids is formed as a ring of relatively rigid but somewhat flexible plastic which when the lid is removed clips to the top of the can in such manner as to cover and form a seal with respect to the entire top, but leave the open mouth of the can unobstructed. The ring thereby prevents any of the contents of the can, or foreign matter, from accumulating on the top of the can during use of the contents. In such position the ring forms a funnel-like mouth for the open can, and also serves as a scraping edge for a paint brush or implement, and as a pouring spout. When the ring is removed from the can and a lid is reapplied, the ring may be inverted and employed to force the lid down to tightly closed position. An axially projecting cylindrical flange of the ring is proportioned to enter the groove in the lid and serve as a tool for pushing the lid into postion by transmitting the lid-applying force to the bottom of the lid groove.

3,469,736
END LOADING CARTON
Richard W. C. Walker, Toronto, Ontario, Canada, assignor to Domtar Limited, Montreal, Quebec, Canada, a company of Canada
Filed Oct. 19, 1967, Ser. No. 676,576
Claims priority, application Canada, Oct. 29, 1966, 974,421
Int. Cl. B65d *5/06, 5/10, 5/16*
U.S. Cl. 220—115 **10 Claims**



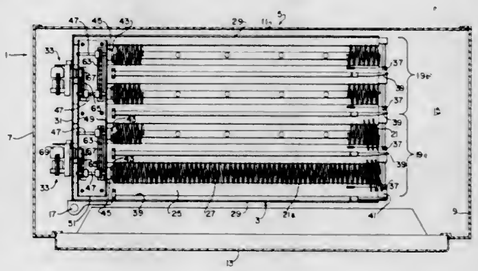
The present invention relates to a blank and to an end loading carton formed therefrom, said carton having an integral bottom wall, a longitudinally divided top wall, a handle member formed in one portion of said top wall and tearable from said one portion and a longitudinal central partition foldably connected to said handle member and to said bottom wall.

3,469,737
ARTICLE CARRIER AND METHOD OF MAKING
Homer W. Forrer, Jonesboro, Ga., assignor to The Mead Corporation, a corporation of Ohio
Original application Dec. 5, 1966, Ser. No. 599,176, now Patent No. 3,397,623. Divided and this application Mar. 28, 1968, Ser. No. 735,949
Int. Cl. B65d *75/00*
U.S. Cl. 220—115 **2 Claims**



A carrier constructed according to this invention may comprise more or less conventional handle, side, end and bottom panels and may also include medial and transverse partitioning structure, the partitioning structure being in the form of at least one supplemental web which is adhered by a patterned application of glue to main continuous web or to the supplemental web or webs. Following the securement of one or more supplement webs to the main web as described, both webs are passed through a single cutting and scoring die apparatus which by the provision of suitable cutting knives and scoring devices on one die element is adapted to cut both the main and supplemental webs and to score one of the webs. The other die element is provided with suitable scoring devices whereby the remaining web is scored simultaneously with the cutting and scoring operation performed on the other web by the other die element. In this manner a carrier is provided which can be either of the full depth or strap style without the necessity of modifying or adjusting the steps or apparatus utilized in the manufacture of the carrier. Furthermore, the procedure for manufacturing a carrier of the so-called laminated type is greatly expedited.

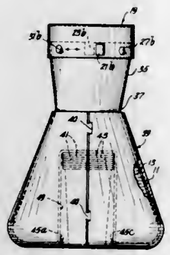
3,469,738
CELLULAR MAGAZINE TYPE DISPENSING APPARATUS
James T. Schuller, St. Ann, Mo., assignor to UMC Industries, Inc., St. Louis, Mo., a corporation of Delaware
Filed Sept. 11, 1967, Ser. No. 666,903
Int. Cl. B65h *5/28;* **G07f** *11/36*
U.S. Cl. 221—75 **5 Claims**



Article dispensing apparatus comprising a shelf supporting a pair of helices and having an article stop for

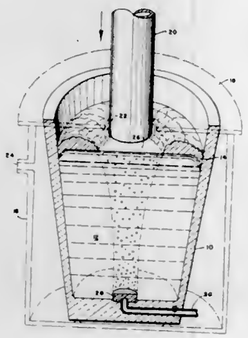
each helix at the discharge end of the shelf. The helices are driven in half-revolution cycles by a common motor, and are 180° out of phase for alternately dispensing an article (such as a postage stamp book) from one helix and then the other on successive vend cycles, in conjunction with the stops.

3,469,739
HOSPITAL CARAFE
Warren D. Phillips, 17944 Pond Road, Ashton, Md. 20702
Filed Nov. 9, 1967, Ser. No. 681,673
Int. Cl. A47f *1/08*
U.S. Cl. 221—96 **10 Claims**



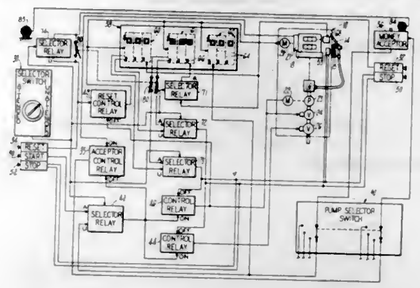
This is an article of manufacture adapted primarily for hospital use, to be kept on a bedside table and used as a container for drinking water. It is provided with a supply of disposable drinking cups. The liquid contents are protected by a cap which is manually removable for refilling, and rotatable to an open, pouring or closed position. The disposable cups are nested in an integral compartment from which they can be withdrawn, one at a time.

3,469,740
PROCESS OF REMOVING METAL FROM SLAG-SURFACED MELT
John E. Crowe, Park Ridge, Ill., assignor to Amsted Industries, Chicago, Ill., a corporation of Delaware
Filed Jan. 24, 1968, Ser. No. 700,185
Int. Cl. B67b *7/00*
U.S. Cl. 222—1 **4 Claims**



A slag-free area is provided at the top of a melt in a ladle by bubbling an inert gas upwardly through the melt from a porous plug at the bottom of the ladle, in order to prevent entrapment of the slag in the pouring tube.

3,469,741
SELF-SERVICE FLUID DISPENSING SYSTEM
John H. Bickford, Middletown, Conn., and Albert Haberstroh, Cohasset, and Lawrence J. Donovan, Newburyport, Mass., assignors to Veeder Industries Inc., Hartford, Conn., a corporation of Connecticut
Filed Oct. 5, 1967, Ser. No. 673,199
Int. Cl. B67d *5/10*
U.S. Cl. 222—2 **11 Claims**



A self-service fuel dispensing system adapted for "Attended" and "Unattended" self-service operation as well as conventional operation by a service station attendant. The system includes a money acceptor adapted for collecting a predetermined deposit, for example one dollar, and a predeterminer for discontinuing the fuel delivery after a preselected amount of fluid has been delivered. The predeterminer includes two banks of conventional single wheel magnetic counters and in its "Unattended" condition one of the banks of single wheel counters which is indexed in the adding direction provides for terminating the fuel delivery by selectively de-energizing a first valve to reduce the rate of fuel flow and thereafter de-energize a second valve to discontinue the fuel delivery.

In its "Attended" position the second bank of single wheel counters which is indexed in the subtracting direction is employed for manually preselecting the amount of fuel to be delivered in accordance with the request of the customer or in accordance with the amount of money collected by the money acceptor, for which purpose a third counter is employed for indicating the amount of money so collected. The fuel pump is activated by depressing a start button and the second bank of single wheel counters provides for terminating the delivery after the amount preselected in the second bank of counters has been delivered.

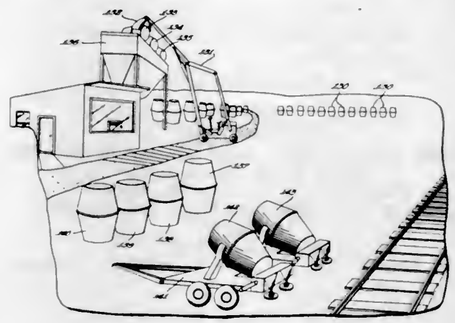
In either its "Attended" or "Unattended" position a "Stop" switch may be manually operated to terminate the delivery and a "Reset" switch may be manually operated after the pump has been deactivated to reset the pump register and the predeterminer counters, with the adding bank of counters being reset to "000" and the subtracting bank of counters being reset to 999.

A manual selector switch is also provided for selecting the pump with which the money acceptor will be employed.

3,469,742
FERTILIZER PLANT
Donald L. Miller, 701 12th St. N., Benson, Minn. 56215, James H. Paul, Atlanta, Ga. (2438 Tanglewood Road, Decatur, Ga. 30033), and Sherman W. Kavanaugh, Benson, Minn.; said Kavanaugh assignor to said Miller and said Paul.
Original application Oct. 23, 1965, Ser. No. 503,145, now Patent No. 3,385,478, dated May 28, 1968. Divided and this application May 18, 1967, Ser. No. 651,068
Int. Cl. B65b *1/32*
U.S. Cl. 222—30 **5 Claims**

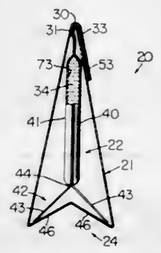
A bulk materials handling plant having a rack for

supporting transport containers over a hopper with weighing, recording and control for the discharge of the



material into the hopper. The material is then blended, and repacked into other containers for further use.

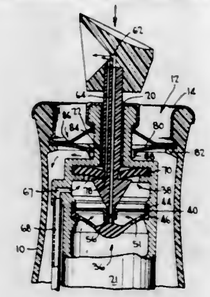
3,469,743
SQUEEZE CARTON AND BLANK FOR MAKING SAME
William C. Becker, Henrico County, Va., assignor to Reynolds Metals Company, Richmond, Va., a corporation of Delaware
Filed Feb. 6, 1968, Ser. No. 703,438
Int. Cl. B65d *35/28, 35/56*
U.S. Cl. 222—105 **9 Claims**



This disclosure relates to a package construction comprised of a roughly wedge-shaped squeeze carton and a collapsible dispensing container contained therein in which such carton has an accordion pleated base which enables opposite walls thereof to be squeezed toward each other to squeeze opposite sides of the collapsible container together and enable easy dispensing of a product carried within such container through a dispensing opening provided therein.

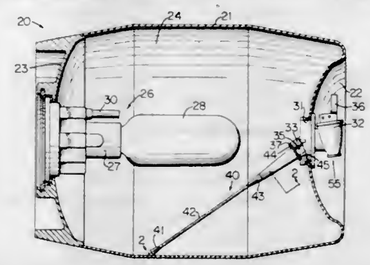
3,469,744
ASPIRATING TYPE FLUID DISPENSER
Douglas F. Corsette, Los Angeles, Calif., assignor to Diamond International Corporation, New York, N.Y., a corporation of Delaware
Filed Nov. 22, 1967, Ser. No. 684,985
Int. Cl. B67d *5/54*
U.S. Cl. 222—193 **12 Claims**

An aerosol dispenser of the aspirating type in which the propellant is stored within a cartridge, the cartridge and the product to be dispensed both being housed with the product container. Discharge of the propellant through a hollow valve stem to an aspirating nozzle, induces a flow of product through a separate passage to and through the nozzle. An annular diaphragm valve within the outer container, having its opposite surfaces exposed to atmospheric pressure and to the internal pressure within the product container respectively, normally maintains



the product out of communication with the atmosphere, but is actuated automatically in response to pressure differential on its said surfaces, to admit air into and to release overpressures from the product container.

3,469,745
SIPHON TUBE AND METHOD OF MAKING THE SAME
Vincent J. Serio, Jr., and Gary W. Smith, Henrico County, and Donald R. Westerlund, Chesterfield County, Va., assignors to Reynolds Metals Company, Richmond, Va., a corporation of Delaware
Filed Dec. 4, 1967, Ser. No. 687,885
Int. Cl. B65d *83/14*
U.S. Cl. 222—399 **15 Claims**

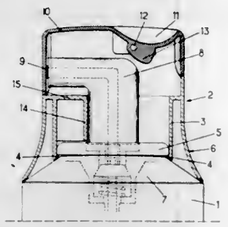


This disclosure relates to a siphon tube particularly adapted to be used with an associated spigot construction to dispense a carbonated beverage, or the like, from within an associated container, wherein such siphon tube has a continuous passage provided therethrough which includes a central section defining a major portion of such passage and such central section has a roughly elliptical and substantially flattened outline which is tapered toward the inlet of such siphon tube. The central section of such passage cooperates with the inlet and outlet sections thereof to convey a carbonated beverage through the siphon tube substantially without foaming.

3,469,746
CAP COMPRISING A SWINGING COVER WHICH SERVES AS A PUSHBUTTON FOR USE WITH A CONTAINER FOR AN AEROSOL PRODUCT
Mario Melocchi, Via Buonarroti 41, Milan, Italy
Filed Apr. 13, 1967, Ser. No. 630,760
Claims priority, application France, Apr. 25, 1966, 58,955
Int. Cl. B65d *83/14*
U.S. Cl. 222—400.12 **3 Claims**

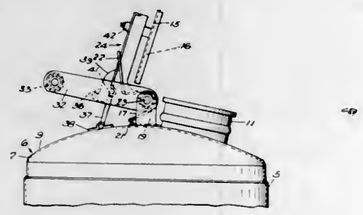
This invention relates to a cap for an aerosol container which cap comprises a cover for actuating the control

valve of the container. This cover is so designed that pressure on one side thereof both uncovers the container



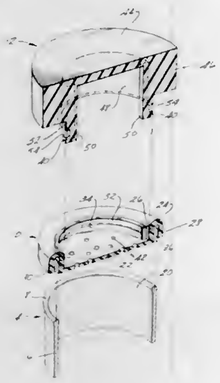
nozzle and actuates the control valve, while release of the pressure automatically results in closure of both valve and cover.

3,469,747
STORAGE CAN FOR FLAMMABLE LIQUIDS
Roy H. Richmond, Jr., Wellsburg, W. Va., assignor to Eagle Manufacturing Company, Wellsburg, W. Va., a corporation of West Virginia
Filed Sept. 22, 1967, Ser. No. 669,826
Int. Cl. B67d *5/58*
U.S. Cl. 222—469 **2 Claims**



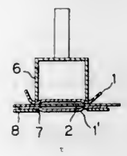
The invention relates to flammable liquid storage cans having a carrying handle controller pour spout.

3,469,748
CLOSURE SEAL AND CAP
Willard F. Meyers, Toledo, Ohio, assignor to Owens-Illinois, Inc., a corporation of Ohio
Filed Feb. 20, 1967, Ser. No. 617,360
Int. Cl. B65d *47/00, 39/10, 41/06*
U.S. Cl. 222—563 **6 Claims**



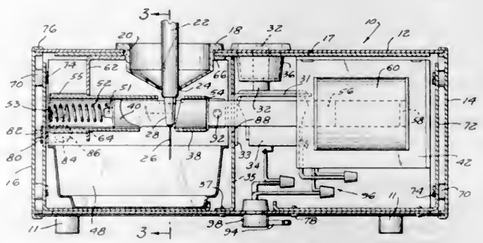
A composite closure for enveloping an otherwise open end of a glass tumbler, or other similar receptacle, thereby allowing its use as a container item. The receptacle is provided with a first member which intimately contacts the interior and exterior wall surfaces in an endless pattern, and an easily removed second cap member having integral means for engaging means on said first member, inwardly of the receptacle wall and downwardly of the rim, whereby the interior receptacle wall surface is more intimately contacted and said cap members are secured to each other.

3,469,749
WATCH BAND
Kazutaka Tabata, Tokyo, Japan, assignor to Kabushiki Kaisha Banbi, Tokyo, Japan
Filed Nov. 27, 1967, Ser. No. 685,819
Claims priority, application Japan, Dec. 10, 1966, 41/112,694
Int. Cl. A44c *5/00*
U.S. Cl. 224—4 **9 Claims**



A three-layer watch band comprising upper and lower band strips interjoined by an intermediate fusible strip interposed therebetween. The adjoining of the layers is only along the internal marginal edges where they are fused together when disposed upon a recessed strap forming mould and subjected to the application of heat and pressure from a combined heat-fusing-and-cutting blade having a predetermined strap outline configuration with a hollow center. An open loop is formed at one end of the band for the insertion therethrough of a watch-attaching pin or spring rod. The layers of the strap are notably spaced generally parallel to one another except along the smooth rounded joining edges of the margins thereof, thereby providing a pleasant cushion feed to the strap.

3,469,750
AUTOMATIC SYRINGE DISPOSAL DEVICE
Russell C. Vanderbeck, Saddle River, N.J., assignor to Becton, Dickinson and Company, Rutherford, N.J., a corporation of New Jersey
Filed Mar. 24, 1967, Ser. No. 625,697
Int. Cl. B26f *3/00;* **A61m** *5/18*
U.S. Cl. 225—94 **7 Claims**



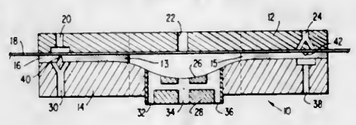
A pair of coaxially mounted and relatively movable shearing dies receive a cannula and hub member of a hypodermic syringe between their respective shearing faces so that substantially the entire length lies below the shear plane and within the dies, respectively. Energization of a power member initiates the rapid relative movement of the shearing dies thereby sequentially causing an interaction of the shearing faces to shear the cannula from the hub and snap the hub and hub support from the hypodermic syringe.

3,469,751
ROLL FOR CONVEYING WEBS
Joseph M. Tyrner, M.R. 17, Morristown, N.J. 07960, and John J. Farrell, 40 Abby Lane, Green Brook, N.J. 08812
Filed Dec. 14, 1967, Ser. No. 690,550
Int. Cl. B65h *25/00, 17/20*
U.S. Cl. 226—25 **5 Claims**



This specification discloses a support roll used to keep the free span of a web within acceptable limits. The roll is driven by an electric motor that supplies enough power to compensate the friction of the roll over the whole speed range for which the roll is used. The armature power supply to the motor is essentially a constant current system but the otherwise constant current is overruled by a feed back from the motor which produces an increase in current for an increase in terminal voltage of the motor. The adjustment of the feed back is regulated to cause the power curve for the motor to follow closely the friction curve of the roll with changes in roll speed.

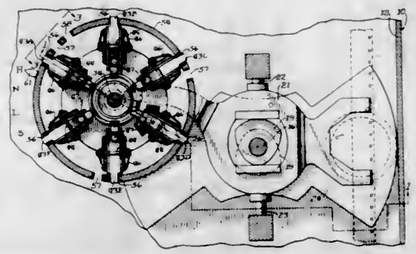
3,469,752
TAPE TRANSPORT INDEXING DEVICE
Lynn G. Amos, Cary, N.C., and Lawrence W. Langley, Corning, N.Y., assignors to Corning Glass Works, Corning, N.Y., a corporation of New York
Filed Sept. 15, 1967, Ser. No. 668,068
Int. Cl. G03b *1/28;* **B65h** *17/32, 17/42*
U.S. Cl. 226—56 **4 Claims**



A tape transport device for feeding a perforated tape along its length in predetermined increments by alternate application of fluid jets to opposite side of said tape.

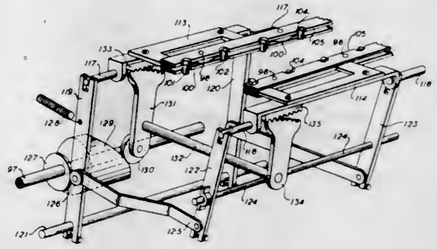
3,469,753
FILM MOVEMENT MECHANISM
Lester V. Jorgensen, Skokie, Ill., assignor to Bell & Howell Company, Chicago, Ill., a corporation of Illinois
Filed Nov. 24, 1967, Ser. No. 685,578
Int. Cl. G03b *1/22;* **B65h** *17/40*
U.S. Cl. 226—62 **7 Claims**

Disclosed is a film movement mechanism for a motion picture projector having a shuttle, adapted to move film through the projector's projection axis. The shuttle can be moved into and out of engagement with the film perforations by a plurality of cam followers at rates related to the rate of rotation of the projector's shutter, which is mounted on a shaft driven in synchronism with the shuttle. A cam is operatively connected to the shuttle. A control means is operatively connected to the shaft to actuate the shuttle into film perforations at selected frequencies determined by the position to which the control means is adjusted. Depending on the position of the control



means, all, some, or none of the cam followers may cause the shuttle to enter film perforations during a given number of shutter revolutions.

3,469,754
TAG FEED DEVICE
Charles A. Parker, East Orange, N.J., assignor to Litton Business Systems, Inc., a corporation of New York
Filed June 7, 1966, Ser. No. 555,887
Int. Cl. G03b *1/22;* **B26d** *5/20*
U.S. Cl. 226—68 **7 Claims**

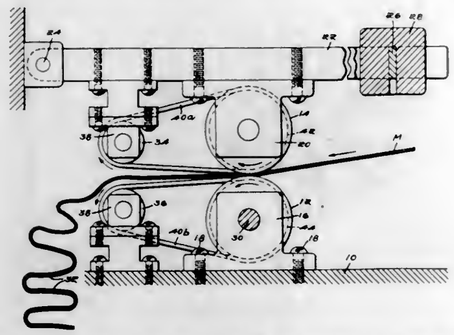


A device for feeding edge notched tags in a predetermined direction including a pair of feed bars adapted for movement transversely to said predetermined direction, and in said predetermined direction; with each of said feed bars carrying one or more rock pawls each formed with a pair of spaced feed teeth. Movement of the feed bars towards the tag results in engagement of either a tooth on a rock pawl with the edges of a notch in the tag or with the edge of the tag itself. The teeth on the rack pawls are so spaced that if one tooth strikes an edge of the tag the pawl will be rocked so that the other tooth enters a notch. If the tooth initially enters a notch then the pawl does not rock. Subsequent movement of the bars in the predetermined direction results in tag feed.

3,469,755
APPARATUS FOR STRIPPING WEB MATERIAL FROM NIP ROLLS
Henry T. Rogers, Orange, Mass., assignor to Rodney Hunt Company, Orange, Mass., a corporation of Massachusetts
Filed Sept. 29, 1967, Ser. No. 671,767
Int. Cl. B65h *17/20, 27/00*
U.S. Cl. 226—172 **2 Claims**

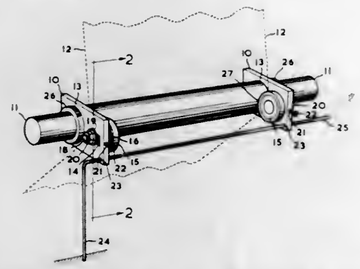
An apparatus for preventing web material passing between nip rolls from adhering to the surfaces thereof. The

apparatus includes a guide member on the delivery side of each roll, and a plurality of endless belts passing around



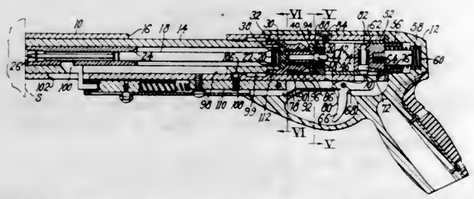
each nip roll and its associated guide member, the said belts being seated in appropriately spaced grooves in the roll surfaces.

3,469,756
CONTROL ATTACHMENT FOR ROTATING SHAFT ROLLER TO CONTROL THE MOVEMENT OF MATERIAL
Leonard Watson Sanderson, P.O. Box 164, Toronto, Ontario, Canada
Filed Feb. 19, 1968, Ser. No. 706,424
Int. Cl. B65h *23/26*
U.S. Cl. 226—177 **3 Claims**



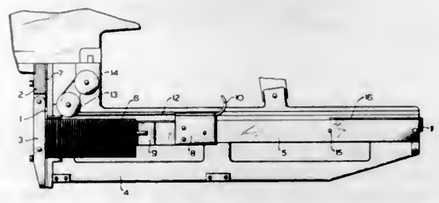
A mounting arrangement for a web material guide roll wherein two spaced plates at opposite ends of the roll support idler rollers which may be adjusted toward and away from the roller by means of screws threaded into the end of each plate.

3,469,757
POWER DEVICES EMPLOYING IMPACT IGNITED LOW EXPLOSIVE
Robert C. Kvavle, Hillsboro, Wash., William L. Lewis, Portland, Oreg., and Charles J. De Caro, Orange, Conn., assignors to United Shoe Machinery Corporation, Flemington, N.J., a corporation of New Jersey
Filed Nov. 9, 1966, Ser. No. 593,144
Int. Cl. B25c *1/12, 1/14*
U.S. Cl. 227—10 **15 Claims**



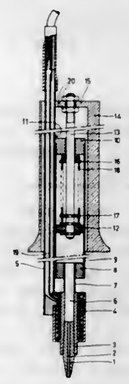
This invention relates to explosively actuated devices, and more especially to hand-held tools of this type wherein there is alined, on an axis of the barrel bore, an axially movable chamber for receiving an explosive charge, and firing mechanism for impacting the charge to drive a fastener by means of expanding gases.

3,469,758
MAGAZINE OF A PORTABLE STAPLING APPARATUS
Dieter Volkmann, Leinstrasse 49, Neustadt am Rubenberge, Germany
Filed Dec. 23, 1966, Ser. No. 604,305
Int. Cl. B25c *5/02, 5/06;* **B27f** *7/08*
U.S. Cl. 227—120 **5 Claims**



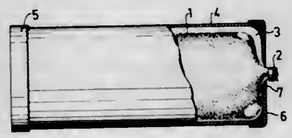
The magazine of a portable stapling apparatus into which staples, nails or other fastener means in the form of a stick are inserted, is at its upper side permanently open. The staples are covered by a spring ribbon, one end of which engages the follower of the staples and the other end of which is secured to the casing body adjacent to the discharge channel of the apparatus. This spring ribbon comprises a spiral spring which urges the follower and the stick of staples against the discharge channel.

3,469,759
SUCTION SOLDERING IRON
Jan Herman Wansink, Emmasingel, Netherlands, assignor, by mesne assignments, to U.S. Philips Corporation, New York, N.Y., a corporation of Delaware
Filed Aug. 10, 1967, Ser. No. 659,805
Claims priority, application Netherlands, Aug. 24, 1966, 6611879
Int. Cl. B23k *3/00*
U.S. Cl. 228—20 **3 Claims**



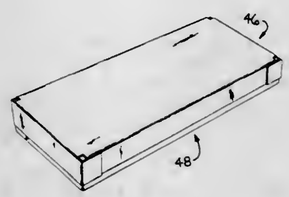
A suction soldering iron for heating and removing solder from a previously soldered connection. Suction is provided by a spring biased piston and cylinder arrangement. The handle of soldering iron is directly connected to the piston so that manually applying the heated soldering iron to the connection moves the piston to decrease the effective volume of the cylinder and removing the soldering iron increases the effective volume of the cylinder creating the suction force which withdraws the liquefied solder from the connection.

3,469,760
LIQUID PACKAGE FOR FILLING MATERIAL UNDER PRESSURE
Hans Anders Rausing and Gad Anders Rausing, Lund, Sweden, assignors to Sobrefina SA, Fribourg, Switzerland, a Swiss company
Filed Mar. 29, 1968, Ser. No. 717,226
Claims priority, application Sweden, Apr. 6, 1967, 4,796/67
Int. Cl. B65d *5/60, 85/70;* **B65b** *31/02*
U.S. Cl. 229—14 **7 Claims**



A container for pressurized liquids is provided with a flexible, tubular, gas-impermeable hose member, sealed at both ends and a relatively non-flexible sleeve member which supports said tubular hose member. Closure members are provided at each end of the sleeve, at least one of them having an opening for exposure of the sealed end of the hose member which can be ruptured when the liquid is to be removed.

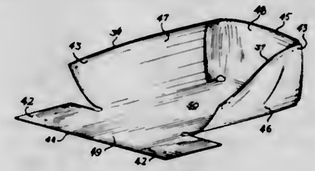
3,469,761
UNIVERSAL BLANK FOR FORMING TELESCOPIC CARTON MEMBERS
John R. Howell, Vineland, N.J., assignor to Owens-Illinois, Inc., a corporation of Ohio
Filed Nov. 1, 1967, Ser. No. 679,717
Int. Cl. B65d *5/24, 5/26*
U.S. Cl. 229—32 **11 Claims**



A carton having its body and telescoping cover formed from identical corrugated paperboard blanks; the blanks being provided with offset fold lines, such that when a blank is folded in one mode a carton body will be produced whereas when folded in an alternate mode, upon offset fold lines, a telescoping carton cover is produced.

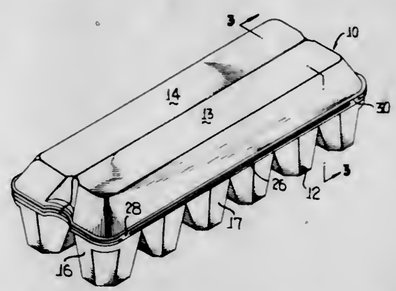
3,469,762
TRANSPORTABLE LEAF COLLECTOR
Mario La Torre, 708 Eagle Rock Ave., West Orange, N.J. 07052
Filed Aug. 29, 1967, Ser. No. 664,039
Int. Cl. B65d *5/26, 5/24*
U.S. Cl. 229—32 **3 Claims**

My invention relates to receptacles generally and specifically to a transportable leaf collector which may be quickly and easily filled with an abundance of loosely packed leaves, closed and thereafter transported with



great ease by sliding along the ground to a point of disposal.

3,469,763
HINGE FOR MOLDED PULP EGG CARTON
Harold W. Voorhis, Upper Nyack, N.Y., assignor to Continental Can Company, Inc., New York, N.Y., a corporation of New York
Filed Jan. 19, 1968, Ser. No. 699,126
Int. Cl. B65d *5/66, 85/32*
U.S. Cl. 229—44 **6 Claims**



This invention relates to an egg or similar carton which includes a carton body and a pair of covers for opening and closing an end of the body opposite a bottom wall thereof. Each of the covers includes hinge means joining each cover to an associated side panel. The hinge means are defined in part by a first wall portion having a wall thickness corresponding generally to the wall thickness of the side walls and the covers, and terminal wall portions which are appreciably greater in wall thickness than the first-mentioned wall thickness thereby functioning to reinforce the hinge means to reduce the fracture thereof, particularly when the carton is of a molded pulp or similar construction.

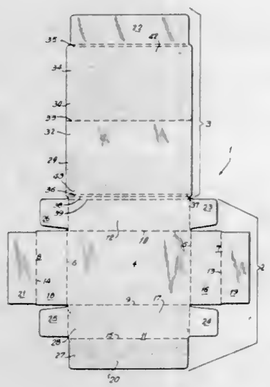
3,469,764
FOAM PLASTIC EGG CARTON
Robert B. Gaylor, Jr., Pittsburgh, Pa., assignor to Sinclair-Koppers Company, a partnership
Filed Jan. 7, 1969, Ser. No. 789,546
Int. Cl. B65d *51/04, 85/32*
U.S. Cl. 229—44 **8 Claims**



A foam plastic egg carton is provided which is formed from a continuous sheet of foam plastic material and comprises a cover and tray portion connected by an integral hinge. The cover portion has therein bossed areas containing apertures to serve as locking means and termi-

nates in a substantially horizontal flange. The tray portion also terminates in a substantially horizontal flange and contains a longitudinal partition and transverse partitions, with separating posts being formed by the intersection of the partitions to form egg receiving cells. A plurality of the transverse partitions terminate in outward and upwardly extending catch posts in the side opposite the hinged portion of the tray, the posts terminating in substantially horizontally extending lips which, when the cover is super-imposed upon the tray portion, cooperate with the lower edge of the apertures in the tray portion to maintain the cover in closed position.

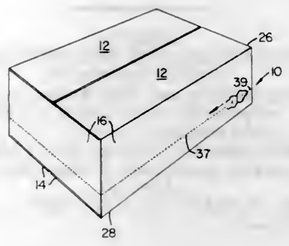
3,469,765
BOX
David Charles Mueller, Neenah, Wis., assignor to American Can Company, New York, N.Y., a corporation of New Jersey
Filed Sept. 30, 1966, Ser. No. 583,404
Int. Cl. B65d *1/22, 5/02*
U.S. Cl. 229—33 **7 Claims**



A box and a blank for making the box is cut and creased from sheet material such as paperboard. The box includes a receptacle and a cover portion with means associated with the cover for limiting the opening movement of the cover with respect to the receptacle. In one embodiment of the invention, the cover is of double wall construction and is connected to one of the receptacle walls which is also of double wall construction. In this embodiment, a scored zone is interposed between the receptacle outer wall and the cover outer panel to form a hinge for giving the desired folding action to the cover. A method for forming the box from the blank is disclosed in connection with this first embodiment. A second embodiment in the invention includes a double wall cover wherein the outer panel of the double cover has a terminal edge cooperating with the receptacle rear wall for limiting cover movement in the opening direction.

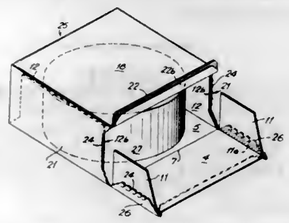
3,469,766
SHIPPING CASE WITH STITCHED RIPCORD
Lloyd A. Nelson, Fremont, Mich., assignor to Gerber Products Company, Fremont, Mich.
Continuation-in-part of applications Ser. No. 551,108, May 18, 1966, and Ser. No. 589,552, Oct. 26, 1966. This application Nov. 21, 1967, Ser. No. 685,735
Int. Cl. B65d *5/54, 5/70, 17/00*
U.S. Cl. 229—51 **14 Claims**

A shipping case of corrugated fiber material which has stitched ripcord means therein for severing the same into top and bottom portions, whereby contents of the shipping case will become exposed and accessible for removal from



the bottom portion. The stitched ripcord means can be utilized with regular slotted container-type shipping cases and shipping cases of the wraparound type.

3,469,767
BOX AND BOX BLANK
George Leroy Meyers, Menasha, Wis., assignor to American Can Company, New York, N.Y., a corporation of New Jersey
Continuation of application Ser. No. 613,287, Feb. 1, 1967. This application June 7, 1968, Ser. No. 739,891
Int. Cl. B65d *5/54*
U.S. Cl. 229—51 **10 Claims**



A box is formed from a suitably cut and scored blank and includes a receptacle portion for receiving a product, and a cover portion for closing and sealing the receptacle portion of the box. The cover includes end wall panels for sealing each end wall closure of the box. For opening the box, suitable lines of weakness break the seal between the end wall closure and one of the panels of the box. After the seal is broken, such panel may be moved to provide access to the interior of the box.

3,469,768
DUAL COMPARTMENT CONTAINER
John P. Repko, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
Original application Aug. 27, 1964, Ser. No. 392,508, now Patent No. 3,390,507, dated July 2, 1968. Divided and this application Feb. 28, 1968, Ser. No. 709,073
Int. Cl. B65d *31/12, 37/00*
U.S. Cl. 229—56 **6 Claims**

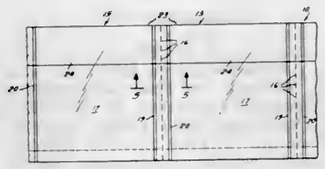
Dual compartment containers are obtained by folding a continuous, sealable web along its longitudinal center line, while reversibly folding edge portions of said web to a height not extending beyond the edge of the center fold, to form four plies intermittently sealing a transverse strip of said folding web to bond the four plies together; the distance between the sealed strips being adjusted to

the desired container width. After filling the container, the edge of the original web is sealed to the center fold.



The container can be cut from the web, prior to or after filling, at the center line of the transverse.

3,469,769
INTERCONNECTED BAGS HAVING CLOSURE FLAPS AND BOTTOM GUSSETS
William Guenther, Hicksville, N.Y., assignor to Lion Packaging Products Company, Inc., a corporation of New York
Filed Oct. 9, 1967, Ser. No. 673,726
Int. Cl. B65d *27/10*
U.S. Cl. 229—69 **1 Claim**



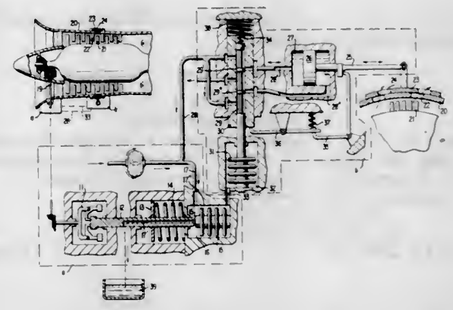
Series of bags formed of continuous length of heat-sealable sheet material. Material folded longitudinally defining superposed bag walls of unequal length. Projecting lip of longer wall folded against outer face of longer wall, defining closure flap. Regions adjacent to fold between bag walls pushed inwardly between bag walls, defining gusset. All plies of material sealed by pairs of spaced-apart seal lines defining side edges of individual bags, and all plies partially severed between each pair of seal lines to define tear line.

3,469,770
DETACHABLE SYSTEM FOR ASSEMBLING TWO ELEMENTS
Jean Zeller, 6 Rue du Sundgau, Mulhouse, Haut-Rhin, France
Filed Dec. 27, 1967, Ser. No. 694,007
Claims priority, application France, Jan. 5, 1967, 90,049
Int. Cl. B65d *51/00, 55/00*
U.S. Cl. 229—78 **3 Claims**



A connecting device comprising a first element, a hook member fixed to said first element, a covering member fixed to said first element, a second element and a retaining member fixed to said second element, whereby the hook member and covering member can be pushed into the retaining member so that the hook member engages said retaining member and the covering member is movable relative to the hook member to a position in which it covers the hook member and thus renders the hook member inoperative so that the hook and covering members can be withdrawn from the retaining member.

3,469,771
INSTALLATION FOR CONVERTING MECHANICAL CONTROL MOVEMENTS INTO HYDRAULIC CONTROL PRESSURES
Wilhelm Jurisch, Nellingen-Parksiedlung, Germany, assignor to Daimler-Benz Aktiengesellschaft, Stuttgart-Unterturkheim, Germany
Filed Oct. 20, 1967, Ser. No. 676,915
Int. Cl. F04d *27/00;* **G01l** *7/00*
U.S. Cl. 230—114 **13 Claims**

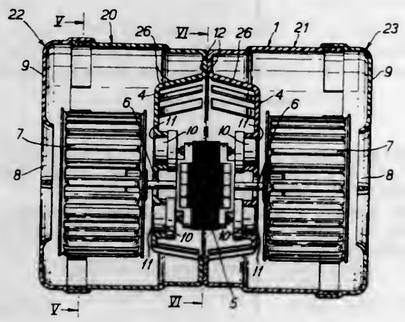


An installation for converting mechanical control movements into hydraulic control pressures, particularly for controlling the bleeder or relief apertures provided in the compressor housing of a gas-turbine drive unit, which comprises a device producing a control magnitude proportional to the rotational speed of the compressor which, in turn, produces a hydraulic control pressure in dependence on the control magnitude, a servo-system for actuating an annular slide valve operable to open and close the bleeder or relief apertures in such a manner that with a lower rotational speed of the compressor, the apertures are completely opened and with a higher rotational speed, the apertures are closed, and a control system for continuously adjusting the annular slide valve from the open to the closed position in dependence on the control pressure which is transmitted from a transmitter chamber to a receiver chamber, whereby the receiver chamber is provided with a pressure box actuating the piston slide valve member of a control valve unit valving the supply of a pressure medium to the one or other side of the actuating piston of the servo-mechanism while a follower-up mechanism re-adjusts the closure piston surrounding the piston slide valve member of the control valve unit.

3,469,772
AIR MOVING APPARATUS
Donald A. McDonald, Sandringham House, Shirley St., Nassau, Bahamas
Filed July 19, 1967, Ser. No. 654,460
Int. Cl. F04d *25/08, 25/16;* **F04b** *39/00*
U.S. Cl. 230—117 **1 Claim**

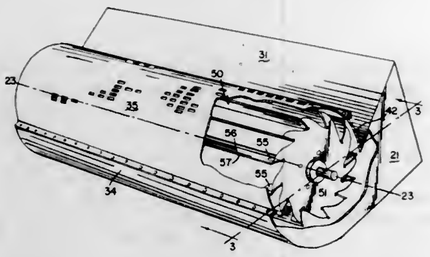
A cased in air moving apparatus including a pair of coaxial centrifugal fan elements driven by a motor mount-

ed therebetween and in the casing, which is adapted to be suspended from above at various angles, an outlet tan-



gential of the fan elements and dispelling air outwardly in desired different directions.

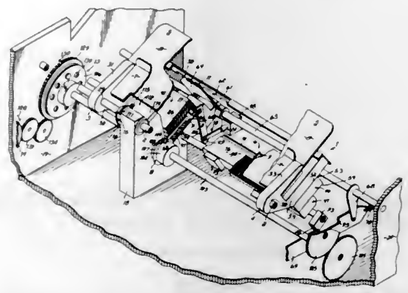
3,469,773
FAN FOR COMBINE
Stuart D. Pool, Naperville, Charles V. Everett, Warrenville, and Homer N. Grillot, Naperville, Ill., assignors to International Harvester Company, Chicago, Ill., a corporation of Delaware
Filed July 12, 1968, Ser. No. 746,703
Int. Cl. F04d *17/08, 29/42;* **A01f** *12/48*
U.S. Cl. 230—125 **7 Claims**



A fan for use with the cleaning system of a combine having a casing with air impervious end sections and an air pervious transverse section arranged so that the fan will draw air into the casing across its entire width and discharge a wide uniform stream of air to the cleaning system.

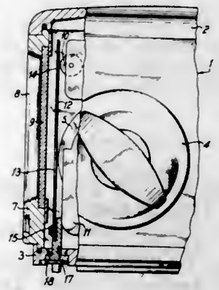
3,469,774
CODER FOR EDGE NOTCHED CARDS AND THE LIKE
Robert J. Kalthoff, Frederic R. G. Sanborn, and Robert D. Parry, Cincinnati, Ohio, assignors to O. K. Partnership, Cincinnati, Ohio, a limited partnership of Ohio
Filed Apr. 4, 1966, Ser. No. 539,708
Int. Cl. G06k *1/00*
U.S. Cl. 234—1 **63 Claims**

Apparatus and method for selectively notching fields of notch sites located along the edge of a record including a record holder, a site-notching punch positioned to notch sites along the edge of a record held by the record holder, and an indexer interconnecting the record holder and the site-notching punch which relatively moves the record edge past the site-notching punch to enable the notch sites of the record edge to be selectively notched in response to code inputs sequentially fed to the punch as the indexer relatively moves the punch and record. Also disclosed is a memory unit having storage elements corresponding in number to the number of notch sites along the record edge, a storage element code entry unit for



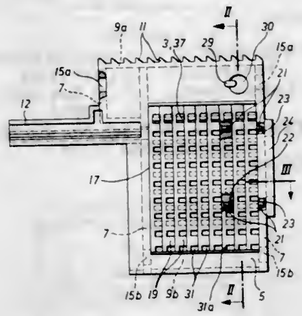
entering code inputs into the storage elements, the memory and entry units being relatively movable, and a storage element sensing and punch actuating unit which senses the stored code inputs entered into the memory unit and in response thereto actuates the punch to selectively notch the sites along the card edge as the indexer moves the punch and record relatively.

3,469,775
REGISTERING DEVICE
Heinz Kelch, Villingen, and Hans Zimmermann, Schwenningen, Germany, assignors to Kienzle Apparate G.m.b.H., Villingen, Black Forest, Germany
Filed Jan. 12, 1968, Ser. No. 697,437
Claims priority, application Germany, Jan. 20, 1967, K 61,221
Int. Cl. G06c *1/00;* **G09f** *9/00*
U.S. Cl. 235—1 **10 Claims**



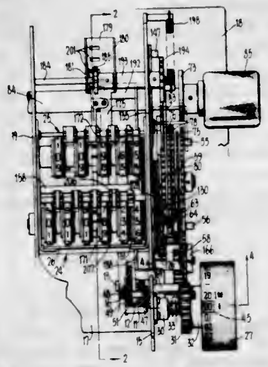
In a counter the housing thereof is provided with an observation window. A plurality of counting wheels or number wheels are arranged inwardly spaced from the observation window so as to be observable therethrough. An opaque shield, provided with a plurality of cutouts through which respective ones of the number wheels may be observed, is interposed between the number wheels and the observation window and is movable into and out of such position from the exterior of the housing without necessitating opening of the latter.

3,469,776
PIN CARRIAGE FOR CALCULATORS
Alfred Hesse, Heinz Focken, and Wolfgang Bindel, Wilhelmshaven, Germany, assignors to Olympia Werke A.G., Wilhelmshaven, Germany
Filed Feb. 15, 1967, Ser. No. 616,267
Claims priority, application Germany, Feb. 16, 1966, O 11,450
Int. Cl. G06c *29/00;* **G06k** *7/04*
U.S. Cl. 235—60 **16 Claims**



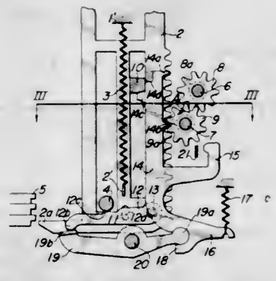
The pin carriage of a calculator is made entirely of a synthetic plastic material and has an integral homogeneous frame body in which a stack consisting of a selected number of ordinal holding elements, consisting of the plastic material and having cutouts for pins, is detachably mounted.

3,469,777
POSTAGE METER
Maynard E. Anderson, Pleasanton, Charles S. Balaz, Dublin, John F. Reus, Hayward, and Sheldon E. Thorson, Pleasanton, Calif., assignors to Friden, Inc., a corporation of Delaware
Filed Nov. 29, 1967, Ser. No. 686,613
Int. Cl. G07g *1/00;* **G06c** *29/00*
U.S. Cl. 235—101 **12 Claims**



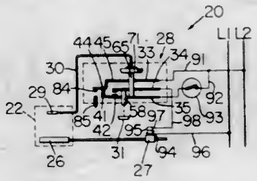
Apparatus for enabling a value entry of one dollar in the selection mechanism of a limited usage postage meter having but two type wheels, a unit type wheel and a tens type wheel. Normally, the selection of postage values in such a meter is restricted to from one cent to twenty cents, inclusive. However, for a desired postage value greater than twenty-cents and up to forty cents, two adjustments of the selection mechanism may be made and the two corresponding values may be printed on an envelope, one impression to the left of the first along the top edge of the envelope. If a postage value of one dollar is desired, the units type wheel is adjusted to a "00" print position while the tens type wheel is adjusted to a "1" print position. A single impression is then caused to be made on an envelope. On the other hand, for values greater than one dollar and up to one dollar twenty cents, or two dollars, two operations of the meter are necessary, causing two impressions to be made on an envelope. The fraction of a dollar is first selected and printed followed by the selection and printing of one dollar. As each value is printed, that value is registered in an ascending and descending register and in the case of one dollar, the "1" is registered directly into the hundredths order numeral wheel of each register.

3,469,778
SIMULTANEOUS TRANSFER MECHANISM FOR CALCULATING MACHINES
Barozzi Gian Piero and Horeschi Giancarlo, Tokyo, Japan, assignors to Citizen Watch Co., Ltd., Tokyo, Japan, a corporation of Japan
Filed June 14, 1967, Ser. No. 646,093
Claims priority, application Italy, Aug. 1, 1966, 29,056
Int. Cl. G06c *7/10, 15/26, 9/00*
U.S. Cl. 235—137 **8 Claims**



A column carrying mechanism for calculators or the like apparatus, in which the rack bar of one accumulator is operatively connected to the rack bar of the adjacent accumulator through a first, second and third levers, and the third lever is arranged to engage a return lever to cause said return lever to return all racks to their stationary positions, whereby all columns are carried simultaneously during return movement of the racks.

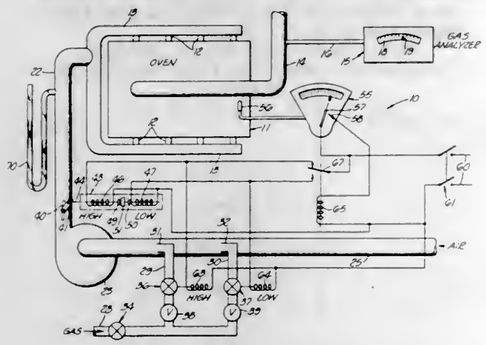
3,469,779
ELECTRICAL THERMOSTAT AND PARTS THEREFOR OR THE LIKE
Denis G. Wolfe, Greensburg, Francis S. Genbauffe, Irwin, and Gerald H. Eicher, Alverton, Pa., assignors to Robertshaw Controls Company, Richmond, Va., a corporation of Delaware
Filed Oct. 3, 1967, Ser. No. 672,603
Int. Cl. F23n *1/00, 5/02;* **G05d** *23/02*
U.S. Cl. 236—15 **8 Claims**



This disclosure relates to an electrical thermostat for a fuel control system of a domestic oven or the like wherein the electric thermostat is provided for operating a gas regulating means to control the temperature effect in the oven as selected by a manual selector means. The thermostat also has means for automatically reducing the temperature effect in the oven to a low temperature effect after the occurrence of an event, such as the lapse of a

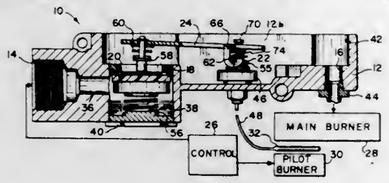
predetermined cooking time, and permits the housewife or the like to select a temperature effect below the automatic low temperature effect, even though the timer means or the like has automatically adjusted the control system to its low temperature effect setting. The thermostat includes means for creating a discrete jump in the opening of the contacts thereof to prevent arcing.

3,469,780
AUTOMATIC TEMPERATURE CONTROL
Herbert J. Woock, 420 California St., Arcadia, Calif. 91006
Filed Nov. 1, 1967, Ser. No. 679,718
Int. Cl. F23n *1/02;* **G05d** *23/02*
U.S. Cl. 236—15 **10 Claims**



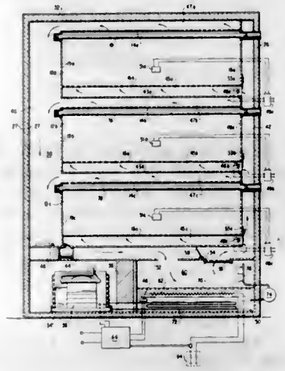
A system for maintaining a chamber heated to a desired temperature level by supplying burner means alternately with combustible mixtures at two different rates one of which is adequate to supply heat in excess of furnace losses and the other of which is inadequate to supply heat losses and including control means for shifting between the two supply rates as the furnace temperature reaches a desired temperature level and again as the furnace temperature recedes from this temperature level. Combustion air is supplied by a constant speed blower having its suction inlet in communication with a fuel supply source. A flow regulator, positioned in the discharge side of the blower means, operates between two partially open positions to supply the combustible mixture at two different rates.

3,469,781
VALVE
George F. Sekera, Jr., Hinsdale, Ill., assignor to Harper-Wyman Company, Hinsdale, Ill., a corporation of Illinois
Filed Feb. 21, 1968. Ser. No. 707,210
Int. Cl. F23n *5/06*
U.S. Cl. 236—99 **6 Claims**



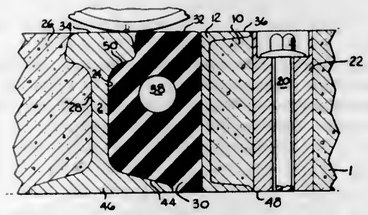
A safety valve for controlling the admission of gas to a burner in accordance with the existence of a sensed condition includes a housing having opposed side walls and having a valve and a power element movable in response to presence or absence of the sensed condition. A pair of pivot pins extend inwardly from the side walls and have spaced ends permitting the power element to be positioned between the pins. An operating lever extends between the power element and the valve and is pivotally mounted by a pair of disengageable hooks pivotally engaging the pins. An adjustment member carried by the lever is in point contact with a flat on the power element so that the relatively short effective lever arm distance between the pivot axis and the point of application of force is fixed. The adjustment member when moved to its adjusted position locks the lever in place.

3,469,782
ENVIRONMENTAL COMPARTMENT TEMPERATURE CONTROL
Andrew Truhan, R.D. 3, Box 392T, Somerset, N.J. 08873
Filed July 26, 1967, Ser. No. 656,202
Int. Cl. G05d *23/24*
U.S. Cl. 237—2 **5 Claims**



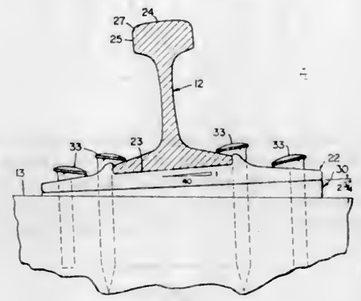
A controlled temperature and humidity compartment having a plurality of independently regulatable chambers therein. Valves are provided to regulate the flow of gas through each of the chambers and independent heating units and controls for each chamber provide a final determination of the temperature and humidity of the gas passed therethrough. A fan circulates a stream of gas from the chambers through a temperature and humidity regulating unit having a liquid sump with heating and cooling coils submerged therein to a distribution channel for controlled distribution and recirculation through the chambers. Control is provided to maintain the sump at a desired temperature by suitable actuation of the heating and/or cooling coils and the liquid is sprayed into the gas stream to initially regulate the temperature and humidity thereof.

3,469,783
RAILROAD CROSSING
Samil S. Uralli, Palos Verdes, and Ralph B. Bormann, Long Beach, Calif., assignors to Johns-Manville Corporation, New York, N.Y., a corporation of New York
Filed Aug. 11, 1967, Ser. No. 659,945
Int. Cl. E01b *21/00, 25/28;* **B01b** *1/00*
U.S. Cl. 238—8 **2 Claims**



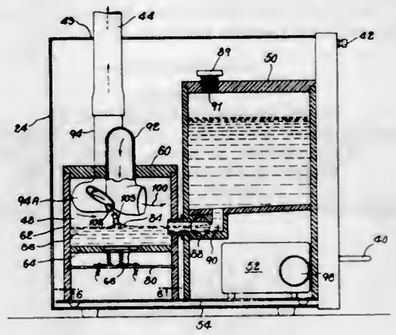
A resilient cushioning member for a railroad track crossing providing a smooth crossing for small-wheeled, solid-tired vehicles wherein the resilient cushioning member is supported by the base flange of the rail.

3,469,784
APPARATUS FOR REDUCING SHELLS IN OUTER-CURVE RAILS
Jackson E. Campbell, 1049 Manzana Place, Lafayette, Calif. 94549, and Erich Thomsen, 2950 Magnolia St., Berkeley, Calif. 94705
Filed June 6, 1967, Ser. No. 643,891
Int. Cl. E01b *3/48, 3/12, 3/22*
U.S. Cl. 238—287 **19 Claims**



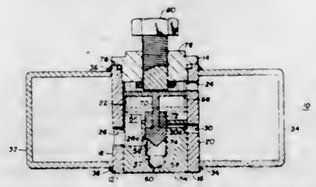
Apparatus for use in reducing shells in outer-curve rails of a railroad track system in which the tangent and curve rails are laid with a standard 1 in 40 cant, by increasing the cant of the outer-curve rails by 2°45′.

3,469,785
HIGH FREQUENCY ULTRASONIC FOG GENERATOR AND METHOD
Raymond Marcel Gut Boucher, Metuchen, and Carlton D. Tobin, Rahway, N.J., assignors to Macrosonics Corporation, Carteret, N.J., a corporation of New Jersey
Filed July 28, 1967, Ser. No. 656,905
Int. Cl. B05b *17/06, 7/00, 3/14*
U.S. Cl. 239—4 **9 Claims**



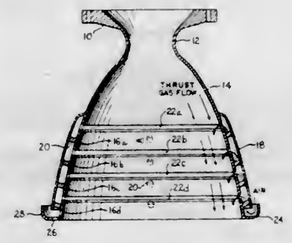
A high frequency ultrasonic fog generator having a liquid chamber containing the liquid to be formed into a fog, transducer means associated with the liquid chamber for agitating the liquid therein with ultrasonic energy to form a geyser, means for introducing gas into the liquid chamber such that swirlings and directional changes are imparted to the fog, a cover on the liquid chamber having at least one opening therein communicating from the exterior of the liquid chamber to the interior thereof, the opening being employed to emit a mist of the liquid from the liquid chamber, means as a part of the cover for causing the large droplets in the geyser to drop back into the liquid in the liquid chamber.

3,469,786
FLUID SPRAYING APPARATUS
John H. Holland, Norman, Okla., assignor to J. H. Holland Company, Norman, Okla., a corporation of Oklahoma
Filed Nov. 24, 1967, Ser. No. 685,644
Int. Cl. B05b *1/20, 1/24;* **B01c** *19/17*
U.S. Cl. 239—126 **12 Claims**



A spraybar for applying a coat of liquid asphalt or the like on the ground having a linearly spaced array of spray nozzles each in fluid communication with a "shoot" manifold through a separate fluid actuated valve. When asphalt is pumped into the shoot manifold, each valve is opened by the pressure of the asphalt and asphalt is sprayed from the nozzles. When asphalt is pumped through a bypass manifold, the pressure of the asphalt closes the valves to the respective nozzles and opens a fluid bypass to the "shoot" manifold to maintain circulation. The valves may be either reciprocating or rotating, and any selected valve can be locked in the closed position.

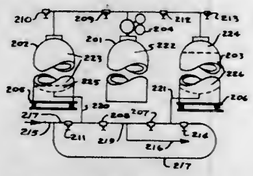
3,469,787
ROCKET MOTOR THRUST NOZZLE WITH MEANS TO DIRECT ATMOSPHERIC AIR INTO THE INTERIOR OF THE NOZZLE
Walter R. Marsh, Hopatcong, and Edward J. Davis, Convent, N.J., assignors to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware
Filed Sept. 7, 1966, Ser. No. 579,798
Int. Cl. B64d *33/04;* **B64c** *15/10;* **B64g** *1/00*
U.S. Cl. 239—127.3 **4 Claims**



A thrust nozzle for a rocket motor wherein provision is made for low altitude operation at high efficiency. The nozzle's exit cone is constructed with an opening and a shroud radially spaced therefrom. The aft end of the cone has a scoop which is opened to permit atmospheric air to enter thereinto, which in turn mitigates or eliminates the deleterious effects of thrust gas separation at

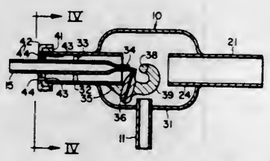
the nozzle wall while the motor is operating within the atmosphere.

3,469,788
AIRLESS SPRAY APPARATUS AND METHODS
Emanuel Michael Glaros, 240 Cascade Road, Pittsburgh, Pa. 15221
Filed Mar. 14, 1966, Ser. No. 534,224
Int. Cl. B05b *11/00, 7/32*
U.S. Cl. 239—307 **8 Claims**



A high pressure spray apparatus is provided having a pressure vessel, an outlet communicating with the lowest point in the pressure vessel, a spray nozzle connected to the outlet, a liquid suspension of material to be sprayed within the vessel, a high pressure compressible immiscible fluid in contact with the liquid suspension and means for replacing said liquid suspension to be sprayed without loss of such high pressure fluid.

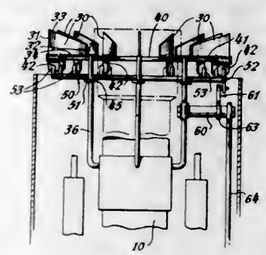
3,469,789
SAMPLE INTRODUCING DEVICE FOR SPECTRO-CHEMICAL ANALYSIS
Eugene C. Simmons, Woodbury, Conn., assignor to Corning Glass Works, Corning, N.Y., a corporation of New York
Filed June 7, 1967, Ser. No. 644,342
Int. Cl. A61m *11/06*
U.S. Cl. 239—338 **10 Claims**



An atomizer is disclosed for introducing a sample into a flame or a similar atom disassociating means for analysis of the sample constituents. A very fine uniform mist or fog is produced by directing an atomized spray of the sample solution or suspension against an obstruction such as a sphere. The fog leaves the atomized chamber via an output tube whereas larger droplets tend to strike the chamber walls and are collected in the chamber.

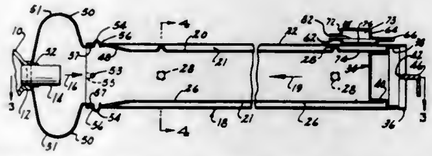
3,469,790
GAS BURNERS
Christopher R. Duncan, Ilminster, England, assignor to Powrmatic Limited, Ilminster, Somerset, England, a British company
Filed June 28, 1967, Ser. No. 649,596
Claims priority, application Great Britain, June 30, 1966, 5,907/66
Int. Cl. B05b *7/10, 7/12, 7/06*
U.S. Cl. 239—402.5 **24 Claims**

The invention relates to a gas burner which consists essentially of gas supply tube and disposed thereabout an outer tube defining an oxygen or air supply conduit, nozzle means for the discharge of gas fuel transverse to a stream of oxygen or air supplied by said conduit and flame control means movable between a first position and a second position with respect to said nozzle or said conduit to permit control of the shape and/or size of the flame. The flame control means may comprise a sleeve mounted at the end of the outer tube and axially slidable between a retracted first position and an extended second position, the former position resulting in a broad flame and the latter position resulting in an elongate flame. The flame control means may also comprise either in combination with the slidable sleeve or separately therefrom, a plural-



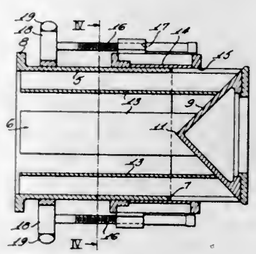
ity, of radially directed vanes disposed circumferentially about the fuel nozzle, each of said vanes being rotatable about a radial axis with respect to said nozzle so that the inclination of each of said vanes can be varied with respect to said nozzle to produce control of the burner flame.

3,479,791
GAS BURNER
Warren H. De Lancey, Herbert G. Hays, and Donald W. Hartzell, Elyria, Ohio, assignors to American Standard Inc., a corporation of Delaware
Filed Jan. 2, 1968, Ser. No. 704,968
Int. Cl. B05b *7/00;* **F23d** *13/24*
U.S. Cl. 239—419.5 **14 Claims**



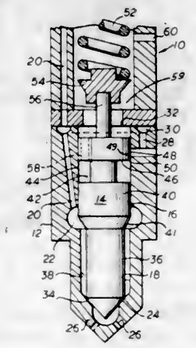
The present burner comprises an inner slotted or perforated gas distributor tube and an outer ported flame tube, the blind ends of said tubes being connected together by a novel low cost cap structure.

3,469,792
FREE DISCHARGE VALVE
John M. Horn, York, Pa., assignor to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.
Filed Oct. 23, 1967, Ser. No. 677,299
Int. Cl. B05b *1/26*
U.S. Cl. 239—456 **3 Claims**



A free discharge valve having a cone shaped diffuser at the discharge end of the valve casing. The cone is supported by a plurality of circumferentially spaced beams which do not extend into the interior of the valve casing as far as the centerline of the casing.

3,469,793
FUEL INJECTION SYSTEM
Rudolf W. Guertler, Fort Wayne, Ind., assignor to International Harvester Company, Chicago, Ill., a corporation of Delaware
Filed May 11, 1967, Ser. No. 637,800
Int. Cl. B05b *1/32;* **F23d** *11/00*
U.S. Cl. 239—533 **4 Claims**



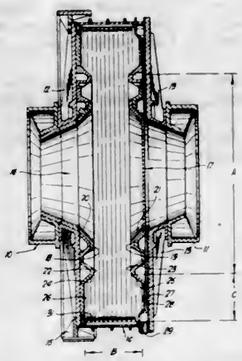
A fuel injection system for an internal combustion engine wherein the rate at which fuel is introduced into the combustion chamber during the fuel injection period is controlled in accordance with the rate at which the air is also introduced into the combustion chamber so as to insure the continuous formation of a substantially homogeneous fuel/air mixture throughout the injection period at a formation rate consistent with maximum utilization of the air and fuel and complete and efficient burning of the fuel/air mixtures and to thereby enhance the overall efficiency of the combustion process. The fuel injection system includes a fuel injection nozzle capable of introducing the liquid fuel charge into the combustion chamber in the form of a multiplicity of small injections during the normal fuel injection rather than by a single large injection.

3,469,794
LAMINAR FLOW BURNER HEAD
August Hell, Whittier, Calif., assignor to Beckman Instruments, Inc., a corporation of California
Filed Apr. 18, 1966, Ser. No. 543,431
Int. Cl. B05b *1/00, 1/14;* **A62c** *31/02*
U.S. Cl. 239—597 **4 Claims**



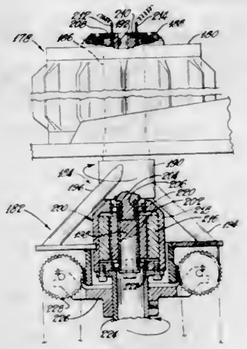
There is disclosed a burner head particularly adapted for atomic absorption and flame photometry and useful with nitrous oxide-acetylene flames which comprises a head of substantial mass with a slot therein to provide laminar flow of the gases through said slot and a groove adjacent to the slot to provide a thin walled portion around the slot.

3,469,795
MATERIAL REDUCTION MILL
David Weston, Toronto, Ontario, Canada, assignor to Aerofall Mills Inc., Clarkson, Ontario, Canada
Filed Apr. 22, 1966, Ser. No. 544,471
Claims priority, application Canada, Feb. 25, 1966, 953,292
Int. Cl. B02c *17/04, 15/08*
U.S. Cl. 241—176 **9 Claims**



A material reduction mill of the cylindrical drum type characterized by keying liners on the end walls of the drum and a substantially cylindrical inner face, and having a large diameter in comparison to its length. With such a drum, having the proper size and peripheral speed, the keying action can be obtained without the use of highly upstanding crusher bars on the cylindrical surface of the drum.

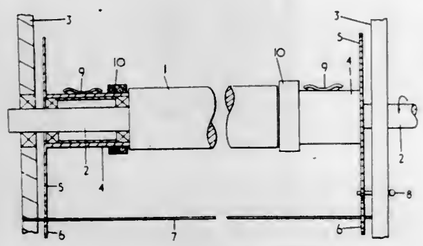
3,469,796
METHOD AND APPARATUS FOR HANDLING STRAND
Robert G. Russell, Granville, Ohio, and Cecil R. Cunningham, Aiken, S.C., assignors to Owens-Corning Fiberglas Corporation, a corporation of Delaware
Filed Oct. 23, 1965, Ser. No. 503,865
Int. Cl. B65h *51/20, 55/00*
U.S. Cl. 242—47.13 **8 Claims**



Apparatus is provided for forming a strand or the like into loops and for conveying the loops in a closely-spaced, orderly manner. The strand is received in a rotating tube which throws it into spiral loops which are collected and carried away on the periphery of a plurality of parallel conveyors arranged in a cylindrical disposition. The conveyors are suspended below the loop-forming means in a manner such that relative rotation between the conveyors and the loop-forming means can be

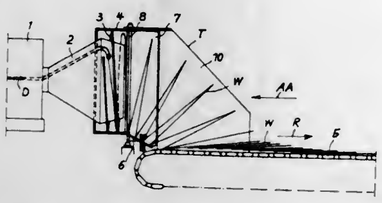
carefully controlled. This can be accomplished through a magnetic arrangement in which the magnets can be moved in a circular path or can be accomplished through a motor arranged coaxially with a main drive motor.

3,469,797
DEVICE FOR DISPENSING PAPER OR LIKE MATERIAL
Kenneth James Henderson and Donald Wilson, Camberley, Surrey, England, assignors to Southern Instruments Limited, Camberley, Surrey, England, a British company
Filed Oct. 27, 1967, Ser. No. 678,634
Claims priority, application Great Britain, Nov. 3, 1966, 49,378/66
Int. Cl. B65h *75/14, 19/00, 17/22*
U.S. Cl. 242—54 **5 Claims**



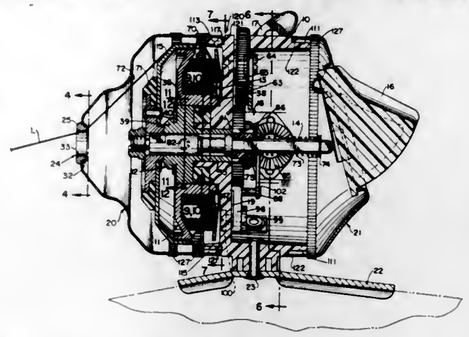
A device for dispensing paper or like material from a roll of such material, which includes roller means mounted for rotation inside a loose roll of material, and for rotating the roll when it is tightened onto the roller means as a result of a pull on the material, the roller means tending subsequently to loosen the tightened roll, and means for applying a frictional drag to the inner end of the material thereby tending to re-tighten the roll onto the roller as a result of the pull on the material.

3,469.798
CONTINUOUS DEPOSITION OF A STRING OF TURNS OF WIRE UPON AN ENDLESS CONVEYOR
Egbert Schroeder, Lank, Germany, assignor to Schloemann Aktiengesellschaft, Dusseldorf, Germany, a company of Germany
Filed Feb. 2, 1968, Ser. No. 702,678
Claims priority, application Germany, Feb. 4, 1967, Sch 40,176
Int. Cl. B21c *47/18*
U.S. Cl. 242—83 **16 Claims**



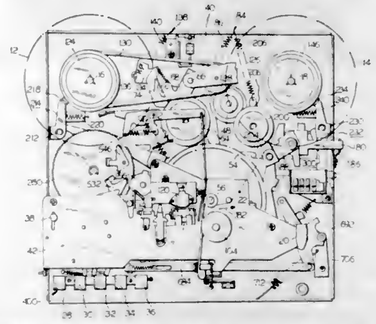
An apparatus using a turn-layer device for producing the helix (Edenborn-reel type; rotatable laying cone with laying tube and worm thread) having the axis of the turn-layer either horizontal, vertical or oblique to the conveyor plane is used. At least one deflector flap having its pivotable axis either horizontal, vertical or oblique to the plane of the conveyor is provided to deflect either the individual turns or groups of turns in either one or both lateral directions with respect to the conveyor axis.

3,469,799
SPINNING REEL BRAKE
R. Dell Hull, 6101 E. Apache St., Tulsa, Okla. 74115
Filed June 15, 1966, Ser. No. 557,752
Int. Cl. A01k *89/00*
U.S. Cl. 242—84.2 **8 Claims**

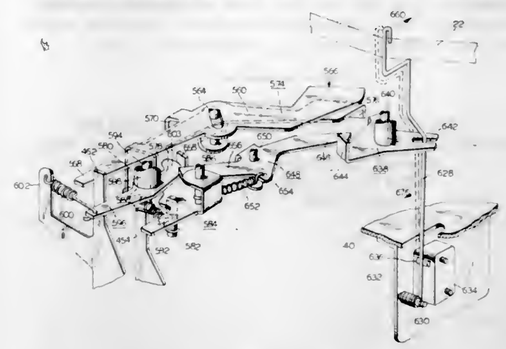


The present invention is directed to spinning reel control mechanisms including an adjustable drag brake which utilizes a controllably expandable O-ring disposed between an improved hub construction and a normally non-rotatable spool seated thereon. The specific shape of the O-ring is varied, and thus the degree of brake force application is controlled, through a cam actuated O-ring retainer. The hub construction includes a radially disposed, spring loaded pin which cooperates with portions of the main shaft of the reel to lock the same forwardly of the reel during casting and to unlock the shaft, allowing it to move rearwardly of the reel, at the commencement of line retrieval.

3,469,800
TAPE RECORDER
Yukitada Ayukawa, Neyagawa-shi, and Isao Kozu, Osaka-shi, Japan, assignors to Matsushita Electric Industrial Co. Ltd., Kadoma, Osaka, Japan
Filed Sept. 8, 1967, Serial No. 666,248
Claims priority, application Japan, Sept. 8, 1966, 41/60,015; Sept. 12, 1966, 41/60,688
Int. Cl. G11b *15/44, 25/06;* **G05g** *11/00*
U.S. Cl. 242—190 **15 Claims**

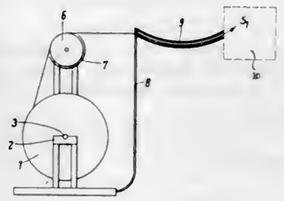


A driving and braking control system for a tape recorder comprising tape moving means for moving a tape at a tape playing speed including reel roller rotating means for rotating a take-up reel roller at both a fast rate for fast forward drive of the tape and at a normal playing speed, and for rotating a supply reel roller for rewind drive of the tape; brake means for braking the take-up reel roller and the supply reel roller; driving means for selectively operating the reel rotating means and the brake means by a drive motor and clutch means provided to



intermit the driving force between the driving means and the motor, and to operate the braking means in response to clutch actuating mechanism operated by a push button selection means for choosing among the "play," "record," "fast forward," "rewind," and "stop" states of operation.

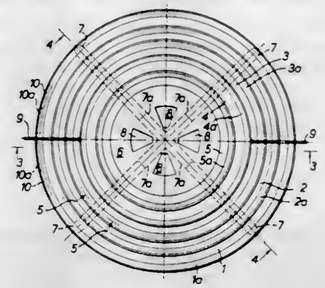
3,469,801
DEVICE FOR UNWINDING WIRE FROM A REEL
Günther Hauck, Munster, and Gerhard Herold and Hans-Günther Schröer, Hamm, Germany, assignors to Westfalische Union AG fur Eisen- und Drahtindustrie, Hamm, Germany
Filed Jan. 15, 1968, Ser. No. 697,721
Claims priority, application Germany, Jan. 13, 1967, W 43,150
Int. Cl. B65h *54/00, 51/06*
U.S. Cl. 242—54 **8 Claims**



A device for the unreeling of wire from a rotatably supported reel, in which a drive reel, driven by a motor, is placed between the reel of wire and a utilization device which exerts a pulling force on the wire. Between the drive reel and the utilization device, a resilient bracket is placed which is connected to the utilization device by an elastic, limply suspended hose through which the wire passes from the drive reel to the utilization device.

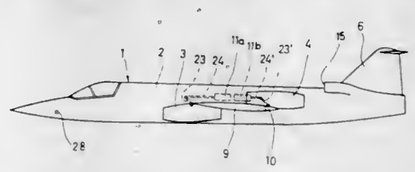
3,469,802
TRANSPORT
John R. Roberts, 634 Ferguson St., Palmerston North, North Island, New Zealand, and Michael J. Alexander, 21 Brassey Road, Wanganui, North Island, New Zealand
Filed Mar. 7, 1966, Ser. No. 534,569
Claims priority, application New Zealand, Mar. 31, 1965, 141,194
Int. Cl. B64c *15/00, 29/04*
U.S. Cl. 244—12 **10 Claims**

An aircraft in which a body is provided with lifting surfaces and flow creating means within the body is adapted to produce a flow of air or gases relative to which lift of the body may be realized. Furthermore, means are provided for producing a reduced pressure between the flow



of air or gases and the lifting surfaces so that vertical flight of the body results when such flow exists and the reduced pressure is operative between the flow and the lifting surface.

3,469,803
ENGINE CONSTRUCTION FOR VTOL AIRCRAFT
Peter Schmielau, Deisenhofen, Germany, assignor to Bolkow Gesellschaft mit beschrankter Haftung, Munich, Germany
Filed Aug. 15, 1966, Ser. No. 572,275
Claims priority, application Germany, Aug. 21, 1965, B 83,378
Int. Cl. B64c *29/04;* **B64d** *27/14*
U.S. Cl. 244—12 **7 Claims**

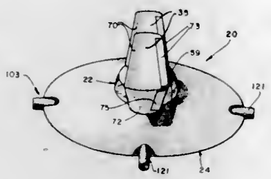


A VTOL airplane comprises a fuselage having a wing structure extending outwardly from each side and which carries a thrust engine for horizontal propulsion adjacent the tail thereof. A pair of forward thrust engines are mounted directly adjacent the fuselage on respective opposite sides adjacent the forward end of the wing structure and a pair of trailing thrust engines are mounted adjacent the fuselage on respective opposite sides thereof adjacent the trailing end of the wing structure, the forward and rear trailing engines of respective sides being located along substantially the axis line of the wing structure and may be tilted from a vertical position to a horizontal position at which the engines become located beneath the wing and the trailing engines become located above the wing. Compressed air generated by the main engine is discharged as a thrust control gas at selected locations to provide an auxiliary means for controlling the attitude of the aircraft.

3,469,804
ROTARY AND CIRCULAR SAUCER-SHAPED AIRFOIL AIRCRAFT
Steven T. Rowan, 235 S. Chick, Colby, Kans. 87701
Filed Apr. 8, 1968, Ser. No. 719,526
Int. Cl. B64c *15/02, 29/04*
U.S. Cl. 244—12 **10 Claims**

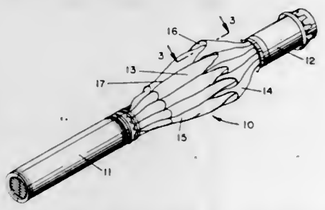
This invention relates to a rotary airfoil aircraft and, more particularly, to a saucer-shaped aircraft capable of both vertical and horizontal flight. Still more specifically,

this invention relates to an airfoil aircraft including a central pilot's control compartment; a circular airfoil wing means rotatably mounted on and extended laterally from the control compartment; and power means pivotally connected to the outer periphery of the airfoil wing means



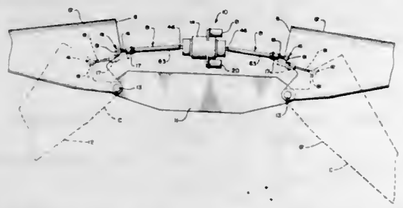
to provide vertical, horizontal, and any combination thereof propulsion. This invention also relates to an airfoil aircraft capable of take-off, vertically, flight in all directions, landing anywhere, and having parachute means mounted thereon for soft landing in cases of emergency to provide the utmost in safety.

3,469,805
METHOD FOR INFLATING A BALLOON
Jimmie M. Craig, China Lake, Calif., and Russell A. Pohl and Paul E. Yost, Sioux Falls, S.D., assignors, by direct and mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed Oct. 24, 1967, Ser. No. 677,795
Int. Cl. B64b *1/58*
U.S. Cl. 244—31 **1 Claim**



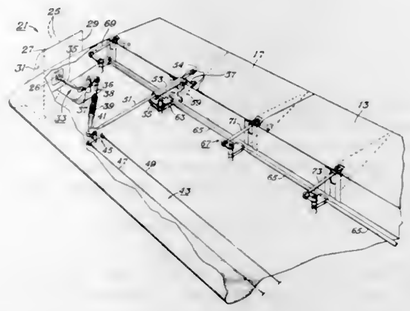
A method and means for inflating a hot air balloon supporting a load aloft which comprises providing peripheral ports located along the equator of a balloon between the vertical seams of each gore and so shaped as to scoop air. When the balloon is launched ram air enters through the ports thereby inflating the balloon in a few seconds.

3,469,806
DRIVE MECHANISM OPERATING AGAINST VARIABLE RESISTANCE
Joseph M. Olchawa, Western Springs, Ill., assignor to Hewitt-Robins Incorporated, Stamford, Conn., a corporation of Delaware
Filed Feb. 9, 1968, Ser. No. 704,441
Int. Cl. B64c *3/56;* **F16h** *57/10;* **F16d** *65/24*
U.S. Cl. 244—46 **11 Claims**



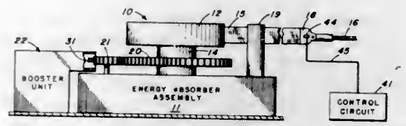
The invention deals with a drive mechanism operating against variable resistance and provides for automatic controls against overrunning or overhauling operations resulting from reduced resistances. The drive mechanism includes a power transmitting feed screw of high efficiency such as a power transmitting feed screw of the antifriction ball type, and to compensate for this high efficiency and to prevent consequent overrunning of the drive mechanism when the load on said feed screw is low, brake means are provided for said drive mechanism, normally inoperative but automatically put into operation, when the load is reduced below a predetermined value.

3,469,807
AIRCRAFT YAW CORRECTION MEANS
Albert E. Morris, Jr., Fort Worth, Tex., assignor to Wren Aircraft Corporation, Fort Worth, Tex.
Filed Oct. 6, 1967, Ser. No. 673,501
Int. Cl. B64c *5/08, 5/10, 9/12*
U.S. Cl. 244—90 **10 Claims**



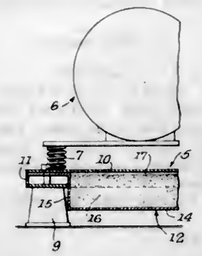
Following is disclosed aircraft yaw correction means that utilizes a movable vertical panel on each wing tip to equalize the drag of both wings when the drag would otherwise be unequal due to aileron use.

3,469,808
AIRCRAFT ARRESTING GEAR BOOSTER UNIT
Herman D'Aulerio, Bowie, Md., assignor to the United States of America as represented by the Secretary of the Navy
Filed Oct. 30, 1967, Ser. No. 678,778
Int. Cl. B64c *25/68;* **B64f** *1/02*
U.S. Cl. 244—110 **8 Claims**



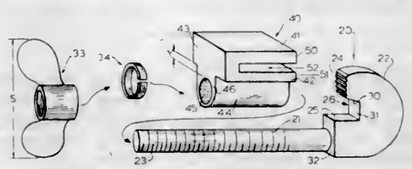
A fluid system containing a continuously running compressor and a double-acting cylinder having a rack formed on the outer end of the piston rod. The rack is connected through appropriate gearing to a bull gear fixed to the shaft of the energy absorber assembly of the arresting gear. A strain gage mounted on the arresting gear tape senses engagement of the aircraft hook with the pendant of the arresting gear and, through an appropriate control circuit, actuates valves in the fluid system which enable the compressor to cycle the cylinder. Corresponding movement of the rack imparts a rotative movement to the energy absorber assembly and assists in overcoming its inertia.

3,469,809
VIBRATION-ABSORBING BASE
David E. Reznick, 183 S. June St., Los Angeles, Calif. 90004, and Ernoe A. Fekete, 9835 La Docena Lane, Pico Rivera, Calif. 90660
Filed Aug. 14, 1967, Ser. No. 660,336
Int. Cl. F16f *15/00;* **F16d** *63/00*
U.S. Cl. 248—20 **4 Claims**



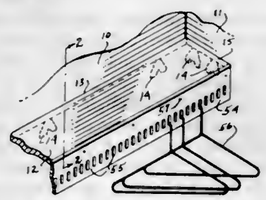
A base that mounts devices or machines that vibrate either when operating, or when starting up, is shock-mounted, as on the roof of a building, and is provided with a shiftable ballast which absorbs such vibration, thereby minimizing transmission of the vibration to the building.

3,469,810
BEAM CLAMP
Joseph E. Dorris, 252 Park Terrace, Mobile, Ala. 36601
Continuation-in-part of application Ser. No. 584,281, Oct. 4, 1966. This application Jan. 31, 1968, Ser. No. 702,083
Int. Cl. F16b *2/02*
U.S. Cl. 248—228 **9 Claims**



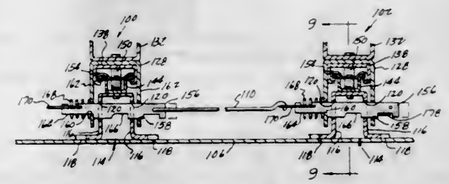
A structural clamp adapted for positive attachment to I-beams, H-beams, T-bars, conventional angles, bulb angles, channels, flanges, plates and other similar structural shapes comprises a pair of clamping jaw members effective to positively grip various combinations of beam flanges and webs and to withstand load forces from various directions and which can be installed and removed without the aid of auxiliary tools.

3,469,811
BRACKETS FOR SUPPORTING A SHELF
Edward I. Crain, 10673 Turfwood Court, Cincinnati, Ohio 45241
Filed Oct. 20, 1967, Ser. No. 676,789
Int. Cl. A47b *55/00*
U.S. Cl. 248—248 **3 Claims**



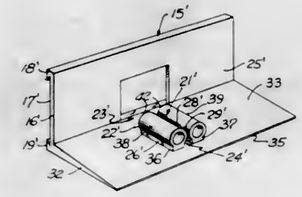
The support for a shelf or the like herewith disclosed is formed from a rectangular sheet of metal either cast or bent to provide means for attaching it to a wall and means for engaging an edge of the shelf in a removably supporting same.

3,469,812
ADJUSTABLE VEHICLE SEAT MOUNTING
Harry Wonell, Westland, and Oakley A. LaFleche, Mount Clemens, Mich., assignors to Howell Industries, Inc., Detroit, Mich., a corporation of Michigan
Filed Feb. 9, 1967, Ser. No. 614,863
Int. Cl. B60n *1/08;* **F16m** *13/00*
U.S. Cl. 248—430 **6 Claims**



A pair of interconnected, internally spaced apart slide devices arranged to support a seat assembly between longitudinally spaced positions relative to the floor of a vehicle. Each slide device includes an upper support member for attachment to the seat unit, a lower support fixed to the vehicle floor, means providing a track between the upper and lower support members and latch means for locking the upper and lower supports at a selected relative position. The upper support member also has means for anchoring the terminal ends of a safety belt assembly associated with the seat assembly. The upper support also has a pair of rigid flange sections straddling a slide unit and arranged to prevent separation of the slide unit components. The latching means includes a latch member associated with each of the slide devices and interconnected one to the other for cooperative movement between a first position wherein the latches engage a selected pair of teeth formed in the lower fixed supports to lock the two supports one to the other and a second position wherein the latches disengage the teeth to free the upper movable supports for longitudinal movement relative to their respective lower fixed supports.

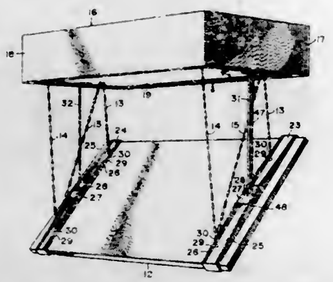
3,469,813
SNAP-ON SUPPORT FOR PRICE TAG HOLDER
Victor Rizzi, 270 Miller Ave., Gilroy, Calif. 95020
Continuation-in-part of application Ser. No. 588,633, Sept. 26, 1966. This application Nov. 29, 1967, Ser. No. 686,474
Int. Cl. A47f *5/00, 13/00;* **G09f** *3/20*
U.S. Cl. 248—475 **5 Claims**



A snap-on fastener related to a price tag or card holder to fit and hold the latter on wire rack shelving. A yield-

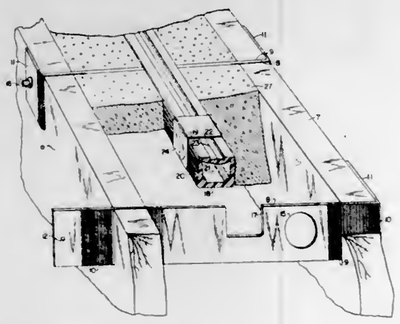
able snap-on feature coordinated with a price card holder for supporting the latter on standard wire rack refrigerator shelving.

3,469,814
MIRROR SUSPENSION
Arthur W. Carlson and Roger W. Peterson, Muskegon, Mich., assignors to E. H. Sheldon & Company, Muskegon, Mich., a corporation of Michigan
Filed Feb. 15, 1968, Ser. No. 705,829
Int. Cl. A47g *1/16;* E04g *17/18;* B66c *23/60*
U.S. Cl. 248—492 7 Claims



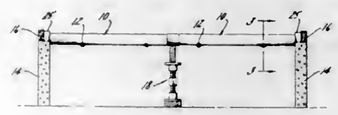
A mirror is suspended over a demonstration area at an angle which permits the audience to view the demonstration. A support mounted upon the ceiling or room wall carries a power-driven reel upon which cables are wound, the outer ends of the cables being attached to the mirror. Also secured to the support are flexible suspension elements, such as chains, which have their lower ends secured to end portions of the mirror, the chains at one end being shorter than those at the other so that upon lowering the mirror, the suspension elements tilt the mirror and hold it against swinging in a desired reflecting position. When the cables are reeled in to raise the mirror in a preferred horizontal position, the chains fold inertly upon the top of the mirror and are carried by the mirror to the support structure. Limit switch means control the motor as the mirror reaches the desired lowered position and the desired raised position.

3,469,815
STRUCTURAL LOCKING AND FORMING DEVICE
John H. Brenneman, 173 Mansgrove Road, Princeton, N.J. 08540
Filed Dec. 17, 1965, Ser. No. 514,572
Int. Cl. E04g *11/06, 17/06*
U.S. Cl. 249—41 11 Claims



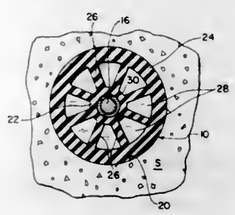
A pair of spaced form members for receiving and retaining concrete or other plastic material until it hardens including spreader members that are received in aligned slots secured to the form members. The opposite ends of the spreader members are bent to overlie the exterior surface of the form members and are secured thereto. The spreader members are transversely serrated to facilitate the separation thereof at the surface of the hardened molding material. An elongated structural member may be seated in aligned recesses in adjacent spreader members.

3,469,816
MOLD FOR MAKING SLOTTED CONCRETE FLOORS FOR ANIMAL HOUSES
Ronald S. Blough, Fairfield, Iowa, and Albert E. Gehlbach, Lincoln, Ill., assignors to Fairfield Engineering and Manufacturing Company, Fairfield, Iowa, a corporation of Iowa
Filed May 2, 1967, Ser. No. 635,580
Int. Cl. E04g *11/36*
U.S. Cl. 249—118 6 Claims



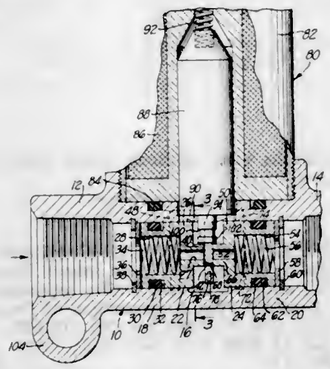
A mold having individual sections assemblable into multiple-beam units for casting slotted concrete livestock floors is described, being characterized by removable end dams whereby each concrete beam may be cast as a removable unit, and by a means for staking the mold sections to their respective end supports to prevent shifting during assembly and pouring.

3,469,817
HOLE-PATTERN MEMBER FOR USE IN CONNECTION WITH A CONCRETE FLOOR SLAB FORM
George F. Bowden, Northbrook, and John R. Gilbert, Chicago, Ill., assignors to Symons Mfg. Company, Des Plaines, Ill., a corporation of Delaware
Filed Oct. 20, 1967, Ser. No. 676,893
Int. Cl. B28b *7/30, 7/34*
U.S. Cl. 249—183 4 Claims



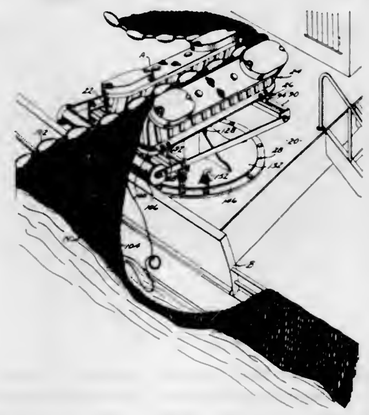
A slab form pattern member adapted to be positioned on the foundation surface of a concrete slab form prior to concrete-pouring operations and to be subsequently extracted from the hardened concrete so as to leave a circular hole in the floor slab through which pipes, conduits, and the like may be passed during building erection. The hole-pattern member is formed of elastomeric material and is so formed that, by means of a suitable extraction tool, a purchase may be had on the central regions thereof for twisting purposes to shrink the insert and thus break its bond with the surrounding concrete for removal purposes.

3,469,818
BALANCED SHUTOFF VALVE
Arnold A. Cowan, Tarzana, Calif., assignor, by mesne assignments, to The Bobrick Corporation, North Hollywood, Calif., a corporation of California
Filed Nov. 14, 1966, Ser. No. 594,169
Int. Cl. F16k *31/143, 25/00*
U.S. Cl. 251—129 6 Claims



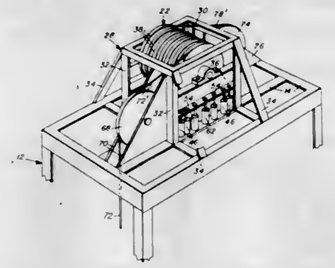
A valve body has fluid inlet and outlet means therein, each including a sealing member resiliently urged longitudinally toward a central, laterally movable gate. The sealing members have openings longitudinally therethrough terminating at inner end portions in laterally elongated, slot-like openings, alignable with a similar opening longitudinally through the gate when the valve is opened and at least one closed by the gate when the valve is closed. The longitudinal movement of the sealing members is limited inwardly and the gate is mounted longitudinally shiftable whereby fluid under pressure from one sealing member against the closed gate forces the gate away from that sealing member and to seal against the other sealing member while the fluid under pressure circulates in the valve body around the gate and partially longitudinally balances said gate.

3,469,819
NET RETRIEVER APPARATUS
Mario J. Puretic, 259 6th Ave. N., Monte Cristo Isle, Tierra Verde, Fla. 33715
Filed Oct. 11, 1967, Ser. No. 674,528
Int. Cl. A01k *73/06, 73/00*
U.S. Cl. 254—137 7 Claims



A retriever for pulling a fishing net from a submerged, expanded fish-catching position onto the deck of a fishing boat in a gathered-together position. The retriever includes a pair of longitudinally-aligned endless belts, the proximate sides of which define a V-shaped gap which receives the net. The belts are supported on a frame. The frame also carries hydraulic motors which concurrently drive the belts in a longitudinal direction. The proximate sides of the moving belts frictionally grip the net to thereby move such net from its fish-catching position in the water to its gathered-together position on the deck of the fishing boat. The frame is supported on the boat deck by means of a pedestal or other structure. The angle between the conveyor belts is adjustable so as to vary the amount of friction applied to the belt. Additionally, the frame is adjustable relative to the deck of the boat to facilitate the net retrieving operation. When the net retriever is not in use, the frame may be pivoted into general longitudinal alignment with the boat to clear the side of the boat thereby facilitating docking and affording free passage along the deck.

3,469,820
DRILL PIPE STABILIZING APPARATUS
Edward E. Horton, Palos Verdes, Calif., assignor to Ocean Science and Engineering, Inc., Washington, D.C., a corporation of Delaware
Filed July 5, 1967, Ser. No. 651,194
Int. Cl. B66d *1/48, 3/00*
U.S. Cl. 254—172 7 Claims

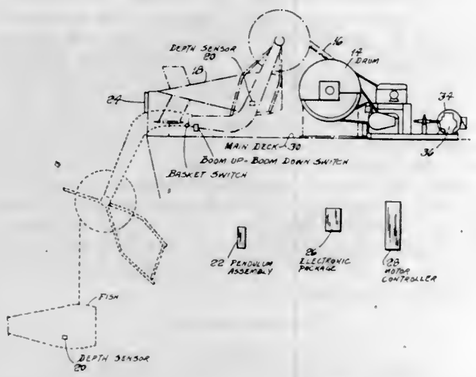


A construction for use in an offshore drilling operation for maintaining the vertical location of a drill pipe stable with respect to the ocean floor even though its floating support platform is subject to wave action. The drill pipe is supported by cables depending from a traveling crown block which is in turn primarily supported with respect to the platform by a plurality of pressurized air cylinders and secondarily by a plurality of hydraulic cylinders. The hydraulic cylinders are double acting and provide motive power synchronized with ship heave to move the crown block relative to the platform so it remains stationary relative to the ocean floor. The synchronization power is controlled by a travel detecting accelerometer.

3,469,821
DEPTH CONTROL SYSTEM FOR TOWED BODY
Seymour Gross, New London, William A. Downes, Mystic, and Frank B. Rakoff, New London, Conn., assignors to the United States of America as represented by the Secretary of the Navy
Filed Mar. 20, 1967, Ser. No. 624,617
Int. Cl. B66d *1/48;* B63d *35/02*
U.S. Cl. 254—173 12 Claims

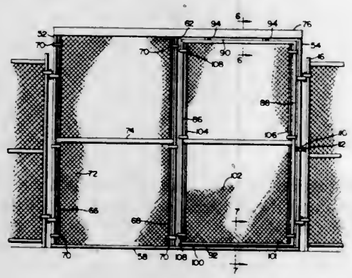
An automatic depth control system for a submerged towed body having an electrohydraulic drive system for driving the towline drum, a set of sensors (accelerometer, depth, torque and hydraulic-pressure) for obtaining electrical signals proportional to deviations in depth of the

towed body and tension variations in the towline, and electronic means for using the sensor signals to control



the operation of the towline drum so as to keep the towed body at a constant depth.

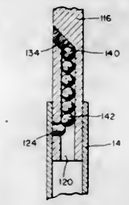
3,469,822
PORTABLE ENCLOSURE
Joseph Francis O'Brien, 4227 Soth Ave., Perry Hall, Md. 21236
Filed Feb. 23, 1968, Ser. No. 707,788
Int. Cl. E04h *17/18*
U.S. Cl. 256—25 **6 Claims**



A portable enclosure comprising a plurality of wire mesh panels interconnected by hinges and each supported by vertical end members, and a gate having a stationary section and a slidably movable section whereby the enclosure is easily assembled without anchoring it in the ground and the gate permits easy access to the enclosure.

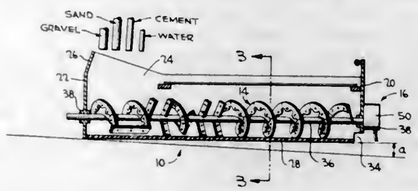
3,469,823
HANDRAIL POST FITTING
Louis Blum, 15 Darlington Court 15217, and William J. Horgan, Jr., 1299 Folkstone Drive 15243, both of Pittsburgh, Pa.
Continuation-in-part of application Ser. No. 627,444, Mar. 31, 1967. This application June 18, 1968, Ser. No. 738,025
Int. Cl. E04h *17/14;* **F12b** *7/00;* **E04g** *7/00*
U.S. Cl. 256—65 **2 Claims**

A telescoping post for handrail may be fixed at adjusted heights by means of a friction member which passes through the hollow wall of the inner-telescoping member and bears against the inner wall of the outer member. The friction member is acted upon by means disposed in



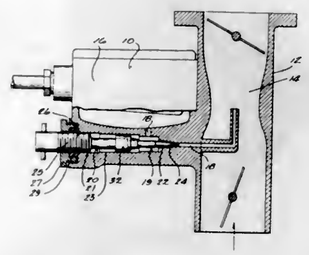
the hollow of the inner member; which means is fixed by a set screw.

3,469,824
MIXING AND CONVEYING MEANS
Robert C. Futty, Willow Street, and John L. Kugle, Lancaster, Pa., assignors to IRL Daffin Associates, Incorporated, Lancaster, Pa., a corporation of Pennsylvania
Filed Feb. 27, 1968, Ser. No. 708,679
Int. Cl. B28c *5/14;* **B01f** *7/08, 7/04*
U.S. Cl. 259—178 **5 Claims**



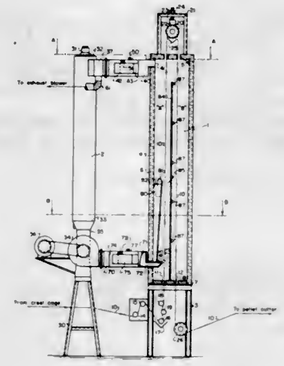
A mixing and conveying means of improved wear characteristics, suitable for use in various types of apparatus such as a mixing trough which can be used to mix concrete. A plurality of mixing and conveying elements are disposed along a shaft and include easily removable wear plates, preferably fabricated of an abrasion resistant material such as a nickel-containing cast iron alloy.

3,469,825
ALIGNMENT BUSHING FOR NEEDLE VALVE
Chester DuBois, Zion, Ill., assignor to Outboard Marine Corporation, Waukegan, Ill., a corporation of Delaware
Filed Oct. 12, 1967, Ser. No. 674,854
Int. Cl. F02m *19/04, 19/06*
U.S. Cl. 261—71 **4 Claims**



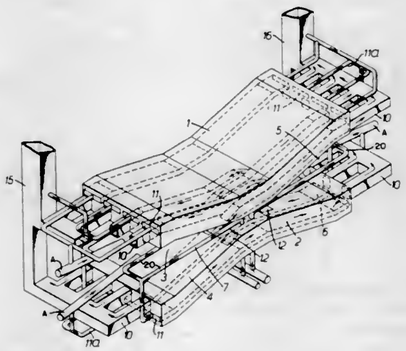
Disclosed herein is a resilient alignment bushing for the needle valve of a carburetor. The bushing comprises concentric inner and outer surfaces with the inner surface defining an axial aperture which receives the needle valve and maintains the valve member in concentric relation to the valve seat. The outer surface of the bushing engages the bore in the carburetor housing to afford a fluid seal.

3,469,826
APPARATUS AND METHOD FOR PRODUCING REINFORCED MOLDING COMPOSITIONS
Glenn S. Berkebile, Evansville, Ind., assignor to Dart Industries Inc., Los Angeles, Calif., a corporation of Delaware
Filed Oct. 30, 1967, Ser. No. 679,025
Int. Cl. F27b *9/28;* **C21d** *9/56*
U.S. Cl. 263—3 **15 Claims**



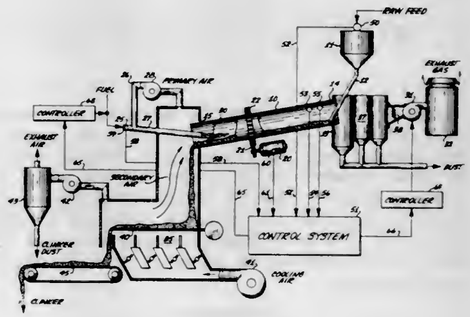
Improvements to apparatus having a curing chamber to dry and to fuse resin to fiber glass strands includes partition for dividing curing chamber into 2 longitudinal sections and first and second ducts attached to one of longitudinal sections for uniformly distributing the hot gases to and channeling the gases from the chamber.

3,469,827
FURNACE
William Robert Laws, Worcester Park, Henry Christopher Holt, London, and Frank Michael Salter, Chatham, England, assignors to The British Iron and Steel Research Association
Filed Dec. 1, 1967, Ser. No. 687,352
Claims priority, application Great Britain, Dec. 2, 1966, 53,994/66
Int. Cl. F27b *9/14;* **F27d** *3/00, 17/00*
U.S. Cl. 263—6 **11 Claims**



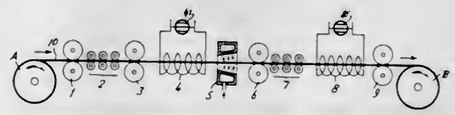
This invention relates to a continuous slab reheating furnace comprising roof and well walls of cavity construction forming channels extending along the length of the walls for the passage through different channels of waste furnace gases and combusition air for the furnace burners so that the combustion air may be preheated. The combustion air for the upper zone burners is further preheated by low temperature recuperators positioned externally of the walls and heated by the waste gases and the combustion air for the lower zone burners is further preheated by passing it through hollow slab-supported skids.

3,469,828
METHOD AND APPARATUS FOR CEMENT KILN CONTROL
James W. Lane, Canoga Park, Calif., assignor to General Electric Company, a corporation of New York
Filed Oct. 30, 1967, Ser. No. 678,851
Int. Cl. F27b *7/00*
U.S. Cl. 263—32 **20 Claims**



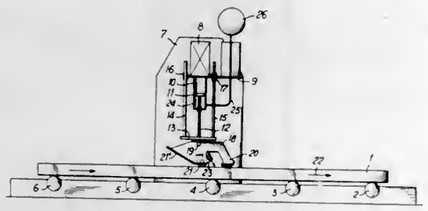
A method and apparatus for controlling the operation of a rotary cement kiln by controlling the fuel rate set point and the exit gas rate set point. The control of fuel rate set point is based upon kiln drive motor torque measurements in conjunction with feedback signals generated by a dynamic kiln model which stores a record of past control actions. Control of the exit gas rate set point is based upon measurements of gas temperature at a selected intermediate area in the kiln. Oxygen content of the exit gas is monitored and employed to exercise overriding control to insure that no combustibles which might cause an explosion appear in the exit gas.

3,469,829
APPARATUS FOR PRODUCING WIRE OF HIGH TENSILE STRENGTH
Makoto Fujita, Tokyo, and Kanichiro Katsura, Yokohama, Japan, assignors to Nippon Kokan Kabushiki Kaisha and Koshuha Netsuren Kabushiki Kaisha, both of Tokyo, Japan
Filed June 16, 1966, Ser. No. 558,073
Int. Cl. C21d *1/66, 1/78, 9/60*
U.S. Cl. 266—3 **7 Claims**



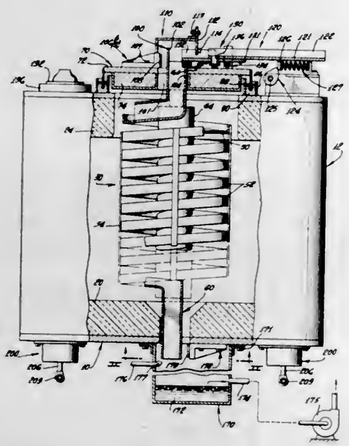
A continuously transported wire moves through a hardening zone in which it is heated and cooled, and then through a tempering zone in which it is tensioned and heated to a tempering temperature.

3,469,830
FEELER DEVICE FOR IRON PRODUCTS SCARFING
Guy Leygue, Parthenay, and Jacques, Auberger, Le Tallud, France, assignors to L'Air Liquide, Societe Anonyme pour l'Etude et l'Exploitation des Procedes Georges Claude, Paris, France
Filed Sept. 25, 1967, Ser. No. 670,073
Claims priority, application France, Sept. 28, 1966, 77,974
Int. Cl. B23k *7/06, 7/10*
U.S. Cl. 266—23 **7 Claims**



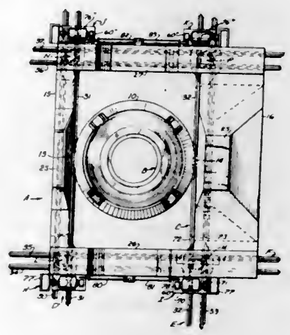
Apparatus for controlling the height of a deseaming torch (**23**) above a metal product (**1**) to be treated. A fluid operated jack (**10**) decreases the force with which the feeler member (**20, 21**) bears on the product. The operating chamber (**24**) is connected either to a first source of fluid (**35**) for lifting the torch and the feeler member or to a lower pressure second source of fluid (**26**) for only relieving the action of the feeler member upon the product.

3,469,831
HEAT TREATMENT FURNACE
Jack Beavers, 5200 Tweedy Blvd., South Gate, Calif. 90280
Continuation of application Ser. No. 593,524, Nov. 10, 1966. This application July 17, 1968, Ser. No. 749,246
Int. Cl. C21d *1/66;* **F27b** *9/14*
U.S. Cl. 266—4 **10 Claims**



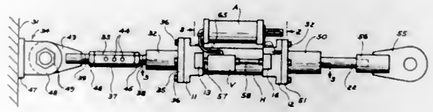
A workpiece heat treating table formed as a helix about a vertical axis, mounted for cyclic rotational vibration within a refractory lined housing having arcuately spaced vertically extending heating means, the housing including a removable cover providing means for journaling the upper end of the table whereby to permit vertical expansion and contraction of the table relative to the housing and to facilitate removal and replacement of the table; workpiece feed platform and apron to supply workpieces through a supply chute to the upper end of the table including means for reciprocatingly vibrating the platform and apron and for rotationally vibrating the helical table, and having atmosphere control means providing a flame curtain inhibiting the entrance of oxygen; a lower discharge chute from the table into a quench tank, and means for controlling the entrance of gas from the tank into the furnace housing; and buffer means at upper and lower ends of the table to minimize shock and torsional stress during rotational vibration of the table.

3,469,832
APPARATUS FOR MAKING STEEL BY THE BASIC OXYGEN PROCESS
Ross B. McCready, Alliance, and Klaus W. Forster, Brecksville, Ohio, assignors to Kerma Corporation, Alliance, Ohio, a corporation of Ohio
Continuation-in-part of application Ser. No. 514,321, Dec. 16, 1965. This application July 25, 1966, Ser. No. 567,721
Int. Cl. C21c *5/50;* **F27d** *3/12*
U.S. Cl. 266—39 **3 Claims**



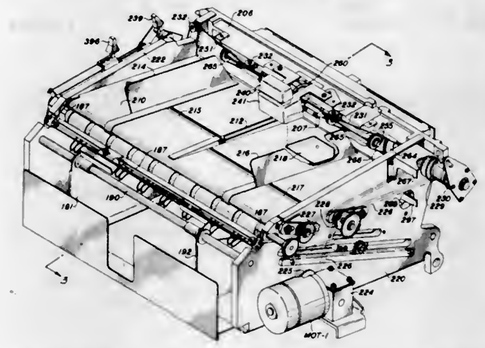
An apparatus for making steel by the basic oxygen process wherein the furnace includes a plurality of wheeled trucks for facilitating movement to and from normal operating or blowing position for such operation as charging, pouring, servicing, etc.

3,469,833
HYDRAULIC SHOCK AND SWAY ARRESTOR
Leonard S. Suozzo, 366 Maple Hill Drive, Hackensack, N.J. 07601
Filed Mar. 27, 1967, Ser. No. 626,185
Int. Cl. F16f *9/00;* **F16d** *57/00*
U.S. Cl. 267—69 **10 Claims**



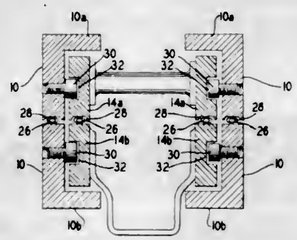
An arrangement of hydraulically operated control apparatus, which is anchored to a stationary support and is connected to equipment, such as high temperature piping, for protecting the equipment against shock loading or undesirable vibratory movement while permitting normal movement of the equipment due to changes in temperature conditions.

3,469,834
SHEET FEEDER AND SEPARATOR APPARATUS
Klaus K. Stange, Pittsford, Adalbert A. Lux, Penfield, and Thomas B. Michaels, Rochester, N.Y., assignors to Xerox Corporation, Rochester, N.Y., a corporation of New York
Filed Apr. 21, 1967, Ser. No. 632,793
Int. Cl. B65h *5/16, 5/06*
U.S. Cl. 271—10 **21 Claims**



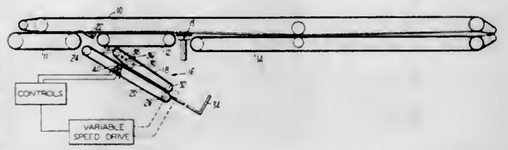
Apparatus for automatically and manually feeding documents to a xerographic machine in which a stack of sheets to be serially advanced are adjustably supported in contact with a friction drive wheel engaging the uppermost sheet in the stack. The sheets are advanced thereby into the wrap formed between a stationary retarding roll or abutment member which is in substantial contact with the moving surface of a belt member. Adhering overlapping sheets are separated by the abutment member as they are advanced through the wrap. The uppermost sheet in the wrap is advanced by the belt to engage a sheet interrupter before being released to a pair of continuously rotating friction rolls which deliver the sheet to the moving transport of the xerographic machine. Apparatus is also provided for inhibiting release of the sheet interrupter and an engaged sheet, in the event that a malfunction in the feeder-separator apparatus occurs. For manual feeding operations the abutment member is positioned out of contact with the belt and a sheet inserted to contact the interrupter forming a hump or buckle therein. Thereafter, the sheet is released to contact the continuously rotating friction rolls for delivery to the moving transport of the xerographic machine.

3,469,835
TRANSPORT DEVICE FOR A SHEET OF MATERIAL
William L. Calvert, Westfield, N.J., assignor to Union Carbide Corporation, a corporation of New York
Filed Aug. 30, 1967, Ser. No. 664,454
Int. Cl. B65h *5/04, 29/46*
U.S. Cl. 271—54 **5 Claims**



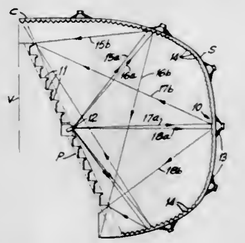
A transport device for a sheet of material comprising at least one parallel pair of stationary clamps and at least one parallel pair of movable clamps, the latter being located inboard of and immediately adjacent to the former. Each of the stationary clamps has an upper rail and a lower rail, mounted one above the other and separated by a slot sufficient to accommodate the passage of a bag film therebetween. Similarly each of the movable clamps has an upper and a lower rail, reciprocatably mounted one above the other and separated by a slot sufficient to accommodate the passage of a bag film therebetween. The slots between the stationary and movable clamp rails lie in a common plane. Guide means are further provided for permitting longitudinal reciprocatable motion of the movable clamps, and means are disposed in the slots for gripping and releasing the film bag when a portion of the film bag is disposed within the slots. In addition thereto, means is provided to impart reciprocal motion to the movable clamps.

3,469,836
SHEET HANDLING AND SAMPLING APPARATUS
Farhang Javid, Willimantic, Conn., assignor to Cameron Machine Company, a corporation of New York
Filed Nov. 29, 1966, Ser. No. 597,692
Int. Cl. B65h *29/62*
U.S. Cl. 271—64 **8 Claims**



In a high speed sheet handling apparatus having a conveying means extending along a first path, a sampling device including second conveying means extending along a second path disposed in downwardly inclined relation to the first path, and sheet sensing means positioned in said downwardly inclined second path, the second conveying means having control means for reducing the speed of deflected sheets, and the sheet sensing means having a signal means for operating the control means in response to the presence of a deflected sheet as its trailing edge leaves the first path.

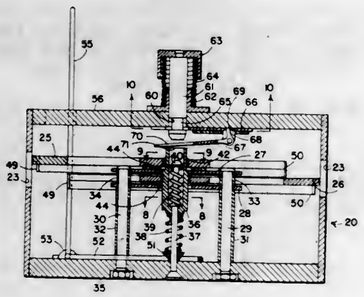
3,469,837
EXPERIENCE THEATER
Morton L. Heilig, 60 Riverside Drive, New York, N.Y. 10024
Filed Mar. 9, 1966, Ser. No. 533,017
Int. Cl. A63j *5/00;* **G03b** *31/00, 21/56*
U.S. Cl. 272—8 **10 Claims**



An experience theater is provided comprising a projection screen of concave configuration of substantially hemispherical sweep embracing substantially the entire normal field of vision of a spectator viewing the screen horizontally from a seated position, a projection system capable of wide angle projection located substantially centrally of the concave screen, a plurality of loudspeakers located within

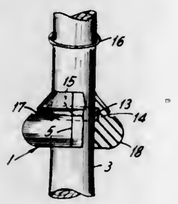
said theater to provide sound effects, and a plurality of viewing chairs whose plane of support is steeply inclined to an imaginary plane extending vertically downward from the ceiling of said theater, the plane of support of said chairs subtending in the vertical direction the substantially hemispherical sweep of said concave screen.

3,469,838
ROTATABLE DISC INDICIA MATCHING GAME DEVICE
Albin Thum, 39—22 Van Ryper Place, Fair Lawn, N.J. 07410; Fred Thum, 472 Sutton Ave., Hackensack, N.J. 07601; and Walter Thum, 12—42 Sunnyside Drive, Fair Lawn, N.J. 07410
Filed June 22, 1966, Ser. No. 559,468
Int. Cl. A63f *4/04*
U.S. Cl. 273—1 **13 Claims**



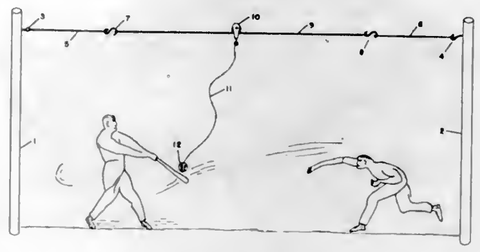
A game in which two rotatable members marked with different symbols have polygonally-shaped central openings. The two members are rotatable independent of each other about a slidingly rotatable column having a portion of polygonally-shaped cross-section. The symbols on one member are not visible to the player rotating the other member. When both members are rotated to correspond to the same symbol, the polygonally-shaped openings are aligned, and the column may be slid to project through the central openings.

3,469,839
BASEBALL BAT CHOKE DEVICE
Joseph A. Pietronuto, 3231 Lafayette Ave. 10465, and Robert Sands, 3235 Cambridge Ave. 10463, both of Bronx, N.Y.
Filed Sept. 20, 1966, Ser. No. 580,714
Int. Cl. A63b *59/06, 69/00*
U.S. Cl. 273—25 **1 Claim**



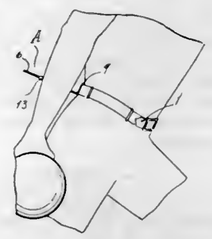
The present invention provides an adjustable bat choke of a flexible material having the characteristics of a bat end. The bat choke generally includes a cleavage line extending along the length of the bat choke body and gripping means of spring-like characteristics to maintain the bat choke on a bat. The spring means generally conform to the circumferential outer periphery of the choke and extends substantially completely around the bat choke in closed position.

3,469,840
PITCHING AND BATTING DEVICE
Joseph John Kruzel, United States Air Force, CRM 1, Box 3, APO San Francisco 96553
Filed Dec. 19, 1966, Ser. No. 602,606
Int. Cl. A63b *65/12, 67/10*
U.S. Cl. 273—26 **1 Claim**



A game apparatus played by two persons. One person pitches a tethered ball to the other person who swings at the pitched ball. The ball is attached to a cord which is fastened to a pulley which travels on a level traverse line. The line is attached at its ends to S-hooks which are connected to two supports.

3,469,841
BOWLING GUIDE
William G. McKee, 6911 Zaharias Court, Oakville, Mo. 63120
Filed May 2, 1966, Ser. No. 546,981
Int. Cl. A63b *69/00;* **A63d** *5/00*
U.S. Cl. 273—54 **6 Claims**

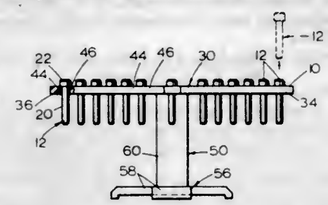


A bowling guide for assisting a bowler in controlling his back swing in a bowling ball delivery utilizing a frame which is readily mounted on a waist belt of the bowler and a feeler arm supported by the frame for disposition across the path of swing of a bowler during the ball delivering operation.

3,469,842
GAME PROJECTILES AND SUPPORT THEREFOR
Dale K. Welbourn, Box 26, Neola, Iowa 51559
Filed Feb. 21, 1966, Ser. No. 528,917
Int. Cl. A63f *9/02;* **A63b** *65/12*
U.S. Cl. 273—95 **3 Claims**

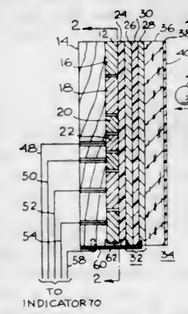
A game having a platform with vertical openings therethrough, pegs disposed in said openings, the pegs having enlarged head portions of larger size than the openings and having shank portions adapted to be received through the openings, the shank portions each having straight

sides to facilitate the gripping thereof by a player, and means to support the game board so that an area there-



beneath is open to facilitate the striking of an underside of a stick to propel it into the air for manual catching.

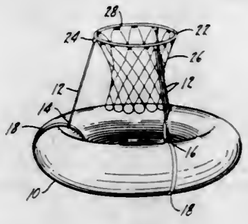
3,469,843
ELECTRICAL TARGET WITH IMPACT-DEFORMING ELECTRODE
Joseph W. Hubbard, Los Angeles, Calif. (26573 Basswood St., Palos Verdes Peninsula, Calif. 90274)
Filed Aug. 13, 1965, Ser. No. 479,409
Int. Cl. A63b *71/06*
U.S. Cl. 273—102.2 **12 Claims**



There is disclosed herein an improved toy target arrangement in which electrically conductive or non-conductive projecticles impinge upon the target structure to cause at least a momentary electrical contact between a first electrode and a second electrode which are normally separated by an insulating layer. The projectile need not penetrate completely through the target structure for electrical contact between the electrodes to be made. A resilient layer is also positioned between the first and second electrodes and may, if desired, also be the insulating layer. After the projectile impinges upon the structure the resiliency of the resilient layer separates the two electrodes to terminate electrical contract therebetween. An indicating circuit is provided to indicate selectively by means of a visual signal the particular portion of the toy target that is struck by the projectile. The visual signal persists for a predetermined time period despite the only momentary contact between the electrodes in the target structure. A switch is provided to manually reset the circuitry to terminate the visual signal and reset the circuitry to indicate the next hit by the projectile.

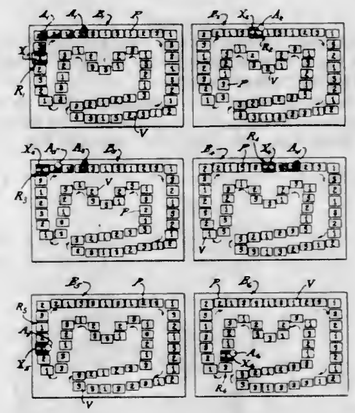
3,469,844
APPARATUS FOR WATER BASKETBALL GAME
James A. Sindelar, Brookfield, Ill., assignor to Sindelar Water Basketball Co., Brookfield, Ill., a partnership of Illinois
Filed Oct. 14, 1966, Ser. No. 586,827
Int. Cl. A63b *63/00*
U.S. Cl. 273—105 **8 Claims**

A water basketball apparatus comprising an annular flotation ring, preferably formed by an inflatable tube, and a basketball hoop supported on the flotation ring. There are a plurality of generally equally spaced support members extending upwardly from the flotation ring



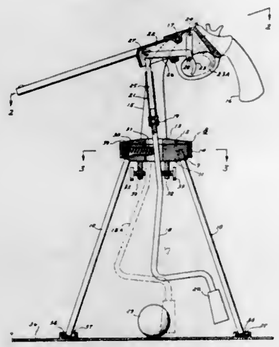
which are secured to and support the basketball hoop at their upper ends. The generally equally spaced support members have lower ends which cooperate with straps to secure the support members to the flotation ring.

3,469,845
BOARD GAME APPARATUS WHEREIN ADVANCEMENT OF PIECES IS CONTROLLED BY MOVEMENTS OF OTHER PIECES
Harlow B. Grow, 16530 Chattanooga Place, Pacific Palisades, Calif. 90272
Filed Mar. 28, 1966, Ser. No. 537,814
Int. Cl. A63f *3/00*
U.S. Cl. 273—134 **3 Claims**



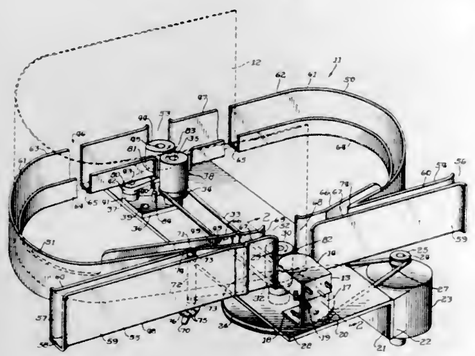
A game apparatus comprising a plurality of identical game boards, and a playing piece and a marker for each board, the boards being provided with a closed-loop path consisting of a series of placements which are individually identified by color and arranged in a repeated color sequence, each placement having a predetermined indicated value, and the total value of each of the several paths being the same. The playing pieces are of different colors corresponding to those of the placements, and the markers are positioned on different placements on the several boards. The game is started by moving the piece on any board an arbitrarily selected number of placements, the color and value of the placement to which the piece is moved determining which piece is to be moved next and to what placement. The advancement of the pieces across the boards therefore is determined by the initial move.

3,469,846
APPARATUS FOR PLAYING MINIATURE GOLF
Henry E. Lippert, 130 SW. 12th St., Miami, Fla. 33130
Filed Mar. 26, 1968, Ser. No. 716,134
Int. Cl. A63b *67/02, 65/12*
U.S. Cl. 273—176 **10 Claims**



A tripod supported rotatable turret mounts a gun which has its trigger operatively connected to a golf club pivotally carried by the turret and adapted to drive golf balls to the gun's point of aim. The point of aim may be an inclined surface including apertures simulating the different holes of a golf course.

3,469,847
TRANSPORT DEVICE FOR PERMITTING CONTINUOUS OR SINGLE PLAY OF A MAGNETIC RECORD CARD
Fred G. Kral, Berwyn, Ill., assignor to Bell & Howell Company, Chicago, Ill., a corporation of Illinois
Filed Aug. 13, 1965, Ser. No. 479,562
Int. Cl. G11b *5/02*
U.S. Cl. 274—4 **1 Claim**



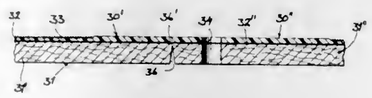
A mechanism for transporting magnetically striped record cards in a guide track past a magnetic transducer selectively for a single pass or plural passes. A pivotable switch gate in the guide track is movable selectively between a straight line single pass condition and a card turn-out condition to guide the card into arcuate track portions wherein the card again passes the transducer and the switch gate.

3,469,848
FLUOROCARBON SOUND RECORD
Salvatore S. Mulay, Roslyn Heights, N.Y., assignor to Tri-Point Industries, Inc., Commack, N.Y., a corporation of New York
No Drawing. Filed Apr. 11, 1966, Ser. No. 542,430
Int. Cl. G11b *9/02*
U.S. Cl. 274—41 **2 Claims**

A rigid phonograph disc record made essentially of a fluorocarbon plastic selected from the group consisting of polytetrafluoroethylene, polychlorotrifluoroethylene, polyfluoroethylenepropylene, and polyvinylidenefluoride, with or without a stainless steel backing, and specifically the process for making a polytetrafluoroethylene sound record disc with a recessed circular spiral grooved sound track, the process including:

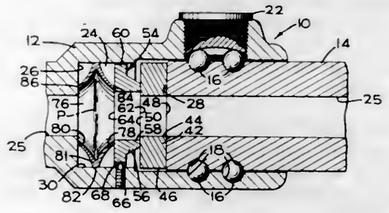
(1) making a laminated record blank;
(2) cutting a spiral groove in said blank;
(3) electroforming a reverse metal pattern on the record disc; and
(4) stripping the metal pattern and utilizing same as a die.

3,469,849
FOLDABLE RECORDING
Harry Gorman, Bronx, N.Y. (200 W. 54th St., New York, N.Y. 10019)
Filed May 20, 1966, Ser. No. 551,684
Int. Cl. G11b *25/04*
U.S. Cl. 274—42 **9 Claims**



A phonograph record in which a spiral record track is impressed into a layer of flexible material laminated to a substrate which is scored along its side remote from the flexible layer. It is scored to a depth less than its thickness and along a line lying within the outline of the recording track. The record is folded inwardly (to enclose the track) along the flexible layer at the score line and, because of inherent elasticity of this flexible layer, the phonograph record can be flattened without significant distortion of the record. Other features of the invention appear in the following specification and in the accompanying drawing.

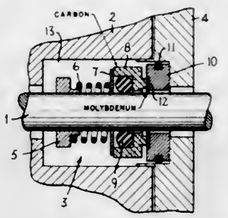
3,469,850
PACKING FOR A FLUID JOINT
Donald M. Jackson, Whittier, and Joseph F. Gierut, Fullerton, Calif., assignors to FMC Corporation, San Jose, Calif., a corporation of Delaware
Filed Feb. 25, 1966, Ser. No. 530,223
Int. Cl. F16j *15/34, 15/32*
U.S. Cl. 277—83 **5 Claims**



A packing for a fluid conduit swivel joint or the like, including an annular flexibly resilient pressure extensible member with at least one annular inwardly bowed and

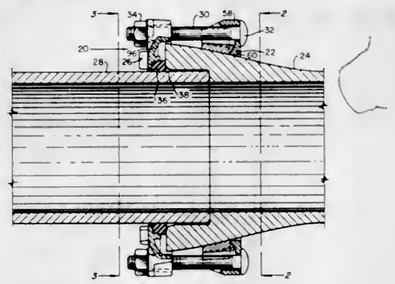
tapered flange of generally frusto-conical configuration extending radially inwardly from an outer annular rim, and in two embodiments an annular rigid member providing a bearing surface for the end sealing face of the flange.

3,469,851
PUMP SHAFT SEAL
Arne F. Enemark, Sonderborg, Denmark, assignor to Danfoss A/S, Nordborg, Denmark, a corporation of Denmark
Filed Sept. 14, 1965, Ser. No. 487,139
Claims priority, application Germany, Sept. 18, 1964, D 45,458
Int. Cl. F16j *15/34, 15/54*
U.S. Cl. 277—85 **6 Claims**



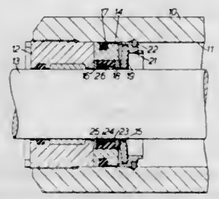
A packing box shaft seal in which a resilient ring seal on the shaft is enclosed circumferentially by a carbon cup-shaped ring or sleeve that applies the resilient ring seal radially inwardly circumferentially of the shaft to preclude leakage along the shaft. The carbon ring precludes leakage from the packing box by having an end surface thereof biased against a molybdenum face surface circumferentially of the shaft where it extends out of the stuffing box out of a casing.

3,469,852
LEAK CLAMP FOR BELL AND SPIGOT PIPE JOINT
Telford L. Smith, Millbrae, Frank E. Turner, San Mateo, and Walter M. Smyk, South San Francisco, Calif., assignors to Smith-Blair, Inc., South San Francisco, Calif., a corporation of California
Filed Oct. 23, 1965, Ser. No. 503,932
Int. Cl. F16j *15/00;* **F16l** *19/00*
U.S. Cl. 277—101 **8 Claims**



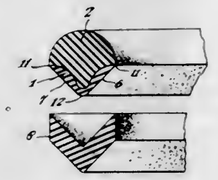
A clamp for installation at a bell and spigot pipe joint comprises a two-piece spigot ring which retains a gasket and a two-piece bell ring drawn together axially by connecting bolts. Both the spigot and bell ring members have end connectors that overlap and interlock and hold the members more firmly together as the bolts are tightened. The spigot ring connectors each have overlapping offset bolt retainer portions and a tapered stud means which fits within a mating, tapered lug opening. The bell ring connectors each have a bolt retainer portion with an adjacent slot and a beveled surface at one end and a mating, tapered lug portion at its other end adapted to fit in the slot plus a cam-like member adapted to bear against the beveled surface and force the two bell ring members together when the bolts are tightened.

3,469,853
SEALING DEVICES
Denzil S. Gullick, Shurdington, Cheltenham, Gloucester, England, assignor to Dowty Rotol Limited, Gloucester, England, a British company
Filed Dec. 28, 1966, Ser. No. 605,318
Claims priority, application Great Britain, Dec. 30, 1965, 55,285/65
Int. Cl. F16j *15/16, 15/56*
U.S. Cl. 277—112 **5 Claims**



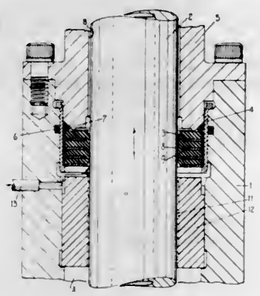
A sealing device for use at very high fluid pressures, for example, for sealing the piston and cylinder members of a liquid spring, comprises a housing in one of the members having an annular recess which receives a ring assembly including a first sealing ring, a second sealing ring of tougher material and an anti-extrusion ring slidably engaging the other of the members, and a loading ring of material more flexible than that of the first sealing ring filling the remaining space between the base of the recess and the ring assembly, a substantially rigid movable ring slidably engaging both the base of the recess and the said other of the members, and a spring acting against the movable ring to compress the loading ring.

3,469,854
HEADER RING
Derek Arthur Linwood, Hampton, England, assignor to Hall & Hall Limited, Hampton, Middlesex, England, a company of Great Britain and Northern Ireland
Filed Nov. 4, 1966, Ser. No. 592,130
Int. Cl. F16j *15/16, 15/48, 15/32*
U.S. Cl. 277—124 **2 Claims**



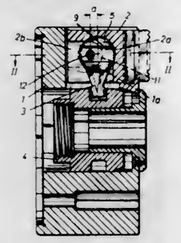
A header ring for use with V-ring assemblies is provided of unitary construction and is made up of two portions, one being a header member and the other a body member. Both are of elastomeric material but the body member is harder than the header member. The base of the body member is specially adapted so as to be of a convex shape which can be received in the concave face of a V-ring. When thus positioned, the header ring and its adjacent V-ring form a packing assembly in which the header ring itself has a sealing action.

3,469,855
PACKING DEVICES FOR SEALING THE PASSAGE OF A PISTON ROD THROUGH A WALL
Jannes Enting, Amsterdam, Netherlands, assignor to Werkspoor N.V., Amsterdam, Netherlands, a company of the Netherlands
Filed Jan. 26, 1967, Ser. No. 611,877
Claims priority, application Netherlands, Jan. 31, 1966, 6601181
Int. Cl. F16j *15/18, 15/56*
U.S. Cl. 277—235 **6 Claims**



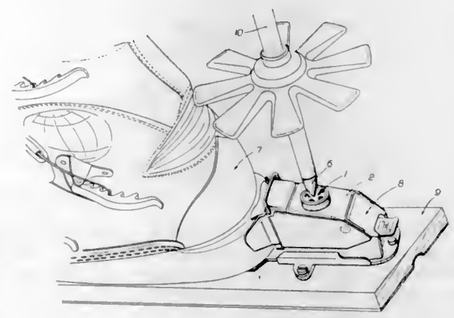
A seal for a reciprocating rod passing through a wall or partition separating chambers subjected to different pressures and which contain fluids which are to be confined within their respective chambers, the seal being in the form of a tubular body of resilient material having an annular intermediate bore portion of uniform diameter adapted to seal against the rod with a predetermined sealing pressure, and tapered bore portion at the opposite ends of the body which clear the rod. Spring washers are embedded in the body and anchored at their peripheries to prevent such axial compression of the body as would cause undue radial sealing pressure to be exerted against the rod.

3,469,856
JAW CHUCK
Karl Deuring, Dusseldorf, and Hans Scharfen, Buderich, Germany, assignors to Paul Forkardt Kommanditgesellschaft, Dusseldorf, Germany
Filed May 19, 1966, Ser. No. 551,448
Claims priority, application Germany, May 22, 1965, F 46,128
Int. Cl. B23b *31/16, 5/22, 5/34*
U.S. Cl. 279—119 **4 Claims**



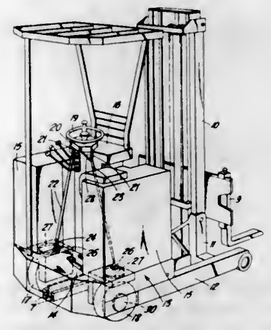
Operating structure for chucks having plural jaws movable radially in response to axial reciprocation of a central sleeve transmitting force to angle levers journalled by the jaws. Each jaw has side walls in which transverse bores provide coaxial recesses for journalling pivot portions of the levers, one side wall having a slot extending from one bore recess to an outward jaw end able to receive a respective lever arm of one angle lever during pivotal assembly to each other. The lever pivot portions include a groove and keyway end interfit to a pivot means carried in the chuck body so that an axis offset eccentrically from that of lever pivot portions is formed at lever arm length capable of variation in force transmitting capability during maintenance of lever arm strength of the angle levers.

3,469,857
SKI BINDING
Thomas G. Smolka and Gottfried Schweizer, Vienna, Austria, assignors to Wiener Metallwarenfabrik Smolka & Co., Mauer, Austria, a corporation of Austria
Filed Dec. 26, 1967, Ser. No. 693,338
Claims priority, application Austria, Jan. 4, 1967, A 85/67
Int. Cl. A63c *9/00;* **H01f** *1/00, 7/04*
U.S. Cl. 280—11.35 **3 Claims**



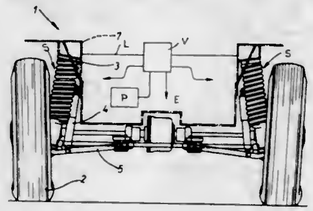
A ski binding which is capable of being opened with a ski pole or manually, which comprises a portion of the ski binding which engages a ski pole, and a magnet comprises a catching magnet for the ski pole.

3,469,858
VEHICLE DIFFERENTIAL STEERING MECHANISMS
Cecil Goodacre, Basingstoke, England, assignor to Lansing Bagnall Limited, Basingstoke, Hampshire, England, a British company
Filed Jan. 2, 1968, Ser. No. 695,104
Claims priority, application Great Britain, Jan. 4, 1967, 479/67
Int. Cl. B62d *1/20, 3/02;* **B60p** *1/02*
U.S. Cl. 280—93 **12 Claims**



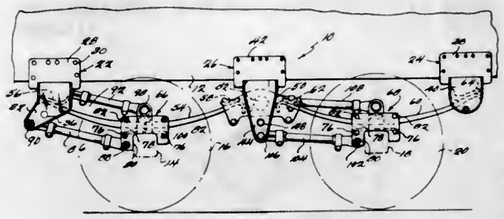
A vehicle, e.g., an industrial lift truck is provided with two steerable ground wheels spaced apart across the vehicle, each ground wheel being rotatable by gearing connected by a universal joint to one end of a propeller shaft, propeller shafts extending upwardly and preferably inwardly and being connected by further universal joints at their upper ends to further gearing, the said further gearing associated with each propeller shaft being rotatable by means of a hand wheel and being connected together by a differential mechanism.

3,469,859
MOTOR VEHICLE SUSPENSIONS
Dante Giacosa, Turin, Italy, assignor to Fiat Societa per Azioni, Turin, Italy
Filed Dec. 5, 1967, Ser. No. 688,064
Claims priority, application Italy, Dec. 9, 1966, 56,386
Int. Cl. B60g *5/00, 11/00*
U.S. Cl. 280—96.2 **12 Claims**



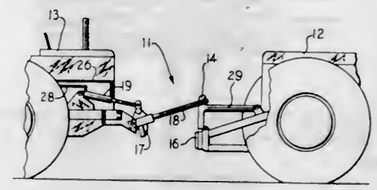
A vehicle suspension has a helical spring and a pressure operated piston at one end of the spring which is operative to engage a rigid support rod fast with the other end of the spring to lock the suspension when required.

3,469,860
SPRING MOUNTING
Charles T. Hutchens, Springfield, Mo., assignor to Hutchens and Son Metal Products, Inc., Springfield, Mo., a corporation of Missouri
Filed July 21, 1967, Ser. No. 655,119
Int. Cl. B60g *11/04, 11/10*
U.S. Cl. 280—104.5 **5 Claims**



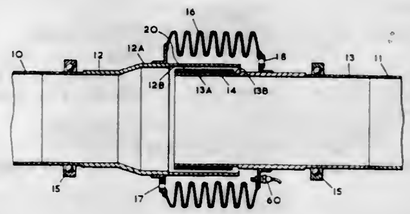
An assembly for suspending a vehicle frame on a pair of wheeled tandem axles in which the axles are connected with the central portions of leaf springs by means of pads of resilient material bonded between the axle and leaf spring so as to permit a limited resilient pivotal movement of the axle with respect to the spring occasioned by brake application to the wheels of the axles so as to more evenly distribute the braking forces to the ends of the springs connected with the vehicle frame and thereby eliminate brake hopping.

3,469,861
HYDRAULIC CONTROL CIRCUIT FOR PUSH-PULL COUPLING OF TANDEM MACHINES
Lawrence F. Schexnayder, Will County, Ill., assignor to Caterpillar Tractor Co., Peoria, Ill., a corporation of California
Filed Nov. 22, 1967, Ser. No. 685,155
Int. Cl. B60d *1/16, 3/00;* **F15b** *15/00*
U.S. Cl. 280—479 **4 Claims**



A hydraulic control circuit having a double-acting hydraulic jack for engaging and disengaging a bail on a rearward implement with relations to a hook on a forward implement to permit selective push-pull tandem operation thereof. A two-position valve selectively directs fluid under pressure to the head or rod end of the jack. A relief valve in communication with each end of the jack limits fluid pressure therein.

3,469,862
EXPANSION JOINTS WITH FROZEN SEALS
George William Conibeer, Whetstone, England, assignor to The English Electric Company Limited, London, England, a British company
Filed Mar. 8, 1966, Ser. No. 532,761
Claims priority, application Great Britain, Mar. 9, 1965, 9,963/65
Int. Cl. F16l *27/10, 27/12*
U.S. Cl. 285—41 **1 Claim**

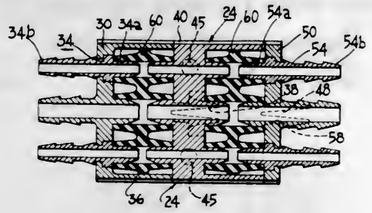


Various forms of spigot-type expansion joints for pipelines, incorporating freeze seals, are described. The inner of the two spigot (joint) members is thermally insulated so as to be less conductive than the outer joint member. The outer end of the annular space, in which the frozen sealing material is situated, is protected by an inert atmosphere.

3,469,863
FLUID COUPLING ASSEMBLY
William C. Riester, Williamsville, and Bronislaus S. Graczyk, Snyder, N.Y., assignors to Trico Products Corporation, Buffalo, N.Y.
Filed Apr. 5, 1967, Ser. No. 628,720
Int. Cl. F16l *39/02, 37/00*
U.S. Cl. 285—137 **13 Claims**

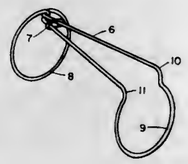
Coupling terminals for connecting conduit harnesses in a fluid system for operating auxiliary equipment in motor vehicles utilizing a series of interlocking connectors

to secure one harness of conduits to other harnesses. The terminals are keyed by asymmetry of the conduit connectors, the interlocking connectors or interengaging



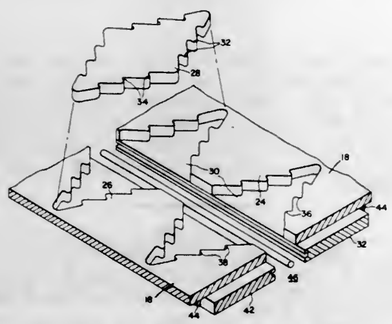
keyed male and female parts to assure that communication is effected between the proper conduits in different harnesses.

3,469,864
CONDUIT CONNECTOR
Fernando V. Guerrero, Solon, Ohio, assignor to Continental Oil Company, Ponca City, Okla., a corporation of Delaware
Filed June 19, 1967, Ser. No. 647,153
Int. Cl. F16l *37/00*
U.S. Cl. 285—308 **5 Claims**



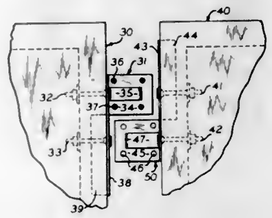
Restraining clamp for holding two conduits in endwise engagement. One end is fixed to a first conduit, and the other end engages the second conduit by encircling a protrusion thereon; the encircling member is held in a closed engaging configuration by a sliding clip.

3,469,865
JOINT STRUCTURE FOR USE IN LARGE CASINGS OR THE LIKE
George W. Ellenburg, Ardmore, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Feb. 24, 1964, Ser. No. 346,816
Int. Cl. F16b *3/00*; F16l *13/02*
U.S. Cl. 285—330 **9 Claims**



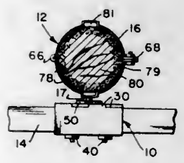
1. An annular joint structure for an elongated segmented tubular casing, said joint structure comprising juxtaposed joint structure portions formed on the confronting edge portions of an adjacent pair of annular segments comprising said casing, said juxtaposed joint structure portions each including a pair of openings in said edge portions, said openings facing each other and being defined by a plurality of spaced projections, the projections in one joint portion being disposed in peak-to-peak relationship with the projections respectively of the other of said joint structure portions, a key member inserted into each of the openings defined by said projections, means for securing each of said key members to each of the adjacent projections to prevent separation of the projections of one joint structure portion from the projections of the other joint structure portion, and at least one backup ring overlying said joint structure portions and said key members.

3,469,866
CONCEALED BUILDING PANEL FASTENER
Frederick R. Ashby and Donald F. Luebs, Carmel, N.Y., assignors to U.S. Plywood-Champion Papers Inc., a corporation of New York
Filed July 22, 1968, Ser. No. 746,328
Int. Cl. F16b *7/00, 9/00, 5/00*
U.S. Cl. 287—20.924 **9 Claims**



An improved wall panel fastener adapted to be used in pairs wherein a first fastener is attached both to the supporting wall and to a first panel and a second similar fastener is adapted to be attached to a second panel and to be interlocked with said first fastener.

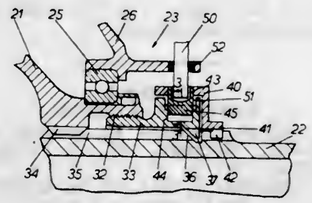
3,469,867
CONNECTOR FOR WOODEN MEMBERS
Robert O. Hawes, 1499 Highwood Drive, McLean, Va. 22101; Robert Z. Page, 7117 Kerr Drive, Springfield, Va. 22150; and Benjamin E. Reed, 4319 Satinwood Drive, Concord, Calif. 94521
Filed Feb. 8, 1966, Ser. No. 526,331
Int. Cl. F16b *7/00*; F16d *3/00*; E04c *3/00*; E04b *1/38*
U.S. Cl. 287—51 **13 Claims**



The description discloses a pair of connectors for partially treated wooden members. Each connector may include a clamp which is adapted to clamp against a respective structural member. Each clamp is provided with inwardly extending teeth which extend only within the treated zone of the wooden member when the clamp is in position. Each clamp may be provided with a respective external hollow housing so that the housings will receive a bolt-nut combination for joining the clamps together.

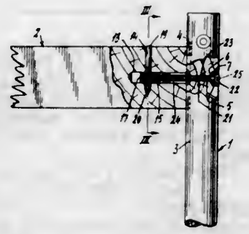
These housings may be provided with keyways is selected locations so that a key can join the clamps in a desired angular relationship.

3,469,868
COUPLING
Frederick Freeman and Peter King, Derby, England, assignors to Rolls-Royce Limited, Derby, England, a British company
Filed Sept. 25, 1967, Ser. No. 670,143
Claims priority, application Great Britain, Oct. 14, 1966, 46,105/66
Int. Cl. F16d *1/06*; F16c *3/10*
U.S. Cl. 287—52 **5 Claims**



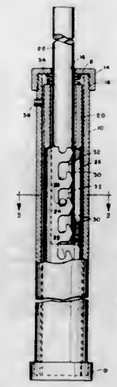
A coupling comprises first and second shafts having interengaging splines, and a coupling member which is rotatably connected to the first shaft. The coupling member and the second shaft are provided with abutment portions which may be brought into and out of alignment with each other on rotation of the coupling member to prevent and permit relative axial movement of the coupling member and the second shaft. A releasable locking device is provided for locking the coupling member to the second shaft with their abutment portions in alignment, release of the locking device permitting the coupling member to be rotated to bring the abutment portions out of alignment so that axial separation of the shafts may be effected.

3,469,869
FURNITURE CONNECTING MEANS
Theodoor Hubertus Ramakers, Heerlen, Netherlands, assignor to Meubelindustrie "Thereca" N.V., Kerkrade, Netherlands, a Dutch company
Filed Oct. 31, 1966, Ser. No. 590,815
Claims priority, application Netherlands, Nov. 3, 1965, 6514269
Int. Cl. F16b *7/00*; E04g *7/00*
U.S. Cl. 287—54 **5 Claims**



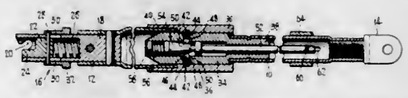
A leg of a piece of furniture is connected to a frame thereof by means of a head bolt which extends through a bore in the leg and is threadably engaged with a tubular nut member secured in a bore in the frame by a transverse pin passing through the nut member and anchored in the frame. A nylon sleeve is inserted into an enlarged portion of the bore in the leg and has an internal shoulder adapted to engage the head of the bolt.

3,469,870
TELESCOPIC STRUCTURE WITH ROTATABLE SHAFT
Homer A. Barkus, San Diego, Calif., assignor of fifty percent to Charles M. Barkus, Arcadia, Calif.
Filed Nov. 24, 1967, Ser. No. 685,653
Int. Cl. F16b *7/10*; E04d *15/14*
U.S. Cl. 287—58 **4 Claims**



A structure comprising a casing of indeterminate configuration and a shaft telescopically adjustable to any of a number of indexed positions, the concealed indexing element incorporating guide means by which each position can be readily located and selected, the shaft being securely locked at each position against telescopic movement but at any locked position the shaft and indexing element are rotatable within the casing of the structure under minor restraint, a frictional drag means effectively holding the indexing element against rotation while the shaft is being telescopically shifted.

3,469,871
RELEASABLE LOCKING DEVICE
Robert E. Betts, Ridgefield, Conn., assignor to Norco, Inc., Ridgefield, Conn., a corporation of Connecticut
Filed Aug. 14, 1967, Ser. No. 660,290
Int. Cl. F16d *1/00*; F16b *7/10*
U.S. Cl. 287—119 **5 Claims**

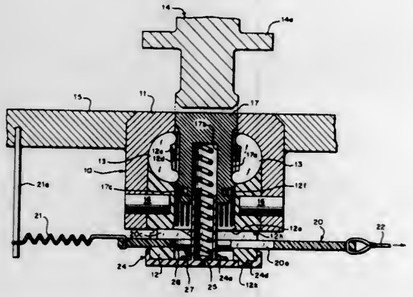


A releasable locking device comprising inner and outer telescoping members respectively having external and internal annular grooves in which arcuate locking dogs are disposed and radially movable. The inner member is tubular and has apertures in its walls, which communicate with the external groove of the member. Force transmitting balls in the apertures engage the insides of the dogs as well as engaging a conical portion of an axially movable release rod disposed in the bore of the inner member.

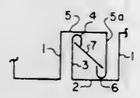
3,469,872
LOW PROFILE LOAD-RELEASING LOCK-ON COUPLING
Carl A. Damm, Upper Black Eddy, and Albert Carl Eichmann, Huntingdon Valley, Pa., assignors to the United States of America as represented by the Secretary of the Navy
Filed Nov. 9, 1967, Ser. No. 681,724
Int. Cl. F16b *7/00*; F16d *1/00*; F16l *21/00*
U.S. Cl. 287—119 **13 Claims**

A releasable coupling for attachment to a grooved lock-on stud including a plastic sprag cage member having

an annularly arranged plurality of projections defining semicircular recesses in one end thereof disposed about a fluted coaxial bore for slidingly receiving a corresponding plurality of semicircular sprag elements confined for rotation within respective recesses by a cap member, the cage member further including integrally formed therewith a ring disposed generally along the annular axis of rotation of the sprag elements and having projecting therefrom spring fingers which normally tend to urge respective sprag elements to rotate to a stud receiving position. The coupling further includes a spring-loaded sear plate movable transversely of the bore of the coupling having an aperture for locking a sprag engaging plunger in a position wherein the stud is engaged by the sprags and a pair of cam surfaces positioned adjacent the aperture for camming the plunger to cause release of the stud.



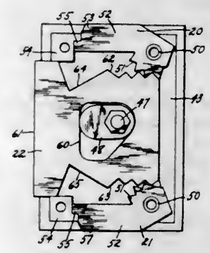
3,469,873
JOINT WITH PLANAR CONNECTOR MEMBER
Emanuel Michael Glaros, 240 Cascade Road, Pittsburgh, Pa. 15221
Filed Aug. 15, 1966, Ser. No. 572,385
Int. Cl. F16b *1/00, 5/00, 7/00*
U.S. Cl. 287—189.36 **2 Claims**



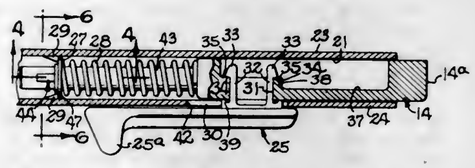
A sheet metal joint connecting adjacent panels made up of a downwardly opening groove at the edge of one panel and an upwardly opening groove at the edge of the adjacent panel, said panel edges overlying one another to enclose said grooves, said grooves facing each other and a generally flat planar member extending between the bottoms of the two grooves in contact with each and held in said grooves by the side thereof.

3,469,874
COIN VAULT DOOR LOCK CONSTRUCTION
Leonard Mercurio, Plainview, N.Y., assignor to Appliance Operating Corporation, Long Island City, N.Y.
Filed Jan. 29, 1968, Ser. No. 701,275
Int. Cl. E05c *9/12, 7/00*
U.S. Cl. 292—5 **1 Claim**

A coin vault door lock construction including first and second generally parallel wall members of rectagular configuration, and corresponding to a similarly shaped opening in a vault, one of said walls having a locking lip engageable with one edge of the opening, the other edge being provided with internally withdrawable locking members which are simultaneously extended to secure the remaining three edges of the door within the opening upon rotation of the lock element.



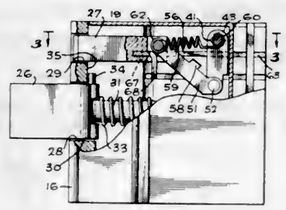
3,469,875
LATCHING ASSEMBLY
Axel W. Ahlgren, Rockford, Ill., assignor to Amerock Corporation, Rockford, Ill., a corporation of Connecticut
Filed Nov. 6, 1967, Ser. No. 680,869
Int. Cl. E05c *1/10, 1/04*
U.S. Cl. 292—175 **2 Claims**



A latching assembly installed in the extruded plastic frame of a storm window and comprising a bolt subassembly inserted into the frame through an edge opening, and a handle subassembly overlying a slot in the side of the frame with a stud extending through the slot and locked in a socket in the bolt. The stud comprises two spaced legs of flexible plastic with snap-locking abutments on their free ends so that the handle is installed after the bolt is in place. A spring is telescoped onto a plastic stem on the bolt and compressed thereon between the bolt and a retainer disk held in place by projections that are radially compressible as a result of a slot in the stem between the projections. This disk engages sheared stops in the bolt recess in the frame to resist retraction of the bolt. In alternative forms, the spring is formed integrally with the bolt bar as a zigzag strip and as a helical coil.

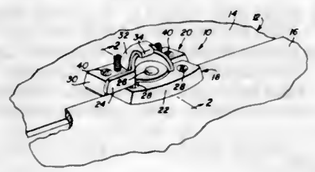
3,469,876
UNIT LOCK DUAL DEAD BOLTS
Fred J. Russell, South Gate, Richard L. Armstrong, Santa Fe Springs, and Vernard W. Sanders, Los Angeles, Calif., assignors, by mesne assignments, to Norris Industries, Inc., Los Angeles, Calif., a corporation of California
Filed Feb. 27, 1967, Ser. No. 618,680
Int. Cl. E05c *1/06, 1/12*
U.S. Cl. 292—177 **8 Claims**

The structure herein disclosed is applicable primarily to a type of lock frequently designated in the trade as a unit type lock. This is a lock which in completely assembled form is applied to a door by inserting it in a cutout extending from the free edge of the door inwardly, the unit type lock being such that it entirely fills the cutout portion of the door with a portion of the lock on opposite sides being flush with opposite faces of the door. In this respect it differs from various other typical lock constructions. The unit type lock herein disclosed is provided with a latch bolt, pivotally mounted inside the end wall of the lock casing, and adapted to be manipulated by a spring-pressed tailpiece. Since unit type locks are customarily built to provide greater security than other conventional type locks, a dead bolt usually is reciprocatably mounted in the case spaced from, but adjacent to the latch bolt, the dead bolt being manipulated by a separate mechanism. In the disclosure here under consideration there is a separate handle for the dead bolt actuating mechanism which, when rotated, operates a spring-biased



linkage to extend the dead bolt to locked position, in which position the spring-biased linkage is impelled over center by action of a torsion spring to hold it in locked position. Consequently, as long as this relationship is maintained, the dead bolt cannot be pried out of locked position. At the same time, an extension on the dead bolt falls into position overlying a complementary extension on the latch bolt and the latch bolt is simultaneously anchored in locked position against prospect of being pried to open position.

3,469,877
ADJUSTABLE LATCH
Charles H. Hutchison, Beaver, Pa.
(Rte. 4, Box 12–A, Danville Road, Decatur, Ala. 35601)
Filed June 30, 1967, Ser. No. 650,361
Int. Cl. E05c *3/04;* **E05b** *15/02*
U.S. Cl. 292—241 **9 Claims**



An adjustable latch for the releasable fastening of adjacent generally offset or overlapped portions of a closure and the like which comprises a latch member adapted to be secured to one portion of the closure and including a pivotally mounted latch cam which coacts with an adjustable latch keeper carried by an offset portion of the closure, which adjustable latch keeper is provided with means for adjusting the distance between the surface on which it is mounted and a latch cam detent carried thereby.

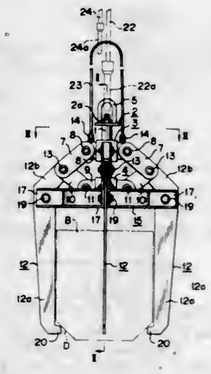
3,469,878
APPARATUS FOR SETTING CORNER IRONS
Alvie L. De Haan, 10841 SW. 63rd St., Portland, Oreg. 97219
Original application June 12, 1967, Ser. No. 645,449, now Patent No. 3,424,077, dated Jan. 28, 1969. Divided and this application Jan. 3, 1969, Ser. No. 788,734
Int. Cl. A47f *13/06*
U.S. Cl. 294—19 **3 Claims**

A tool for installing corner irons on the edge of a load of lumber or plywood comprising an extensible handle and a slotted holder mounted on one end thereof, the holder having a longitudinal axis disposed at an angle to the longitudinal axis of the handle. A corner iron inserted in the slotted holder is raised from the ground to a position in which its horizontal leg can rest on top of the edge of the load and is maintained in position



underneath the transversely-extending restraining cable used to hold the load in place until the cable is tightened, thereby to maintain the corner iron protectively in place on the edge of the load.

3,469,879
TONG DEVICE FOR METAL SCRAP BLOCKS
Kunitoshi Tezuka, 34, 7-chome, Minamisuna-machi, Koto-ku, Tokyo, Japan
Filed Apr. 24, 1967, Ser. No. 633,105
Claims priority, application Japan Dec. 29, 1966, 41/85,660
Int. Cl. B66c *1/28*
U.S. Cl. 294—106 **5 Claims**

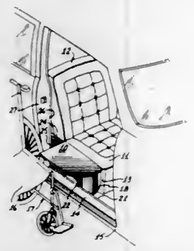


The present invention involves a device for supporting scrap metal blocks by means of tong arms for introduction within a furnace in which the blocks are to be melted, the construction of the device being such that the blocks are readily released by the device when deposited in the furnace whereafter the device is removable from the furnace without damaging the walls of the furnace.

3,469,880
PATIENT HANDLING APPARATUS
George H. Woodward, 11223 103rd Ave., Sun City, Ariz. 85351
Filed Dec. 21, 1967, Ser. No. 692,605
Int. Cl. B60n *1/12*
U.S. Cl. 296—1 **2 Claims**

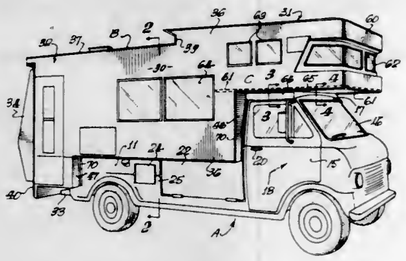
A patient handling platform seat demountably insert-

able between the end of an automobile seat and the vehicle body door column to provide an outward extension of the



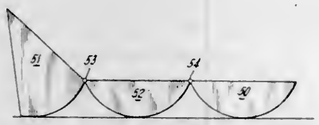
seat surface out over the door sill to facilitate moving the patient between a wheel chair and the automobile seat.

3,469,881
CAMPER CONVERTED FROM PANEL TRUCK AND METHOD OF CONVERSION
Merle Dwyer McNamee, Whittier, Calif. (2501 Rosemead Blvd., El Monte, Calif. 91733)
Continuation-in-part of application Ser. No. 667,311, Aug. 12, 1967. This application Oct. 7, 1968, Ser. No. 765,402
Int. Cl. B60p *3/32, 3/34*
U.S. Cl. 296—23 **10 Claims**



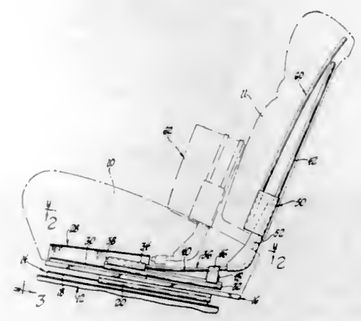
A mobile home of the camper type composed of a camper body combined with a panel truck so as to expand the space therein upwardly, laterally and rearwardly for a full complement of living quarter facilities.

3,469,882
PIECE OF FURNITURE
Johannes Peter Larsen, Vanlose Alle 61, Vanlose, Denmark
Filed May 15, 1967, Ser. No. 638,496
Claims priority, application Denmark, May 14, 1966, 2,483/66; Sept. 8, 1966, 4,618/66
Int. Cl. A47c *13/00*
U.S. Cl. 297—118 **6 Claims**



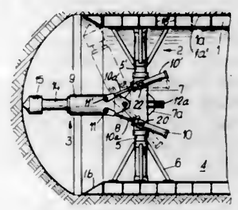
A piece of furniture having a geometric appearance when in folded position and in unfolded position presents a furniture unit which can be utilized as a chair or lying surface which changes its profile according to variations in weight distribution whereby the chair or lying surface adapts itself to the profile of the human body sitting or lying thereon.

3,469,883
SEAT ASSEMBLY
Hyland C. Flint, 3551 Walnut Lake Road, Orchard Lake, Mich. 48033
Filed July 20, 1967, Ser. No. 654,772
Int. Cl. B60n *1/06*
U.S. Cl. 297—353 **23 Claims**



An energy absorbing seat assembly in which a backrest is provided with support spring wire members extending downwardly and forwardly to engage a track assembly. The track assembly connects the support members to a base and permits the backrest to be moved forwardly and rearwardly relative to the base and a seat cushion to vary the distance between the front edge of the seat and the front surface of the backrest.

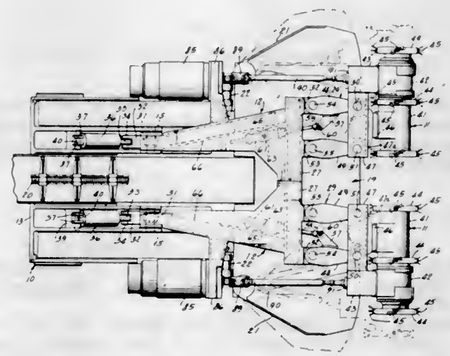
3,469,884
TUNNEL DRIVING SHIELD HAVING PIVOTALLY MOUNTED DRILLING BOOM
Gerhard Kampf-Emden, Essen, Germany, assignor to Demag AG, Duisburg, Germany
Filed July 14, 1967, Ser. No. 653,502
Claims priority, application Germany, Aug. 18, 1966, D 50,879
Int. Cl. E21d *23/08;* **E21c** *25/00*
U.S. Cl. 299—33 **11 Claims**



A tunnel excavating device includes a tubular shield which is advanced through the tunnel which is being bored and which includes cutting edges at its inner end for facilitating the advance thereof. A swivel mount for a drilling or cutting tool boom is secured to the upper half portion of the inner end of the tubular shield leaving the lower half portion free for the removal of the material which is cut away by the drilling tool as the tunnel is advanced. The swivel mount provides a vertical axis mount for the drilling boom on a swivel sleeve which is pivotal around a horzontal axis so that the boom is

universally movable. The boom carries a drill shaft portion which may be advanced or retracted as desired in order to orient a rotating drill head or mining head in respect to the ground being excavated. The arrangement is such that the drilling head may be oriented outwardly in front of the shield at any desired angle in order to remove the material ahead of the shield so that it can be continuously advanced as its boring proceeds.

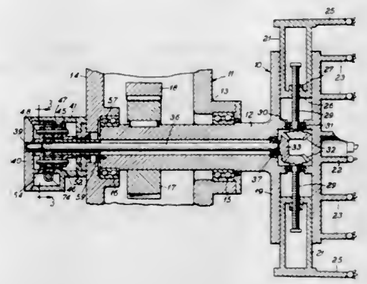
3,469,885
OSCILLATING CUTTER RIPPER MINER
Gustaf Albert Marberg, Oak Park, Ill., assignor to Westinghouse Air Brake Company, Pittsburgh, Pa., a corporation of Pennsylvania
Continuation of application Ser. No. 606,646, Jan. 3, 1967. This application Oct. 15, 1968, Ser. No. 770,888
Int. Cl. E21c *25/12*
U.S. Cl. 299—71 **8 Claims**



Oscillating mining head ripper type continuous miner having rotary ripper mining heads supported on vertically movable boom arms on parallelogram linkages. Individual motors connected between the boom arms and the parallelogram linkages oscillatably move the mining heads back and forth across the forward ends of the boom arms in a plurality of parallel vertical planes, extending parallel to the ribs of the working place.

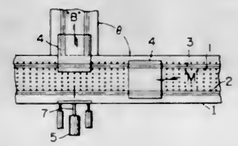
3,469,886
RADIAL ADJUSTMENT MEANS FOR BORING ARMS OF CONTINUOUS MINER
Gustaf A. Marberg, Oak Park, Ill., assignor to Westinghouse Air Brake Company, Pittsburgh, Pa., a corporation of Pennsylvania
Continuation of application Ser. No. 665,392, Sept. 5, 1967. This application Oct. 28, 1968, Ser. No. 771,694
Int. Cl. E21c *13/00*
U.S. Cl. 299—80 **7 Claims**

Cutting diameter adjustment actuator for the boring arms of the boring head of a continuous mining machine. The adjustment means comprises a central adjustment shaft extending through the hollow drive shaft for the boring head, which has drive connection with motion translating means, for radially adjusting the boring arms. The drive to the adjustment shaft is in the form of a double planetary geared reduction device, the pitches of the gears of which are identical. The planetary is directly connected between the hollow drive shaft, rotatably supporting the boring head and the adjustment shaft. An independent motor is provided to drive the ring gear of one planetary. The ring gear of the other planetary is connected to the main supporting housing for the boring head. The planetary pinions of the double planetary are mounted on a common carrier rotating about an axis coaxial with the axis of rotation of the adjustment shaft. The pinions meshing with the stationary ring gear also mesh with a sun gear rotatable with the hollow drive shaft for the boring head. The pinions meshing with the rotatable ring gear mesh with a sun gear keyed to



the adjustment shaft. The application of power to the rotatable ring gear effects relative movement between the hollow drive shaft and the adjustment shaft, to extend or retract the boring arms. When no power is applied to the ring gear, the two ring gears are held from rotation. This will hold the boring arms in selected positions of adjustment. Adjustment of the boring arms may, however, be attained by driving the rotatable ring gear by power either while the boring head is rotating or is stationary.

3,469,887
APPARATUS FOR BRANCHING OFF FLOATING ARTICLES
Shigeru Nakahara, Tokyo, and Yoichi Toyoda, Yokohama-shi, Japan, assignors to The Tsubakimoto Chain Mfg. Co., Ltd., Joto-ku, Osaka-shi, Japan, and Asahi Glass Co., Ltd., Marunouchi, Chiyoda-ku, Tokyo, Japan
Filed Apr. 24, 1967, Ser. No. 633,123
Claims priority, application Japan, Apr. 30, 1966, 41/27,391
Int. Cl. B65g *53/06*
U.S. Cl. 302—29 **2 Claims**



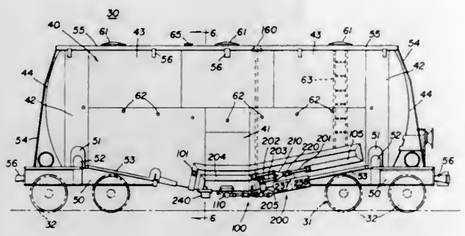
This invention relates to apparatus for branching off floatingly supported articles such as flat plates in a pressurized fluid or air cushion type conveyor, and includes a main transporting path for transporting a flat plate therealong, a sub-transporting path crossing the main path at a given angle θ and a positive advancing mechanism for pushing the plate onto the branch path at a branching portion.

3,469,888

RAILWAY CAR FOR TRANSPORTING PULVERULENT MATERIAL

Edmund R. Aller, Portage, Ind., and Paul E. Solt, Catasauqua, Pa., assignors to General American Transportation Corporation, Chicago, Ill., a corporation of New York

Filed Aug. 16, 1967, Ser. No. 660,952
Int. Cl. B65g *53/40*
U.S. Cl. 302—52 **36 Claims**



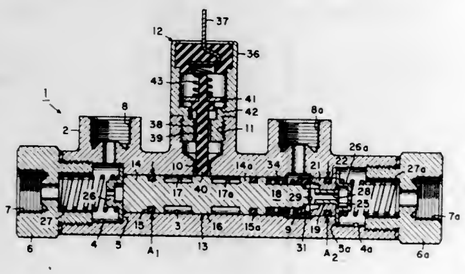
There is disclosed a railway car for transporting pulverulent lading including a fluid-tight lading container, means for pressurizing the container, structure defining two pairs of troughs leading into a sump in the lower portion of the container, means for alternately and abruptly aerating the pairs of troughs for fluidizing the lading and shaking the troughs to facilitate movement of the lading into the sump, discharge valve apparatus below the sump for pneumatically unloading the container and a control device for automatically closing the discharge valve apparatus in response to a sudden pressure drop in the container.

3,469,889

CONTROL VALVE

Richard C. Bueler, Glendale, Mo., assignor to Wagner Electric Corporation, Newark, N.J., a corporation of Delaware

Filed Aug. 9, 1967, Ser. No. 659,378
Int. Cl. B60t *13/12*
U.S. Cl. 303—6 **19 Claims**



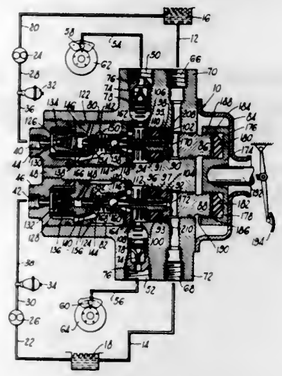
A control valve including an inhibiting portion for inhibiting the application through said control valve of a fluid pressure applied thereto, and a control portion responsive to a predetermined differential between the supplied fluid pressure and another fluid pressure separately supplied to said control valve to disable said inhibiting portion and thereby effect an uninhibited application of the first named supplied fluid pressure through said control valve.

3,469,890

REACTION MEANS FOR HYDRAULIC CONTROL VALVE

Keith H. Fulmer, South Bend, Ind., assignor to The Bendix Corporation, a corporation of Delaware

Filed Apr. 10, 1968, Ser. No. 720,240
Int. Cl. B60t *15/06, 13/00, 13/16*
U.S. Cl. 303—52 **9 Claims**



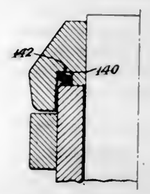
A reaction device capable of imparting all reaction forces up to a predetermined control pressure to an operator-operated control member and thereafter proportion the reaction forces thereto.

3,469,891

TRACK JOINT HAVING FLOATING SEAL

Jack M. Deli, Wheaton, Ill., assignor to International Harvester Company, Chicago, Ill., a corporation of Delaware

Original application Jan. 24, 1967, Ser. No. 611,463, now Patent 3,437,385, dated Apr. 8, 1969, which is a continuation-in-part of application Ser. No. 576,152, Aug. 30, 1966. Divided and this application July 11, 1968, Ser. No. 752,434
Int. Cl. B62d *55/18*
U.S. Cl. 305—11 **5 Claims**



Sealed track chain joint having a bushing, a link counterbore receiving and housing therein the thrust end portion of the bushing, and a floating end-face seal in the link adjacent said thrust end portion and forming within the link a radial interface of sealing contact at least preferably in a ring at the outer end periphery of the bushing or, at most, in an outermost ring of pressure contact spaced apart radially outwardly from the bushing.

3,469,892

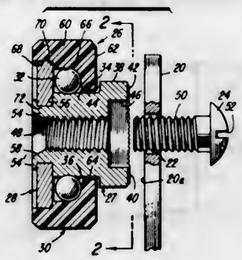
SHIELDED-BEARING ROLLER FOR SUSPENSION DEVICES

Hall Langstroth, Coral Gables, Fla., assignor to Watsco, Inc., Hialeah, Fla.

Filed June 3, 1968, Ser. No. 734,030
Int. Cl. F16c *31/04, 13/02, 35/06*
U.S. Cl. 308—3.8 **5 Claims**

A support roller assembly particularly adapted for suspending shower doors, suspension drawers and the like,

in which the roller is an anti-friction plastic element having an annular, lateral recess at one side forming an outer bearing race, the inner race comprising an axle projecting axially through an apertured wall and forming an inner bearing race; the axle terminally receiving a coupling washer-like element closing the roller recess, and



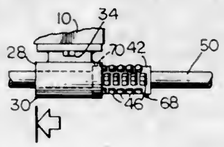
being swaged to retain the parts in assemblied relation for retaining bearing elements and/or a lubricant in the recess; and the axle being internally threaded to receive a mounting fastener, and having a polygonal end for receiving a wrench as well as a terminal, friction surface for eliminating mounting washers.

3,469,893

BEARING CONSTRUCTION

Arthur F. Hudson, Box 630, Huntington, Ind. 46750

Filed Mar. 13, 1967, Ser. No. 622,528
Int. Cl. F16c *17/00, 21/00, 19/00*
U.S. Cl. 308—6 **4 Claims**



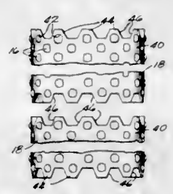
A bearing construction is provided in which the sleeve or cage receives the bearing elements and has spaced pins or stops in combination with both the cage and the surrounding bushing so that the available stroke length can be increased, being a function of both movement of the bearing elements and the cage for the bearing elements.

3,469,894

DIE SET LEADER PIN WITH SECTIONAL BEARING CAGE

Richard R. Stamm, Brookfield, Wis., assignor to Superior Die Set Corporation, Oak Creek, Wis., a corporation of Wisconsin

Filed Oct. 12, 1967, Ser. No. 674,846
Int. Cl. F16c *21/00, 19/00, 31/00*
U.S. Cl. 308—6 **8 Claims**



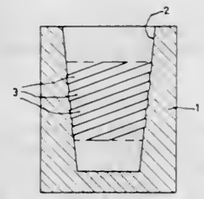
Suspended on a leader pin to enter the bushing of a die set is a bearing comprising a plastic retainer or cage in which balls are confined so that the retainer will move in the bushing at half the rate of advance of the leader pin. The cage is sufficiently resilent to yield to permit these balls to be forced to and from their confining pockets. The cage is made in interfitting sections so that a single stock form will serve installations requiring different cage lengths.

3,469,895

BEARING SLEEVE FOR A HYDRODYNAMIC BEARING

Jacobus Johannes Cornelius Vandersteen, Emmasingel, Eindhoven, Netherlands, assignor, by mesne assignments, to U.S. Philips Corporation, New York, N.Y., a corporation of Delaware

Filed Nov. 17, 1967, Ser. No. 683,967
Claims priority, application Netherlands, Dec. 7, 1966, 6617169
Int. Cl. F16c *7/04, 35/00, 19/12*
U.S. Cl. 308—9 **2 Claims**



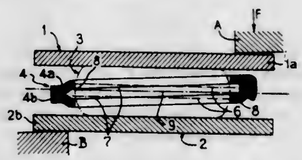
A bearing sleeve having a conical race therein for a spiral groove hydrodynamic bearing. A plurality of grooves are included in the surface of the race for generating fluid pressure between the race and a shaft stub rotatable in the race. The grooves are equally spaced with respect to the center line of the sleeve and are uniformly distributed over the race surface. The cross-section of each groove is trapezoidally shaped.

3,469,896

FLEXIBLE THRUST ROLLING BEARING HAVING NEEDLES OR ROLLERS

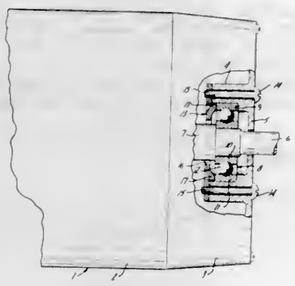
Alfred Pitner, Paris, France, assignor to Nadella S.A., Rueil-Malmaison, France, a French body corporate

Filed Nov. 13, 1967, Ser. No. 682,061
Claims priority, application France, Dec. 28, 1966, 89,096
Int. Cl. F16c *17/06, 17/08, 19/30*
U.S. Cl. 308—231 **6 Claims**



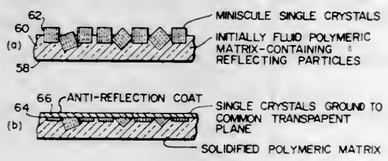
A thrust needle bearing in which the raceway plates bear against mechanical elements through their inner edges which are radially offset relative to the ring of needles applied against the plates, these needles being contained in a cage whose aperture-defining bars have a polygonal sectional shape in the radial plane of the bearing which defines for the plane and parallel flanks of the aperture end portions located in alignment with the diametral plane of the needles for guiding the latter and a centre portion offset relative to the diametral plane.

3,469,897
LOCK PLATE FOR FIXED MOTOR ROTOR BEARING
Howard W. Rike, Kettering, Ohio, assignor to A. O. Smith Corporation, Milwaukee, Wis., a corporation of New York
Filed Feb. 21, 1968, Ser. No. 707,116
Int. Cl. F16c *33/30*
U.S. Cl. 308—236 **3 Claims**



An annular stamped steel lock plate having equicircumferentially spaced tabs lanced therethrough and extending radially outwardly to contact the outer bearing race of a fixed rotor bearing assembly and apply a uniform locking force to the bearing. The tabs are located so that the bearing race will not deform under the axial locking force.

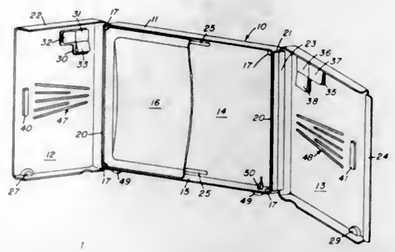
3,469,898
REFLEX REFLECTIVE PRODUCTS AND PROCESSES FOR THEIR MANUFACTURE
Gerald Altman, Newton, Mass.
(41 Westminster Road, Newton Centre, Mass. 02159)
Continuation-in-part of application Ser. No. 226,631, Sept. 27, 1962. This application Nov. 20, 1967, Ser. No. 684,338
Int. Cl. G02b *5/12*
U.S. Cl. 350—103 **11 Claims**



Minute reflex reflecting particles for use in thin reflex reflecting sheets, as fluid reflex reflecting pigment, or the like, are provided in the form of optically clear "single crystals," of which rearward facets are metallized to provide reflex reflecting corners and forward facets are clear to provide paths to and from the reflex reflecting corners.

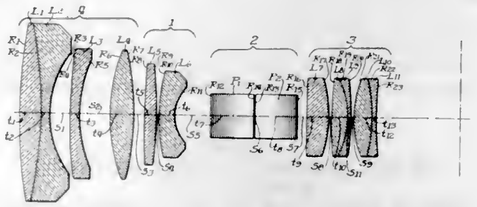
3,469,899
CASE FOR A PROJECTION SCREEN
Jasper S. Chandler, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed Nov. 21, 1966, Ser. No. 595,676
Int. Cl. G03b *21/58*
U.S. Cl. 350—123 **12 Claims**

A projection screen comprises a case having a main portion or support which is similarly larger than a screen and within the confines of which the screen is mounted. The main portion carries a pair of movable cover members each of which is hinged to an opposed side of the main portion for movement between a screen covering position and an open position. When the cover members are in the open position, a plurality of elongated angularly-spaced indicia on each of the cover members is used to establish the angular or tilt position of the screen relative



to an audience space. When the cover members are in the screen covering position, reflecting surfaces or members on each cover member, which are disposed at an angle relative to their respective cover member as well as to each other, are used to establish the position of the screen relative to a projector and the audience space by the projected light reflected from the surfaces or members.

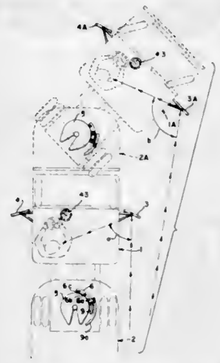
3,469,900
REVERSED TELEPHOTO TYPE LENS WITH INTERNAL PRISMS, AND WIDE-ANGLE ATTACHMENT THEREFOR
Jerome G. Kenney, Chicago, Ill., assignor to Bell & Howell Company, Chicago, Ill., a corporation of Illinois
Filed Oct. 6, 1967, Ser. No. 673,442
Int. Cl. G02b *17/04*
U.S. Cl. 350—203 **4 Claims**



An optical projection objective for use in a system of motion picture projectors comprising a front negative group of lens elements, prism systems and a rear positive group of lens elements in optical alignment. All of the prism systems have the same optical thickness and a predetermined number of the prism systems embody an image orienting capability.

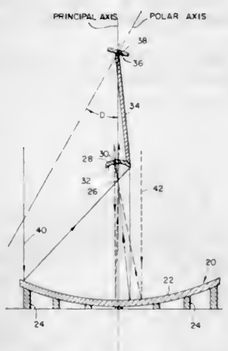
3,469,901
AUTOMATICALLY ADJUSTED MIRRORS FOR TRACTOR-TRAILERS
Gerald L. Cook, Rte. 3, and William E. Presley, Rte. 1, both of Stroud, Okla. 74079
Filed Dec. 9, 1966, Ser. No. 600,626
Int. Cl. G02b *5/08*
U.S. Cl. 350—289 **4 Claims**

The present disclosure pertains to electrical means for automatically adjusting the rear view mirrors of a tractor-trailer vehicle, the operation of which electrical means is controlled by rotary movement of the fifth wheel of the



vehicle when the vehicle is being turned and locking means for holding the mirrors in a predetermined position when the vehicle is being driven in a straight line.

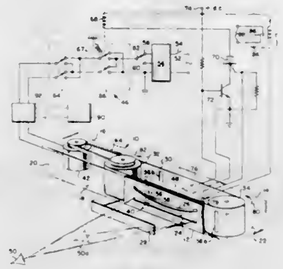
3,469,902
CATOPTRIC LIGHT COLLECTOR
Lawrence N. Mertz, Lexington, Mass., assignor to Block Engineering, Inc., Cambridge, Mass., a corporation of Delaware
Filed Jan. 27, 1966, Ser. No. 523,412
Int. Cl. G02b *5/10, 5/12*
U.S. Cl. 350—294 **5 Claims**



A light collecting system having a large concave spherical reflector and an apertured secondary reflector having a concave surface directed toward the concave surface of the large reflector. The secondary reflector is aspheric so as to recollimate light received from the large reflector. The secondary reflector is positioned adjacent the paraxial focus of the large reflector so that the latter can act as a tertiary reflector and focus a beam through the aperture of the secondary reflector.

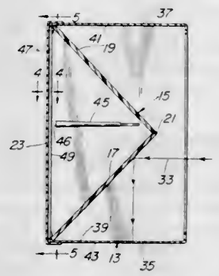
3,469,903
NYSTAGMUS GONIOSCOPE
James A. Grichnik, Park Ridge, and Albert Kupferschmidt, Chicago, Ill., assignors to Beckman Instruments, Inc., a corporation of California
Filed Mar. 22, 1967, Ser. No. 625,242
Int. Cl. A61b *3/02*
U.S. Cl. 351—1 **10 Claims**

An apparatus for stimulating eye movement in which an endless, opaque belt, having at least one narrow slit across its width, is moved either continuously or in an oscillatory fashion inside a light-tight housing having a front panel provided with a horizontal elongated opening.



A light source inside the housing causes a light spot to appear in the moving aperture defined by the elongated opening and the slit.

3,469,904
NIGHT VISION PERFORMANCE TESTER
Merrill J. Allen, Bloomington, Ind., assignor to Indiana University Foundation, Bloomington, Ind., a not for profit corporation of Indiana
Filed Sept. 16, 1966, Ser. No. 579,955
Int. Cl. A61b *3/02*
U.S. Cl. 351—36 **15 Claims**

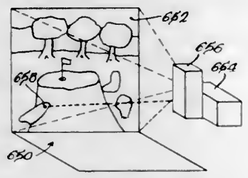


The mesopic visual acuity and ability to detect low contrast objects of a person is tested while the person is located in a normally lighted room. A filter is utilized to minimize the amount of ambient light appearing at a testing screen. The filter is formed by two planar filter parts jointed at an angle to form a V-shaped cross-section so as to eliminate or attenuate surface reflections. A reversible chart is utilized to provide more accurate testing.

3,469,905
SPOT PROJECTING DEVICE
Bradford J. Baldwin, Muskegon, William D. Cornell, Grand Haven, Paul R. Hoffman, Farmington, and Jack A. Russell, Muskegon, Mich., assignors to Brunswick Corporation, a corporation of Delaware
Filed Oct. 24, 1966, Ser. No. 588,813
Int. Cl. G03b *19/18, 21/32*
U.S. Cl. 352—39 **15 Claims**

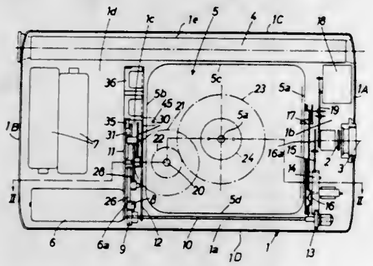
A spot projecting device particularly suited for use in golf games including a universally, pivotally mounted mirror for projecting a spot of light toward a screen, a

pair of mirror moving means for respectively causing up and down and side-side movement of the projected spot on the screen, and the light source means including



an iris, for projecting a beam of light toward the mirror, the iris being operable to control the size of the spot of light projected on the screen.

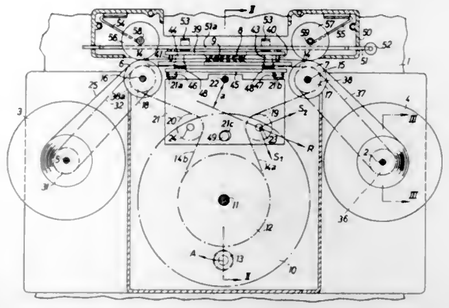
3,469,906
MOVIE CAMERA
Alfred Winkler and Richard Denk, Munich, Germany, assignors to Agfa-Gevaert Aktiengesellschaft, Leverkusen, Germany
Filed Sept. 30, 1965, Ser. No. 491,626
Claims priority, application Germany, Oct. 7, 1964, A 47,277
Int. Cl. G03b *23/02, 3/00*
U.S. Cl. 352—72 **13 Claims**



A portable motion picture camera for Super-8 film comprises a flat rectangular pocket-sized housing wherein the motor which drives the shutter and the film transporting mechanism is located in a rear compartment adjacent to a narrow rear wall of the housing. The lens, shutter and film transporting mechanism are mounted in a front compartment which is adjacent to a narrow front wall of the housing and is separated from the rear compartment by a space which can receive a magazine with coaxial film supply and takeup means. A horizontal drive shaft which connects the motor with the shutter and with the film transporting mechanism extends in parallelism with the optical axis of the lens at a level below the space for the magazine. The film frame counter is located in the rear compartment which latter further accommodates a portion of a transmission which connects the motor with the takeup means of a magazine in the space.

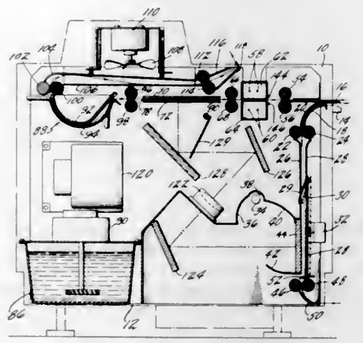
3,469,907
FILM GUIDING AND TRANSPORTING MECHANISM FOR MICROFILM READERS
Hans-Ado Brandt, Munich, Germany, assignor to Agfa-Gevaert A.G., Leverkusen, Germany
Filed Mar. 7, 1967, Ser. No. 621,208
Claims priority, application Germany, Mar. 26, 1966, A 51,983
Int. Cl. G03b *1/48*
U.S. Cl. 352—225 **13 Claims**

A film guiding and transporting mechanism for microfilm readers. The film is transported from a supply reel to a takeup reel, or vice versa, and passes through a film channel between a fixed and a movable pressing plate. The movable pressing plate is automatically moved away from the fixed pressing plate when the film transporting unit is set in motion, either by hand or by means of a motor,



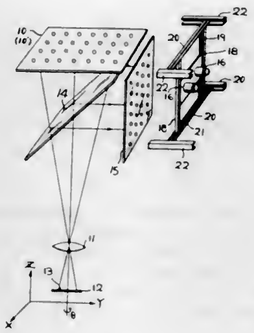
so that the film is not scratched during travel from one of the reels toward the other reel, or vice versa. The drive of the film transporting unit includes an endless chain which can rock a two-armed lever, and such rocking of the lever causes movement of the movable pressing plate away from the fixed pressing plate.

3,469,908
REPRODUCING APPARATUS
Joseph G. Marek, Higganum, and Vincent A. Erato, Saybrook, Conn., assignors to Victor Tool and Manufacturing, Incorporated, Chester, Conn., a corporation of Connecticut
Filed Jan. 27, 1967, Ser. No. 612,140
Int. Cl. G03g *13/00, 15/00*
U.S. Cl. 355—3 **12 Claims**



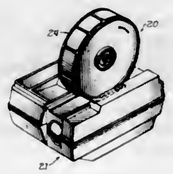
Apparatus for copying documents by a wet, electrostatic process. The apparatus is characterized by an optical system; including adjustable mirrors and a fixed position, wide angle lens, having a short focal length; which projects an image of the document to be copied onto a viewing screen over which travels sensitized copy paper which has just previously been passed through a corona discharge. The mirrors are easily and rapidly aligned. The viewing screen has a pattern of discrete, raised, opaque areas on the surface adjacent to the copy paper for light balancing and preventing sticking of the paper to the screen.

3,469,909
DEVICE FOR CARRYING OUT OBSERVATIONS OF AN IMAGE FORMED ON AN IMAGE FORMING SURFACE
Hiroshi Amoh, Tokyo, Japan, assignor to Ushio Electric Inc., Tokyo, Japan
Filed Dec. 26, 1967, Ser. No. 693,659
Claims priority, application Japan, Dec. 30, 1966 (utility models), 42/559, 42/560
Int. Cl. G03b *21/28*
U.S. Cl. 353—98 **1 Claim**



A device for carrying out observation of an image formed on an image forming surface. The device has a pattern plate to be projected, a work piece having an image forming surface thereon and an image forming lens. The lens projects symbols of the pattern plate and forms an image thereof on a reduced scale on the image forming surface. A light beam divider is provided in the path of light between the pattern plate and the image forming lens. The light beam divider is tilted with respect to the path of light and movable eyepieces are provided for observing on an enlarged scale the details of the image reflected from said light beam divider.

3,469,910
ROTARY SLIDE TRAY
Frank C. Badalich, Chicago, Ill., assignor to Bell & Howell Company, Chicago, Ill., a corporation of Illinois
Filed Mar. 7, 1967, Ser. No. 621,192
Int. Cl. G09f *11/30;* **G03b** *21/00;* **B65d** *1/34*
U.S. Cl. 353—117 **16 Claims**

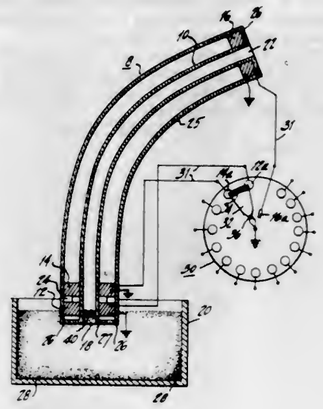


A rotatable slide tray has means adapted to be actuated by a member on a projector for selectively preventing movement from said tray of slides stored therein.

ERRATUM

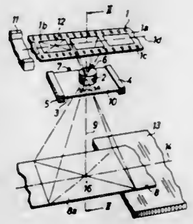
For Class 355—3 see:
Patent No. 3,469,908

3,469,911
ELECTROMAGNETIC PUMPING APPARATUS FOR USE IN ELECTROPHOTOGRAPHY
Roger G. Olden, Princeton, N.J., assignor to RCA Corporation, a corporation of Delaware
Filed Jan. 30, 1967, Ser. No. 612,684
Int. Cl. G03g *15/02*
U.S. Cl. 355—3 **1 Claim**



An electromagnetic pumping apparatus for transporting a powdered developer of iron and toner particles from a reservoir to a developing station in an electrostatic printing machine. The pump comprises a thin-walled tube of nonmagnetic material surrounded by a number of electric coils which are energized in sequence. As the coils are sequentially energized the developer is caused to move along the tube, from the reservoir to the developing station. The switching device that energizes the coils is such that two adjacent coils are always energized at any particular time and the last coil in the sequence is energized for a period shorter than that of the other coils.

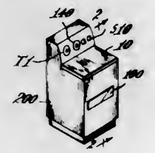
3,469,912
APPARATUS FOR OPTICALLY ALIGNING LATERALLY OFFSET NEGATIVE FRAMES WITH PHOTOSENSITIVE MATERIAL
Richard Wick, Grunwald, Germany, assignor to Agfa-Gevaert Aktiengesellschaft, Leverkusen, Germany
Filed Jan. 31, 1967, Ser. No. 612,876
Claims priority, application Germany, Feb. 4, 1966, A 51,506
Int. Cl. G03b *27/00, 27/52*
U.S. Cl. 355—18 **10 Claims**



Enlarger for plural types of roll film negatives wherein the lens is movable to several positions to form images

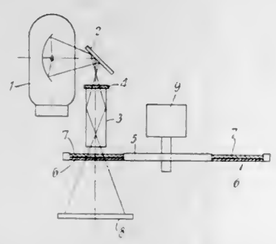
of negative frames, held in a fixed carrier, onto sheets of photosensitive material. The optical axis of the lens coincides, at least substantially, with the line connecting the central points of successive frames with central points of successive increments of enlarging paper onto which the lens focusses the images of the respective frames.

3,469,913
PHOTOCOPYING APPARATUS
Kenneth J. White, Framingham, Mass., assignor to Dennison Manufacturing Company, Framingham, Mass., a corporation of Nevada
Continuation of application Ser. No. 337,477, Jan. 13, 1964, which is a continuation-in-part of application Ser. No. 263,804, Mar. 8, 1963. This application Apr. 10, 1967, Ser. No. 648,509
Int. Cl. G03b *27/14*
U.S. Cl. 355—18 **9 Claims**



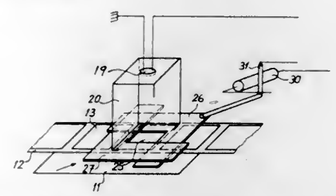
Apparatus comprising means for feeding a strip of copy material along a predetermined path, a cutter at one location along the path for cutting sheets from the strip, an exposure window at another location along the path in which the material is exposed, means for feeding different lengths of material to the cutter to produce either long or short sheets, the cutter being in advance of the window so that the sheets are cut before being exposed, and means for feeding the sheets from the cutter to the window so that both short and long sheets are centered in the window while being exposed.

3,469,914
ENLARGER HEAD FOR USE WITH VARIABLE CONTRAST PAPER
Charles Leslie Thomson, Kingston, Liberton, Edinburgh 9, Scotland
Filed Nov. 4, 1966, Ser. No. 592,098
Int. Cl. G03b *27/32, 27/52, 27/76*
U.S. Cl. 355—32 **6 Claims**



Photographic prints are produced on variable contrast photographic printing material by the use of a set of color filter units. Each filter unit comprises a colored filter producing a different exposure and a neutral density filter having an optical density such that prints of varying contrast are produced using substantially constant time irrespective of which filter unit is employed.

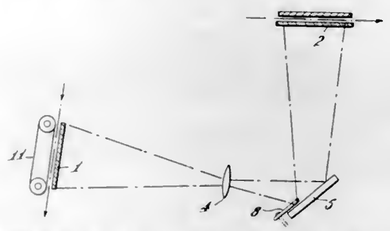
3,469,915
METHOD OF AND APPARATUS FOR AUTOMATICALLY CONTROLLING EXPOSURE TIMES IN A PHOTOGRAPHIC COPYING MACHINE
Kurt Thaddey, Buchs, Zurich, Switzerland, assignor to Ciba Limited, Basel, Switzerland, a corporation of Switzerland
Filed Aug. 31, 1967, Ser. No. 664,754
Claims priority, application Switzerland, Sept. 22, 1966, 13,685/66
Int. Cl. G03b *27/78*
U.S. Cl. 355—38 **10 Claims**



A method and apparatus for automatically controlling exposure times in a photographic copying machine.

Colour exposure signals, generated by a measurement of the overall brightness, of a picture to be copied are corrected for excessive differences in brightness. The correction signals obtained are the result of a comparison between the upper and lower halves of the picture and a comparison in brightness between a centrally located small area in the picture and the remainder of the picture. This is detected by scanning the picture with a variable aperture. The corrections are effected on a digital basis.

3,469,916
PHOTOGRAPHIC COPYING APPARATUS
Donald D. Sloan, Weston, Mass., assignor to Dennison Manufacturing Company, Framingham, Mass., a corporation of Nevada
Filed Oct. 12, 1966, Ser. No. 586,206
Int. Cl. G03b *27/70*
U.S. Cl. 355—51 **2 Claims**

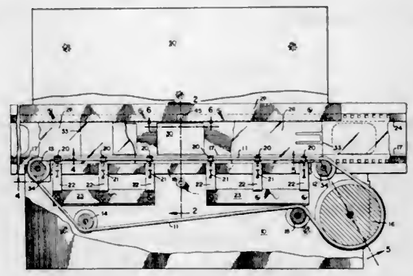


Apparatus of the type which projects light along a path which is elongate transversely of the path and which has a mask in the path of the projected light. The mask has an opening which is narrower in the middle than at the ends to obstruct light more in the middle than at the ends thereby to afford uniform illumination throughout the exposure window.

3,469,917
FILM CARRIER
Joseph Pignone, Essex County, N.J., assignor to Charles Beseler Company, East Orange, N.J., a partnership
Continuation-in-part of application Ser. No. 659,474, Aug. 9, 1967. This application Dec. 28, 1967, Ser. No. 694,290
Int. Cl. G03b *27/58, 27/04, 27/10*
U.S. Cl. 355—72 **12 Claims**

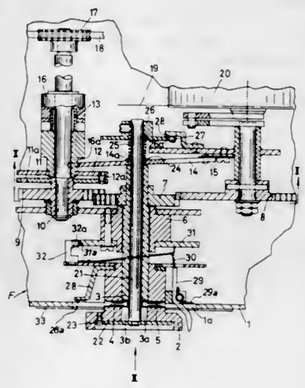
A film carrier for use in photographic or projection apparatus in which a film supported on a pair of aligning

film guides is transported by means of an endless belt providing a long, point to point frictional driving contact with the film, the belt being arranged such that a portion of the belt at each end of the film guides slopes away from the film guides to provide a funneling entrance to facilitate insertion of the film at either end of the carrier. The aligned film guides cooperate with the belt on one



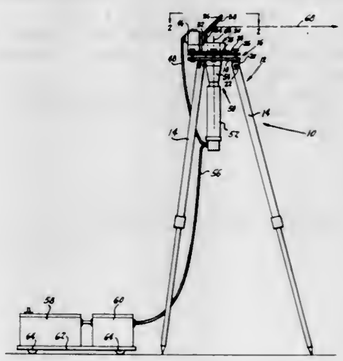
side of the film and with a third guiding member on the other to flatten the film, overcoming its tendency to bow out of the plane of projection. The film carrier also incorporates a movable aperture masking plate for changing the area of the film which is projected, and contains a window designed to permit the projection of a fiducial mark or frame number for identification of particular film frames.

3,469,918
PHOTOGRAPHIC PRINTING APPARATUS
Wilhelm Baasner, Munich, Germany, assignor to Agfa-Gevaert Aktiengesellschaft, Leverkusen, Germany
Filed Sept. 22, 1967, Ser. No. 669,901
Claims priority, application Germany, Sept. 29, 1966, A 53,620
Int. Cl. G03b *27/04*
U.S. Cl. 355—97 **22 Claims**



A photographic printing apparatus wherein the feeding unit for advancing a strip of light-sensitive material stepwise to an exposure station is adjustable to perform strokes of different length and wherein an adjustable masking unit can cover different portions of the strip at the exposure station. The adjusting device for the two units is permanently connected with the feeding unit but is detachable from the masking unit so that the feeding unit can be adjusted together with or independently of the masking unit. The adjusting device comprises a rotary knob and the apparatus comprises means for indicating angular displacement of the knob when the latter adjusts both units as well as angular displacement of the knob when the latter adjusts only the feeding unit.

3,469,919
ELECTRONIC SURVEYING INSTRUMENT
Floyd L. Zellner, Seattle, Wash., assignor of fifty percent to Glenn Reynolds, Tulsa, Okla.
Filed July 14, 1965, Ser. No. 471,826
Int. Cl. G01c *3/08*
U.S. Cl. 356—4 **5 Claims**



An electronic surveying system including a laser beam projector coupled with a power rotated 45° angled mirror to produce a horizontal datum. A receiver having adjustable paired antenna arranged to signal when intersected by the horizontal datum beam, and an indicator panel is associated with the receiving station to convey information concerning the relationship between the paired antennas and the beam.

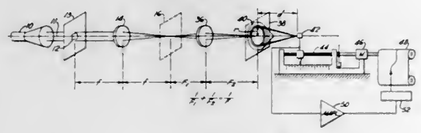
3,469,920
MEANS FOR OBTAINING THE INVERTED RAMAN SPECTRUM OF A SUBSTANCE TO BE STUDIED
Serge Dumartin and Boris Oksengorn, Paris, France, Marvin Tobin, Norwalk, Conn., and Boris Vodar, Issy-les-Moulineaux, France, assignors of thirty-three percent to Centre National de la Recherche Scientifique, Paris, France, and sixty-seven percent to Perkin-Elmer Co., Norwalk, Conn., a society of Connecticut
Filed July 25, 1966, Ser. No. 567,720
Claims priority, application France, July 27, 1965, 26,195
Int. Cl. G01j *3/44*
U.S. Cl. 356—75 **12 Claims**



A coherent monochromatic beam of very high intensity (e.g., ten megawatts) is focused into a compressed gas (such as krypton or xenon) to produce a wide, con-

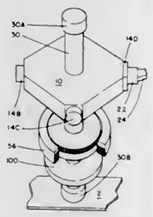
tinuous spectrum, substantially synchronized with the monochromatic beam. The energy of the monochromatic beam is reduced to below the threshold required to produce stimulated Raman emission in the sample to be studied, and the resulting beam containing the continuous and monochromatic light is focused into the sample to produce the inverted Raman spectrum in it. The emergent beam containing the inverted Raman spectrum is projected into a spectrograph.

3,469,921
APPARATUS FOR THE SIZE DISTRIBUTION OF AN AGGREGATION
Maurice E. Taylor, Monroeville, Pa., assignor to Gulf Research & Development Company, Pittsburgh, Pa., a corporation of Delaware
Filed May 25, 1966, Ser. No. 552,751
Int. Cl. G01n *15/02, 21/06;* **G02b** *5/18*
U.S. Cl. 356—102 **7 Claims**



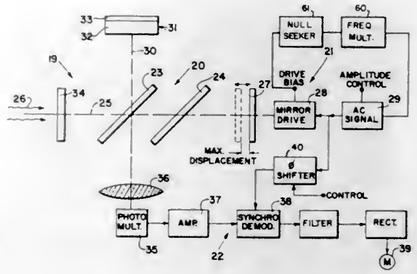
The invention concerns measuring the size distribution of an aggregation, such as the openings in a sieve or sand particle size, by preparing a black-and-white photographic transparency of the aggregation, and integrating the transmitted light through the transparency from the Fourier plane at various distances after the Fourier plane. The amount of light in any ring in the Fourier plane and the distance from the Fourier plane that the light from any one ring focuses and the radius of the ring are together utilized to determine overall side distribution. An automatic apparatus is also provided.

3,469,922
GAS RING LASER GYROSCOPE SYSTEM
Joseph D. Coccoli, Brighton, and Dusan A. Koso, Cambridge, Mass., assignors to Massachusetts Institute of Technology, Cambridge, Mass., a corporation of Massachusetts
Filed Mar. 27, 1967, Ser. No. 626,198
Int. Cl. G01b *9/02;* **H01s** *3/00;* **G06f** *15/50*
U.S. Cl. 356—106 **12 Claims**



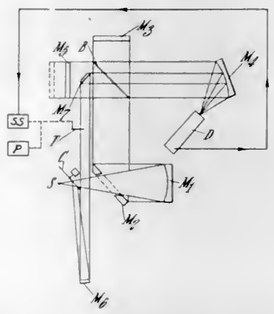
A gyroscope system for measuring the inertial orientation of a maneuvering base with a resolution appreciably less than earth rate. The system rotates a gas ring laser at a constant inertial angular reference velocity and determines the relative angular motion between the laser and the base. By then computing the difference between the relative motion and a stored reference rate, the system provides a measure of the rotation angle of the base.

3,469,923
OPTICAL DEVICE FOR DETECTING A RELATIVELY LOW INTENSITY SPECTRUM LINE
Lawrence N. Mertz, Lexington, Mass., assignor to Block Engineering, Inc., Cambridge, Mass., a corporation of Delaware
Continuation-in-part of application Ser. No. 374,416, June 11, 1964. This application Mar. 1, 1965, Ser. No. 440,662
Int. Cl. G01b *9/02*
U.S. Cl. 356—106 **7 Claims**



By field-widening a Michelson interferometer the spectrum is encoded in channel spectra while retaining the inherent large light transmission qualities of the instrument. Provision is made for moving the channels which modulates and spectral discontinuity while a background continuum remains constant, thus line spectra can be discriminated from the background with great sensitivity.

3,469,924
OPTICAL INTERFEROMETERS
Ronald Haswell, Newcastle-upon-Tyne, England, assignor to Sir Howard Grubb Parsons & Company Limited, Newcastle-upon-Tyne, England, a British company
Filed Jan. 4, 1966, Ser. No. 518,634
Claims priority, application Great Britain, Jan. 5, 1965, 369/65
Int. Cl. G01b *9/02*
U.S. Cl. 356—106 **6 Claims**



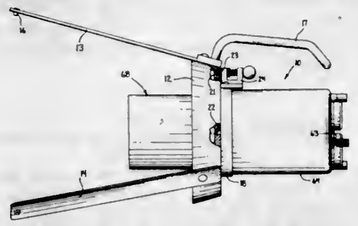
An optical interferometer comprising a source of radiation, a detector, means defining three beam paths for said radiation, means for focussing each beam path upon said detector, means for producing interference between two of said beam paths, and beam switching means for interrupting the beams whereby the detector receives alternately radiation from the two interfering beams combined and from the third beam alone.

3,469,925
METHOD FOR DETERMINING IMAGE SHARPNESS
Franz Urbach and George C. Higgins, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed Mar. 25, 1966, Ser. No. 537,336
Int. Cl. G01j *1/00, 3/48;* **G03b** *3/00*
U.S. Cl. 356—122 **2 Claims**



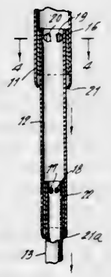
A method for indicating and measuring the relative sharpness of a real image and for automatically controlling the relation of the image to its focal plane. In this system phosphors having a nonlinear response are used as a photosensitive material in the measuring system.

3,469,926
TESTING DEVICE FOR MISSILE GUIDANCE SECTION
August H. Bickel and George R. Sotsky, Louisville, Ky., assignors to the United States of America as represented by the Secretary of the Navy
Filed Nov. 15, 1965, Ser. No. 507,973
Int. Cl. G02b *27/32*
U.S. Cl. 356—247 **2 Claims**



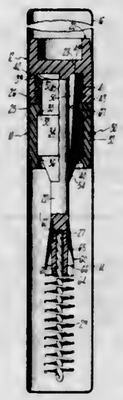
A test set for checking the guidance section of a missile having an opaque target attached to a reflector plate which is reciprocally movable in first and second mutually perpendicular directions. A motor and cam mechanism are utilized for moving the reflector plate and the cam mechanism has means for centering the reflector plate relative to the guidance section when the reflector plate is stationary.

3,469,927
MINIATURIZED TELESCOPIC MARKING INSTRUMENT
Joseph Aversa, Scarsdale, N.Y.
(270 Lafayette St., New York, N.Y. 10012)
Filed Nov. 6, 1967, Ser. No. 680,803
Int. Cl. B43k *23/00;* **H01q** *1/10;* **E21d** *15/14*
U.S. Cl. 401—95 **3 Claims**



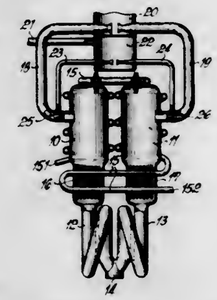
A miniaturized telescopic marking instrument in which smooth frictional movement between adjacent telescoping segments is provided by a one piece split sleeve of simplified construction.

3,469,928
APPLICATOR
Walter M. Widegren, Haddam, Conn., assignor to Lake Eyelet Manufacturing Co., Inc., Southington, Conn., a corporation of Connecticut
Filed Oct. 18, 1968, Ser. No. 768,717
Int. Cl. A46b *11/00, 17/00;* **A45d** *40/26*
U.S. Cl. 401—122 **8 Claims**



A mascara applicator comprising a mascara reservoir and an applicator wand providing a cap for the reservoir and having a depending brush normally retained in the reservoir and adapted for application of the mascara. The reservoir has a throat with an inwardly tapered opening for removing excess mascara from the brush when the wand is withdrawn from the reservoir and the wand has a conical wiper element for wiping the throat opening clean when the wand is reinserted into the reservoir.

3,469,929
PULSE JET BURNER
Franz Haag, Plochingen, Germany, assignor to Junkers & Co. GmbH, Wernau (Neckar), Germany
Filed Dec. 20, 1967, Ser. No. 692,093
Int. Cl. F23c *3/02*
U.S. Cl. 431—1 **11 Claims**



A pulse jet burner having a combustion chamber, a resonance duct communicating with one end of the combustion chamber, and mixing tube means for feeding a mixture of combustion air and fuel into the combustion chamber and constructed in such a manner so as to impart at least to the combustion air passing therethrough a rotary movement to enhance intimate mixing of air and fuel shortly before the same enter the combustion chamber.

CHEMICAL

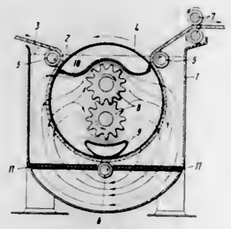
3,469,930
WOOL DYEING PROCESS
Patrick Harwood Harrell and Denis Ronald Lemin, Manchester, England, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain
No Drawing. Filed May 3, 1966, Ser. No. 547,157
Claims priority, application Great Britain, May 25, 1965, 22,137
Int. Cl. D06p *1/82, 3/14*
U.S. Cl. 8—54 **4 Claims**

A process for dyeing wool by padding the wool in an aqueous solution of a water soluble wool dyestuff and fixing the dyestuff on the fiber by steaming wherein the padding solution contains at least 1% by weight of an alkali metal dodecylbenzene sulphonate and at least 1% by weight of a condensate of ethylene oxide with an alkyl phenol.

3,469,931
METHOD FOR TREATING MATERIALS
William Boon, 215 Passaic Ave., Passaic, N.J. 07055
Filed Mar. 30, 1966, Ser. No. 538,800
Int. Cl. D06f *29/00*
U.S. Cl. 8—137 **4 Claims**

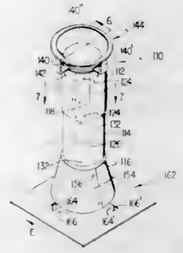
The present invention is broadly concerned with an improved system for the handling and wash processing of bulky materials, and is more particularly concerned with a unique technique for treating before introducing bulky materials into wash processing units, and is especially directed to a very efficient treatment of applying the conventional soil break solution to the fabrics being processed.

3,469,932
PROCESS AND APPARATUS FOR THE WET-TREATMENT OF MATERIALS
Heinz Fleissner, Egelsbach, near Frankfurt am Main, Germany, assignor to Vepa AG, Basel, Switzerland
Filed Apr. 7, 1967, Ser. No. 629,308
Claims priority, application Germany, Apr. 7, 1966, A 52,106; Jan. 5, 1967, V 32,718
Int. Cl. D06c *29/00;* **D06f** *35/00*
U.S. Cl. 8—151 **32 Claims**



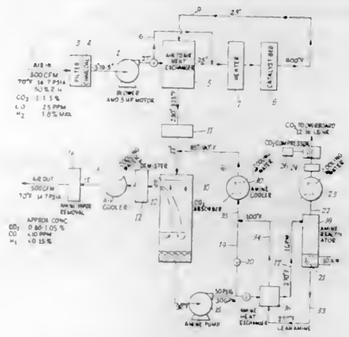
The present disclosure relates to a process and apparatus for the wet-treatment of materials, for example; textile materials, such as loose fibrous material, tow, top, slivers, fabrics, knit goods, needled felt materials, non-wovens, tufted carpets, etc., wherein the material to be treated is immersed in a treatment bath by contact with at least one conveying surface, a portion of the treatment liquid in the treatment bath being drawn into and discharged from the conveying surface, thereby permitting double penetration of the textile material by the treatment liquid in alternate directions.

3,469,933
THERMO-DUSTER ALCOHOL BURNING FUNGICIDE SUBLIMER
James Robert Oglevee, Connellsville, Pa., assignor to Oglevee Floral Company, Inc., Connellsville, Pa., a corporation of Pennsylvania
Filed Apr. 27, 1967, Ser. No. 634,361
Int. Cl. A61l *3/00*
U.S. Cl. 21—117 **1 Claim**



An alcohol stove for subliming a solid fungicide comprising an adjustable length cylindrical combustion chamber having a conical apron on the bottom, fingers supporting a fungicide vessel on the top, and a support for an alcohol vessel and for the combustion chamber on the bottom.

3,469,934
METHOD OF PURIFYING CLOSED ATMOSPHERES
Joseph P. Bocard, New Albany, Ind., and Richard L. Harvin, Louisville, Ky., assignors to Girdler Corporation, Louisville, Ky., a corporation of Ohio
Filed Oct. 26, 1964, Ser. No. 406,971
Int. Cl. B01d *49/00;* **B03c** *3/02*
U.S. Cl. 23—4 **8 Claims**



Process and apparatus for continuously treating a closed atmosphere to render it breathable, wherein a portion of the atmosphere is continuously being withdrawn and passed through a filtering means including activated charcoal for the removal of some portion of Freon and hydrocarbonaceous contaminants. The withdrawn portion of the atmosphere is subjected to catalytic oxidation, whereby to decompose and oxidize remaining hydrocarbonaceous substances, to decompose Freon and to oxidize hydrogen. Thereafter, the withdrawn portion of the atmosphere is subjected to an absorbent solution for removing carbon dioxide therefrom, and then is cooled, filtered, and returned to the closed atmosphere.

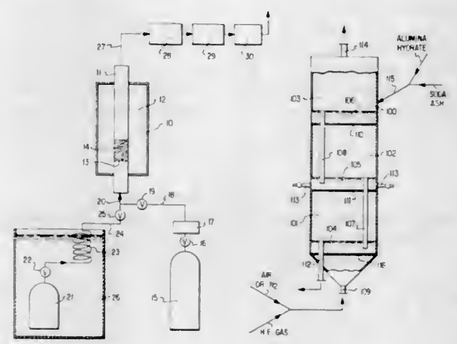
3,469,935
TREATMENT OF BAYER PROCESS DIGESTER SLURRY
Kizhakke Govind Hrishikesan, Little Rock, and James Franklin Kane, Benton, Ark., Edward Bruce Teas, Corpus Christi, Tex., and William Haddon Brown, Little Rock, Ark., assignors to Reynolds Metals Company, Richmond Va., a corporation of Delaware
No Drawing. Filed May 18, 1965, Ser. No. 456,817
Int. Cl. C01f *7/06, 7/34*
U.S. Cl. 23—52 **6 Claims**

Dissolved zinc is removed from an aqueous alkaline slurry obtained by digestion of a zinc-containing bauxite with caustic alkali, by adding to the slurry an alkali metal sulfide to cause precipitation of the zinc as zinc sulfide, and holding the slurry in a quiescent state for 15 to 45 minutes to allow the zinc sulfide to collect on the insoluble bauxite residue. The resulting clarified digestion liquor may be further treated by filtering through a bed of red mud. The alkali metal sulfide may be derived from carbothermic reduction of a mixture of sodium sulfate, sodium carbonate and sodium aluminate, known as salting out product, formed as a by-product in the processing of sodium aluminate to recover alumina hydrate.

3,469,936
BROMINE PENTAFLUORIDE DISPOSAL
Albert A. Chilenskas and John E. Kincinas, Chicago, Ill., assignors to the United States of America as represented by the United States Atomic Energy Commission
No Drawing. Filed Dec. 13, 1967, Ser. No. 690,109
Int. Cl. C01f *7/50*
U.S. Cl. 23—88 **8 Claims**

Bromine pentafluoride is passed through a bed of activated alumina to form solid aluminum fluoride and bromine gas. The bromine gas is then passed through a bed of soda lime which reacts with the bromine to complete the disposal of bromine pentafluoride.

3,469,937
PRODUCTION OF SYNTHETIC CRYOLITE BY FLUIDIZED DRY PROCESS
Richard C. Roberts, Henrico County, Va., and James F. Kane, Benton, Ark., assignors to Reynolds Metals Company, Richmond, Va., a corporation of Delaware
Filed Apr. 19, 1966, Ser. No. 543,738
Int. Cl. C01f *7/54;* **C01b** *31/20*
U.S. Cl. 23—88 **10 Claims**

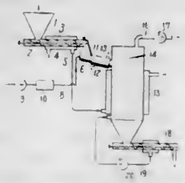


Sodium aluminum fluorides, such as cryolite, are manufactured by introducing a finely divided mixture of soda ash and alumina hydrate into a reaction zone, passing inert gas through the mixture at a velocity sufficient to form a fluidized bed while raising the bed temperature to at least 250° C., introducing hydrogen fluoride into the heated fluidized mixture when the bed temperature is in the range 250°–350° C. and completing the formation of sodium aluminum fluoride by simultaneously reacting said soda ash, hydrogen fluoride, and aluminum hydrate at a bed temperature which will minimize product fusion.

3,469,938
PRODUCTION OF HYDRATED SODIUM TRIPOLYPHOSPHATE
James E. McLeod, Elizabeth, and Steve Taborosi, Woodbridge, N.J., Harvey F. Groening, Lawrence, Kans., and Harold D. Riechers, Ponca City, Okla., assignors to FMC Corporation, New York, N.Y., a corporation of Delaware
No Drawing. Filed July 28, 1967, Ser. No. 656,707
Int. Cl. C01b *25/30;* **C11d** *7/16*
U.S. Cl. 23—107 **3 Claims**

This specification discloses a method of producing hydrated sodium tripolyphosphate, preferably to the point just short of theoretical hydration to produce the hexahydrate, in controlled particle size and bulk density, by a process which involves grinding the anhydrous feed to a controlled extent, followed by hydration and screening.

3,469,939
PROCESS FOR MANUFACTURING HYDROGEN FLUORIDE
Hiroshi Aiso, Osaka-fu, Shunichi Nomura, Kyoto-shi, and Toshinobu Takeuchi, Osaka-fu, Japan, assignors to Daikin Kogyo Kabushiki Kaisha, Osaka-shi, Japan
Filed July 5, 1967, Ser. No. 651,273
Claims priority, application Japan, July 8, 1966, 41/44,643
Int. Cl. C01b *7/22*
U.S. Cl. 23—153 **8 Claims**



In manufacturing hydrogen fluoride by reaction of fluorspar with sulfuric acid a process comprises contacting at 150 to 300° C. particulate fluorspar with sulfuric acid by continuously introducing the preheated particulate fluorspar into reaction zone and spraying the preheated sulfuric acid to the reaction zone in at least stoichiometric amount for the reaction with the fluorspar to effect the reaction of the sulfuric acid and fluorspar to produce hydrogen fluoride and calcium sulfate and separating evolved hydrogen fluoride from calcium sulfate.

3,469,940
HYDRAZINE RECOVERY PROCESS
Brian John Needham and Michael Arthur Smith, Loughborough, England, assignors to Whiffen & Sons Limited, Loughborough, England
No Drawing. Continuation-in-part of application Ser. No. 386,786, July 31, 1964. This application Nov. 29, 1966, Ser. No. 597,558
Claims priority, application Great Britain, Aug. 20, 1963, 32,819/63
The portion of the term of the patent subsequent to July 25, 1984, has been disclaimed
Int. Cl. C01c *1/28;* **C08f**
U.S. Cl. 23—190 **12 Claims**

A method is provided for obtaining hydrozine hydrate from hydrazine salts, which method involves contacting an aqueous solution of the hydrazine salt successively with two or more columns of an ion exchange resin and

recovering hydrazine by washing the ion exchange resin with a water or a base.

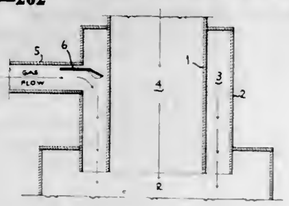
3,469,941
ULTRAFINE BORON NITRIDE AND PROCESS OF MAKING SAME
William E. Kuhn, Lexington, Ky., assignor to A. P. Green Refractories Co., Mexico, Mo., a corporation of Missouri
Filed Sept. 5, 1967, Ser. No. 665,486
Int. Cl. C01b *21/06*
U.S. Cl. 23—191 **13 Claims**

An ultrafine boron nitride product composed of white, equiaxed or spheroidal discrete particulate material of less than about 1000 A. composed of crystallites 200 A. and less in size having an "as produced" bulk density of 0.015–0.031 gm./cc. The product can be produced substantially pure or mixed with up to 50% boric oxide. The product is made by vaporizing boric oxide from a bed or porous media preferably composed of pieces of boron nitride which is maintained at a temperature of 1500 to 2400° C. Nitrogen carries the vaporized boric oxide into an adjoining reaction zone where it is mixed with anhydrous ammonia to produce the ultrafine boron nitride product. An arc plasma, induction, and resistance heating can be used to supply heat to the process. A modification includes the use of a plasma jet to directly vaporize the boric oxide and maintain it in a vapor state during the reaction with ammonia.

3,469,942
PRODUCTION OF IRON OXIDE FOR OXIDIC SINTERED SHAPED BODIES
Friedrich Henneberger, Bitterfeld, and Fritz Gebhardt, Sandersdorf, Germany, assignors, by mesne assignments, to VEB Chemiekombinat Bitterfeld, Bitterfeld, Germany
No Drawing. Filed Oct. 12, 1966, Ser. No. 586,039
Int. Cl. C01g *49/02;* **C04b** *35/26;* **H01v** *9/02*
U.S. Cl. 23—200 **3 Claims**

A process for producing iron oxide of high tamped density and high reactivity for making oxidic sintered shaped bodies, which comprises the steps of preparing iron-II-carbonate in crystalline form by adding an iron-II-sulfate solution to a solution of ammonium bicarbonate-ammonium carbonate with predetermined ratio of the carbonates, washing the iron carbonate free of soluble salts, and directly thereafter oxidizing it with admission of air to iron-III-oxide at temperatures ranging from 550 to 650° C.

3,469,943
METHOD FOR UNIFORM DISTRIBUTION OF GASES IN AN ANNULUS AND APPARATUS THEREFOR
William L. Wilson, Barberton, Ohio, assignor to PPG Industries, Inc., a corporation of Pennsylvania
Continuation of application Ser. No. 373,414, June 8, 1964. This application Apr. 29, 1968, Ser. No. 725,226
Int. Cl. C01b *13/14;* **C01g** *23/04;* **B01j** *1/14*
U.S. Cl. 23—202 **10 Claims**

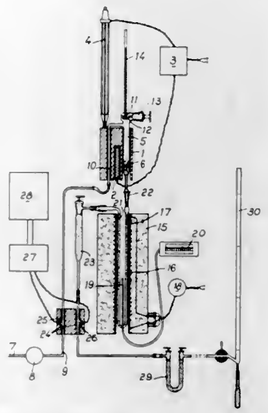


The production of pigmentary metal oxides, e.g., titanium dioxide, by vapor phase oxidation of the corresponding metal halide, e.g., titanium tetrachloride, is described. The result of ineffective mixing of reactant gases is discussed and a particular method for delivering reactant gases to the mixing zone in a uniform manner described.

3,469,944
PROCESS AND APPARATUS FOR THE MANUFACTURE OF HYDROGEN FOR FUEL CELLS
Joseph P. Bocard, New Albany, Ind., Richard L. Harvin, Louisville, and Bertrand J. Mayland, Jeffersontown, Ky. (all % C & I/Girdler, P.O. Box 174, Louisville, Ky. 40201)
Continuation of application Ser. No. 341,628, Jan. 31, 1964. This application May 13, 1968, Ser. No. 730,980
Int. Cl. C01b *1/13, 1/27;* **B01j** *7/00*
U.S. Cl. 23—212 **2 Claims**

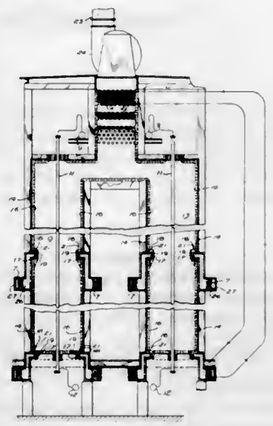
Process and apparatus for making hydrogen for fuel cells from liquid organic fuels of the type capable of being reformed in the range of 700° to 800° F., whereby the fuel is mixed with water, the mixture is vaporized by heat derived from the direct combustion of fuel, and the vaporized mixture is subjected to catalytic steam reformation in heat exchange relationship with the products of said combustion. The reformed gaseous mixture is conducted directly from the reforming apparatus to diffusion apparatus wherein the gaseous mixture is separated into substantially pure hydrogen and an impure gaseous fraction containing combustible values. These combus·ible values are used as part at least of the fuel for the above mentioned direct combustion. Means are provided whereby heat transfer is effected between the reforming apparatus and the diffusion apparatus, whereby the diffusion apparatus is maintained at a temperature substantially in the range of 600° to 800° F.

3,469,945
METHOD AND APPARATUS OF MEASURING THE SPEED OF THERMAL DECOMPOSITION OF POLYMERS
Marcel Delassus, Mazingarbe, Richard Devaux, Vermelles, and Theophile Hofman, Grenay, France, assignors to Houllieres du Bassin du Nord & du Pas-de-Calais Doual (Nord), France, a French public establishment
Filed July 13, 1966, Ser. No. 564,991
Claims priority, application France, July 26, 1965, 26,065
Int. Cl. G01n *33/44, 31/00*
U.S. Cl. 23—230 **9 Claims**



A method and apparatus which permit the rate of thermal decomposition of polymers to be easily determined at any given temperature. A sample of the polymer is heated in a thermolysis chamber and the products are scavenged by an inert gas passing through the chamber at a constant flow rate, the effluent being oxidized to convert the products to carbon dioxide and water vapor. The water vapor is eliminated and the carbon dioxide concentration is measured at regular intervals to determine the rate of thermal decomposition of the polymer.

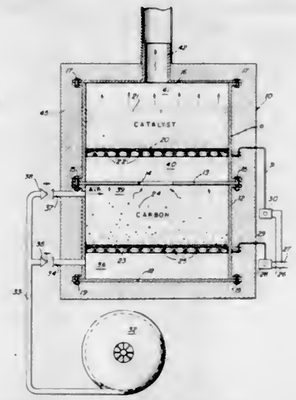
3,469,946
APPARATUS FOR HIGH-TEMPERATURE CONVERSIONS
Peter von Wiesenthal, New York, N.Y., assignor to Alcorn Combustion Company, New York, N.Y., a corporation of Delaware
Filed Sept. 1, 1965, Ser. No. 484,414
Int. Cl. B01j *9/04;* **F23l** *9/00*
U.S. Cl. 23—277 **1 Claim**



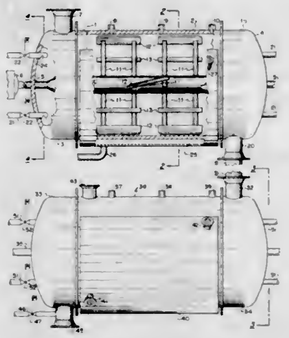
This disclosure teaches cycling of a heat-transfer liquid to upgrade thermal efficiencies in high temperature furnaces. The liquids contemplated for this service are eutectic mixtures of potassium and sodium salts, eutectic mixtures of diphenyl and diphenyloxide, o-dichlorobenzene, tetrachlorobiphenyl compounds, aromatic oils and the like. Heat is recovered in convection tubes and is used to preheat combustion air so that fuel consumption is deduced and smaller furnace sizes are made possible. Circulation of the heat-transfer fluid is conveniently handled in pipes.

3,469,947
ATMOSPHERE GENERATOR
Chauncey R. Drury, Sunnyvale, Calif., assignor to Whirlpool Corporation, a corporation of Delaware
Filed Jan. 12, 1965, Ser. No. 424,898
Int. Cl. B01j *7/00*
U.S. Cl. 23—281 **6 Claims**

1. A generation for generating an atmosphere rich in carbon dioxide but low in oxygen, comprising: a container; means for supporting a fluid permeable mass of solid carbon in said container with a gas space above said mass and a gas space below said mass; means for initiating burning of said carbon; means for forcing air under pressure into said space below said carbon mass for upward flow through said burning mass of carbon to produce gases containing carbon dioxide, carbon monoxide and nitrogen and other inert gases of said air in said space above said mass; means for supplying additional air to said gases in said gas space above said mass to provide a mixture; means for providing a fluid permeable bed of an oxidation catalyst; means for heating said catalyst to a catalyzing temperature; and means for forcing said mixture of said gases through said oxidation catalyst bed to oxidize carbon monoxide in said gases to carbon dioxide, thereby providing said atmosphere rich in carbon dioxide but low in oxygen.



3,469,948
PADDLE-TYPE POLYMERIZATION REACTOR
John E. Anderson, Oakland, and Francis H. Holloway, Hackensack, N.J., and William A. Steen, Odessa, Tex., assignors to Dart Industries Inc., Los Angeles, Calif., a corporation of Delaware
Filed Aug. 24, 1966, Ser. No. 574,765
Int. Cl. B01j *1/14*
U.S. Cl. 23—285 **8 Claims**

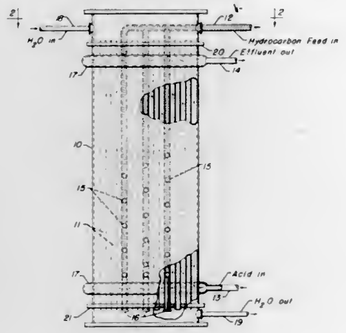


The polymerization reactor comprises a plurality of paddle blades positioned adjacent the reactor's inner surface and a plurality of intermediate paddle blades connected to support members spaced longitudinally along a driven shaft coaxially rotatably mounted within the shell of the reactor and positioned between the shaft and the inner surface. Purge gas inlet and pulsing means are provided in the reactor and/or on the product outlet to pulse a purge gas against the inner surface of the ends of the reactor to prevent product accumulation thereon and to aid in product removal.

3,469,949
ALKYLATION APPARATUS FORMING AN UPWARDLY SPIRALLING FLOW PATH OF REACTANTS

William B. Borst, Jr., Mount Prospect, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

Filed Sept. 23, 1966, Ser. No. 581,600
Int. Cl. B01j 1/00
U.S. Cl. 23—285 4 Claims

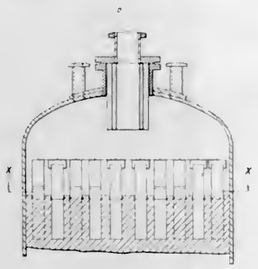


An apparatus for carrying out an alkylation reaction is provided. The apparatus embodies a shell and tube heat exchanger wherein at least part of the tubes of the heat exchanger carry the hydrocarbon feed reactant into the space between the tubes and the shell for reaction by passing these reactants through a series of spaced openings in the tubes which jet the reactants into an upwardly spiraling flow path from the opening around the heat exchanger tubes into a moving flow path of hydrogen fluoride catalyst which has been passed into the shell side of the exchanger.

3,469,950
FIXED-BED CATALYTIC OPERATIONS

Jack Mackley, Rochester, England, assignor to The British Petroleum Company Limited, London, England, an English company

Filed Nov. 6, 1964, Ser. No. 409,446
Claims priority, application Great Britain, Nov. 21, 1963, 45,995/63
Int. Cl. B01j 9/04
U.S. Cl. 23—288 5 Claims



A device for insertion into the catalyst bed of a wholly vapour phase downflow reactor comprises a first perforated tube closed at its lower end which is inserted into the top of the catalyst bed and a cover fitting over the first perforated tube above the level of the catalyst bed, which cover prevents the passage of solid particles into the tube and which is either a second perforated tube open at its lower end but closed at its upper end, or a second imperforate tube open at its upper and lower ends but having around and above its upper end a cowl which defines an annular entry for feedstock vapours, said vapours having to reverse their downward direction of flow and flow upwardly into the annular entry in order to enter the first perforated tube and catalyst bed.

3,469,951
FLEXIBLE NONEXTENSIBLE METAL STRAPS

Mario Zaltron, Via Panizza 30, Vicenza, Italy

Filed Mar. 31, 1966, Ser. No. 539,065
Int. Cl. B21k 27/00
U.S. Cl. 29—183 2 Claims



The present invention provides a flexible nonextensible metal strap for watch-bands, belts, and tapes. The metal strap comprises a flattened continuous spiral, made from a long narrow metal strip of S-shaped cross section, the adjacent turns of which are locked together.

3,469,952
COMPOSITE METALLIC ARTICLES

Colin Baker, Richmond, Va., assignor to Reynolds Metals Company, Richmond, Va., a corporation of Delaware

Filed Mar. 14, 1967, Ser. No. 623,143
Int. Cl. B21c 37/00
U.S. Cl. 29—191.4 12 Claims

Improving the fracture toughness of metals, by incorporating discrete elements of a ductile material. Techniques are presented for introducing wires or rods of the ductile material into a molten or solid matrix of a high strength aluminum base alloy, such as heat-treatable alloy 7075, to form a composite sheet or extruded shape.

3,469,953
LEAD FRAME ASSEMBLY FOR SEMICONDUCTOR DEVICES

Michael J. St. Clair and William L. Keady, Woodside, Calif., assignors to Advalloy, Inc., Palo Alto, Calif., a corporation of California

Continuation of application Ser. No. 593,145, Nov. 9, 1966. This application Dec. 7, 1968, Ser. No. 785,031
Int. Cl. B21c 37/00; B23p 3/20
U.S. Cl. 29—193.5 11 Claims

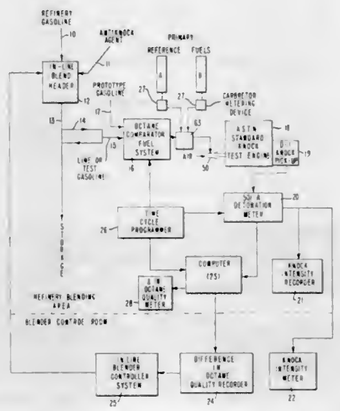


A layer of relatively soft conductive material is deposited longitudinally on a narrow strip of flexible metal material. The strip is stamped to form a plurality of integrally connected lead frames with narrow lead portions, masked, etched to remove portions of soft conductive material, plated, and bonded to substrate supporting tips of lead portions having a layer of soft conductive material.

3,469,954
APPARATUS FOR CONTROLLING OCTANE VALUE IN GASOLINE

Richard A. Hoffman, Claymont, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Filed Nov. 10, 1964, Ser. No. 410,129
Int. Cl. G01n 33/22
U.S. Cl. 44—2 9 Claims



An apparatus for determining the difference in octane quality between a prototype gasoline of known octane quality and a test gasoline of similar composition but of unknown octane quality, and its use in the control of octane quality of blended gasolines during production, said apparatus comprising means for adjusting the prototype and test gasolines to substantially the same temperature, means for alternately supplying said temperature-adjusted gasolines according to a programmed time cycle to a single spill-type carburetor of low fuel holdup, means for alternately measuring the knock intensities of said gasolines in a standard ASTM knock engine, and means for converting said knock intensities into a difference in octane quality between said gasolines.

3,469,955
CORROSION-INHIBITED HYDROCARBON COMPOSITIONS

Hellmuth Grosse-Oetringhaus, Hamburg-Harburg, Germany, assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed June 2, 1966, Ser. No. 554,694
Claims priority, application Germany, June 8, 1965, S 97,518
Int. Cl. C10l 1/22
U.S. Cl. 44—63 4 Claims

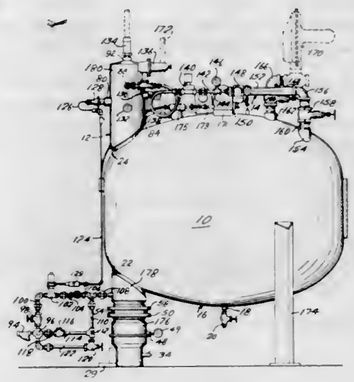
A hydrocarbon composition containing an anticorrosive amount of N-acyl-amino acid and morpholine.

3,469,956
STANDBY LIQUEFIED PETROLEUM GAS UNIT

Verle H. Brown, Seattle, Wash., assignor to E. Sam Dick Co., Inc., Seattle, Wash.

Filed June 8, 1966, Ser. No. 556,229
Int. Cl. C10j 1/06
U.S. Cl. 48—102 5 Claims

Standby unit provides a mixture of air and liquefied petroleum gas to be fed directly into an industrial gas user's supply line for use during periods when natural gas supply is cut off in favor of residential users. The LP gas vaporizer in the unit is partially enclosed within the surge tank which stores the air-gas mixture, to provide heat transfer from the vaporizer to the stored mixture and



thereby maintain it in a vaporized state without necessity for a separate heat source for the surge tank itself.

3,469,957
PROCESS FOR THE PRODUCTION OF COMBUSTIBLE GASES

George Percival and Thomas Rowland Phillips, Solihull, England, assignors to The Gas Council, London, England, a British body corporate

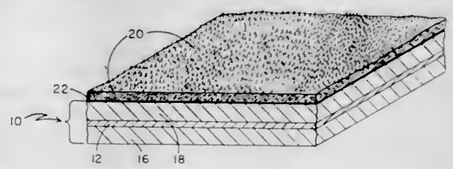
No Drawing. Filed Jan. 12, 1965, Ser. No. 425,052
Claims priority, application Great Britain, Jan. 17, 1964, 2,229/64
Int. Cl. C10k 3/06
U.S. Cl. 48—214 9 Claims

A low temperature steam-reforming process for the production of methane-containing gases wherein a paraffinic hydrocarbon feedstock, containing an average of 2 to 5 carbon atoms per molecule is mixed with steam. The mixture at atmospheric or superatmospheric pressure, is passed through a bed of a steam-reforming catalyst at a bed temperature below 400° C.

3,469,958
DIMENSIONALLY STABLE FLEXIBLE ABRASIVE SHEET MATERIAL

William L. Johnson, Hanover, Mass., assignor to Abrasive Products, Inc., South Braintree, Mass., a corporation of Massachusetts

Filed Dec. 5, 1966, Ser. No. 599,248
Int. Cl. B24d 11/02
U.S. Cl. 51—297 5 Claims



A dimensionally stable flexible abrasive sheet comprising a laminated backing formed of a malleable metallic foil layer between thicker layers of paper, and a layer of abrasive grit adhesively secured to a surface of said laminated backing.

3,469,959

ALUMINOSILICATE ZEOLITE IN A SYNTHETIC RESIN BONDED ABRASIVE ARTICLE

Harold A. Stein, Niagara Falls, N.Y., assignor to The Carborundum Company, Niagara Falls, N.Y., a corporation of Delaware

No Drawing. Filed Sept. 8, 1966, Ser. No. 577,834
Int. Cl. C08g *51/12;* **C04b** *31/16*
U.S. Cl. 51—298 **5 Claims**

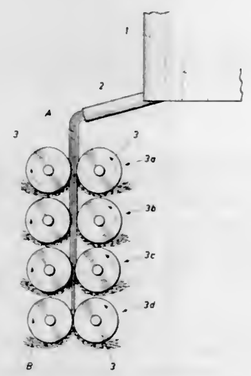
Bonded abrasive articles containing from about 2% to about 30% finely divided aluminosilicate zeolite molecular sieve adsorbent are relatively free of pores or voids formed during molding and curing operations, but are relatively unaffected by moisture in the atmosphere.

3,469,960

APPARATUS FOR PRODUCING MINERAL WOOL

Max Putzig, Hasselgatan 4, Goteborg V, Sweden

Filed Oct. 14, 1966, Ser. No. 586,692
Int. Cl. C03b *19/04, 37/04*
U.S. Cl. 65—15 **6 Claims**



An apparatus for producing mineral wool including parts of rapidly rotating drums arranged one below the other with one drum of each part being located on opposite sides of a free falling stream of melted substance. Each drum withdraws a thin layer of substance from the free falling stream and the free space between the drums of each pair is continuously decreased downwardly in order to compensate for the reduced thickness of the stream.

3,469,961

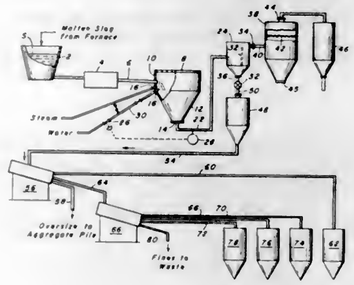
METHOD AND APPARATUS FOR MAKING SLAG PELLETS

Thomas F. Barnhart, O'Hara Township, Allegheny County, and Roger L. Rueckl, Franklin Township, Westmoreland County, Pa., assignors to United States Steel Corporation, a corporation of Delaware

Filed Aug. 25, 1966, Ser. No. 574,977
Int. Cl. C04b *5/00;* **C03b** *19/08, 19/10*
U.S. Cl. 65—20 **10 Claims**

A method of making dense spherical slag particles in which a high velocity gas jet is injected into a falling oblong stream of molten slag in the direction of the long dimension.

Apparatus for making either dense or porous slag pellets which includes a closed chamber having an upper portion of large horizontal cross section tapering to a small bottom opening, means providing a stream of molten slag in the top of the chamber, a jet of gas injected into the molten slag to break it into round pellets and fibrous particles, means for controlling the introduction of pellet cooling water into the stream to such an amount that the water is converted to steam and together with the gas forms a carrier for the pellets into a separator which separates the pellets from the fibrous particles.

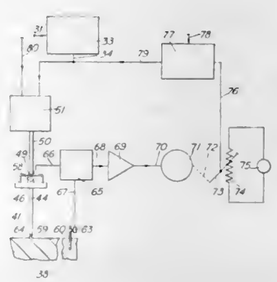


3,469,962

METHOD AND APPARATUS FOR SURFACE LEVEL CONTROL OF MOLTEN GLASS

David Edward Owen, Billinge, Wigan, England, assignor to Pilkington Brothers Limited, Liverpool, Lancashire, England

Filed Nov. 17, 1965, Ser. No. 508,344
Claims priority, application Great Britain, Dec. 18, 1964, 51,614/64
Int. Cl. C03b *15/04*
U.S. Cl. 65—29 **10 Claims**



The surface level of a body of molten glass is continuously indicated by drawing a bead of glass from the surface, and maintaining that bead unbroken while its electrical resistance is continuously monitored and the bead is returned to its optimum height if a resistance change takes place.

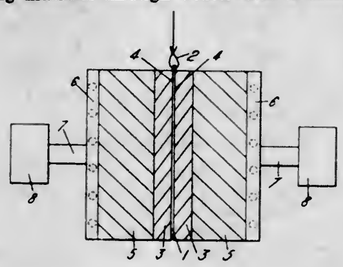
3,469,963

METHOD OF AND APPARATUS FOR TOUGHENING GLASS

John Reginald Beattie, Maghull, near Liverpool, England, assignor to Pilkington Brothers Limited, Liverpool, Lancashire, England, a corporation of Great Britain

Filed Dec. 6, 1965, Ser. No. 511,784
Claims priority, application Great Britain, Dec. 9, 1964, 50,157/64
Int. Cl. C03b *27/00*
U.S. Cl. 65—115 **9 Claims**

A hot glass sheet is toughened by contacting its surfaces with opposed bodies of graphite-containing heat-conducting material through which heat is extracted by maintaining a reference temperature at the remote surfaces of those bodies.

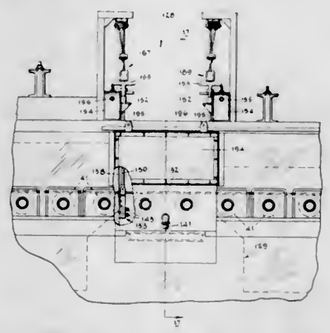


3,469,964

CUT-OFF VENTING MEANS FOR SHEET GLASS PROCESS

James T. Zellers, Jr., Charleston, W. Va., assignor to Libbey-Owens-Ford Glass Company, Toledo, Ohio, a corporation of Ohio

Original application Sept. 17, 1962, Ser. No. 224,007, now Patent No. 3,241,940, dated Mar. 22, 1966. Divided and this application Sept. 3, 1965, Ser. No. 485,030
Int. Cl. C03b *25/04, 15/02*
U.S. Cl. 65—194 **4 Claims**



An elongated annealing lehr through which a continuous glass ribbon is carried on a series of horizontally aligned rolls for gradual cooling, including means closing off the space between the bottom of the sheet and the floor of the lehr at a pair of spaced locations to form a substantially closed chamber therebetween, means above said first named means closing off the space between the top of the sheet and the roof of the lehr at a pair of spaced locations forming a chamber therebetween, and an opening in the lehr roof venting the chamber above the sheet to the outside to prevent movement of convection currents throughout the full length of the lehr.

3,469,965

TREATING HARVESTED PLANT MATERIALS WITH UREA DERIVATIVES

Michael Ian Bruce, John A. Zwar, and Noel Price Kefford, all of 314 Albert St., East Melbourne, Victoria, Australia

No Drawing. Filed Feb. 16, 1966, Ser. No. 527,777
Claims priority, application Great Britain, Feb. 18, 1965, 7,009/65
Int. Cl. A01n *3/00, 9/20*
U.S. Cl. 71—68 **4 Claims**

Treatment of harvested plant materials to improve their storage characteristics which comprises treating the plant material with a preserving effective amount of a urea derivative of the formula:

R.NH.CO.NH.R'

where R is selected from the group consisting of substituted phenyl and, heterocyclic aromatic groups and R' is selected from the group consisting of hydrogen, phenyl and substituted phenyl groups.

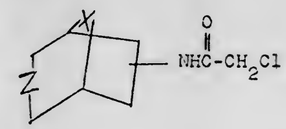
3,469,966

BICYCLIC AMIDES HAVING HERBICIDAL PROPERTIES

Peter E. Newallis, Morris Plains, and Zafarullah K. Cheema, Morristown, N.J., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed Jan. 23, 1967, Ser. No. 610,740
Int. Cl. A01n *9/20;* **C07c** *103/34*
U.S. Cl. 71—118 **5 Claims**

Bicyclic acetamides characterized by the general formula:



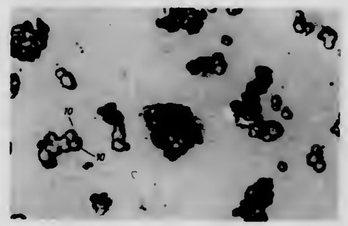
wherein X represents methylene or ethylene and Z represents ethylene or vinylene, which are used as the active ingredients in herbicidal compositions.

3,469,967

PROCESS FOR THE PRODUCTION OF NICKEL REFRACTORY OXIDE POWDERS AND PRODUCT THEREOF

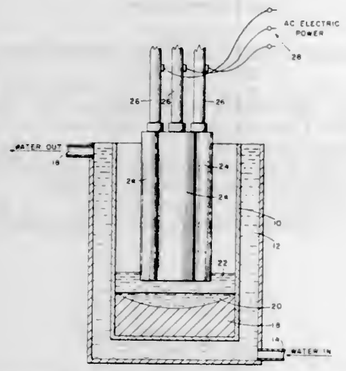
Basil Meddings and Bauke Weizenbach, Fort Saskatchewan, Alberta, David John Ivor Evans, North Edmonton, Alberta, and Vladimir Nicolaus Mackiw, Fort Saskatchewan, Alberta, Canada, assignors to Sherritt Gordon Mines Limited, Ontario, Canada, a company of Canada

Filed Feb. 10, 1966, Ser. No. 543,495
Claims priority, application Canada, Feb. 12, 1965, 923,160
Int. Cl. C22b *23/00*
U.S. Cl. 75—.5 **17 Claims**



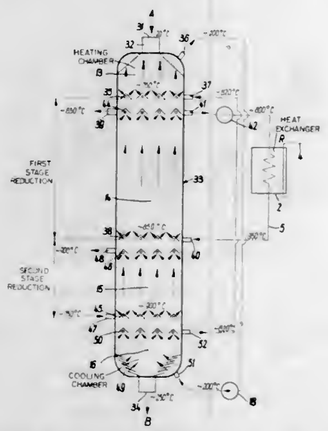
A process for preparing nickel powder particles having submicron sized refractory oxide particles fixed in the surfaces thereof which involves the impregnation of finely divided basic nickel carbonate particles with discrete submicron sized refractory oxide particles following by the direct reduction of the refractory oxide impregnated basic nickel carbonate particles to elemental nickel powder by reacting a liquid suspension of the impregnated elemental particles with hydrogen at elevated temperature and pressure.

3,469,968
ELECTROSLAG MELTING
Karl S. Snow, Boulder City, Nev., assignor to Allegheny Ludlum Steel Corporation, Brackenridge, Pa., a corporation of Pennsylvania
Filed Oct. 20, 1965, Ser. No. 498,526
Int. Cl. C22d *7/00;* **B22d** *27/02*
U.S. Cl. 75—10 **10 Claims**



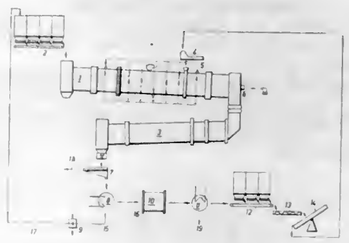
A process for melting consumable electrode of metal by electroslag resistance heating wherein a pool of molten metal is established in a mold and a consumable electrode positioned thereabove. A layer of molten slag is formed above the molten metal and the end of the consumable electrode is immersed in the slag whereby alternating current resistance heating of the slag layer causes melting of the consumable electrode and is continued until an ingot is formed.

3,469,969
PROCESS FOR REDUCING IRON ORES
Hermann Schenck, Intzestrasse 1, Aachen, Germany; Werner Wenzel, Prinz-Heinrich-Strasse 29, Aachen, Germany; and Franz-Rudolf Block, Kalfstrasse, Rotgen, Germany
Filed Oct. 23, 1965, Ser. No. 503,601
Claims priority, application Germany, May 25, 1965, Sch 37,124; June 18, 1965, Sch 37,249
Int. Cl. C21b *1/10;* **C21c** *5/38*
U.S. Cl. 75—26 **9 Claims**



Process for the reduction of iron ore by a reducing agent in which heat produced in an atomic reactor is transferred to the ore and reducing agent by a coolant for the reactor. The reduction is effected in two reaction zones in which the ore is successively reduced, the reduction being achieved to a degree of completion of about 40 to 75% in the first stage, whereas the residual oxygen content at the end of the second stage is about 5 to 15%. The first reduction stage is carried out at elevated pressure and the produced gas is washed to yield a reducing gas which is used in the second stage.

3,469,970
PELLETIZATION OF A SPONGE IRON PRODUCED BY DIRECT REDUCTION
Günter Heitmann, Frankfurt am Main-Niederrad, Germany, assignor to Metallgesellschaft Aktiengesellschaft, Frankfurt am Main, Germany, and The Steel Company of Canada Limited, Hamilton, Ontario, Canada
Filed Oct. 4, 1965, Ser. No. 492,546
Claims priority, application Germany, Oct. 8, 1964, M 62,701
Int. Cl. C21b *13/08*
U.S. Cl. 75—33 **9 Claims**



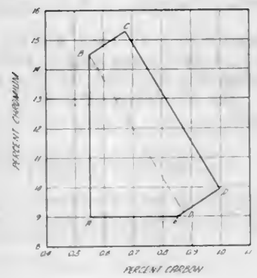
Lumps of sponge iron are produced by directly reducing iron ores in a rotary kiln, crushing the reduced ore, separating the crushed iron ore from the tailings, pelletizing the separated sponge, ,and then hardening the pellets under reducing conditions at a temperature of from 500 to 1200° C. The hardened pellets contain at least 80% metallic iron.

3,469,971
RECOVERY OF PLATINUM FROM DEACTIVATED CATALYSTS
James G. Leopard, Shreveport, La., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware
No Drawing. Filed Feb. 28, 1967, Ser. No. 619,203
Int. Cl. C22b *11/00*
U.S. Cl. 75—121 **5 Claims**

The removal of iron contaminants from platinum recovered from deactivated platinum-alumina catalysts by treating the platinum residue with activated carbon in an oxygen-free atmophere and then in an oxygen-containing atmosphere. The resulting mixture is then treated with a mineral acid whereby the iron contaminant is solubilized and is thereafter removed from the platinum group metal.

3,469,972
RAZOR BLADES AND SIMILAR THIN ELONGATED SHARP-EDGED BLADES MADE OF A CHROMIUM STEEL
Jan-Christer Henric Ovesson Carlen, Sandviken, Sweden, and Francis Edward Flaherty, Canton, and Wyman Carrick Tupper, Marblehead, Mass., assignors to Sandvikens Jernverks Aktiebolag, Sandviken, Sweden, a corporation of Sweden
Filed Jan. 4, 1966, Ser. No. 518,583
Int. Cl. C22c *39/18, 39/48;* **C21d** *1/18*
U.S. Cl. 75—126 **10 Claims**

Razor blades having a good corrosion resistance and a cutting edge hardness above VPN 700 after tempering up to 500° C., characterized in that the razor blades are made from a steel having good working properties and consisting essentially of carbon and chromium in amounts within the area ABCDEA of the accompanying diagram; 0.70–2.5% silicon; up to 2% manganese; a member of the class consisting of molybdenum, tungsten, and mixtures thereof, the amount of molybdenum when present alone being 0.5–2.5%, the amount of tungsten when present alone being 1.0–5.0%, and the sum of the amounts of molybdenum and one-half the tungsten when both are present being 0.5 to 2.5; 0–1.5% of nickel; 0–1.5% of copper, and 0–0.5% cobalt, the total amount



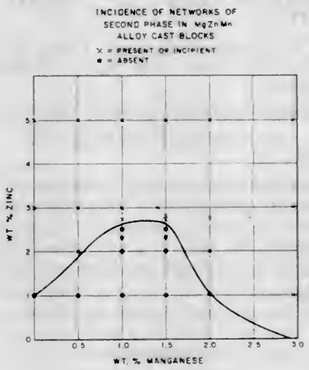
of all nickel, copper and cobalt being at most 1.5%; and the remainder being substantially all iron; and in which the sum of the amounts of chromium, molybdenum and one-half the tungsten is 10–15%. The method of making such blades which includes cold rolling the steel to the desired thin dimension, hardening the cold rolled steel to high hardness by heating it to a temperature within the range 1000° to 1150° C. and subsequently cooling to a temperature below room temperature, the temperature and time of the hardening step being selected to provide substantially maximum hardness of the steel after cooling.

3,469,973
MAGNETIC ALLOY FOR DATA STORAGE DEVICES
John Duckles Underwood, London, England, assignor to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware
No Drawing. Filed Aug. 18, 1965, Ser. No. 480,812
Claims priority, application Great Britain, Oct. 2, 1964, 40,199/64
Int. Cl. C22c *19/00, 1/10;* **H01f** *1/00*
U.S. Cl. 75—170 **2 Claims**

This is an invention of a magnetic alloy having a substantially rectangular hysteresis loop, a coercive force of not more than 3 oersteds and substantially magnetically isotropic in which said alloy contains 65–83% nickel, 15–33% cobalt and 2% phosphorus.

3,469,974
MAGNESIUM BASE ALLOYS
Wolfram H. O. Ziegler, Uberlingen (Bodensee), Germany, and Philip A. Fisher, Swinton, England, assignors to Magnesium Elektron Limited, Swinton, Manchester, England, a company of the United Kingdom
Continuation-in-part of application Ser. No. 477,193, Aug. 4, 1965. This application Sept. 12, 1967, Ser. No. 667,165
Claims priority, application Great Britain, Aug. 7, 1964, 32,303/64
Int. Cl. C22c *23/00*
U.S. Cl. 75—168 **7 Claims**

A magnesium base alloy in wrought condition which, apart from impurities, consists essentially of 0.6–1.3%



by weight of manganese, 1.2–2.5% by weight of zinc and the remainder magnesium.

3,469,975
METHOD OF HANDLING CREVICE-CORROSION INDUCING HALIDE SOLUTIONS
Octavian Bertea, Warren, Howard B. Bomberger, Jr., East Liverpool, and Layne F. Plock, Warren, Ohio, assignors to Reactive Metals, Inc., a corporation of Delaware
No Drawing. Continuation-in-part of application Ser. No. 561,391, June 29, 1966. This application May 3, 1967, Ser. No. 635,686
Int. Cl. C22c *15/00;* **B01**
U.S. Cl. 75—175.5 **3 Claims**

A method of handling crevice-corrosion-inducing halide solutions such as sea water that involves containing the solution in a structure having a solution-contacting surface of an alloy of titanium with at least one of nickel, cobalt or molybdenum. The nickel, cobalt and molybdenum are present in amounts of up to 5.0% nickel, at least about 0.3% cobalt and at least about 2.0% molybdenum.

3,469,976
ISOSTATIC HOT PRESSING OF METAL-BONDED METAL CARBIDE BODIES
Ralph K. Iler, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed July 31, 1967, Ser. No. 657,048
Int. Cl. B22f *3/00;* **C22c** *1/04, 1/10*
U.S. Cl. 75—204 **24 Claims**

A mixture of a powdered metal carbide and a powdered binder metal is formed into a billet by compacting the mixture and sintering the resulting compact. The sintered billet is placed in a hot pressing mold where it is surrounded with a powdered borosilicate glass which contains from about 83 to about 99.7% by weight SiO_2 and from about 0.3 to about 17% by weight B_2O_3 and which is essentially free of alkali and alkaline earth metals. The billet and surrounding glass are heated to a temperature sufficient to render the glass plastic and while maintaining that temperature, pressure is applied to the glass, thereby isostatically hot pressing the billet. Articles of near theoretical density can thus be obtained. Hot pressing temperatures of from 1200 to 1700° C. and pressures of from 3000 to 6000 p.s.i. are representative. Borosilicate glasses containing from 86 to 99% by weight SiO_2 and from 1 to 14% by weight B_2O_3 are preferred for the 1200 to 1700° C. temperature range.

3,469,977

ELECTROSTATIC PRINTING PAPERS INCLUDING A PRIME COATING OF A MIXTURE OF A TERPOLYMER AND AN ALKALI METAL SILICATE

Richard L. Savage, Naugatuck, Conn., assignor to Uniroyal, Inc., New York, N.Y., a corporation of New Jersey

No Drawing. Filed Oct. 1, 1965, Ser. No. 492,282

Int. Cl. G03g 7/00; B44d 1/00

U.S. Cl. 96—1.5 6 Claims

This invention is directed to an improved copy sheet for electrostatic printing. The copy sheet has a prime coating which comprises a mixture of from 30 to 70 dry parts by weight of a latex of a terpolymer, of butadiene, styrene, and an unsaturated polycarboxylic acid and from 70 to 30 dry parts by weight of an alkali metal silicate, the silicate being either potassium silicate or sodium silicate.

3,469,978

PHOTOSENSITIVE ELEMENT

Charles Wood, Pittsford, G Sanjiv Kamath, Rochester, and James H. Neyhart, Penfield, N.Y., assignors to Xerox Corporation, Rochester, N.Y., a corporation of New York

Filed Nov. 30, 1965, Ser. No. 510,561

Int. Cl. G03g 7/00; C01b 25/00; C23c 13/00

U.S. Cl. 96—1.5 15 Claims

A xerographic plate comprising a supporting substrate having on one surface thereof a substantially binderless photoconductive insulating layer of at least one compound of the Group III–V elements, said substrate having an electrical resistance less than said photoconductive insulating layer, with said photoconductive insulating layer having a resistivity of at least about 10^{10} ohm-cm. and being capable of supporting an electrostatic charge in the dark and dissipating a portion of said charge in response to electromagnetic radiation impinging thereon.

3,469,979

ELECTROPHOTOGRAPHIC RECORDING ELEMENT WITH INCREASED SPEED

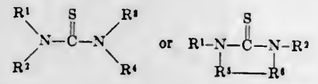
Louis James Ferrarini, Wakefield, R.I., Harold J. Homonoff, Saxonville, and George R. Nelson, Holliston, Mass., assignors to Dennison Manufacturing Company, Framingham, Mass., a corporation of Nevada

No Drawing. Filed Nov. 26, 1965, Ser. No. 510,089

Int. Cl. G03g 7/00

U.S. Cl. 96—1.7 8 Claims

An electrophotographic recording element comprising a backing and a coating comprising a finely-divided photoconductive zinc oxide and finely-divided sensitizing dye dispersed in an insulating binder and characterized by a hypersensitizer for increasing the speed of discharge of the coating when electrostatically charged and exposed to light. The sensitizer is either thiourea dioxide or a compound of the structure



where each of R^1, R^2, R^3 and R^4 is either hydrogen, lower aliphatic, lower cycloaliphatic, lower acyl, aryl or heterocyclic monovalent radicals and R^5 and R^6 are lower divalent aliphatic radicals.

3,469,980

DESCUMMING SOLUTION FOR ETCHING

Karl Heyman, Montclair, and Harold Messerschmidt, Stockholm, N.J., assignors to Mona Industries, Inc., Paterson, N.J., a corporation of New Jersey

No Drawing. Filed June 27, 1966, Ser. No. 560,847

Int. Cl. G03f 7/10; C09k 3/00

U.S. Cl. 96—36.3 4 Claims

A process of descumming a zinc photoengraving plate by treating the plate with an aqueous solution of 8 to 10 weight percent oxalic acid, and 0.3 to 1.5 weight percent nitric acid.

3,469,981

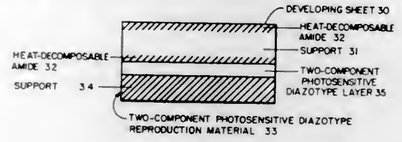
DIAZOTYPE REPRODUCTION MATERIALS

Jaromir Kosar, Beechhurst, N.Y., assignor to Keuffel & Esser Company, Hoboken, N.J., a corporation of New Jersey

Original application Mar. 19, 1963, Ser. No. 266,230, now Patent No. 3,255,007, dated June 7, 1966. Divided and this application July 12, 1965, Ser. No. 482,655

Int. Cl. G03c 1/58, 5/34

U.S. Cl. 96—49 24 Claims

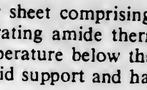


1. A process for forming an azo dye comprising:

(a) placing in face-to-face combination:

(1) a two-component diazotype sheet material comprising a diazonium compound and an azo dye coupler capable of forming an azo dye with said diazonium compound in an alkaline environment; and

(2) a developer sheet comprising a support, and an alkali-liberating amide thermally-decomposable at a temperature below the scorching temperature of said support and having the general formula



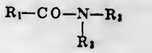
wherein R_1 is hydrogen, alkyl, alkylene, aryl or an amidated polymeric radical having a molecular weight of about 40,000, and R_2 and R_3 are, individually, hydrogen, alkyl or aryl; and

(b) heating said combination to a temperature between the decomposition temperature of said amide and the scorching temperature of said support.

2. A process for forming a diazotype image comprising:

(a) imagewise exposing to actinic radiation diazotype sheet material comprising a light-sensitive diazonium compound and an azo dye coupler capable of forming an azo dye with said diazonium compound in an alkaline environment;

(b) placing said diazotype material in face-to-face contact with a developer sheet comprising a support, and an alkali-liberating amide thermally-decomposable at a temperature below the scorching temperature of said support and having the general formula



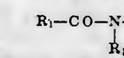
wherein R_1 is hydrogen, alkyl, alkylene, aryl or an amidated polymeric radical having a molecular weight of about 40,000, and R_2 and R_3 are, individually, hydrogen, alkyl or aryl; and

(c) heating said combination to a temperature between the decomposition temperature of said amide and the scorching temperature of said support.

20. A diazotype developer sheet comprising:

(a) a support;

(b) an alkali-liberating amide thermally-decomposable at a temperature below the scorching temperature of said support and having the general formula



wherein R_1 is hydrogen, alkyl, alkylene, aryl or an amidated polymeric radical having a molecular weight of about 40,000, and R_2 and R_3 are, individually, hydrogen, alkyl or aryl; and

(c) an organic acid in an amount between about 20% and 50% of the amount of amide.

3,469,982

PROCESS FOR MAKING PHOTORESISTS

Jack Richard Celeste, 40 Cameron Court, Freehold, N.J. 07728

No Drawing. Continuation-in-part of application Ser. No. 477,016, Aug. 3, 1965. This application Sept. 11, 1968, Ser. No. 759,217

Int. Cl. G03c 1/90, 5/00; G03f 7/10

U.S. Cl. 96—35.1 15 Claims

A process for forming a photoresist which comprises:

(1) applying to a surface the surface of an unexposed photopolymerizable layer, the other surface being adhered to a film support, then in either order

(2) exposing the layer, and

(3) stripping the support, and finally,

(4) washing away the unexposed areas of the layer. The surface bearing the resist can be etched, plated, or treated in other ways.

3,469,983

PREPARATION OF PHOTOPOLYMER LITHOGRAPHIC OFFSET PAPER PLATES

Carl E. Diener and William G. Herrick, Binghamton, N.Y., assignors to GAF Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed July 6, 1965, Ser. No. 469,922

Int. Cl. G03c 1/86; B41m 3/00

U.S. Cl. 96—75 10 Claims

Lithographic plate having a paper base, an anchoring layer thereon of heat-cured hydroxyethyl cellulose, and an overlying light-sensitive layer of a lipophilic resin containing a polymerizable ethylenically unsaturated monomer and a radiation-sensitive ferric salt as a polymerization catalyst.

3,469,984

HEAT-SENSITIVE DIAZOTYPE MATERIALS

Edward C. Bialczak, Mount Prospect, Ill., assignor to Addressograph-Multigraph Corporation, Cleveland, Ohio, a corporation of Delaware

No Drawing. Filed May 17, 1965, Ser. No. 456,536

Int. Cl. G03c 1/60, 1/58

U.S. Cl. 96—75 6 Claims

A heat-sensitive diazotype material having two coatings wherein one coating contains a diazo compound and a coupling component and the other coating contains a metallic salt amine adduct, the amine being selected from the group consisting of alicyclic and heterocyclic amines.

3,469,985

LIGHT-ABSORBING DYES DERIVED FROM BARBITURIC AND 2 - THIOBARBITURIC ACID COMPOUNDS USEFUL FOR PHOTOGRAPHY AND THEIR PREPARATION

Joseph Bailey, Wealdstone, Harrow, England, assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Original application June 13, 1963, Ser. No. 287,530. Divided and this application Apr. 4, 1968, Ser. No. 718,911

Int. Cl. G03c 1/84

U.S. Cl. 96—84 9 Claims

Process for preparing novel light-absorbing dyes useful, for example, in light absorbing filter layers in photography by reacting a barbituric acid or a 2-thiobarbituric acid with ethyl orthoacetate or ethyl orthopropionate, for example. Complex dyes are obtained by condensing the dyes formed as indicated above with cyanine or merocyanine dye intermediates. Derivatives are readily prepared by heating the first formed dyes with a reactant such as a primary amine, piperidine, ammonia, fuming sulfuric acid or bromine, for example.

3,469,986

SILVER HALIDE EMULSIONS CONTAINING MAGENTA - COLORED CYAN - FORMING COUPLERS

Makoto Yoshida, Keisuke Shiba, and Akio Okumura, Minami-Ashigara machi, Japan, assignors to Fuji Shashin Film Kabushiki Kaisha, Kanagawa, Japan

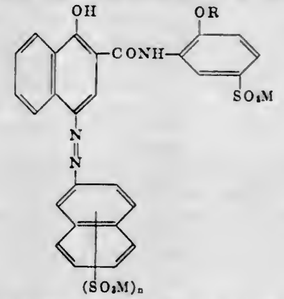
Filed Jan. 24, 1966, Ser. No. 522,556

Claims priority, application Japan, Jan. 23, 1965, 40/3,281

Int. Cl. G03c 1/40

U.S. Cl. 96—100 9 Claims

A color photographic silver halide emulsion containing a magenta color cyan coupler having remarkable auto-masking action represented by the formula



wherein R represents an alkyl group having more than 10 carbon atoms; M represents a member selected from the group consisting of hydrogen, an alkali metal, an ammonium group, and $—H.NH_p(R'')_q$, where p is an integer selected from the group 0 to 3, q is an integer selected from the group 0 to 3 inclusive, $p+q=3$, and R'' is a lower alkyl group; and n is an integer selected from the group 1 to 2 inclusive.

3,469,987

METHOD OF SPECTRALLY SENSITIZING PHOTOGRAPHIC SILVER HALIDE EMULSIONS

James M. Owens and James L. Graham, Rochester, N.Y., and Edward A. Pilsworth, Toronto, Ontario, Canada, assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed June 21, 1965, Ser. No. 465,736

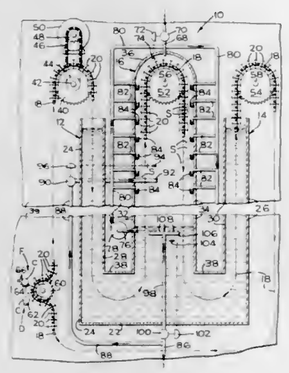
Int. Cl. G03c 1/10

U.S. Cl. 96—102 15 Claims

Photosensitive silver halide is spectrally sensitized by forming a dispersion of a substantially water-insoluble spectral sensitizing dye in a hydrophilic colloid, and in-

corporating the dispersion of dye in colloid in a light sensitive system comprising photosensitive silver halide dispersed in a hydrophilic colloid.

3,469,988
CONTINUOUS PROCESS FOR COOKING FOOD CONTAINED IN HERMETICALLY SEALED GLASS CONTAINERS
Ernest S. Yawger, San Jose, Calif., assignor to FMC Corporation, San Jose, Calif., a corporation of Delaware
Continuation-in-part of application Ser. No. 528,940, Feb. 21, 1966. This application June 21, 1967, Ser. No. 647,706
Int. Cl. H23l *3/02, 1/00;* **B65b** *55/18*
U.S. Cl. 99—1 **5 Claims**



A hydrostatic cooker having a cooking chamber filled with a steam-air mixture maintained at the sterilizing temperature and at a pressure sufficient to prevent rupture of hermetically sealed containers due to cooking pressure increase within the containers passing through the cooking chamber. Streams of sprays of cascading water at/or slightly above the cooking temperature in the cooking chamber is either directed onto the containers for heating the same by liquid contact. or is directed adjacent to but not against the containers for maintaining the steam-air mixture adjacent the containers at the cooking temperature and for circulating the mixture assuring that vapor condensed upon contact with the containers during heating is immediately replaced by hot vapor evaporated from the cascading water thereby preventing a zone of heat insulating air from surrounding the containers.

3,469,989
ANIMAL FEED SUPPLEMENT CONTAINING A SALT OF SUCROSE PHOSPHATE
Julian Gagolski, Chatswood, New South Wales, and Bruce M. Smythe, Roseville, New South Wales, Australia, assignors to The Colonial Sugar Refining Company, Limited, New South Wales, Australia
No Drawing. Filed July 12, 1965, Ser. No. 471,413
Int. Cl. A23l *1/16*
U.S. Cl. 99—2 **7 Claims**

An animal feed supplement, for example a salt block, having incorporated therein a soluble, non-toxic mineral metal salt of a sugar, for example sucrose, phosphate or a soluble, non-toxic, trace mineral metal complex of such a mineral metal salt of a sugar phosphate, for supplying to an anmial, in assimilable form and in proportions as required, dietary mineral metals such as calcium, magnesium, sodium, potassium, cobalt, zinc, iron, copper and manganese.

3,469,990
TRACERS
Sylvan Eisenberg, 2101 Wawona, San Francisco, Calif. 94116
No Drawing. Filed Apr. 6, 1966, Ser. No. 540,499
Int. Cl. A23k *1/00*
U.S. Cl. 99—2 **3 Claims**

The combination with a mixed animal feed of a tracer for the feed supplement or micro-ingredient portion of said feed, said tracer comprising a finely divided water-insoluble vehicle and a water-soluble dye adsorbed by said vehicle, the vehicle being characterized by the property of strongly adsorbing the dye to such a degree that the dye cannot be fully eluted from the vehicle in its entirety by water or steam.

3,469,991
HIGH PROTEIN PRODUCT AND PROCESS FOR PRODUCING SAME
Robert L. Hawley, Morgan Park, Ill., assignor to Libby, McNeill & Libby, Chicago, Ill., a corporation of Maine
No Drawing. Filed Feb. 2, 1966, Ser. No. 524,468
Int. Cl. A23j *1/14*
U.S. Cl. 99—17 **7 Claims**

Preparation of a food product having a paste-like consistency by introducing oil-soluble flavoring material into oil containing unhydrated soy-protein particles.

3,469,992
CHILL STABILITY AND FOAM ADHERENCE OF BEER
Frede B. Strandskov, North Caldwell, N.J., and Henry L. Ziliotto, Wantagh, N.Y., assignors to The T. & M. Schaefer Brewing Company, Brooklyn, N.Y.
No Drawing. Continuation-in-part of application Ser. No. 353,572, Mar. 20, 1964. This application Apr. 16, 1968, Ser. No. 721,634
Int. Cl. C12h *1/00*
U.S. Cl. 99—48 **5 Claims**

A method is provided for improving the chill stability and foam adherence properties of finished, unpasteurized beer which has been preserved against microbial growth by the addition of heptyl para-hydroxybenzoate. The method comprises adding to and intimately admixing with the preserved beer a propylene glycol alginate alone or together with either cobalt or FS–26W. The present invention also provides the improved beer compositions.

3,469,993
LIPOLYZED MILK FAT PRODUCTS
Douglas John Pangier, Madison, Wis., assignor, by mesne assignments, to Miles Laboratories, Inc., Elkhart, Ind., a corporation of Indiana
No Drawing. Filed July 11, 1966, Ser. No. 563,986
Int. Cl. A23c *23/00;* **C12d** *1/02*
U.S. Cl. 99—59 **3 Claims**

Improved lipolyzed milk fat products can be obtained by treating a milk fat medium with a lactic acid-producing bacterial culture and then contacting the milk fat medium with a lipase enzyme system to effect lipolysis.

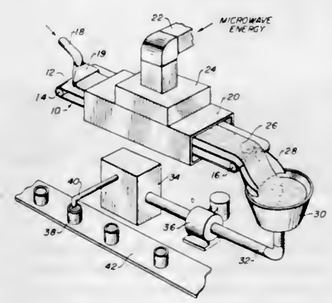
3,469,994
TREATING SOYBEAN MEAL TO INHIBIT CAKING
Merl A. Williams, Craigville, Ind., assignor to Central Soya Company, Inc., Fort Wayne, Ind., a corporation of Indiana
Filed June 13, 1966, Ser. No. 557,209
Int. Cl. A23l *1/20*
U.S. Cl. 99—98 **11 Claims**

Soybean meal is toasted to form meal particles of varying sizes and the meal passed over screens to separate smaller particles from large oversize particles, the oversize particles being ground to expose the interior tacky portions thereof, and the tacky portions of the particles being coated with an inert fine coating powder clinging to the particles to inhibit caking. In addition, a small amount of fat may be added with the coating powder to make the product free flowing.

3,469,995
MEAT ADDITIVES
David Jacoby, Los Angeles, and Rosalynne J. Berhold, Santa Monica, Calif., assignors to Adolph's Food Products Mfg. Co., Burbank, Calif., a corporation of California
No Drawing. Filed Dec. 23, 1965, Ser. No. 516,135
Int. Cl. A22c *11/00*
U.S. Cl. 99—108 **5 Claims**

Improvement in meat additives for the retention of moisture, reduction in shrinkage, and improvement in texture of ground and diced meats by the addition of one or more than one of the following ingredients, to wit: unmodified starches containing 50% or more of amylopectin, a chelating agent, and a protease, or combinations thereof.

3,469,996
PROCEDURE FOR CONTINUOUSLY TEMPERING SHORTENING
Joseph G. Endres, Downers Grove, Raymond J. Wrobel, Chicago, and Robert B. Rendek, Hillside, Ill., assignors to Armour and Company, Chicago, Ill., a corporation of Delaware
Filed Feb. 14, 1966, Ser. No. 527,355
Int. Cl. A23d *5/03*
U.S. Cl. 99—118 **3 Claims**

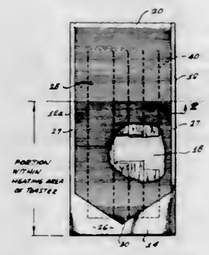


A more uniform tempered shortening is produced by supercooling molten shortening triglycerides to crystallization and then quick heating them with microwaves.

3,469,997
METHOD OF PRODUCING HANDLE-ANCHORED FORMED SUGAR BLOCK
Emil R. Rossi, 71 Windom Ave. 10305, and Aldo A. Rainero, Jr., 810 Henderson Ave. 10310, both of Staten Island, N.Y.
Continuation-in-part of application Ser. No. 455,274, May 12, 1965. This application Dec. 6, 1966, Ser. No. 599,450
The portion of the term of the patent subsequent to Apr. 4, 1984, has been disclaimed
Int. Cl. A23g *3/00;* **C13f** *3/00*
U.S. Cl. 99—138 **1 Claim**

A process for pressure forming sugar blocks around wooden sticks, having one end with a cylindrical shape, for use as a sweetener and stirrer, comprising (1) placing the cylindrical end of the stick in a die coated with a film of lubricant, (2) pouring into the die a dry mixture of can sugar crystals containing about 3% to 20% by weight of dry sugar crystals in needle crystal form, and (3) compressing said mixture around said stick to yield a sugar block of a hardness of about 10 kg. as determined by the Strong Cobb-Arner hardness tester.

3,469,998
FOOD PACKAGE
Alan B. Lane, Northridge, Calif., assignor to Reddi-Bacon, Inc., Los Angeles, Calif., a corporation of California
Filed Nov. 4, 1965, Ser. No. 506,349
Int. Cl. B65d *85/36;* **B65b** *65/42*
U.S. Cl. 99—171 **10 Claims**



A package for food which is insertable into a toaster and which includes a wrapping of heat-resistant sheet material enclosing the food. The exterior surface of the sheet material is partially coated with heat-resistant material and the remainder of the exterior surface is coated with heat-absorbent material in a predetermined pattern so that the food is heated substantially uniformly to prevent overcooking and undercooking of portions of the food. The interior surface of the sheet material may be provided with a sanitary layer of inert, heat-fusible plastic material.

3,469,999
METHOD OF PACKAGING BREAD
George L. Meyers, Menasha, Wis., assignor to American Can Company, New York, N.Y.
Original application June 29, 1964, Ser. No. 378,503, now Patent No. 3,355,303, dated Nov. 28, 1967. Divided and this application Aug. 24, 1967, Ser. No. 671,525
Int. Cl. B65b *25/18, 25/16*
U.S. Cl. 99—173 **2 Claims**

A method of packaging bread with a sheet material which is either partially or entirely heat shrinkable. Heat is applied to the packaged bread so as to shrink only a portion of the package in tight relationship to the bread. A hole is provided under a gusset to permit air to be exhausted from the package during shrinking so that the gusset closes the opening upon removal of the air.

3,470,000
FROZEN MUSHROOM PRODUCT
James F. Hale, Old Greenwich, and Donald K. Tressler, Westport, Conn., assignors to The Borden Company, New York, N.Y., a corporation of New Jersey
No Drawing. Filed Jan. 12, 1966, Ser. No. 520,046
Int. Cl. A23b *7/04;* **A23l** *3/34*
U.S. Cl. 99—193 **3 Claims**

Preserving mushrooms by treating at ambient temperature with a gas containing an effective amount of gaseous sulfur dioxide for a time sufficient to prevent discoloration of the mushrooms during subsequent freezing, storage, and thawing.

3,470,001

MASKING COMPOSITION

Anthony J. Koury, 234 Sagamore Road, Havertown, Pa. 19083

No Drawing. Continuation-in-part of application Ser. No. 446,130, Apr. 6, 1965. This application Dec. 22, 1967, Ser. No. 692,644

Int. Cl. C09d *3/34, 5/20*

U.S. Cl. 106—2 9 Claims

The subject invention relates to a unique gel-like composition that encapsulates various essential ingredients including lubricants, corrosion inhibitors and acid neutralizers and provides a protective coating or mask for a metallic surface during paint stripping and other metal treating operations.

3,470,002

GLAZE FOR HIGH DENSITY ALUMINA

Frank V. Di Marcello, Plainfield, and Arnold W. Treptow, Fanwood, N.J., assignors to Bell Telephone Laboratories, Incorporated, Murray Hill, N.J., a corporation of New York

Filed Jan. 30, 1967, Ser. No. 612,377

Int. Cl. C03c *5/00;* C04b *33/26*

U.S. Cl. 106—49 5 Claims

A ceramic substrate glaze which is of particular interest for use upon high density alumina substrates includes an oxide mixture containing Al_2O_3, SiO_2, BaO, PBO, Bi_2O_3, TiO_2, K_2O, As_2O_3 and either CaO or B_2O_3. The thermal coefficient of expansion of the glaze may be altered for the purpose of matching that of the substrate member by varying the ratio of B_2O_3 to CaO.

3,470,003

OXIDATION RESISTANT COMPOSITES

Clive E. Waylett, Olmsted Falls, Ohio, assignor to Union Carbide Corporation, a corporation of New York

No Drawing. Filed June 6, 1966, Ser. No. 555,263

Int. Cl. C04b *35/70, 35/52, 35/36*

U.S. Cl. 106—56 11 Claims

A lightweight refractory composite having excellent oxidation resistance and high strength is formed by combining a shredded fibrous carbonaceous material with one or more materials which promote a protective surface coating when the composite is subjected to oxidizing conditions. A method which includes subjecting the composite mixture to a simultaneous temperature of between 1850° C. and 2250° C. and a pressure of between 2100 pounds per square inch and 6300 pounds per square inch.

3,470,004

MORTAR COMPOSITION AND STRUCTURES INCORPORATING SUCH COMPOSITIONS

Edward R. Begley and Robert F. Patrick, Louisville, Ky., and Thomas M. Wehrenberg, Jeffersonville, Ind., assignors to Corhart Refractories Company, Louisville, Ky., a corporation of Delaware

No Drawing. Filed Nov. 22, 1966, Ser. No. 596,079

Int. Cl. C04b *35/120, 35/42, 35/20*

U.S. Cl. 106—59 7 Claims

A composition suitable for preparing a refractory mortar comprising from 78 to 92% of fused-cast refractory particles comprising chrome ore and magnesia having a particle size of less than about 50 mesh, from 5 to 10% of a plasticizing agent in the form of filler particles, from 5 to 10% water soluble sodium silicate and from 0.03 to 0.5% organic wetting agent.

3,470,005

MIX FOR FORMING LIGHTWEIGHT CONCRETE

Paul Flachsenberg, Josef Wuhrer, and Walter Stein, Wülfrath, Germany, assignors to Rheinische Kalksteinwerke GmbH, Wulfrath, Germany, a corporation of Germany

Filed Sept. 10, 1965, Ser. No. 486,417

Claims priority, application Germany, Sept. 15, 1964, R 38,790

Int. Cl. C04b *21/02, 9/00*

U.S. Cl. 106—87 2 Claims

A mix for preparing porous lightweight concrete including a silica containing material and a binder with a gas producing agent wherein the binder consists of at least 78% quicklime, 90% of whose particles are smaller than 90μ with a mean density in the range 1.03 to 1.15 kg./liter determined according to German specification DIN 1060.

3,470,006

PRODUCTS FROM ACID SLUDGES

Henri Brunel, 9 Rue du General, Niox, Paris 16, France

No Drawing. Continuation-in-part of application Ser. No. 181,498, Mar. 19, 1962. This application Oct. 21, 1965, Ser. No. 500,169

Claims priority, application France, June 15, 1961, 865,052

Int. Cl. C08h *17/28;* C04b *34/30*

U.S. Cl. 106—123 11 Claims

This invention relates (1) to a process for making useful coating and water proofing compositions with acid sludges as an essential ingredient thereof, by neutralizing and plastifying such acid sludges in the presence of a solvent mixture which is liquid at 50–90° C. and which comprises bitumens, higher fatty acids, resinic acids, naphthenic acids, tall oil of mixtures thereof, and (2) to the composition so produced.

3,470,007

STABILIZED LEAD CHROMATE PIGMENTS AND PROCESS FOR MAKING SAME

Howard R. Linton, Scotch Plains, N.J., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Nov. 8, 1967, Ser. No. 681,589

Int. Cl. C09c *1/20, 3/00*

U.S. Cl. 106—298 14 Claims

Lead chromate pigments having improved resistance to chemical attack by alkalis, acids, and sulfides, having increased resistance to discoloration on exposure to light or elevated temperatures, especially when used as colorants for molded plastics, and having decreased susceptibility to mechanical destruction by abrasion, shear or impact, are produced by effectively coating the lead chromate pigment particles with dense, amorphous silica, optionally in combination with alumina, and thereafter depositing on the silica-coated particles a stabilizing agent selected from the group consisting of alkaline earth metal salts of rosin acids and of long-chain fatty acids.

3,470,008

PROCESS FOR MAKING PAPERLESS CIGARETTE FILTER

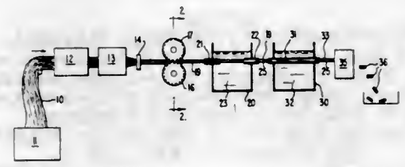
George A. Watson, Charlotte, N.C., assignor to Celanese Corporation, a corporation of Delaware

Original application Sept. 27, 1965, Ser. No. 490,509, now Patent No. 3,361,137. Divided and this application Nov. 8, 1967, Ser. No. 707,899

Int. Cl. A24c *5/50*

U.S. Cl. 117—4 5 Claims

A process for forming a shape-retaining filter plug is described. Said process comprising opening a tow of continuous crimp filaments, condensing the tow into a filter rod, coating the filter rod with a molten wax-resin mixture, cooling the coated filter rod, and severing the rod into filter plug lengths.



3,470,009

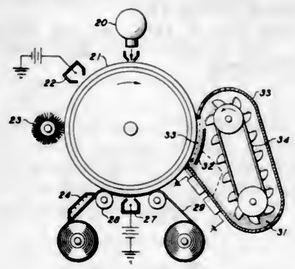
POWDER CLOUD DEVELOPMENT OF ELECTROSTATIC IMAGES

Robert W. Gunlach, Victor, N.Y., assignor to Xerox Corporation, Rochester, N.Y., a corporation of New York

Filed Dec. 28, 1964, Ser. No. 421,306

Int. Cl. B05b *5/00;* G03g *13/08*

U.S. Cl. 117—17.5 7 Claims



Method and apparatus for the development of selectively distributed latent electrostatic charges on a photoreceptive surface wherein xerographic developer material is applied to the photoreceptive surface by means of a xerographic toner powder cloud generator including an apertured screen and developer chute for generating a toner powder cloud, from the developer material, which is applied to the selectively distributive latent electrostatic charges for the development thereof.

3,470,010

METHOD FOR APPLYING STREAMS OF INSULATING PARTICLES TO STATOR AND ROTOR WINDING SLOTS

Erik Frede Christiansen, Degnevaenget 8, Sonderborg, Denmark

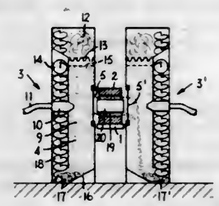
Continuation-in-part of application Ser. No. 341,257, Jan. 30, 1964. This application Jan. 10, 1968, Ser. No. 698,683

Claims priority, application Germany, Feb. 1, 1963, D 40,803

Int. Cl. B44d *1/08, 1/22*

U.S. Cl. 117—18 6 Claims

A method for coating winding slots of electrical motor cores such as stators or rotors with streams of insulating particles developed externally of an area in which the unit to be insulated is disposed and applying the coating particles only on those surfaces of the slots desired to be coated without contamination of the atmosphere in which the unit being coated is disposed so that there is substantialy no deposition of insulating particles on surfaces other than those being coated without contamination of the atmosphere in which the unit being coated is disposed so that the is substantialy no deposition of insulating particles on surfaces other than those being coated. Particles are suspended in a chamber defining a confined area and then subjected to gas flow through the chamber exiting from the chamber as a divided gas flow as different sets each of a plurality of insulating particle streams and sequentially of different cross sections. The streams are in a configuration corresponding to the cross section of the slots and enter the slots of the core coaxial therewith simultaneously. The streams of particles increase in cross section and a build-up of particles on the surfaces desired to be coated takes place. The particles not adhered to the slot surfaces pass through and exit from an end of the slots into a second chamber where they are recovered and from which reverse flow streams of particles can be applied to the core.



3,470,011

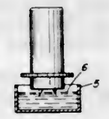
PROCESS FOR APPLYING LIQUID BIOLOGICALS TO APPLICATORS FOR INTRACUTANEOUS INJECTION

Stephen Aloysius Szumski, Pearl River, N.Y., and Herbert Bennett Uhl, River Edge, N.J., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

Filed Feb. 7, 1967, Ser. No. 614,484

Int. Cl. B44d *1/40;* A61b *17/20*

U.S. Cl. 117—47 6 Claims



A process is shown for depositing a predetermined amount of dried coating on the tines of an intracutaneous applicator. The tines are first chilled to a temperature below the freezing point of a liquid product containing a physiologically active product and are then immersed in the liquid for a length of time sufficient to freeze a predetermined volume of the product onto the tips of the tines. The tines are thereafter removed from the liquid and allowed to air dry to deposit the predetermined solid dosage on the tines.

3,470,012

METHOD AND APPARATUS FOR PRODUCING DECORATIVE STONE

Robert C. Rollette, Phoenix, Ariz. (280 Blackhawk Blvd., South Beloit, Ill. 61080)

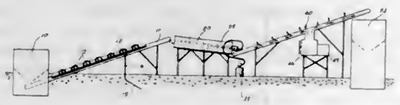
Filed Mar. 8, 1965, Ser. No. 437,759

Int. Cl. B44d *1/20, 1/44;* B05c *3/04*

U.S. Cl. 117—54 1 Claim

Stone to be coated is preheated and introduced into a rotating drum which includes therein a spray arrangement forming a spray pattern of coating material. As the drum rotates and the stone is tumbled, the stone falls through the spray pattern a number of times to become completely coated and is fed to a separate section of

the drum to be dried. The stone is preheated on its way from a storage area to the drum and is dried on a conveyor after exiting from the drum during its travel to storage.



3,470,013
COATED PLASTIC
Richard L. Wagner, Sherwood Park, Del., assignor to Hercules Incorporated, Wilmington, Del., a corporation of Delaware
No Drawing. Continuation-in-part of application Ser. No. 528,380, Feb. 18, 1966. This application Dec. 14, 1966, Ser. No. 601,576
Int. Cl. B44d *1/14;* **C23c** *13/04*
U.S. Cl. 117—70 **17 Claims**

Coated articles, comprising polyolefins, polystyrene, styrene copolymers, blends of polystyrene with styrene-butadiene copolymers, poly(vinyl chloride), poly(vinylidene chloride), vinyl chloride-vinylidene chloride copolymers, poly[bis(chloromethyl) oxetane], chlorinated ethylene polymers, cellulose esters and ethers and polymethacrylates pretreated by coating with a thin layer of silicon monoxide and top-coated with an aqueous dispersion of an alkali metal silicate, boric acid and a finely-divided metallic agent selected from the group consisting of aluminum oxide, aluminum hydroxide, aluminum and zinc and their process of preparation. The said coated articles are particularly useful as lithographic plates, drafting film and coated abrasive sheets.

3,470,014
SUBSTRATES COATED WITH PIGMENTED ACRYLATE COATING AND A FLUOROCARBON TOPCOAT
Francis Frederick Koblitz, Erdenheim, and Robert Gabriel Petrella, Philadelphia, Pa., assignors to Pennsalt Chemical Corporation, Philadelphia, Pa., a corporation of Pennsylvania
No Drawing. Filed Nov. 23, 1966, Ser. No. 596,453
Int. Cl. B44d *1/14, 1/28;* **C03c** *17/00*
U.S. Cl. 117—72 **10 Claims**

Substrates coated with a first primer layer of a pigmented acrylic copolymer composed of (a) about 40% to about 80% by weight of a polymerizable acrylic ester of acrylic acid and a primary alkanol containing from 1 to 18 carbon atoms; (b) from about 59% to about 18% by weight of at least one alkyl methacrylate containing from 1 to 4 carbon atoms in the alkyl group; (c) about 0.5% to about 2.0% by weight of at least one polymerizable α,β-unsaturated carboxylic acid; and as a topcoat a layer of a copolymer consisting of 95% to 60% by weight of vinylidene fluoride and 5% to 40% by weight of tetrafluoroethylene or perfluoropropene.

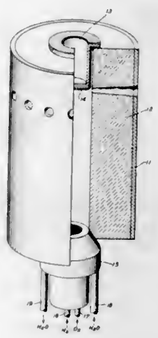
3,470,015
PROCESS FOR BONDING A HOT MELT POLYMERIC COATING TO A SUBSTRATE
Jesse P. Shanok, Brooklyn, and Victor Shanok, New York, N.Y., assignors to Glass Laboratories Company, Brooklyn, N.Y., a partnership
No Drawing. Continuation-in-part of application Ser. No. 500,184, Oct. 21, 1965. This application Apr. 8, 1966, Ser. No. 541,092
Int. Cl. B44d *1/092*
U.S. Cl. 117—72 **5 Claims**

Process of hot melt coating. The hot melt is applied to a base wet with a liquid anaerobic curing composition. The application of the hot melt covers the liquid anaerobic curing composition, heats it and excludes air from it, thereby promoting its polymerization.

3,470,016
BITUMEN-IMPREGNATED-FOAM MATERIAL
James R. Biles, Athens, and Wendell E. Brennan, Decatur, Ala., Stephen H. Alexander, St. Louis, Mo., and Edgar E. Hardy, Dayton, Ohio, assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware
No Drawing. Filed Dec. 13, 1965, Ser. No. 513,565
Int. Cl. B44d *1/06;* **B32b** *5/18*
U.S. Cl. 117—76 **7 Claims**

An article comprised of a bitumen and a foamed plastic having a multicellular structure and reinforced with a fibrous material. The bitumen represents at least 90% by weight of the combined weight of the bitumen and foamed plastic and occupies at least 50% of the free space of the cells of the foamed plastic.

3,470,017
IRIDIUM CRUCIBLES AND TECHNIQUE FOR EXTENDING THE LIFETIME THEREOF BY COATING WITH ZIRCONIUM OR ZIRCONIUM OXIDE
Jerry J. Rubin, Clark, and Le Grand G. Van Uitert, Morris Township, Morris County, N.J., assignors to Bell Telephone Laboratories Incorporated, New York, N.Y., a corporation of New York
Filed Nov. 5, 1965, Ser. No. 506,490
Int. Cl. B05b *7/20;* **B01l** *3/04*
U.S. Cl. 117—105.2 **5 Claims**

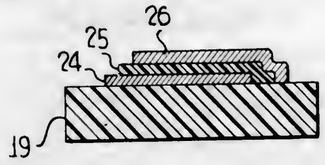


The useful lifetime of an iridium crucible destined for use in high temperature crystal growth techniques may be enhanced by encasing the crucible in a thin film of zirconium or zirconium oxide.

3,470,018
THIN FILM CAPACITOR
Richard C. Smith and Michael Hacskaylo, Falls Church, Va., assignors to Melpar, Inc., Falls Church, Va., a corporation of Delaware
Filed Aug. 24, 1964, Ser. No. 391,543
Int. Cl. H01b *1/02;* **C23c** *13/02;* **B44d** *1/00*
U.S. Cl. 117—217 **7 Claims**

A thin film capacitor having stable electrical properties over a high temperature range is formed by depositing a stoichiometric thin film of a rare earth borate as the dielectric between a pair of metal plates or electrodes. A stoichiometric thin film of neodymium borate is formed as the dielectric by vacuum evaporation of a compressed pellet composed of neodymium oxide, boric oxide, and boron nitride powders in the approximate proportions by weight of 50:10:40, respectively, while preventing the deposition of any liberated material until a neodymium

borate vapor is released from the remaining evaporant. At that point, blockage of the surface of the metal plate

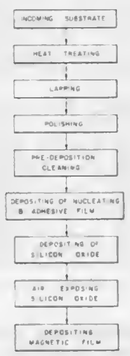


on which the dielectric film is to be deposited is removed to permit coating of that surface to the desired thickness by the neodymium borate.

3,470.019
PLATINUM COATING COMPOSITION, PROCESS AND PLATINUM-COATED MATERIALS
Raymond Steele, West Chester, Pa., assignor, by mesne assignments, to Matthey Bishop, Inc., Malvern, Pa., a corporation of Pennsylvania
No Drawing. Filed Feb. 4, 1965, Ser. No. 430,474
Int. Cl. H01b *1/02;* **B44d** *1/00;* **C03c** *25/04*
U.S. Cl. 117—227 **15 Claims**

The present invention relates to the preparation of a colloidal dispersion of platinum, to the dispersion and to its use in forming platinum deposits. Platinum dioxide is reduced to colloidal platinum by reaction with a lower alcohol-formaldehyde mixture. The dispersion may be made to contain minor amounts of other platinum group metals, in addition to platinum. When this dispersion is coated on substrates and dried out, adherent, catalytically active platinum deposits are formed.

3,470,020
PROCESS FOR MAKING A MAGNETIC FILM
Lee J. Boudreaux, Phoenix, Ariz., Barry L. Flur, Burlington, Vt., and Kenneth B. Scow, Wappingers Falls, N.Y., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed Dec. 20, 1965, Ser. No. 515,118
Int. Cl. C23c *13/02;* **B44d** *1/12*
U.S. Cl. 117—236 **8 Claims**

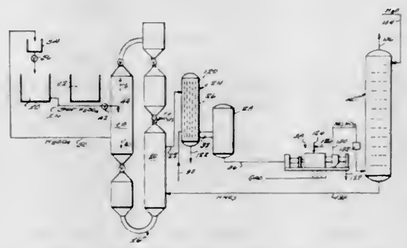


A method of making magnetic film device by depositing a silicon monoxide layer on a supporting substrate, then exposing the silicon monoxide layer to air or other oxidizing atmosphere prior to depositing the magnetic film device. As a result of the exposure to air or other oxidizing atmosphere, the oxidation state of the silicon monoxide is altered. Use of this process gives a 30 to 50 percent reduction in wall motion threshold (H_o), dispersion (α_{90}), and skew (β), in the magnetic film devices thus produced.

3,470,021
MAGNETIC RECORDING MATERIAL
Serge Hendricx and François Pierre Loots, Mortsel-Antwerp, Belgium, assignors to Gevaert Photo-Producten N.V., Mortsel, Belgium, a Belgian company
No Drawing. Filed Apr. 25, 1966, Ser. No. 544,691
Int. Cl. G11b *5/68*
U.S. Cl. 117—239 **10 Claims**

A high speed magnetic recording material, e.g. tape, formed of a magnetic recording layer carried on a magnetically inert support, the recording layer containing as essential constituents magnetically susceptible particles, a synthetic polymeric binder, and oleic acid in the amount of 3–10% by weight of said particles, binder and acid, and characterized by improved resistance to abrasion and lump formation.

3,470,022
PROCESS FOR PICKLING METAL AND PROCESSING PICKLING LIQUORS
Jack D. Ferner and Irwin R. Higgins, Oak Ridge, Tenn., assignors to Chemical Separations Corporation, Oak Ridge, Tenn., a corporation of Tennessee
Filed Apr. 4, 1966, Ser. No. 540,087
Int. Cl. C23g *1/08, 1/36;* **B01j** *1/04*
U.S. Cl. 134—3 **13 Claims**



A continuous cyclic process for the pickling of metal, for regenerating spent pickle liquor and for regenerating an agent employed to regenerate the spent pickle liquor which includes conducting the pickling operation with a pickle liquor comprising an aqueous solution of a pickle liquor acid having an acid concentration maintained within the range of about 5 to 20 weight percent, said acid having a pK_a ranging from 10^{-4} to 1, and a metal salt of said acid, the concentration of said metal salt being maintained within the range of about 1 to 10 weight percent, continuously withdrawing spent pickle liquor from the pickling step for regeneration, said regenerations comprising flowing said spent pickle through a first section of a cation exchange column loop having a shiftable cation exchange resin bed therein, to bring the same into contact with a first portion of cation exchange resin therein and exchanging metal ions from the spent pickle liquor for hydrogen ions of the exchange resin; while withdrawing from said first section regenerated pickle liquor, continuously recirculating the regenerated pickle liquor to the pickling step, treating a second portion of said cation exchange resin loaded with metal ions from above with a regenerating agent in a second section of the column loop, interrupting the flow of said spent pickle liquor and said regenerating agent, shifting the cation exchange resin bed in the cation exchange column loop from one section thereof to another contiguous section

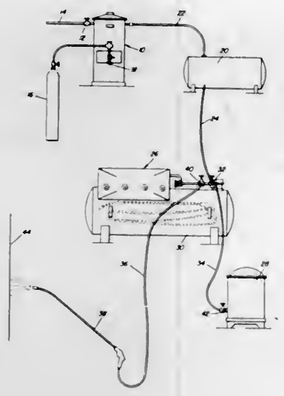
therein, thereby replacing at least a portion of the resin in the first section with another portion of the resin previously regenerated in the second section and displacing a portion of resin carrying the metal ions previously eliminated from the spent pickle liquor into the second section for regeneration thereof, withdrawing from the second section a solution of metal salt of regenerating agent, concentrating the metal salt solution, decomposing the metal salt solution to provide a metal oxide and a gaseous product, treating the gaseous product to produce the regenerating agent and continuously recycling the regenerated regenerating agent to the second section of the column loop.

3,470,023

METHOD OF CLEANING EXTERIOR SURFACES

Ethel P. Johnston, Oklahoma City, Okla., assignor of one-half to Carl M. Johnston, Oklahoma, City, Okla.

Filed Feb. 14, 1964, Ser. No. 344,960
Int. Cl. B08b *3/10*
U.S. Cl. 134—29 **4 Claims**



1. A method of cleaning foreign matter from an exterior surface comprising the steps of: initially spraying said surface with a chemical solution under a relatively low pressure to coat the surface; subsequently spraying the surface with a cleaning mixture under a relatively high pressure to physically dislodge the foreign matter loosened by the action of said chemical solution; and finally rinsing the surface with a spray of water under said relatively high pressure; said cleaning mixture being formed from ingredients mixed with water preheated to temperatures below boiling, agitation and forced flow of said cleaning mixture under said relatively high pressure being effected by a fuel engine driven pump mechanism, the operation of which is throttled to forcedly induce flow of the chemical solution at said relatively low pressure.

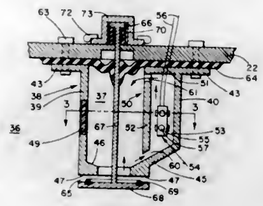
3,470,024

RECOMBINATION SYSTEMS FOR SEALED BATTERIES AND BATTERIES INCORPORATING THEM

James H. B. George and Albert E. Dennard, Cambridge, and Ekkehard L. Kreidl, Wayland, Mass., assignors to Arthur D. Little, Inc., Cambridge, Mass., a corporation of Massachusetts

Filed Dec. 30, 1966. Ser. No. 606,418
Int. Cl. H01m *35/00*
U.S. Cl. 136—6 **3 Claims**

This invention relates to sealed batteries, and more particularly to sealed secondary or rechargeable batteries which evolve hydrogen and/or oxygen gases especially during the time when they are being charged. A recombination system, which includes a flue member, is



incorporated into the battery to effect a reaction between the hydrogen and oxygen and return the product water to the electrolyte.

3,470,025

THIRD-ELECTRODE RECHARGEABLE ALKALINE BATTERY CELLS AND ASSOCIATED BATTERY CIRCUITS

David Yehiely, New York, N.Y., assignor to Sonotone Corporation, Elmsford, N.Y., a corporation of New York

Continuation of application Ser. No. 373,216, June 8, 1964. This application Nov. 8, 1967, Ser. No. 707,885
Int. Cl. H01m *35/32, 43/04, 45/04*
U.S. Cl. 136—6 **5 Claims**

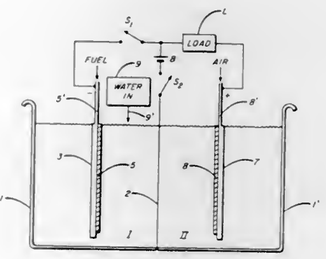
Apparatus for preventing overdischarging or reverse charging of the lowest capacity cell of a rechargeable battery having a plurality of serially connected sealed cells. A control cell is provided, and is responsive to a voltage rise above a threshold representing a predetermined discharge condition, for reducing the discharge current from the serially connected cells to a safe, damage suppressing level.

3,470,026

METHOD OF OPERATING FUEL CELL WITH CARBON-CONTAINING FUEL

Walter Juda, Lexington, David McLeod Moulton, Scituate, and Robert L. Novack, Arlington, Mass., assignors to Prototech Incorporated, Cambridge, Mass., a corporation of Massachusetts

Filed Mar. 3, 1965, Ser. No. 436,766
Int. Cl. H01m *27/14*
U.S. Cl. 136—86 **1 Claim**



The disclosed electrochemical methods and apparatus employ incompatible ion-containing media separated by an ion-impervious selectively-permeable conducting membrane and are concerned with the addition of an oxygen-containing additive in order to oxidize substantially completely the carbon of a fuel supplied to one of the media. Hydrogen concentration in the membrane may be controlled by electrical biasing of the membrane from an external potential.

3,470,027

THERMAL CELL

Niels C. Nielsen, Lexington, Ill., assignor to National Union Electric Corporation, Stamford, Conn., a corporation of Delaware

No Drawing. Filed Apr. 20, 1967, Ser. No. 632,216
Int. Cl. H01m *21/14, 11/00*
U.S. Cl. 136—83 **13 Claims**

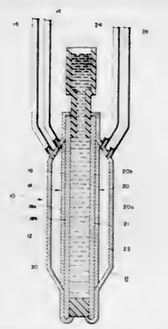
A thermal cell having as the fusible electrolyte a mixture of lithium, sodium, and potassium fluorides with a melting point not greater than 600° C. The eutectic mixture (46.5 mole percent LiF, 11.5 mole percent NaF, and 42.0 mole percent KF) melting at 454° C. is preferred. Any chemically compatible anode-cathode combination is used, e.g. a magnesium or lithium-magnesium-aluminum alloy anode and a V_2O_5 cathode. Lithium fluoride, sodium fluoride, potassium fluoride, or mixtures of the same may also be added to the cathode or to the cathode and the anode for improved cell life.

3,470,028

INTERMEDIATE TEMPERATURE PACKED FUEL CELLS

John H. Sizer, Jr., Vernon, Conn., and Jose Giner, Sudbury, Mass., assignors to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware

Filed Aug. 25, 1966, Ser. No. 575,070
Int. Cl. H01m *27/04*
U.S. Cl. 136—86 **12 Claims**



1. A fuel cell comprising:
(a) a housing;
(b) a fuel electrode;
(c) means for supplying fuel to the fuel electrode;
(d) a metal-containing oxidant electrode spaced from the fuel electrode;
(e) means for supplying oxidizing gas to the oxidant electrode;
(f) an electrolyte dispersed between said electrodes; and
(g) a packing space between said electrodes, which comprises a sufficient quantity of particulate ceria or thoria to inhibit dissolution of the oxidant electrode into said electrolyte during operation of the cell and retard migration of dissolved oxidant electrode metal to the fuel electrode.

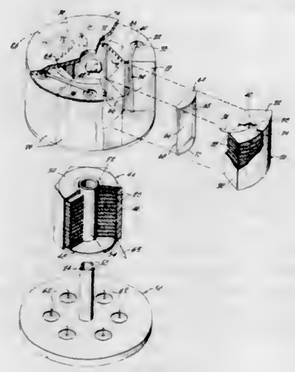
3,470,029

AMMONIA BATTERY SYSTEM

William F. Meyers, Blue Bell, and Charles E. Smiley, Ambler, Pa., assignors to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware

Continuation of application Ser. No. 394,677, Sept. 8, 1964. This application Apr. 9, 1968, Ser. No. 730,668
Int. Cl. H01m *17/06, 21/10*
U.S. Cl. 136—90 **17 Claims**

A rapid activating liquid ammonia battery comprised of a battery section and a liquid ammonia reservoir, the battery section consisting of a central A section and a plurality of B–C sections disposed peripherally about the A section. The cells of each section are enclosed in individual plastic cups and the entire battery section is enclosed in plastic. Means are provided for transmitting the liquid ammonia to the battery section into operating contact with the cells to thereby activate the battery.



3,470,030

METHOD OF MANUFACTURING A POROUS ELECTRODE CONTAINING A BORON COMPOUND

Ingemar Lindholm and Gun Karlsson, Vasteras, Sweden, assignors to Allmanna Svenska Elektriska Aktiebolaget, Vasteras, Sweden, a corporation of Sweden

No Drawing. Filed June 15, 1966, Ser. No. 557,624
Claims priority, application Sweden, June 21, 1965, 8,135/65
Int. Cl. H01m *13/00*
U.S. Cl. 136—120 **11 Claims**

A porous electrode material is produced by mixing a boron-containing material from the group of a metal borate, a partially hydrolyzed metal borate, a metal borate at least partially reduced by means of treatment with hydrogen, a boron oxide and an at least partially hydrolyzed boron oxide with an electrically conductive carrier material for said boron-containing material, compressing the mixture and sintering to form a coherent product.

3,470,031

PROCESS FOR THE PREPARATION OF A FUEL ELECTRODE FOR A FUEL CELL

Masataro Fukuda, Takatsuki, Osaka, Japan, and Philip J. Elving and Charles L. Rulfs, Ann Arbor, Mich., assignors to Atlantic Richfield Company, New York, N.Y., a corporation of Pennsylvania

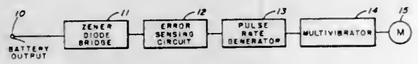
Continuation of application Ser. No. 494,550, Oct. 11, 1965. This application Sept. 11, 1967, Ser. No. 667,005
Int. Cl. H01m *13/04, 21/00*
U.S. Cl. 136—120 **6 Claims**

A process for the preparation of a fuel electrode for a fuel cell comprising intimately mixing platinum oxide and silver powder in a weight ratio of from about 0.1 to 5:1, pressing the mixture between two silver screens to form an electrode body and reducing the body to a stage of reduction between about 50% and 95% relative to the stoichiometrically calculated stage wherein the theoretical value for the formation of PtH is 125.2%.

3,470,032
SEA WATER BATTERY VOLTAGE CONTROL CIRCUIT

William E. Egan, Pittsfield, Mass., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy

Filed Sept. 29, 1967, Ser. No. 671,890
Int. Cl. H01m *11/00*
U.S. Cl. 136—160 **7 Claims**



An electronic voltage control circuit which operates to maintain the output voltage of a sea water battery at its maximum value. An error voltage either positive or negative is generated indicating whether the battery output is above or below a reference voltage. This error voltage is converted into pulses which are fed to an electric motor, the motor in turn operating a valve which increases or decreases the flow of sea water through the battery compartment.

3,470,033
THERMOELECTRIC DEVICE COMPRISING SILICON ALLOY THERMOCOUPLE LEGS BONDED BY A SOLDER COMPOSED OF PALLADIUM ALLOY

Gerhard Oesterhelt, Nuremberg, Eugen Szabo de Bucs, Erlangen, and Alfred Kunert and Joachim Rupprecht, Nuremberg, Germany, assignors to Siemens Aktiengesellschaft, Berlin, Germany, a corporation of Germany

Filed Mar. 29, 1968, Ser. No. 717,229
Claims priority, application Germany, Apr. 1, 1967, S 109,151
Int. Cl. H01v *1/14*
U.S. Cl. 136—237 **16 Claims**

In a thermoelectric device with thermocouple legs of silicon alloy interconnected by contact bridges which are soldered to the legs, the solder material consists of an alloy of palladium and silicon with metal (Me) from the group Fe, Co, Ni, Ti, Hf, V, Nb, Ta, Mo and W, according to the composition $Pd_x(Me_ySi_{1-y})_{1-x}$, wherein $0.25 \leq x \leq 0.60$, and $y \geq 0$.

3,470,034
METHOD OF REFINING THE MACROSTRUCTURE OF TITANIUM ALLOYS

Joseph Kastanek, Youngstown, and Harold D. Kessler, Canfield, Ohio, assignors to Reactive Metals, Inc., a corporation of Delaware

No Drawing. Filed Feb. 14, 1967, Ser. No. 615,928
Int. Cl. C22f *1/00*
U.S. Cl. 148—11.5 **5 Claims**

A process is disclosed for producing a fine-grained titanium alloy macrostructure which involves heating an ingot or billet to a temperature between 50 and 250° F. above the alloy's beta transus and hot working, for example by forging, the heated alloy as its temperature decreases to within the range of 50 to 300° F. below the beta transus. The performing of additional cycles of the aforementioned sequence of heating and hot working results in progressively finer grain size.

3,470,035
HEAT TREATMENT OF METAL

Walter Maknis, W. Main St., Woodbury, Conn. 06798

Filed Jan. 13, 1965, Ser. No. 425,198
Int. Cl. C22f *1/00*; C21d *1/00*
U.S. Cl. 148—13 **9 Claims**

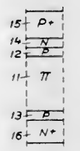
A method of inhibiting surface deterioration of a metal article from contact with air during heat treatment comprising heat treating the metal article while enclosed in a covering of a thin flexible oxidizable metal sheet without previously exhausting air from the covering.



3,470,036
RECTIFYING SEMI-CONDUCTOR BODY

Per Svedberg, Vallingby, Sweden, assignor to Allmänna Svenska Elektriska Aktiebolaget, Vasteras, Sweden, a corporation of Sweden

Filed May 14, 1965, Ser. No. 455,891
Claims priority, application Sweden, May 15, 1964, 5,947/64
Int. Cl. H01l *3/12*
U.S. Cl. 148—33.5 **7 Claims**



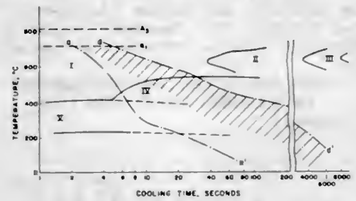
A thyristor having very high blocking and reverse voltages; it comprises a semi-conductor body of silicon having, parallel to each other, end zones of opposite conductivity type with an impurity concentration of 10^{18}–10^{20} impurity atoms/cm.^{3} and a middle zone of lower impurity concentration forming P-N-junctions with the end zones; the middle zone is of at least three parallel layers, a central layer having a thickness of 100 to 1000 μm. and a product of impurity concentration to thickness of less than 10^{12} impurity atoms/cm.^{2} and the outer layers each having a thickness of 1–20% of the thickness of the central layer and an impurity concentration to thickness product of 2.10^{11}–2.10^{12} impurity atoms/cm.^{2}; the middle zone also may have an additional layer having a thickness of 1–100 μm. and a product of impurity concentration and thickness of 10^{12}–10^{15} impurity atoms/cm.^{2} between one of the outer layers and the P-N-junction.

3,470,037
METHOD OF TREATING ALLOY STEEL

Kazubisa Suzuki, Kobe, Japan, assignor to Mitsubishi Jukogyo Kabushiki Kaisha, Tokyo, Japan

Filed July 5, 1966, Ser. No. 562,720
Claims priority, application Japan, July 24, 1965, 40/56,548
Int. Cl. C22c *41/00*; B23k *29/00*
U.S. Cl. 148—127 **5 Claims**

The steel is heated to a temperature above the A_3 transformation point and is then cooled to approximately the temperature at which martensitic transformation of the steel begins, along a cooling curve approximating the cooling curve resulting from the welding thermal cycle, after which the steel is cooled more slowly.



3,470,038
ELECTROLUMINESCENT p-n JUNCTION DEVICE AND PREPARATION THEREOF

Ralph A. Logan, Morristown, and Harry G. White, Somerset, N.J., assignors to Bell Telephone Laboratories, Incorporated, Murray Hill and Berkeley Heights, N.J., a corporation of New York

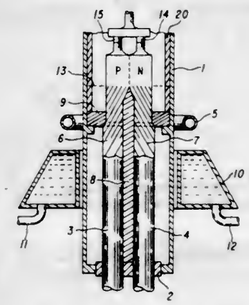
Filed Feb. 17, 1967, Ser. No. 616,966
Int. Cl. H05b *33/16*; H01l *7/34, 5/00*
U.S. Cl. 148—171 **2 Claims**

High efficiency gallium phosphide electroluminescent p-n junction devices capable of emitting visible light at room temperature are prepared by depositing an epitaxial layer of n-type gallium phosphide by conventional techniques upon a solution grown p-type gallium phosphide crystal and annealing the resultant junction at temperatures ranging from 450–725° C.

3,470,039
CONTINUOUS JUNCTION GROWTH

Paul C. Goundry and James C. Boatman, Richardson, Tex., assignors to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware

Filed Dec. 21, 1966, Ser. No. 603,625
Int. Cl. H01l *7/46*
U.S. Cl. 148—172 **5 Claims**



1. In the process of forming a monocrystalline rod of semiconductor material, the steps of:
   (a) heating the end of a feed rod of semiconductor material having a first conductivity to form a molten mass thereof supported on the end of the rod by the surface tension of the molten mass,
   (b) heating the end of the feed rod of semiconductor material having a second conductivity to form a molten mass thereof supported on the end of the rod by the surface tension of the molten mass,
   (c) maintaining the first molten mass separate from the second molten mass until they have passed through spaced shaping guide apertures, and
   (d) drawing the molten masses through the spaced apertures so that the two molten masses are drawn together at the liquid-solid interface by virtue of their molten condition to form a continuous junction at the interface between the once molten masses.

3,470,040
THIXOTROPIC LIQUID PROPELLANT COMPOSITIONS WITH SOLID STORAGE CHARACTERISTICS

William B. Tarpley, Jr., West Chester, Pa., assignor to Aeroprojects Incorporated, West Chester, Pa., a corporation of Pennsylvania

No Drawing. Filed Sept. 30, 1959, Ser. No. 844,607
Int. Cl. C06b *19/04*; C10l *7/02*; C06d *5/00*
U.S. Cl. 149—1 **3 Claims**

1. An inorganic liquid rocket propellant component composition having the property of being essentially unpourable under storage or low shear conditions and of becoming fluid and flowing under increased shear comprising a mixture of a major weight proportion of an inorganic liquid rocket propellant component selected from the group consisting of liquid hydrogen, liquid oxygen, liquid ammonia, and red fuming nitric acid and from two to ten weight percent of colloidal silica.

3,470,041
NITRIC ACID SENSITIZED CAP SENSITIVE EXPLOSIVES WITH GELATION CATALYST AND ENTRAPPED AIR

Neil E. Gehrig, Schuylkill Haven, Pa., assignor to Atlas Chemical Industries, Inc., Wilmington, Del., a corporation of Delaware

Continuation-in-part of application Ser. No. 604,202, Dec. 23, 1966. This application Jan. 29, 1968, Ser. No. 701,083
The portion of the term of the patent subsequent to Jan. 3, 1984, has been disclaimed
Int. Cl. C06b *19/04, 21/00, 1/00*
U.S. Cl. 149—2 **9 Claims**

A gelled emulsion blasting composition is disclosed which is prepared by a method wherein an aqueous solution of nitric acid; an inorganic nitrate; an immiscible fuel; an acid-resistant stabilizer, or an acid-resistant surfactant, or both; a gelation catalyst; and air are mixed to entrap the air and characterize the prepared blasting composition with a density of from about 0.5 gm./cc. to about 1.60 gm./cc.

3,470,042
THIXOTROPIC GELLED BIPROPELLANT COMPOSITION CONTAINING SULPHATED GALACTOSE POLYMER

Chester J. Grelecki, Rockaway, Robert A. Keeler, Denville, and Barna Szabo, Jr., Elizabeth, N.J., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Navy

No Drawing. Filed Feb. 24, 1967, Ser. No. 619,128
Int. Cl. C06b *17/00, 19/04*; C10l *7/02*
U.S. Cl. 149—22 **10 Claims**

A gelled bipropellant composition wherein the gelling agent is a sulphated galactose polymer.

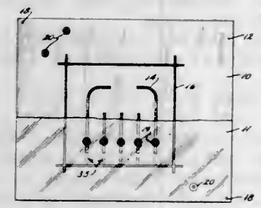
3,470,043
SELECTIVE PLATING OF ETCHED CIRCUITS WITHOUT REMOVING PREVIOUS PLATING

Charles Exum Whitfield, Baltimore, Md., assignor to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration

Filed Sept. 8, 1965, Ser. No. 485,958
Int. Cl. C23f *1/02*
U.S. Cl. 156—3 **7 Claims**

A process for fabricating, by a multi-step procedure, an etched copper circuit board wherein discrete portions (conductor paths, terminal pads, etc.) thereof are cov-

ered with a suitable metal coating. In the case where it is desirable to have the conductor paths coated with gold and the terminal pads coated with solder plate: (1) a resist covered copper board is photographed under a positive film of the conductor paths, developed to bare the conductor path portions of the copper layer, plated with gold on the exposed copper layer, and processed to reprove the resist; (2) the board is again completely



coated with resist, photographed under a positive film of he terminal pads, developed to expose only the terminal pads, plated with solder plate on the terminal pads, and processed to remove the resist; and (3) the board for a final time is completely covered with resist, photographed under a negative of the overall circuit, developed so that the unprotected copper is etched away, and processed to remove the resist.

3,470,044

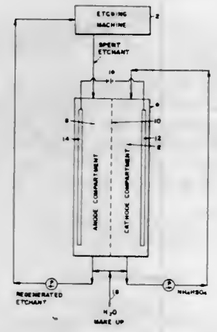
ELECTROLYTIC REGENERATION OF SPENT AMMONIUM PERSULFATE ETCHANTS

Kenneth J. Radimer, Little Falls, N.J., assignor to FMC Corporation, New York, N.Y., a corporation of Delaware

Continuation-in-part of application Ser. No. 495,374, Oct. 1, 1965, now Patent No. 3,406,108, dated Oct. 15, 1968. This application June 30, 1967, Ser. No. 650,484

Int. Cl. C23b *3/02*

U.S. Cl. 156—19 **9 Claims**



A spent ammonium persulfate etching solution is regenerated, without loss of residual persulfate values, by electrolysis of the etching solution in an electrolytic cell having a cation exchange separator; the solution serves as the anolyte, and sulfate values therein are converted to persulfate values at the anode while dissolved metal ions are removed at the cathode.

3,470,045

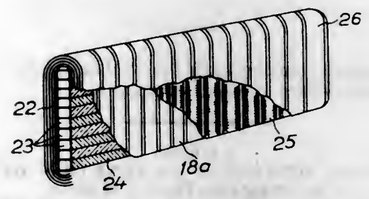
METHOD OF MANUFACTURING AN INSULATED ELECTRICAL CONDUCTOR

Wolfgang Bronnvall and Jostein Andreassen, Vasteras, Sweden, assignors to Allmänna Svenska Elektriska Aktiebolaget, Vasteras, Sweden, a corporation of Sweden

Filed June 3, 1965, Ser. No. 460,892

Int. Cl. H01b *13/08;* **B32b** *5/16*

U.S. Cl. 156—53 **7 Claims**



A method of manufacturing an insulated electric conductor, the insulation of which is constituted by a bandage of an insulating material wound around the conductor in several layers, the bandage being impregnated with a resin and the insulating material comprising a self-carrying layer of small mica flakes overlapping each other, a backing for the mica flake layer and a binder for binding the mica flake layer to the backing. In this method a binder is used, which is composed of a thermosetting high molecular alkyd resin built up of isophthalic or terephthalic acid or mixtures thereof.

3,470,046

METHOD OF HEAT SHRINKING THERMOPLASTIC COVERINGS TO TUBULAR METAL BODIES

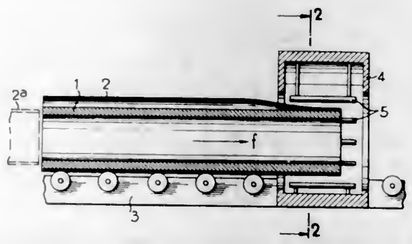
Jean-Marie Louis Augustin Verdin, Pont-A-Mousson, France, assignor to Centre de Recherches de Pont-A-Mousson, Pont-A-Mousson (Meurthe-et-Moselle), France, a French body corporate

Filed Feb. 11, 1966, Ser. No. 526,731

Claims priority, application France, Apr. 14, 1965, 13,141

Int. Cl. B32b *1/08, 27/16;* **B29c** *27/20*

U.S. Cl. 156—86 **2 Claims**



Method for providing a tubular metal body with a thermoplastic covering which is intended to permanently adhere to this body. A previously heat-expanded thermoplastic sheath, having an initial diameter less than but an expanded diameter greater than that of the body, is placed round the body and heating means having an axial extent considerably less than the length of the sheath is placed around one end of the sheath and the sheath and the body are moved axially through the heating means so that the sheath is shrunk onto the body progressively and trapping of air between the sheath and body is avoided.

3,470,047

PROCESS FOR FIXEDLY JOINING GRINDING WHEEL RIM TO GRINDING WHEEL CORE

Chester Griswold Bragaw, Jr., West Chester, Pa., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Dec. 1, 1965, Ser. No. 510,972

Int. Cl. B32b *31/20;* **B29c** *27/12*

U.S. Cl. 156—83 **5 Claims**

A process of fixedly joining an abrasive filled resin bonded grinding wheel rim to a metal grinding wheel core by applying an adhesive which preferably is heat curable to at least one of the rim or core, followed by snugly fitting the rim over the core, and introducing a hoop strain on the rim equal to an expansion of the internal circumference of the rim of from 0.5 to 1.5 percent preferably by allowing a precooled core and a preheated rim to come to thermal equilibrium.

3,470,048

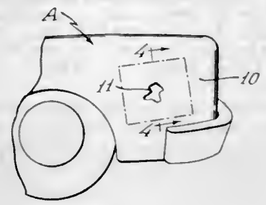
METHOD OF PATCHING CAR BODIES

Carol J. Jones, 9042 12th Ave. S., Minneapolis, Minn. 55802

Filed Nov. 25, 1964, Ser. No. 413,789

Int. Cl. B32b *35/00*

U.S. Cl. 156—94 **6 Claims**



The present invention describes a method of patching metal surfaces, such as car bodies, with the use of a patch comprising a backing sheet of sheet metal such as steel having bonded thereto a thin foam plastic sheet having a pressure sensitive surface protected by a covering sheet. After the surface to be mended is cleaned, the covering sheet is removed and the patch is applied over the surface to be mended. The edges of the patch are forced into contact with surface to be patched, connecting the metal backing sheet to the surface to be patched through the foam plastic. The patch is then covered with filler and the exposed surface ground to the proper contour.

3,470,049

METHOD OF ENCAPSULATING REACTIVE LAYER EXHIBITING REVERSIBLE VARIABLE LIGHT PERMEABILITY

Gotthilf Reusch, Berkheim, Germany, assignor to J. Eberspacher, Esslingen, Neckar, Germany

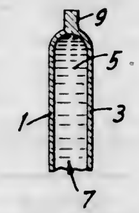
Filed Aug. 17, 1965, Ser. No. 480,455

Claims priority, application Germany, Aug. 18, 1964, E 27,629

Int. Cl. B32b *1/06*

U.S. Cl. 156—145 **1 Claim**

A method of producing a multilayer construction having a reactive layer which exhibits reversible variable light permeability. The light permeability varies in dependence on temperature and light conditions and the reactive layer is interposed between outer transparent layers which have marginal portions which extend beyond and encompass the reactive layer. The construction is carried out by placing the outer panels in parallel spaced planes in a manner such that their marginal portions register. Two cores are placed at spaced locations between the outer panels and they are located transverse to the marginal portions. The marginal portions are then urged into a unitary integral sealing rim portion except at the location of the two cores. The rim portion encompasses an interior cavity formed by the panels. Thereafter, the cores are removed and two



spaced passages which traverse the sealing rim portion remain which establish connection between atmosphere and the interior of the cavity. A reactive layer is then introduced through one of the passages and the air within the cavity escapes through the other passage. Thereafter, the passages are hermetically sealed.

3,470,050

METHOD OF MAKING A RESILIENT REINFORCED CONVEYOR BELT

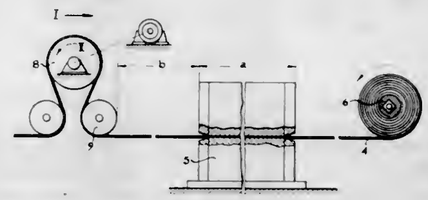
Peter Michels, Hannover, and Horst Engel, Sarstedt, Germany, assignors to Continental Gummi-Werke Aktiengesellschaft, Hannover, Germany

Filed Feb. 1, 1966, Ser. No. 523,987

Claims priority, application Germany, Jan. 29, 1965, C 34,974

Int. Cl. B32b *31/08;* **C09j** *5/00*

U.S. Cl. 156—164 **8 Claims**



In making a resilient conveyor belt having reinforcing inserts embedded therein, a tensile stressing is applied variably in differing width areas in progressive longitudinal sections with respect to divisional pieces by means of one cover strip of collective width corresponding to width of a conveyor belt followed by completion of vulcanization of assembled parts to be finished during maintenance of said tensile stressing. The tensile stressing continues until essentially equal stressing conditions occur and are maintained in reinforcing inserts of all divisional pieces collectively and at least until repetition thereof in periodic effectiveness upon the divisional pieces subjected to said tensile stressing.

3,470,051

FORMATION OF REINFORCED PLASTIC RODS AND TUBES

Leonard S. Meyer, 5920 Lakeshore Drive, Columbia, S.C. 29206

Filed Aug. 5, 1965, Ser. No. 477,544

Int. Cl. B32b *1/08, 31/08*

U.S. Cl. 156—171 **10 Claims**

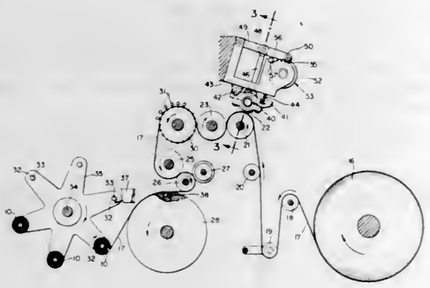
The formation of reinforced plastic rods either as hollow tubes or solid rods which include an outer layer of

longitudinally extending, exactly parallel, reinforcing glass fiber roving, impregnated with a resin-emulsion. The outer



layer may be formed on core material or the core and the layer may be produced simultaneously.

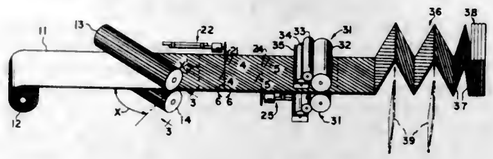
3,470,052
METHOD AND APPARATUS FOR WINDING A MULTIPLE PLY WEB
Walter H. Herman, South Hadley, Mass., assignor to Scott Paper Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed Mar. 28, 1966, Ser. No. 538,080
Int. Cl. B32b *31/00;* **B65h** *81/00*
U.S. Cl. 156—184 **4 Claims**



1. In a winding process wherein a plurality of web rolls are successively wound on mandrels from a substantially continuously advancing flexible web having at least two plies unattached to each other, the improvement comprising preparing end portions of the web adjacent the leading and trailing ends of successive lengths of web to be wound for transfer and attachment to a roll core and a wound roll respectively, by embossing the plies of said web together in at least portions of successive areas spaced apart from each other by substantial lengths of said web in which said plies are unattached to each other, said areas being located adjacent the line of severance of one web length from a preceding web length to effect localized physical attachment of said plies in the area of web severance.

3,470,053
METHOD AND APPARATUS FOR MAKING CORRUGATED MATERIAL STRUCTURE
Edwin L. Rule, Berkeley, Calif., assignor to Hexcel Corporation, Berkeley, Calif., a corporation of California
Filed Feb. 19, 1965, Ser. No. 434,086
Int. Cl. B32f *1/22;* **B23p** *19/04*
U.S. Cl. 156—207 **18 Claims**

An assembly used for producing a series of parallel corrugations in a web of material at a constant angle to a line across the width of the material. The assembly includes a first and second plurality of teeth arranged in parallel relationship, means for supporting the first plurality of teeth to mesh with the second plurality of teeth and provide corrugations in said material as it passes between the meshing teeth, means for driving said teeth into meshing contact and means for maintaining the angle constant by moving the teeth along their length at a rate

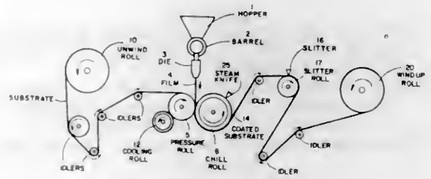


sufficient to compensate for the displacement of the material during the angular meshing contact with the plurality of teeth. Apparatus is also included for fabricating honeycomb structures that have cellular openings thereof arranged in at least three different directions.

3,470,054
METHOD OF PROCESS COLOR PRINTING WITH WATER-BASE INKS
John J. Tyrrell, Hill Crest Park, Old Greenwich, Conn. 06870
No Drawing. Continuation-in-part of application Ser. No. 549,169, May 11, 1966, which is a continuation-in-part of application Ser. No. 439,945, Mar. 15, 1965. This application Dec. 15, 1967, Ser. No. 690,773
Int. Cl. B32b *31/22;* **B31f** *1/20*
U.S. Cl. 156—210 **2 Claims**

A heat resistant image having various colors, tones and hues is applied to a flat sheet material so that the latter may be subsequently subjected to heat and pressure, as in the bonding of the flat sheet material to corrugated material in the manufacture of corrugated fibre board, by the rotogravure process color printing on the flat sheet material of successively overprinted images from differently colored water-base inks containing heat resistant pigments and binders and having viscosities in the range between 16 and 22 seconds as measured with a No. 2 Zahn cup.

3,470,055
EXTRUSION COATING METHOD
Charles A. Wade, Greenup, Ill., assignor to National Distillers and Chemical Corporation, New York, N.Y., a corporation of Virginia
Filed Jan. 21, 1965, Ser. No. 426,733
Int. Cl. B29c *13/00*
U.S. Cl. 156—244 **13 Claims**

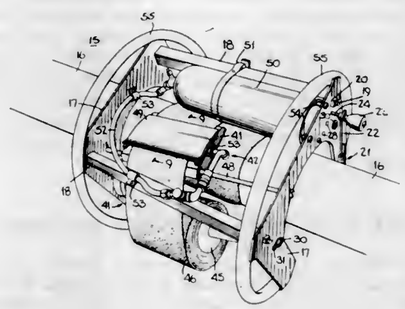


A method for providing an extruded polymeric resin coating on a substrate whereby the polymeric film is extruded in its molten state into the nip formed between two counter-rotating rolls wherein it is coated and pressed onto the substrate and wherein at least the roll contacting the polymeric coating is a chill roll, and recovering the resulting coated substrate by stripping it from the chill roll which is facilitated by applying a substantially uniform, thin film of moisture to the surface of said chill roll at a point prior to the formation of said nip and subsequent to the release therefrom and at a point subsequent to the release of previously formed polymeric coated substrate from the chill roll.

3,470,056
PREPARATION OF POLYETHYLENE ALUMINUM LAMINATES
George C. Hook, Chicago, Ill., assignor to Continental Can Company, Inc., New York, N.Y., a corporation of New York
No Drawing. Filed Dec. 16, 1966, Ser. No. 602,131
Int. Cl. C09j *5/02;* **B32b** *15/20;* **C23f** *1/02*
U.S. Cl. 156—308 **5 Claims**

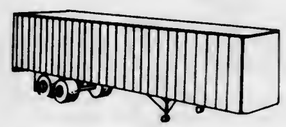
The adhesion of polyethylene to aluminum substrates is improved by first treating the aluminum substrates with hot formic acid followed by treatment with a fatty acid having 10 to 24 carbon atoms before application of the polyethylene layer.

3,470,057
PIPE WRAPPING MACHINE
Linden Stuart, Jr., Bedminster, and Frank F. Curtis, South Plainfield, N.J., assignors to Stuart Steel Protection Corp., Somerset, N.J., a corporation of Delaware
Filed July 15, 1966, Ser. No. 565,481
Int. Cl. B31c *11/04, 3/00*
U.S. Cl. 156—392 **11 Claims**



A portable, manually operated, heated, pipe wrapping machine for wrapping strips of protective material about pipes in the field.

3,470,058
FOAMED PLASTIC STRUCTURES
George R. Heffner, Cincinnati, Ohio, assignor to Pullman Incorporated, Chicago, Ill., a corporation of Delaware
Filed June 1, 1964, Ser. No. 371,426
Int. Cl. B32b *3/12, 5/18, 3/22*
U.S. Cl. 161—69 **6 Claims**



A panel adapted to receive transverse compressive stress comprising, two spaced parallel sheets, a plurality of spacers between said sheets each constituted by a tubular skin surrounding expanded plastic foam having cells elongated in a direction parallel to said skin and perpendicular to said sheets, and plastic foam expanded in the remaining volume between said sheets.

3,470,059
MATRIX FOR MOLDING A POSITIVE RELIEF IMPRESSION
Nelson Jonnes, Stillwater, Minn., assignor to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware
Filed Dec. 22, 1965, Ser. No. 515,576
Int. Cl. B32b *3/26, 29/00;* **B41b** *5/02*
U.S. Cl. 161—161 **4 Claims**

1. A matrix for molding a positive relief impression of a desired image on a receptor sheet comprising, a base sheet overcoated with a layer of fracturable hollow microbubbles unified within the layer by a low shear, non-resilient binder, and a thin ductile release film laminated to the bubble layer, said layer and film receiving a permanent, sharply defined negative relief impression of the desired image upon instantaneous impact with an image bearing slug sufficient to fracture the bubbles.

3,470,060
BI-COMPONENT POLYACRYLONITRILE FILAMENTS AND PROCESS FOR PRODUCING THE SAME
Jeno Szitz, Alfred Nogaj, and Herbert Marzolph, Dormagen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany
No Drawing. Filed Jan. 26, 1967, Ser. No. 611,802
Claims priority, application Germany, Feb. 2, 1966, F 48,318
Int. Cl. D01f *7/02*
U.S. Cl. 161—175 **6 Claims**

A method of conjugate spinning a bi-component fiber consisting of a homopolymer of acrylonitrile and a copolymer of acrylontrile containing at most 20 weight percent of a copolymerizable hydrazido betaine.

3,470,061
SODIUM POLYSULFIDE PULPING PROCESS AND REGENERATION
Richard G. Barker, Princeton Junction, N.J., assignor to Union Camp Corporation, New York, N.Y., a corporation of Virginia
No Drawing. Filed Mar. 3, 1967, Ser. No. 620,288
Int. Cl. D21c *11/12, 3/26*
U.S. Cl. 162—32 **5 Claims**

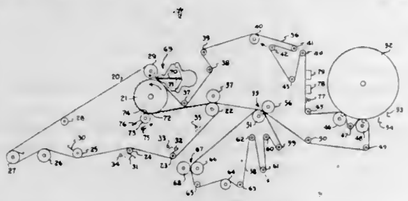
A method for generating sodium polysulfide in alkaline digesting liquor containing sodium sulfide comprising chemically oxidizing the sodium sulfide present in the digesting liquor with insoluble solid inorganic manganese oxidizer, the oxidizer being an oxide, sulfide or hydroxide exemplified by the formulae Mn_2O_3, Mn_3O_4, MnS_2, partially oxidized MnO, MnOOH and MnO_2, the oxidation occurring at a temperature in the range of 40–120° C.

3,470,062
CERAMIC ACOUSTICAL WATER-LAID SHEET
James C. Ollinger, Lancaster County, Pa., assignor to Armstrong Cork Company, Lancaster, Pa., a corporation of Pennsylvania
No Drawing. Application June 23, 1965, Ser. No. 466,477, now Patent No. 3,371,134, which is a continuation-in-part of applications Ser. No. 148,877, Oct. 31, 1961, and Ser. No. 371,832, June 1, 1964. Divided and this application Oct. 4, 1967, Ser. No. 688,637
Int. Cl. D21h *3/66*
U.S. Cl. 162—152 **2 Claims**

A light-colored ceramic board product formed from a water-laid sheet containing mineral wool and Mississippi M & D clay. A firmly bonded board is achieved when the

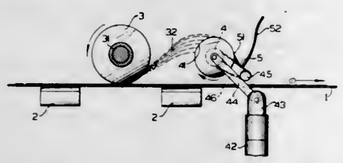
water-laid sheet is fired at a temperature between about 1000° and 1600° F., the firm bond throughout the sheet being established between the clay and mineral wool on firing in this temperature range.

3,470,063
PAPERMAKING MACHINE
Charles L. Sanford, Memphis, Tenn., assignor to Kimberly-Clark Corporation, Neenah, Wis., a corporation of Delaware
Filed Jan. 27, 1965, Ser. No. 428,516
Int. Cl. D21f *1/10, 11/06*
U.S. Cl. 162—303 **2 Claims**



A papermaking machine having a felt passing around a supporting roll, a foraminous forming fabric overlying the felt on the roll with paper stock directed between the fabric and felt so that a paper web forms around the periphery of the roll, and a porous roll or endless foraminous fabric in moving contact with the external surface of the forming fabric as it passes around the supporting roll for removing some of the water in the interstices of the forming fabric.

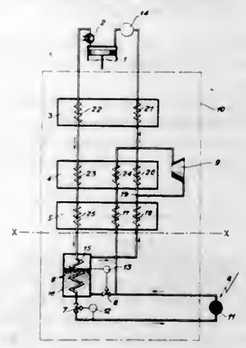
3,470,064
SPRAY RECEIVING DEVICE FOR A PAPERMAKING MACHINE
Hans Schwerdt, Dusseldorf, Germany, assignor to Feldmuhle Aktiengesellschaft, Dusseldorf, Germany
Filed Mar. 28, 1966, Ser. No. 537,997
Claims priority, application Germany, Apr. 6, 1965, F 45,742
Int. Cl. D21f *1/46*
U.S. Cl. 162—314 **6 Claims**



The drops of water and stuff thrown upward and forward from a Fourdrinier wire are intercepted by a face portion of a rotating cylinder or a moving conveyor belt while the intercepting portion moves obliquely upward from the direction of wire movement at least at the speed of the wire, thereby causing the drops to be deposited on the cylinder or belt in a film which is harmlessly removed by a wiper.

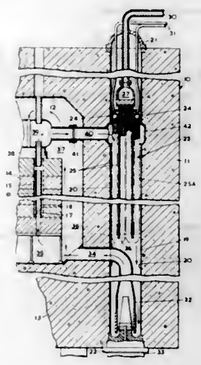
3,470,065
PRODUCTION OF COLD NEUTRONS
Sahabettin Ergenc, Zollikerberg, Zurich, Switzerland, assignor to Sulzer Brothers Limited, Winterthur, Switzerland, a Swiss company
Filed July 1, 1966, Ser. No. 562,310
Claims priority, application Switzerland, July 5, 1965, 9,455/65
Int. Cl. G21c *5/12;* **F25j** *1/02;* **F25b** *25/00*
U.S. Cl. 176—39 **12 Claims**

Cold neutrons are produced from the fission neutrons of a nuclear reactor in the moderator thereof with the aid of liquefied hydrogen deuteride circulated through a chamber in that moderator, the liquefied gas being obtained by compressing hydrogen or hydrogen deuteride gas, cooling and liquefying the compressed gas by countercurrent heat exchange flow with previously compressed and subsequently expanded gas, supercooling the condensed gas by evaporation of a fraction thereof expanded to intermediate pressure, passing the liquefield supercooled gas through a chamber in the moderator of the reactor,



evaporating and superheating the liquefied gas emerging from the chamber by passing it in countercurrent heat exchange flow with newly compressed gas, expanding with performance of external work the evaporated and superheated gas and combining it with that fraction as evaporated in the supercooling step, and further heating the resulting combined stream of gas to the vicinity of ambient temperature preliminary to renewed compression thereof. There is also disclosed apparatus for carrying out the process.

3,470,066
NUCLEAR REACTOR HAVING A CONCRETE PRESSURE VESSEL
Walter Oldham Livsey and Alexander Gillies Young, Whetstone, England, assignors to The English Electric Company Limited, London, England, a British company
Filed June 20, 1966, Ser. No. 558,720
Claims priority, application Great Britain, June 18, 1965, 25,930/65
Int. Cl. G21c *11/02, 15/00;* **G21d** *9/00*
U.S. Cl. 176—60 **2 Claims**



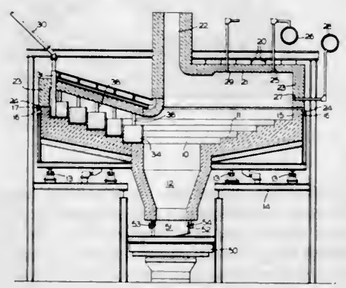
A concrete combined pressure vessel/biological shield for a nuclear reactor comprises a single wall with a cylindrical vertical outer surface and has vertical cylindrical

penetrations in said wall, in each of which there are closely fitted a boiler and a coolant circulator coaxial with the boiler.

3,470,067
CONCENTRATION AND PURIFICATION OF VIRUSES FROM PARTICULATE MAGNETIC IRON OXIDE-VIRUS COMPLEXES
Joel Warren and Alan L. Neal, Terre Haute, Ind., and David A. Rennels, Pasadena, Calif., assignors to Chas. Pfizer & Co., Inc., New York, N.Y., a corporation of Delaware
No Drawing. Continuation-in-part of application Ser. No. 489,076, Sept. 21, 1965. This application Sept. 19, 1967, Ser. No. 668,946
Int. Cl. C12k *7/00;* **A61k** *23/00*
U.S. Cl. 195—1.5 **4 Claims**

The ability of iron oxide to complex with microorganisms leads to useful iron oxide-virus compositions and to an invaluable means of purifying contaminated water.

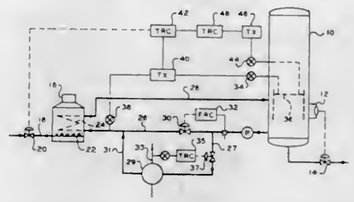
3,470,068
METHODS AND APPARATUS FOR THE CONTINUOUS TREATMENT OF NON-CAKING COAL AND OTHER DISCRETE MATERIALS
John L. Kemmerer, Jr., Short Hills, N.J., and Edward G. Buschow, Pittsburgh, Pa., assignors to Salem-Brosius, Inc., a corporation of Pennsylvania
Filed Oct. 12, 1966, Ser. No. 586,207
Int. Cl. C10b *7/02, 11/00*
U.S. Cl. 201—33 **4 Claims**



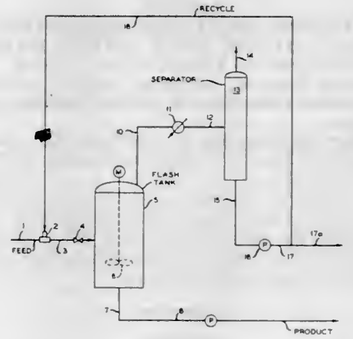
A method and apparatus for continuously treating noncaking coal and other materials of low non-agglutinating values, consisting in delivering the materials onto a rotating hearth which is stepped or cascaded circularly and radially from its outer periphery at the point of admission of materials thereinto to its center where a soaking pit is provided. A plurality of stationary rabbles are disposed above the hearth and extend downwardly towards the respective steps, said rabbles being coextensive with the width of the steps to insure a full sweep of the material thereon and stirring it as well as advancing it in its progress towards the soaking pit or exit area.

3,470,069
TEMPERATURE CONTROL OF A PROCESSING ZONE BY SENSING AND AVERAGING SEPARATE TEMPERATURES
Robert C. Bracken and Eugene D. Lea, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware
Filed Apr. 22, 1968, Ser. No. 722,998
Int. Cl. B01d *3/42*
U.S. Cl. 203—2 **12 Claims**

Method and apparatus for maintaining the temperature of a fluid in a first zone substantially constant by averaging (1) the temperature of a fluid in said first zone and (2) the temperature of fluid from said first zone prior to its entry into a heat transfer zone, and employing the resulting averaged temperature as a control temperature for the addition of heat to or the withdrawal of heat from said fluid in said heat transfer zone.



3,470,070
FLASHING VISCOUS POLYMER SOLUTIONS
Robert D. Heckart, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed Dec. 6, 1966, Ser. No. 599,642
Int. Cl. B01d *3/06*
U.S. Cl. 203—88 **4 Claims**

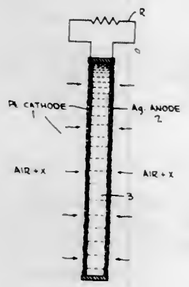


A solution of a polymer in a solvent, e.g., hydrogenated polybutadiene dissolved in hexane, is flashed at a desired flash tank pressure and the concentration of the remaining liquid is regulated to a desired value by recycling a portion of earlier flashed but now condensed hexane to the feed to the tank.

3,470,071
METHOD AND APPARATUS FOR DETECTING GAS
Michael A. Vertes, New York, and Harry G. Oswin, Chauncey, N.Y., assignors to Leesona Corporation, Warwick, R.I., a corporation of Massachusetts
Filed July 11, 1966, Ser. No. 564,262
Int. Cl. B01k *3/00;* **B01d** *13/02*
U.S. Cl. 204—1 **15 Claims**

A detector for sensing the presence of noxious gases in the atmosphere is described comprising an anode, a cathode, an electrolyte, and an external circuit including a warning signal connecting the anode and cathode. The anode and cathode each comprise a liquid impermeable and gas permeable polymer membrane coated at one surface with a catalytic layer. The catalytic layer of the cathode is electrochemically active with respect to the

oxygen of its environment and invariant to the gas being detected, whereas the catalytic layer of the anode includes in its catalytic layer a material reactive with the gas to be detected. The detector is constructed and arranged in order that the catalytic layer of the anode and



cathode is in contact with the electrolyte of the detector and the hydrophobic polymer of each of the anode and cathode is in contact with the atmosphere. The detector is sensitive, of simplified construction, and compact, making it capable of use as a personal detector.

3,470,072
PROCESS FOR THE ELECTRO-DEPOSITION OF PAINT COATING ONTO ARTICLE HAVING PREDEPOSITED POROUS ZINC LAYER

John Gooch Ransome, Abingdon, England, assignor to Pressed Steel Fisher Limited, Oxford, England, a British company

No Drawing. Filed Mar. 13, 1967, Ser. No. 622,439
Int. Cl. C23b *13/00*; B01k *5/02*; C23f *17/00*
U.S. Cl. 204—181 **5 Claims**

This invention involves a process for imparting a coating to an article by electrodeposition and includes electroplating the surface of an article with a thin porous layer of zinc in an alkaline plating bath and subsequently painting the article by electrophoresis.

3,470,073
METHOD OF ELECTROPLATING ALUMINUM

Akira Miyata, Hideyo Okubo, Chickayoshi Tomita, and Akio Suzuki, Kawasaki-shi, Japan, assignors to Nippon Kokan Kabushiki Kaisha, Tokyo, Japan

No Drawing. Filed Dec. 26, 1967, Ser. No. 693,093
Claims priority, application Japan, Oct. 25, 1967, 42/68,434
Int. Cl. C23b *9/02*; C22d *3/12*
U.S. Cl. 204—39 **5 Claims**

Aluminum is electroplated from a fused salt bath containing dehydrating substance.

3,470,074
DEPOSITING ZINC COATINGS

Josef H. Schick, Obersdorf uber Siegen, Germany, assignor to Siemag Siegener Maschinenbau G.m.b.H., a corporation of Germany

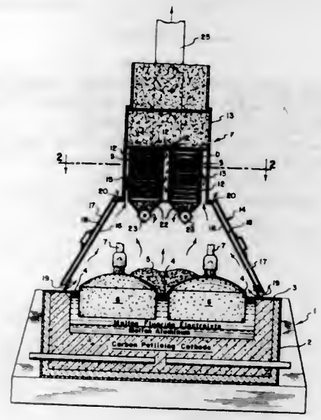
No Drawing. Filed Aug. 18, 1965, Ser. No. 480,759
Claims priority, application Germany, Aug. 18, 1964, Sch 35,639; Jan. 26, 1965, M 63,931; Feb. 24, 1965, M 64,300; Aug. 4, 1965, M 66,208
Int. Cl. C23b *5/10, 5/46*
U.S. Cl. 204—55 **14 Claims**

A process for producing zinc coatings on more noble metals includes passing an electrode current to a cathode of the object to be coated from an anode of a zinc metal through an aqueous solution which contains at least one salt of the less noble metal, a base, an acid, and a reducing agent with the pH value of the aqueous solution being at least five, with the voltage corresponding to at least the potential differences between the coating and the coated metals but being below the decomposition voltage of the water.

3,470,075
PROCESS AND APPARATUS FOR FILTERING EFFLUENT PRODUCED FROM ALUMINUM REDUCTION CELLS

Arthur F. Johnson, 203 Creole Lane, Franklin Lakes, N.J. 07417

Filed Feb. 6, 1967, Ser. No. 614,294
Int. Cl. B01k *3/00*; C22b *21/00*
U.S. Cl. 204—67 **11 Claims**



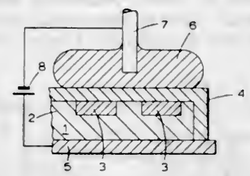
This invention comprises an apparatus associated with an aluminum reduction cell and a process for directing the hot gases, vapors and dust issusing from the cell and passing them through a wall of pulverulent alumina supported between upright metal walls having a multiplicity of openings. The wall of alumina which may contain some admixed activated alumina, provides a physicophysical filter which entrains the dust, absorbs the fluoride vapors and gaseous compounds, absorbs the heat and returns the absorbed chemicals, dust and heat to the cell. The wall of alumina is preferably supplied from an upper feed hopper and as the wall of alumina moves downwardly it engages means which controls feeding the wall of alumina into the cell which also maintains the wall of alumina. The metal walls preferably have many spaced upwardly disposed baffles which prevent spillage of the alumina and intervening spaces through which the gases, vapors and dust pass into the alumina.

3,470,076
METHOD OF REMOVING ALKALI METAL IMPURITY FROM AN OXIDE COATING

Thomas Klein, Palo Alto, Calif., and Keith Harlow Nicholas, Reigate, Surrey, England, assignors, by mesne assignments, to U.S. Philips Corporation, New York, N.Y., a corporation of Delaware

Filed Jan. 10, 1967, Ser. No. 608,427
Claims priority, application Great Britain, Dec. 23, 1966, 1,075/66
Int. Cl. B01k *1/00*
U.S. Cl. 204—130 **11 Claims**

A method of removing alkali metal ion impurity from an oxide formed on a semiconductor body is disclosed wherein the body is first heated and then applying a liquid metal which has affinity for alkali metal ions and which does not wet the oxide and applying a voltage across the

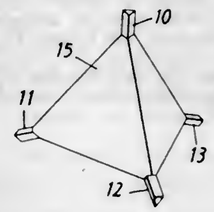


oxide coating whereby the alkali metal ion impurity is transported to the liquid metal, and then removing the metal with its content of alkali metal ions.

3,470,077
SACRIFICIAL ANODES AND METHOD OF USING SAME

William Frederick Higgins, Swinton, England, assignor to Magnesium Elektron Limited, Swinton, England

Filed Sept. 7, 1967, Ser. No. 666,156
Int. Cl. C23f *13/00*
U.S. Cl. 204—148 **11 Claims**



An anode comprising a block of sacrificial metal and a metal core embedded therein and projecting therefrom. The block and the core are so arranged that in any position of the anode when placed on a surface of a structure it rests on three separate portions of the core, said three separate portions being small in area relative to the weight of the anode so as to provide a high unit loading.

3,470,078
IRRADIATED POLY(ETHYLENE OXIDE) AND PROCESS THEREFOR

Paul A. King, Warwick, N.Y., assignor to Union Carbide Corporation, a corporation of New York

Continuation of application Ser. No. 273,728, Apr. 17, 1963. This application July 31, 1967, Ser. No. 657,426
Int. Cl. C08f *1/16*
U.S. Cl. 204—159.14 **10 Claims**

Water-soluble homopolymers, copolymers and terpolymers of polyethylene oxide irradiated by exposure to ionizing radiation in a total dose between about 0.01 and about 5 megarads and having a reduced viscosity value of at least 1.1, aqueous solutions of the irradiated polymer, characterized by viscosities at least 10 percent lower than aqueous solutions of an otherwise identical but unirradiated polymer, and by a marked decrease in pituitousness and by relatively small changes in viscosity compared to aqueous solutions of an otherwise identical but unirradiated polymer at the same concentration and temperature.

3,470,079
HIGHLY RADIATION-SENSITIVE TELOMERIZED POLYAMIDES

Gaetano F. D'Alelio, South Bend, Ind., assignor to PPG Industries Inc., a corporation of Pennsylvania

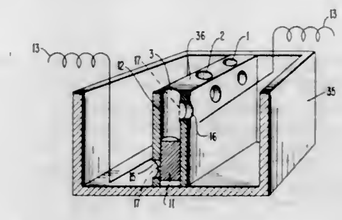
No Drawing. Filed May 18, 1966, Ser. No. 550,968
Int. Cl. C08f *1/16*
U.S. Cl. 204—159.15 **24 Claims**

The preparation of highly radiation-sensitive telomerized diacrylyl polyamides whereby said polyamides are treated by subjecting same to high energy ionizing radiation so as to produce three-dimensional crosslinked, insoluble infusible polymers at relatively low doses of ionizing radiation.

3,470,080
MULTI-PHASE ELECTROPHORETIC DISTRIBUTION

Samuel Raymond and John Broome, both of 4312 Osage Ave., Philadelphia, Pa. 19104

Filed June 27, 1966, Ser. No. 560,550
Int. Cl. B01k *5/00*
U.S. Cl. 204—180 **3 Claims**

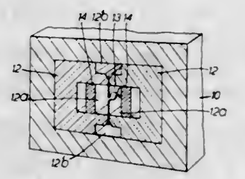


A process and apparatus for multi-phase electrophoretic distribution utilizes both electrophoretic mobility and phase distribution as separation parameters. Mixing and non-mixing phases are placed in contact in separate receptacles and in an electrophoric field to cause electrophoretic migration in either direction, e.g., either into or out of the non-mixing zone within the receptacles. The contents of the mixing zones of the receptacles are transferred sequentially with respect to the non-mixing zones with a reversing of the electrophoretic field.

3,470,081
ELECTROLYTIC CELL FOR SHARPENING THE EDGE OF A RAZOR BLADE

Barry W. Lovekin, High Wycombe, England, assignor to Wilkinson Sword Limited, London, England, a British company

Filed Mar. 21, 1966, Ser. No. 536,054
Claims priority, application Great Britain, Mar. 30, 1965, 13,324/65
Int. Cl. C23b *5/58*
U.S. Cl. 204—206 **6 Claims**



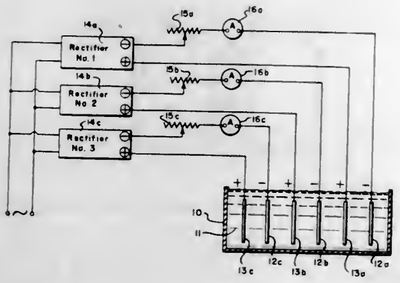
An electrolytic cell for the electroforming or electrofinishing of the cutting edges of razor blades is so constructed that there is no physical contact between the

electrodes of the cell and the razor blades during the process. This is achieved by providing a first chamber for containing electrolyte with which the anode is in contact and a second chamber for containing electrolyte, isolated from the electrolyte in the first chamber, with the cathode in contact with the electrolyte in the second chamber. A razor blade is supported with the edge which is to be electroformed or electrofinished in the electrolyte in the second chamber whilst a portion of the blade behind the edge is in contact with the electrolyte in the first chamber. In this way current flows from the anode through the electrolyte in the first chamber to the portion of the blade behind the cutting edge through the blade to the edge which is to be electroformed or electrofinished and thence through the electrolyte in the second chamber to the cathode.

3,470,082
ELECTROPLATING METHOD AND SYSTEM

Louis W. Raymond and Roger E. Reath, both % Superior Plating Company, 2500 Post Road, Fairfield, Conn. 06430

Filed Sept. 22, 1965, Ser. No. 489,278
Int. Cl. C23b *5/00, 5/68;* **B01k** *3/00*
U.S. Cl. 204—228 **3 Claims**



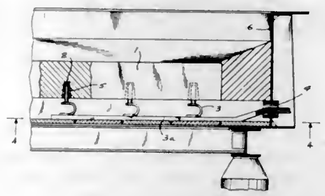
A plurality of individual parts are electroplated in a common electroplating electrolyte by providing a separate and mutually independent source of electrolyzing current for each part being electroplated (for example, a separate rectifier for each part). The negative pole of each of the separate sources of electrolyzing current is connected to a separate one of the parts being electroplated and the positive pole of each source is connected either to separate anodes or to a common anode immersed in the electrolyte. Separate means are provided for controlling the amount of electrolyzing current flowing from each source of electrolyzing current through the electrolyte and the cathode associated with that source of electrolyzing current.

3,470,083
ELECTROLYTIC CELL CATHODE BOTTOM WITH VERTICALLY INSERTED CURRENT CONDUCTOR

Friedrich Wilhelm Wrigge, Bad Godesberg, and Ernst Weckesser, Grevenbroich, Germany, assignors to Vereinigte Aluminium-Werke Aktiengesellschaft, Bonn, Germany

Filed Oct. 27, 1964, Ser. No. 406,841
Claims priority, application Germany, Nov. 22, 1963, V 24,909, Patent 1,187,809
Int. Cl. C22d *3/02*
U.S. Cl. 204—243 **10 Claims**

1. In an electrolytic cell for recovery of a metal from a molten electrolyte containing the same, in combination, a vessel adapted to hold molten electrolyte, said vessel having a bottom formed of a substantially horizontally extending carbonaceous cathode plate having an upper face adapted to contact the molten electrolyte or molten metal electrolytically separated therefrom, and a lower face; a plurality of current conducting nipples extending spaced from each other in substantially vertical direction through said lower face of said cathode plate into the lat-

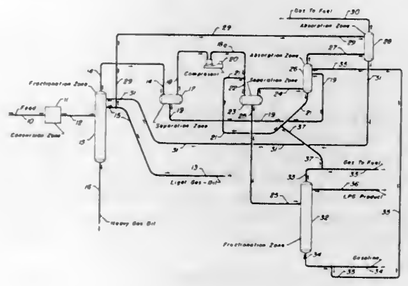


ter, each of said nipples having a lower end and an upper free end downwardly spaced from said upper face of said cathode plate and completely separated from said top face by an uninterrupted portion of said cathode plate so as to be out of direct contact with said electrolyte; and current supply means spaced from said cathode plate and electrically connected to said lower end of each nipple.

3,470,084
METHOD OF SEPARATION OF GASEOUS HYDROCARBONS FROM GASOLINE

Norman H. Scott, Villa Park, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

Filed Nov. 20, 1967, Ser. No. 684,204
Int. Cl. C10g *31/14, 21/14, 25/00*
U.S. Cl. 208—101 **5 Claims**



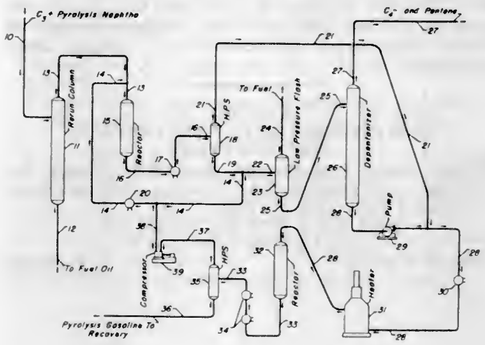
Method for recovering gasoline and normally gaseous hydrocarbons from the effluent of a hydrocarbon conversion zone, such as a coking unit. The method utilizes a combination of low and high pressure separation zones operating in conjunction with a dual absorption zone system. Gasoline and LPG are recovered as separate products.

3,470,085
METHOD FOR STABILIZING PYROLYSIS GASOLINE

Robin J. Parker, Western Springs, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

Filed Nov. 20, 1967, Ser. No. 684,173
Int. Cl. C10g *35/18, 35/08;* **C07c** *5/06*
U.S. Cl. 208—143 **7 Claims**

Method for stabilizing pyrolysis gasoline via a two-stage hydrogenation technique. The first stage utilizes a palladium catalyst and the second stage utilizes a nickel catalyst for desulfurization. The invention is uniquely applicable to feedstocks having a Diene Value in excess



of 30, typically, in the 50 to 60 range. Olefinic hydrocarbons, hydrocarbons suitable for gasoline blending, and aromatic hydrocarbons may, if desired, be recovered as separate product streams.

3,470,086
HYDROREFINING OF AROMATIC-CONTAINING HYDROCARBON DISTILLATES

Evan A. Jones, Mount Prospect, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

No Drawing. Filed Apr. 24, 1967, Ser. No. 632,953
Int. Cl. C10g *23/00;* **C07c** *5/00*
U.S. Cl. 208—209 **3 Claims**

Ring saturation of aromatic compounds contained in a hydrocarbon mixture is prevented during a process for hydrorefining to (1) saturate olefins to produce aliphatic hydrocarbons and (2) convert nitrogenous and sulfurous contaminants into hydrocarbons, ammonia, and hydrogen sulfide. An oxide of carbon is added to the hydrogen-hydrocarbon charge, in an amount of from about 0.5 mol percent to about 5.0 mol percent (based upon the quantity of hydrogen), prior to introducing the mixture into the reaction zone.

3,470,087
SOLVENT RECOVERY PROCESS

Donald B. Broughton, Evanston, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

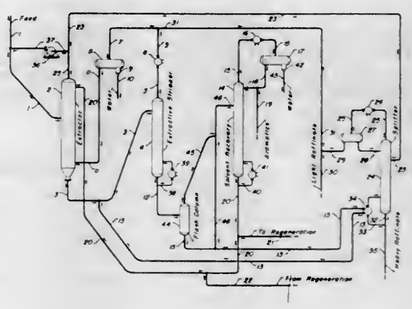
No Drawing. Filed Sept. 11, 1967, Ser. No. 666,971
Int. Cl. C10g *21/22, 25/00;* **B01j** *1/22*
U.S. Cl. 208—321 **10 Claims**

A technique to be integrated into an extraction process designed to recover aromatic hydrocarbons from a mixture thereof with non-aromatic hydrocarbons. The substantially aromatic-free raffinate phase, containing minor quantities of a sulfolane-type solvent characteristically selective for absorbing aromatic hydrocarbons, is passed through activated carbon for adsorption thereon of the solvent. The activated carbon, containing the solvent, is then back-flushed, or washed, with an aromatic hydrocarbon stream to desorb the solvent. The technique is particularly adaptable where a substantially solvent-free raffinate is required.

3,470,088
METHOD FOR AROMATIC HYDROCARBON RECOVERY

Anthony G. Vickers, Raynes Park, England, assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

Filed Nov. 6, 1967, Ser. No. 680,857
Int. Cl. C07c *7/02;* **C10g** *21/06*
U.S. Cl. 208—321 **7 Claims**

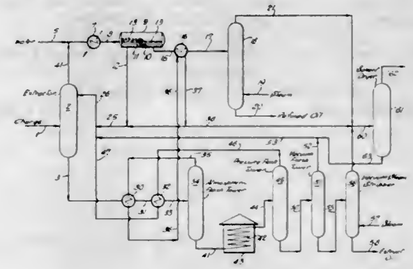


Method for extracting and recovering aromatic hydrocarbons from a suitable feedstock, such as pyrolysis gasoline, using a selective solvent, preferably, of the sulfolane type. The extracted aromatic hydrocarbons are recovered in high yield and high purity using a combination of extractive distillation, equilibrium flash, and fractionation. The method is uniquely applicable to recovering xylenes in extremely high purity from a pyrolysis gasoline fraction.

3,470,089
SEPARATION OF SOLVENT FROM RAFFINATE PHASE IN THE SOLVENT REFINING OF LUBRICATING OIL STOCKS WITH N-METHYL-2-PYRROLIDONE

Herbert C. Morris, Groves, and John I. Nixon, deceased, late of Bridge City, Tex., by Roberta Lois Nixon, administratrix, Orange, Tex., assignors to Texaco Inc., New York, N.Y., a corporation of Delaware

Filed June 20, 1967, Ser. No. 648,533
Int. Cl. C10g *21/20, 21/28*
U.S. Cl. 208—326 **9 Claims**



In the solvent refining of a lubricating oil charge stock for the removal of constituents having a low viscosity index and poor stability, said lubricating oil charge stock is contacted with a solvent comprising N-methyl-2-pyrrolidone effecting separation of a raffinate-mix comprising a major portion of oil with a minor portion of said solvent dissolved therein and an extract-mix comprising a major portion of said solvent with said constituents having a low viscosity index and poor stability dissolved therein.

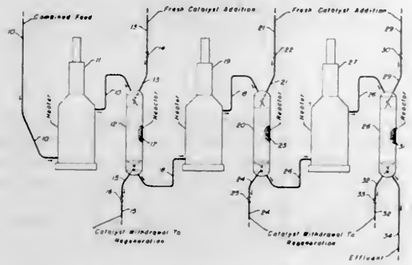
Solvent is separated from raffinate-mix by adding water in an amount of at least 2.0 weight percent of the N-methyl-2-pyrrolidone dissolved therein effecting separation of an oil phase and a wet solvent phase comprising at least 2.0 weight percent water. Refined oil is separated by distilling remaining solvent therefrom. Wet solvent is recycled with solvent of lower water content to comprise at least a part of the solvent charged in contact with said lubricating oil charge stock.

3,470,090

METHOD FOR OPERATING A NON-REGENERATIVE FIXED BED REFORMING PROCESS

Don B. Carson, Mount Prospect, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

Filed Sept. 25, 1967, Ser. No. 670,827
Int. Cl. C10g *35/08*
U.S. Cl. 208—138 **5 Claims**



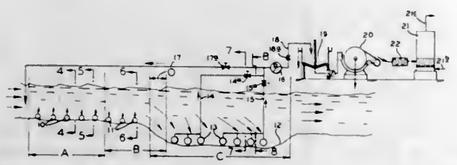
Method for operating a non-regenerative fixed bed naphtha reforming process wherein the platinum catalyst activity is maintained at a predetermined level by periodically adding and removing catalyst from the reactors without removing any reactor from the process stream. The removed catalyst may be regenerated outside of the system and subsequently returned for reuse.

3,470,091

TREATMENT OF POLLUTED STREAMS IN PLACE

William E. Budd, Ridgefield, Conn., and Thomas J. Powers, Midland, Mich., assignors to Dorr-Oliver Incorporated, Stamford, Conn., and The Dow Chemical Company, Midland, Mich., as joint owners, both corporations of Delaware

Filed Feb. 8, 1968, Ser. No. 703,944
Claims priority, application Great Britain, Feb. 21, 1967, 8,248/67
Int. Cl. C02c *1/02, 5/04;* **C02b** *1/20*
U.S. Cl. 210—10 **27 Claims**



This invention relates to a system and a method for combating the pollution of streams or rivers or canals, by treating the polluted water collectively in the flowing stream itself, instead of separately treating the individual contributing sources of pollution in order that the construction of numerous shore-located individual expensive sewage treatment plants may be forestalled or avoided.

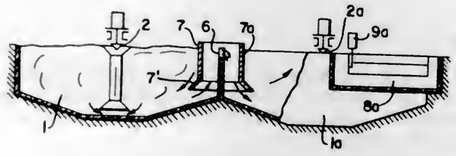
This system provides for applying aeration- and flocculation treatment to a predetermined length of the stream itself, so that the resulting floc structures from that treatment, weighted by entrapped inert solids, will settle in a downstream adjoining sedimentation zone as sludge which may be removed or pumped away periodically.

3,470,092

SYSTEM FOR THE PURIFICATION OF WASTE WATERS

Jacques Joseph Paul Bernard, Port-Marly, France, assignor to Degremont S.A., Suresnes, Hauts-de-Seine, France, a corporation of France

Filed May 8, 1967, Ser. No. 636,727
Int. Cl. C02c *1/06, 5/04*
U.S. Cl. 210—15 **9 Claims**



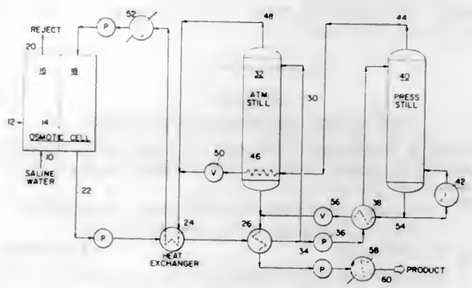
A system for the purification of waste waters based on the activated sludge process utilizing an aeration zone and a settling zone which are interconnected with means for periodically reversing operation so that the aeration zone becomes the settling zone and vice versa.

3,470,093

OSMOTIC PURIFICATION OF SOLUTIONS

Edwin S. Johanson, Princeton, N.J., assignor to Hydrocarbon Research, Inc., New York, N.Y., a corporation of New Jersey

Continuation-in-part of application Ser. No. 324,385, Nov. 18, 1963. This application Nov. 9, 1966, Ser. No. 611,187
Int. Cl. B01d *13/00, 11/04*
U.S. Cl. 210—22 **2 Claims**



An osmotic process for the recovery of water from an aqueous solution containing non-volatile impurities wherein the diffusion potential for the osmosis is obtained by diluting the diffused water side of the membrane with a solvent possessing a high volatility with respect to water and which is completely miscible with the water whereby a continuous flow of pure water is maintained through the membrane.

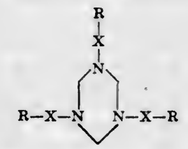
3,470,094

COMPOSITIONS FOR PREPARING HEAT-CURABLE FIRE RETARDANT MOLDING COMPOSITIONS

Rolf Zimmermann, Wolfram Ernst Busch, and Fritz Reiners, Wiesbaden-Biebrich, Germany, assignors to Chemische Werke Albert, Wiesbaden-Biebrich, Germany, a corporation of Germany

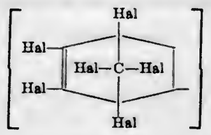
No Drawing. Original application July 13, 1965, Ser. No. 471,745, now Patent No. 3,361,847, dated Jan. 2, 1968. Divided and this application Apr. 10, 1967, Ser. No. 642,271
Claims priority, application Germany, July 16, 1964, C 33,423, C 33,424; June 18, 1965, C 36,145
Int. Cl. C09k *3/28*
U.S. Cl. 252—8.1 **1 Claim**

Compositions for preparing heat-curable moulding compositions comprising a powdery inorganic filler and a fire-retardant additive from the group (A) 1,3,5-s-tris-(dihalopropionyl) - hexahydrotriazine, (B), a mixture thereof with perchlorocyclo - $(5,2,1,0^{2,6},0^{3,9},0^{5,8})$decane, (C) a hexahydrotriazine derivative of the formula



(I)

in which X is a member selected from the group consisting of $>C=O$ and $>SO_2$ and at least one of the radicals R is the group



(II)

Hal being bromine or chlorine and the other radicals R the group $-CH=CH_2$ and (D) a mixture of a plurality of components (A), (B) and (C).

3,470,095

AQUEOUS TEXTILE TREATING EMULSION

Joseph John Pontelandolfo, Charlotte, N.C., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed Feb. 1, 1966, Ser. No. 523,913
Int. Cl. D06m *13/20*
U.S. Cl. 252—8.9 **6 Claims**

A textile treating composition comprising an aqueous emulsion of (1) a triglyceride of higher fatty acids; (2) hydrogenated tallow fatty acid; (3) a mixed ester of glycerol, said mixed ester having from 1 to 2 lower acyl ester moieties, the remaining ester moieties being higher fatty acid moieties; and (4) an ethoxylated castor oil.

3,470,096

SYNERGISTIC MIXTURES FOR CONTROL OF SLIME-FORMING BACTERIA AND OTHER DELETERIOUS MICRO-ORGANISMS AND PROCESSES USING SAME

Carl O. Tant, Houston, Nan E. Turner, Dallas, and Edward O. Bennett, Houston, Tex., assignors to Nalco Chemical Company, Chicago, Ill., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 406,598, Oct. 26, 1964. This application Aug. 24, 1965, Ser. No. 482,294
Int. Cl. E21b *41/00;* **A01n** *9/22*
U.S. Cl. 252—8.55 **17 Claims**

Synergistic, microbiocide mixtures comprising paired or multiple combinations of at least one of each of (a) compounds having furan, dihydrofuran or tetrahydrofuran nuclei and (b) compounds having phenol nuclei or chloroanilines at weight ratio of (a):(b) of 25:1 to 1:10 and uses thereof destroying slime-forming micro-organisms in subterranean, aqueous environment, e.g., in subterranean water-flooding operations.

3,470,097

OVERBASED DIALKYLBENZENE SULFONATES

Joe B. Lavigne, Oakland, and Mack F. Hughes, Albany, Calif., assignors to Chevron Research Company, San Francisco, Calif., a corporation of Delaware

No Drawing. Continuation-in-part of applications Ser. No. 579,814, Sept. 16, 1966, and Ser. No. 647,957, June 22, 1967. This application Sept. 19, 1967, Ser. No. 668,924
Int. Cl. C10m *1/40, 3/34*
U.S. Cl. 252—33 **8 Claims**

Overbased calcium dialkylbenzene sulfonate lubricating oil compositions, wherein the alkyl groups are of significantly different carbon lengths and structure. One alkyl group is branched chain of from 3 to 10 carbon atoms, while the second alkyl group is straight chain having secondary attachment to the benzene ring and is of from 17 to 21 carbon atoms. Overbasing is achieved with carbonation of basic calcium.

3,470,098

SULFUR AND CHLORINE CONTAINING ASHLESS DISPERSANT, AND LUBRICATING OIL CONTAINING SAME

Rosemary O'Halloran, Union, N.J., assignor to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 422,036, Dec. 29, 1964. This application May 29, 1968, Ser. No. 732,876
Int. Cl. C10m *1/38;* **C10l** *1/24;* **C08f** *27/06*
U.S. Cl. 252—47.5 **8 Claims**

This invention relates to products formed by reacting ashless dispersants which are mineral-oil soluble carboxylic (or corresponding acid anhydride) amides and imides of polyalkylene amines, with sulfur chloride, method of preparing said products, and oil compositions containing said products.

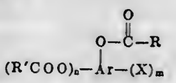
3,470,099

ESTERS OF POLYNUCLEAR ALCOHOLS AND LUBRICATING OILS CONTAINING SAME

Herbert G. Burkard, Convent Station, and David S. Bosniack, Edison, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Filed June 5, 1967, Ser. No. 643,383
Int. Cl. C10m *1/24, 3/18*
U.S. Cl. 252—57 **8 Claims**

Esters of certain hydroxylated fused ring aromatic compounds, when employed in lubricating oils, impart to those oils improved oxidative and corrosive properties. Broadly, the ester additive is represented by the following structural formula:



wherein R and R' can be the same or different, and contain from 2 to 20 carbon atoms, preferably 6 to 11 carbon atoms, and are each selected from the group consisting of normal alkyl, branched chain alkyl, aryl, aralkyl, cycloaliphatic, normal alkenyl, branched chain alkenyl, and aralkenyl, the preferred group being normal alkyl and branched chain alkyl groups; *n* is 0 to 3, preferably 1; X is a carbonyl or hydroxy group or both; *m* is 1 to 4;

and Ar is a hydrocarbon radical of naphthalene, a hydrocarbon radical of anthracene, or a hydrocarbon radical of phenanthrene, preferably a hydrocarbon radical of anthracene.

3,470,100
GROWTH OF PIEZOELECTRIC BISMUTH OXIDE
Albert A. Ballman, Woodbridge, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
No Drawing. Filed Jan. 25, 1966, Ser. No. 522,840
Int. Cl. H01v *7/02;* **B01j** *17/00;* **C04b** *35/00*
U.S. Cl. 252—62.9 **1 Claim**

Single crystal, optically active, photoconductive, piezoelectric bismuth oxide is obtained by growth from a melt comprising high purity bismuth oxide is obtained by growth from a melt comprising high purity bismuth oxide and small quantities of an oxide selected from among the oxides of germanium, silicon, gallium, aluminum, and titanium.

3,470,101
FLUORINATED HYDROCARBON COMPOSITIONS
Robert D. Broadley, Hanover Township, Morris County, N.J., assignor to Allied Chemical Corporation, New York, N.Y., a corporation of New York
Continuation-in-part of abandoned application Ser. No. 179,237, Mar. 12, 1962. This application Oct. 3, 1963, Ser. No. 313,643
Int. Cl. C09k *3/06;* **F25**
U.S. Cl. 252—67 **6 Claims**

1. A low boiling composition consisting of a mixture of difluoromethane and monochloropentafluoroethane, in which mixture the mol percent of monochloropentafluoroethane is substantially in the range of 13–65.

3,470,102
DETERGENT COMPOSITION
Karl Ludwig Heinz, Vlaardingen, Netherlands, assignor to Lever Brothers Company, New York, N.Y., a corporation of Maine
No Drawing. Filed Jan. 19, 1966, Ser. No. 521,550
Claims priority, application Great Britain, Jan. 22, 1965, 2,962/65
Int. Cl. C11d *1/40*
U.S. Cl. 252—152 **1 Claim**

A low-foaming detergent composition having controlled sudsing capacity which contains as essential components thereof a tertiary amine oxide and a foam-stabilizing agent.

3,470,103
CHEMILUMINESCENT COMPOSITION AND METHOD
Desmond Sheehan, Northford, Conn., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine
No Drawing. Filed Sept. 23, 1965, Ser. No. 489,748
Int. Cl. C09k *1/00, 3/00;* **C06d** *1/00*
U.S. Cl. 252—186 **12 Claims**

A method for obtaining chemiluminescent light by the reaction of a fluorescer precursor compound with a hydroperoxide in the presence of a solvent, the chemiluminescent composition of such reactants and components of some of the ingredients in the composition. The fluorescer-precursor compound is one represented by the formula $Y_1—A—Y_2$, where A is a fluorescer-precursor paradihydropolycyclic aromatic hydrocarbon derivative, and Y_1 and Y_2 are each substituents selected from the group consisting of: halocarbonyl; non-bridged carboxylic anhydride including acyloxycarbonyl and aroyloxycarbonyl; bridged carboxylic anhydride; and aryloxycarbonyl, one of said Y_1 and Y_2 groups being substituted on A at each of the para positions corresponding to the dihydroaromatic structure. Preferred halo carbonyls are bromocarbonyl, chlorocarboxyl, and fluorocarboxyl. The chlorocarboxyl-substituted compounds give the preferred results. Preferred aryloxycarbonyl substituents are nitrophenoxycarbonyl, dinitrophenoxycarbonyl, cyanophenoxycarbonyl, and trifluoromethylphenoxycarbonyl. The fluorescer precursor is thus a parahydropolycyclic aromatic hydrocarbon derivative, typically a bis(acid halide [or corresponding anhydride]) of a dihydroanthracene.

3,470,104
SORBENT MATERIAL AND FILTER AID COMPOSITIONS AND THE PROCESS FOR THE PREPARATION THEREOF
Lawrence Domas, 960 E. Greendale, Detroit, Mich. 48203
No Drawing. Filed Apr. 30, 1964, Ser. No. 364,020
Int. Cl. C09k *3/00*
U.S. Cl. 252—188 **7 Claims**

Filter aid compositions useful for the removal of soil complex impurities from non-polar organic dry cleaning solvents are described. Particularly described are filter aid compositions incorporating a reducing agent which reacts with the soil complex impurities in the presence of small amounts of water to insolubilize the soil complex impurities. The reducing agents are also described in combination with various sorbent materials, particularly metal and salts which are coated on the surface of a filter, aid material. Also described are the use of aerating agents in the filter aid composition with the reducing agent which generates a gas in situ to improve the filtration rate through the filter cake. Further clay sorbent materials in combination with hydrophobic metal dispersing agents to prevent adhesion of the clay sorbent material are described.

ERRATUM

For Class 252—363.5 see:
Patent No. 3,470,213

3,470,105
METHOD FOR THE PRODUCTION OF A SUPPORTED CHROMIUM-COBALT-PALLADIUM OXIDE EXHAUST CATALYST
Warren S. Briggs, Silver Spring, Md., William A. Stover, Pitman, N.J., and John L. Warthen, Baltimore, Md., assignors to W. R. Grace & Co., New York, N.Y., a corporation of Connecticut
No Drawing. Original application Feb. 1, 1963, Ser. No. 255,658. Divided and this application Mar. 2, 1967, Ser. No. 641,392
Int. Cl. B01j *11/46;* **C01b** *13/10*
U.S. Cl. 252—455 **4 Claims**

A method of producing an exhaust gas catalyst comprises the consecutive impregnation of a support with chromium and with cobalt-palladium salt solutions, said impregnations being separated by a drying step and followed by calcination.

3,470,106
PROCESSING OF HALOPHOSPHATE PHOSPHOR
Frank M. Vodoklys, Wayne, and Gilbert P. Mortensen, Livingston, N.J., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Feb. 23, 1967, Ser. No. 618,024
Int. Cl. C09k *1/04*
U.S. Cl. 252—301.4 **4 Claims**

Halophosphate phosphor is reheated after initial preparation with an addition of ammonium chloride. The reheating is carried out in an inert atmosphere at from 600–940° C. for at least one-half hour. The luminous output of the discharge lamp incorporating the phosphor is thereby improved.

3,470,107
SILICON CARBIDE PHOSPHORS
Arrigo Addamiano, Willoughby, Ohio, assignor to General Electric Company, a corporation of New York
Filed Oct. 15, 1965, Ser. No. 496,325
The portion of the term of the patent subsequent to Jan. 2, 1985, has been disclaimed
Int. Cl. C09k *1/50*
U.S. Cl. 252—301.4 **4 Claims**

Silicon carbide is activated by 5×10^{-5} to 5×10^{-3} atoms of aluminum, gallium or indium per mole of silicon carbide and coactivated by nitrogen or phosphorus sufficiently to compensate for charge deficiency. The material luminesces under 3650 A. longwave ultraviolet excitation at 77° K. and the brightness increases down to liquid helium temperature. The material also luminesces under X-ray excitation at low temperature, under cathode ray excitation at room temperature, and is electroluminescent under suitable conditions.

3.470.108
STRONTIUM-BARIUM HALOPHOSPHATE PHOSPHOR
Richard C. Ropp, North Caldwell, N.J., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Mar. 2, 1967, Ser. No. 620,073
Int. Cl. C09k *1/36*
U.S. Cl. 252—301.6 **3 Claims**

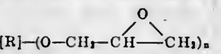
Halophosphate phosphor is strontium-barium fluoroapatite, activated by antimony, and displays a very efficient blue-green emission suitable for blending with other phosphor materials to achieve a desired color.

3,470,109
METHOD OF MAKING RECONSTITUTABLE ALOE GEL IN CRYSTALLINE FORM
Joseph R. Marsh, Jr., Fort Lauderdale, Fla., assignor to Aloe Creme Laboratories, Inc., Fort Lauderdale, Fla., a corporation of Florida
No Drawing. Filed Jan. 31, 1968, Ser. No. 701,861
Int. Cl. B01j *13/00;* **C08b** *19/00*
U.S. Cl. 252—316 **2 Claims**

The method of making reconstitutable aloe gel and particularly aloe vera gel in dry crystalline form in which the gel is removed from the leaves, mercerized, screened, frozen to between 0° C. and −120° C., and while frozen having a vacuum administered thereto for a period of 6 to 12 hours, until anhydrous crystals remain, and storing the dry crystals in sealed containers. Later, by the addition of water, the crystals may be reconstituted into gel having the same physical and chemical properties as the fresh gel.

3,470,110
POLYGLYCIDYL ETHERS OF POLYGLYCOLS
Alfred Renner, Muenchenstein, Switzerland, assignor to Ciba Limited, Basel, Switzerland, a company of Switzerland
No Drawing. Filed Aug. 15, 1967, Ser. No. 660,595
Claims priority, application Switzerland, Aug. 30, 1966, 12,568/66
Int. Cl. C08g *30/04;* **C07d** *1/18*
U.S. Cl. 260—2 **5 Claims**

This invention relates to a polyepoxide of the formula



where R represents the residue, freed from the terminal hydroxyl groups, of a polyhexamethyleneglycol containing at least 2 hexamethyleneglycol units, which may additionally contain cocondensed units of other polyhydric alcohols, and n is 2 or a higher number.

The polyglycidyl ethers may be cured by themselves to furnish elastic shaped articles.

3,470,111
1-ARYLBICYCLO[1.1.0]BUTANES, INTERMEDIATES THERETO AND HOMOPOLYMERS THEREOF
Elwood P. Blanchard, Jr., Williamsville, N.Y., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Continuation-in-part of application Ser. No. 601,325, Dec. 13, 1966. This application Jan. 25, 1968, Ser. No. 700,364
Int. Cl. C08f *13/00;* **C07c** *13/34*
U.S. Cl. 260—2 **4 Claims**

A process for preparing 1-arylbicyclo[1.1.0]butanes which involves contacting a 1-aryl-1,3-dihalocyclo-butane with a metal. The bicyclobutanes can be homopolymerized into homopolymers useful as shaped objects and in the form of self-supporting films.

3,470,112
POLYMERIC COMPOSITIONS
Riyad R. Irani and Robert S. Mitchell, St. Louis, Mo., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware
No Drawing. Original application Mar. 29, 1966, Ser. No. 538,193, now Patent No. 3,395,113, dated July 30, 1968. Divided and this application Jan. 30, 1968, Ser. No. 725,972
Int. Cl. C08f *45/00;* **C09k** *3/28*
U.S. Cl. 260—2 **12 Claims**

This invention relates to and covers new compositions of matter comprising synthetic copolymeric materials prepared using as a comonomer an anhydride of an organo-amino-polyphosphonic acid having a general formula as described hereinafter. An example of such organo-amino-phosphonic acid includes amino tri(methylene phosphonic acid).

3,470,113
PROCESS FOR THE PRODUCTION OF POLYOLEFINES CONTAINING BLOWING AGENTS
Fritz Baxmann, Wolfgang Bursian, and Rudolf Schumacher, Marl, Germany, assignors to Chemische Werke Huls Aktiengesellschaft, Marl, Germany, a corporation of Germany
No Drawing. Filed Aug. 3, 1964, Ser. No. 387,224
Claims priority, application Germany, Feb. 1, 1964, C 32,024
Int. Cl. C08f *47/10, 47/02*
U.S. Cl. 260—2.5 **4 Claims**

In preparing a mixture of polyolefine and a blowing agent, for use in an extrusion (or, injection) molding machine, a polyolefine powder, up to 80% by weight of the particles of which are less than 150 microns, is mixed with a solid blowing agent in fine powder form and the mixture is simultaneously stirred and heated to its sintering temperature and then is cooled, whereby there is produced a foamable granular substance having desirable free-flowing characteristics making the substance immediately usable in the molding machine.

3,470,114
FOAM POLYESTERS AND PROCESS OF MAKING SAME
Erhard Siggel, Seckmauern, and Walter Rein, Obernburg (Main), Germany, assignors to Vereinigte Glanzstoff-Fabriken AG, Wuppertal-Elberfeld, Germany
No Drawing. Filed Aug. 20, 1965, Ser. No. 481,418
Claims priority, application Germany, Aug. 28, 1964, V 26,665
Int. Cl. C08g *53/08, 39/10*
U.S. Cl. 260—2.5 **9 Claims**

Process for producing a foamed polyester such as polyeythlene terephthalate by reacting a homogeneous mixture of the polyester with an aromatic polycarbonate in a weight ratio of polyester to polycarbonate of 20:1 to

1:1 at a temperature and for a period of time sufficient to produce a softened foamable mass and to release carbon dioxide from the polycarbonate to act as an expanding agent. The resulting foamed products are low density, cellular materials in which the decomposed chains of the polycarbonate have reacted with the polyester.

3,470,115

PROCESS FOR MAKING NON-SHRINKING UREA-FORMALDEHYDE FOAMS

William P. Moore, Jr., Chester, and Rob. R. MacGregor, Hopewell, Va., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed Aug. 27, 1965, Ser. No. 483,347
Int. Cl. C08g *53/08, 5/00*
U.S. Cl. 260—2.5 **2 Claims**

Process of producing a substantially non-shrinking urea-formaldehyde foam which comprises preparing an aqueous urea-formaldehyde resin solution, flash drying said solution, and redissolving said dried resin in water, adding a hardener solution and foaming agent to said resins solution, forcing air through said resin solution to produce a homogeneous foam and curing the foam.

3,470,116

SELF-EXTINGUISHING STYRENE POLYMER COMPOSITIONS AND METHOD OF MAKING SAME

Hans Eberhard Praetzel, Bensberg-Frankenforst, and Ernst-Friedrich Wirth and Herbert Jenkner, Cologne-Deutz, Germany, assignors to Chemische Fabrik Kalk G.m.b.H., Cologne-Kalk, Germany

No Drawing. Filed Jan. 21, 1966, Ser. No. 522,047
Int. Cl. C08f *47/08, 33/08;* **C09k** *3/28*
U.S. Cl. 260—2.5 **6 Claims**

Flame resistant polymer of styrene containing at least 50% by weight of styrene units, which polymer contains 0.5 to 6.0% based on the total weight of polyvinyl bromide therein as a flame-proofing agent.

3,470,117

HIGH STRENGTH REFRACTORY BODY

Michael L. Pearce, Lewiston, N.Y., assignor to Air Reduction Company, Incorporated, New York, N.Y., a corporation of New York

Filed Apr. 19, 1966, Ser. No. 543,606
Int. Cl. C08g *53/08, 53/14;* **C04b** *21/06*
U.S. Cl. 260—2.5 **5 Claims**

A method for the in situ insulation of a high temperature heat source, according to which a refractory foam, including a heat settable resin and metallic oxides, is applied about the heat source, after which the heat source is brought to temperature so as to carbonize only portions of the refractory shell adjacent said source, resulting in a composite shell body containing high proportions of metal carbides and other carbonized elements adjacent the heat source, but essentially being a green foam at the external surface of the shell.

3,470,118

FLAME-RESISTANT POLYOL URETHANE FOAM COMPOSITION AND PROCESS OF PRODUCING THE SAME

Wolfgang C. Forster, Middletown, N.Y., assignor to Reichhold Chemicals, Inc., White Plains, N.Y.

No Drawing. Filed May 20, 1966, Ser. No. 551,561
Int. Cl. C08j *1/18;* **C08g** *22/44*
U.S. Cl. 260—2.5 **8 Claims**

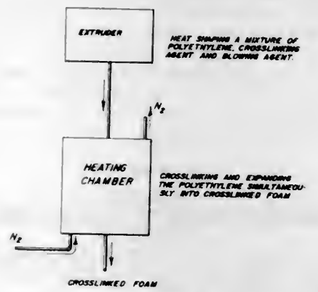
This application discloses a blend of (a) an oxyalkylated phenol-formaldehyde condensation product and (b) an oxyalkylated mono and/or polyamine, consisting of about 10% to about 70% of compound (a) and about 90% to about 30% of compound (b). These blends react readily with polyisocyanates, forming polyurethanes with greatly improved flame resistance.

3,470,119

PROCESS FOR PREPARING A FOAMED CROSSLINKED ETHYLENE POLYMER

Calvin J. Benning, Clarksville, and Ronald L. Adams, Sykesville, Md., assignors to W. R. Grace & Co., New York, N.Y., a corporation of Connecticut

Continuation-in-part of applications Ser. No. 367,615, May 15, 1964, and Ser. No. 368,972, May 20, 1964. This application Feb. 27, 1967, Ser. No. 642,979
Int. Cl. C08f *47/10;* **C08d** *13/10*
U.S. Cl. 260—2.5 **5 Claims**



A process for preparing foamed crosslinked ethylene polymer which comprises heat shaping a uniform mixture of ethylene polymer, crosslinking agent and blowing agent at a temperature below the decomposition temperature of said agents, said agents decomposing at similar temperatures above the melting point of the polymer, and heating the shaped ethylene polymer mixture to the decomposition temperature of said agents in the substantial absence of atmospheric oxygen. The resulting foamed crosslinked ethylene polymer has low density, a substantially uniform cell structure and good tensile properties.

3,470,120

COATING COMPOSITION CONTAINING PLEATED PARTICLES AND METHOD FOR APPLYING SAME

Jiro Sasai, 1065, 1-chome, Sakuracho, Akashi, Hyogoken, Japan

Filed Sept. 1, 1965, Ser. No. 484,280
Int. Cl. C09d *5/00, 7/00*
U.S. Cl. 260—17 **11 Claims**

Coating composition which includes conventional film forming coating ingredients and flexible, pleated particles of a colored resinous film material, the composition being being sprayable by the conventional compressed air spray gun, whereupon the pleated particles open up to substantially larger dimensions than the particles have while dispersed in the vehicle.

3,470,121

NOVEL POLYOL COMPOSITIONS AND FILLED POLYURETHANES PREPARED THEREFROM

David S. Cobbledick, Amherst, N.Y., assignor to Allied Chemical Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed Sept. 15, 1966, Ser. No. 579,516
Int. Cl. C08g *22/14*
U.S. Cl. 260—18 **14 Claims**

Production of storage stable liquid polyol compositions comprising a mixture of an organic polyol, an inert filler dispersed therein, a divalent lead salt of a neoacid and a stabilizing amount of a basic compound of a metal of Group II A of the Periodic Table and use thereof in preparation of filled non-cellular polyurethane composition by reaction with an organic isocyanate. The urethane system is useful in preparation of pipe joints cast in situ.

3,470,122

COMPOSITIONS COMPRISING ETHYLENE-VINYL ACETATE COPOLYMER, FATTY ACID SALT, FATTY ACID AMIDE AND PARTICULATE MATERIAL

Lee R. Ridgeway, Cincinnati, Ohio, and Joseph Fischer, Urbana, Ill., assignors to National Distillers and Chemical Corporation, New York, N.Y., a corporation of Virginia

No Drawing. Filed Jan. 19, 1966, Ser. No. 521,524
Int. Cl. C08f *45/44, 47/14*
U.S. Cl. 260—23 **6 Claims**

A polyolefin composition including in combination an ethylene-vinyl acetate copolymer, a metal salt of a fatty acid, an amide of a fatty acid and a finely divided inert inorganic compound.

3,470,123

NOVEL COMPOSITIONS OF ETHYLENE POLYMERS AND WAX

Arleen S. Varron, Wayne, N.J., assignor to Inmont Corporation, New York, N.Y., a corporation of Ohio

No Drawing. Filed Sept. 15, 1966, Ser. No. 579,518
Int. Cl. C08f *45/52, 29/12, 29/40*
U.S. Cl. 260—28.5 **11 Claims**

A coating composition comprising a continuous petroleum wax phase having emulsified therein a discontinuous phase containing water in which a polyethylene homopolymer or an ethylene-vinyl acetate copolymer has been dispersed. The coating compositions have excellent barrier properties to moisture and wax and are useful as coating for paper and paperboard in the food packaging industry.

3,470,124

NEW FLUORINATED COMPOUNDS AND THEIR PREPARATION

Cyrille Van Eygen, Boitsfort, and Raymond Carpentier, Waterloo, Belgium, assignors to UCB (Union Chimique-Chemische Bedrijven), S.A., Saint-Gilles-Brussels, Belgium

No Drawing. Filed July 5, 1966, Ser. No. 562,511
Claims priority, application Great Britain, July 7, 1965, 28,800/65
Int. Cl. C08f *3/62;* **C07c** *69/62*
U.S. Cl. 260—29.6 **7 Claims**

Fluorinated ethylenically unsaturated mixed esters of the formula

$$R'COO—Y—OOCR''$$

wherein R'COO is the residue of a perfluoroalkanoic acid containing 2 to 18 carbon atoms; R''COO is the residue of acrylic acid or methacrylic acid; and Y is the residue of an aliphatic dihydric alcohol or a functional derivative thereof, as well as homopolymers thereof and copolymers with acrylic, vinylic and allylic compounds, are oleophobic and are useful in treating fibers, paper, wood, brick and many other materials to protect them from dirt and to make them resistant to wetting by oils, greases, etc. Methods of preparing the said esters and also starting materials are described. Compositions comprising said esters are also disclosed.

3,470,125

PRODUCTION OF POLYMER DISPERSIONS

Wolfgang Sliwka, Weinheim, and Manfred Gellrich, Ludwigshafen (Rhine), Germany, assignors to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany

No Drawing. Continuation of application Ser. No. 523,021, Jan. 26, 1966. This application Feb. 15, 1968, Ser. No. 705,856
Claims priority, application Germany, Feb. 5, 1965, B 80,384
Int. Cl. C08f *1/13, 3/56*
U.S. Cl. 260—29.6 **2 Claims**

An improved process for the polymerization of vinyl esters in aqueous emulsion in the presence of catalysts and of a modified polyvinyl alcohol. The improvement consists in using as the modified polyvinyl alcohol a saponification product of a copolymer derived from 90 to 99.9% by weight of a vinyl ester of an aliphatic monocarboxylic acid having one to three carbon atoms and 0.1 to 10% by weight of a vinyl ester of an aliphatic saturated monocarboxylic acid having four to twenty carbon atoms whose carboxylic group is in α-position to a tertiary carbon atom.

3,470,126

WATER BASED COPOLYMER EMULSIONS CONTAINING UNSATURATED ESTERS

Kazys Sekmakas, Chicago, and Roland F. Stanci, Chicago Heights, Ill., assignors to De Soto, Inc., a corporation of Delaware

No Drawing. Filed Mar. 17, 1965, Ser. No. 440,628
Int. Cl. C08f *1/13, 15/16;* **C09d** *5/02*
U.S. Cl. 260—29.7 **8 Claims**

Water based emulsions, and especially aqueous emulsion paints having gloss or semi-gloss characteristics, are provided by copolymerizing ethylenically unsaturated materials including unsaturated esters produced either by esterifying an unsaturated fatty acid with an α,β-ethylenically unsaturated alcohol or by esterifying an unsaturated fatty alcohol with an α,β-ethylenically unsaturated acid. These esters are illustrated by the reaction product of crotonic acid with linoleyl fatty alcohol or by esterifying dehydrated castor fatty acids with an unsaturated alcohol. These esters are pre-emulsified using an anionic emulsifier and emulsion polymerization is effected by gradually adding vinyl monomers to the heated pre-emulsified mixture.

3,470,127

ELECTRICAL INSULATING TAPE PREPARED FROM AN ETHYLENE-PROPYLENE COPOLYMER COMPOSITION

Robert B. Snell, White Bear Lake, and Charles R. Freeman, St. Paul, Minn., assignors to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware

No Drawing. Filed July 6, 1965, Ser. No. 469,873
Int. Cl. C08f *47/14, 29/12*
U.S. Cl. 260—33.6 **9 Claims**

Self-fusing electrical insulating tape comprising an ethylene-propylene elastomer, a tackifier, and either a thermoplastic resin selected from polyethylene and polypropylene or a curing agent; in some embodiments an elastomer based on isobutylene, a plasticizer, and fillers, including electrically conductive fillers, are also included.

3,470,128

CURABLE FILLED EPOXY RESIN MIXTURES

Otto Ernst, Pfeffingen, Ulrich Niklaus, Basel, and Hans Batzer, Arlesheim, Switzerland, assignors to Ciba Limited, Basel, Switzerland, a company of Switzerland

No Drawing. Filed Nov. 22, 1966, Ser. No. 596,068
Claims priority, application Switzerland, Nov. 23, 1965, 16,130/65
Int. Cl. C08g *45/06*
U.S. Cl. 260—37 **4 Claims**

Curable resin mixtures which contain as the resin component either an epoxy resin containing carbocyclic aromatic rings and a curing agent for epoxy resins or a pre-condensate from such an epoxy resin and a curing agent, as well as fillers, characterized in that the filler consists at least partially of a nitrogenous compound from the groups of the triazine derivatives, urea, guanidine and derivatives thereof, the said nitrogenous compound having a molecular weight not exceeding 1000, having a melting point over 120° C. and not being appreciably soluble in the resin component at 120° C., and

the said nitrogenous compound being present in the mixture in an amount of at least 40 parts by weight, preferably of over 50 up to 400 parts by weight, for every 100 parts by weight of epoxy resin and are particularly useful as casting compositions, particularly for use in the electrical industry. They are also suitable as laminating compositions, molding compositions, coating compositions and the like.

3,470,129
CURABLE FILLED CYCLOALIPHATIC EPOXY RESIN MIXTURES

Otto Ernst, Pfeffingen, Ulrich Niklaus, Basel, and Hans Batzer, Arlesheim, Switzerland, assignors to Ciba Limited, Basel, Switzerland, a company of Switzerland

No Drawing. Filed Nov. 22, 1966, Ser. No. 596,069
Claims priority, application Switzerland, Nov. 26, 1965, 16,300/65
Int. Cl. C08g *45/10*
U.S. Cl. 260—37 **3 Claims**

Curable resin mixtures which contain as the resin component either a cycloaliphatic epoxy resin and a curing agent for epoxy resins or a pre-condensate from such an epoxy resin and a curing agent, as well as fillers, characterized in that the filler consists at least partially of a nitrogenous compound from the groups of the triazine derivatives, urea, guanidine and derivatives thereof, the said nitrogenous compound having a molecular weight not exceeding 1000, having a melting point over 120° C. and not being appreciably soluble in the resin component at 120° C., and the said nitrogenous compound being present in the mixture in an amount of at least 40 parts by weight, preferably of over 50 up to 400 parts by weight, for every 100 parts by weight of epoxy resin and are particulary useful as casting compositions, particularly for use in the electrical industry. They are also suitable as laminating compositions, molding compositions, coating compositions and the like.

3,470,130
TRIFLUOROACETAMIDOPROPYL-SUBSTITUTED SILICONE RUBBER

Tse C. Wu, Waterford, N.Y., assignor to General Electric Company, a corporation of New York

No Drawing. Filed Dec. 5, 1967, Ser. No. 688,000
Int. Cl. C08g *31/24, 47/06*
U.S. Cl. 260—37 **6 Claims**

Silicone elastomers in which from about 16 to 33 percent of the silicon atoms contain silicon-bonded trifluoroacetamidopropyl substituents have a desirable combination of solvent resistance, thermal stability and hydrolytic stability, which makes them useful in silicone rubber applications where the environment requires high temperature, high humidity and contact with solvents such as internal combustion engine fuels.

3,470,131
STABILIZED PIGMENTED POLYMERS

William Frederick Baitinger, Jr., Belle Mead, N.J., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine

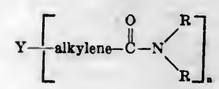
No Drawing. Continuation-in-part of application Ser. No. 490,055, Sept. 24, 1965. This application Jan. 8, 1969, Ser. No. 789,961
Int. Cl. C08f *45/60, 45/04*
U.S. Cl. 260—41 **6 Claims**

A light-stable polymeric composition comprising:

(a) a polymer selected from the group consisting of vinylchloride polymers, polyolefins derived from olefins of 2–4 carbon and polystyrene;

(b) at least 0.5% of TiO_2 pigment based on the weight of (a); and

(c) 0.1–10% based on the weight of (a) of a compound of the formula:



wherein alkylene has 1–3 carbons; each R is hydrogen or R^1A in which R^1 is alkylene of 1–18 carbons and A is hydrogen, lower alkoxy, cyano, or hydroxy; Y is imino, N-alkylimino of 1–18 carbon atoms, thio or phosphinylidyne; and *n* is an integer having a value of two when Y is imino, alkylimino or thio, or a value of three when Y is phosphinylidyne.

3,470,132
THERMOCURABLE COMPOSITION OF EPOXY RESINS AND MIXED POLYCARBOXYLIC ACID ANHYDRIDES

Otto Ernst, Pfeffingen, Switzerland, Kurt Neubold, Bottrop, and Guenther Ibing, Gladbeck, Germany, and Fritz Kugler, Muttenz, Switzerland, assignors to Ciba Limited, Basel, Switzerland, a company of Switzerland, and Ruhroel Chemiewerk der Steinkohlenbergwerke Mathias Stinnes Aktiengesellschaft, Bottrop, Germany, a German body corporate

No Drawing. Filed Nov. 29, 1966, Ser. No. 597,577
Claims priority, application Switzerland, Dec. 10, 1965, 17,088/65; Sept. 26, 1966, 13,852/66
Int. Cl. C08g *30/32*
U.S. Cl. 260—47 **4 Claims**

Thermocurable mixtures containing epoxy resins having a plurality of 1,2-epoxide groups and as curing agents polycarboxylic acid anhydrides characterized in that the curing agent consists at least partially of an anhydride mixture which is liquid at room temperature and has been obtained by isomerizing a methyl-tetrahydrophthalic anhydride especially 4-methyl-Δ^4-tetrahydrophthalic anhydride, in known manner.

3,470,133
WATER WASHING POLYESTERS OF CARBONIC ACID AND DIPHENOLS

Howard R. Ohme, Akron, Ohio, assignor to PPG Industries, Inc., a corporation of Pennsylvania

No Drawing. Continuation-in-part of application Ser. No. 386,763, July 31, 1964. This application Sept. 15, 1967, Ser. No. 668,195
Int. Cl. C08g *17/003, 17/13*
U.S. Cl. 260—47 **4 Claims**

Organic solutions of carbonic acid polyesters of diphenols are washed with aqueous solutions of carbon dioxide to remove organic nitrogen catalyst.

3,470,134
PREPARATION OF MELAMINE-FORMALDEHYDE RESINS AND PRODUCTS THEREOF

Israel S. Ungar, Baltimore, Md., assignor to Allied Chemical Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed Oct. 20, 1965, Ser. No. 499,086
Int. Cl. C08g *9/30, 53/16*
U.S. Cl. 260—67.6 **3 Claims**

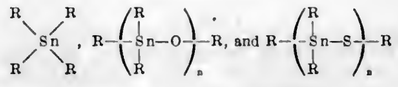
Melamine-formaldehyde resins which have thermoplasticity after curing are prepared by reacting formaldehyde with melamine in a mol ratio of 3.0:1 to 3.5:1 until the resin is miscible to the extent of one part per 1–3.5 parts of water, then adding melamine to adjust the formaldehyde-melamine mol ratio to about 2.0:1 to 2.5:1, and then heating the resulting mixture until one part of the product is miscible in 0.5–1.5 parts of water. The product is useful in making post-formable laminates.

3,470,135
PROCESS FOR THE PREPARATION OF POLYACETAL RESIN

Shinichi Ishida, Kunio Sato, Norimasa Fujita, Hiromichi Fukuda, and Kyoichiro Mori, Tokyo, Japan, assignors to Asahi Kasei Kogyo Kabushiki Kaisha, Osaka, Japan, a corporation of Japan

No Drawing. Filed July 6, 1966, Ser. No. 563,029
Claims priority, application Japan, July 8, 1965, 40/40,571; Apr. 4, 1966, 41/20,675
Int. Cl. C08g *1/26*
U.S. Cl. 260—67 **10 Claims**

1. A process for the preparation of a stabilized polyoxymethylene which comprises polymerizing formaldehyde containing between 0.5–6.0% of impurities in an inert solvent in the presence of a catalyst, said catalyst being an organic compound of tetravalent tin of the general formulae:



wherein the R groups are defined as follows:

(A) not more than 3 of the R groups are:

(1) selected from the group consisting of alkyl, cycloalkyl, aryl, aralkyl and alkenyl groups having 1 to 20 carbon atoms,

(2) selected from the group consisting of alkyl, cycloalkyl, aryl, aralkyl and alkenyl groups having 1 to 20 carbon atoms and said groups substituted by amino, substituted amino, hydroxyl, nitrile, halogen, thiol, carboxyalkyl, epoxy or methylol radical, at least one of said not more than three R groups being the substituted group, or

(3) selected from the group consisting of hydrogen, hydroxyl, thiol and methylol groups,

(B) the remaining R groups being either:

(1) selected from the group consisting of alkyl, cycloalkyl, aryl, aralkyl and alkenyl groups having 1 to 20 carbon atoms and said groups substituted by amino, substituted amino, hydroxyl, nitrile, halogen, thiol, carboxyalkyl, epoxy or methylol radical, each of the groups having further an atomic group consisting of at least two atoms of oxygen, hydrogen, sulphur, carbon and nitrogen, such as carbonyl, thiocarbonyl, oxycarbonyl, amino, amido, sulphoxy and sulphone, through which atomic group said remaining R groups are connected to Sn, or

(2) selected from the group consisting of alkyl, cycloalkyl, aryl, aralkyl and alkenyl groups having 1 to 20 carbon atoms and said groups substituted by amino, substituted amino, hydroxyl, nitrile, halogen, thiol, carboxyalkyl, epoxy or methylol radical, each of the groups having further an oxygen or sulphur atom, through which atom the remaining R groups are connected to Sn in the form of an ether or thioether; and

(C)

(1) any two of the R groups form a ring, and

(2) two of the R groups may be oxygen or sulphur atoms; and *n* is an integer above 1.

whereby a polymer slurry is formed, and reacting said polymer slurry with 20–500% based on the solid of said polymer with an esterifying or etherifying agent in the presence of an esterification or etherification catalyst at a temperature of 120°–180° C.

3,470,136
WATER-SOLUBLE POLYESTERS CONTAINING ALKYLENEPOLYAMINE GROUPS

Jack C. McClendon and Clarence R. Dick, Lake Jackson, Tex., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Feb. 24, 1966, Ser. No. 529,676
Int. Cl. C08g *17/14*
U.S. Cl. 260—75 **5 Claims**

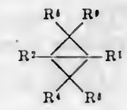
Polymers containing acryloxy groups in either main or side chain are reacted with aziridines unsubstituted at the nitrogen atom to give B-substituted aziridine group containing polymers. When these are formed from polyesters containing major amounts of unsaturated dibasic acids, a water soluble polymer results, which is lightly cross-linked by heating in acidic solution to give water-soluble polymers effective as flocculating agents.

3,470,137
INTER SE COPOLYMERS OF BICYCLO[1.1.0]BUTANES

Elwood P. Blanchard, Jr., Williamsville, N.Y., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 475,573, July 28, 1965. This application Feb. 14, 1967, Ser. No. 615,919
The portion of the term of the patent subsequent to July 16, 1985, has been disclaimed
Int. Cl. C08g *25/00*
U.S. Cl. 260—78.5 **7 Claims**

Inter se copolymers of two or more structurally different bicyclo[1.1.0]butane monomers of the formula:



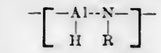
wherein the R groups are a variety of substituents. The copolymers are useful in preparing fibers, films or molded objects. The copolymers are prepared by ordinary initiator polymerization processes.

3,470,138
POLYMERIC IMINIC-ALUMINIUM COMPOUNDS AS CATALYSTS FOR ALPHA-OLEFIN POLYMERIZATION

Walter Marconi, Sebastiano Cesca, and Arnaldo Roggero, San Donato Milanese, Milan, Italy, assignors to SNAM S.p.A., Milan, Italy, a company of Italy

No Drawing. Filed Oct. 12, 1965, Ser. No. 495,331
Claims priority, application Italy, Feb. 3, 1965, 890
The portion of the term of the patent subsequent to Sept. 16, 1986, has been disclaimed
Int. Cl. C08f *1/34;* **C07f** *5/06;* **B01j** *11/00*
U.S. Cl. 260—80.78 **4 Claims**

A catalytic system for the preparation of olefinic, amorphous, unsaturated terpolymers comprising an aluminum compound which is a linear polymer of polyiminic nature containing between 4 and 50 repeating units of the type



where R is a hydrocarbon radical selected from the group consisting of alkyl, aryl, and cycloalkyl radicals, and a transistion metal compound selected from the group consisting of $TiCl_4$, $TiCl_3$, VCl_4, $VO(OC_2H_5)_3$, and $ZrCl_4$, the polymerized olefins being selected from the group consisting of ethylene, propylene, butene-1, pentene-1, 3-methyl-pentene-1, 4-methyl-pentene-1, and homologues.

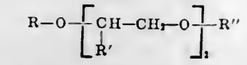
3,470,139

POLYMERIZATION OF CAPROLACTAM IN THE PRESENCE OF CATALYST, INITIATOR AND A CRYSTALLIZATION MODIFIER

Geoffrey Marshall, Derby, and Gordon Ernest Smith, Chaddesden, Derby, England, assignors to Courtaulds Limited, London, England, a British company

No Drawing. Filed Jan. 13, 1966, Ser. No. 520,391
Claims priority, application Great Britain, Jan. 14, 1965, 1,636/65
Int. Cl. C08g *41/00, 51/00*
U.S. Cl. 260—78 **1 Claim**

In the manufacture of shaped bodies by simultaneously polymerizing and molding nylon 6, voids in the molded body are avoided by carrying out the polymerization and molding in the presence of a crystallization modifier which is (a) a polyether having the formula



where R and R'' are alkyl radicals of 3 to 5 carbon atoms and R' is hydrogen or methyl; or (b) a normal paraffin of 12 to 16 carbon atoms.

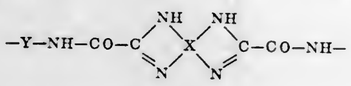
3,470,140

POLY-2-ARYLCARBAMOYL BENZIMIDAZOLES AND PROCESS OF PREPARING SAME

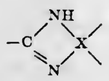
Robert Salle, Bernard Sillion, and Gabriel de Gaudemaris, Grenoble, France, assignors to Institut Francais du Petrole des Carburants et Lubrifiants, Rueil-Malmaison, Hauts-de-Seine, France

No Drawing. Filed July 5, 1967, Ser. No. 651,140
Claims priority, application France, July 4, 1966, 68,120
Int. Cl. C08g *20/00*
U.S. Cl. 260—78 **6 Claims**

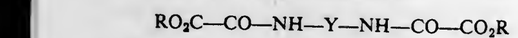
Poly-2-arylcarbamoyl benzimidazoles having the general formula:



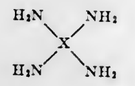
wherein X is a tetravalent aromatic or unsaturated heterocyclic radical, preferably comprising from 4 to 14 carbon atoms, Y is a divalent aromatic or unsaturated heterocyclic radical, preferably containing 4 to 14 carbon atoms, and the carbon atoms linked with the nitrogen atoms are necessarily vicinal two by two, in order that the heterocycle



be an imidazole, are produced by reacting an arylene bis oxamate having the general formula



with an aromatic tetramine having the general formula:



wherein R is a monovalent hydrocarbon radical and X and Y are as defined above, at a temperature of about 100 to 300° C., said polymers having utility as composite materials with glass cloths and adhesives.

3,470,141

ACRYLONITRILE COPOLYMERS

Jenö Szita, Heinrich Rinkler, Herbert Marzolph, and Günther Nischk, Dormagen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a German corporation

No Drawing. Filed Jan. 23, 1967, Ser. No. 610,809
Claims priority, application Germany, Feb. 2, 1966, F 48,320
Int. Cl. C08f *15/40, 15/22*
U.S. Cl. 260—78.5 **6 Claims**

Acrylonitrile polymers containing at least 70% acrylonitrile having improved affinity for basic dyes, good thermal stability, and low gelation are prepared by incorporating 0.5 to 20% by weight of the monomers of a copolymerizable, unsaturated oxalic acid amide hydrazide sulfobetaine into the polymer by copolymerization.

3,470,142

TERPOLYMERS OF ETHYLENE, HIGHER ALPHA-OLEFINS AND CYCLOALKADIENONORBORNENES

Guido Sartori, Nazzareno Camell, and Alberto Valvassori, Milan, Italy, assignors to Montecatini Edison S.p.A., Milan, Italy, a corporation of Italy

No Drawing. Filed Oct. 22, 1965, Ser. No. 502,358
Claims priority, application Italy, Nov. 23, 1964, 25,084/64
Int. Cl. C08f *15/40, 27/00*
U.S. Cl. 260—79.5 **24 Claims**

According to the present invention, at least one cycloalkadienonorbornene is copolymerized with ethylene and at least one higher alpha-olefin, with or without the inclusion of dicyclopentadiene, in contact with anionic-type catalysts based on vanadium compounds, to obtain amorphous copolymers containing polymerized units of all of the starting monomers and which are sulfur-vulcanizable to useful elastomers or synthetic rubbers.

3,470,143

HIGHLY FLUORINATED HYDROCARBONS USED AS DILUENTS IN THE POLYMERIZATION OF ETHYLENICALLY UNSATURATED MONOMERS

Albert Schrage, East Orange, and Jules E. Schoenberg, Bergenfield, N.J., assignors to Dart Industries Inc., Los Angeles, Calif., a corporation of Delaware

No Drawing. Filed Mar. 26, 1964, Ser. No. 355,091
Int. Cl. C08f *1/08, 45/30*
U.S. Cl. 260—82.5 **8 Claims**

In a process for the preparation of a boiling-xylene soluble polymer in a slurry which comprises polymerizing at least one ethylenically unsaturated hydrocarbon monomer to an amorphous elastomer in a reaction zone in a polymerization medium under the influence of a catalyst, an improvement has been found for substantially eliminating reaction zone fouling and recovering the polymer in discrete particle form which comprises employing as a polymerization medium a fluorinated organic carbon compound wherein the ratios of fluorine to other substituents on the carbon compound are in the order of F/Cl=1.0 and above, F/Br=3.0 and above, F/H=2.0 and above, F/(Cl+H)=2.0 and above and F/(Br+H)=3.0 and above, said amorphous elastomer being substantially insoluble and not swellable in said polymerization medium.

3,470,144

PROCESS FOR PRODUCING COPOLYMER

Saburo Minekawa, Yokohama, Koretaka Yamaguchi, Kawasaki-shi, and Kuniaki Sakamoto, Tokyo, Japan, assignors to Asahi Kasei Kogyo Kabushiki Kaisha, Osaka, Japan, a corporation of Japan

No Drawing. Filed Dec. 15, 1966, Ser. No. 601,836
Claims priority, application Japan, Dec. 21, 1965, 40/78,371
Int. Cl. C08f *3/04, 1/14*
U.S. Cl. 260—85.3 **8 Claims**

A process for producing a curable rubbery copolymer containing substantially no gel insoluble in hydrocarbons, the process comprising copolymerizing 1,3-butadiene and propylene with a ternary catalyst consisting of a trialkylaluminum, iodine and a titanium compound having the formula: $TiBr_nCl_{4-n}$ wherein n is an integer from 0 to 4.

3,470,145

COPOLYMERS OF ALPHA MONO-OLEFINS AND TERPENES

Roger D. A. Lipman, Yonkers, N.Y., assignor to Geigy Chemical Corporation, Ardsley, N.Y., a corporation of New York

No Drawing. Filed Mar. 8, 1967, Ser. No. 621,416
Int. Cl. C08f *19/00, 33/08*
U.S. Cl. 260—897 **5 Claims**

Copolymers of alpha mono-olefins and terpenes useful as rubber tackifiers and in adhesives, are made using Friedel-Crafts or Ziegler type catalysts.

3,470,146

SUSPENSION POLYMERIZATION OF VINYL AROMATIC MONOMERS

William N. Maclay, Monroeville, Pa., assignor to Sinclair-Koppers Company, a partnership of Delaware

No Drawing. Filed May 26, 1967, Ser. No. 641,491
Int. Cl. C07f *1/74, 1/11*
U.S. Cl. 260—93.5 **3 Claims**

The production of polymer beads or particles by suspending, as droplets, a vinyl aromatic monomer such as styrene having a free radical generating catalyst dissolved therein, in an aqueous medium with the aid of a finely divided phosphate suspending agent and a water soluble sulfite or precursor thereof, and heating the suspensions to cause the monomer to polymerize into polymer particles is improved by adding to the suspension, certain water soluble organic sulfides, for example, dithiodiglycol.

3,470,147

CHLORINATION OF POLYETHYLENE

Leonard Marshall Shorr and Noah Sofer, Haifa, Israel, assignors to Israel Mining Industries-Institute for Research and Development, near Ir Ganim, Haifa Bay, Israel, and Israel Petrochemical Enterprises Ltd., Haifa Bay, Haifa, Israel, both Israeli companies

No Drawing. Filed Nov. 7, 1966, Ser. No. 592,313
Claims priority, application Israel, Nov. 25, 1965, 24,681
Int. Cl. C08f *27/03*
U.S. Cl. 260—94.9 **5 Claims**

This invention is concerned with the chlorination of polyethylene wherein the polymer is dissolved in an organic solvent of dielectric constant up to 20 and then precipitated by a solvent of dielectric constant above 20 prior to chlorination.

3,470,148

REACTION PRODUCTS OF LIGNIN AND BARK EXTRACTS AND PROCESS FOR SAME

George Graham Allan, Seattle, Wash., assignor to Weyerhaeuser Company, Tacoma, Wash., a corporation of Washington

No Drawing. Filed Dec. 16, 1966, Ser. No. 602,185
Int. Cl. C07g *1/00*
U.S. Cl. 260—124 **9 Claims**

Compounds made by reacting lignin containing materials, particularly kraft and sulfite lignins and alkaline extracts of barks of trees, with compounds such as cyanuric chloride, 2,4-dichloro-6-methoxy-s-triazine, choline chloride, hydrazides, tetrakishydroxymethyl phosphonium chloride. These compounds are useful as coagulants and coagulation aids.

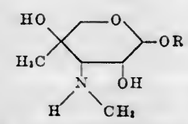
3,470,149

ALKYL GLYCOSIDES DERIVED FROM GENTAMICIN

David J. Cooper, West Caldwell, N.J., assignor to Schering Corporation, Bloomfield, N.J., a corporation of New Jersey

No Drawing. Filed July 28, 1967, Ser. No. 656,660
Int. Cl. C07d *87/32;* **A01n** *9/28*
U.S. Cl. 260—210 **5 Claims**

Novel 3-deoxy-3-methylamino - 4 - methylpentose, and certain derivatives thereof, having the structural formula:



wherein R is hydrogen or saturated hydrocarbyl radicals. These compounds may be prepared from the antibiotic gentamicin and can be used to form amine fluosilicate salts useful as moth-proofing agents.

3,470,150

METHOD FOR PRODUCING ORYZANOL

Yasuo Watanabe, 231–7 Mukohara, 3-chome, Itabashiku, Tokyo, Japan; Tsukasa Arawaka, 2113 Kamiboya, Hoyamachi, Kitatamagun, Tokyo, Japan; and Tomio Iwasaki, 11–25 Wakagi, 1-chome, Itabashiku, Tokyo, Japan

No Drawing. Filed Apr. 3, 1967, Ser. No. 627,677
Claims priority, application Japan, Nov. 22, 1966, 41/76,604
Int. Cl. C07g *17/00;* **A61k** *27/00*
U.S. Cl. 260—236.5 **10 Claims**

A method for producing crystalline oryzanol comprising subjecting the oryzanol concentrates (including their distillation fractions and residue) obtained by way of the molecular distillation of rice-germ oil, rice-bran oil, rice-bran dark oil or their esters, to fractional extraction by using a petroleum hydrocarbon and furfural as mediums and then adding water to the resultant furfural containing oryzanol to separate crystalline oryzanol.

3,470,151

FURYL- AND THIENYL-PENICILLINS AND SALTS THEREOF

Frank Peter Doyle and John Herbert Charles Nayler, Surrey, England, assignors to Beecham Group Limited, Brentford, Middlesex, England, a British company

No Drawing. Continuation-in-part of application Ser. No. 267,910, Mar. 26, 1963. This application May 17, 1966, Ser. No. 550,626

Int. Cl. C07d *99/22;* **A61k** *21/00*

U.S. Cl. 260—239.1 **14 Claims**

Substituted furyl and thienyl penicillins having high antibacterial activity and good minimum inhibitory concentrations are provided.

3,470,152

5,6,11,12 - TETRAHYDRO - DIBENZO[b,f][1,5]DIAZOCINE - 6,12 - DIONES AND METHOD OF PREPARATION

Ottmar Zipp, Frankfurt, and Josef Nickl, Hans Machleidt, Johannes Keck, Gerd Kruger, Robert Engelhorn, and Sigfrid Puschmann, Biberach an der Riss, Germany, assignors to Boehringer Ingelheim G.m.b.H., Ingelheim am Rhein, Germany, a corporation of Germany

No Drawing. Filed Oct. 21, 1966, Ser. No. 588,330

Claims priority, application Germany, Oct. 21, 1965, T 29,634; Apr. 21, 1966, T 30,962

Int. Cl. C07d *53/00;* **A61k** *27/00*

U.S. Cl. 260—239.3 **9 Claims**

The compounds are 11-aminoalkyl-5,6,11,12-tetrahydro-dibenzo[b,f][1,5]diazocine-6,12-diones and nontoxic acid addition salts thereof, useful as antitussives and antiemetics in warm-blooded animals.

3,470,153

PROCESS FOR THE SIMULTANEOUS PRODUCTION OF EPSILON-CAPROLACTAM AND OMEGA-DODECALACTAM

Hans-Joachim Schultze, Chur, Walter Zbinden, Tamins Grisons, and Clau Berther, Chur, Switzerland, assignors to Inventa A.G. für Forschung und Patentverwertung, Zurich, Switzerland

No Drawing. Filed Nov. 3, 1966, Ser. No. 591,675

Claims priority, application Switzerland, Nov. 3, 1965, 15,156/55

Int. Cl. C07d *41/06, 41/00*

U.S. Cl. 260—239.3 **10 Claims**

The invention relates to the simultaneous production of epsilon-caprolactam. More particularly, it relates to a common oximation of cyclododecanone and cyclohexanone, whereby the cyclohexanone oxime formed acts as a solvent for the cyclododecanone oxime which simultaneously forms. The two lactams then formed from these oximes are the monomers from which nylon-6 and nylon-12 are produced.

3,470,154

DIBENZO[e,g][1,4]OXAZOCINES AND DIBENZO[e,g][1,4]THIAZOCINES

John J. Lafferty, Levittown, Pa., assignor to Smith Kline & French Laboratories, Philadelphia, Pa., a corporation of Pennsylvania

No Drawing. Filed Feb. 21, 1967, Ser. No. 617,464

Int. Cl. C07d *93/44, 87/54;* **A61k** *27/00*

U.S. Cl. 260—239.3 **6 Claims**

Dibenzo[e,g][1,4]oxazocines and dibenzo[e,g][1,4]-thiazocines having central nervous system depressant activity are prepared by ring closure of a 2'-amino-2-biphenylyl acid. The benzo[e] ring may be substituted by halogen, lower alkyl, lower alkoxy or trifluoromethyl. The azocine ring may be C-substituted by lower alkyl, phenyl, substituted phenyl or benzyl, have a carbonyl function or additionally be N-substituted by lower alkyl, lower alkenyl, lower alkanoyl, cycloalkylcarbonyl, cycloalkyl-lower alkyl or diloweralkylaminoloweralkyl. The N-substituted derivatives are prepared by alkylation with an appropriate halide or acylation with an appropriate acyl halide.

3,470,155

N-DIHYDROPYRANYLMETHYL-5-SULFAMOYL-ANTHRANILIC ACID DERIVATIVES

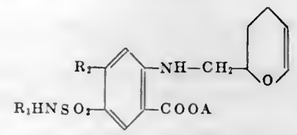
Joseph Weinstock, Phoenixville, Pa., assignor to Smith Kline & French Laboratories, Philadelphia, Pa., a corporation of Pennsylvania

No Drawing. Filed Nov. 16, 1965, Ser. No. 508,162

Int. Cl. C07d *7/10;* **A01k** *27/00*

U.S. Cl. 260—239.6 **6 Claims**

1. A compound of the formula:



in which:

A is hydrogen or lower alkyl;
R_1 is hydrogen or lower alkyl and
R_2 is chloro, bromo, fluoro or trifluoromethyl or, when A is hydrogen, a pharmaceutically acceptable carboxylic acid salt thereof.

3,470,156

6,6-ETHYLENE-1,2-METHYLENESTEROIDS

Kenneth G. Holden, Stratford, N.J., assignor to Smith Kline & French Laboratories, Philadelphia, Pa., a corporation of Pennsylvania

No Drawing. Filed Jan. 30, 1967, Ser. No. 612,356

Int. Cl. C07c *169/22, 173/00*

U.S. Cl. 260—239.55 **7 Claims**

6,6-ethylene-1α,2α-methyleneandrost-4-en-3-ones, substituted at the 17-position by a hydroxy group, which is free, esterdified, or etherified. The compounds are prepared by reaction of the androsta-1,4-diene with trimethyl sulfoxonium methylide and subsequent esterification or etherification of the 17-hydroxy group. The compounds possess anabolic activity.

3,470,157

6,7-ETHYLENE AND 6,7-SUBSTITUTED ETHYLENE DERIVATIVES OF THE ANDROSTANE SERIES

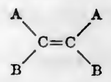
John A. Zderic, Mexico City, Mexico, assignor to Syntex Corporation, Apartado, Panama, a corporation of Panama

No Drawing. Continuation-in-part of application Ser. No. 544,850, Apr. 25, 1966. This application Apr. 10, 1967, Ser. No. 629,371

Int. Cl. C07c *169/22, 169/24, 173/00*

U.S. Cl. 260—239.55 **14 Claims**

6,7-ethylene and 6,7,-substituted ethylene derivatives of the androstane and 19-nor androstane series having anabolic activity are prepared by the photochemical cycloaddition of an olefin of the formula:



wherein A is hydrogen or fluoro, and B is hydrogen, fluoro, chloro, methyl or phenyl, to a 3-keto-$\Delta^{4,6}$-diene of the androstane, or 19-nor androstane, series.

3,470,158

6,7-ETHYLENE AND 6,7-SUBSTITUTED ETHYLENE DERIVATIVES OF THE PREGNANE SERIES

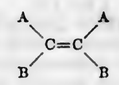
John A. Zderic, Mexico City, Mexico, assignor to Syntex Corporation, Panama, Panama, a corporation of Panama

No Drawing. Continuation-in-part of application Ser. No. 544,710, Apr. 25, 1966. This application Apr. 10, 1967, Ser. No. 629,419

Int. Cl. C07c *169/34, 169/36, 173/00*

U.S. Cl. 260—239.55 **18 Claims**

6,7-ethylene and 6,7-substituted ethylene derivatives of the pregnane series having corticoid activities are prepared by the photochemical cycloaddition of an olefin of the formula:



wherein A is hydrogen or fluoro and B is hydrogen, fluoro, chloro, methyl or phenyl, to a 3-keto-$\Delta^{4,6}$-diene of the pregnane series.

3,470,159

ESTRA-1,3,5(10),7-TETRAENES AND PROCESS OF PREPARATION

David J. Marshall, Hampstead, Quebec, Canada, assignor to American Home Products Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed July 13, 1967, Ser. No. 653,009

Int. Cl. C07c *173/00, 169/08;* **A61k** *17/06*

U.S. Cl. 260—239.55 **17 Claims**

There is disclosed herein a process for preparing estra-1,3,5(10),7-tetraenes from related estra-1,3,5(10),6,8-pentaenes, comprising treatment of the latter compounds with an alkali or alkaline earth metal in liquid ammonia. There are also disclosed estra-1,3,5(10),7-tetraene-3,16α, 17β- and -3,16β,17β-triols and the 16,17-acetonide and 16,17-acetophenonide of the latter compound. The compounds prepared by the process of this invention have estrogenic properties and methods for their use are also given.

3,470,160

15,16 BETA-METHYLENE STEROIDS OF THE ESTRANE AND ANDROSTANE SERIES AND METHODS FOR PREPARING SAME

Otfried Schmidt, Klaus Prezewowsky, and Rudolf Wiechert, Berlin, Germany, assignors to Schering A.G., Berlin, Germany

No Drawing. Filed Mar. 28, 1967, Ser. No. 626,426

Claims priority, application Germany, Apr. 2, 1966, Sch 38,777

Int. Cl. C07c *169/10, 169/22;* **A61k** *17/00*

U.S. Cl. 260—239.55 **7 Claims**

15,16β-methylene steroids and their preparation.

3,470,161

17-TETRAHYDROFURYLESTRADIOL DERIVATIVES

Yvon Lefebvre, Pierrefonds, Quebec, Canada, assignor to American Home Products Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Sept. 12, 1967, Ser. No. 667,088

Int. Cl. C07c *173/00;* **A61k** *27/00*

U.S. Cl. 260—239.55 **27 Claims**

There are disclosed herein the compounds 17α-[2'-tetrahydrofury]- and -[3'-tetrahydrofury]-1,3,5(10)-estratriene-3,17-diol, and their respective 3-acetates, 3-propionates, 3-butanoates, and 3-benzoates, as well as their 3-methoxy, 3-ethoxy, 3-propoxy-, 3-isopropoxy-, 3-n-butoxy-, 3-sec.-butoxy-, 3-cyclopentyloxy-, and 3-cyclohexyloxy derivatives. The compounds have anti-inflammatory activities and methods for their preparation and use are also given.

3,470,162

3-TETRAHYDROPYRANYL ETHERS OF STEROIDAL ALDOSTERONE ANTAGONISTS

John A. Edwards, Palo Alto, Calif., assignor to Syntex Corporation, Panama, Panama, a corporation of Panama

No Drawing. Filed Dec. 15, 1965, Ser. No. 514,113

Int. Cl. C07c *173/00, 173/20;* **A61k** *27/00*

U.S. Cl. 260—239.57 **20 Claims**

Tetrahydropyranyl ethers of steroidal aldosterone antagonists prepared by reduction of 3-keto-Δ^4 to 3β-hydroxy-Δ^4 and treatment thereof with dihydropyran.

3,470,163

METHOD FOR PRODUCING MELAMINE

Russell F. Hazelton, Chesterfield County, Va., assignor to Allied Chemical Corporation, New York, N.Y., a corporation of New York

No Drawing. Continuation-in-part of application Ser. No. 464,689, June 17, 1965. This application June 15, 1967, Ser. No. 646,189

Int. Cl. C07d *55/28*

U.S. Cl. 260—249.7 **4 Claims**

An improved method for the production of melamine from urea wherein molten urea is directed to a heating zone having a plurality of heating rods therein, the introduction rate of the molten urea being such so as to cause an increase in heat transfer coefficient to effectuate the commercial production of a high yield of melamine. Melamine is useful in the production of synthetic resins.

3,470,164

2-[2-(5-NITROFURYL)-VINYL]-AZOLES AND PROCESS FOR PRODUCING THEREOF

Hideji Takamatsu, Hyogo-ken, Shinsaku Minami, Nara-ken, Jiro Aritomi, Osaka, Akio Fujita, Kamikyo-ku, Kyoto, Katsuro Fujimoto, Neyagawa-shi, Osaka-fu, and Masanao Shimizu and Yoshiyuki Takase, Hyogo-ken, Japan, assignors to Dainippon Pharmaceutical Co., Ltd., Osaka, Japan, a corporation of Japan

No Drawing. Filed Apr. 30, 1963, Ser. No. 277,045

Claims priority, application Japan, May 4, 1962, 37/18,402; May 24, 1962, 37/21,412; July 21, 1962, 37/31,051; Dec. 26, 1962, 37/58,920

Int. Cl. C07d *5/30, 85/36, 91/24*

U.S. Cl. 260—240 **3 Claims**

1. 2-[2-(5-nitrofuryl)-vinyl]-benzimidazole.

3,470.165

FUROCHROMONE DERIVATIVES

Colin Fitzmaurice, Holmes Chapel, England, assignor to Benger Laboratories Limited, Holmes Chapel, England

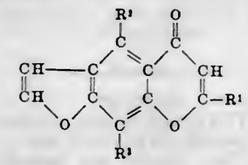
No Drawing. Filed July 9, 1963, Ser. No. 293,874

Claims priority, application Great Britain, July 10, 1962, 26,404/62, 26,405/62

Int. Cl. C07d *7/36, 5/40*

U.S. Cl. 260—240 **8 Claims**

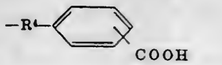
1. A compound selected from furochromone derivatives of the formula:



wherein R^1 is selected from the group consisting of:

(a) o-carboxyphenyl, m-carboxyphenyl and p-carboxyphenyl groups;

(b) o-carboxyphenylalkylene, m-carboxyphenylalkylene and p-carboxyphenylalkylene groups of the formula:



wherein R^4 is selected from the group consisting of saturated alkylene groups; R^2 is selected from the group consisting of hydroxy, alkoxy, substituted aminoalkoxy and carboxyalkoxy groups: and R^3 is selected from the group consisting of hydrogen and lower alkoxy groups; and alkali metal salts, ammonium salts, alkyl esters and glycine amides of those compounds in which R^1 contains a carboxyl group.

5. 2 - [2-(4-carboxyphenyl)-vinyl]-5,8-dimethoxy-furo-[3,2-g]-chromone and alkali metal salts, ammonium salts, alkyl esters and glycine amides thereof.

3,470,166
OPTICAL SENSITIZING CYANINE DYES CONTAINING OXAZINE-TYPE RING

Oskar Riester, Leverkusen, Germany, assignor to Agfa Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Original application July 13, 1964, Ser. No. 382,032, now Patent No. 3,340,064, dated Sept. 5, 1967. Divided and this application Mar. 2, 1967, Ser. No. 619,920
Claims priority, application Germany, July 22, 1963, A 43,644
Int. Cl. C09b *23/04;* **G03c** *1/14*
U.S. Cl. 260—240.7 **10 Claims**

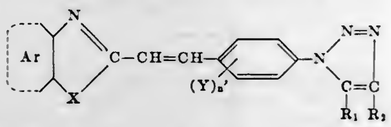
Effective sensitizing of silver halide emulsions is obtained with cyanine dyes having oxazine-type ring fused to an azole ring. The dyes are made from precursor having the fused ring structure, which in turn is produced by cyclizing the oxazine-type ring in a starting compound.

3,470,167
TRIAZOLYL STYRYL OPTICAL WHITENING AGENTS

Asim Kumar Sarkar, Leeds, England, assignor to Hickson & Welch Limited, Castleford, Yorkshire, England, a British company

No Drawing. Filed Sept. 7, 1966, Ser. No. 577,593
Claims priority, application Great Britain, Sept. 22, 1965, 40,404/65
Int. Cl. C09b *23/14;* **C07d** *55/02*
U.S. Cl. 260—240.9 **9 Claims**

An optical whitening agent of the formula



where Ar represents aryl; X is oxygen, sulphur or a group —NR— wherein R is hydrogen or a substituted or unsubstituted alkyl group of 1–4 carbon atoms; R_1 and R_2, which may be the same or different, are each hydrogen, a substituted or unsubstituted alkyl group of 1–4 carbon atoms, carboxy, hydroxy or alkoxy-carbonyl of 2–5 carbon atoms; Y is a halogen atom, cyano or an alkyl or alkoxy group of 1–4 atoms; and n' is 0 or an integer from 1 to 4.

3,470,168
2-SUBSTITUTED-4H-1.3-BENZOTHIAZIN-4-ONE DERIVATIVES

Milton Wolf, West Chester, and John H. Sellstedt, St. Davids, Pa., assignors to American Home Products Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Mar. 31, 1967, Ser. No. 627,296
Int. Cl. C07d *93/08, 99/06;* **A61k** *27/00*
U.S. Cl. 260—243 **30 Claims**

This invention is concerned with 2-substituted-4H-1,3-benzothiazin-4-ones which have demonstrated pharmacological activity as anti-inflammatory, central nervous system depressant, analgesic and diuretic agents.

3,470,169
PROCESS FOR PREPARING PHENOTHIAZINE

Gerhard F. Ottmann, Hamden, and David F. Gavin, New Haven, Conn., assignors to Olin Mathieson Chemical Corporation, a corporation of Virginia

No Drawing. Filed Sept. 1, 1967, Ser. No. 664,927
Int. Cl. C07d *93/14*
U.S. Cl. 260—243 **4 Claims**

A process for preparing phenothiazine and substituted phenothiazines which comprises reacting nitrocyclohexane or alkyl substituted nitrocyclohexane with carbon disulfide in the presence of selected bases.

3,470,170
DIFLUORAMINATED UREA DERIVATIVES

Andrew Harper Dinwoodie, Dalry, and Godfrey Fort, Ardrossan, Scotland, assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Navy

No Drawing. Filed Mar. 10, 1967, Ser. No. 622,092
Claims priority, application Great Britain, Apr. 13, 1966, 16,275/66
Int. Cl. C07d *87/00;* **C07c** *127/00, 127/16*
U.S. Cl. 260—244 **6 Claims**

New organic nitrogen compounds which are N-difluoraminomethyl-N'-(2,2,2 - trinitroethyl)urea and -uron and tris(difluoraminomethyl) - (2,2,2 - trinitroethyl)urea. The new compounds are useful energetic constituents of high energy propellent compositions.

The mono(difluoraminomethyl) substituted urea and uron are prepared by refluxing difluoramine with, respectively, N - methylol-N' - (2,2,2 - trinitroethyl)urea and N - methoxymethyl - N' - (2,2,2 - trinitroethyl)uron in an inert atmosphere and in the presence of concentrated sulphuric acid.

The tris(difluoraminomethyl) substituted urea is prepared by reacting difluoramine with N - methoxymethyl-N'-(2,2,2-trinitroethyl)uron at 20° C. in an inert atmosphere and in the presence of concentrated sulphuric acid.

3,470,171
OXAZINOISOQUINOLINE DERIVATIVES

Frank H. Clarke, Jr., Armonk, N.Y., assignor to Geigy Chemical Corporation, Ardsley, N.Y., a corporation of New York

No Drawing. Continuation-in-part of application Ser. No. 634,856, May 1, 1967. This application Apr. 26, 1968, Ser. No. 724,622
Int. Cl. C07d *87/50, 35/24;* **A61k** *27/00*
U.S. Cl. 260—244 **21 Claims**

3-carboxamido, and substituted carboxamido, derivatives of 9,10-dialkoxy-, 9,10,11-trialkoxy- and 9,10-methylenedioxy - 1,3,4,6,7,11b - hexahydro-[1,4]oxazino [3,4a]isoquinolines, and their salts, possess tranquilizing and muscle relaxant properties. They can be prepared through treatment of derivatives of the corresponding 3-carboxylic acid with an amine. Typical embodiments are 3 - carboxamido-9,10-dimethoxy-1,3,4,6,7,11b-hexahydro-[1,4]oxazino[3,4a]isoquinoline and 3-(N,N-diethylcarboxamido) - 9,10 - dimethoxy - 1,3,4,6,7,11b-hexahydro-[1,4]-oxazino[3,4a]isoquinoline.

3,470,172
PROCESS FOR PRODUCING CERTAIN AMINO SUBSTITUTED NITRO PYRIDINES

Harold A. Kaufman, Piscataway, N.J., assignor to Mobil Oil Corporation, a corporation of New York

No Drawing. Filed Mar. 2, 1967, Ser. No. 619,941
Int. Cl. A01n *9/22;* **C07d** *99/04, 99/02*
U.S. Cl. 260—247.5 **9 Claims**

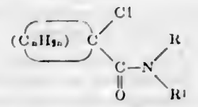
A process for manufacturing N-substituted nitropyridines by reacting hydroxy nitropyridines with primary and secondary amines, as well as cyclic amines. The nitropyridine products obtained are useful as herbicides.

3,470,173
1-CHLORO-CYCLOALKANE-1-CARBOX AMIDES

Gerhard H. Alt, Creve Coeur, Mo., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Filed May 23, 1966, Ser. No. 551,929
Int. Cl. C07d *87/34;* **C07c** *103/76;* **A61k** *27/00*
U.S. Cl. 260—247.7 **9 Claims**

Compounds of the formula



wherein R and R^1 are alkyl having a maximum of 12 carbon atoms or together form a divalent group selected from the group consisting of

$$—CH_2CH_2CH_2—,\ —CH_2CH_2OCH_2CH_2—,$$
$$—CH_2CH_2CH_2CH_2—,\ —CH_2(CH_2)_3CH_2—,\text{ and}$$
$$—CH_2(CH_2)_4CH_2—$$

and *n* is an integer of from 3 to 10 thus forming an alicyclic ring which may have a maximum of three methyl substituents.

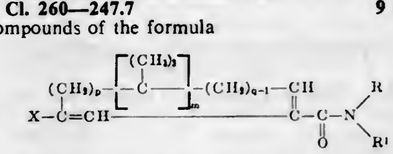
These compounds may be used as feed additives.

3,470,174
CYCLODIENE CARBOX AMIDES

Gerhard H. Alt, Creve Coeur, Mo., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Filed May 23, 1966, Ser. No. 551,962
Int. Cl. C07c *103/86;* **C07d** *87/00, 29/00*
U.S. Cl. 260—247.7 **9 Claims**

Compounds of the formula



wherein *m* is an integer from zero to one, *p* and *q* are integers from one to three, X is selected from the group consisting of hydrogen, chlorine and methyl; and R and R^1 are selected from the class consisting of alkyl up to 12 carbon atoms and the moieties such that R and R^1 together is selected from the class consisting of

$$—CH_2(CH_2)_3CH_2—,\ —CH_2(CH_2)_4CH_2—$$
$$—CH_2CH_2OCH_2CH_2—,\ —CH_2CH_2CH_2—$$

and

$$—CH_2(CH_2)_2CH_2—$$

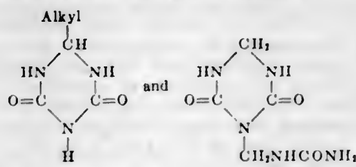
These compounds are useful as animal feeds, providing growth stimulation and inhibition of parasitic helminths.

3,470,175
UREIDOMETHYLENEHYDROTRIAZINEDIONE

Robert A. Wiesboeck, Atlanta, Ga., assignor, by mesne assignments, to USS Agri-Chemicals, Inc., Pittsburgh, Pa., a corporation of Delaware

No Drawing. Filed Apr. 26, 1966, Ser. No. 545,234
Int. Cl. C07d *55/12;* **C05c** *11/00*
U.S. Cl. 260—248 **1 Claim**

Hydrotriazinedione derivatives including



are disclosed as well as a method of employing these compounds to fertilize soil. The compounds are slow release nitrogen fertilizers.

3,470,176
CATALYZED NITRILE TRIMERIZATION PROCESS

Joseph La Mar Zollinger, Woodbury Township, Minn., assignor to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware

No Drawing. Filed Mar. 10, 1967, Ser. No. 622,038
Int. Cl. C07d *55/50*
U.S. Cl. 260—248 **19 Claims**

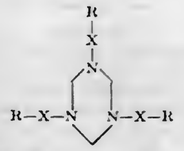
This invention relates to an improved process for trimerizing nitriles to form triazine rings wherein the process is conducted in the presence of certain organometallic compounds of metals of Groups IV and V of the Periodic Table.

3,470,177
HEXAHYDROTRIAZINE DERIVATIVE

Rolf Zimmermann, Wiesbaden-Biebrich, Germany, assignor to Chemische Werke Albert, Wiesbaden-Biebrich, Germany, a corporation of Germany

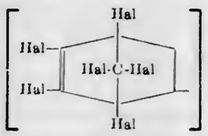
No Drawing. Original application July 13, 1965, Ser. No. 471,745, now Patent No. 3,361,847, dated Jan. 2, 1968. Divided and this application Oct. 27, 1967, Ser. No. 678,759
Claims priority, application Germany, May 19, 1965, C 35,881; June 18, 1965, C 36,145
Int. Cl. C07d *55/14*
U.S. Cl. 260—248 **3 Claims**

A flame-retardant hexahydrotriazine derivative of the formula



(I)

in which X is >C=O or $>SO_2$ and at least one of the radicals R is the group



(II)

Hal being a halogen having an atomic weight of at least 35 and at most 80 and the other radicals R being the group —CH=CH_2.

3,470,178
ANTHRAQUINONE DYESTUFFS

Rütger Neeff and Wilhelm Gohrbandt, Leverkusen, and Robert Kuth, Cologne, Muengersdorf, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Filed Nov. 30, 1965, Ser. No. 510,693
Claims priority, application Germany, Dec. 2, 1964, F 44,593
Int. Cl. C07d *55/44;* **C09b** *5/44;* **D06p** *1/00*
U.S. Cl. 260—249 **5 Claims**

Dyestuffs for dyeing or printing synthetic fiber materials which comprise triazine dyestuffs of the anthraquinone series wherein the triazine ring contains bis-alkoxyethoxy substituents.

3,470,179
4-SUBSTITUTED-3,4-DIHYDROQUINAZOLINES

Hans Ott, Convent Station, N.J., assignor to Sandoz Inc., Hanover, N.J.

No Drawing. Filed June 14, 1966, Ser. No. 557,372
Int. Cl. C07d *51/48, 99/04;* **A61k** *27/00*
U.S. Cl. 260—251 **18 Claims**

The invention discloses novel compounds of the class of 4-substituted-3,4-dihydroquinazolines which are 4-

cycloalkyl-3,4-dihydroquinazolines, 4-pyridyl-3,4-dihydroquinazolines, 4-furyl-3,4-dihydroquinazolines, 4-thienyl-3,4-dihydroquinazolines or 4-phenyl(lower)alkyl-3,4-dihydroquinazolines, all possessing pharmaceutical activity in animals and useful, for example, as Central Nervous System stimulants, as analgesic, anti-inflammatory and local anesthetic agents.

3,470,180

10b-PHENYL-1,2,3,4-TETRAHYDROPYRIMIDO [2,1-a]ISOINDOL-6-(10bH)-ONES

William J. Houlihan, Mountain Lakes, N.J., assignor to Sandoz Inc., Hanover, N.J.

No Drawing. Original application Dec. 18, 1963, Ser. No. 331,372, now Patent No. 3,334,113, dated Aug. 1, 1967. Divided and this application Jan. 24, 1967, Ser. No. 611,241

Int. Cl. C07d *51/42, 51/46;* **A61k** *25/00*

U.S. Cl. 260—251 **4 Claims**

The compounds are of the class of tricyclic compounds having a heteocyclic ring of 6 ring atoms fused to the b-side of a 3-phenylphthalimidine, the heterocyclic ring containing one additional nitrogen atom which is in a 1,3-relationship with respect to the other hetero atom and also ortho to the point of fusion. The compounds are useful as anti-inflammatories and are prepared by reacting an o-benzoylbenzoic acid (or acid halide) with an appropriate ω-substituted alkyleneamine.

3,470,181

FUSED 2-PYRIMIDINEPROPIONIC ACID COMPOUNDS, RELATED COMPOUNDS, AND THE PROCESS FOR THEIR PREPARATION

Peter H. L. Wei, Upper Darby, and Stanley C. Bell, Penn Valley, Pa., assignors to American Home Products Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Oct. 23, 1967, Ser. No. 677,049

Int. Cl. C07d *99/02, 99/04, 51/36*

U.S. Cl. 260—251 **6 Claims**

The present invention is concerned with fused 2-pyrimidinepropionic acid compounds which are pharmacologically effective as analgesic and central nervous system depressants. Further, this invention is concerned with the process for the preparation of these compounds from their corresponding 3-cyanopropionamidotricyclic compounds.

3,470,182

4-AMINO-SUBSTITUTED QUINAZOLINES

Goetz E. Hardtmann, Florham Park, and Hans Ott, Convent Station, N.J., assignors to Sandoz Inc., Hanover, N.J.

No Drawing. Filed Feb. 9, 1967, Ser. No. 614,813

Int. Cl. C07d *51/48, 51/72;* **A61k** *27/00*

U.S. Cl. 260—256.4 **8 Claims**

There are disclosed various 4-amino-substituted quinazolines, which are central nervous system stimulants and may be used as antidepressants.

3,470,183

THIENOPYRIMIDINES

Barbara Roth, Scarsdale, N.Y., assignor to Burroughs Wellcome & Co. (U.S.A.) Inc., Tuckahoe, N.Y., a corporation of New York

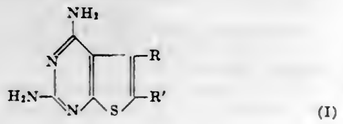
No Drawing. Filed June 6, 1967, Ser. No. 643,833

Claims priority, application Great Britain, June 9, 1966, 25,752/66

Int. Cl. C07d *99/06, 63/18;* **A61k** *27/00*

U.S. Cl. 260—256.5 **4 Claims**

Thienopyrimidines of the formula



(I)

wherein R and R′ may be lower alkyl, and wherein R′ or R may be a hydrogen atom. R and R′ may also be phenyl, benzyl or phenethyl optionally substituted with halogen or lower alkoxy. The compounds are useful as antibacterials, anthelmintics and as anti-protozoal agents.

3,470,184

N-(3-PYRAZOLYL-PROPYL)-N′-PHENYL-PIPERAZINES

Vishwa Prakash Arya, Bombay, India, assignor to Ciba Limited, Basel, Switzerland, a company of Switzerland

No Drawing. Filed Dec. 22, 1966, Ser. No. 603,728

Claims priority, application Switzerland, Dec. 23, 1965, 17,732/65; Nov. 10, 1966, 16,258/66

Int. Cl. C07d *57/00;* **A61k** *25/00*

U.S. Cl. 260—268 **9 Claims**

N - [(1 - Ac - 4 - pyr) - C(=X) - alk - CH_2] - N′ - Ardiazacycloalkanes in which the nitrogen atoms of the diazacycloalkane radical are separated from each other by 2 or 3 carbon atoms and in which the 4-pyr group is a 4-pyrazolyl radical substituted in position 1 by the group Ac which represents the acyl residue of an organic acid, X represents an oxygen atom, a free or substituted hydroxyl group together with a hydrogen atom, or two hydrogen atoms, or a double bond linked with the C_1 carbon atom of the residue "alk," in which "alk" represents a 1:1-lower alkylidene residue, together with a hydrogen atom, and Ar represents an aromatic group. The compounds are useful as antihypertensives.

3,470,185

2-(PIPERAZINO)METHYL-2,3-DIHYDRO-BENZOFURANS

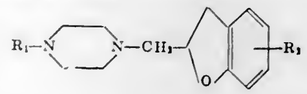
Charles Ferdinand Huebner, Chatham, and Lincoln Harvey Werner, Summit, N.J., assignors to Ciba Corporation, Summit, N.J., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 644,793, June 9, 1967, which is a continuation of application Ser. No. 640,845, May 24, 1967, which in turn is a continuation-in-part of application Ser. No. 580,-880, Sept. 21, 1966. This application Mar. 18, 1968, Ser. No. 714,057

Int. Cl. C07d *99/04, 51/72;* **A61k** *27/00*

U.S. Cl. 260—268 **16 Claims**

2-(4-arylpiperazino) - methyl-2,3-dihydrobenzofurans, e.g. those of the formula



R_1=iso- or heterocyclic aryl

R_2=H, alkyl, alkoxy, alkylmercapto, halogen, CF_3 or alkanoyl quaternaries and salts thereof exhibit hypotensive effects.

3,470,186

SUBSTITUTED 4-ANILINO-3-QUINOLINE-CARBOXYLIC ACIDS AND ESTERS

John William Hanifin, Jr., Suffern, N.Y., Rosemary Angela Capuzzi, Cliffside Park, N.J., and Elliott Cohen, Pearl River, N.Y., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed June 2, 1967, Ser. No. 643,034

Int. Cl. C07d *33/52, 33/48;* **A61k** *27/00*

U.S. Cl. 260—287 **10 Claims**

This disclosure describes compounds of the class of substituted 4-anilino-3-quinolinecarboxylic acids and esters useful as diuretic and anti-depressant agents.

3,470,187

NORTROPINE DERIVATIVES

Stephen I. Sallay, Wynnewood, and Scott J. Childress, Philadelphia, Pa., assignors to American Home Products Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed May 24, 1967, Ser. No. 640,849

Int. Cl. C07d *39/00;* **A61k** *27/00*

U.S. Cl. 260—292 **2 Claims**

Piperidine and tropane derivatives having an olefinic component in the 3 or 4-position of the ring have been prepared, the compounds demonstrating a central nervous system stimulating action.

3,470,188

9-CYCLOALKYL-LOWER ALKYL-PIPERIDYLIDENE DERIVATIVES OF XANTHENES AND THIOXANTHENES

Carl Kaiser, Haddon Heights, N.J., and Charles L. Zirkle, Berwyn, Pa., assignors to Smith Kline & French Laboratories, Philadelphia, Pa., a corporation of Pennsylvania

No Drawing. Filed Jan. 5, 1967, Ser. No. 607,404

Int. Cl. C07d *99/04, 99/06;* **A61k** *25/00*

U.S. Cl. 260—293.4 **10 Claims**

Xanthenes and thioxanthenes, optionally ring substituted, having an N-cycloalkyl-lower alkyl-piperidylidene substituent in the 9-position are tranquilizers. These compounds are generally prepared from corresponding N-unsubstituted-piperidylidene derivatives or by reaction of an appropriate xanthone or thioxanthone with a 4-chloro-1-cycloalkyl-lower alkyl-piperidine Grignard reagent.

3,470,189

HETEROCYCLIC SUBSTITUTED ACETIC ACID DERIVATIVES, INTERMEDIATES THEREFOR, AND PRODUCTION AND USE THEREOF

Herndon Jenkins, Richmond, Va., assignor to A. H. Robins Company, Incorporated, Richmond, Va., a corporation of Virginia

No Drawing. Filed Oct. 24, 1965, Ser. No. 504,992

Int. Cl. C07d *27/26, 29/12;* **A61k** *27/00*

U.S. Cl. 260—294 **49 Claims**

3-pyrrolidinyloxy and 3- and 4-piperidinyloxy phenylacetic acid derivatives carrying a further alpha substituent selected from phenyl, thienyl, and naphthyl, the derivative being a lower-alkyl ester thereof or an amide thereof, including substituted amides. Phenyl groups in the compound may also carry substituents. The compounds are useful as analgesic/analgetics. Also, acid and metal salt intermediates useful in the preparation of the active compounds of the invention.

3,470,190

10-[(N-LOWER ALKYL-PYRROLIDYL)-METHYLIDENE] AND 10-(N-LOWER ALKYL-PIPERIDYLIDENE) DERIVATIVES OF 9,10-DIHYDRO-9-ANTHROL

Klaus Reinhold Noll, Alex Berg, Hans Machleidt, Werner Roethele, and Günther Engelhardt, Biberach an der Riss, Germany, assignors to Boehringer Ingelheim G.m.b.H., Ingelheim am Rhein, Germany, a corporation of Germany

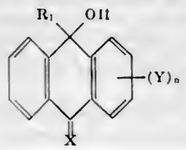
No Drawing. Filed Nov. 9, 1966, Ser. No. 592,973

Claims priority, application Germany, Nov. 15, 1965, T 29,792

Int. Cl. C07d *29/12, 27/24;* **A61k** *27/00*

U.S. Cl. 260—294.7 **6 Claims**

The compounds are derivatives of 9,10-dihydro-9-anthrol of the formula



wherein

R_1 is hydrogen, lower alkyl or phenyl,

X is (N-lower alkyl-pyrrolidyl)methylidene or N-lower alkyl-piperidylidene,

Y is methyl, chlorine, bromine or methoxy, and

n is an integer from 0 to 2, inclusive, and non-toxic acid addition salts thereof, useful as sedatives and antitoxins against snake poison in warm-blooded animals.

3,470,191

PROCESS FOR THE PREPARATION OF 3-ARYLAMINO-2-PYRAZOLIN-5-ONE

Pieter Hendrik Eerdekens, Mortsel-Antwerp, and Robert Joseph Pollet, Berchem-Antwerp, Belgium, assignors to Gevaert-Agfa N.V., Mortsel, Belgium, a Belgian company

No Drawing. Filed Oct. 13, 1965, Ser. No. 495,688

Claims priority, application Great Britain, Oct. 15, 1964 42,087/64

Int. Cl. C07d *49/16, 57/00*

U.S. Cl. 260—294.8 **9 Claims**

Improved yields of 3-arylamino-2-pyrazolin-5-one color couplers useful in photography are obtained by reacting a 3-amino-2-pyrazoline-5-one with the salt of a strong acid and an aromatic primary amino compound in a neutral or aliphatic acid medium.

3,470,192

CERTAIN 2-(2,3-AND 4-PYRIDYL)-BENZOFURAN AND DERIVATIVES THEREOF

Fernand Binon and Herbert Ziegler, Brussels, and Henri Inion, Wemmel, Brabant, Belgium, assignors, by mesne assignments, to Laboratoires Labaz, Paris, France

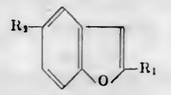
No Drawing. Filed Nov. 12, 1965, Ser. No. 507,559

Claims priority, application Great Britain, Nov. 11, 1964, 46,043/64

Int. Cl. C07d *31/32;* **A61k** *27/00*

U.S. Cl. 260—297 **10 Claims**

1. A compound of the class consisting of a free base and the pharmaceutically acceptable acid addition salts thereof, the free base being represented by the formula:



wherein R_1 is selected from the group consisting of 2-pyridyl, 3-pyridyl, 4-pyridyl, 6-methyl-2-pyridyl, 5-methyl-2-pyridyl and 5-methyl-4-pyridyl and R_2 is selected from the group consisting of hydrogen, chlorine, methyl and piperidino-methyl.

3,470,193

17α-CHLOROETHINYL-17β-HYDROXY STEROIDAL DERIVATIVES

Vladimir Petrow, Colin Michael Burgess, and Peter Feather, London, England, assignors to The British Drug Houses Limited

No Drawing. Filed July 31, 1961, Ser. No. 127,805

Claims priority, application Great Britain, Aug. 5, 1960, 27,179/60

Int. Cl. C07c *169/06, 169/08;* **A61k** *27/00*

U.S. Cl. 260—397.4 **8 Claims**

17α-chloroethinyl-17β-hydroxy steroid derivatives having utility in the hormonal field.

3,470,194
(INDAZOLE-3-YL)-OXYALKANOIC ACIDS

Giuseppe Palazzo, Rome, Italy, assignor to Aziende Chimiche Riunite Angelini, Francesco A.C.R.A.F. S.p.A., Rome, Italy, a corporation of Italy

No Drawing. Continuation-in-part of application Ser. No. 606,594, Jan. 3, 1967. This application May 24, 1968, Ser. No. 731,723

Claims priority, application Italy, Aug. 29, 1966, 21,810

Int. Cl. C07d *49/02;* **A61k** *27/00*
U.S. Cl. 260—299 **26 Claims**

(Indazole-3-yl)-oxyalkanoic acids and nontoxic salts thereof have anti-inflammatory activity. They are prepared by reacting certain metal salts of 3-oxy-indazoles with certain halogenated aliphatic compounds.

3,470,195
PHENYL AND BENZYL OXAZOLE ACETIC ACID COMPOUNDS

Derrick Michael O'Mant, Macclesfield, England, assignor to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

No Drawing. Filed Sept. 1, 1967, Ser. No. 664,941

Claims priority, application Great Britain, Sept. 30, 1966, 43,786/66

Int. Cl. C07d *85/44;* **A61k** *27/00*
U.S. Cl. 260—307 **3 Claims**

This disclosure relates to phenyl-(and benzyl-)oxazolyl-alkanoic acids and derivatives thereof which possess anti-inflammatory, analgesic and antipyretic activity. The disclosure also relates to processes for making these compounds, to pharmaceutical compositions comprising at least one of said compounds, and to methods of treatment involving said compounds. A representative of said compounds is 2-(4-chlorophenyl)oxazol-4-ylacetic acid.

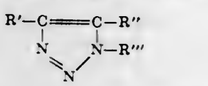
3,470,196
PREPARATION OF V-TRIAZOLES

George R. Harvey, Kirkwood, Mo., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware

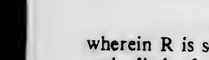
No Drawing. Filed Nov. 12, 1965, Ser. No. 507,516

Int. Cl. C07d *55/02;* **A01n** *9/22*
U.S. Cl. 260—308 **10 Claims**

1. The method of preparing triazoles of the formula



wherein R′ is selected from the class consisting of alkyl having up to four carbon atoms, chlorine, bromine and hydrogen; wherein R″ is selected from the class consisting of alkyl having up to 12 carbon atoms, phenyl, nitrophenyl, chlorophenyl, bromophenyl; and wherein R‴ is selected from the class of aryl moieties consisting of phenyl, benzenesulfonyl, benzoyl and the said aryl moieties containing substituents of the class consisting of alkyl of up to four carbon atoms, chlorine, bromine and nitro, which comprises reacting, in an inert solvent, a phosphorane of the formula



wherein R is selected from the class consisting of phenyl and alkyl of up to 12 carbon atoms with an azide of the formula $R'''N_3$.

3,470,197
1-SUBSTITUTED DERIVATIVES OF 3-ETHYL-4 - [1-METHYLIMIDAZOLYL-(5)-METHYL]-2-PYRROLIDINONE

John William Van Dyke, Jr., Elkhart, Ind., assignor to Miles Laboratories, Inc., Elkhart, Ind., a corporation of Indiana

No Drawing. Filed Aug. 30, 1967, Ser. No. 664,272
Int. Cl. C07d *49/36*
U.S. Cl. 260—309 **4 Claims**

A series of 1-substituted derivatives of 3-ethyl-4-[1-methylimidazolyl-(5)-methyl]-2-pyrrolidinone useful as antiglaucoma agents, prepared by reacting pilocarpine or isopilocarpine with ammonia or a suitable amine.

3,470,198
BICYCLODECENES CONTAINING THREE RING NITROGEN ATOMS

Rudolf G. Griot, Florham Park, N.J., assignor to Sandoz Inc., Hanover, N.J.

No Drawing. Original application Apr. 1, 1964, Ser. No. 356,641, now Patent No. 3,351,629, dated Nov. 7, 1967. Divided and this application Sept. 12, 1967, Ser. No. 698,073

Int. Cl. C07d *57/00;* **A61k** *27/00*
U.S. Cl. 260—309.7 **13 Claims**

The compounds are of the class of 1,4,8-triazabicyclo-[5,3,0]decen$\Delta^{7,8}$-10-ones, useful as CNS depressants and sedatives.

3,470,199
PRODUCTION OF POLYAMIDE MOLDINGS

Hans Jung, Ludwigshafen (Rhine), Germany, assignor to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany

Filed Oct. 6, 1965, Ser. No. 493,347
Claims priority, application Germany, Oct. 13, 1964, B 78,894
Int. Cl. B29c *5/04, 9/00*
U.S. Cl. 264—310 **3 Claims**

A process for producing cast articles in which a mixture of at least two lactams is passed into a rotating mold whereupon polymerization takes place in the presence of alkaline catalysts and activators, and wherein the concentration of the separate lactam feed is varied during the polymerization process.

3,470,200
PHTHALOCYANINE DYESTUFFS FOR BALL-POINT PEN INKS

Norman L. Anderson, Hamburg, N.Y., assignor to Allied Chemical Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed July 22, 1965, Ser. No. 474,141
Int. Cl. C09b *47/04*
U.S. Cl. 260—314.5 **12 Claims**

Production of phthalocyanine dyestuffs useful as colorants for ball-point pen inks, characterized by imparting to such inks excellent fastness to water, by reaction of a metal phthalocyanine disulfonic acid and a diphenyl guanidine substituted by an alkyl group containing 4–12 carbon atoms and, optionally, by an alkyl group containing 1–3 carbon atoms, in each of the benzene rings of said diphenyl guanidine.

3,470,201
DYESTUFFS FOR BALL-POINT PEN INKS

Norman L. Anderson, Hamburg, and Alvin C. Litke, West Seneca, N.Y., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed July 22, 1965, Ser. No. 474,168
Int. Cl. C09b *47/04*
U.S. Cl. 260—314.5 **11 Claims**

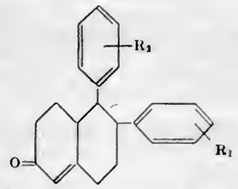
Production of phthalocyanine dyestuffs useful as colorants for ball-point pen inks, characterized by imparting to such inks a high degree of stability, particularly, resistance to hydrolysis and water fastness, by reaction of a metal phthalocyanine disulfonic acid and a diphenyl guanidine substituted by a di-lower alkylamine group and, optionally, by a lower alkyl group, in each of the benzene rings of said diphenyl guanidine.

3,470,202
5,6-DIPHENYL-4,4α,5,6,7,8-HEXAHYDRO-2(3H)-NAPHTHALENONES

Daniel Lednicer, Portage, Mich., assignor to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 364,288, May 1, 1964. This application Nov. 13, 1967, Ser. No. 682,632
Int. Cl. C07d *27/04, 29/10;* **C07c** *97/10*
U.S. Cl. 260—326.5 **2 Claims**

The invention is a group of organic compounds having the following formula:



wherein R_1 is hydrogen, lower-alkyl, or halogen and R_2 is hydroxy or tertiaryaminoalkoxy. The tertiaryaminoalkoxy compounds are useful for preparing moth-proofing agents and the hydroxy compounds are intermediates for preparing the tertiaryaminoalkoxy compounds.

3,470,203
INTERMEDIATES FOR PREPARING 1-AROYLINDOLE-3-ALKANOIC ACIDS

George Gal, Summit, and Meyer Sletzinger, North Plainfield, N.J., assignors to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey

No Drawing. Continuation-in-part of applications Ser. No. 255,642, Feb. 1, 1964, and Ser. No. 496,701, Oct. 15, 1965. This application Feb. 16, 1967, Ser. No. 616,496
Int. Cl. C07d *27/56*
U.S. Cl. 260—326.15 **12 Claims**

1-aroylindole-3-acetic acids are prepared via 1-aroylindole-3-acetaldehydes and their acetals, or 1-aroylindole-3-ethanols and their ethers and esters, or 1-aroylindoxyls, or 1-aroylindole-3-acetonitriles. The Fischer indole synthesis gives the acetals, ethers, esters or nitriles which are then aroylated in the 1-position. Hydrolysis to aldehydes and alcohols permits oxidation to the acids. The nitriles are hydrolyzed enzymatically to the acids. The 1-aroylindoxyls, formed by ring closure of N-aroyl-N-o-carboxyphenyl alanines, are converted to the 1-aroylindole-3-acetic acids via the malonic acid, Reformatsky, Grignard, or Wittig syntheses.

3,470,204
3-(1-PYRROLIN-2-YL)INDOLES

William C. Anthony and Jacob Szmuszkovicz, Kalamazoo, Mich., assignors to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware

No Drawing. Original application Oct. 7, 1963, Ser. No. 314,502, now Patent No. 3,361.759, dated Feb. 2, 1968. Divided and this application Oct. 17, 1967, Ser. No. 675,768
Int. Cl. C07d *27/56;* **A61k** *27/00*
U.S. Cl. 260—326.15 **4 Claims**

3-(1-pyrrolin-2-yl)indoles are disclosed. These compounds are intermediates in the production of 3-(2-pyrrolidinyl)indoles which compounds are useful antianaphylactic, anti-inflammatory, and anorexigenic agents.

3,470,205
3-(4-NITROBUTYRYL)INDOLES

William C. Anthony and Jacob Szmuszkovicz, Kalamazoo, Mich., assignors to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware

No Drawing. Original application Oct. 7, 1963, Ser. No. 314,502, now Patent No. 3,361,759, dated Feb. 2, 1968. Divided and this application Oct. 17, 1967, Ser. No. 675,767
Int. Cl. C07d *27/56;* **A61k** *9/04*
U.S. Cl. 260—326.16 **4 Claims**

3-(4-nitrobutyryl)indoles are disclosed. These compounds are useful intermediates in the production of 3-(2-pyrrolidinyl)indoles which compounds are useful antianaphylactic, antiinflammatory and anorexigenic agents.

3,470,206
PROCESS FOR PREPARING ORGANIC ETHERS AND SULFIDE ETHERS

Donald J. Martin, Zurich, Switzerland, assignor to Stauffer Chemical Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed June 16, 1967, Ser. No. 646,446
Int. Cl. C07d *71/00, 89/06;* **C07c** *149/00*
U.S. Cl. 260—327 **12 Claims**

Process for the preparation of organic ethers and sulfide-ethers of the formula:



wherein R and R′ are hydrocarbyl of from 1 to 12 carbon atoms which may be joined to form ring compounds and X and X′ are chalcogens having molecular weights between about 11 and 37; which compounds are prepared by the preferential hydrogenation of organic thiocarbonates of the formula:



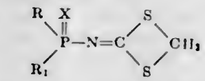
wherein R, R′, X and X′ are as previously defined, which comprises treating said organic thiocarbonates with hydrogen in an amount and for a time sufficient to reduce the thiocarbonyl group and hydrogenate the resultant carbon atom, at a temperature and pressure above about 80° C. and 100 p.s.i. in the presence of a hydrogenation catalyst which is resistant to sulfur poisoning; and recovering the organic product.

3,470,207
IMINO-1,3-DITHIETANES AND THEIR PREPARATION

Roger Williams Addor, Pennington, N.J., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine

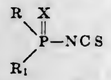
No Drawing. Filed Apr. 21, 1967, Ser. No. 632,545
Int. Cl. C07d *69/00;* **C07f** *9/28, 9/16*
U.S. Cl. 260—327 **9 Claims**

The present invention relates to novel imino-1,3-dithietanes and to methods for preparing the same. More particularly, the invention relates to 2-phosphinylimino-1,3-dithiethanes or 2-phosphinothioylimino - 1,3 - dithietanes, to methods for their manufacture, and to compositions and methods for controlling a variety of pests employing the aforementioned 2-imino-1,3-dithietanes. Still more particularly, the invention is concerned with 2-imino-1,3-dithietanes represented by the structure:



wherein X is sulfur or oxygen, and R and R_1 each represent a radical, such as a lower alkyl, lower alkoxy or

phenyl, prepared by reacting an alkali metal hydrosulfide and an isothiocyanate of the structure:



wherein R, R_1 and X are the same as defined above, ring closing the so-formed dithiocarbamate salt with methylene halide or methylene sulfate in the presence of a suitable base, and then recovering a 2-imino-1,3-dithietane derivative defined hereinabove.

3,470,208

METHOD FOR THE PREPARATION OF POLYMERIZATION-GRADE TRIOXANE

Ralph H. Lasco, Painesville, and Emmett J. Ferretti, Chesterland, Ohio, assignors to Diamond Shamrock Corporation, a corporation of Delaware

No Drawing. Filed July 12, 1965, Ser. No. 471,403
Int. Cl. C07d *19/00*
U.S. Cl. 260—340 **10 Claims**

In the method for the preparation of polymerization-grade trioxane by distilling an aqueous formaldehyde solution and subsequently separating trioxane from the resulting distillate by extraction with an organic, water-immiscible solvent, the extracted trioxane is purified by treatment with a basic compound, followed by contact with a molecular sieve. The final trioxane product contains essentially no formaldehyde and less than 20 p.p.m. each of water and formic acid. As continuously operated, the distillation process produces trioxane at a rate which is at least 125 grams per hour per each 1000 grams of reaction mixture.

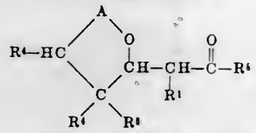
3,470,209

TETRAHYDROPYRANS AND -FURANS

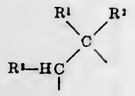
Hans Dietmar Lamparsky, Dubendorf, and Roman Marbet, Riehen, Switzerland, assignors to Givaudan Corporation, Delawanna, N.J., a corporation of New Jersey

No Drawing. Filed Dec. 7, 1965, Ser. No. 512,216
Claims priority, application Switzerland, Dec. 11, 1964, 15,996/64
Int. Cl. C07d *7/02, 5/16*
U.S. Cl. 260—345.8 **35 Claims**

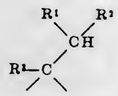
Processes and intermediates for novel ketones useful in perfumery on account of their desirable olfactory properties are disclosed. The ketones have the formula:



wherein A represents a member selected from the group consisting of



and



wherein R^1 represents a lower alkyl group which may be substituted by a free, esterified or etherified hydroxy group; a lower alkenyl, a member selected from the group consisting of phenyl, benzyl and phenethyl, or, together with R^2, a lower alkylene group; R^2 is a lower alkyl group; R^3, R^4 and R^5 represent hydrogen atoms or lower alkyl groups; R^6 represents a hydrogen atom or a lower alkyl or alkenyl group; R^7 represents a hydrogen atom or a lower alkyl group which may be substituted by a free, esterified or etherified hydroxy group; and R^8 represents a lower alkyl group which may be substituted by a free, esterified or etherified hydroxy group; a lower alkenyl or phenyl.

3,470,210

ADAMANTYL AZIDOFORMATES

Koert Gerzon and Eriks V. Krumkalns, Indianapolis, Ind., assignors to Eli Lilly and Company, Indianapolis, Ind., a corporation of Indiana

No Drawing. Original application Jan. 21, 1965, Ser. No. 427,124, now Patent No. 3,345,399, dated Oct. 3, 1967. Divided and this application Feb. 13, 1967, Ser. No. 615,313
Int. Cl. C07d *109/00, 27/04*
U.S. Cl. 260—349 **1 Claim**

The preparation of adamantyl azidoformates, useful as intermediates, is described.

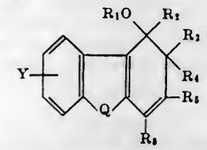
3,470,211

PHOTOCHROMIC DIHYDRODIBENZO-FURANS AND THIOPHENES AND SYNTHESIS THEREOF

Joseph Csapilla, Stamford, Conn., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed May 17, 1966, Ser. No. 550,629
Int. Cl. C07d *5/40, 63/18*
U.S. Cl. 260—346.2 **10 Claims**

Photochromic dihydrodibenzo-furans and thiophenes are provided having the formula



where R_1 is alkyl, R_2 and R_6 are alkyl, aryl or substituted aryl, R_3 and R_4 are cyano, carboxy, sulfonyl, sulfinyl, nitro or nitroso, R_5 is hydrogen, alkoxy, amino, or the same as R_2 or R_3, Q is oxygen or sulfur, and Y is hydrogen, alkyl, alkoxy, alkylthio, cyano, nitro, amino, halogen, trifluoromethyl or acyl. They are prepared by condensing the benzofurans or thiophenes of U.S. Patent No. 3,331,854 with ethylenes carrying the above-defined substituents R_3, R_4, and R_5, cyclizing the products in strongly acid media, and esterifying.

3,470,212

TETRAHYDROFURFURYL ALCOHOL-POLYMERIZED FATTY ACID ESTERS

Robert W. Van Tuyle, Cincinnati, Ohio, assignor to Emery Industries, Inc., Cincinnati, Ohio, a corporation of Ohio

No Drawing. Filed Aug. 20, 1964, Ser. No. 391,039
Int. Cl. C07d *5/20, 5/16*
U.S. Cl. 260—347.4 **7 Claims**

A diester prepared from tetrahydrofurfuryl alcohol and a polymerized fatty acid useful in the plasticizing of polyvinyl chloride resins.

3,470,213

SULFOSUCCINATE SALT SOLUBILIZATION OF FUMARIC ACID

David M. Marquis, Orinda, Calif., assignor to Chevron Research Company, San Francisco, Calif., a corporation of Delaware

No Drawing. Filed May 16, 1966, Ser. No. 550,137
Int. Cl. B01f *3/00;* **B01j** *1/00*
U.S. Cl. 252—363.5 **3 Claims**

Fast dissolving fumaric acid-sulfosuccinate salt compositions are obtained by spray-drying aqueous slurries of the acid and salt.

3,470,214

ISOMERIZATION OF TETRAHYDROPHTHALIC ANHYDRIDE

Freeman M. Young, Spartanburg, S.C., assignor to Air Products and Chemicals Inc., Philadelphia, Pa., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 409,562, Nov. 6, 1964. This application Apr. 23, 1968, Ser. No. 723,625
Int. Cl. C07d *5/38, 5/32*
U.S. Cl. 260—346.3 **13 Claims**

Normally solid tetrahydrophthalic anhydrides are converted to their normally liquid isomers by a catalytic reaction wherein the catalyst is a solid, particulate, acidic, siliceous cracking catalyst. Reaction takes place at elevated temperatures. The catalyst, which is insoluble, can be recovered for further use by simple physical separation (e.g. filtration). The liquid isomers made by this process find utility as epoxy resin curing agents.

3,470,215

SYNTHESIS OF 10-ISOGONENES AND DERIVATIVES THEREOF

George C. Buzby, Jr., Philadelphia, and Herchel Smith, Wayne, Pa., assignors to American Home Products Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Apr. 4, 1967, Ser. No. 628,274
Int. Cl. C07c *169/66, 169/22;* **A61k** *27/00*
U.S. Cl. 260—397.3 **10 Claims**

The compounds of the class of 5,13-dialkyl-10-isogonan-3-one compounds useful as anti-androgenic agents.

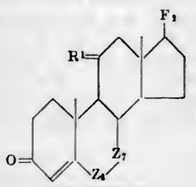
3,470,216

SELECTED 17,17-DIFLUORO UNSATURATED ANDROSTANES

George A. Boswell, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 444,454, Mar. 31, 1965. This application Nov. 29, 1966, Ser. No. 597,557
Int. Cl. C07c *169/18, 169/22;* **A61k** *27/00*
U.S. Cl. 260—397.3 **5 Claims**

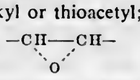
Steroids of the formula



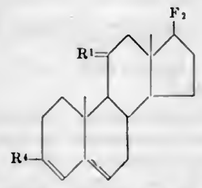
where Z_6–Z_7 represents —CH=CH—; —CHR^2—CH_2—; —CR^2=CH— where R^2 is Cl, Br or CH_3;

—CH_2—CHR_3—

where R_3 is lower alkyl or thioacetyl; or



and R^1 is H,H; H,OH; or =O; and steroids of the formula



where R_4 is O-lower alkyl, O-cycloalkyl or O-lower alkanoyl. These steroids are prepared by a variety of procedures. For example, fluorination of a 3,17-dione derivative of the above-described steroids with sulfur tetrafluoride can result in the described steroids. The steroids have pharmaceutical properties.

3,470,217

PROCESS FOR THE PREPARATION OF ALKYNYL CARBINOLS

Robert Ginsig, Mexico City, Mexico, assignor to Syntex Corporation, Panama, Panama, a corporation of Panama

No Drawing. Filed Apr. 7, 1966, Ser. No. 540,815
Int. Cl. C07c *167/00*
U.S. Cl. 260—397.4 **18 Claims**

Preparation of 17β-hydroxy-17α-ethynyl steroids, useful as estrogenic and progestational agents, from the corresponding 17-keto steroids by allowing the latter to react with acetylene in the presence of an alkali metal alkoxide and dialkylsulfoxide.

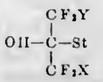
3,470,218

NEW 2-SUBSTITUTED ESTROGENIC STEROIDS

Basil S. Farah, Elma, N.Y., assignor to Allied Chemical Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed Dec. 27, 1966, Ser. No. 604,636
Int. Cl. C07c *169/06, 169/08;* **A61k** *17/00*
U.S. Cl. 260—397.5 **6 Claims**

New 2-substituted estrogenic steroids having the formula



wherein St is a steroid radical of the estrogenic steroid series having an aromatic A ring, a hydroxy group at the 3-position, and a free valence in the 2-position and wherein X and Y are independently fluorine or chlorine are prepared by reacting a steroid of the estrogenic steroid series having an available 2-position with a hexahaloacetone of the formula $CO(CF_2X)(CF_2Y)$ wherein X and Y are as stated above.

3,470,219

TRANSADDITION REACTION BETWEEN AN OLEFIN AND A SATURATED ALIPHATIC MONOCARBOXYLIC ACID

Charles C. Hobbs, Jr., and Alexander F. MacLean, Corpus Christi, Tex., assignors to Celanese Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Jan. 30, 1964, Ser. No. 341,408
Int. Cl. C11c *1/00*
U.S. Cl. 260—413 **10 Claims**

In effecting a transaddition reaction between an olefin and a saturated aliphatic monocarboxylic acid, which reaction is carried out in an aqueous system containing a water-soluble initiator such as a persulfate, the efficiency of the reaction is enhanced by minimizing contact of reaction products with the initiator. A preferred embodiment comprises continuously extracting the reaction products from the reaction zone, substantially as rapidly as they are formed, with a liquid extractant which is a selective solvent for the reaction product and which is substantially immiscible with the reaction medium contained in the reaction zone. Another embodiment comprises adding the initiator gradually in stages to a mixture of the reactants whereby, even at unusually high reaction temperatures, efficiency of utilization of the initiator is kept at a high level while degradation of the products by the initiator is kept at a low level.

3,470,220

GERMANIUM AND TIN COMPOUNDS

Kurt Moedritzer, Webster Grove, and John R. Van Wazer, Ladue, Mo., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Filed Aug. 19, 1965, Ser. No. 481,090

Int. Cl. C07f *7/22, 7/00*

U.S. Cl. 260—429 **22 Claims**

The present invention relates to germanium and tin containing compounds having the general formula:

$$R_{4-n}MX_{n-m}Y_m$$

in which R is selected from the group consisting of hydrocarbyl radicals having from 1 to 20 carbon atoms, such as saturated and unsaturated alkyl and cycloalkyl radicals having from 1 to 20 carbon atoms, and phenyl and substituted phenyl radicals having from 6 to 20 carbon atoms; M is a metal selected from the group consisting of germanium and tin; and X and Y are different members selected from the group consisting of a halogen such as fluorine, chlorine, bromine and iodine as well as alkoxyl, thioalkyl, dialkylamino, cyano, cyanate, thiocyanate, azide and acetylide radicals; *n* is a whole number from 2 to 4, and *m* is a whole number from 1 to 3, with the requirement that *m* be less than *n*.

The compositions of the present invention have utility as functional fluids, dielectric materials, biological compounds and plasticizers.

3,470,221

DIORGANO-(ALKOXY) TIN HALIDES

Rajendra Nath Chadha, Ann Arbor, and Kailash Chandra Pande, Adrian, Mich., assignors to Stauffer Chemical Company

No Drawing. Filed Sept. 2, 1965, Ser. No. 484,769

Int. Cl. C07f *7/22;* **B01j**

U.S. Cl. 260—429.7 **4 Claims**

Certain organo- monoalkoxy halides are presented as novel compounds and their use as catalysts in room temperature vulcanizing systems demonstrated.

3,470,222

PHOSPHORUS- AND METAL-CONTAINING COMPOSITION AND PREPARATIONS THEREOF

Thomas C. Jennings, Willowick, Ohio, assignor to The Lubrizol Corporation, Wickliffe, Ohio, a corporation of Ohio

No Drawing. Continuation-in-part of application Ser. No. 493,240, Oct. 5, 1965. This application July 18, 1966, Ser. No. 565,740

Int. Cl. C07f *9/08;* **C09k** *3/10;* **C09d** *5/04*

U.S. Cl. 260—429.9 **9 Claims**

Products suitable for use in caulking compositions, paints, drawing compositions, etc., may be prepared by the reaction of phosphoric acid, an organic epoxide and a metal base.

3,470,223

SOLIDS PURGING FROM AN ALUMINUM ALKYL STREAM

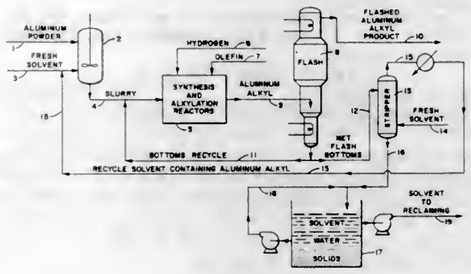
John H. Smith and Bernard J. Laurent, Ponca City, Okla., assignors to Continental Oil Company, Ponca City, Okla., a corporation of Delaware

Filed Feb. 2, 1967, Ser. No. 613,677

Int. Cl. C07f *5/06;* **B01d** *11/00*

U.S. Cl. 260—448 **6 Claims**

A solution of aluminum alkyl in solvent is flashed to recover aluminum alkyl overhead; a portion of the solvent bottoms contaminated with solid impurities is



stripped with additional solvent to remove residual alkyl aluminum, and the stripper bottoms are drowned in water.

3,470,224

PROCESS FOR THE PREPARATION OF NEW DIALKYL ALUMINUM-AROMATIC COMPLEX COMPOUNDS

Herbert Lehmkuhl, Mulheim (Ruhr), Germany, assignor to Studiengesellschaft Kohle m.b.H., Mulheim (Ruhr), Germany

No Drawing. Filed June 22, 1966, Ser. No. 559,394

Claims priority, application Germany, July 5, 1965, St 24,085

Int. Cl. C07f *5/06*

U.S. Cl. 260—448 **17 Claims**

Novel aluminum-aromatic complex compounds of the formula:

$$[Y]^{2-}[AlR^{+}_{2}]_n[M^{+}]_m$$

and the ether addition products thereof wherein M designates an alkali metal, Y is a polycyclic aromatic hydrocarbon, R is alkyl, *n* is 1 or 2, *m* is 0 or 1, and $n+m=2$ and process for preparing such compounds comprising reacting an alkali metal (M), a polycyclic aromatic hydrocarbon (Y) with an aluminum trialkyl (AlR_3) or dialkyl aluminum halide (R_2AlHal) or ether addition product thereof.

3,470,225

PROCESS FOR THE PRODUCTION OF ORGANIC SILICON COMPOUNDS

Helmut Knorre, Hainstadt am Main, and Wilfried Rothe, Strotzbach Post Mombris, Germany, assignors to Deutsche Gold- und Silber-Scheideanstalt vormals Roessler, Frankfurt am Main, Germany

No Drawing. Filed Dec. 18, 1967, Ser. No. 691,247

Claims priority, application Germany, Dec. 16, 1966, D 51,794

Int. Cl. C07f *7/02*

U.S. Cl. 260—448.2 **4 Claims**

Production of organic silicon compounds by addition of silicon compounds containing at least one hydrogen atom bound directly to silicon on organic compounds containing at least one non-aromatic double or triple C—C bond using a coordinate complex of the empirical formula $PtX_2(RCOCR'COR'')_2$ wherein X is halogen, R is

alkyl, preferably, lower alkyl, R' is hydrogen or alkyl, preferably lower alkyl, and R'' is alkyl or alkoxy, preferably lower alkyl or alkoxy.

3,470,226

POLYBUTADIENE ORGANOSILICON POLYMERS HAVING POLYOXYALKYLENE GROUP ATTACHED TO THE SILICON ATOMS

John Beckett Plumb, West Kilbride, and Ronald Sangster Stuart, Saltcoats, Scotland, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

No Drawing. Filed Oct. 14, 1966, Ser. No. 586,638

Claims priority, application Great Britain, Oct. 23, 1965, 44,973/65

Int. Cl. C07f *7/18;* **C08f** *27/12*

U.S. Cl. 260—448.8 **10 Claims**

Organosilicon polymers are prepared wherein polybutadiene is reacted with a compound $HSiR_b''X_{3-b}$ where R'' is a hydrocarbyl group and X is a halogen and *b* is 0, 1 or 2. The product obtained is reacted with a monohydroxy polyoxyalkylene to give butadiene organosilicon polymer having polyoxyalkylene group attached to the silicon atoms. The polymers are surfactants and are especially useful in producing polyurethane foams.

3,470,227

PROCESS FOR THE PRODUCTION OF XYLYLENE DIISOCYANATE

Hiroshi Hatta, Osaka, and Hiroshi Mukai, Suita, Japan, assignors to Takeda Chemical Industries, Ltd., Osaka, Japan

No Drawing. Filed Sept. 6, 1966, Ser. No. 577,170

Claims priority, application Japan, Sept. 6, 1965, 40/54,823; Aug. 20, 1966, 41/54,909

Int. Cl. C07c *119/04*

U.S. Cl. 260—453 **4 Claims**

Process for the production of xylylene diisocyanate by phosgenating xylylene diamine with at least 2.5 moles of phosgene per mole of xylylene diamine in an inert solvent at a temperature of 0° to about 50° C. and then maintaining the temperature of the reaction mixture between about 120° C. to 180° C. under a pressure of 2 to about 5 kg./cm.² gauge. By carrying out the reaction within the aforementioned parameters, undesirable chlorinated and resinous by-products are reduced, thereby producing high yields of relatively pure xylylene diisocyanate.

3,470,228

PREPARATION OF ORGANIC ISOCYANATES

Dietrich H. Heinert, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Oct. 26, 1966, Ser. No. 589,490

Int. Cl. C07c *119/04*

U.S. Cl. 260—453 **10 Claims**

Aliphatic and aromatic isocyanates are produced by pyrolyzing the corresponding isocyanurates at 500–1000° C. and less than 100 mm. absolute pressure. Unsaturated isocyanates such as vinyl isocyanate and vinylphenyl isocyanate are of particular interest as difunctional monomers.

3,470,229

O,O-DIALKYL-O-(DITHIOCARBONATO) ETHYL-PHOSPHORIC ACID ESTERS

Gerhard Schrader, Wuppertal-Cronenberg, Wolfgang Behrenz, Cologne-Stammheim, and Ingeborg Hammann, Cologne, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

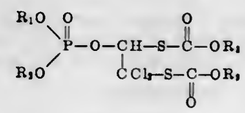
No Drawing. Filed Oct. 21, 1966, Ser. No. 588,337

Claims priority, application Germany, Oct. 29, 1965, F 47,553

Int. Cl. C07f *9/08, 9/02;* **A01n** *9/36*

U.S. Cl. 260—455 **4 Claims**

O,O-dialkyl-O-(dithiocarbonato) ethyl-phosphoric acid ester of the formula



in which R_1 and R_2 each respectively is alkyl or chloroalkyl, and R_3 is alkyl, which possess insecticidal and acaricidal properties.

3,470,230

PROCESS FOR PREPARING VINYL COMPOUNDS

Lothar Hirsch, Kelkheim, Taunus, and Lothar Hörnig, Günther Mau, and Therese Quadflieg, Frankfurt am Main, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany, a corporation of Germany

No Drawing. Filed Mar. 23, 1965, Ser. No. 442,208

Claims priority, application Germany, Apr. 16, 1964, F 42,628

Int. Cl. C07c *121/30*

U.S. Cl. 260—465.3 **6 Claims**

A process for the vinylation of a nucleophilic compound having a hydrogen atom that is easily split off wherein a vinyl group is added in place of said hydrogen atom, which process comprises reacting ethylene, oxygen and a nucleophilic compound of the type mention in the presence of palladous oxide catayst, one example being the reaction of ethylene, oxygen and HCN at temperatures of, for example, 20° C. to 350° C.

3,470,231

METHOD OF STABILIZING NITRIC ACID ESTERS

Ralph P. Gelardo, West Hyattsville, Md., and Otto Reitlinger, Arlington, Va., assignors to the United States of America as represented by the Secretary of the Navy

No Drawing. Filed May 29, 1967, Ser. No. 643,303

Int. Cl. C07c *77/02*

U.S. Cl. 260—466 **9 Claims**

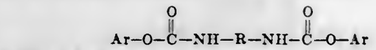
A process for purifying and stablizing nitric acid esters containing carbonyl inpurities which comprises treating said impure nitric acid esters with a reducing agent such as sodium borohydride for a time sufficient to reduce said carbonyl impurities to their respective alcohols and thereafter separating said alcohols from said esters.

3,470,232
DIURETHANE COMPOUNDS

Max Duennenberger, Frenkendorf, and Max Schellenbaum, Riehen, Switzerland, assignors to Ciba Limited, Basel, Switzerland, a company of Switzerland

No Drawing. Filed Feb. 15, 1966, Ser. No. 527,496
Claims priority, application Switzerland, Mar. 2, 1965, 2,878/65
Int. Cl. C07c *125/04, 147/12*
U.S. Cl. 260—471 **1 Claim**

New di-urethanes are provided which are represented by the formula



where R is an alkylene radical containing 2 to 18 carbon atoms which may be interrupted by oxygen, sulphur, SO, SO_2 or by an N-alkyl group containing up to 8 carbon atoms, or a divalent aromatic or araliphatic radical, and Ar represents a tri- or tetrahalogenophenyl.

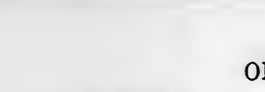
The compounds of this invention are especially useful as biocides for combating pests such as bacteria, fungi, fungus spores, worms, insects, snails and the like.

3,470,233
PROCESS FOR THE MANUFACTURE OF L-(—)-β-(3.4-DIHYDROXY-PHENYL)-α-METHYLALANINE

Hans-Joachim Bohn, Kelkheim, Taunus, and Günther Seidl, Frankfurt am Main, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany, a corporation of Germany

No Drawing. Filed July 7, 1965, Ser. No. 470,208
Claims priority, application Germany, July 9, 1964, F 43,379; Sept. 4, 1964, F 43,911; Dec. 9, 1964, F 44,649; Apr. 9, 1965, F 45,772
Int. Cl. C07c *99/00, 101/00, 101/02*
U.S. Cl. 260—473 **11 Claims**

Monoesters of L - α - (3,4 - dimethoxybenzyl) - α-methyl malonic acid and of L-α-(3,4-diallyloxy-benzyl)-α-methyl malonic acid. Process for the manufacture of L-(—)-β-(3,4 - dihydroxyphenyl) - α-methylalanine by resolving a racemic mixture of



(I)

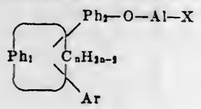
wherein R represents methyl and R_1 represents methyl, n-butyl, or benzyl, and if R_1 is methyl, R may also represent benzyl or allyl, into its optical isomers; esterifying the D-monoester; and hydrolyzing the diester to reform the monoester starting compound. The α-carboxy group of the L-compound is converted to an α-amino group by a Curtius or Hofmann rearrangement involving intermediate azide or isocyanate formation. The ether groups on the phenyl nucleus and the α-ester group are removed during the synthesis.

3,470,234
DIARYL SUBSTITUTED BENZOCYCLOALKANES

William Laszlo Bencze, New Providence, N.J., assignor to Ciba Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 451,651, Apr. 28, 1965, which is a continuation-in-part of application Ser. No. 401,256, Oct. 2, 1964. This application Aug. 23, 1965, Ser. No. 481,954
Int. Cl. C07c *69/76;* **A61k** *27/00*
U.S. Cl. 260—473 **28 Claims**

Diaryl-benzocycloalkanes of the formula



$Ph_{1,2}$=a phenylene
Al=lower aliphatic radical
X=free or functional converted carboxy
Ar=an aryl radical
n=5 to 7

and salts thereof, exhibit hypocholesterolemic effects.

3,470,235
ALICYCLIC BISPHENYLENEOXYDICARBOXYLIC ACIDS, SALTS AND ESTERS

Winston J. Jackson, Jr., and John R. Caldwell, Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Continuation-in-part of application Ser. No. 193,593, May 9, 1962, now Patent No. 3,226,362, dated Dec. 28, 1965. This application Nov. 5, 1965, Ser. No. 506,587
Int. Cl. C07c *69/78, 87/02, 65/14*
U.S. Cl. 260—473 **9 Claims**

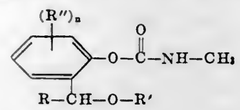
The preparation of alicyclic bridged ring bisphenyleneoxydicarboxylic acids, salts, and esters is disclosed, said compounds being useful in the preparation of high melting, fiber-, and film-forming polyamides.

3,470,236
PHENYL-N-METHYL CARBAMIC ACID ESTERS

Arnold Hausweiler, Cologne-Flittard, Ingeborg Hammann, Cologne, and Wolfgang Behrenz, Cologne-Stammheim, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Filed June 17, 1965, Ser. No. 464,831
Claims priority, application Germany, June 27, 1964, F 43,288
Int. Cl. C07c *125/06;* **A01n** *9/20*
U.S. Cl. 260—479 **11 Claims**

1. Phenyl N-methyl carbamic acid esters having the general formula



in which R is selected from the group consisting of hydrogen and C_1-C_4 alkyl, R′ and R″ each respectively is selected from the group consisting of C_1-C_4 alkyl, and n is a whole number having a value from 0 to 2.

3,470,237
N-METHYL-2-DIMETHYLAMINO-5-CHLORO BENZHYDRYLCARBAMATES

Sidney B. Richter and David P. Mayer, Chicago, Ill., assignors to Velsicol Chemical Corporation, Chicago, Ill., a corporation of Illinois

No Drawing. Continuation-in-part of application Ser. No. 454,688, May 10, 1965. This application May 12, 1967, Ser. No. 637,935
The portion of the term of the patent subsequent to Sept. 5, 1984, has been disclaimed
Int. Cl. C07c *101/00, 101/12, 101/18*
U.S. Cl. 260—482 **1 Claim**

New compounds selected from the group consisting of N-methyl-2-dimethylamino-5-chloro-2′-methylbenzhydrylcarbamate, N - methyl - 2 - dimethylamino - 5 - chloro-4′ - methylbenzhydrylcarbamate, N - methyl - 2 - dimethylamino - 4′,5 - dichlorobenzhydrylcarbamate and N - methyl - 2 - dimethylamino - 3′,5 - dichlorobenzhydrylcarbamate. These compounds are useful as miticides.

3,470,238
PROCESS FOR RECOVERING ACRYLIC AND METHACRYLIC ESTER

Taisuke Asano and Mamoru Nakano, Tokyo, Yasuhiro Sato, Yokkaichi-shi, and Takashi Shimodaira and Keiko Kamata, Tokyo, Japan, assignors to Mitsubishi Petrochemical Co., Ltd., Tokyo, Japan, a corporation of Japan

Filed Nov. 3, 1965, Ser. No. 506,214
Claims priority, application Japan, Nov. 6, 1964, 39/62,479
Int. Cl. C07c *69/54, 67/06, 51/42*
U.S. Cl. 260—486 **6 Claims**

A process for recovering acrylic and/or methacrylic acid from a dilute aqueous solution thereof in the form of esters thereof. The acids in said aqueous solution are extracted with tri-n-butyl phosphate or acetophenone and the extract is directly esterified with an alcohol in the presence of a cation exchange resin as a catalyst. The thusly formed esters are thereafter recovered from the esterified extract.

3,470,239
PROCESS FOR PREPARING METHACRYLIC ACID AND ITS ESTERS FROM ISOBUTANE

Joseph L. Russell, Ridgewood, N.J., assignor to Halcon International, Inc., a corporation of Delaware

Continuation of application Ser. No. 688,623, Dec. 6, 1967, which is a continuation of application Ser. No. 333,106, Dec. 24, 1963. This application June 7, 1968, Ser. No. 739,940
Int. Cl. C07c *51/20, 67/00, 69/54*
U.S. Cl. 260—486 **7 Claims**

This invention relates to processes for preparing methacrylic acid or ester from isobutane, more particularly to cyclic processes wherein isobutane is converted to tertiary butyl hydroperoxide which in turn is reacted with methacrolein to form methacrylic acid or ester (from added alcohol reactant) product and tertiary butyl alcohol, at least some of the said methacrolein being obtained from said tertiary butyl alcohol, and the acid or ester is recovered as substantially the only product.

3,470,240
13,14-SECO-STEROIDS AND PROCESS FOR PREPARATION THEREOF

Georg Anner and Jaroslav Kalvoda, Basel, Switzerland, assignors to Ciba Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Aug. 17, 1965, Ser. No. 480,513
Claims priority, application Switzerland, Sept. 4, 1964, 11,599/64
Int. Cl. C07c *69/12, 171/07*
U.S. Cl. 260—488 **15 Claims**

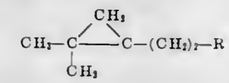
Manufacture of new 13-iodo-14-oxo-13,14-secosteroids and of their reduction and condensation products, in which a 14-hydroxysteroid that does not contain an additional oxidizable hydroxyl group is reacted with a compound containing monovalent, positive iodine, and, if desired, the resulting 13-iodo-14-oxo-13,14-secosteroid is reductively condensed to the 14β-hydroxysteroid and/or at any stage of the process any protected oxo or hydroxyl groups present in the process products are liberated and/or hydroxyl groups are etherified or esterified. Also included are the products obtained, which are useful as intermediates for making known, pharmacologically-active compounds and/or as androgenanabolics and antiestrogens.

3,470,241
CYCLOPROPANE INTERMEDIATES FOR IRONES

Albert Eschenmoser and Dorothea Felix, Zurich, and Max Stoll, Geneva, Switzerland, assignors to Firmenich & Cie, Geneva, Switzerland

No Drawing. Original application Feb. 12, 1964. Ser. No. 356,996. Divided and this application Feb. 5, 1968, Ser. No. 724,302
Int. Cl. C07c *69/12, 49/26;* **C11b** *9/00*
U.S. Cl. 260—488 **3 Claims**

1. Compounds of the formula



wherein R represents one of the radicals

—C(OH)(CH₃)—CH=CH₂

—C(CH₃)=CH—CH₂OOCCH₃

and —C(CH₃)=CH—CHO.

3,470,242
LIPOTROPIC MEDICINE HAVING AS A BASE BETAINE ACETYL ASPARTATE

Yvonne Thuillier, 16 Rue Brunel, Paris, France

Continuation-in-part of application Ser. No. 432,717, Feb. 15, 1965. This application Oct. 17, 1967, Ser. No. 678,480
Claims priority, application France, Feb. 25, 1964, 965,070
Int. Cl. C07c *101/26;* **A61k** *27/00*
U.S. Cl. 260—501.13 **1 Claim**

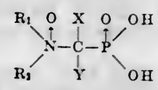
The new compound betain acetyl aspartate has utility in the treatment of hepatic steatosis in mammals.

3,470,243
TETRAKIS(DIHYDROGEN PHOSPHONO METHYL)-ETHYLENE DIAMINE, N,N′-DIOXIDE AND RELATED COMPOUNDS

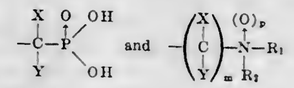
Marvin M. Crutchfield and Riyad R. Irani, St. Louis, Mo., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Original application Sept. 3, 1964, Ser. No. 394,350, now Patent No. 3,429,914, dated Feb. 25, 1969. Divided and this application June 6, 1968, Ser. No. 763,441
Int. Cl. C07f *9/02*
U.S. Cl. 260—502.5 **1 Claim**

Organo-phosphono-amine oxides having the formula



where R_1 and R_2 are alkyl, aryl, alkaryl, aralkyl, alicyclic, hydroxy-substituted derivatives of the foregoing,



wherein X and Y are hydrogen or lower alkyl, m is an integer from 1 to 10 and p is 0 or 1.

3,470,244
METHYL BIS(DIHYDROGEN PHOSPHONO METHYL)-AMINE OXIDE AND RELATED COMPOUNDS

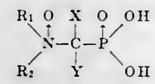
Marvin M. Crutchfield and Riyad R. Irani, St. Louis, Mo., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Original application Sept. 3, 1964, Ser. No. 394,350, now Patent No. 3,429,914, dated Feb. 25, 1969. Divided and this application June 6, 1968, Ser. No. 763,442

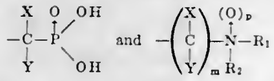
Int. Cl. C07f *9/38*

U.S. Cl. 260—502.5 **1 Claim**

Organo-phosphono-amine oxides having the formula



wherein R_1 and R_2 are alkyl, aryl, alkaryl, aralkyl, alicyclic, hydroxy-substituted derivatives of the foregoing,



wherein X and Y are hydrogen or lower alkyl, *m* is an integer from 1 to 10 and *p* is 0 or 1.

3,470,245
PREPARATION OF NITRILOTRIACETIC ACID

Philip F. Jackisch, Livonia, Mich., assignor to Ethyl Corporation, New York, N.Y., a corporation of Virginia

No Drawing. Filed Mar. 27, 1967, Ser. No. 625,968

Int. Cl. C07c *101/20, 99/00*

U.S. Cl. 260—534 **1 Claim**

Nitrilotriacetic acid is prepared by reacting glycine with carbon monoxide and formaldehyde in the presence of aqueous hydrogen halide. Temperatures employed are from about 150° to about 250° C.; reaction pressures are from about 700 to about 1000 atmospheres.

3,470,246
POLY (T-BUTYLSULFONYL CHLORIDE) AROMATIC COMPOUNDS

Allan J. Lundeen, Ponca City, Okla., assignor to Continental Oil Company, Ponca City, Okla., a corporation of Delaware

Continuation-in-part of application Ser. No. 408,826, Nov. 4, 1964. This application May 27, 1968, Ser. No. 736,528

Int. Cl. C07c *143/70, 143/00*

U.S. Cl. 260—543 **5 Claims**

Aryl poly (t-butylsulfonyl chlorides) are prepared by reacting SO_2 and Cl_2 with the desired aryl compound at below 100° C. in the presence of light.

3,470,247
PROCESS FOR THE PRODUCTION OF UREA BY SYNTHESIS OF AMMONIA AND CARBON DIOXIDE, WITH TOTAL RECYCLING OF THE PORTION WHICH HAS NOT BEEN CONVERTED INTO UREA

Mario Guadalupi, Milan, Italy, assignor to Snam S.p.A., Milan, Italy, a company of Italy

Filed Mar. 3, 1965, Ser. No. 436,769

Claims priority, application Italy, Sept. 8, 1964, 50,979/64

Int. Cl. C07c *127/04*

U.S. Cl. 260—555 **6 Claims**

This is a process for producing urea by synthesis from ammonia and carbon dioxide, in which the ammonia and carbon dioxide, which are not converted into urea, are recycled. The reaction product is freed from the major fraction of the unreacted ammonia by evaporation; and the ammonium carbonate formed is decomposed in two stages, in the first of which partial disassociation is effected by heat, and in the second of which disassociation is completed by counterflowing gaseous ammonia, the ammonia and carbon dioxide produced by the disassociation being absorbed in an ammoniated solution which contains essentially all the ammonia and carbon dioxide not converted into urea. This solution is recycled.

3,470,248
TRICYCLIC POLYAMINES

Thomas K. Brotherton, Charleston, Robert J. Knopf, St. Albans, and Paul S. Starcher and Charles A. Noffsinger, Charleston, W. Va., assignors to Union Carbide Corporation, a corporation of New York

No Drawing. Filed Oct. 19, 1965, Ser. No. 498,091

Int. Cl. C07c *87/40, 87/00;* **C07d** *21/00*

U.S. Cl. 260—563 **7 Claims**

Tricyclic polyamines and polyisocyanates which include decahydro-1,4-methanonaphthalene - 2,5 - ylenedialkylene diamines and diisocyanates, dodecahydro-1,4-methanobenzocyclooctane-2,7(or 8)-ylenedialkylene diamines and diisocyanates, tricyclo[4.2.1.$0^{2,5}$]non-3,7(or 8)-ylenedialkylene diamines and diisocyanates, and hexahydro-4,7-methanoindan-1(or 2), 5(or 6)-ylenedialkylene diamines and diisocyanates are useful in the resin arts such as in the preparation of urethane polymers, polyamides and polyurethane polyurea elastomers.

3,470,249
1 - (m - HYDROXYPHENYL) - 2 - DIALKYLAMINO METHYL - CYCLOALKENES AND THE SALTS THEREOF AND THE PROCESS OF PERPARING THE SAME

Ernst Frankus, Schleckheim, and Kurt Flick, Bochum-Stiepel, Germany, assignors to Chemie Grunenthal GmbH, Stolberg, Rhineland, Germany

No Drawing. Filed July 6, 1966, Ser. No. 563,044

Claims priority, application Germany, Aug. 2, 1965, C 36,556

Int. Cl. C07c *91/30, 89/00;* **A61k** *25/00*

U.S. Cl. 260—570.5 **25 Claims**

1-(m-hydroxy phenyl)-2-methyl alkylamino methyl cyclopentene, cyclohexene, or cycloheptene-(1) compounds have proved to be highly effective antitussive agents. Said compounds are prepared, for instance, by reacting corresponding 1-phenyl-2-methyl alkylamino methyl cycloalkanol-(1) compounds having an etherified hydroxyl group in m-position in the phenyl ring, with a mixture of hydrobromic acid and glacial acetic acid whereby simultaneously dehydration, hydrolysis of the ether group to the phenolic hydroxyl group, and isomerization of the initially formed dehydration product to the active 1,2-unsaturated cycloalkene compound takes place. It is also possible to produce such compounds by isomerization of the corresponding 1-(m-hydroxy phenyl)-2-methyl alkylamino methyl cyclopentene-(5), cyclohexene-(6), or cycloheptene-(7) compounds by means of hydrobromic acid.

3,470,250
PRODUCTION OF SECONDARY ALKYL PRIMARY AMINES

John A. Patterson, Fishkill, Lawrence W. Menapace, Beacon, and William P. Dovle, Lagrangeville, N.Y., assignors to Texaco Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed June 30, 1967, Ser. No. 650,220

Int. Cl. C07c *85/10, 85/00*

U.S. Cl. 260—583 **11 Claims**

A process for producing secondary alkyl primary amines and, in particular, secondary alkyl primary amines having from 10 to 25 carbon atoms wherein a C_{10} to C_{25} paraffin hydrocarbon is reacted in the liquid phase with a vaporous nitrating agent to produce a crude nitrated product containing paraffin, nitroparaffins, ketones, alcohols and acids, reacting the crude nitrated product in the presence of a hydrogenation catalyst first with hydrogen and thereafter with a mixture of hydrogen and ammonia, thereby producing secondary alkyl primary amines from the nitroparaffins, ketones and alcohols.

3,470,251
SEPARATION AND PURIFICATION OF SECONDARY ALKYL PRIMARY AMINES

William R. Siegart, Poughkeepsie, Peter C. Peropoulos, Fishkill, Ronald E. Jones, Glenham, and William Smolin, Wappingers Falls, N.Y., assignors to Texaco Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed June 30, 1967, Ser. No. 650,242

Int. Cl. C07c *85/16*

U.S. Cl. 260—583 **12 Claims**

Method for the purification of secondary alkyl primary amines from crude mixtures containing, in addition to the amine, n-paraffins, ketones, alcohols and polyfunctionals wherein the crude mixture is initially treated with measured amounts of water and an inorganic acid thereby forming an aqueous amine salt layer, washing the aqueous amine salt layer with a liquid hydrocarbon, treating the aqueous amine salt layer with a base and separating the amines from the aqueous layer.

3,470,252
PRODUCTION OF SECONDARY ALKYL PRIMARY AMINES FROM NORMAL PARAFFINS

William P. Doyle, Lagrangeville, and John A. Patterson and Peter C. Peropoulos, Fishkill, N.Y., assignors to Texaco Inc., New York, N.Y., a corporation of Delaware

Filed Aug. 23, 1967, Ser. No. 662,768

Int. Cl. C07c *85/00*

U.S. Cl. 260—583 **14 Claims**

A process for producing secondary alkyl primary amines and, in particular, secondary alkyl primary amines having from 10 to 25 carbon atoms wherein a C_{10} to C_{25} paraffin hydrocarbon is reacted in the liquid phase with a vaporous nitrating agent to produce a crude nitrated product containing nitroparaffin and n-paraffin, hydrogenating the nitroparaffin in a paraffin medium and in the presence of a hydrogenation catalyst thereby producing a crude secondary alkyl primary amine product, treating the crude amine product with measured amounts of water and an inorganic acid thereby forming an aqueous amine salt layer, washing the aqueous amine salt layer with a liquid hydrocarbon, treating the aqueous amine salt layer with a base and recovering the amine from the aqueous layer.

3,470,253
PROCESS FOR THE PREPARATION OF DIALKALI METAL SALTS OF DINITROCYCLIC KETONES

Henry Feuer, West Lafayette, Ind., and Albert M. Hall, Durham, N.C., assignors to Purdue Research Foundation, Lafayette, Ind., a corporation of Indiana

No Drawing. Filed Dec. 27, 1967, Ser. No. 693,738

Int. Cl. C07c *79/36*

U.S. Cl. 260—586 **8 Claims**

A process for preparing dialkali metal salts of a,a'-dinitrocyclic ketones by reacting a cyclic ketone and an alkyl nitrate in the presence of a solution of alkali metal amide, such as potassium amide, in liquid ammonia.

3,470,254
PROCESS FOR PREPARING TERTIARY PHOSPHINES IN THE PRESENCE OF ETHER SOLVENTS

Ingenuin Hechenbleikner, Cincinnati, Ohio, and Edward J. Lanpher, Hampstead, N.H., assignors to Carlisle Chemical Works, Inc., Reading, Ohio, a corporation of Ohio

No Drawing. Filed Sept. 15, 1967, Ser. No. 668,169

Int. Cl. C07f *9/50, 9/52*

U.S. Cl. 260—606.5 **18 Claims**

Trihydrocarbyl (or alkoxyaryl) phosphines are prepared by reacting a hydrocarbyl (or alkoxyaryl) chloride or bromide with a tertiary phosphite, a phosphinite or a phosphonite and sodium. The reaction is particularly useful in preparing phosphines from secondary alkyl chlorides or benzyl chloride.

3,470,255
MANUFACTURE OF BIS(1,2,2-TRICHLOROETHYL) SULFIDE

Donald H. Kelly, Parkville, Mo., assignor to Chemagro Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed Aug. 12, 1966, Ser. No. 571,965

Int. Cl. C07c *149/16, 149/10*

U.S. Cl. 260—609 **6 Claims**

Bis(1,2,2-trichlorethyl) sulfiide is propared by reacting 1,2-dichloroethylene with 1,2,2-trichloroethanesulfenyl chloride in the presence of a chemical free radical addition initiator.

3,470,256
FLUORINATED ETHERS

Francis W. Evans and Morton H. Litt, Morristown, N.J., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed Dec. 13, 1965, Ser. No. 513,574

Int. Cl. C07c *41/04, 43/12;* **C09k** *3/02*

U.S. Cl. 260—611 **6 Claims**

This invention relates to mixed ethers where one radical is a perfluorinated cyclic group and the other radical is either a halogen-substituted alkyl group or a halogen-substituted alicyclic group and contains at least one halogen other than fluorine. This invention further relates to the preparation of said ethers and to novel intermediates formed in this preparation.

3,470,257
ALKYLATION OF AROMATIC COMPOUNDS

Allen K. Sparks, Des Plaines, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 523,919, Feb. 1, 1966. This application Dec. 19, 1966, Ser. No. 602,565

Int. Cl. C07c *43/20*

U.S. Cl. 260—613 **12 Claims**

Alkylating an aromatic compound with an alkylating agent in contact with a catalyst comprising silica-metal oxide and alkali metal or alkaline metal component.

3,470,258
FLUORINATED ALCOHOLS-GLYCIDOL ADDITION PRODUCTS

Giuliana C. Tesoro, Dobbs Ferry, N.Y., assignor to J. P. Stevens & Co., Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Apr. 19, 1967, Ser. No. 632,011

Int. Cl. C07c *43/18*

U.S. Cl. 260—615 **7 Claims**

Mixtures of novel compounds included within the structural formula:



wherein R is H or CF_3,

Q is $-CH(CH_2OH)-$ or $-CH(OH)CH_2-$, D is $-CH(CH_2OH)-$ or $-CH(OH)CH_2-$

p is a number from 1 to 20, s is a number from 0 to 20, the sum of $p+s$ is from 1 to 20, and R_f is a fluorinated alkyl radical containing 1 to 15 carbon atoms, which are suited as surface active agents and emulsifiers.

3,470,259
DEALKYLATION OF DITERTIARY-BUTYLCRESOLS
Gerd Leston, Pittsburgh, Pa., assignor to Koppers Company, Inc., a corporation of Delaware
No Drawing. Filed Feb. 17, 1966, Ser. No. 528,066
The portion of the term of the patent subsequent to Oct. 10, 1984, has been disclaimed and dedicated to the Public
Int. Cl. C07c *39/18, 39/12*
U.S. Cl. 260—621 **11 Claims**

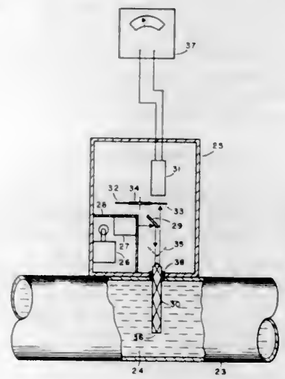
The dealkylation of ortho-, para-ditertiary-alkyl-metacresols to give substantially quantitative yields of metacresol is carried out by heating the ortho-, para-ditertiary-alkyl-metacresols in the presence of a catalytic amount of an aryloxide of a metal selected from zirconium, niobium, hafnium and tantalum, until about two moles of isoolefin are evolved.

3,470,260
CARBON TETRACHLORIDE AND PERCHLOROETHYLENE PROCESS
Irving E. Levine, Stamford, Conn., assignor to Halcon International, Inc., a corporation of Delaware
Filed June 17, 1966, Ser. No. 558,356
Int. Cl. C07c *21/12, 19/06, 17/02*
U.S. Cl. 260—654 **4 Claims**

The invention is directed to an improved process for the production of carbon tetrachloride and perchloroethylene. The process utilizes two chlorination zones operated under exhaustive chlorination conditions and partial chlorination conditions, respectively. Net plant feed of chlorine is introduced together with a recycle stream of partially chlorinated hydrocarbons to effect exhaustive chlorination and effluent therefrom is quenched in a liquid medium of carbon tetrachloride and perchloroethylene, which medium is continuously circulated and cooled. Gaseous effluent from the quench zone is introduced together with net plant feed of olefin to completely react with all of the molecular chlorine therein. The resultant liquid stream from the partial chlorination reactor is fractionated to provide the recycle stream to the exhaustive chlorination reactor together with product carbon tetrachloride and perchloroethylene. By-product hydrogen chloride gas free of chlorine is obtained from the overhead of the partial chlorination reactor. Where ethylene dichloride is the desired product the inventive process may be modified by introducing the effluent from the quench zone to a scrubbing column and feeding the overhead therefrom to the partial chlorination reactor. In the latter case a liquid stream is drawn off from the quench zone and fed to a refining column for production of carbon tetrachloride, the bottoms therefrom being additionally refined to produce perchloroethylene.

3,470,261
CONTROL OF ALKYLATION CATALYST ACTIVITY
Grady L. Roberts, Texas City, Tex., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware
Filed June 28, 1967, Ser. No. 649,619
Int. Cl. C07c *3/52;* **G01n** *23/00*
U.S. Cl. 260—671 **14 Claims**

A process for determining and controlling the activity of a Friedel-Crafts catalyst used in the preparation of alkylated aromatic compounds which comprises monitoring the absorption spectrum of the catalyst complex and adjusting the addition of metal halide and hydrogen



halide to said catalyst complex to maintain predetermined absorbance values or ratios thereof.

3,470,262
DEHYDROGENATION PROCESS
Glenn O. Michaels, South Holland, and John Mooi, Homewood, Ill., assignors to Sinclair Research, Inc., New York, N.Y., a corporation of Delaware
No Drawing. Filed May 16, 1966, Ser. No. 550,176
Int. Cl. C07c *11/12, 5/18*
U.S. Cl. 260—680 **20 Claims**

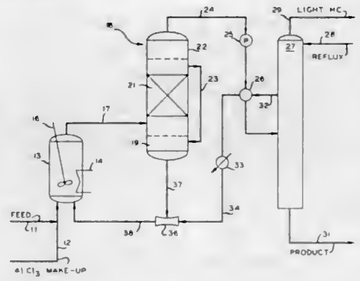
Paraffin or mono-olefin hydrocarbons of 4 to 5 carbon atoms are effectively dehydrogenated in the vapor phase at temperatures of about 900 to 1200° F. while in contact with a catalyst comprising about 0.01 to 1 weight percent of a platinum group metal, about 5 to 50 weight percent Cr_2O_3, about 1 to 50 weight percent ZnO, about 0.1 to 2 weight percent alkali metal oxide, and at least about 30 weight percent activated alumina. The zinc oxide and alumina can be combined in the form of spinel.

3,470,263
CONCURRENT CRACKING
Maurice R. Kitzen, Elkins Park, Pa., assignor to Selas Corporation of America, Dresher, Pa., a corporation of Pennsylvania
Continuation-in-part of application Ser. No. 411,079, Nov. 13, 1964. This application Feb. 24, 1966, Ser. No. 529,769
Int. Cl. C07c *3/30, 11/04;* **C10g** *9/100*
U.S. Cl. 260—683 **5 Claims**

A refining method for producing ethylene from naphtha, wherein the naphtha is cracked separately to produce ethane and ethylene product and the ethylene product is taken off in a still while the ethane is introduced into a separate concurrent cracking unit together with naphtha as the feed. The separate concurrent cracking unit produces ethylene product and further ethane and these products are separated in a still and the further ethane is fed back into the naphtha and ethane feed to the concurrent cracking unit so that it is recycled to extinction.

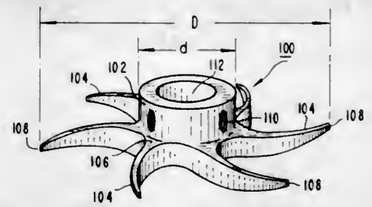
3,470,264
SEPARATION OF ALUMINUM HALIDE COMPLEX IN ALKYLATION PROCESS
Luther F. Mayhue, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed Mar. 27, 1967, Ser. No. 626,159
Int. Cl. C07c *3/56, 7/00*
U.S. Cl. 260—683.57 **7 Claims**

Hydrocarbon effluent containing aluminum halide catalyst is passed from an alkylation reaction into the lower zone of a settler-accumulator-coalescer vessel, the effluent is separated in the lower zone into a heavy liquid phase of aluminum halide complex and a light liquid hydrocarbon phase with entrained aluminum halide complex. The light liquid hydrocarbon phase is passed through



the coalescing zone to an upper zone in said vessel, where further separation of the hydrocarbon and the aluminum halide catalyst complex takes place. The alkylation product recovered from the hydrocarbon is substantially free of aluminum halide catalyst.

3,470,265
ALKYLATION WITH A FORWARD-DISCHARGING IMPELLER
Frank B. Sprow, Baytown, Tex., assignor to Esso Research and Engineering Company
Filed Dec. 5, 1966, Ser. No. 599,290
Int. Cl. C07c *3/14, 3/54;* **B01j** *1/00*
U.S. Cl. 260—683.59 **3 Claims**



A forward-discharging impeller provides improved mixing performance, particularly in sulfuric acid alkylation. By reversing the direction of rotation of an impeller having a pair of curved, tapered blades, as previously practised by the art, the average drop diameter is decreased and the homogeneity of drop size distribution is improved. Further, by tapering the blades in the axial plane, the efficiency of mixing is retained while the power consumption is cut in half.

3,470,266
COMPOSITIONS CONTAINING AN EPOXY CURABLE RESIN AND A CURED AMINOPLAST AS FILLER
Hans Batzer, Arlesheim, Otto Ernst, Pfeffingen, and Ulrich Niklaus, Basel, Switzerland, assignors to Ciba Limited, Basel, Switzerland, a company of Switzerland
No Drawing. Filed Oct. 24, 1966, Ser. No. 588,762
Claims priority, application Switzerland, Nov. 1, 1965, 15,037/65
Int. Cl. C08g *45/10, 51/14*
U.S. Cl. 260—834 **6 Claims**

A curable filled resin composition containing at least one curable epoxy resin component and fillers wherein the fillers consist of a cured aminoplast resin which is insoluble in the curable resin component.

3,470,267
POLYOXAZINES AS ANTISTATIC AGENT FOR HIGH MOLECULAR WEIGHT MATERIALS
Morton H. Litt, University Heights, Ohio, and Jack L. Herz, East Syracuse, N.Y., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York
No Drawing. Filed Dec. 4, 1967, Ser. No. 687,462
Int. Cl. C09k *3/16;* **C08g** *39/10, 41/04*
U.S. Cl. 260—857 **8 Claims**

2 - substituted-5,6-dihydro-4H-1,3-oxazine-derived carbon-nitrogen backbone chain polymers are effective antistats for a wide variety of materials. This antistat activity can be achieved by applying the polymer to the surface of the material being treated, or in some instances, the oxazine-derived polymer can advantageously be incorporated into the material itself. This incorporation can be achieved by melting, extruding or milling the oxazine polymer and the material together or by precipitating the material being treated from a solution containing the oxazine polymers.

3,470,268
METHOD FOR THE PREPARATION OF SEGMENT POLYESTERS WITH SHORT, ALTERNATING SEGMENTS OF POLYCARBONATE AND POLYESTER
Rudolf Nehring, Marl, Roland Feinauer, Haltern, and Wolfgang Seeliger, Marl, Germany, assignors to Chemische Werke Huls Aktiengesellschaft, Marl, Germany, a corporation of Germany
No Drawing. Filed Dec. 27, 1966, Ser. No. 604,665
Claims priority, application Germany, Feb. 11, 1966, C 38,192
Int. Cl. C08g *17/13, 17/08*
U.S. Cl. 260—860 **9 Claims**

Segment polyesters, having short, alternating, carbonate and terephthalate segments are prepared by (1) transesterification of certain dihydroxy-compounds containing carbonate groups, with a terephthalic acid dialkyl ester and (2) subsequent condensation polymerization.

ERRATUM

For Class 260—897 see:
Patent No. 3,470,145

3,470,269
RESIN COMPOSITIONS CONTAINING POST-CHLORINATED POLYVINYL CHLORIDE
Yvan Dobovsek, Versailles, France, assignor to Solvay & Cie, Brussels, Belgium, a corporation of Belgium
No Drawing. Continuation-in-part of application Ser. No. 396,574, Sept. 15, 1964. This application May 25, 1967, Ser. No. 641,154
Claims priority, application France, Sept. 20, 1964, 948,109, Patent 1,378,939
Int. Cl. C08f *29/24*
U.S. Cl. 260—897 **6 Claims**

Resin compositions containing post-chlorinated polyvinyl chloride, polyvinyl chloride and chlorinated polyethylene and shaped articles constituted of these compositions.

3,470,270
PRODUCTION OF PHOSPHORUS ACID ESTERS
Ruben Wardi, 88 Hatishbi St., Haifa, Israel
No Drawing. Continuation-in-part of application Ser. No. 251,734, Jan. 16, 1963. This application Nov. 24, 1965, Ser. No. 509,612
Claims priority, application Israel, Jan. 28, 1962, 16,686
Int. Cl. C07f *9/08;* **C09k** *3/00*
U.S. Cl. 260—926 **7 Claims**

Preparation of acid esters of phosphorus by contacting white phosphorus and a hydrocarbon having one al-

coholic hydroxyl group, with oxygen supplied by a stream of air in a reaction medium of ethyl acetate or butyl acetate at a temperature of 20° C. to 55° C. The process produces a novel mixture of acid esters in which the average oxidation state of phosphorus is from 3.9 to 4.1. These esters can be used as emulsifiers, fuel additives, metal complexing agents, flotation agents, extreme pressure lubricant additives, and rust inhibitors.

3,470,271

PROCESS FOR PRODUCING PHOSPHORYL ISOCYANATES

Thomas K. Brotherton, John W. Lynn, and John Smith, Jr., Charleston, W. Va., assignors to Union Carbide Corporation, a corporation of New York

No Drawing. Filed Sept. 13, 1965, Ser. No. 487,086
Int. Cl. C07f *9/24;* **C09k** *3/28*
U.S. Cl. 260—968 **8 Claims**

A process for producing phosphoryl isocyanates which comprises contacting a phosphoryl amide of the formula

$$(RO)_x—\overset{\overset{O}{\uparrow}}{P}—(NH_2)_{3-x}$$

wherein x is an integer having a value of from 0 to 2 and wherein R is a substituted or unsubstituted aliphatic group containing up to 18 carbon atoms or a substituted or unsubstituted monocyclic or bicyclic aromatic group, R being free from groups other than primary amino groups which contain active hydrogen as determined by the Zerewitinoff method; with phosgene under conditions of temperature and pressure above the boiling point of phosgene. The phosphoryl isocyanates are reactive flameproofing agents.

3,470,272

PROCESS FOR MAKING PHOSPHOROTHIOATES

Thomas M. Melton, Richmond, Va., assignor to Mobil Oil Corporation, a corporation of New York

No Drawing. Filed Oct. 24, 1966, Ser. No. 588,731
Int. Cl. C07f *9/16;* **A01n** *9/36*
U.S. Cl. 260—978 **6 Claims**

Phosphorothioates such as malathion are prepared rapidly by reacting maleic anhydride with phosphorodithioic acids and alkanols.

3,470,273

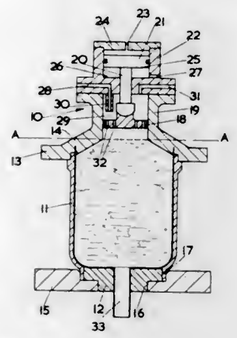
TOP CASTING UNDER PRESSURE OF ROCKET MOTOR PROPELLANTS

Stuart Gordon, Cleobury, Arthur Jack Mowate, Kidderminster, James Paul Morris, Claines, and Alwyn Cunliffe, Kidderminster, England, assignors to Imperial Metal Industries (Kynoch) Limited, Birmingham, England, a corporation of Great Britain

Filed May 17, 1967, Ser. No. 639,176
Claims priority, application Great Britain, June 10, 1966, 25,977/66
Int. Cl. C06b *21/02*
U.S. Cl. 264—3 **5 Claims**

Casting a solid propellant charge for a rocket motor is carried out by filling a mould cavity with casting powder, applying fluid pressure to a pressure plate to compress the casting powder, introducing a casting liquid into the compressed powder to displace air from interstices in the powder, maintaining pressure on the casting powder at a constant magnitude, and curing the propellant to a hard mass under the pressure applied to the propellant by the pressure plate.

Apparatus for carrying out the method includes a mold cavity, which may be a rocket casing, a pressure plate



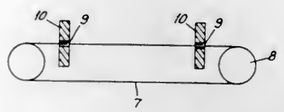
movable in the cavity, ducts through the pressure plate for the introduction of casting liquid, and a vent in the cavity wall for relieving air and excess liquid.

3,470,274

THERMOPLASTIC FILM PRODUCTION

Denis James Henry Sandiford, Welwyn, and John Alan Elliott Kail, Harpenden, England, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

Filed July 29, 1966, Ser. No. 568,958
Claims priority, application Great Britain, July 30, 1965, 32,703/65; Jan. 24, 1966, 3,101/66
Int. Cl. B29f *3/06*
U.S. Cl. 264—22 **8 Claims**



In a process for extruding thermoplastic film means are provided for maintaining substantially free from deposit a wire electrode which is used to deposit an electrostatic charge on to the upper surface of the film. In a preferred embodiment the wire electrode is continuously unwound from a first reel on to a second reel. The wire electrode is kept substantially free of deposit by means of either a scraper plate or a current of air which is passed between the film and the wire electrode to prevent deposits from forming.

3,470,275

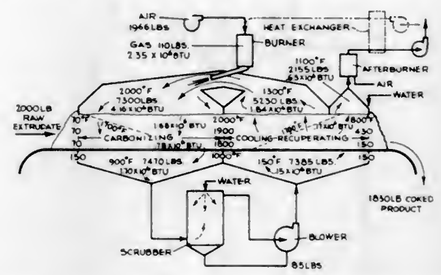
PROCESS FOR MAKING CARBON AGGLOMERATES

Thomas E. Ban, Cleveland Heights, Ohio, assignor to McDowell-Wellman Engineering Company, a corporation of Ohio

Filed May 29, 1967, Ser. No. 643,801
Int. Cl. C01b *31/00;* **C10b** *47/00*
U.S. Cl. 264—29 **5 Claims**

This invention is in a process for producing a carbon agglomerate from raw finely divided coke material which comprises carbonizing a burden of raw extrudate or compacted bodies of a mixture of such coke with a tarry

binder at elevated temperatures which reach into the range of from 1600° F. to 2100° F. by passing hot gases transversely to the direction of movement of the burden, and recycling the gases through the trevelling bed to cool the burden to an exit temperature of less than about



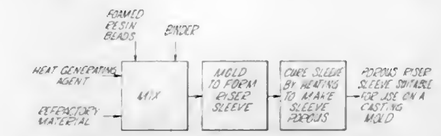
1000° F. and to reheat the gasses for repassage through fresh burden to carbonize or garphitize the coke and yield a hard, baked, product which is suitable for use in making numerous carbon products, for example, electrodes.

3,470,276

METHOD OF MANUFACTURING POROUS RISER INSULATING SLEEVE

Atsumi Ohno, Tokyo, Japan, assignor to Sekisui-Suponji-Kogyo Kabushiki Kaisha, Osaka-shi, Japan, a corporation of Japan

Filed Feb. 17, 1966, Ser. No. 528,071
Claims priority, application Japan, Feb. 20, 1965, 40/9,346
Int. Cl. B28b *21/02*
U.S. Cl. 264—44 **4 Claims**



A method of manufacturing an insulating porous riser sleeve comprising including beads of foamed resin in the composition for making an insulating riser sleeve, which sleeve is intended for maintaining the temperature of the molten metal by utilizing the heat generated by said riser sleeve upon its contact with the molten metal poured into the casting mold.

3,470,277

PROCESS OF MAKING CELLULAR PLASTIC PRODUCTS

Ralph S. Hagan and Francis J. Hartlage, Louisville, Ky., assignors to General Electric Company, a corporation of New York

Filed Aug. 24, 1966, Ser. No. 574,537
Int. Cl. B29d *27/00;* **B29h** *7/20*
U.S. Cl. 264—53 **6 Claims**



A cellular plastic product of relatively small cell size is produced by mechanically straining a sheet of plastic material saturated with a vaporizable blowing agent before heating the saturated sheet to vaporize the blowing agent.

3,470,278

METHOD OF PIGMENTING VINYL FILMS AND PREPARATIONS FOR PIGMENTING THE SAME

William H. A. Weber, Jr., Maplewood, N.J., assignor to Samuel M. Schwartz, Paterson, N.J.

No Drawing. Filed Apr. 25, 1967, Ser. No. 633,425
Int. Cl. B29d *27/00;* **C08f** *47/10*
U.S. Cl. 264—54 **6 Claims**

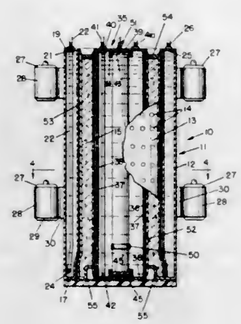
Vinyl films are colored without streaking, fading or clumping effects by the use of foam vinyl chloride plastic encapsulated pigments. The encapsulated pigments are distributed throughout the body of the film and each carries a layer of a foam or porous vinyl chloride polymer which has a lubricating material therein of the nature of castor oil. The foam or porous vinyl chloride polymer is treated by heat and pressure in such a manner as to release any loosely bound chlorine and render the remaining chlorine inactive as far as changing the coloration of the pigment is concerned.

3,470,279

PROCESS OF MOLDING AND COMPACTING HOLLOW CONCRETE PRODUCTS INCLUDING PULSATING WATER VIBRATOR MEANS

William Glen Abbott, Oxon Hill, Md., assignor of one-half to Martin Lewis, Jr., Landover, Md.

Original application Oct. 29, 1964, Ser. No. 407,482, now Patent No. 3,323,188, dated June 6, 1967. Divided and this application Apr. 14, 1967, Ser. No. 631,057
Int. Cl. B28b *1/10, 7/30;* **B29c** *1/12*
U.S. Cl. 264—72 **10 Claims**



A method of molding hollow concrete products such as tubular pipe wherein the concrete mix in the mold is subjected to vibrations from the exterior and interior of the mold while simultaneously the concrete mix is subjected to pulsating fluid under pressure.

3,470,280

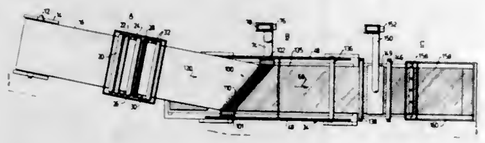
METHOD FOR THE PRODUCTION OF DIAGONALLY PLEATED PAPER MATERIAL

Carl Georg Munters, 3 Danderydsvagen, Stocksund, Sweden, and George W. Meek, P.O. Box 1909, Fort Myers, Fla. 33902

Filed Oct. 31, 1966, Ser. No. 590,919
Claims priority, application Sweden, July 22, 1966, 10,065/66
Int. Cl. B31b *1/20;* **B31f** *1/36, 1/20*
U.S. Cl. 264—90 **5 Claims**

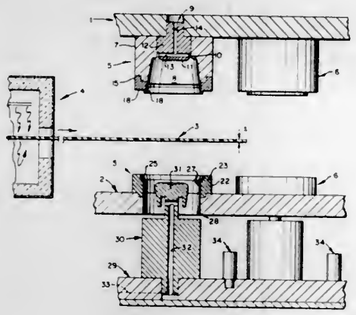
Method for diagonally pleating a paper or like material in which a web of deformable material is delivered to a

station where the web is impregnated with a liquid solution and is then fed into a perforated mold which moves in a closed path and which has grooves extending diag-



onally across it, the web being introduced angularly to the mold to compensate for the pull exerted thereon and being subjected to heat while being engaged in the mold grooves.

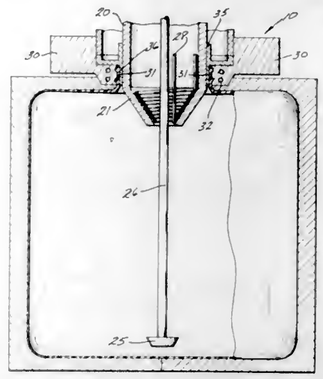
3,470,281
METHOD OF FORMING A FLANGED CONTAINER
Edward Rolland Knowles, Cranford, N.J., assignor to Sterling Extruder Corporation, Linden, N.J., a corporation of New Jersey
Filed Sept. 14, 1966, Ser. No. 579,281
Int. Cl. B29c *17/04*
U.S. Cl. 264—94 **12 Claims**



The method of forming a cup-shaped, flange container from moldable material including the steps of forming a thickened flange portion having a thickness greater than the thickness of the moldable material, and forming the portion of the moldable material disposed inwardly of the flange into a cup-shaped configuration without disturbing the flange.

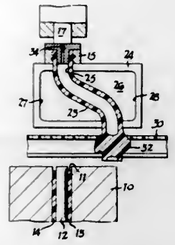
3,470,282
METHOD OF MAKING A BLOWN ARTICLE
Anthony James Scalora, Toledo, Ohio, assignor to Owens-Illinois, Inc., a corporation of Ohio
Continuation-in-part of application Ser. No. 275,735, Apr. 25, 1963. This application Aug. 11, 1967, Ser. No. 659,968
Int. Cl. B29d *23/03;* **B29c** *17/04*
U.S. Cl. 264—97 **4 Claims**

This invention comprises the preparation of a biaxially oriented, thermoplastic, container-shaped article by injection molding a homogeneous melt to form a hollow body or parison, cooling the body to a temperature range wherein the thermoplastic can be biaxially oriented by stretching and inflating, said range being below the homogeneous melt temperature, and then stretching the cooled body along its longitudinal axis and inflating it radially with respect to such longitudinal axis so as to



obtain uniform biaxial orentation of the thermoplastic body. The preferred thermoplastic is polyvinyl chloride.

3,470,283
METHOD FOR MAKING HOLLOW PLASTIC CONTAINERS WITH OFFSET FINISH
Wilbur A. Schaich, Maumee, Ohio, assignor to Owens-Illinois, Inc., a corporation of Ohio
Original application Dec. 16, 1964, Ser. No. 418,601, now Patent No. 3,319,291, dated May 16, 1967. Divided and this application Mar. 6, 1967, Ser. No. 620,986
Int. Cl. B29c *17/04*
U.S. Cl. 264—97 **7 Claims**

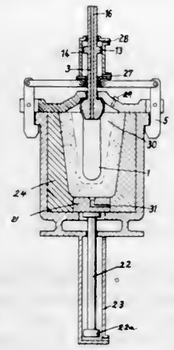


A method of producing a hollow plastic container having a body and an offset finish from a tubular parison which is extruded from an extrusion orifice. The end disposed at the extrusion orifice is severed and displaced relative to the orifice to position the parison diagonally of the blow mold cavity prior to closing of the blow mold therearound.

3,470,284
DEVICE FOR PRODUCING REFRACTORY BODIES AND A METHOD OF PRODUCING SUCH BODIES
Rolf Hartmann, Hofheim, Taunus, Germany, assignor to Aug. Gundlach G.m.b.H., Grossalmerode, Germany, a company of Germany
Filed Mar. 16, 1966. Ser. No. 534,755
Claims priority, application Germany, May 14, 1965, G 43,594
Int. Cl. B28b *7/32;* **B29c** *1/12*
U.S. Cl. 264—119 **12 Claims**

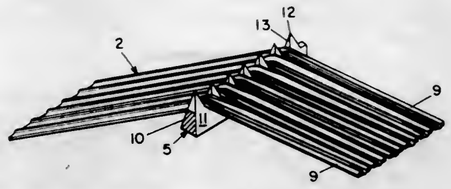
A method and device for producing hollow refractory bodies by first inserting into a mold having a cavity the walls of which define the outer configuration of a body,

a rigid pre-form core so that a space is left surrounding the core. This space is packed with a granulated moldable material whereupon the core is withdrawn. An expand-



able finishing core is then inserted into the space and expanded, by application of pressure, to a shape which causes compaction of the material in the space to a shape representing the desired final form of the hollow body.

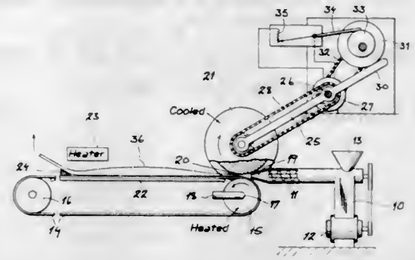
3,470,285
MAKING SYNTHETIC FILAMENTS FROM FIBRILLATED FILM
Charles W. Kim, Wilmington, and Stanley D. Samiuk, Newark, Del., assignors to Hercules Incorporated, Wilmington, Del., a corporation of Delaware
Filed Aug. 4, 1967, Ser. No. 658,448
Int. Cl. D02g *1/10*
U.S. Cl. 264—147 **2 Claims**



This invention relates to a process for making a yarn from a striated ribbon of thermoplastic material that is linearly oriented in the direction lengthwise of the striations by passing the ribbon over a serrated knife edge having the teeth thereof corresponding in gauge to that of the striations whereby the individual teeth penetrate the ribbon and split the same lengthwise along the webs of the striations as the ribbon is moved relatively to the knife edge, the ribbon being under tension and at an acute angle relative to the edge whereby a knife edge crimp is imparted thereto simultaneously with splitting.

3,470,286
MANUFACTURE OF ELONGATED RESINOUS STRIPS
Christine Weber, Leopoldstrasse 38, Innsbruck, Austria
Filed Aug. 8, 1966, Ser. No. 571,036
Claims priority, application Austria, Aug. 9, 1965, A 7,332/65
Int. Cl. D01d *5/20;* **B29d** *7/08*
U.S. Cl. 264—167 **6 Claims**

An elongated body of varying cross-section, such as a ski runner, is made by continuous extrusion of a mass of thermoplastic material into the space between a heated conveyor band and a co-operating cooled roller synchronized therewith whose radial spacing from the band is periodically altered or which is formed with a peripheral groove of nonuniform depth and/or width to define with

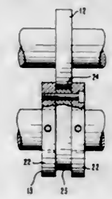


the band a gap of gradually changing profile; several plastic strips so produced may be stacked to form the desired body. Variation of the roller and band speed in dependence upon the profile may help maintain a substantially constant extrusion rate.

3,470,287
PROCESS FOR THE MANUFACTURE OF RUBBER ELASTIC THREADS OF SULFOCHLORINATED POLYOLEFINS
Franz Landauer, Frankfurt am Main, Claus Beermann, Neu-Isenburg, and Ernst Horoldt, Kelkheim, Taunus, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany, a corporation of Germany
No Drawing. Filed May 16. 1966, Ser. No. 550,166
Claims priority, application Germany, May 18, 1965, F 46,075
Int. Cl. D01d *7/04, 5/06;* **D01f** *7/00*
U.S. Cl. 264—183 **6 Claims**

In the process for manufacturing rubber-elastic threads of sulfochlorinated polyolefins the improvement comprising shaping a diamine-free solution of sulfochlorinated polyethylene, sulfochlorinated polypropylene or a sulfochlorinated olefin copolymer to form threads in the presence of o-, m-, and p-phenylene diamine, 4,4'-diaminobenzophenone, xylylene diamine, diamino decane, 2,2'-diamino-diethyl ether, N,N'-dimethyl-ethylene diamine, ethylene diamine, 1,3-propylene-diamine or 1,6-diaminohexane.

3,470,288
ROLL ORIENTING PROCESS
Gordon B. Dunnington and Reuben T. Fields, Wilmington, Del., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Continuation-in-part of application Ser. No. 473,543, June 4, 1965, which is a continuation-in-part of application Ser. No. 195,468, May 17, 1962. This application Oct. 2, 1967, Ser. No. 672,155
Int. Cl. D01f *7/06;* **B29d** *7/22*
U.S. Cl. 264—210 **11 Claims**

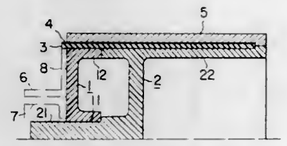


Roll orienting thermoplastics such as polyamides and amorphous polyesters to produce high strength strapping.

3,470,289
METHOD OF MANUFACTURING A CORELESS ROTOR

Kenichiro Katsuki, Hiroshi Kawakami, and Juichi Tatsumi, Musashi-machi, Japan, assignors to Societe d'Electronique et d'Automatisme, Courbevoie, Hauts-de-Seine, France

Filed Apr. 9, 1965, Ser. No. 446,954
Claims priority, application Japan, Apr. 10, 1964, 39/20,196
Int. Cl. B29d *3/00;* **B29c** *1/12*
U.S. Cl. 264—229 **5 Claims**

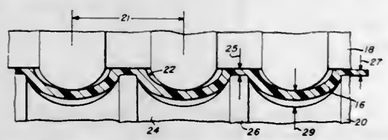


An annular cup-shaped coreless rotor for a dynamo electric machine supported by an annular carrier at only one end thereof is formed by first placing the windings on the carrier and also on a concentrically arranged inner mold of the same diameter as the carrier. The winding is then taped, for example with glass fiber tape of high tensile strength, and an outer mold is placed around the carrier, the winding and the inner mold. The rotor is then subjected to a vacuum impregnation step with a thermosetting resin such as an epoxy resin. The inner mold is formed of a material having a higher linear coefficient of thermal expansion than that of the winding conductors or of the outer mold so that when heated to set the resin, the winding is radially expanded placing the tape in tension.

3,470,290
METHOD OF MAKING PLASTIC FILE FOLDER

Harry Poris, New York, N.Y., and George S. Hendrie, Grosse Pointe Farms, Mich., assignors to Macoid Industries, Inc., Detroit, Mich., a corporation of Michigan

Original application Sept. 15, 1965, Ser. No. 487,564. Divided and this application Feb. 28, 1967, Ser. No. 619,397
Int. Cl. B29c *17/02;* **B29d** *7/24*
U.S. Cl. 264—291 **2 Claims**



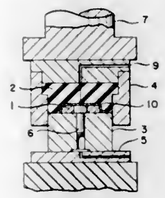
A method of making a file folder wherein at least one linear portion of a thin gauge sheet of non-oriented plastic material is longitudinally compressed and simultaneously transversely tensioned, to form a reduced-thickness longitudinal fold line. The combination of longitudinal compression and transverse tension biaxially orients the crease line while eliminating the possibility of local thickening of the sheet on either side of the crease line. The sheet is folded along the crease line to provide front and rear walls for a file holder.

3,470,291
FORMING THERMOPLASTIC ARTICLES

Herbert G. Johnson, Havertown, Pa., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware

Filed June 30, 1966, Ser. No. 561,871
Int. Cl. B29b *7/24*
U.S. Cl. 264—292 **12 Claims**

A method is disclosed for the shaping of plastic sheet into shaped articles of moderate draw depth. The method is suitable for large scale production of thick-walled thermoplastic items. It consists of forming a thermoplastic sheet at a temperature substantially below that at which it can be thermoformed, by forcing a thick body of elastomer into contact with one surface of the



sheet, opposite a non-yielding die. The sheet is deformed under tensile stress as the elastomer tends to move with the sheet. The sheet is held in contact with the die until stress is substantially relieved. The formed articles conform substantially to the shape of the die, exhibitiing little or no shrinkage or spring-back.

ERRATUM

For Class 264—310 see:
Patent No. 3,470,199

3,470,292
FILM-FORMING COMPOSITION CONTAINING A PHOSPHATIDE AND A SILOXANE

Frank William Marschner, East Orange, N.J., assignor to Colgate-Palmolive Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed June 1, 1965, Ser. No. 460,491
Int. Cl. A61l *23/00;* **A61k** *9/00*
U.S. Cl. 424—47 **7 Claims**

A film forming protective aerosol composition for topical application containing a phosphatide and a siloxane.

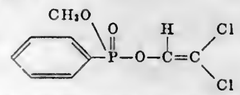
3,470,293
PESTICIDAL PREPARATIONS

Max Geiger, Riehen, Switzerland, assignor to Ciba Limited, Basel, Switzerland, a company of Switzerland

No Drawing. Continuation of application Ser. No. 388,933, Aug. 11, 1964. This application June 12, 1967, Ser. No. 645,547
Claims priority, application Switzerland, Aug. 14, 1963, 10,024/63
Int. Cl. A01n *9/36, 17/14*
U.S. Cl. 424—84 **3 Claims**

1. A scattering stomach bait for combating harmful insects including houseflies, substantially lowering the vapour pressure of volatile organic phosphorus insecticides, consisting essentially of

(a) an insecticidally effective amount of a volatile organic phosphorus insecticide selected from the group consisting of dimethyl-dichlorovinyl phosphate, dimethyl-dichlorovinyl phosphate or diethyl-dichlorovinyl phosphate, dipropyl- or dibutyl-dichlorovinyl phosphates, diamyl-dichlorovinyl phosphates, dimethyl- or diethyl-dibromovinyl phosphate, methyl-ethyl dichlorovinyl phosphate, and the compound of the formula



(b) 1 to 10% by weight of a finely dispersed silica gel having an inner surface greater than 50 m.²/gram and a particle size of 40 microns, or less,

(c) and the remainder being sugar, sucrose octaacetate, a red dyestuff which attracts flies, and white petroleum jelly in a quantity sufficient to adhere said components.

3,470,294
VACCINE FOR IMMUNIZATION OF DOGS AND FOXES AGAINST DISTEMPER, HEPATITIS CONTAGIOSA AND LEPTOSPIROSIS AND PROCESS FOR PREPARING IT

Kurt Drager and Othmar Ackermann, Marburg (Lahn), Germany, assignors to Behringwerke Aktiengesellschaft, Marburg (Lahn), Germany, a corporation of Germany

No Drawing. Continuation-in-part of applications Ser. No. 294,173, July 10, 1963, and Ser. No. 534,319, Mar. 15, 1966. This application June 22, 1967, Ser. No. 647,923
Claims priority, application Germany, June 21, 1961, B 62,972; July 12, 1962, B 68,006
Int. Cl. A61k *23/00;* **C12k** *5/00, 7/00*
U.S. Cl. 424—89 **10 Claims**

A divalent vaccine comprising (1) a live apathogenic distemper virus adapted by passage through tissue cultures and (2) an inactivated hepatitis virus. A trivalent vaccine additionally containing (3) inactivated cultures of *Leptospira canicola* and *Leptospira icterohaemorrhagiae* and methods for making these vaccines.

3,470,295
COMPOSITIONS AND METHODS FOR TREATING POSTTRAUMATIC SHOCK, PAIN AND HEMORRHAGE

Emanuel Revici, 1111 Park Ave., New York, N.Y. 10028

No Drawing. Filed Jan. 12, 1965, Ser. No. 425,075
Int. Cl. A61k *27/14*
U.S. Cl. 424—180 **4 Claims**

A therapeutic composition which comprises (a) n-butanol and (b) a member of the group consisting of maltose, inositol, and sorbitol in the relative proportions of from 1:5 to 100:1 parts by weight and the method of treating humans and animals for posttraumatic shock, pain, and hemorrhage with said composition.

3,470,296
PESTICIDAL METHODS AND A COMPOSITION COMPRISING ARYLPHOSPHATES AND ARYLTHIOPHOSPHATES

Theodore Largman, Morristown, and Peter E. Newallis, Morris Plains, N.J., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed Dec. 16, 1966, Ser. No. 602,119
Int. Cl. A01n *9/36;* **C07f** *9/12*
U.S. Cl. 424—217 **8 Claims**

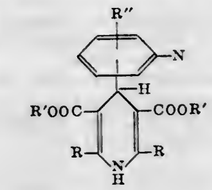
Organic esters of phosphoric acid and thiophosphoric acid, useful as insecticides. Two of the alcoholic moieties of the ester are derived from lower aliphatic alcohols and the third alcoholic moiety is derived from a substituted phenol. Such compounds are prepared by reacting a dialkyl chlorophosphate ester or dialkyl chlorothiophosphate ester with a substituted phenol.

3,470,297
CORONARY DILATING COMPOSITIONS AND THEIR ADMINISTRATION

Friedrich Bossert, Wuppertal-Elberfeld, and Wulf Vater, Opladen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Filed Nov. 1, 1966, Ser. No. 591,082
Claims priority, application Germany, Nov. 10, 1965, F 47,633
Int. Cl. A61k *27/00;* **C07d** *57/00*
U.S. Cl. 424—263 **13 Claims**

Coronary insufficiency and angina pectoris can be treated by using a composition which consists essentially of from 5 to 50 mg. of a dihydrodipyridyl derivative or a non-toxic pharmaceutically acceptable salt thereof, said dihydrodipyridyl derivative having the formula:



wherein:

R is hydrogen or alkyl of 1 to 3 carbon atoms,
R′ is alkyl of 1 to 4 carbon atoms, and
R″ is hydrogen, lower alkyl or lower alkoxy,

in combination with a pharmaceutically acceptable non-toxic inert carrier.

3,470,298
TOPICAL ANTI-INFLAMMATORY COMPOSITION CONTAINING (INDAZOLE-3-YL)-OXYALKANOIC ACIDS

Giuseppe Palazzo, Rome, Italy, assignor to Aziende Chimiche Riunite Agelini, Francesco A.C.R.A.F. S.p.A., Rome, Italy, a corporation of Italy

No Drawing. Application May 24, 1968, Ser. No. 731,723, which is a continuation-in-part of application Ser. No. 606,594, Jan. 3, 1967. Divided and this application Jan. 29, 1969, Ser. No. 795,051
Int. Cl. A61k *23/00, 27/00*
U.S. Cl. 424—273 **6 Claims**

Cosmetic compositions contain as anti-inflammatory agents (indazole-3-yl)-oxyalkanoic acids and non-toxic salts thereof.

3,470,299
2-METHYL-COUMARAN-7YL-N-METHYL-CARBAMATE

Rudolf Heiss, Cologne-Stammheim, Ernst Böcker, Leverkusen, Wolfgang Behrenz, Cologne-Stammheim, and Günter Unterstenhöfer, Opladen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a German corporation

No Drawing. Filed May 11, 1964, Ser. No. 366,650
Claims priority, application Germany, June 28, 1963, F 40,104
Int. Cl. C07d *5/36;* **A01n** *9/20, 9/28*
U.S. Cl. 424—285 **3 Claims**

Coumaranyl-N-methyl-carbamic acid esters, preparation thereof via a 7-hydroxy-coumarane precursor and the utility thereof as insecticidal agents.

3,470,300
COMPOSITIONS AND METHODS FOR RELAXING SKELETAL MUSCLES WITH O-SUBSTITUTED BENZOCYCLOBUTENYL KETONE OXIMES

Joseph A. Skorcz, Milwaukee, Wis., assignor to Colgate-Palmolive Company, New York, N.Y., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 497,498, Oct. 18, 1965. This application Oct. 9, 1967, Ser. No. 673,960
Int. Cl. A61k *27/00;* **C07c** *131/02*
U.S. Cl. 424—327 **8 Claims**

The compounds are O-substituted benzocyclobutenyl ketone oximes useful as skeletal muscle relaxants.

3,470,301

ANTIDEPRESSANT COMPOSITIONS AND METHODS EMPLOYING α-AMINODESOXYBENZOIN DERIVATIVES

David John Gilman, Macclesfield, England, assignor to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

No Drawing. Filed July 20, 1967, Ser. No. 654,686
Claims priority, application Great Britain, Aug. 4, 1966, 34,977/66; Oct. 24, 1966, 47,605/66
Int. Cl. A61k 27/00
U.S. Cl. 424—331 5 Claims

A method of producing an antidepressant effect by the administration of α-aminodesoxybenzoin derivatives, pharmaceutical compositions containing the said derivatives and methods for the manufacture of novel α-aminodesoxybenzoin derivatives.

3,470,302

PROCESS OF FUMIGATION WITH FLUOROCYCLOALKENE FLUOROALKYL ETHERS

Robert E. A. Dear and Everett E. Gilbert, Morristown, N.J., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed Oct. 12, 1967, Ser. No. 674,768
Int. Cl. A01n 9/24
U.S. Cl. 424—339 7 Claims

Process for combating noxious insects by fumigation which comprises subjecting said insects to the action of vapors of fluorocycloalkene fluoroalkyl monoethers.

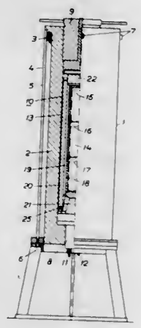
ELECTRICAL

3,470,303

VERTICAL TUBE ELECTRIC FURNACE

Hans Torbujörn Lundström, Robertsfors, Sweden, assignor to Allmanna Svenska Elektriska Aktiebolaget, Vasteras, Sweden, a Swedish corporation

Filed Oct. 9, 1967, Ser. No. 673,623
Int. Cl. H05b 3/62
U.S. Cl. 13—20 7 Claims



A cylindrical oblong furnace arranged in a pressure chamber for isostatic compression with its longitudinal axis substantially vertical. To obtain uniform temperature in the furnace, a heat insulating sheath is provided which comprises at least one cell consisting of a space enclosed in a casing of material with low gas permeability. The said space communicates with its environment through at least one opening situated in an area which is rather short in the vertical direction in comparison with the height of the cell in the same direction.

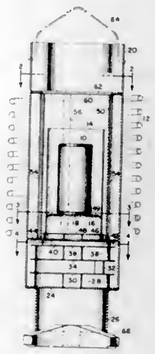
3,470,304

INDUCTION FURNACE WITH PERFORATED TUNGSTEN FOIL SHIELDING

Henry J. Geringer, Brunswick, Ohio, assignor to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration

Filed Feb. 16, 1967, Ser. No. 617,770
Int. Cl. H05b 5/16
U.S. Cl. 13—26 6 Claims

An induction heater having tungsten foil shielding between its coil and the specimen which is to be heated. The foil is perforated to minimize susception, and it is loosely wound into a tubular configuration about the susceptor or specimen.

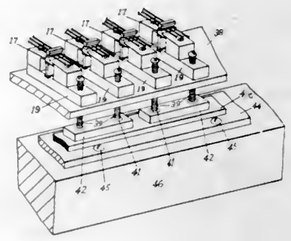


3,470,305

INTERNOTE COUPLING MEANS FOR AN ELECTROPIANO

Daniel W. Martin and James F. Ziegler, Cincinnati, Ohio, assignors to D. H. Baldwin Company, Cincinnati, Ohio, a corporation of Ohio

Filed May 27, 1966, Ser. No. 553,335
Int. Cl. G01h 3/00
U.S. Cl. 84—1.16 9 Claims



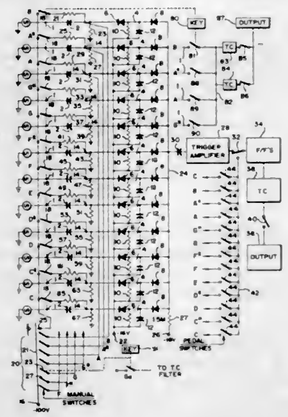
An electrical musical instrument, such as an electropiano, wherein the mechano-electric transducers for a series of strings are mechanically interconnected, as by means of a coupling plate, so as to provide sympathetic vibration between strings tuned for different notes of the scale.

3,470,306

BASS REGISTER KEYING SYSTEM

George H. Hadden, Islington, Ontario, Canada, assignor to D. H. Baldwin Company, Cincinnati, Ohio, a corporation of Ohio

Filed July 1, 1965, Ser. No. 468,767
Int. Cl. G10h 1/06
U.S. Cl. 84—1.19 12 Claims



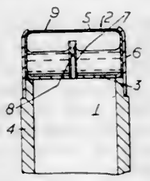
A note an octave or two octaves below the lowest note of a chord played on the accompaniment manual of an organ is produced by a frequency-dividing flip-flop triggered by a signal selected from the chord notes by use of a preferential type of mechanical switch. This switch is comprised of a series of movable contacts parallel to, and actuated respectively by, playing keys in the lower section of the accompaniment manual. Thereby, when a chord is played, a note corresponding only with the lowest or root note of the group of keys actuated is sounded. The pitch range of such a switch is only about seven semi-tones, so if, as is preferable in a root-tone system, about an octave and a half of semi-tones is to be included, some means must be provided for extending the range to about 19 semi-tones. The preferred extension, in accordance with the invention, is to parallel the movable contacts with ordinary make-break key switches actuating diode gates preferentially biased by scaling voltage dividers. Means are provided to have one preferential system override the other, so that a double preference is exercised, operative simultaneously over the entire 19 semi-tones.

3,470,307

CAPACITORS

Wolfgang Mosebach, William E. R. Evans, and Richard S. Stevens, South Devon, England, assignors to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware

Filed Aug. 16, 1967, Ser. No. 660,956
Claims priority, application Great Britain, Aug. 26, 1966, 38,410/66
Int. Cl. H02g 15/26
U.S. Cl. 174—12 6 Claims



This invention is for a housing for an oil filled capacitor which has a working chamber containing the electrical component, an air chamber sealed off from the working chamber but communicating with it through a tube having one or more orifices at the centroid of the air chamber; oil fills the housing to a level covering the orifices for all temperatures within the operating range at any attitude of the capacitor.

3,470,308

HIGH VOLTAGE INSULATING COLUMN WITH POTENTIAL DISTRIBUTION RINGS

Jean M. Huc, Bagneres de Bigorre, France, assignor to Compagnie Generale d'Electro-Ceramique, Paris, France

Filed May 10, 1967, Ser. No. 637,521
Claims priority, application France, May 16, 1966, 61,816
Int. Cl. H01b 17/48
U.S. Cl. 174—141 9 Claims



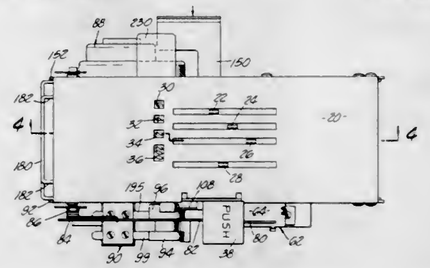
A high voltage insulating column having means to protect against surge voltages, said means comprising one or more intermediate potential distribution rings of lesser diameter below a large diameter potential distribution ring carried by the column head element.

3,470,309

BILLING AND DECODING BOX

John Nyberg, North Hollywood, Calif., assignor to International Telemeter Corporation, Los Angeles, Calif., a corporation of California

Filed Apr. 28, 1967, Ser. No. 634,674
Int. Cl. H04n 1/44
U.S. Cl. 178—5.1 16 Claims

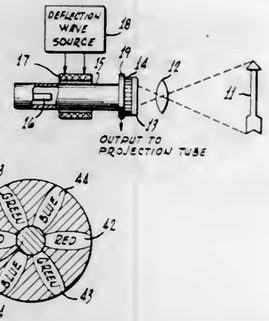


A billing and decoding box for connection to a television receiver in a subscription television system to decode scrambled television signals and bill the subscriber. Code levers are set to the code which unscrambles a particular program, one character of the code being the price for viewing that program, and a button is pushed to deliver unscrambled television signals to the television set. The code and price are printed on a strip of paper which is later ejected from the box, and which serves as a bill which is paid by the subscriber.

3,470,310
COLOR IMAGE DISPLAY SYSTEM UTILIZING A LIGHT VALVE

Fred Ezra Shashoua, Cherry Hill, N.J., assignor to RCA Corporation, a corporation of Delaware

Filed May 23, 1966, Ser. No. 552,070
Int. Cl. H04n 1/46, 9/02
U.S. Cl. 178—5.2 9 Claims

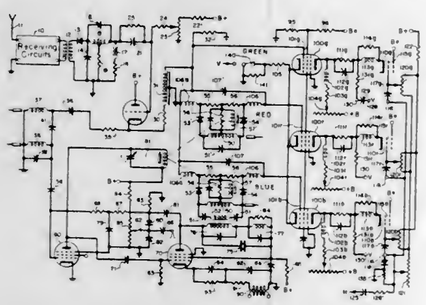


A light valve including a birefringent crystal scanned by an electron beam which is modulated by spatially separated component color video signals is disposed in an optical path between first and second light polarizers. A source directs white light through the first polarizer. The plane of polarization of such light is changed to a degree corresponding to the intensity of the scanning electron beam and is emitted from the second polarizer as black and white images of the component colors. These images are passed through a color selector in the optical path such that a composite color image may be projected onto a viewing screen.

3,470,311
CIRCUIT FOR ADDING THE LUMINANCE AND COLOR DIFFERENCE SIGNALS IN A SIGNAL PROCESSING APPARATUS FOR A COLOR TELEVISION RECEIVER

George W. Fyler, Lombard, Ill., assignor to Zenith Radio Corporation, Chicago, Ill., a corporation of Delaware

Filed Oct. 31, 1966, Ser. No. 590,793
Int. Cl. H04n 5/38, 5/44
U.S. Cl. 178—5.4 10 Claims

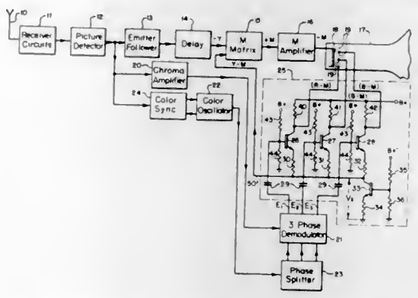


This specification discloses a color television receiver apparatus which combines the luminance and demodulated color-difference signals external to the display tube to provide to the tube control signals which are representative of only the primary color components. The luminance signal is applied across a first load resistor and the demodulated color difference signal is applied across another resistor A.C.-connected in series with the first resistor to produce the primary color signal.

3,470,312
COLOR TELEVISION RECEIVER UTILIZING A MODIFIED LUMINANCE SIGNAL

John L. Rennick, Elmwood Park, Ill., assignor to Zenith Radio Corporation, Chicago, Ill., a corporation of Delaware

Filed Nov. 7, 1966, Ser. No. 592,566
Int. Cl. H04n 5/38, 5/44
U.S. Cl. 178—5.4 11 Claims

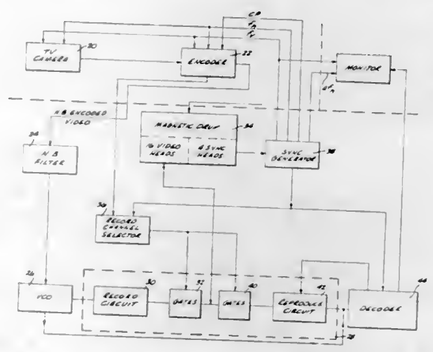


This specification discloses a color television receiver which utilizes nonstandard color-difference signals and a modified luminance signal to display the color image in order to equalize the demand on the syncronous detectors. The color-difference signals (R–M, G–M, and B–M) are obtained by synchronously detecting the chroma signal with respect to a nonstandard reference phase. The modified luminance signal (M) is derived from the NTSC luminance signal (Y) in accordance with the color-difference signals.

3,470,313
NARROW BANDWIDTH VIDEO

Walter H. Bockwoldt, Woodland Hills, Calif., assignor, by mesne assignments, to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration

Filed May 13, 1966, Ser. No. 554,277
Int. Cl. H04n 7/12
U.S. Cl. 178—6 13 Claims

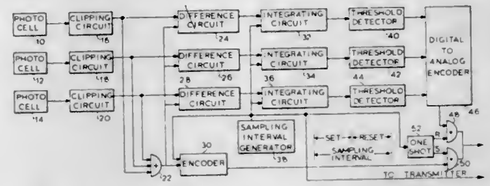


This is a television system in which the video signal is sampled for recording on separate tracks of a magnetic storage means to form a plurality of low resolution spatially interrelated video frames. When the tracks of video information are played back in time-base synchronism, the video information contained therein is interlaced horizontally and vertically to provide high resolution video information. In addition, the number of tracks of low resolution video information played back at any instant of time can be selectively controlled and the background brightness level can be controlled.

3,470,314
LINE ENCODING FACSIMILE BANDWIDTH REDUCTION SYSTEM

Albert Macovski, Palo Alto, Calif., assignor to Southern Pacific Company, San Francisco, Calif., a corporation of Delaware

Filed Nov. 16, 1966, Ser. No. 594,756
Int. Cl. H04n 7/12
U.S. Cl. 178—6 5 Claims



1. Apparatus for encoding the two-level video signals simultaneously derived by scanning a plurality of lines of video signals comprising:

means for establishing a picture sampling interval;

OR gate means to which the video signals derived by scanning said plurality of lines are applied for producing an output corresponding to one of said two-level signals as long as said one of said two-level signals is present at the input;

encoding means to which the output of said OR gate is applied for producing an encoding signal representative thereof over a picture sampling interval;

means for comparing the output of said OR gate with the two-level video signals derived by scanning each line of video signals for producing at the end of each picture sampling interval for each line, a signal indicative of the similarity of the line video signal to the OR gate output signal over a preponderance of a picture sampling interval;

digital-to-analog means to which said plurality of comparing means output is applied for producing an analog signal representative of the output of said comparing means;

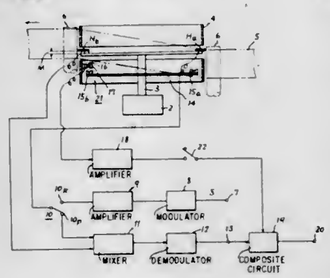
means for associating said encoded signal with said analog signal; and

means for utilizing said analog signal.

3,470,315
SKIP FIELD RECORDING AND REPRODUCING SYSTEM WITH MODIFIED VERTICAL SYNC SIGNAL

Nobutoshi Kihara, Tokyo, Japan, assignor to Sony Corporation, Tokyo, Japan, a corporation of Japan

Continuation-in-part of application Ser. No. 475,070, July 27, 1965. This application Nov. 18, 1965, Ser. No. 508,542
Int. Cl. H04n 5/76
U.S. Cl. 178—6.6 6 Claims

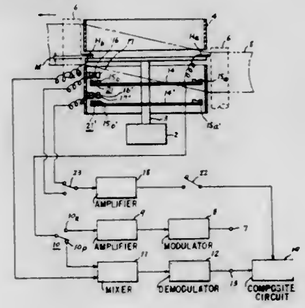


In a system for recording and reproducing video signals in which only specified fields of a continuous train of fields are recorded on magnetic tape and during reproduction each of the tracks corresponding to a field is reproduced a plurality of times, a vertical synchronizing pulse is combined with the reproduced signals during reproduction of regular motion pictures and said vertical synchronizing pulse is omitted during reproduction of a still picture signal.

3,470,316
SKIP FIELD RECORDING AND REPRODUCING SYSTEM WITH VERTICAL SYNC SIGNAL GENERATION

Nobutoshi Kihara, Tokyo, Japan, assignor to Sony Corporation, Tokyo, Japan, a corporation of Japan

Continuation-in-part of application Ser. No. 475,070, July 27, 1965. This application Nov. 18, 1965, Ser. No. 508,541
Int. Cl. H04n 5/76
U.S. Cl. 178—6.6 7 Claims

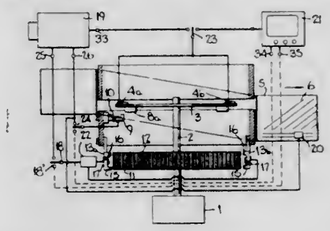


In a system for recording and reproducing video signals in which only specified fields of a continuous train of fields are recorded on magnetic tape and during reproduction each of the tracks corresponding to a field is reproduced a plurality of times, a vertical synchronizing pulse is combined with the output video signals during reproduction of regular motion pictures and a different vertical synchronizing pulse is combined with the output signals during reproduction of a still picture signal.

3,470,317
HORIZONTAL SYNC PULSE GENERATION FOR VIDEO RECORDING EMPLOYING MAGNETIC GEAR WHEEL

Nobutoshi Kihara, Tokyo, Japan, assignor to Sony Corporation, Tokyo, Japan, a corporation of Japan

Filed Jan. 21, 1966, Ser. No. 522,310
Claims priority, application Japan, Jan. 23, 1965, 40/3,549, 40/3,550
Int. Cl. H04n 5/76
U.S. Cl. 178—6.6 5 Claims

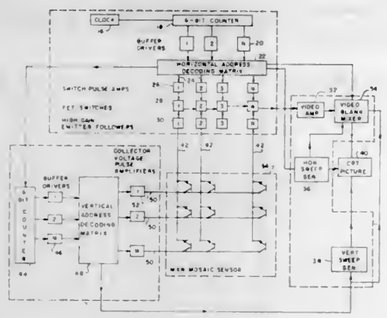


In an apparatus for recording and reproducing video signals having rotatable head means for scanning a magnetic medium; horizontal synchronizing pulses are produced by a gear rotatable with the head means and having a predetermined number of magnetic spaced teeth which move past a pickup head means.

3,470,318
SOLID STATE TELEVISION CAMERA SYSTEM

James E. Webb, Administrator of the National Aeronautics and Space Administration, with respect to an invention of Marvin A. Schuster, Baltimore, and James C. Broderick, Ellicott City, Md., Carl T. Huggins, Huntsville, Ala., and William F. List, Lenthicum, Gene Strull, Pikesville, and David E. Callahan, Baltimore, Md.

Filed May 11, 1966, Ser. No. 550,088
Int. Cl. H04n *3/16*
U.S. Cl. 178—7.1 16 Claims

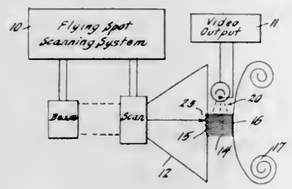


A solid state television camera system consisting of a monolithic semiconductor mosaic sensor and a molecular digital readout system. The readout circuit includes a timing and switching circuit for sequentially reading the output of each of the transistors in the mosaic and an output circuit for visually displaying the output of the mosaic sensor. The sensor is a M x N matrix of phototransistors interconnected by M common collector regions (rows) and N rows of connected emitters, so that any combination of one collector row and one emitter row will provide unique access to one phototransistor.

3,470,319
FLYING SPOT SCANNER EMPLOYING FIBER OPTICS

Benjamin L. McGlamery, San Diego, Calif., assignor to Stromberg-Carlson Corporation, Rochester, N.Y., a corporation of Delaware

Filed June 7, 1966, Ser. No. 555,845
Int. Cl. H04n *3/16*
U.S. Cl. 178—7.1 3 Claims

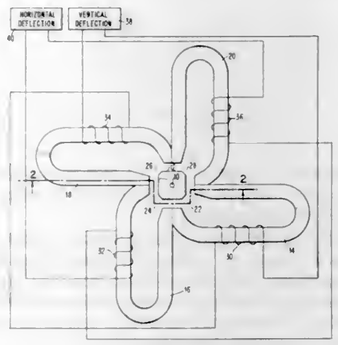


A flying spot scanner utilizes an electronic cathode ray tube with optical fibers placed generally longitudinally with the axis of the beam to be lighted by the moving spot and intercepting at the opposite end an image which reflects light to a variable extent. The reflected light in the bundle of fibers is then measured to obtain a video signal by sensing the light escaping from the fibers.

3,470,320
FIBRE DEFLECTION MEANS

Charles A. Pike, Ossining, and Norman J. Woodland, Chappaqua, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed Sept. 13, 1962, Ser. No. 223,337
Int. Cl. H04n *3/16*
U.S. Cl. 178—7.6 6 Claims

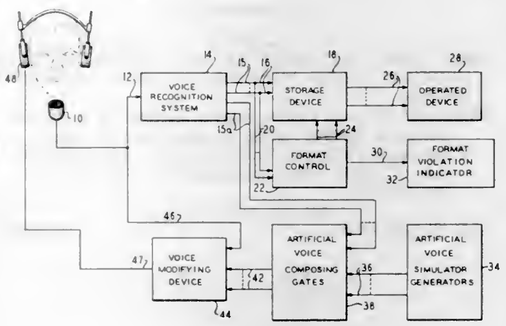


The invention is a scanning device comprising a flexible fiber optic anchored at one end and covered by a metal shield. The fiber is situated in the center of a variable force field so that the fiber may be positioned by the interaction of the force field with the metal shield in accordance with a scanning pattern.

3,470,321
SIGNAL TRANSLATING APPARATUS

William C. Dersch, Jr., 8 Westerly Ave., Madison, N.J. 07940

Filed Nov. 22, 1965, Ser. No. 508,973
Int. Cl. H04m *1/24*
U.S. Cl. 179—1 14 Claims

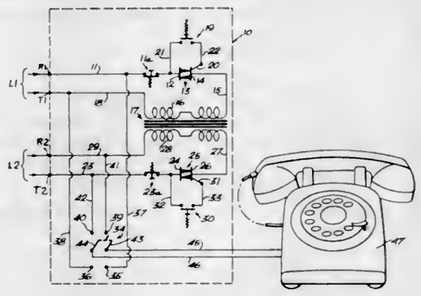


A system is disclosed which includes a voice recognition section responsive to voice generated electric signals to provide output signals indicative of the manner in which the voice signals have been interpreted. These output signals can then be utilized for the input of data to a data processing apparatus. As the word identification signals are being generated by the recognition section during the actual formation of the individual sounds making up a word, they are substantially simultaneously used to modify a portion of the original voice generated signals so that such modified portion can be used to generate a signal to be monitored by the person using the equipment. In one preferred embodiment headphones are disclosed as the monitoring device with the system operating to provide the audio signals to the speaker so rapidly, and in fact prior to completion of complete word identification, that to the speaker the audio signals are subjectively simultaneous with the words being spoken. Thus the operator knows immediately whether or not the spoken word has been properly recognized by the system, and in fact can be forced to correct a word even before the word has been completely spoken.

3,470,322
COMBINATION CONFERENCE CONNECTION AND CALL TRANSFER DEVICE FOR TELEPHONE SUBSCRIBER LINES

Charles F. Rice, 812 NE. 92nd St., Miami Shores, Fla. 33153, and Charles Kimtantas, 549 Palmetto Drive, Miami Springs, Fla. 33166

Filed Aug. 12, 1966, Ser. No. 572,045
Int. Cl. H04m *3/42*
U.S. Cl. 179—1 9 Claims



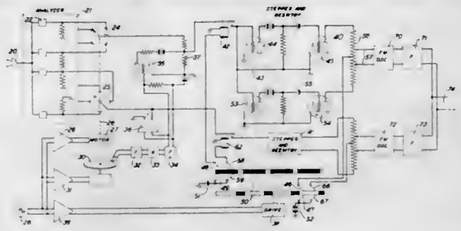
A conference connection and call transfer device for effecting call transfer or conference connection between two or more mutually remote telephone subscribers at a subscriber station having a plurality of telephone circuit subscriber lines, and having universal application to all types of telephone signalling exchange systems including step-by-step, cross-bar and solid state. The lines are inductively coupled by means of a transformer having a winding for each of the lines to be coupled. Coupling is effected through a series-connected, bi-directional triode switch in each line circuit, whereby automatic disconnect is effected upon hanging up of the associated telephone subscriber set. Manual switch means is provided for switching a controlling telephone hand-set from the seized line to another line, at which time the transformer winding associated with the seized line serves as a terminal impedance for the line matching that of a hand-set to keep the line seized.

3,470,323
SIGNALING SYSTEM

Homer W. Dudley, Summit, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed June 30, 1944, Ser. No. 542,946
Int. Cl. H04m *1/70, 3/16*
U.S. Cl. 179—1.5 3 Claims

1. In telephone privacy, means to derive from speech message waves a plurality of relatively low frequency currents in separate circuits representing energy variations in different component frequency bands of the speech, a lesser plurality of enciphering means, common means to supply variable key currents to said enciphering means, means to apportion each enciphering means to a different group of said circuits on a time division basis

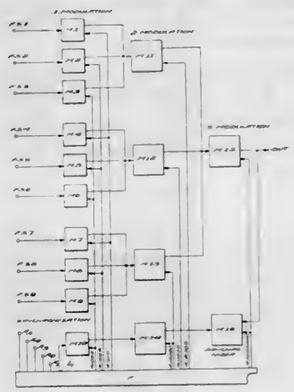


to cause enciphering of the currents in all of said circuits by said enciphering means, and a transmission channel connected to each enciphering means for transmitting the currents enciphered thereby.

3,470,324
SYSTEM FOR THE TRANSMISSION OF INFORMATION BY CARRIER WAVES OVER A SINGLE CONDUCTOR

Henning Harmuth, Offenbach am Main, Germany, assignor to Battelle-Institut E.V., Frankfurt am Main, Germany

Filed Sept. 17, 1964, Ser. No. 397,227
Claims priority, application Germany, Sept. 17, 1963, H 50,289
Int. Cl. H04j *1/00*
U.S. Cl. 179—15 3 Claims



In the transmission by carrier waves consisting of Walsh functions a plurality of signals are produced which are divided into groups. A Walsh function is amplitude modulated by one signal of each group and another Walsh function by a different signal of each group. The modulated signals of each group are added to form multiplexed signals, and these multiplexed signals are used to amplitude modulate a different Walsh function, after which several different Walsh functions amplitude modulated by multiplexed signals are added.

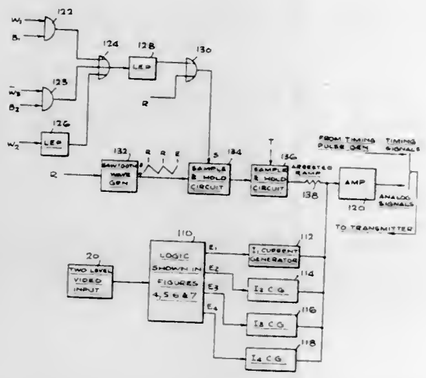
3,470,325
VIDEO SIGNAL ENCODING TECHNIQUE FOR REDUCED BANDWIDTH TRANSMISSION

Hugh F. Frohbach, Sunnyvale, Calif., assignor to Southern Pacific Company, San Francisco, Calif., a corporation of Delaware

Filed Oct. 31, 1966, Ser. No. 590,911
Int. Cl. H04b *1/66*
U.S. Cl. 179—15.55 14 Claims

A bandwidth compression system for two level signal transmission, such as is found in facsimile, is provided

wherein a single analog signal is generated for representing the sequence of black to white transitions or two level



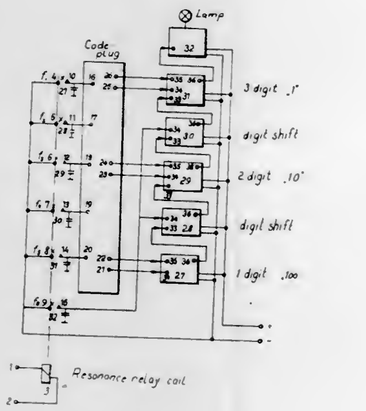
signal transitions which occur within a predetermined sampling interval together with an indication of the first type of transition within said interval.

3,470,326

SELECTIVE CALLING SYSTEM EMPLOYING AN INTERDIGITAL TONE TO AID IN DISCRIMINATION BETWEEN SIGNAL TONES

Frederik Gretteberg, Oslo, Norway, assignor to A/S Lehmkuhl, Oslo, Norway

Filed Mar. 2, 1967, Ser. No. 620,067
Int. Cl. H04m *5/04*
U.S. Cl. 179—41 **3 Claims**



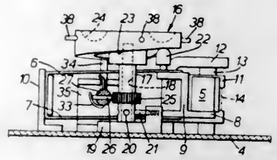
A selective calling system for radio communication, in which a coded calling signal consisting of two speech frequency modulation signals of a group of five and a sixth audio frequency is transmitted, of which the sixth lies within the speech frequency band and is transmitted in each of the spaces between the code signals, in such a way that all these individual signals follow one another in continuous sequence.

3,470,327

MAGNETIC TRANSDUCER TRACK CHANGING APPARATUS

Gordon Howard Reed, St. Heller, Jersey, Channel Islands, England, assignor to Television Research Limited

Filed Dec. 28, 1964, Ser. No. 421,206
Claims priority, application Great Britain, Dec. 31, 1963, 51,270/63
Int. Cl. G11b *5/48*
U.S. Cl. 179—100.2 **4 Claims**



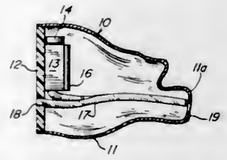
Magnetic head track-changing apparatus is provided including parallel linkage means for supporting the magnetic head and rotatable cam means engaging the parallel linkage means such that rotation of the cam means causes a substantially parallel transverse movement of the head to selected tracks of a multi-track tape. The cam means are driven either by a one-way driving connection or by means affording manual rotation of the cam means independently of the operation of the powered driving connection.

3,470,328

HEARING AID VENT TUBE

William Lee Daniels, Hillsborough, Calif., assignor, by mesne assignments, to Goldentone Electronics, Inc., Minneapolis, Minn., a corporation of Minnesota

Filed Mar. 2, 1966, Ser. No. 531,249
Int. Cl. H04r *25/00*
U.S. Cl. 179—107 **1 Claim**



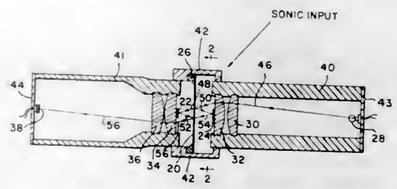
A hearing aid device including a flexible vent tube communicating the auditory canal of the ear with the ambient atmosphere whereby the pressure on either side of the device may be equalized while providing a vent tube that can be cleaned without dismantling the device and which will not increase the acoustical feedback in said device.

3,470,329

INTERFEROMETER MICROPHONE

Niels O. Young, Lincoln, Mass., assignor to Block Engineering, Inc., Cambridge, Mass., a corporation of Delaware

Filed Feb. 9, 1966, Ser. No. 526,241
Int. Cl. H04r *17/02, 19/04, 21/02*
U.S. Cl. 179—121 **6 Claims**



An optical microphone having a light source and an interferometer for producing circular interference patterns from the light of the source in response to sound.

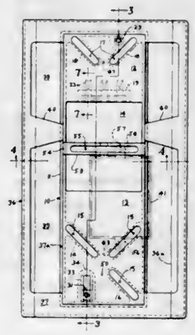
The interferometer is adjusted to operate on the central fringe of the pattern so that changes in the sound field vary the intensity of the central pattern. The geometry of the device provides optimum light throughput.

3,470,330

TELEPHONE BACKBOARD

George J. Brown, 22 Grandview Ave., Waterbury, Conn. 06708

Filed June 23, 1966, Ser. No. 559,902
Int. Cl. H04m *1/04*
U.S. Cl. 179—146 **13 Claims**



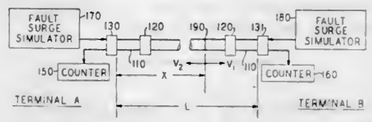
The invention pertains to a backboard for mounting a telephone upon a support wall and one that is designed to be attached permanently to the wall and left there regardless of the number of times the telephone is changed, or the color of the wall is changed, and is provided with features adapting it for use with a variety of support wall structures and different telephones. Also an adaptor frame is provided suitably interfitted with the backboard and is the only part that needs to be exchanged any time a telephone or wall color is changed.

3,470,331

FAULT-GENERATED SURGE RESPONSIVE FAULT LOCATING SYSTEM FOR FREQUENCY DIVISION MULTIPLEXED TRANSMISSION FACILITIES

Meyer Barash, Matawan and Per Brostrup-Jensen, Warren, N.J., assignors to Bell Telephone Laboratories, Incorporated, Murray Hill, N.J., a corporation of New York

Filed Dec. 29, 1966, Ser. No. 605,790
Int. Cl. H04b *3/46*
U.S. Cl. 179—175.3 **8 Claims**



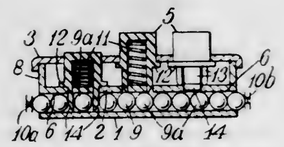
An automatic fault locator which measures the time of propagation of fault-generated surge signals is adapted for fault locating in a multiplex transmission system. Fault surge monitors at each end of the multiplex transmission system each comprise two fault surge signal detectors which are connected to substantially adjacent multiplex message channels located in a frequency range of minimum delay. When fault surge signals occur in both substantially adjacent channels, a monitoring system is activated to locate the fault. Auxiliary equipment verifies this fault location by timing a fault surge signal in a multiplex message channel located in a frequency range of maximum delay with respect to one of the fault surge signals occurring in the frequency range of minimum delay.

3,470,332

PUSH BUTTON ELECTRICAL SWITCHES

Ernest Milner, Cardiff, and Gwyn Davies, Aberdare, Wales, assignors to A.B. Electronic Components Limited, Glamorgan, Wales, a British company

Filed Feb. 13, 1968, Ser. No. 705,141
Claims priority, application Great Britain, Feb. 22, 1967, 8,529/67
Int. Cl. H01h *9/26*
U.S. Cl. 200—5 **8 Claims**



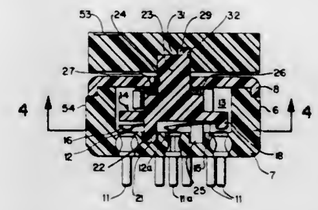
An assembly of push button electrical switches each adapted to give a characteristic switching pattern of an arrangement of electrical contacts, comprising a matrix arrangement of push buttons in rows and columns, and a laterally confined line of movable, abutting, motion-transmitting elements corresponding to each row and column of the matrix, the lines intersecting in a common element corresponding to each push button, each push button incorporating deflector means for displacing the elements in the lines corresponding to the row and column it occupies, other than the corresponding common element, and contact means operable by the said displacement to provide the characteristic switching pattern for each button.

3,470,333

MULTIPOSITION ROTARY SWITCH

Stanley Schneider, Newport Beach, Calif., and Robert L. Ferrell, Bothell, Wash., assignors to Beckman Instruments, Inc., a corporation of California

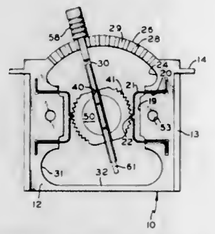
Filed June 20, 1967, Ser. No. 647,498
Int. Cl. H01h *19/58, 21/78*
U.S. Cl. 200—11 **3 Claims**



A multiposition rotary switch including an array of contact elements connecting with stationary terminals positioned through a base of a housing member enclosing a cavity. The contact carrying rotor is mounted within the cavity and adapted to move an electrically conductive wiper into contact with successive contact elements. In order to provide detent action and to positively locate the position of the wiper with regard to the contact elements there is provided a detent means including a camming surface on the rotor having a plurality of protruding teeth arranged around the camming surface with depressions

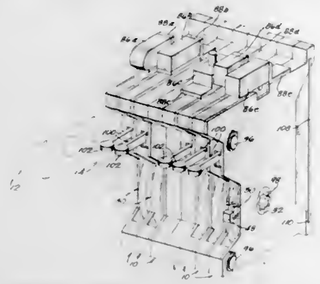
therebetween and a spring member having a convex-shaped section mounted within the housing and forced against the teeth of the camming surface so that the convex-section of the beam spring tends to center itself between two adjacent teeth of the rotor camming surface.

3,470,334
MULTICONTACT SWITCH
Joseph De Robertis, Yorktown Heights, and David Genovese, Spring Valley, N.Y., assignors to Sealectro Corporation, Mamaroneck, N.Y., a corporation of New York
Filed Apr. 11, 1968, Ser. No. 720,683
Int. Cl. H01h *19/58, 21/78*
U.S. Cl. 200—11 **5 Claims**



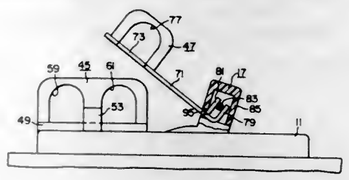
A switch of the kind used in rheostats with a pivoted lever and a plurality of contacts successively engaged by the lever slidably mounted on a slot in a rotatable carrier wherein the arm is longitudinally movable a short distance between two positions defined by stops. In a first position, one of several circuits is established and so long as the lever is in this position, it cannot be rotated. When the lever is moved longitudinally the other position, preparatory to rotating the lever to establish another circuit, the first circuit is opened, and all circuits remain open until the lever is again moved to the desired position.

3,470,335
STEPPING CAM CARTRIDGE ASSEMBLY
James S. Roberts, Brookfield, Wis., assignor to Milwaukee Chaplet & Mfg. Company, Inc., Milwaukee, Wis., a corporation of Wisconsin
Filed July 27, 1967, Ser. No. 656,503
Int. Cl. H01h *7/08, 43/10*
U.S. Cl. 200—38 **9 Claims**



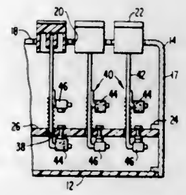
Disclosed herein is a stepping cam cartridge which includes a rotatable cam disc having selectively removable cam plugs positioned on the outer periphery of the disc to activate a switch in a sequence through an overriding lever and a switch actuator. The cartridge is stackable with any number of similar cartridges with the cam disc in each cartridge aligned with the other cam discs in the stack so that they can be driven by a common drive motor.

3,470,336
CIRCUIT INTERRUPTER WITH HANDLE LOCKING MEANS
Gerald J. De Angelo, Monroe, Conn., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Jan. 18, 1968, Ser. No. 698,883
Int. Cl. H01h *9/28, 27/00*
U.S. Cl. 200—42 **10 Claims**



A circuit interrupter is provided with means for locking the operating handle in the "ON" and "OFF" positions.

3,470,337
COMBINATION SWITCH
Elia Verzilli, 1098 Princess Katy, Las Vegas, Nev. 89109
Filed Mar. 21, 1968, Ser. No. 714,889
Int. Cl. H01h *27/10*
U.S. Cl. 200—43 **13 Claims**

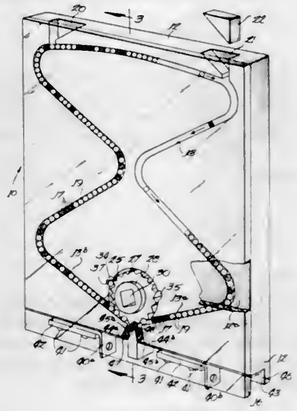


The combination switch comprises a circuit board including a plurality of circuit segments comprising electrically connected paired contacts, the circuit segments forming an interrupt series circuit between end terminals. A plurality of combination assemblies are mounted for movement between first and second positions respectively connecting contact bridging elements and electrical and insulating blocks between adjacent circuit segments. The combination assemblies extend through the circuit board with the bridging elements and blocks being interchangeably mounted on opposite sides of the board. Actuation of selected combination assemblies engages their bridging elements across associated circuit segments while the bridging elements on the opposite side of the circuit board carried by the remaining unactuated combination assemblies connect between the remaining adjacent circuit segments to complete the series circuit between the end terminals.

3,470,338
PROGRAM CONTROLLER
Robert H. Ahrens, Milwaukee, Wis., assignor to Milwaukee Chaplet & Mfg. Company, Inc., Milwaukee, Wis., a corporation of Wisconsin.
Continuation-in-part of application Ser. No. 498,580, Oct. 20, 1965. This application Oct. 3, 1966, Ser. No. 583,906
Int. Cl. H01h *43/08*
U.S. Cl. 200—46 **21 Claims**

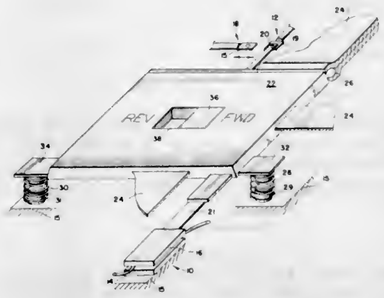
One or more guide channels contains signal operating elements in pre-determined sequence with elements which do not operate the signal, all elements being of equal extent in the guide channel. The guide channel may either

be circuitous to repeat the sequence of elements, or arranged to deliver the elements into hoppers in which they are segregated and from which they may be returned to the channel in any desired order, all elements being fed in sequence past a reading station, preferably by a star



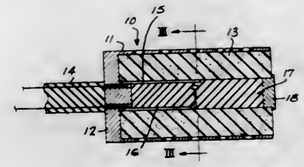
wheel or the like to enable determination of the capacity of the element at such station to effect signal response. It is contemplated that a number of series of such elements in modular assembly may be operated concurrently in correlated sequence.

3,470,339
COVER PLATE SWITCH ACTUATOR INTERLOCKED WITH A SECOND SWITCH
Robert J. Roman, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed Aug. 10, 1967, Ser. No. 659,665
Int. Cl. H01h *9/20, 33/46*
U.S. Cl. 200—50 **10 Claims**



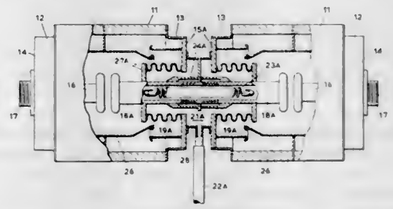
A switch interlock mechanism is provided wherein a first switch is actuated by depression of a plate member. The control knob for a second switch is located within an aperture in the plate member of the first switch, flush with or below the surface of the plate member. To gain ready access to the control knob of the second switch the plate member must be depressed, thereby actuating the first switch, and thus the second switch cannot conveniently be actuated until the prior actuation of the first switch.

3,470,340
LEAK DETECTION APPARATUS
Leo E. Hakka, Ottawa, Ontario, Canada, assignor to Ernest O. Butts, Ottawa, Ontario, Canada
Filed Nov. 16, 1967, Ser. No. 683,632
Claims priority, application Canada, Sept. 13, 1965, 940,411
Int. Cl. H01h *29/02*
U.S. Cl. 200—61.04 **1 Claim**



Leak detection apparatus for fuel lines and underground storage tanks comprising in combination an exteriorly encased rubber filler, said rubber filler being selected from the group consisting of butyl, isotactic polyisoprene, soft vulcanized natural rubber and soft vulcanized styrene-butadiene (SBR) rubber, a pair of electrical contacts adjacent said filler separated by an insulator and connected to a source of electricity and to a visual or audible alarm, said rubber filler being adapted on exposure to fuel oil to expand inwardly, and force said electrical contacts into engagement, actuating said visual or audible alarm.

3,470,341
VACUUM SWITCH WITH LIQUID FILLED BELLOWS OPERATION
Stanley Beddoe, Meopham, Kent, England, assignor to The English Electric Company Limited, London, England, a British company
Filed Sept. 30, 1966, Ser. No. 583,171
Claims priority, application Great Britain, Sept. 30, 1965, 41,637/65
Int. Cl. H01h *9/30, 33/66*
U.S. Cl. 200—144 **4 Claims**

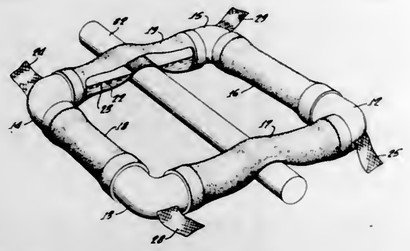


A vacuum switch having a pair of contacts in an evacuated casing; a bellows interconnects one of the contacts and the casing, and forms part of the wall of the evacuated casing, and of a closed chamber outside the evacuated casing. Insulating liquid is supplied to the closed chamber, both to move the contact between open and closed positions, and to damp oscillations in the bellows and contact system, thus preventing contact bounce. The liquid may be transformer oil.

3,470,342
ELECTRICAL SWITCHING DEVICE
James E. Webb, Administrator of the National Aeronautics and Space Administration, with respect to an invention of Charles W. Edman, Sylmar, Calif.
Filed Jan. 26, 1968, Ser. No. 700,987
Int. Cl. H01h *29/00, 35/02, 29/02*
U.S. Cl. 200—152 **10 Claims**

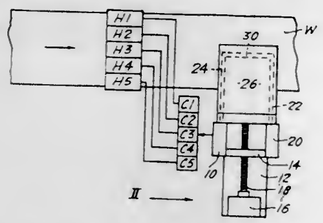
An electrically conductive liquid is confined within a square loop of deformable nonconductive tubing having

electrical terminals on two opposite corners connected to the opposite poles of a battery, and terminals at the other two corners connected to an output circuit. Simultaneously displacing the liquid in one pair of opposite sides of the loop energizes the circuit with a given polarity. Reversing the situation by displacing the liquid in the other pair, reverses the polarity.



The device is also usable as a leveling switch by forming a ridge in each nonconductive side equal in height to the level of the conductive liquid when the device is horizontally level. When not level, two adjacent corners are electrically connected to actuate a leveling device.

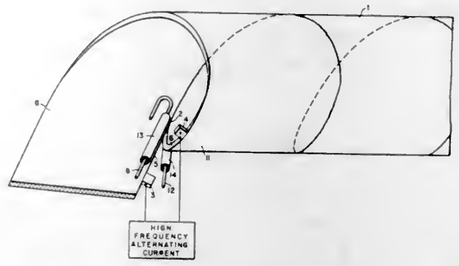
3,470,343
HEAT TREATMENT OF SHEET AND WEB MATERIALS
Jack Bilbrough, Newcastle-upon-Tyne, England, assignor to The Rank Organisation Limited, London, England, a company of Great Britain and Northern Ireland
Filed Sept. 11, 1967, Ser. No. 666,672
Claims priority, application Great Britain, Sept. 13, 1966, 40,799/66
Int. Cl. H05b *9/06, 5/04*
U.S. Cl. 219—10.61 **10 Claims**



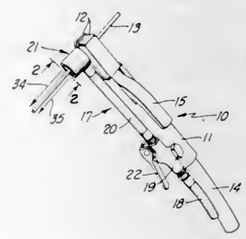
A heat treatment apparatus measures the moisture content at different zones across the width of a travelling sheet or web by microwave energy techniques and the measurement signals are used to regulate the output of heating units at corresponding zones so that variations in the heat treatment effects between such different zones can be controlled. The measurements may be made at stations preceding and following a heating stage and an auxiliary heating stage, which may itself be microwave powered, can follow a main heating stage to make a second order adjustment of the heat treatment effects across the width of the web.

3,470,344
HELICAL-SEAM RESISTANCE TUBE WELDING APPARATUS
Hans Schafer, Erlangen, Germany, assignor to Siemens Aktiengesellschaft, Berlin, Germany, a corporation of Germany
Filed Feb. 13, 1967, Ser. No. 615,821
Claims priority, application Germany, Mar. 29, 1966, S 102,838
Int. Cl. B23k *1/16, 11/08*
U.S. Cl. 219—62 **2 Claims**

In helical or spiral seam welding apparatus where high frequency heating current is caused to flow from one sliding contact along one edge of a tangentially-approaching metal strip, through a weld point where such edge contacts the adjacent edge of the tube into which such strip is being wound, and along such tube edge to another sliding contact; a pair of ferromagnetic rods, located in the vicinity of the approaching edges, one of the rods being located along the inner surface of the strip parallel to its heated edge, and the other being located outside the tube tangential to its heated edge.



3,470,345
AIR ACCESSORY FOR CONVERTING ARC WELDER TO CUTTER
Robert M. Vaillancourt, Pasadena, Calif., assignor to Thermacote Company, Pasadena, Calif., a corporation of California
Filed June 12, 1967, Ser. No. 645,154
Int. Cl. B23k *9/00*
U.S. Cl. 219—70 **1 Claim**

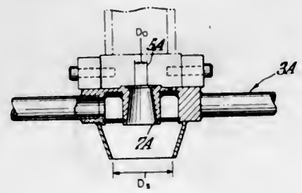


An accessory for a conventional electric arc welder, for directing a stream or streams of air along the electrode of the welder towards the arc thereof to remove molten metal removed by the electrode arc and to cool the electrode.

3,470,346
PROTECTIVE ATMOSPHERE FOR THE ARC WELDING AND SURFACING OF STEELS
Georges Duboz, Paris, and Paul Demars, Fontenay-sous-Bois, France, assignors to L'Air Liquide, Societe Anonyme Pour l'Etude et l'Exploitation des Procedes Georges Claude
No Drawing. Filed May 23, 1966, Ser. No. 551,928
Claims priority, application France, June 2, 1965, 19,179
Int. Cl. H05b *11/00*
U.S. Cl. 219—74 **13 Claims**

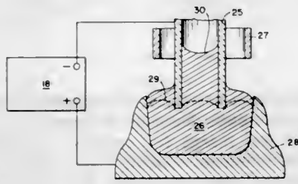
Shielding gas for electric arc welding with droplet and short-circuit deposition. The gas consists of a rare gas from the group of 20–90% helium and helium plus neon, 0.5–2% hydrogen, and a balance of argon. The neon in the helium plus neon member is in an amount up to 30% of the member. The hydrogen component can be free or combined and the mixture can optionally include gases and/or vapours free from halogen, but containing oxygen, optionally carbon and optionally hydrogen, the proportion of the total of these gases and vapours and hydrogen being between 2 and 6%. The inclusion of hydrogen in the mixture limits the sputtering of metal on the edges of the bead.

3,470,347
METHOD FOR SHIELDING A GAS EFFLUENT
John E. Jackson, Indianapolis, Ind., assignor to Union Carbide Corporation, a corporation of New York
Filed Jan. 16, 1968, Ser. No. 698,268
Int. Cl. B23k *9/04*
U.S. Cl. 219—76 **2 Claims**



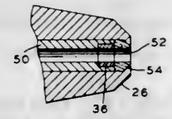
A method is disclosed for producing a substantially oxygen-free coating on a substrate by the use of a plasma arc coating torch. The torch produces an arc plasma through a constricting nozzle orifice so as to provide a high velocity, high energy arc effluent which carrys the coating material to be deposited onto the substrate. The gas effluent is protected from contamination by its surrounding environment by surrounding such effluent with a coaxial annular stream of gas having a width which is in the range of from 0.25 to about 4.0 times the square root of the diameter of the nozzle orifice, and which has a flow rate value for the square root of the longitudinal momentum flux that is greater than 2.0 lb.$^{1/2}$ per sec. ft.$^{1/2}$ as given by the equation $(Q/A)\ \rho^{1/2}$; wherein Q is the flow rate in ft.^{3}/sec. of the annular gas stream; A is the annular area in ft.^{2} and ρ is gas density in lb./ft.$^{3''}$.

3,470,348
ANODIC BONDING OF LIQUID METALS TO INSULATORS
Daniel I. Pomerantz and George Wallis, Lexington, Mass., assignors to P. R. Mallory and Co., Inc., Indianapolis, Ind., a corporation of Delaware
Filed Apr. 18, 1966, Ser. No. 543,241
Int. Cl. H05b *3/16*
U.S. Cl. 219—117 **5 Claims**



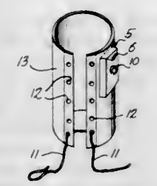
A normally solid fusible metallic conductive material is bonded to an insulating material which the metal, in a molten condition normally will not wet. The materials, with the conductive material in a molten condition, are placed in contact and the insulator is heated to render it electrically conductive. A low density electric current is then passed from the molten conductive material to the solid insulator. The current is then interrupted and the metal cooled to solidification.

3,470,349
GUIDE FOR WELDING WIRE
Max A. Sievers, 17144 Mount Elliott, Detroit, Mich. 48212
Filed Mar. 15, 1965, Ser. No. 439,742
Int. Cl. B23k *9/00*
U.S. Cl. 219—136 **2 Claims**



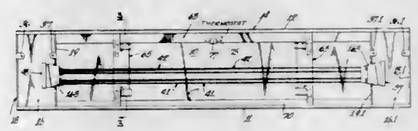
A metallic arc welding nozzle having a passage through which electrode wire is fed in a conductive relationship improved to avoid the sticking of weld spatter and to improve the wear characteristics by forming the basic nozzle body of pure copper and providing a wear resistant passage within the nozzle, a portion of it being formed of a material harder than copper but still conductive and a portion of it at the tip end having high wear resistance in the form of a carbide material and glass.

3,470,350
ELECTRICALLY HEATED HORSE'S LEG BINDING
Dorothy Bailey Lewis, 532 14th St. SE., Washington, D.C. 20003
Filed Dec. 8, 1965, Ser. No. 512,360
Int. Cl. H05b *3/06, 3/34*
U.S. Cl. 219—211 **1 Claim**



A flexible heating garment in the form of a horse's leg binding. The leg binding is wrapped in a single turn about the horse's leg and has laces on opposite edges thereof to hold the fabric material in position. Electrical wiring is enclosed entirely within the fabric member and means in the form of a battery is provided in a pocket on the fabric member to apply current to the wiring to thus apply heat to the horse's leg.

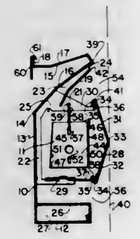
3,470,351
ELECTRIC BASEBOARD HEATERS
Harry C. Fischer, Royal Oak, Md., assignor to Edwin L. Wiegand Company, Pittsburgh, Pa.
Filed Mar. 22, 1965, Ser. No. 441,643
Int. Cl. H05b *3/02*
U.S. Cl. 219—366 **23 Claims**



A baseboard heater free of internal baffle means, including a heater wire doubled on itself to form a plurality of reaches, and bight portions at opposite ends of the reaches and defining the ends of the heating element.

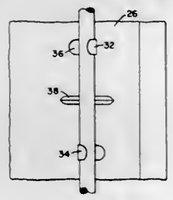
The wires in each bight portion extending about rotatable dielectric bushings to provide a multiple-sheave block and tackle effect. Spring means hold the heater wire taut and also provide for electrical connection thereto. The heater also includes a bottomless plenum chamber and a thermally responsive device in electric circuit with the heater wire and disposed within the plenum chamber to reduce heat output of the heater wire upon excessive temperature rise within the chamber.

3,470,352
ELECTRIC HEATER
David McKay and Alfred G. Kandera, Winnipeg, Manitoba, Canada, assignors to James B. Carter Ltd., Winnipeg, Manitoba, Canada
Filed June 12, 1967, Ser. No. 645,379
Claims priority, application Canada, Dec. 29, 1966, 979,147
Int. Cl. H05b *3/62*
U.S. Cl. 219—368 **2 Claims**



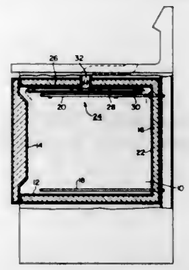
A baseboard heater consisting of a casing having a forwardly and upwardly sloping upper wall which then folds back upon itself to provide an air space between the two portions. A deflector is spaced from the upwardly and forwardly inclining portion thus defining air channels one of which draws cool air adjacent the casing and the other of which directs the flow of warm air flowing from the heater element. It also includes a front baffle which is shaped so that it is impossible to block off the air flow from the heater by furniture or the like. Fins located on a heating element have their rear edges slanted forwardly towards the bottom of the deflector.

3,470,353
SMOKE ELIMINATOR HEATING ELEMENT MOUNTING FOR HEAT-CLEANING COOKING OVENS
Calvin J. Holtkamp, Mansfield, Ohio, assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Oct. 9, 1967, Ser. No. 673,887
Int. Cl. F27d *11/00;* **A21d** *1/00*
U.S. Cl. 219—393 **5 Claims**



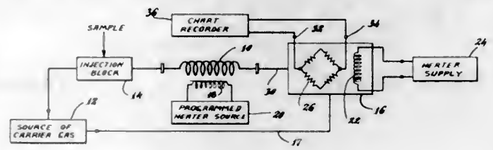
Mounting arrangement for a heater in a heat-cleaning oven of the type in which the heater is located closely below a plenum into which combustion products from the oven pass, the heater being supported by tabs lanced down out of the lower wall of the plenum in an array corresponding to part of the heater array, the openings from which the tabs are displaced serving as part of the inlet openings into the plenum, the heater being spaced from the lower wall of the plenum by embossments in the lower wall.

3,470,354
CATALYTIC SMOKE ELIMINATOR FOR HIGH TEMPERATURE SELF-CLEANING OVENS
Carl W. Tilus, Mansfield, Ohio, assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Oct. 19, 1967, Ser. No. 676,446
Int. Cl. F27d *11/00;* **A21d** *1/20*
U.S. Cl. 219—393 **5 Claims**



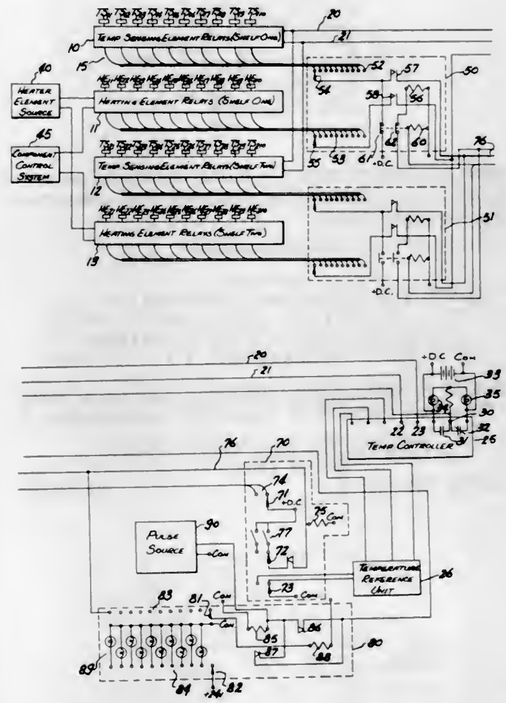
An apparatus formed by a pair of slightly spaced apart walls of extended area in the upper part of a self-cleaning oven with at least one of the facing surfaces of the walls being provided with a catalytic coating. An electric heater closely adjacent one of the walls for activating the catalyst and an air flow pattern in which the oven gases flow radially in between the peripheral edges of the walls to a central outlet.

3,470,355
FILAMENT PROTECTION FOR HOT WIRE DETECTORS
Wilson P. Ralston, Stamford, Conn., assignor to The Perkin-Elmer Corporation, Norwalk, Conn., a corporation of New York
Filed July 29, 1966, Ser. No. 568,872
Int. Cl. H05b *1/02*
U.S. Cl. 219—505 **5 Claims**



A detector circuit arrangement includes a detector filament and a reference filament arranged in a balanced bridge circuit and means for causing a heating current to flow in the filaments. Circuit means are provided for sensing variations in the equivalent resistance (R_e) of the bridge circuit and for automatically reducing heating current to the bridge circuit when the resistance (R_e) exceeds a preselected limiting value (R_L). Circuit means are also provided for sensing resistance unbalance of detector and reference filaments and for automatically varying the amplitude of heating current flowing in the filaments in a manner for limiting the resistance ratio of the filaments. Through this arrangement a limit on the resistance of each filament is established thus inhibiting detector filament burnout.

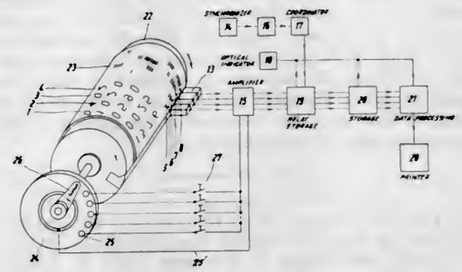
3,470,356
MULTIPLE TEMPERATURE CONTROLLER
Herbert Carl Ganiere and Edwin Theodore Sherwood, Milwaukee, Wis., assignors to Globe-Union Inc., Milwaukee, Wis., a corporation of Delaware
Filed July 18, 1966, Ser. No. 566,155
Int. Cl. H05b *3/02*
U.S. Cl. 219—508 **4 Claims**



A multiple temperature controller is described where the temperatures at various locations of a testing oven are controlled with one temperature controller and a switching system. The switching system enables different temperature references to be applied to different locations and also permits different levels of electrical power to be supplied to different locations depending on whether the components at the locations are being tested under operating conditions.

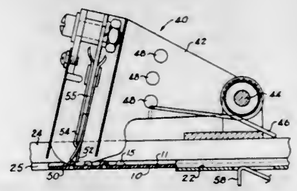
3,470,357
METHOD OF PRODUCING A PRINTING FORM AND OF EVALUATING DATA CONTAINED THEREIN
Wilhelm Ritzerfeld, Berlin-Dahlem, Germany, and Gerhard Ritzfeld, Franzensbader Str. 21, Berlin-Grunewald, Germany; Elvira nee Weiss Ritzerfeld and said Gerhard Ritzerfeld, heirs of said Wilhelm Ritzerfeld, deceased, assignors to said Gerhard Ritzerfeld, Berlin-Schmargendorf, Germany
Filed June 5, 1964, Ser. No. 372,824
Claims priority, application Germany, June 7, 1963, R 35,396
Int. Cl. G06k *7/10*
U.S. Cl. 235—61.11 **11 Claims**

On the rear face of a printing form, reverse reading images of digits, and markings representing the same numbers as correlated digits are produced in lines of the printing form so that the information contained in each



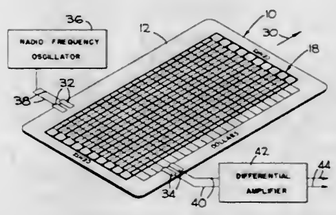
line of the printing form can be printed, and also read out and stored for data processing.

3,470,358
APPARATUS AND METHOD FOR CIRCUIT CONTROL FROM STORED DATA
Max E. Sallach, Chesterland, Ohio, assignor to Addressograph-Multigraph Corporation, Cleveland, Ohio, a corporation of Delaware
Filed Feb. 18, 1966, Ser. No. 528,446
Int. Cl. G06k *7/01*
U.S. Cl. 235—61.11 **8 Claims**



A device for sensing physical variations of a data card surface employing the principle of a moving card and a sensing head carriage riding that card. A sensing device on the carriage scans the card. Factors of thickness of variation in card surface are eleminated by reason of the provision of placing the scanning head carriage to ride on the surface of the card.

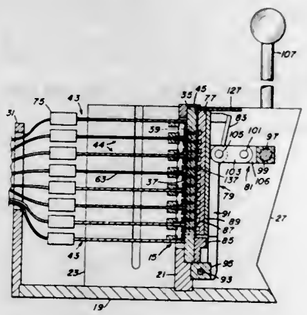
3,470,359
ANTI-COUNTERFEIT DOCUMENT
Henry N. Esterly, Cupertino, Calif., assignor to FMC Corporation, San Jose, Calif., a corporation of Delaware
Filed Apr. 5, 1966, Ser. No. 540,386
Int. Cl. G06k *7/06*
U.S. Cl. 235—61.11 **4 Claims**



Dielectric members are laminated together and externally printed to form a document of predetermined value or

authenticity, such as a fare ticket with grid squares wherein a mark in a square indicates the devalued worth of the ticket. Conductive ink marks or stripes underlie rows of grids from edge to edge of the document, and the member carrying the marks is thin so that a marking tool impressed in a grid will electrically alter the conductivity of the stripe. Enlarged end portions of adjacent stripes may be individually capacitively coupled to radio frequency probes to compare the integrity of the marks to determine that the value indicated by the grids is in fact the genuine value of the document.

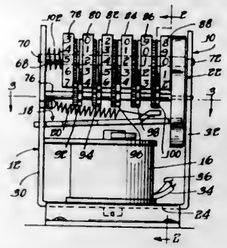
3,470,360
STATIC MEMORY PUNCHED CARD READER
Wallace R. Rust, 523 Britton Road, Rochester, N.Y. 14616, and Robert J. Whitman, 2300 E. Lake Road, Conesus, N.Y. 14435
Filed June 6, 1966, Ser. No. 555,443
Int. Cl. G06k *7/04*
U.S. Cl. 235—61.11 **4 Claims**



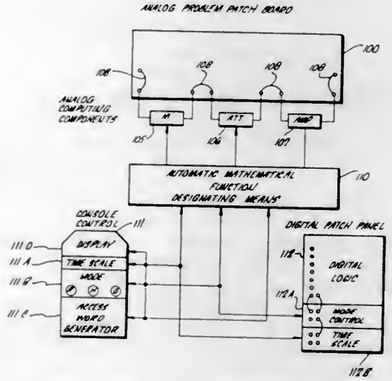
A machine for electrically sensing the positions of the holes in a conventional punched card. A movable platen presses the punched card against a fixed board through which feeler pins extend, there being a pin in each position where a hole might be punched in the card, according to the standard positions normally used in such a card. On the opposite side of the board from the card, each feeler pin cooperates with its own individual resilient electrical switch arm normally engaging a fixed contact, and presses the resilient arm away from its associated fixed contact if the feeler pin is displaced by a card having no hole punched in the particular location corresponding to the feeler pin. If the card does have a hole in this location, then the pressing of the card against the board does not displace this feeler pin, and consequently does not open the electric switch associated with this particular feeler pin, this individual switch remaining closed so as to complete an electric circuit to the desired indicating mechanism such as an electric lamp.

3,470,361
COUNTER
Burnell J. Wollar, Barrington, Ill., assignor to ENM Company, Chicago, Ill., a corporation of Illinois
Filed Dec. 28, 1967, Ser. No. 694,165
Int. Cl. G06f *7/38;* **G06g** *7/00*
U.S. Cl. 235—92 **11 Claims**

The present counter has a plurality of number wheels mounted on a frame, a ratchet wheel connected to one of the number wheels and an electromagnetic coil with an armature to provide a power source to drive the ratchet wheel. A thermoplastic molded unitary verge connects the ratchet wheel with the power source. The verge includes a carrier held in alignment by a pair of shafts and a pair of pawls formed integral with the carrier and engageable with the ratchet wheel. A pair of resilient elements are formed integral with the carrier and are connected to the pawls to urge the pawls into engagement with the ratchet wheel.



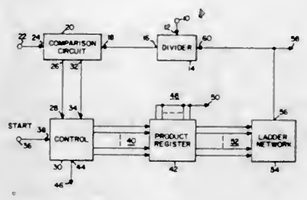
3,470,362
COMPUTER WITH LOGIC CONTROLLED ANALOG COMPUTING COMPONENTS WHICH AUTOMATICALLY CHANGE MATHEMATICAL STATES IN RESPONSE TO A CONTROL MEANS
Monroe A. Miller, Coral Gables, Fla., assignor to Milgo Electronic Corporation, Miami, Fla., a corporation of Florida
Filed Apr. 20, 1965, Ser. No. 449,491
Int. Cl. G06g *7/32*
U.S. Cl. 235—150.4 **18 Claims**



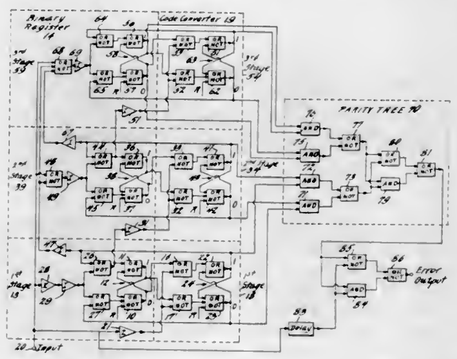
In an analog computer having a problem flow path, manually patched multi-state analog computing components connected in the problem flow path, operator control means associated with the computer components so as to have themselves automatically change mathematical states in response to electrical signals from the control means.

3,470,363
HYBRID MULTIPLIER APPARATUS
Don E. Aitchison, Duarte, Calif., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware
Filed Oct. 14, 1965, Ser. No. 495,832
Int. Cl. G06j *1/00*
U.S. Cl. 235—150.52 **7 Claims**

A hybrid multiplier which is capable of multiplying one analog signal by another analog signal or alternatively by a digital signal to provide a digital output signal. The multiplication is accomplished by generating a trial product, dividing the trial product by a first signal indicative of the multiplier, and comparing the quotient to the multiplicand. The trial product is adjusted by the result of the comparison thereby generating a new trial product. The accuracy of the trial product improves after each iteration or trial. After a predetermined number of trials or after a predetermined accuracy is reached, the multiplication process is complete.



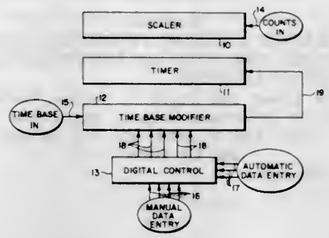
3,470,364
CIRCUIT FOR DETECTING A REGISTER MALFUNCTION
James M. Fullton, Jr., Greensboro, N.C., assignor to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York
Filed Feb. 10, 1966, Ser. No. 526,410
Int. Cl. G06f *11/00;* **H04l** *3/00;* **H03k** *13/00*
U.S. Cl. 235—153 **6 Claims**



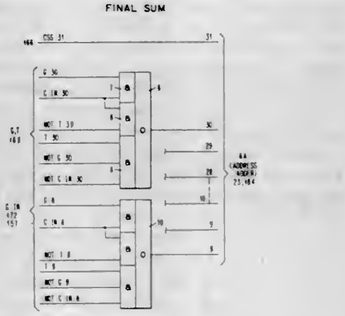
A circuit converts the code of a binary register to a second code having a parity which alternates in correspondence to the presence and absence of pulses in the input signal. The circuit senses the parity of the second code and compares the sensed parity to the input signal.

3,470,365
COMBINED DATA ACCUMULATION REDUCTION SYSTEM
Roy E. Nather and Wallace L. Knute, Solana Beach, Calif., assignors to Beckman Instruments, Inc., a corporation of California
Filed June 30, 1966, Ser. No. 561,907
Int. Cl. G06f *7/38;* **G06g** *7/00*
U.S. Cl. 235—156 **8 Claims**

A system for computing the counts-per-minute for radiation analysis systems wherein the contents of a scaler is divided by the contents of the timer to present the quotient as the output. In order to enhance the system's data reduction capability, the timer is modified to automatically apply a correction factor to the counts-per-minute output.



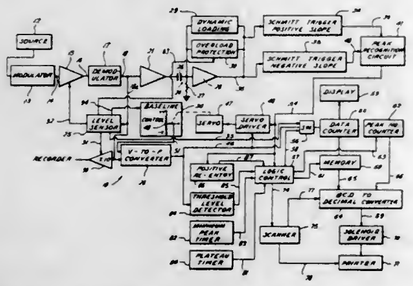
3,470,366
FAST FLUSH ADDER
Alan R. Geller, Poughkeepsie, N.Y., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Continuation-in-part of application Ser. No. 445,320, Apr. 5, 1965. This application Jan. 13, 1967, Ser. No. 609,246
Int. Cl. G06f *7/385*
U.S. Cl. 235—175 **3 Claims**



The specification discloses an illustrative embodiment for the invention comprising a large scale data processing system of the type which is composed of a plurality of quasi-independent units. The environmental data processing system includes a central processing unit or portion, which is herein referred to as a CPU, a plurality of storage units, a plurality of input/output control devices referred to herein as channels, as well as control and maintenance facilities which are found in a power distribution unit, herein referred to as a PDU. The CPU of the environmental system includes a control or instruction unit hereinafter referred to as an I unit, and an arithmetic and logic or execution unit, hereinafter referred to as an E unit. The I unit includes controls for instruction fetching, branching, interruption handling, communication with the input/output channels, and other related functions. The E unit of the environmental system can perform algebraic and logical operations, moving, shifting, and other functions. A carry propagate adder is used in which the bit input to the final sum generator is provided directly by the bit functions generated for use in

the carry propagate portion of the adder. This adder eliminates the generation of half sums in the nominal data path of the adder.

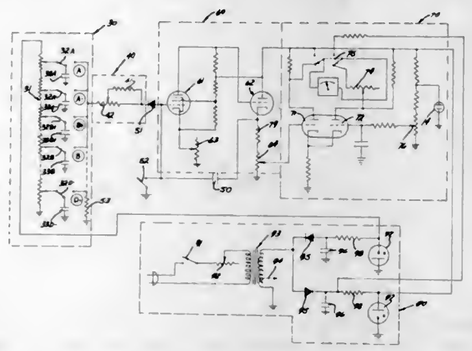
3,470,367
WIDE-RANGE ANALOG-TO-DIGITAL INTEGRATOR FOR USE WITH ANALYTICAL MEASURING INSTRUMENTS
Clinton D. Frisby and David W. Spence, Houston, Tex., assignors to Infotronics Corp., a corporation of Texas
Filed Apr. 9, 1965, Ser. No. 447,026
Int. Cl. G06g *7/18*
U.S. Cl. 235—183 **21 Claims**



A two-range signal integrator with automatic switching between ranges. Such integrator is useful with analog-type analytical measurement signals having recurrent data fluctuations which extend from a baseline value, the integrator serving to individually integrate the areas under the different data fluctuations. The integrator includes an amplifier for amplifying the analog measurement signals, an integrating-type, voltage-to-frequency converter responsive to the amplified measurement signals for producing an output pulse for each predetermined incremental area of the analog signal wave form above the baseline value, a pulse counter for counting the pulses produced during each data fluctuation in the analog signal and printing means coupled to the pulse counter for producing a readable record of the integral values for the various data fluctuations. Range switching is accomplished by a level sensor which is responsive to the amplified analog input signal and operates to change the gain of the input amplifier when the analog signal passes a predetermined signal level. At the same time the level sensor changes the pulse counter decade to which the pulses are supplied so as not to change the significance (or scale factor) of the data values printed by the printing means. A peak sensor subsystem is responsive to the incoming measurement signal to correlate the operation of the pulse counter with the occurrence of the data fluctuations in the measurement signal.

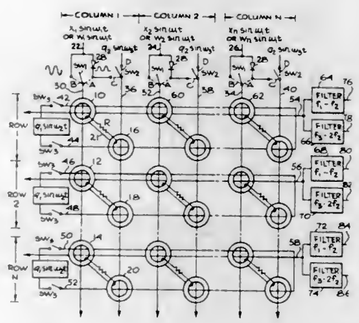
3,470,368
GRADEMATIC COMPUTER FOR AVERAGING A PLURALITY OF GRADES
John L. Brittan, 917 Brunn, St. Joseph, Mich. 49085
Flled Oct. 21, 1966, Ser. No. 588,514
Int. Cl. G06g *7/00*
U.S. Cl. 235—193 **10 Claims**

An averaging device particularly adapted for utilization by teachers in averaging a plurality of grades. The device, basically, is electrical, discrete charge quantities being generated which are indicative of each of the possible grades in the particular grading system being utilized. The teacher, through a series of switches on a control panel, causes those of these discrete charges indicative of the particular grades being averaged to be gated into a storage capacitor. A potentiometer network is provided for reducing the charge on the storage capacitor by a factor equal to the number of grades to be averaged. The



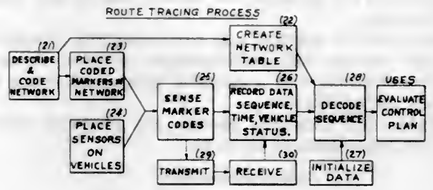
total charge on the storage capacitor is then converted to a visual average indication by means of a voltmeter.

3,470,369
MAGNETIC CORE MATRIX MULTIPLIER FOR OBTAINING THE DOT PRODUCT OF A PLURALITY OF VECTORS
Charles A. Rosen, Atherton, Calif., assignor to Stanford Research Institute, Menlo Park, Calif., a corporation of California
Filed Sept. 19, 1966, Ser. No. 580,277
Int. Cl. G06g *7/16;* **H01f** *27/42, 31/06*
U.S. Cl. 235—194 **8 Claims**



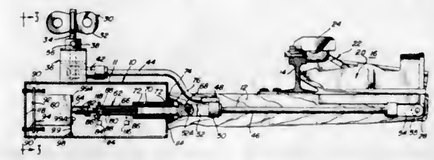
An arrangement is provided for obtaining the dot product of a plurality of vectors. A magnetic core matrix is employed and the components of a first vector are read into one row of cores by applying pulsed DC currents. Simultaneously, the cores of that row are subjected to a radio frequency current to enable the cores to assume the DC pulse current magnitudes representative of the first vector. Next the components of a second vector are applied to the same row of cores employing a magnetic flux derived from AC currents wherein the currents have a magnitude representative of the second vector. Simultaneously with the application of the second vector, a third alternating current is applied to all the cores of the row. A readout wire threading all the cores in the row has induced in it a voltage which is the sum of the product components from each core, which is therefore equal to the dot product of the two vectors which were inputed to the cores.

3,470,370
VEHICLE ROUTE TRACER
Herbert T. Landow, 11212 W. 74th St., La Grange, Ill. 60525
Filed Feb. 13, 1967, Ser. No. 615,587
Int. Cl. B61l *25/00, 27/00;* **B61b** *1/00*
U.S. Cl. 246—122 **8 Claims**



The vehicle moves on paths interconnected into a network. Two paths converge to form a third path at a network node. At each node, each of the converging paths is equipped with a coded marker. Two codes are used, one for each converging path. Vehicles are equipped to sense the markers and record or transmit the code. The position and/or route of the vehicle is inferred by relating the code sequence to the network description and a statement of initial vehicle position in the network.

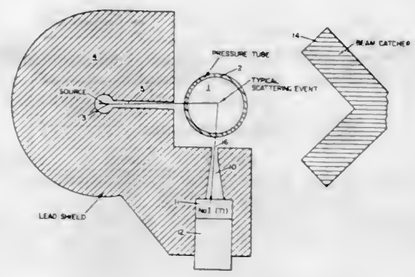
3,470,371
RAILWAY APPLIANCE OPERATING MECHANISM
Brice E. Hayes, Richmond, Ind., assignor to Hayes Track Appliance Company, Richmond, Ind., a corporation of Indiana
Filed May 4, 1966, Ser. No. 547,531
Int. Cl. B61l *19/02;* **E01b** *7/00;* **B61k** *5/00*
U.S. Cl. 246—163 **9 Claims**



An operating assembly moves a sliding derail or other device between positions. Rotary movement of the drive shaft of an electric motor produces reciprocal movement of an actuating element connected to the device by means of a motion translating means including a screw and a nut assembly movably axially on the screw and capable of free wheeling on the screw. The motor is resiliently secured within a housing including a tubular support for a tubular reciprocally driven element connected to the actuating element. The motion translating means is reversible and the actuating means can be operated manually and without declutching. Stop members limit the range of movement of the actuating element, and limit switches control the energization of the motor.

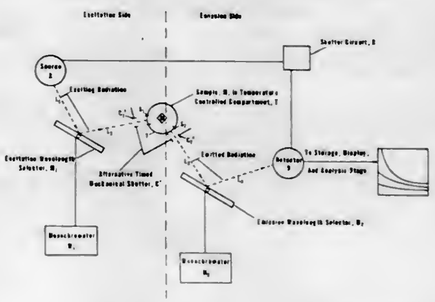
3,470,372
FOG DENSITY MEASUREMENT BY X-RAY SCATTERING
John G. Bayly, Deep River, Ontario, Canada.; may be granted to U.S. Atomic Energy Commission under the provisions of 42 U.S.C. 2182
Continuation of application Ser. No. 298,993, July 31, 1963. This application Jan. 10, 1966, Ser. No. 523,002
Int. Cl. G01n *9/24*
U.S. Cl. 250—43.5 **12 Claims**

An apparatus for determining the density of a light substance confined within a material of greater density employing a source of mono-kinetic photons with an energy sufficient to pass through the greater density material and then pass out again after Compton scattering by electrons in the light substance. The photons are collimated both before and after scattering and those scattering at a predetermined angle are detected along with those photons scattered other than by the single Compton scattering. The detector includes means for generating



output pulses whose amplitudes are dependent upon the energy of photons encountered by the detector and the apparatus includes means for selecting pulses of the amplitude range effected by the Compton scattering and of a second amplitude range effected by photons arriving from other than the Compton scattering. Means are included for comparing the two intensities which is a function of the density of the light substance.

3,470,373
METHOD FOR ANALYSIS AND IDENTIFICATION OF BIOLOGIC ENTITIES BY PHOSPHORESCENCE
Aubrey K. Brewer, Washington, D.C., and Stuart L. Adelman, McLean, Va.; said Brewer assignor to Litton Systems, Inc., a corporation of Maryland
Flled Oct. 18, 1966, Ser. No. 587,513
Int. Cl. G01n *23/22, 21/52*
U.S. Cl. 250—71.5 **10 Claims**

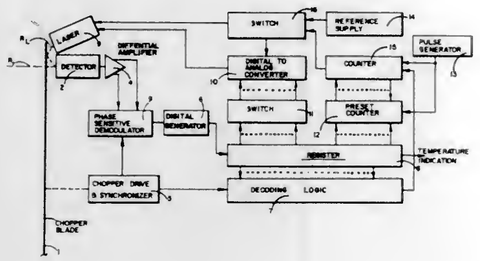


A method for identifying microorganisms by subjecting the organisms to be identified with radiation that will produce luminescent emissions from the organisms. A period of time sufficient to allow escape of the fluorescent portion of those emissions is permitted to elapse, and then the phosphorescent emissions are measured as to intensity and plotted against time to obtain decay rates, which are then compared with decay rates, which are then compared with decay rates of known microorganisms to provide identification.

3,470,374
INFRARED DETECTION SYSTEM USING DIGITAL CONTROLS

Roger W. Jones, Garden Grove, Calif., assignor to North American Rockwell Corporation, a corporation of Delaware

Filed Mar. 6, 1967, Ser. No. 621,046
Int. Cl. G01j *1/18, 1/32*
U.S. Cl. 250—83.3 **6 Claims**

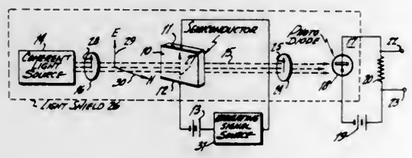


An infrared detection system using a laser having a relatively broad dynamic range for generating a reference radiation level for comparison with a radiation level generated by a target such as a circuit board, by means of a chopper and a detector, including a circuit for obtaining the difference between the two levels and for converting the difference into a digital signal for controlling the output of the laser and for indicating the temperature of the target. The output of the laser is regulated so that when a null is obtained between the reference radiation and target radiation, the readout on a register controlling the reference radiation source indicates the temperature of the target.

3,470,375
HIGH FREQUENCY SEMICONDUCTOR SYSTEMS USING ELECTRIC FIELDS PERPENDICULAR TO THE DIRECTION OF WAVE PROPAGATION

Kern K. N. Chang, Princeton, N.J., assignor to RCA Corporation, a corporation of Delaware

Filed Mar. 13, 1964, Ser. No. 351,669
Int. Cl. H04b *9/00*
U.S. Cl. 250—199 **7 Claims**



1. In combination:

a member constructed of one type of a particular semiconductor material including an excess of free charge carriers, wherein said particular semiconductor material is characterized by being substantially transparent to electromagnetic energy of a given frequency passing therethrough, and which in the presence of said electromagnetic energy passing therethrough in a first direction with a magnetic component vector of said electromagnetic energy polarized in a second direction perpendicular to said first direction and in the presence of an electric field through said semiconductor material in a third direction perpendicular to both said first and second directions is further characterized by generating additional photons of electromagnetic energy of said given frequency in an amount which is proportional to the product of said magnetic component vector and the strength of said electric field,

means including ohmic contacts on said semiconductor material for applying said electric field in said third direction,

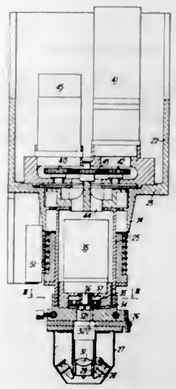
and means for applying said electromagnetic energy to and through said semiconductor material in said first direction with a magnetic component vector in said second direction,

whereby said additional photons are generated within said semiconductor material.

3,470,376
TRACING HEAD FOR LINE FOLLOWING APPARATUS

Brian Yoxall Moss, 148 Norbury Court Road, London SW. 16, England

Filed Nov. 16, 1966, Ser. No. 594,768
Int. Cl. G05b *1/04*
U.S. Cl. 250—202 **4 Claims**



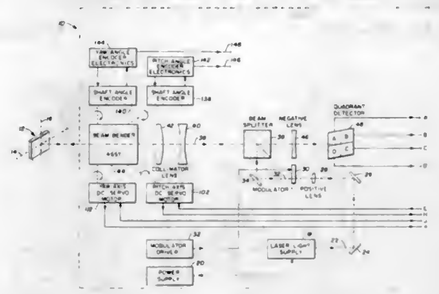
Apparatus for following a pattern of a type including a follower head having a rotatable member supporting a light-sensing device responding to the pattern and a driver for cyclically moving the follower head to provide constant amplitude movement thereof to produce modulated signals from the light-sensing device to control rotation of the rotatable member to cause the follower head to folow the pattern. A second light-sensing means may also be mounted to the rotatable member to provide an additional signal to slow down the driver in response to a change in direction of the sensed pattern.

3,470,377
TWO-AXIS AUTOMATIC AUTOCOLLIMATOR

David A. Le Febre, Richardson, and Walter Kuehne, Dallas, Tex., assignors to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware

Filed Nov. 4, 1966, Ser. No. 592,164
Int. Cl. G01j *1/36*
U.S. Cl. 250—204 **14 Claims**

An autocollimator is a device for determining the position of a body relative to the autocollimator by projecting a light beam through an optical system onto a reflecting surface and measuring the position of the reflected beam to determine the position of the reflecting surface. An automatic autocollimator is one which determines the position of the reflecting surface automatically and usually produces an electrical signal, either analog or digital, representative of the position of the reflecting surface. The position of the reflecting surface can generally be described with respect to an optical axis by pitch movement about an axis normal to the optical axis, yaw movement about an axis normal to the optical axis and pitch axis, roll movement as pivotal movement about the optical axis, and also translational movement along each of these three axes.



This invention relates generally to apparatus for detecting the position of an observed body relative to a reference body, and more particularly, but not by way of limitation, relates to an automatic autocollimator for determining the pitch, yaw and normal translation of the observed body relative to the reference body.

3,470,378
ELECTRIC CIRCUIT FOR THE DETECTION AND AMPLIFICATION OF ELECTROMAGNETIC RADIATION

Derek Hubert Mash and Jack Rowland Peters, Harlow, England, assignors to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware

Filed Jan. 18, 1967, Ser. No. 610,128
Claims priority, application Great Britain, Jan. 28, 1966, 3,898/66
Int. Cl. H01j *39/12*
U.S. Cl. 250—211 **2 Claims**



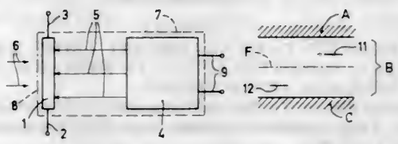
An electric circuit includes a photosensitive varactor, the junction capacitance of which increases when irradiated with light, and the change in capacitance is utilized to bring about a change in power in an AC load.

3,470,379
DEVICE FOR DETECTING RADIATION

Hermann Georg Grimmeiss and Heinz Scholz, Aachen, Germany, assignors, by mesne assignments, to U.S. Philips Corporation, New York, N.Y., a corporation of Delaware

Filed Oct. 14, 1965, Ser. No. 495,854
Claims priority, application Netherlands, Oct. 15, 1964, 6411983
Int. Cl. H01j *39/12*
U.S. Cl. 250—211 **14 Claims**

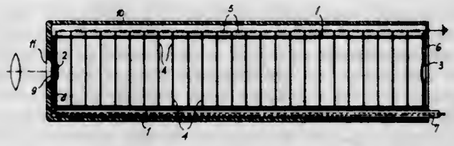
A semiconductor device is provided for detecting long-wave radiation in which the separation between the valence and conduction bands exceeds the quantum energy of the radiation to be detected and in which impurities are incorporated in the semiconductor establishing capture centers for both free electrons and free holes. The sensitivity of the device is increased by subjecting the device to auxiliary radiation capable of generating therein free electrons and free holes in which the quantum energy of the auxiliary radiation is at least equal to the forbidden band width of the semiconductor.



3,470,380
PHOTOELECTRONIC IMAGE DETECTING DEVICES

James Dwyer McGee, London, England, assignor to National Research Development Corporation, London, England, a British corporation

Filed Dec. 6, 1965, Ser. No. 511,898
Claims priority, application Great Britain, Dec. 12, 1964, 50,663/64
Int. Cl. H01j *31/50*
U.S. Cl. 250—213 **3 Claims**

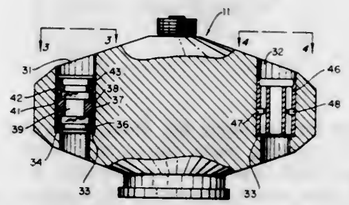


An image intensifier tube having a cathode window covered by a highly insulating transparent material such as silica, and wherein the tube may also have an insulating casing. By insulating the tube in this way leakage currents through the tube which dispense as corona are reduced, especially at the cathode window, and consequently any parasitic background to the amplified image provided by the tube is also reduced.

3,470,381
PHOTOELECTRIC SCANNING SYSTEM FOR ULTRACENTRIFUGES HAVING PERIODIC CALIBRATION MEANS

William R. Boyd, Oakland, Calif., assignor to Beckman Instruments, Inc., a corporation of California

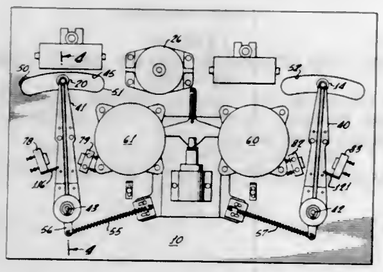
Filed May 3, 1965, Ser. No. 452,681
Int. Cl. G01n *21/26*
U.S. Cl. 250—218 **11 Claims**



A photoelectric scanning system for use with a centrifuge system for providing and recording an electrical signal whose amplitude varies as a function of the concentration distribution of a sample being centrifuged

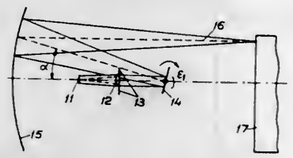
and including means for generating at selected time intervals an electrical calibration signal against which the electrical information signal may be compared.

3,470,382
MAGNETIC TAPE TRANSPORT USING RADIATION SENSITIVE MEANS TO SIGNAL BUFFER STORAGE ARM POSITION
Richard Tobey, Tustin, Calif., assignor to Dartex Division of Tally Corporation, Santa Ana, Calif., a corporation of California
Filed July 17, 1967, Ser. No. 653,820
Int. Cl. G01n *21/30*
U.S. Cl. 250—219 **32 Claims**



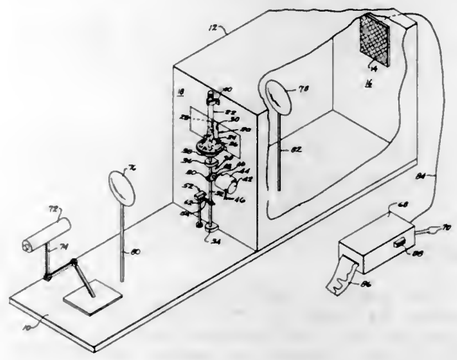
A magnetic tape transport wherein a continuous signal corresponding to buffer storage arm position is produced by the combination of a light source carried by the buffer arm and a pair of photosensitive devices mounted on opposite sides of the buffer arm. Another signal, corresponding to movement of the buffer arm to a predetermined limit position, is produced by the combination of the light source and an additional photosensitive device exposed to the light energy in all positions of the arm except at the predetermined limit position.

3,470,383
DEVICE FOR MEASURING THE WIDTH OF GLOWING OBJECTS BY SCANNING WITH A PHOTOCELL
Erik Persson, Nils-Erik Claesson, Ingvar Trulsson, and Osvald Melandsör, Vasteras, Sweden, assignors to Allmanna Svenska Elektriska Aktiebolaget, Vasteras, Sweden, a corporation of Sweden
Filed Aug. 14, 1967, Ser. No. 660,494
Claims priority, application Sweden, Aug. 12, 1966, 10,915/66
Int. Cl. G01n *21/30*
U.S. Cl. 250—219 **9 Claims**



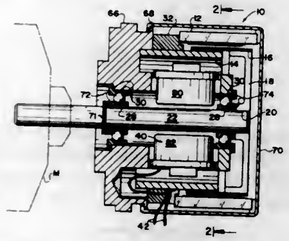
A device for measuring the width of glowing objects comprises a rotating plane mirror or a drum provided with a slot, which is positioned in the focus of a concave mirror or lens, and a photocell with a narrow field of view. When the mirror or drum is rotated a periodic scanning motion is obtained across the object and pulses or signals are emitted from the photocell when the field passes the borders of the object, which pulse or pulses may be used for measuring the width of the scanned object.

3,470,384
PHOTOMETRIC GAUGE IN WHICH A TEST OBJECT IS ROTATED ABOUT AN AXIS DISPOSED BETWEEN A LAMP MEANS AND AN APERTURE MEANS
Albert J. Bodnar, Penn Hills Township, Allegheny County, Pa., assignor to Gulf Research & Development Company, Pittsburgh, Pa., a corporation of Delaware
Filed Nov. 26, 1965, Ser. No. 509,705
Int. Cl. H01j *39/12*
U.S. Cl. 250—224 **19 Claims**



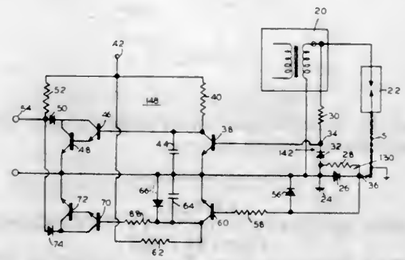
A photometric method and apparatus for gauging the total volume and distribution of a deposit adhering to the exterior curved surface of an object involving the rotation of the object on a plane transverse to a light beam and near an aperture for the passage of the light beam toward a photosensitive surface.

3,470,385
OPTICAL ENCODER COMPRISING EASILY REMOVABLE CODED CYLINDER
Claude L. Emmerich, Scarsdale, N.Y., assignor to Singer-General Precision Inc., a corporation of Delaware
Filed Apr. 3, 1967, Ser. No. 628,106
Int. Cl. G01d *5/34*
U.S. Cl. 250—231 **8 Claims**



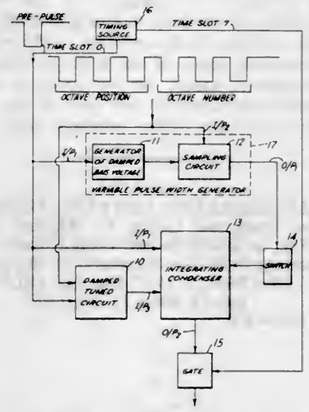
A brushless optical encoder having an outer lamp-carrying cylinder; an inner photoconductor-carrying cylinder; and an intermediate mask-carrying cylinder. Both the photoconductor cylinder and mask cylinder are arranged in a combination providing a predetermined code. The outer cylinder, being fixed, is covered with electroluminescent material. The inner cylinder includes a photosensor extending along the outside of the cylinder. The inner cylinder is mounted in such a manner that the electroluminescent material illuminates all the photosensors set in their array. The intermediate middle cylinder or drum comprises a thin opaque mask for controlling the light directed from the outer lamp-carrying cylinder to the inner photoconductor-carrying cylinder in accordance with predetermined coded information.

3,470,386
SPARK DETECTOR
William F. Potts, Liverpool, N.Y., and Francois Duval, Southhull, Quebec, Canada, assignors to Liberty Combustion Corporation, Syracuse, N.Y., a corporation of New York
Filed Apr. 21, 1967, Ser. No. 632,644
Int. Cl. H03k *19/22*; **F23n** *5/24, 1/00*
U.S. Cl. 307—218 **3 Claims**



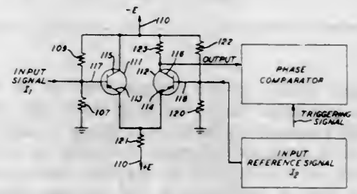
Spark occurrence signal circuit for a spark gap igniter to detect the presence or absence of a normal spark current flowing through the gap, and to detect the presence or absence of normal ignition voltage across the gap producing a signal responsive to the detection of normal current and normal voltage simultaneously, and using an AND gate.

3,470,387
DIGITALLY EXPANDING DECODER FOR PULSE CODE MODULATION SYSTEMS
Alec Harley Reeves and Ryszard Kitajewski, Aldwych, London, England, assignors to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware
Filed Oct. 8, 1965, Ser. No. 494,008
Claims priority, application Great Britain, Feb. 5, 1965, 5,095/65
Int. Cl. H03k *5/20*
U.S. Cl. 307—231 **3 Claims**



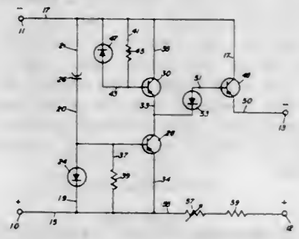
This is a decoder that operates on a 6-digit binary code generated in the transmitter from a 10-digit binary code comprising two portions, one portion including 3-digits indicating the position of the first "1" in the 10-digit code and the other portion including the 3-digits immediately following the first "1" in the 10-digit code. The decoder includes a source of pre-pulse which initiates the operation of a damped tuned circuit and a damped bias voltage source and charges an integrating condenser to a given value. The digits of the other portion are converted to weighted amplitude pulses in the tuned circuit and add their value to the condenser. The digits of the one portion, through the cooperation of the voltage source, are converted to weighted width modulated pulses which close a switch to discharge the condenser at a higher than normal rate. The final voltage on the condenser is the PAM signal which is extracted by a suitably enabled gate.

3,470,388
DIFFERENTIAL AMPLIFIER CIRCUITS
Thomas J. Scarpa, Metuchen, N.J., assignor to Edison Instruments, Inc.
Original application June 16, 1964, Ser. No. 375,537, now Patent No. 3,335,606, dated Aug. 15, 1967. Divided and this application Aug. 4, 1967, Ser. No. 669,999
Int. Cl. H03k *5/20*
U.S. Cl. 307—235 **4 Claims**



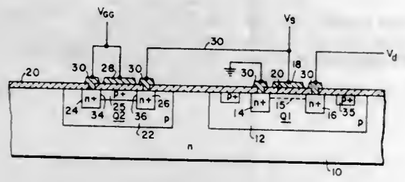
There are disclosed differential amplifier circuits for comparing a selected alternating current input signal with a reference signal of the same frequency and phase. In each case the circuit comprises a pair of substantially identical current discharge devices, each comprising a current emitter, a current collector, and a control electrode. The two devices are connected in tandem relation to a common output circuit disposed across the collector electrodes. The signals to be compared are impressed across the respective emitter electrodes and are added algebraically in the common output circuit. The difference curent so derived is impressed on a gating circuit which is controlled by a pulsing source synchronized with the input signals. The polarity and amplitude of the pulsed output of the gating circuit depends on whether the selected input signal is above or below the reference input signal and the magnitude of the difference.

3,470,389
SELF-POWERED TRANSISTORIZED METER CLAMP CIRCUIT FOR EXTRANEOUS PULSES
Ben J. Vaandering, 1514 NE. 60th St., Vancouver, Wash. 98665
Filed Oct. 18, 1966, Ser. No. 588,250
Int. Cl. H03k *17/30*
U.S. Cl. 307—237 **4 Claims**



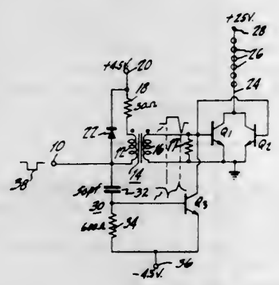
Spurious pulses are screened out of a meter input through a circuit having in leads connected across input terminals thereof, a capacitor which responds to a spurious input pulse by momentarily switching into effect a diode and resistance combined in parallel to absorb the resultant extraneous current and facilitate the gating of steady input to the meter.

3,470,390
INTEGRATED BACK-TO-BACK DIODES TO PREVENT BREAKDOWN OF MIS GATE DIELECTRIC
Hung Chang Lin, Silver Spring, Md., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Feb. 2, 1968, Ser. No. 702,721
Int. Cl. H03k *5/08*
U.S. Cl. 307—237 **4 Claims**



Voltages applied to the gate electrode of an MIS device are prevented from breaking down the dielectric under the electrode by being clamped to a safe level by means of a protective element that may be within the same body of semiconductive material characterized by having a pair of back-to-back PN junction diodes connected to the gate electrode.

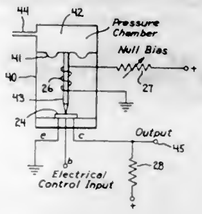
3,470,391
CURRENT PULSE DRIVER WITH MEANS TO STEEPEN AND STABILIZE TRAILING EDGE
Clifford E. Granger, Burlington, Mass., assignor to RCA Corporation, a corporation of Delaware
Filed June 3, 1966, Ser. No. 555,186
Int. Cl. H03k *1/18*
U.S. Cl. 307—270 **2 Claims**



A transistor driver for supplying a current pulse with steep and stabilized edges to a load such as a line in a magnetic memory. An input pulse is coupled through a transformer to an output transistor, which is driven to saturation. The input pulse is also coupled through a differentiator and a second transistor to the output transistor to cause a steep, time-stabilized trailing edge on the pulse from the output transistor by sweeping out the stored charge.

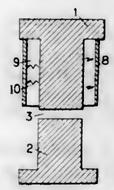
3,470,392
ELECTRONIC PRESSURE-SENSITIVE SEMICONDUCTOR DEVICE
Clark L. Habermehl, Columbia, Ill., and James T. Newell, Kirkwood, Mo., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed May 17, 1967, Ser. No. 640,790
Int. Cl. H03k *3/26*
U.S. Cl. 307—308 **5 Claims**

A pressure-sensitive semiconductor device having a force actuating plunger with a point contact on the semiconductor material to change the electrical characteris-



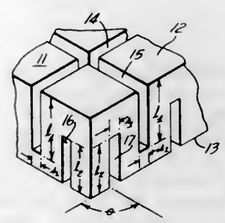
tics of the semiconductor output proportional to plunger pressure exerted on the material.

3,470,393
HIGH IONIZATION DENSITY THERMIONIC CONVERTERS
Gerard Moncorge, Paris, France, assignor to CSF-Compagnie Generale de Telegraphie Sans Fil, a corporation of France
Filed Feb. 21, 1966, Ser. No. 528,983
Claims priority, application France, Feb. 24, 1965, 6,817
Int. Cl. H02n *3/00*
U.S. Cl. 310—4 **9 Claims**



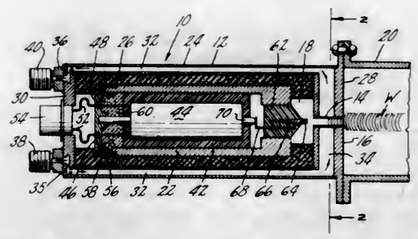
A thermionic converter in which the ion density of the ionizable substance is increased in the interelectrode space resulting in a higher output power through provision of an auxiliary diode operating in the arc mode near the interelectrode space of the principle diode operating in the non-ignited mode, the electrodes of the auxiliary diode being short-circuited and fixed at the potential of one of the electrodes of the principle diode.

3,470,394
DOUBLE SERRATED CRYSTAL TRANSDUCER
Rufus Lee Cook and Lucius D. Whatley, Jr., Panama City, Fla., assignors to the United States of America as represented by the Secretary of the Navy
Filed Nov. 9, 1967, Ser. No. 681,725
Int. Cl. H04r *17/10, 1/00*
U.S. Cl. 310—8.0 **11 Claims**



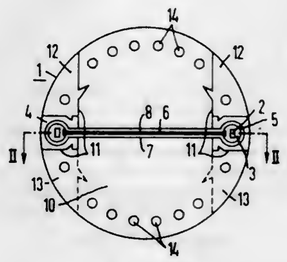
A reversible piezoelectric transducer which has improved wideband performance due to serrations on opposite, parallel faces of the piezoelectric crystal.

3,470,395
ACOUSTIC WAVE SENSOR
Elbert Marston Moffatt, Glastonbury, Conn., asisgnor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware
Filed Dec. 30, 1966, Ser. No. 606,275
Int. Cl. H04r *17/00;* **H01v** *7/02*
U.S. Cl. 310—8.1 **10 Claims**



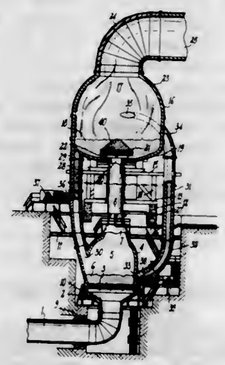
This disclosure relates to a damped acoustic wave transducer which detects the leading edge of a wave impinging on the transducer. Besides being damped, the transducer acts as a high-pass filter by rejecting noise composed of low frequency pressure waves. The sensing unit for the transducer employs a piezoelectric crystal mounted on a damping fin and the transducer is equipped to operate in hostile environments having varying extremes in vibration level and temperature.

3,470,396
ELECTRIC MACHINE HAVING A ROTATING SUPERCONDUCTING EXCITATION WINDING
Wilhelm Kafka, Tennenlohe, Germany, assignor to Siemens Aktiengesellschaft, Erlangen, Germany, a corporation of Germany
Filed Jan. 28, 1966, Ser. No. 523,593
Claims priority, application Germany, Feb. 6, 1965, S 95,346
Int. Cl. H02k *1/22, 3/48, 9/20*
U.S. Cl. 310—10 **18 Claims**



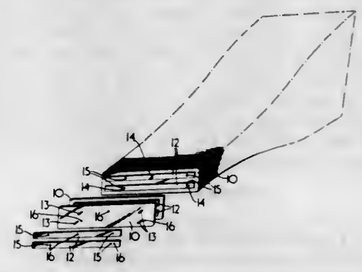
An electric machine includes a rotor having an elongated iron core, carrier band means mounted substantially at the surface of the iron core and having opposing portions extending in the longitudinal direction of the iron core, a superconductive excitation winding carried by the carrier band means and wound around the iron core in the direction of the carrier band means, and tie rod means connecting the portions of the carrier band means, the winding and the iron core being adapted to produce magnetic forces therebetween compensating for most of a centrifugal force to which the winding is subject during rotation of the rotor, the tie rods being adapted to absorb the balance of the centrifugal force.

3,470,397
COMBUSTION PLANTS, NOTABLY FOR GENERATORS OF ELECTRIC CURRENT BY MAGNETO HYDRODYNAMIC EFFECT
Claude Bloch, Sevres, Gérard Gosse, Paris, and Michel Tamalet, Rueil-Malmaison, France, assignors to Societe Anonyme Heurtey, Paris, France
Filed Jan. 9, 1967, Ser. No. 608,165
Claims priority, application France, Jan. 11, 1966, 45,445, 45,446; Aug. 25, 1966, 74,114
Int. Cl. G21d *7/02;* **H02k** *45/00*
U.S. Cl. 310—11 **20 Claims**



The heat produced by the combustion products is taken from a fluidized bed at the outlet of the combustion plant, the component particles of said first fluidized bed being transferred to a second fluidized bed disposed at the inlet of the plant, at least the combustion agent being caused to pass through said second fluidized bed and the particles transferred back from said second bed to said first bed.

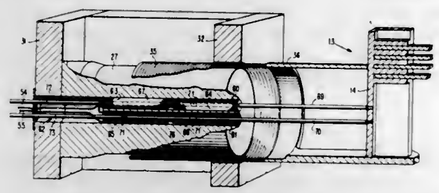
3,470,398
GENERATING DUCT FOR A MAGNETOHYDRODYNAMIC ELECTRICAL GENERATOR
Anthony William Thomas Mottram, 9 Fosse Way, Princethorpe, Warwickshire, England
Filed July 12, 1967, Ser. No. 652,975
Claims priority, application Great Britain, July 15, 1966, 31,793/66
Int. Cl. G21d *7/02*
U.S. Cl. 310—11 **6 Claims**



Method of manufacturing a generator duct for a magnetohydrodynamic (MHD) generator by sealingly securing together end-to-end alternate electrode-defining, annular, tubular members and annular layers of insulation. The method includes the first step of assembling a

pack of alternate templates and template separators forming a laminated block having a peripheral surface of the same shape as the inner periphery of the duct to be formed, each template having a thickness equal to the intended axial thickness of a member and each template separator having a thickness equal to the intended axial thickness of an insulating layer. Then each member is formed by taking each template separately and wrapping a tube, from which the member is to be formed, around the periphery of the template (hereinafter referred to as an "inner template"), arranging one of a second set of annular templates around the tube, the annular template having the same thickness as the corresponding inner template and an internal periphery shaped to define the desired outer periphery of the member. Then the tube is pressed to the thickness of the inner and annular templates and is separated from at least the inner template. Then the members and annular layers of insulation of thickness corresponding to the template separators are arranged alternately end-to-end in the same order as that occupied by the corresponding inner templates and the template separators in said laminated block and the members and the annular layers of insulation are sealingly secured together.

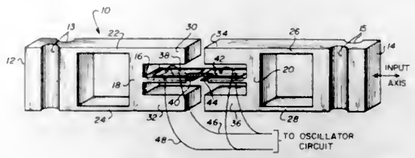
3,470,399
LINEAR MOTOR VELOCITY DETECTION APPARATUS
James L. Johnson and Harold C. Stephens, San Jose, Calif., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed June 17, 1968, Ser. No. 737,438
Int. Cl. H02k *41/02*
U.S. Cl. 310—13 **4 Claims**



Velocity detection apparatus for use in a linear electric motor having a cylindrical center pole piece surrounded at one end by an outer pole piece to form a circular gap therebetween in which a movable, hollow cylindrical drive coil is inserted. The apparatus includes two cavities extending axially into the center pole piece. Two elongated permanent magnets are supported by the drive coil within the cavities and near the center of gravity of the drive coil assembly. Sensing coils are located in the cavities surrounding the magnets at the poles. The polarities of the two magnets are reversed and the coils are serially connected to cancel out electrical noise generated by the drive coil and by eddy currents induced in the center pole piece by the drive coil.

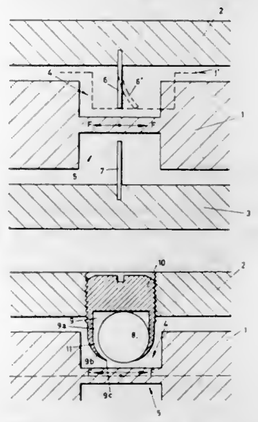
3,470,400
SINGLE BEAM FORCE TRANSDUCER WITH INTEGRAL MOUNTING ISOLATION
Leon Weisbord, New York, N.Y., assignor to Singer-General Precision, Inc., a corporation of Delaware
Filed Dec. 21, 1967, Ser. No. 692,402
Int. Cl. H02k *33/00, 35/00;* **H03b** *5/32*
U.S. Cl. 310—15 **10 Claims**

An apparatus having a vibratory member either a beam or a string and means for effectively isolating the vibratory member from its end mounts over the range of its operating frequencies to eliminate energy loss to the mounts. In one embodiment wherein the axial stresses, either tension or compression, are directly transferred to the vibratory member to affect its natural resonant frequency, isolation at vibration frequencies is effected by the cooperation of combined isolator masses and isolator springs with the vibratory member. The isolator masses



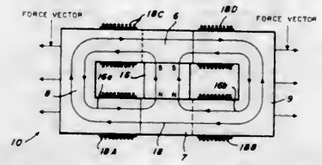
comprise two extending from each end support of the vibratory member, each being coextensive with a portion of the member and with their centers of gravity projectable on the member. The pairs of masses are axially separated. The isolator springs comprise two pairs of thin, spaced resilient members, each pair interconnecting an end support of the member and an apparatus end mount.

3,470,401
DEVICE FOR LIMITING THE AMPLITUDE OF OSCILLATION OF A MECHANICAL RESONATOR FOR ELECTROMECHANICAL TIME PIECE
Max Hetzel, Bienne, Switzerland, assignor to Centre Electronique Horloger SA, Neuchatel, Switzerland, a Swiss corporation
Filed May 26, 1967, Ser. No. 641,564
Claims priority, application Switzerland, May 27, 1966, 7,714/66
Int. Cl. H03b *5/30*
U.S. Cl. 310—25 **7 Claims**



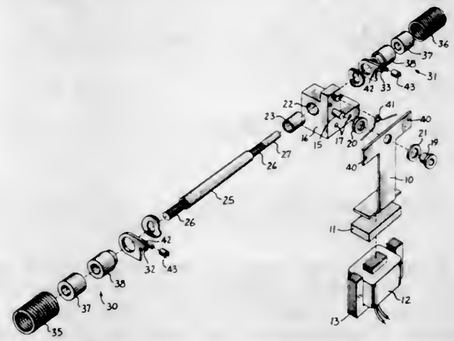
A device for limiting the amplitude of oscillation perpendicular to the normal oscillatory plane of a mechanical resonator for electro-mechanical time pieces, comprising yieldable stop members placed above and below the resonator but near it, these stop members being driven by the resonator parallel to its normal oscillatory plane when said resonator contacts said stop members as a result of shock resulting from impact.

3,470,402
MAGNETOSTRICTIVE VIBRATION MOTOR
Frank R. Abbott, San Diego, Calif., assignor to the United States of America as represented by the Secretary of the Navy
Filed Aug. 25, 1967, Ser. No. 663,455
Int. Cl. H02k *9/19;* **H04r** *15/00*
U.S. Cl. 310—26 **5 Claims**



The motor of a transducer comprises a core with two end-to-end portions of magnetostrictive metals of, respectively, positive and negative co-efficients of expansion. A magnetic bias is applied to the cores and the magnetic field of the signal current so applied to the two core portions as to, respectively, increase and decrease the lines of force in the two portions to cophasally add the elongation of the two core portions.

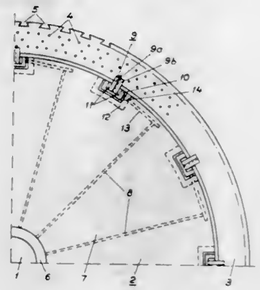
3,470,403
ELECTRIC MOTOR WITH TORQUE AMPLIFIED OUTPUT
Ahmet K. Bey, 3435 S. Racine St., Chicago, Ill. 60608
Filed May 10, 1967, Ser. No. 637,460
Int. Cl. H02k *33/02*
U.S. Cl. 310—37 **5 Claims**



A vibratory electric motor having enhanced torque output is described in which oscillations of a permanent magnet armature in an alternating magnetic field are converted into rotational output torque by a combination of levers and one-way clutches.

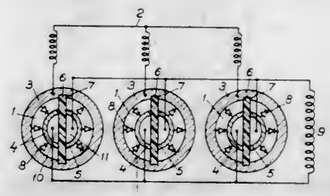
3,470,404
ROTORS FOR ROTATING ELECTRIC MACHINES
Erik Agerman, Åke Lindstedt, and Nils-Erik Nilsson, Vasteras, Sweden, assignors to Allmanna Svenska Elektriska Aktiebolaget, Vasteras, Sweden, a Swedish corporation
Filed June 30, 1966, Ser. No. 561,906
Claims priority, application Sweden, June 30, 1965, 8,612/65
Int. Cl. H02k *15/02*
U.S. Cl. 310—42 **4 Claims**

A rotor ring is connected to a central supporting structure in such a way that free radial expansion of the rotor ring is allowed. Concentricity is maintained without using resilient or adjustable guiding elements. The support bars are furnished with collars intended to overlap re-



cesses in the end plates to the supporting structure and machined to fit, with means for their attachment to the rotor ring prior to erection. Finally the collars are welded to the end plates.

3,470,405
ROTATING RECTIFIER DEVICE
Nils Eric Andersson and Goran Lilja, Ludvika, Sweden, assignors to Allmänna Svenska Elektriska Aktiebolaget, Vasteras, Sweden, a Swedish corporation
Filed Oct. 30, 1967, Ser. No. 679,076
Claims priority, application Sweden, Nov. 2, 1966, 15,006/66
Int. Cl. H02k *11/00*
U.S. Cl. 310—68 **7 Claims**

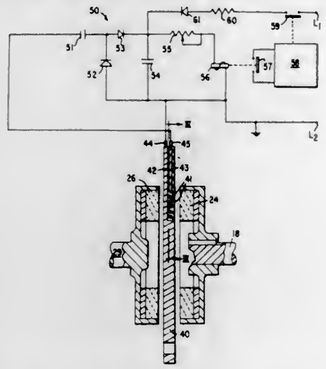


A rotating rectifier device for magnetizing a synchronous machine is fed by a feeding generator driven by said machine. It includes a rectifier bridge for each phase of the rotor winding of the feeding generator. Each rectifier bridge is supported by the shaft of the feeding generator and comprises an outer ring, an inner ring formed of two halves insulated from each other and a plurality of rectifiers arranged between the rings.

3,470,406
MAGNETIC COUPLING WITH SLIP DETECTION MEANS
John Law, Manlius, N.Y., assignor to Carrier Corporation, Syracuse, N.Y., a corporation of Delaware
Original application July 28, 1967, Ser. No. 656,851, now Patent No. 3,429,137, dated Feb. 25, 1969. Divided and this application Sept. 6, 1968, Ser. No. 758,063
Int. Cl. H02k *49/00, 7/10;* **H02p** *15/00*
U.S. Cl. 310—95 **2 Claims**

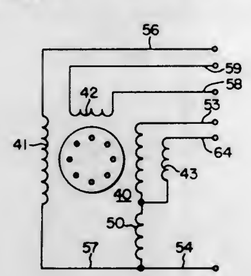
A magnetic drive pump for use in an absorption re-

frigeration system, having coil disposed intermediate rotating drive and follower magnets for sensing resulting



variation in the magnetic flux linking the coil to provide a control signal indicative of loss of magnetic coupling.

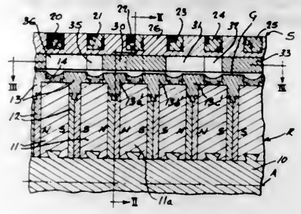
3,470,407
CONCENTRIC COIL WINDINGS FOR THREE-SPEED, SINGLE-PHASE INDUCTION MOTOR STATOR
Benjamin F. Richer and Thomas Charlton, Lima, Ohio, assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed May 20, 1968, Ser. No. 730,571
Int. Cl. H02k *19/06*
U.S. Cl. 310—166 **6 Claims**



A concentric coil winding arrangement for a single-phase induction motor comprising at least three main windings disposed in the slots of an existing two-speed stator core to provide magnetic poles for at least three running speeds, the third winding and a portion of the first winding being electrically connected together and disposed in a manner to induce in the core additional magnetic poles for the third running speed when the third winding and the portion of the first are energized.

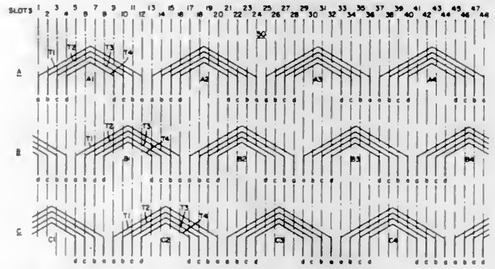
3,470,408
VARIABLE RELUCTANCE ELECTRIC GENERATORS WITH STACKED PERMANENT MAGNET DISCS
Wilfrid B. Lewis and William A. Wolfe, Deep River, Ontario, Canada, assignors to Atomic Energy of Canada Limited, Ottawa, Ontario, Canada
Filed Sept. 18, 1967, Ser. No. 668,344
Int. Cl. H02k *19/24*
U.S. Cl. 310—168 **5 Claims**

Electric inductor generators of the magneto type having a rotor and a stator. A series of annular ferrite magnets arranged coaxially side-by-side (on a rotor or on an inner stator) have an associated magnetic structure including series of teeth that act as pole pieces for the magnets. Circumferentially extending coils extend around the outside of the generator structure. Located radially intermediate the teeth and the coils, and arranged to be rotatable relative to the teeth are magnetic shorting members that continuously switch the magnetic flux back and forth



between a first condition in which it ideally does not link at all with an associated coil and a second condition in which it ideally fully links with such coil, thus generating a voltage therein. Longitudinally of the machine the shorting members are circumferentially staggered to generate a multiphase output in the coils.

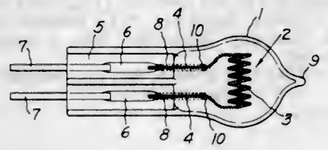
3,470,409
CONCENTRIC COIL STATOR WINDING FOR POLYPHASE DYNAMOELECTRIC MACHINE
Francis A. Scheda, Williamsville, N.Y., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed May 28, 1968, Ser. No. 732,610
Int. Cl. H02k *19/06*
U.S. Cl. 310—180 **3 Claims**



A polyphase stator winding for a dynamoelectric machine, the winding disposed in slots of a stator core comprising a plurality of coil groups forming a plurality of magnetic poles with each coil group having innermost and outermost concentric coils. The coils have coil sides adapted to lie in different slots, the ratio of the turns of the innermost coils to the turns of the outermost coils being such that the coils are distributed about the core to effect substantially equal slot fullness in all of the core slots.

3,470,410
BROMINE REGENERATIVE CYCLE INCANDESCENT LAMPS WITH PROTECTIVE OVERWIND COILS ON COILED FILAMENT LEGS
Glenn F. Patsch, South Euclid, Ohio, assignor to General Electric Company, a corporation of New York
Filed Jan. 16, 1967, Ser. No. 609,591
Int. Cl. H01j *1/02, 61/52;* **H01k** *1/58*
U.S. Cl. 313—37 **8 Claims**

In a regenerative cycle tungsten filament lamp containing bromide, preferably as hydrogen bromide, coiled wire filament legs emerging from a pinch seal and supporting the body portion of the filament are enclosed in a close fitting wire coil overwind to provide flexible support and to effect a gradual temperature gradient downward from the filament coil turns immediately adjacent the coil overwind to thereby minimize destructive attack of the filament coil turns by the bromine. This also permits an in-

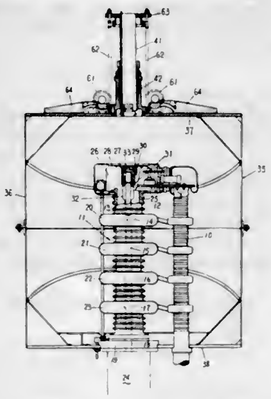


crease in hydrogen bromide concentration which, in turn, minimizes destructive arcing across the filament legs.

3,470,411
YTTRIUM-INDIUM VANADATE PHOSPHORS
Lyuji Ozawa, Kamakura-shi, Akio Toshinai, Chigasaki-shi, Yoshihisa Nagashima, Tokyo, and Satoru Nishikawa, Yokosuka-shi, Japan, assignors to Dai Nippon Toryo Kabushiki Kaisha, Konohana-ku, Osaka-shi, Osaka-fu, Japan
Filed Sept. 15, 1966, Ser. No. 579,699
Claims priority, application Japan, Sept. 21, 1965, 40/57,440
Int. Cl. C09k *1/44;* **H01j** *29/20, 61/44*
U.S. Cl. 313—92 **21 Claims**

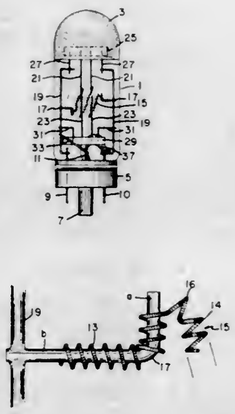
Europium activated yttrium vanadate phosphors having enhanced luminescence are formed by replacing part of the yttrium with indium.

3,470,412
APPARATUS FOR EXCHANGING THE FILAMENT OF AN ELECTRON GUN
Yoshio Sakamoto, Kyoto, Japan, assignor to Shimadzu Seisakusho, Ltd., Kyoto, Japan, a corporation of Japan
Continuation of application Ser. No. 287,444, June 12, 1963. This application Aug. 25, 1965, Ser. No. 482,462
Claims priority, application Japan, June 13, 1962, 37/24,620
Int. Cl. H01j *1/92*
U.S. Cl. 313—237 **6 Claims**



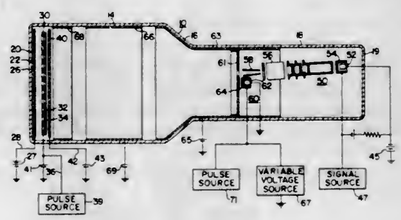
A device for exchanging the filament of an electron gun without breaking airtightness of the casing enclosing the insulating tower which contains the electron gun assembly. The exchange of the filament is carried out through the utilization of an elongated sleeve airtightly carried by the top wall of the casing and arranged in coaxial alignment with the insulating tower. The sleeve has a detachable airtight lid at its bottom and is axially movable from an entirely retracted position at the level of the top wall to a plunged position within the casing where the sleeve is engageable airtightly with the insulating tower.

3,470,413
PROJECTOR LAMP FILAMENT SUPPORT
Chester C. Blair, Jr., Winchester, and Richard E. Smith, Lexington, Ky., assignors to Sylvania Electric Products Inc., a corporation of Delaware
Filed Apr. 28, 1966, Ser. No. 545,945
Int. Cl. H01j *1/52, 19/40*
U.S. Cl. 313—331 **6 Claims**



A projector lamp in which each of the end segments of a coiled-coil filament is threaded over a substantially L-shaped support member which is in turn supported by and from a side rod of the mount framework.

3,470,414
DIRECT VIEW STORAGE SYSTEM
Wilson G. Helt and Jack K. Smith, Horseheads, N.Y., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed May 27, 1968, Ser. No. 732,175
Int. Cl. H01j *29/41*
U.S. Cl. 315—12 **4 Claims**

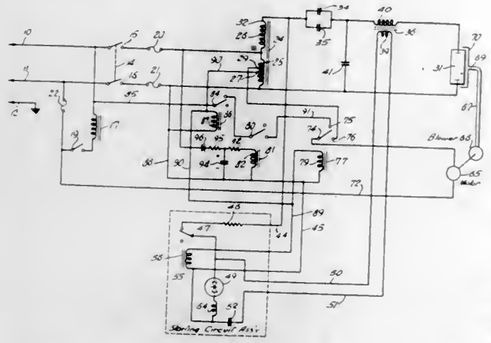


This invention relates to storage tubes and particularly to improved circuit and method for erasing a direct view storage tube. More particularly, the invention relates to means for modulating the spot size of the erase electron beam during the erase cycle for achieving complete and uniform erasure during the erase cycle.

3,470,415
SYSTEM COOLING FOR DISCHARGE LAMP
Maksymilian A. Michalski, Woodside, N.Y., assignor to Berkey Photo, Inc., New York, N.Y.
Filed July 25, 1967, Ser. No. 655,956
Int. Cl. H01j *7/24, 17/28, 19/74*
U.S. Cl. 315—117 **3 Claims**

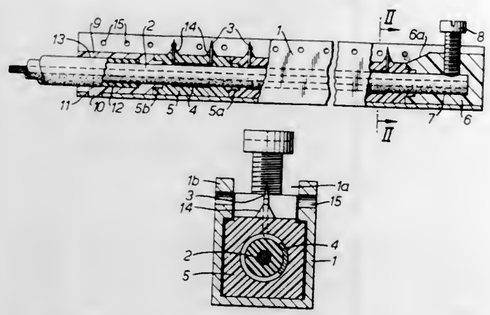
An electric system supplies a gas discharge lamp. A motor operated blower is provided to cool the lamp by blowing air thereover, the blower motor being adapted

to be operated at two speeds, a lower speed on partial voltage and a higher speed on full voltage. Switching means are provided so that upon first being energized the blower is not operated so that there is no cooling, thus allowing the lamp to reach operating temperature at a rapid rate. Timing means are provided so that after the lamp has been in operation for a predetermined time



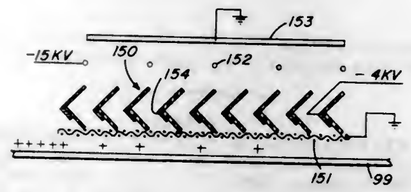
switching means is actuated causing the blower motor to operate under partial voltage. Holdover time delay means are provided so that the blower motor is operated after the lamp is deenergized, this phase of operation being at full voltage so that the lamp is rapidly cooled so as to be ready for a subsequent operation. The time delay of the switching means is achieved by the use of R-C circuits.

3,470,416
STATIC ELIMINATORS
John Richard Radington-Meech, Sidlow, near Reigate, and George Thomas Wright, Sydenham, London, England, assignors to Industrial Electrical Company Limited
Filed Sept. 21, 1966, Ser. No. 580,951
Claims priority, application Great Britain, Sept. 22, 1965, 40,370/65
Int. Cl. H05f *3/06*
U.S. Cl. 317—2 **6 Claims**



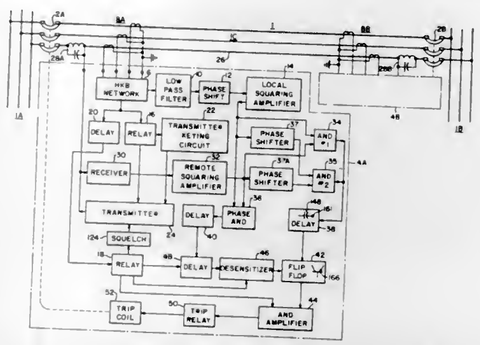
A static eliminator comprising an elongated casing, an electrically conductive member extending within and insulated from the casing, an electrical discharge means including electrodes and a wire coil embedded in a plurality of apertured units of insulating material which are threaded over the conductive member and located in end-to-end relation within the casing, with the electrical discharge means being capacitively coupled to the conductive member and being operative to create an ionizing field between the conductive member and the casing upon application of a high voltage.

3,470,417
METHOD OF ALTERING ELECTROSTATIC CHARGE ON AN INSULATING MATERIAL
Carl B. Gibbons, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed Oct. 3, 1966, Ser. No. 589,165
Int. Cl. H05f *1/02*
U.S. Cl. 317—4 **10 Claims**



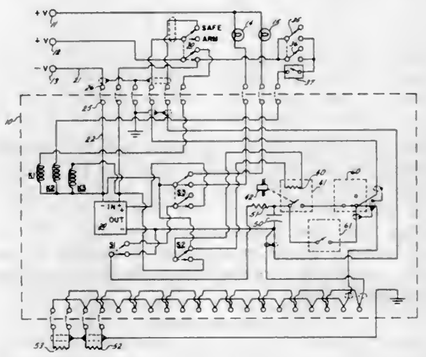
A method by which an electrostatic charge on one or both surfaces of a sheet or a web of insulating material can be altered to a desired potential or completely neutralized. This is accomplished by positioning or moving the sheet or web of insulating material between at least one pair of corona charging stations. Each corona directs a flow of ions through a wire screen or grid arranged close to the surface of the web and to the surface of the material. The wire screen can be grounded or held at some preselected potential depending on the alteration to be made of the charge on the surface of the material facing the screen. The wire screen controls the flow of ions to the respective surface of the insulating material.

3,470,418
PHASE COMPARISON RELAYING NETWORK
John E. Hagberg, Mountain Lakes, and Herbert W. Lensner, East Orange, N.J., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed June 6, 1967, Ser. No. 643,995
Int. Cl. H02h *3/28, 7/26*
U.S. Cl. 317—27 **10 Claims**



This disclosure discloses a phase comparison relaying system which will provide a trip signal to a circuit breaker in the case of an internal fault within the line section being protected with a time delay which is substantially the same irrespective of the time in any half-cycle during which the internal fault occurs. This is accomplished by the use of two AND circuits both of which are fed from the same pair of squaring amplifiers. One amplifier is actuated by the local and the other by the remote terminal. The amplifier signals are dependent upon the direction of current flow. The inputs of one of the AND circuits are connected through phasing networks which are set to reverse the phase of the local and remote squaring amplifier by 180°. These phasing networks, for example, may be NOT circuits so that one of the AND circuits will be actuated during one half-cycle of the flow of power and the other AND during the other half-cycle flow of power. The outputs of both AND circuits are connected through a common delay unit to the trip coil of the relay which operates the circuit breaker.

3,470,419
DESTRUCTION ACTUATION CIRCUIT
Donald D. Sitler, Phoenix, and William O. Christianson, Litchfield Park, Ariz., assignors to UMC Industries, Inc., a corporation of Missouri
Filed Sept. 9, 1966, Ser. No. 578,406
Int. Cl. F23q *7/02;* **H01h** *47/00*
U.S. Cl. 317—80 **10 Claims**



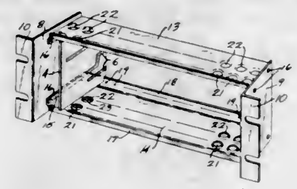
1. A destructor actuation circuit comprising: a capacitor; a potential source; a capacitor charging device conneted to said potential source and to said capacitor; a capacitor discharge circuit comprising:

(A) a first series circuit having connected in series:
  (1) a destructor actuation device responsive to a current therethrough for actuating a destructor;
  (2) said capacitor;
  (3) a normally open firing switch having contacts closable at the will of an operator;
  (4) a barometrically responsive switch having contacts normally closed at sea level and normally open at a predetermined height above sea level;

(B) and a second series circuit having connected in series:
  (1) said destructor actuation device;
  (2) said capacitor;
  (3) an impact-responsive switch having normally open contacts responsive to predetermined acceleration forces for closing.

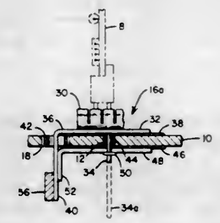
3,470,420
PRINTED CIRCUIT BOARD RACK
Lawrence P. Marks, Brown Deer, Wis., assignor to A. O. Smith Corporation, Milwaukee, Wis., a corporation of New York
Filed June 1, 1967, Ser. No. 642,788
Int. Cl. H02b *1/04, 9/00*
U.S. Cl. 317—101 **5 Claims**

A rack for a plurality of printed circuit boards is formed as a rectangular box-like structure which is open at the front and back. The box-like structure is formed with stamped metal walls including end walls including means having front mounting flanges for mounting of the rack into a suitable cabinet or other support. The top and bottom walls are similarly formed as planar



members with end flanges riveted to the end walls. Back wall flanges on the top and bottom walls project toward each other and include similar laterally equally spaced openings.

3,470,421
CONTINUOUS BUS BAR FOR CONNECTOR PLATE BACK PANEL MACHINE WIRING
Donald L. Shore, St. Paul, and James S. Warwick, Minneapolis, Minn., assignors to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed Aug. 30, 1967, Ser. No. 664,489
Int. Cl. H02b *1/04, 9/00*
U.S. Cl. 317—101 **10 Claims**

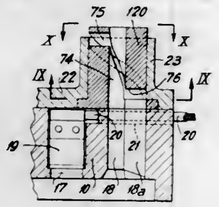


A continous bus bar for a conductive connector plate that is specifically designed for back-panel wiring by an automatic Wire-Wrap machine. The bus bar, on the connector plate front-side, includes a continuous spring clip for sliding pressure electrical contact with male contacts of printed circuit board connectors that are mounted thereby on the conector plate front-side. The bus bar, on the back-side, may include one or more conductive strips that are electrically coupled to the spring clip on the front-side by conductive members that, on the back-side, may also function as Wire-Wrap pins. The bus bar may be insulatively mounted on the connector plate to function as a voltage bus or may be directly mounted on the connector plate to function as a ground bus.

3,470,422
ELECTRICAL INSTRUMENTATION AND SWITCHGEAR PANELS
Charles Schneider, Asnieres, Hauts-de-Seine, and Felix Gervais Lameyre, Rneil-Malmaison, Hauts-de-Seine, France, assignors to La Telemecanique Electrique, Nanterre, Hauts-de-Seine, France, a French body corporate
Filed Jan. 25, 1968, Ser. No. 700,422
Claims priority, application France, Feb. 6, 1967, 93,801
Int. Cl. H02b *1/08, 1/06*
U.S. Cl. 317—120 **14 Claims**

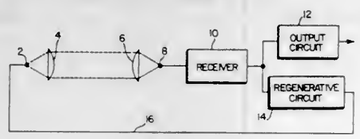
An electrical installation comprises a number of trays removably mounted in rack. Electrical components on

the rack are supplied with power from busbars at the rear of the rack via plugs attached to the trays. Each tray has a rotatable spindle by means of which the tray can be



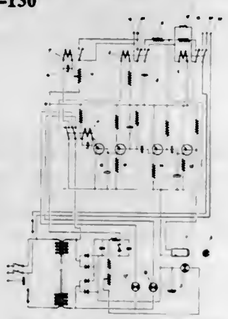
moved to connect and disconnect the plugs and the busbars. Disconnectible connections are also provided for the output of the components on the tray.

3,470,423
CLOSED LOOP MODULATED LIGHT RECOGNITION SYSTEM
John J. Larew, Waynesboro, Va., assignor to General Electric Company, a corporation of New York
Filed Nov. 26, 1965, Ser. No. 509,750
Int. Cl. H01h *47/24*
U.S. Cl. 317—125 **10 Claims**



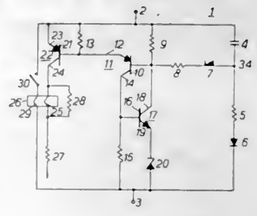
A modulated light arrangement comprising a light source, a light sensor, and a tuned amplifier coupled with said source and sensor in a regenerative circuit whose frequence of oscillation establishes the modulation rate of the modulated light emitted by said source.

3,470,424
DEVICE FOR THE AUTOMATIC STOPPING OF A MACHINE SUCH AS A CIGARETTE-MAKING MACHINE
Jacques Flesselles and Raymond Poupin, Fleury-les-Aubrais, France, assignors to Service d'Exploitation Industrielle des Tabacs et des Allumettes, Paris, France, a French public establishment
Filed June 15, 1966, Ser. No. 557,749
Claims priority, application France, June 17, 1965, 21,206
Int. Cl. H01h *47/24, 47/32*
U.S. Cl. 317—130 **8 Claims**



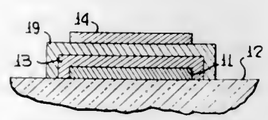
A production machine is automatically stopped when a detecting means reacts on missing products. A time-delay device is arranged to render the stopping circuit temporarily inoperative when the machine is restarted, until perfect products are again delivered by the machine.

3,470,425
LOCK-OUT CIRCUIT ARRANGEMENT
Stephane Marcel Clement Victor Simon, Brussels, Belgium, assignor to International Standard Electric Corporation
Filed Oct. 10, 1966, Ser. No. 585,576
Claims priority, application Netherlands, Oct. 15, 1965, 6513416
Int. Cl. H01h *47/02*
U.S. Cl. 317—137 **21 Claims**



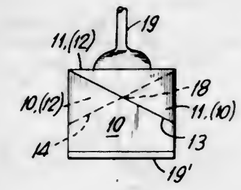
These lock-out circuit arrangements include a plurality of bistable devices. The bistable devices are associated in a manner such that when an attempt is made to switch one or more devices from their first to their second condition, only one device can be switched. This improved lock-out circuit arrangement is capable of successfully performing a lock-out operation between at least 500 bistable devices.

3,470,426
THIN FILM CIRCUIT ELEMENT OF AMORPHOUS SEMICONDUCTOR EXHIBITING A VOLTAGE VARIABLE NON-LINEAR RESISTANCE WITH SYMMETRICAL CHARACTERISTICS
Charles Feldman, Alexandria, Va., assignor to Melpar, Inc., Falls Church, Va., a corporation of Delaware
Filed Nov. 18, 1964, Ser. No. 411,973
Int. Cl. H01l *5/02*
U.S. Cl. 317—234 **10 Claims**



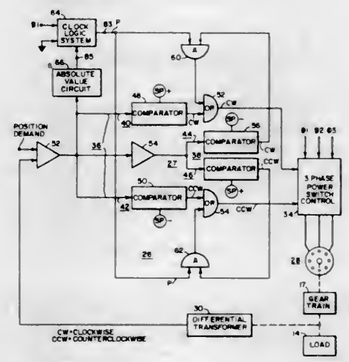
A thin film circuit element exhibiting a voltage variable non-linear resistance with a symmetrical characteristic curve is produced by securing a thin film of substantially pure amorphous semiconducting material of less than ten thousand angstroms in thickness between the relatively parallel opposed surfaces of a pair of spaced metal electrodes, the amorphous semiconducting material preferably an elemental semiconductor selected from the group consisting of boron, silicon, and germanium. A rectifying element having the aforementioned characteristic curve in the forward direction and a non-symmetrical high resistance curve in the reverse direction is obtained by further interposing a thin crystalline semiconducting film together with the amorphous film between the electrodes, the crystalline film bonded to one of the electrodes and to the amorphous film.

3,470,427
SEMICONDUCTOR LASER DEVICES
Akira Kawaji and Hiroo Yonezu, Tokyo, Japan, assignors to Nippon Electric Company, Ltd.
Filed Jan. 30, 1967, Ser. No. 612,574
Claims priority, application Japan, Jan. 31, 1966, 41/5,497
Int. Cl. H01l *5/00;* **H01s** *3/00;* **H01j** *1/62*
U.S. Cl. 317—234 **5 Claims**



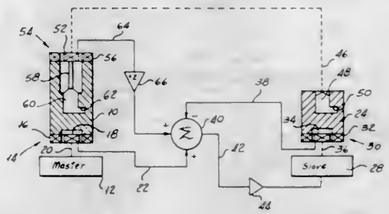
A semiconductor laser including a semiconductor crystal of one conductivity type having a pair of optically flat and mutually parallel side faces, and at least two regions of opposite conductivity types arranged in such a manner that each of the P-N junction interfaces, between the crystal and the regions, is disposed perpendicularly to the side faces so that if extended, the interfaces would intersect each other, and define a line of lasing action.

3,470,428
ALTERNATING CURRENT MOTOR CONTROL SYSTEM PARTICULARLY FOR POSITION REGULATING APPLICATIONS
Joseph Gill, Bridgeville, and George Rouvalis, Pittsburgh, Pa., assignors, by mesne assignments, to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Jan. 20, 1966, Ser. No. 521,931
Int. Cl. H02p *5/46, 7/68, 7/74*
U.S. Cl. 318—18 **10 Claims**



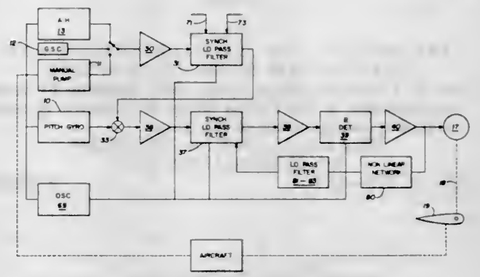
A three phase induction motor is position controlled or position and velocity controlled by means of solid state switches which apply full supply voltage cycles to the motor at varying rates dependent on the position error or the position error and velocity error. A pulse generator is controlled to generate pulses synchronously with supply voltage cycles for gating control of the solid state switches.

3,470,429
SYSTEM FOR ALIGNING REMOTE LINES OF POSITION
Raymond Wendell Goodwin, Westport, and Marshall Greenspan, Fairfield, Conn., assignors to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware
Filed Jan. 6, 1966, Ser. No. 519,022
Int. Cl. H02p *5/46, 7/68, 7/74*
U.S. Cl. 318—18 **15 Claims**



A servo system especially adapted for aligning remote lines of position in which respective transducers have rotors and stators mounted on bodies adapted to move relative to each other. A comparator responsive to respective signals representing the displacements of the rotors from reference positions with relation to the stators actuates means for positioning the stator of one of the transducers. Means responsive to relative movement between the stators in response to movement of the bodies from a predetermined relative position provides a compensating signal which is fed to the comparator to compensate for the relative movement of the bodies.

3,470,430
AIRCRAFT PITCH AXIS SERVO CONTROL INCLUDING NOISE ELIMINATION AND NONLINEAR COMPENSATION
James R. Younkin, Mineral Wells, Tex., assignor to Mitchell Industries, Inc., Mineral Wells, Tex., a corporation of Texas
Filed Mar. 11, 1966, Ser. No. 533,701
Int. Cl. G05b *11/14;* **H02p** *7/00*
U.S. Cl. 318—18 **6 Claims**

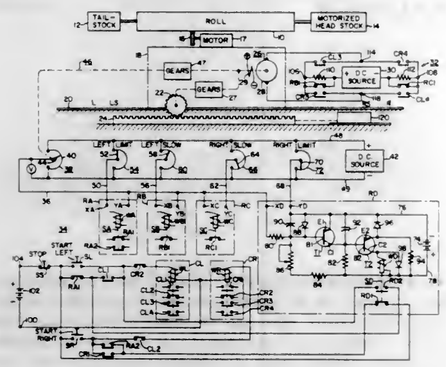


The disclosure is directed to a control system for an aircraft pitch axis wherein the pitch control output of an aircraft may be utilized in conjunction with either an altitude hold function, manual pitch control, or a glide slope coupler. The selected control function is filtered and added with the output from the pitch gyro. The combined signals are filtered and passed through a phase detector to drive a servo actuator to operate the aircraft elevators. Feedback of the servo drive signal is passed through a nonlinear network and a low pass filter for insertion into the filter for the combined signals. Circuitry is provided in the filter for the selected control function to nonlinearly control the time response of the filter to provide a delayed response for all control functions exceeding a predetermined level.

3,470,431
POSITION RESPONSIVE SWITCHING APPARATUS

Donald W. Jones, Cheektowaga, N.Y., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Nov. 16, 1966, Ser. No. 594,882
Int. Cl. H02p *1/54, 5/46, 7/74*
U.S. Cl. 318—18 **2 Claims**

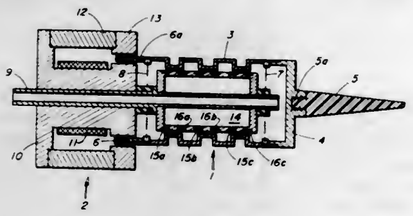


A position responsive switching system is disclosed wherein the direction and extent of movement of a driven member relative to a reference, such as a workpiece, is controlled by providing reference and position responsive potentiometers in parallel across a voltage source with the wiper contact of the position responsive potentiometer being driven as a function of the direction and extent of the movement of the driven member. The switching circuit includes a switching element, which may comprise a polarized relay, connected across the wiper contacts of the position and reference potentiometer and which is designed to have a predetermined response so that this circuit will be activated depending upon the relative positions of the wiper arms of the reference and position potentiometers. The switching circuit may be utilized to detect any desired circuit change, for instance, slowdown or reversal of the drive for the driven member.

3,470,432
TRANSDUCER, TRANSDUCER SYSTEM AND TRANSDUCER SUSPENSION SPRING

John G. Chubbuck, Silver Spring, Md., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy

Filed July 21, 1967, Ser. No. 655,244
Int. Cl. H02k *33/02, 35/02*
U.S. Cl. 318—127 **8 Claims**

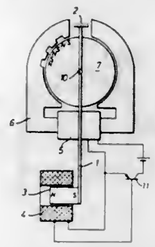


A transducer apparatus system having a movable probe constrained to travel longitudinally by a single spoke suspension spring, a capacitance pickoff to sense probe motion, and an electronic control circuit which closely controls probe motion or force and provides voltage readouts indicative of probe displacement and probe force.

3,470,433
CONSTANT SPEED CLOCK MOTOR

Roland Siefert, Bad Durrheim, Germany, assignor to Kienzle Uhrenfabriken G.m.b.H., Schwenningen am Neckar, Germany, a limited-liability company of Germany

Filed Aug. 12, 1966, Ser. No. 572,145
Claims priority, application Germany, Aug. 12, 1965, K 56,868
Int. Cl. H02k *29/02, 29/04*
U.S. Cl. 318—138 **6 Claims**

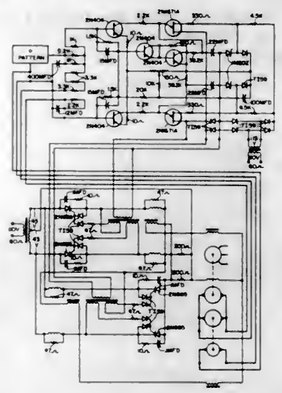


An electrically driven clockwork motor whose stator drive winding is controlled through a transistor relay as a switch and the relay is in turn controlled by output from an inductor coil. Cooperating with the inductor coil is an oscillatory permanent magnet on a spring the latter also carrying a bearing of the rotor of the motor.

3,470,434
ELECTRICAL DRIVE AND METHOD OF OPERATING SUCH DRIVE

William R. Caputo, Jersey City, N.J., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Sept. 9, 1966, Ser. No. 583,146
Int. Cl. H02p *5/20, 5/22*
U.S. Cl. 318—146 **7 Claims**



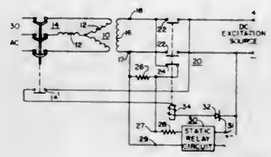
An electrical MG-set drive for an elevator is disclosed in which the field of the generator is supplied through silicon-controlled rectifiers connected to supply the fields in opposite directions in accordance with the demands of the elevator cars for being moved up or down or being held at selected levels or having their speeds reduced. Smooth control is achieved by controlling the rectifiers which conduct oppositely so that they can conduct simultaneously in opposite directions, during transitions from field current of one polarity to the opposite polarity, while the field current is low, the decaying current still flowing through the field and the increasing current flowing through resistance until it takes over. The rectifiers of unselected polarity are locked out at normal drive field

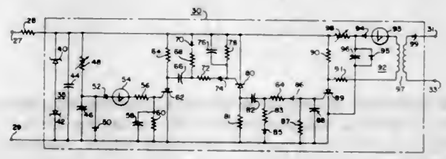
current by saturation of the firing current transformer of each rectifier by the normal current flow of the opposite polarity through the field. Each firing transformer includes a coil in the field circuit which saturates it for normal current flow opposite to the polarity of the rectifier which it fires.

3,470,435
SYNCHRONOUS MOTOR FIELD CONTROL CIRCUIT

Arthur H. Hoffmann, Monroeville, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed June 6, 1967, Ser. No. 643,914
Int. Cl. H02p *5/28*
U.S. Cl. 318—176 **7 Claims**





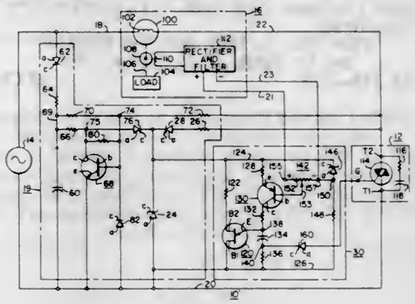
A circuit for controlling the application of excitation to the field of a synchronous machine. The excitation current is applied to the field through contactors of a switching means having an inherent delay in closing time. The circuit is connected across the field winding of the machine to sense the frequency and phase of the alternating slip voltage developed therein with rotation of the winding relative to an energized stator winding. The circuit comprises a first timing circuit for measuring the frequency of the voltage by timing its negative half cycle and for producing a breakdown potential across a diode when the voltage attains a predetermined frequency. The breakdown potential gates a switching device which is operable to energize a second circuit which produces an output signal during the following positive half cycle. The output signal energizes a second timing circuit which is operative to produce a pulse for energizing the contactor switching means during the next negative half cycle, at a time period before the next voltage zero equal to the time inherently required for the contactors to close.

3,470,436
ELECTRICAL CONTROL APPARATUS

David J. Steele, Monroeville, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Oct. 27, 1967, Ser. No. 678,597
Int. Cl. H02p *1/26, 1/42;* **H02k** *17/02*
U.S. Cl. 318—227 **9 Claims**

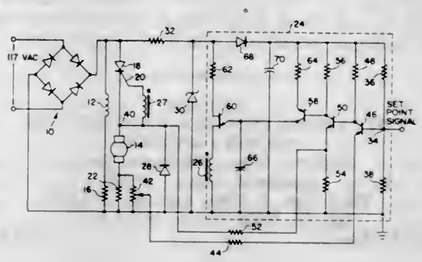
Speed control systems for single phase AC motors, which do not require isolating power or pulse transformers. The speed control systems utilize a controllable semiconductor AC switch connected in series with a source of AC potential and a winding of the AC motor whose speed is to be controlled, and a phase controlled firing circuit which provides symmetrical firing pulses for the AC switch during the positive and negative half cycles of the source potential, in response to a feedback signal from means responsive to the speed of the AC motor. In one embodiment of the invention, control voltage pulses of like polarity are provided during the positive and negative half cycles of the AC source potential, initiated by the turning off of the AC switch at current zero. These control voltage pulses are used to initiate the timing cycle in each half cycle of the AC source potential for pulse producing means. In another embodiment of the invention, symmetrical positive and negative firing pulses are provided in the positive and negative half cycles of the AC source potential, respectively, in response to the feedback signal.



3,470,437
MOTOR SPEED REGULATOR

Donald C. Douglass, Pomona, Calif., assignor to Beckman Instruments, Inc., a corporation of California

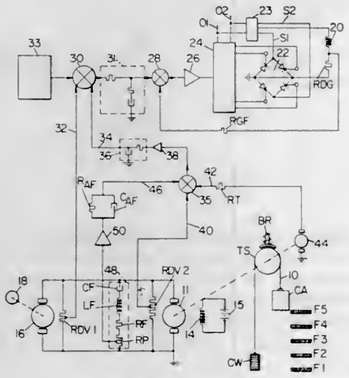
Filed Sept. 8, 1966, Ser. No. 578,048
Int. Cl. H02p *5/28, 7/36;* **H02k** *27/20*
U.S. Cl. 318—308 **9 Claims**



A circuit for the control and regulation of the speed of a direct current motor having a shunt field over a large range of high torque operating conditions is disclosed. Speed is regulated by controlling the energy delivered to the armature. The control is accomplished by means of two feedback signals which are combined in such a fashion as to generate pulses in a timing circuit to initiate conduction of a silicon controlled rectifier through which energy is supplied to the armature. One feedback control signal is a function of the counter-E.M.F. during free-wheeling. The other feedback control signal is proportional to armature current during free-wheeling. The circuit combines these two feedback signals in such a manner that the energy supplied to the armature is decreased with increasing counter-E.M.F. and is increased with increasing armature current so as to provide constant speed over a greater torque range than heretofore possible. Energy is supplied through a semiconductor diode full-wave rectifier to the parallel combination of the shunt field, the armature in series with the energy controlling

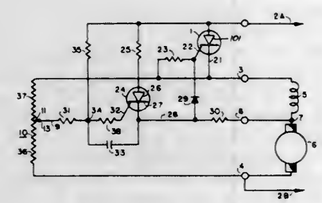
gate, and the timing circuit. The unfiltered full-wave output of the bridge rectifier is applied directly to this combination.

3,470,438
MOTOR CONTROL SYSTEM
Otto Albert Krauer, Tuckahoe, and Sidney Howard Benjamin, Brooklyn, N.Y., assignors to Otis Elevator Company, New York, N.Y., a corporation of New Jersey
Filed Mar. 8, 1967, Ser. No. 621,535
Int. Cl. H02k *27/20;* **H02p** *7/80*
U.S. Cl. 318—312 **15 Claims**



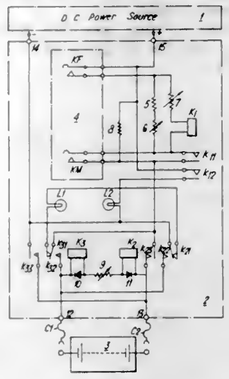
A high performance servo system particularly suitable for controlling the speed of a motor which is subjected to a variety of loads. The feedback loops of the system include networks which produce signals representing the steady-state load components of the motor armature terminal voltages. These signals cancel out the adverse effects load variations would otherwise have on the system.

3,470,439
RECTIFIER CONTROL CIRCUIT FOR MOTOR CONTROL
Walter J. Brown, 71 Gurley Road, Stamford, Conn. 06902
Filed Sept. 2, 1966, Ser. No. 577,078
Int. Cl. H02k *27/20;* **H02p** *5/12*
U.S. Cl. 318—331 **16 Claims**



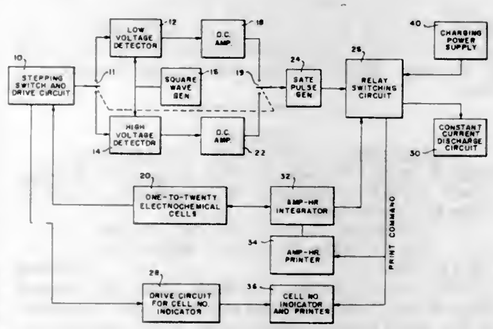
A power control system for a series wound electric motor receives rectified alternating current supply and includes a gated power rectifier controlled by a controllable semiconductor pilot device, such as a silicon controlled rectifier or a transistor. The pilot device has control means connected across a capacitor in an error signal circuit and is substantially isolated from the gated power rectifier during conduction periods in each alternating current cycle.

3,470,440
STORAGE BATTERY CHARGING EQUIPMENT
Michael Rheingold, Thalwil, and Jean R. E. Debrunner, Langnau am Albis, Switzerland, assignors to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware
Filed Mar. 13, 1967, Ser. No. 622,534
Claims priority, application Switzerland, Mar. 18, 1966, 3,989/66
Int. Cl. H02j *7/00;* **H01m** *45/04*
U.S. Cl. 320—25 **1 Claim**



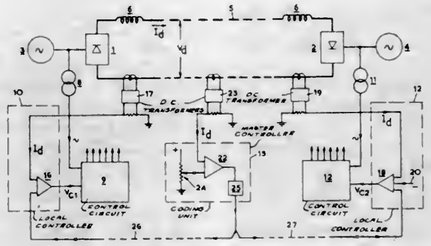
A connected battery to be charged by self-service equipment is automatically related to the charging source in correct polarity by a pair of polarized relays. Automatic control of the charging voltage and charging time accommodates both the 6 and 12 voltage batteries without external settings being required and provides the same number of watt-hours per coin unit irrespective of the voltage of the battery.

3,470,441
AUTOMATIC FORMATION CYCLER AND CONTROLLER FOR ELECTROCHEMICAL CELLS
Floyd E. Ford, Davidsonville, Thomas J. Hennigan, Chillum Terrace, Nelson H. Potter, Berwyn Heights, Md., and Kenneth O. Sizemore, Washington, D.C., assignors to the United States of America as represented by the Secretary of the Navy
Filed Oct. 25, 1966, Ser. No. 589,469
Int. Cl. H02j *7/14;* **H01m** *45/04*
U.S. Cl. 320—6 **3 Claims**



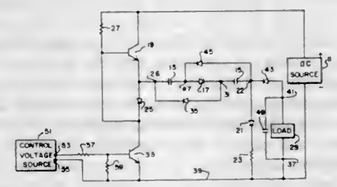
This invention is a battery charger for charging and discharging a plurality of battery cells. The device operates to sense a high voltage in any given when the cells are being charged and a low voltage when they are being discharged. When either state is sensed, a pulse is generated to energize a relay which acts to remove the cell from the circuit.

3,470,442
CONTROL SYSTEMS FOR H.V.D.C. TRANSMISSION LINKS
John Desmond Ainsworth, Stafford, England, assignor to the English Electric Company Limited, London, England, a British company
Filed July 3, 1967, Ser. No. 650,938
Claims priority, application Great Britain, July 5, 1966, 30,217/66
Int. Cl. H02m *3/22, 5/40*
U.S. Cl. 321—2 **11 Claims**



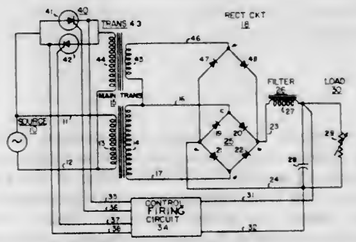
A control system for an H.V.D.C. link including two A.C.–D.C. converter station operable as a rectifier and an invertor, respectively. At least one local controller is provided at each station for adjusting the conduction angles of the controllable devices, e.g. mercury pool valves, so as to adjust a quantity, e.g. power, of the link in dependence on the difference between a signal derived from the link itself and an "ordered" signal from a master controller. In addition, the invertor station includes an additional control operative to reduce the magnitude of the ordered signal whereby to afford a margin by which the invertor tends to adjust the said quantity in the link to a value lower than that adjusted by the rectifier. The system affords an extremely rapid response to changes in the monitored quantity, any such change being sensed directly by the master controller which, in turn, appropriately governs the local controllers.

3,470,443
POSITIVE DC TO NEGATIVE DC CONVERTER
Eugene H. Berry, Arab, and Frank J. Nola, Huntsville, Ala., assignors to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration
Filed Dec. 7, 1967, Ser. No. 688,807
Int. Cl. H02m *3/22, 3/08*
U.S. Cl. 321—2 **3 Claims**



An apparatus for converting the output of a positive DC voltage source to a negative DC voltage of lower magnitude across a load having a common reference point with the source where a pluraliy of capacitors are charged in series and discharged in parallel. Half wave rectifier means connecting the plurality of capacitors in series and in parallel and first and second transistor switches extending between the positive terminal of the DC source and ground for alternately connecting one end of the capacitance circuit to the positive terminal of the DC source and ground. Unidirectional conducting means connecting the opposed end of the capacitance circuit to ground and to the load so as to steer the charging current to ground and to steer the discharging current through the load.

3,470,444
CONTROL CIRCUIT FOR RECTIFIERS USING SILICON CONTROLLED RECTIFIERS
William H. Bixby, Columbus, Ohio, assignor to North Electric Company, Galion, Ohio, a corporation of Ohio
Continuation of application Ser. No. 311,053, Sept. 24, 1963. This application June 21, 1967, Ser. No. 647,876
Int. Cl. H02m *7/12*
U.S. Cl. 321—5 **23 Claims**

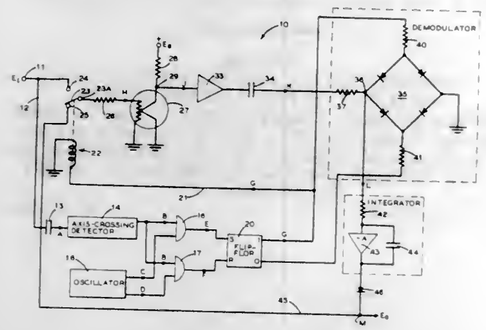


1. In a power supply circuit for providing a controlled direct current output from an alternating current source to a load including a rectifier circuit, a first supply circuit including a main transformer means for supplying a first energizing voltage from said source to said rectifier circuit, connecting means for connecting the output of said rectifier circuit to a load, a second supply circuit including booster transformer means for supplying an additional voltage output from said source to said rectifier circuit, and a pair of controlled rectifier devices connected in inverse parallel relation to control energization of said booster transformer means from said source means, a control circuit connected between said load and said controlled rectifier devices for adjusting the firing angle of said controlled rectifier devices in each cycle to a value which maintains a constant output for said load, and means in said rectifier circuit operative to conduct the transformer secondary current over said main transformer and said booster transformer means in series to said connecting means in response only to switching of either one of said controlled rectifier devices to the conductive state.

3,470,445
R.M.S. TO D.C. CONVERTER FOR PERIODIC SIGNALS
Peter L. Richman, Lexington, Mass., assignor to Weston Instruments, Inc., Newark, N.J., a corporation of Delaware
Filed Jan. 3, 1968, Ser. No. 695,375
Int. Cl. H02m *1/08, 7/44*
U.S. Cl. 321—1.5 **6 Claims**

A system for converting the R.M.S. value of a periodic electrical input waveform into a substantially D.C. output waveform of proportional magnitude, the periodic waveform crossing a known axis in a given direction only once during each period thereof. The conversion is effected by a thermal converter having its input periodically

switched to receive the periodic waveform. Each axis crossing of the periodic waveform is detected and two out of a plurality of axis crossings are utilized to synchronize the selective connection of the thermal converter input to that waveform and to a correspondingly synchronized D.C. feedback signal. The D.C. feedback signal is received by the converter input via a feedback loop and has a magnitude proportional to the R.M.S. value of the



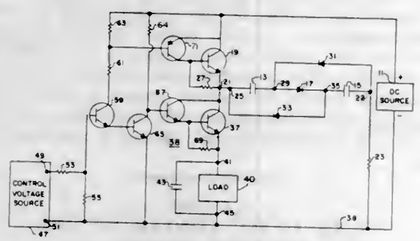
periodic waveform from whence it is derived. The feedback loop tends to nullify magnitude differentials between the feedback signal and the R.M.S. value of the periodic waveform so that time-varying transients produced by the successive connection of the converter input to the periodic waveform and to the feedback signal are caused to assume similar waveshapes thereby substantially lessening the problem of compensating for such transients.

3,470,446

POSITIVE DC TO POSITIVE DC CONVERTER

Eugene H. Berry, Arab, and Frank J. Nola, Huntsville, Ala., assignors to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration

Filed Jan. 12, 1968, Ser. No. 697,341
Int. Cl. H02m *3/22, 5/40*
U.S. Cl. 321—2 **2 Claims**



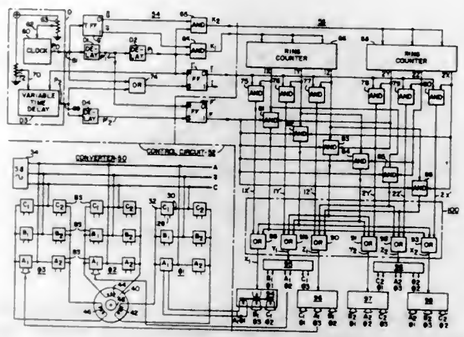
An apparatus for converting the output of a positive DC voltage source to a positive DC voltage of lower magnitude across a load having a common reference point with the source including a plurality of capacitors connected in series by first half wave rectifier means and in parallel by second half wave means. First and second transistor switch means extending between the positive output terminal of the DC source and a first load input terminal for alternately connecting one end of the capacitor circuit to the positive output terminal and to the first load input terminal and conducting means coupling the opposed end of the capacitor circuit to the negative terminal of the DC source and to the second load input terminal.

3,470,447

STATIC FREQUENCY CONVERTER WITH NOVEL VOLTAGE CONTROL

Laszlo Gyugyi, Penn Hills, Pittsburgh, and Brian R. Pelly, Murrysville, Pa., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Apr. 21, 1967, Ser. No. 632,787
Int. Cl. H02m *1/08, 7/44*
U.S. Cl. 321—7 **5 Claims**



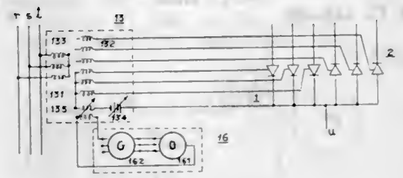
Apparatus shown is a frequency converter including a three-phase to three-phase system, wherein for each output phase there is a three-phase-input bridge-type frequency converter having six conversion phases operating on six uniformly time-spaced line-to-line alternating voltages implicit in a three-phase supply. Each of the six arms of the bridge is provided with a bilateral controlled static switch, and a control circuit operates the switches in a cyclic pattern of successive different permutations each including a pair of the switches. The repetitive pattern extends across a plurality of successive time frames. Each permutation is effected at least once during the pattern, and at least one permutation is effected at least some time during each frame of the pattern. Each permutation connects a different one of the six voltages to the load circuit, whereby the successive permutations successively connect to the load circuit, increments of the input voltages in a certain order to provide an output frequency equal to the difference between the power input frequency and the cyclic rate of the aforesaid pattern. The control circuit includes adjustable means for varying the duration of connection of each voltage within and relative to the length of a frame thereby to control the magnitude of the average output voltage. One version of the control circuit also has provisions to short the load within the time span between the end of each voltage connection and the start of the next voltage connection. Another control modification provides a cyclic switching pattern wherein successively operated switching units alternately connect opposite polarity voltages to the load circuit in a controllable ratio of positive-to-negative durations, thus to control the average output voltage. The described apparatus also includes a unique arrangement for maintaining substantially constant volts-per-cycle by linearly varying with output frequency, the duration of connection of each input AC voltage relative to the length of the time frame.

3,470,448

CONTROL SYSTEM FOR A FREQUENCY CONVERTER

Ulrich Krabbe, Helsinger, Denmark, assignor to Allmanna Svenska Elektriska Aktiebolaget, Vasteras, Sweden

Continuation-in-part of application Ser. No. 590,456, Oct. 22, 1966. This application Dec. 11, 1967, Ser. No. 689,524
Int. Cl. H02m *1/12*
U.S. Cl. 321—9 **4 Claims**



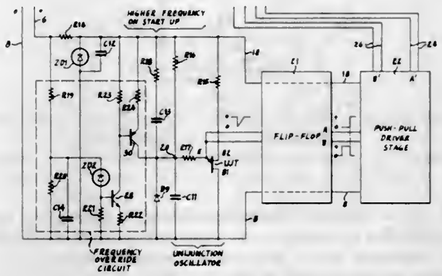
A method of controlling a static converter used for converting a multi-phase alternating voltage from one network to a multi-phase alternating voltage in a second network; the converter includes reverse parallel connected rectifiers between the phases of the networks and a common ignition device for all the rectifiers connected to any phase; a reference voltage from the primary network and an A.C. control voltage are combined in such a way that the secondary phases follow the A.C. control voltage; each phase of the A.C. control voltage has a curved shape representing the combination of a fundamental wave and at least one of the harmonics divisible by three so as to reduce the amplitude of the A.C. control voltage at least at its highest amplitude.

3,470,449

CONSTANT FREQUENCY INVERTER WITH FREQUENCY OVERRIDE

Robert L. Risberg, Milwaukee, Wis., assignor to Cutler-Hammer, Inc., Milwaukee, Wis., a corporation of Delaware

Filed Apr. 8, 1968, Ser. No. 719,383
Int. Cl. H02m *1/18*
U.S. Cl. 321—11 **10 Claims**



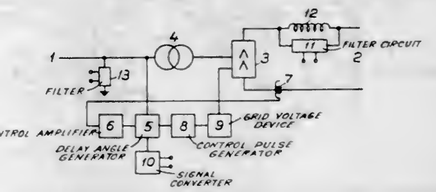
A single-phase solid state inverter supplied from a D.C. source and controlled by a unijunction oscillator to provide a constant 60 c.p.s. frequency, constant amplitude A.C. output independent of supply voltage variations within a reasonable range. An RC timing circuit at the oscillator input provides higher frequency at start-up to avoid high inrush current to the output transformer and to allow use of lower rating components in the commutating circuits. A frequency override circuit at the oscillator input operates if the supply voltage should increase beyond the aforesaid range—above 120 percent of nominal voltage—to prevent saturation of the output transformer.

3,470,450

CONVERTER WITH COMPENSATION FOR DC MAGNETIZATION

Kjell Karl-Axel Eriksson and Sven Erland Gustav Lindblad, Ludvika, and Bengt Gösta Lindeberg, Orebro, Sweden, assignors to Allmanna Svenska Elektriska Aktiebolaget, Vasteras, Sweden, a Swedish corporation

Filed July 27, 1966, Ser. No. 568,166
Claims priority, application Sweden, July 28, 1965, 9,900/65
Int. Cl. H02m *1/08, 7/02*
U.S. Cl. 321—16 **6 Claims**



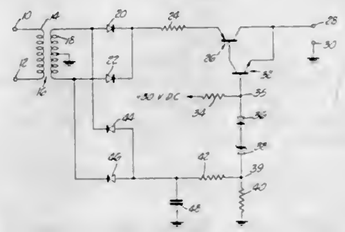
A static converter is provided with a rectifier bridge and a converter transformer and with circuitry for indicating directly or indirectly a DC magnetization in said converter transformer. Said indicating circuiting gives a signal for influencing a control system for the rectifier bridge in order to restore symmetric operation of the static converter and thus eliminate the DC magnetization of the converter transformer.

3,470,451

RMS VOLTAGE REGULATOR

Shingo Arase, Monterey Park, Calif., assignor to Hoffman Electronics Corporation, El Monte, Calif., a corporation of California

Filed July 3, 1967, Ser. No. 650,720
Int. Cl. H02m *1/08, 7/04*
U.S. Cl. 321—18 **8 Claims**



A voltage regulator for maintaining the RMS value constant in which the negative going half of the input signal is used to change the reference level of a Zener diode which in turn controls the base level of a series transistor to cause it to clip at a lower level if the input voltage increases.

3,470,452

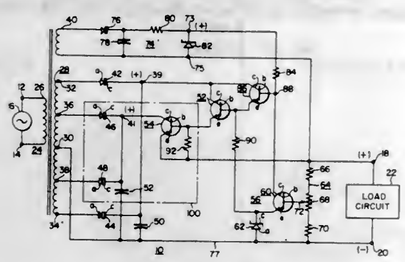
REGULATED POWER SUPPLY HAVING A TAPPED LINE TRANSFORMER FOR PROVIDING A PLURALITY OF DC VOLTAGE LEVELS

Guido Watson, Murrysville, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Mar. 13, 1968, Ser. No. 712,677
Int. Cl. H02m *1/08, 7/44*
U.S. Cl. 321—18 **9 Claims**

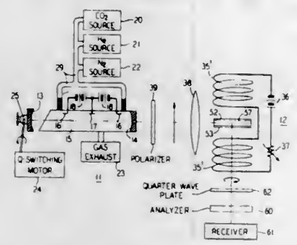
An AC to DC regulated power supply, including input and output terminals, a line transformer having a plurality of taps, rectifier means connected to certain of the

transformer taps to provide a plurality of DC voltage levels, a transistor connected between each of the DC voltage levels and the output terminals, and feedback circuitry for providing a signal responsive to the deviation of the voltage at the output terminals from the desired value. The transistors are connected in a cascaded emitter



follower arrangement, and provide automatic tap changes on the transformer as the AC voltage at the input terminals changes, to provide power flow through the series transistor associated with the lowest DC voltage level capable of being regulated by the feedback signal to provide the desired voltage at the output terminals.

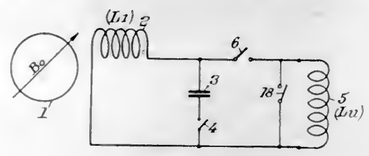
3,470,453
FIELD-TUNABLE RAMAN LASER
Paul A. V. Fleury, Plainfield, Chandra K. N. Patel, Chatham, Richart E. Slusher, Millington, and Yako Yafet, Maplewood, N.J., assignors to Bell Telephone Laboratories, Incorporated, Murray Hill, N.J., a corporation of New York
Filed May 11, 1967, Ser. No. 637,796
Int. Cl. H02m *5/16, 5/26;* **H01s** *3/09*
U.S. Cl. 321—69 **3 Claims**



A broadly tunable Raman device employs magnetic field tuning of new electronic Raman transitions in low-effective-mass semiconductors, such as indium antimonide. The new transitions are the spin-reversal transition and the $\Delta n=1$ transition, where n is the Landau level quantum number. Both transitions are characterized by emitted radiation polarized orthogonal to the magnetic field when the pumping radiation is polarized parallel to the magnetic field or by emitted radiation polarized parallel to the magnetic field when the pumping radiation is polarized orthogonal to the magnetic field. In order to obtain these transitions, the pumping source, the scattered radiation resonator and the scattered radiation receiver are appropriately mutually adapted in view of these respective polarizations and the relative directions of propagation of the respective radiations.

The optical resonator can be selected to prefer one or more of the transitions, or to support all of the known electronic Raman transitions, specifically, spin-reversal, $\Delta n=1$ and $\Delta n=2$. An additional parabolic reflector facilitates observation of both spontaneous scattering and stimulated scattering.

3,470,454
ELECTRICAL GENERATORS, MORE PARTICULARLY FOR DELIVERING ELECTRICAL ENERGY IN PULSE FORM
Paul-Henri Rebut, Versailles, and Antoine Torossian, Bourg-la-Reine, France, assignors to The Commissariat a l'Energie Atomique, Paris, France, an organization of France
Filed Nov. 25, 1966, Ser. No. 597,034
Claims priority, application France, Nov. 26, 1965, 40,005
Int. Cl. H02h *7/06*
U.S. Cl. 322—20 **8 Claims**

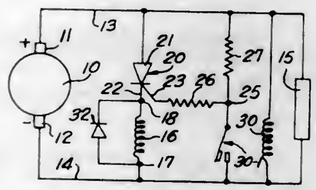


The generator comprises a rotor and a stator, and delivers a unidirectional pulse, preferably during one-half of a period of the sinusoidal voltage produced, during which time the rotor stops. The generator satisfies the following condition:

$$\Omega^2 \leq \frac{4\phi_0^2}{K(Lu+\alpha N)}$$

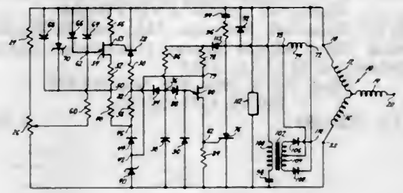
where Ω and K are the speed and moment of inertia, respectively, of the rotor, ϕ_0 is the stator flux, N is the leakage self-inductance, α is a coefficient whose value is comprised between 1 and 2, and Lu is the self-inductance of the utilization circuit.

3,470,455
ELECTRIC GENERATING SYSTEM CONTROL
John W. Korda, East Cleveland, Ohio, assignor to The Leece-Neville Company, Cleveland, Ohio, a corporation of Ohio
Filed Oct. 17, 1962, Ser. No. 231,179
Int. Cl. H02p *9/30*
U.S. Cl. 322—28 **22 Claims**



1. In an electric generating system, a generating machine having an output to be regulated between maximum and minimum levels, positive and negative terminals energized by the output of said machine, a circuit adapted to be switched between conductive and nonconductive states to control the output of said machine, said circuit including a semiconductor switching device having an anode and a cathode connected in series in said circuit, said device being of the avalanche type having a gate electrode and being adapted to be switched on and off by gate currents in the device between the gate electrode and the cathode when the gate electrode is positive with respect to the cathode and between the anode and gate when the gate is negative with respect to the cathode, a gate circuit for applying a potential across said gate electrode to potentials below and above the cathode of said device to establish gate currents in said device of opposite polarity to switch the device off and on, and output sensing means responsive to the output of said machine for switching said gate circuit as said output rises and falls to said maximum and minimum levels.

3,470,456
GENERATOR CONTROL CIRCUIT HAVING MEANS FOR RAPID VOLTAGE BUILD-UP
Owen E. Reinert, St. Louis, Mo., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed July 27, 1966, Ser. No. 568,210
Int. Cl. H02h *7/06;* **H02p** *9/00, 11/00*
U.S. Cl. 322—32 **11 Claims**

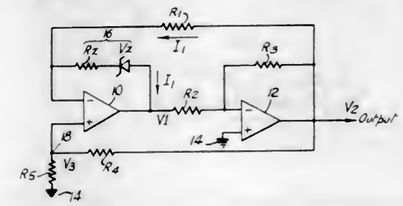


The primary winding of a voltage step-down transformer is connected in series with a capacitor to constitute a series-resonant circuit across an output of an electric generator; and the secondary winding of that transformer is connected in series with the field winding of that electric generator to facilitate rapid buildup of the voltage across the output of the electric generator. The normal value of the output voltage of the electric generator is controlled by a primary variable impedance which controls the lengths of time during which power is supplied to the field winding of the electric generator, and by a secondary variable impedance which controls the firing angle of that primary variable impedance. An inexpensive and easily-adjusted control element can be adjusted to adjust the firing angle of the secondary variable impedance and thereby adjust the firing angle of the primary variable impedance; and hence an adjustment of an inexpensive and easily-adjusted control element can adjust the normal value of the output voltage of the electric generator.

ERRATUM

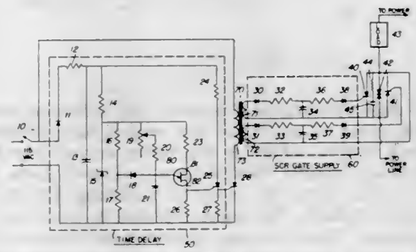
For Class 323—22 see:
Patent No. 3,470,497

3,470,457
VOLTAGE REGULATOR EMPLOYING CASCADED OPERATIONAL AMPLIFIERS
Donald L. Howlett, Houston, Tex., assignor to Texaco Inc., New York, N.Y., a corporation of Delaware
Filed Apr. 28, 1967, Ser. No. 634,717
Int. Cl. G05f *1/60, 1/40;* **H02m** *3/08*
U.S. Cl. 323—22 **9 Claims**



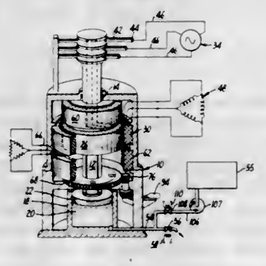
A voltage regulator circuit employing two operational amplifiers connected in series. The second stage, or final amplifier, from which the regulated voltage output is derived, includes three feedback loops. Two of these feedback loops are coupled to the input of the first stage, or initial, amplifier while the third of these feedback loops is coupled to the input of the second stage amplifier. The first stage amplifier has one feedback loop including a Zener diode and this feedback loop couples the output voltage of the first stage amplifier to the input thereof.

3,470,458
SOLID STATE LOAD CONTROL
Lawrence G. Corey, Rockville, Conn., assignor to The Arrow-Hart & Hegemen Electric Company, Hartford, Conn., a corporation of Connecticut
Filed Feb. 24, 1967, Ser. No. 618,516
Int. Cl. G05f *1/40, 1/52, 1/60*
U.S. Cl. 323—22 **8 Claims**



An electrical control circuit for switching a load, which circuit includes an adjustable time delay between initiation and accomplishment of the switching function. The switching function is accomplished by gate controlled semiconductor rectifier means. The gate control circuit of the rectifier means is transformer coupled to the control circuit which includes the time delay function. The gate control circuit includes gate controlled semiconductor rectifier means whose gate potential is constant DC with an amplitude sufficient to sustain the rectifier means conductive to latch such rectifier means in a conductive state.

3,470,459
ASYNCHRONOUS LOAD LIMITING TRANSFORMER
Eric A. Salo, San Lorenzo, Calif., assignor to Eryx Corporation, San Lorenzo, Calif., a corporation of California
Filed Mar. 20, 1967, Ser. No. 624,533
Int. Cl. H02p *13/08, 13/10;* **H02m** *5/12*
U.S. Cl. 323—52 **8 Claims**

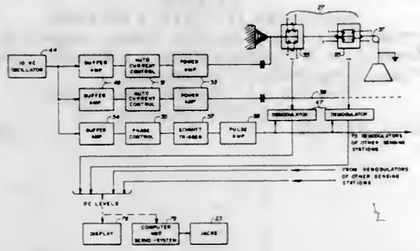


Apparatus for the interchange of electrical energy from a primary circuit to a secondary circuit including rotor and stator cores, a shaft bearing the rotor core, and selectively operable means for shifting the shaft longitudinally, locking the shaft against rotation, drivably rotating the shaft, and permitting free rotation of the shaft.

3,470,460
STRETCHED REFERENCE WIRE MAGNETIC PICKUP ALIGNMENT SYSTEM

Wolfgang K. H. Panofsky, Los Altos Hills, and William F. Marshall, San Carlos, Calif., assignors to the United States of America as represented by the United States Atomic Energy Commission

Filed Mar. 22, 1967, Ser. No. 625,920
Int. Cl. G01r *33/02*
U.S. Cl. 324—34 **5 Claims**

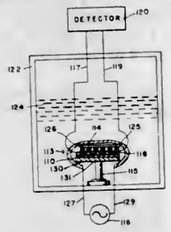


The disclosure relates to a system for indicating physical alignment of an object with respect to a stretched reference wire to which an alternating current signal is continuously applied. Window-type pickup magnets for pickup of the signal are mounted at sensing stations on the object. Initially, the object is placed in alignment by other means. Thereafter, any transverse movement of the object causes movement of the pickup magnets away from their centered position. Upon being even slightly off-centered, signals are induced from the reference wire to the magnets. The magnet windings are connected to produce a resultant signal that may be rectified to a direct current signal. The level of the direct current signal indicates the amount of misalignment of the object, while its polarity indicates the direction of misalignment.

3,470,461
CRYOGENIC FLUX-GATING MAGNETOMETER

Arthur L. Morse, Los Angeles, Calif., assignor to TRW Inc., Redondo Beach, Calif., a corporation of Ohio

Filed July 10, 1967, Ser. No. 652,244
Int. Cl. G01r *33/02, 33/04*
U.S. Cl. 324—43 **4 Claims**

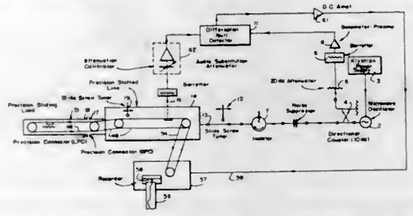


There is disclosed herein a flux-gate magnetometer of improved sensitivity over previously known devices of this type. In the present device gating regions in a thin film of superconductive material are deposited on an element which acts as a heat sink in order to improve switching speed. Further, the superconductive gating regions are made very small and are surrounded by effectively individual pickup coils so that the flux increase around their perimeter when superconducting is small. The individual superconducting region should be of the approximate size and shape of a natural domain under the design conditions. The sensor then consists of a mosaic containing a large number of such small regions each surrounded by a pickup coil. The magnetic drive field is made as precisely parallel to the surface on which the superconducting regions are deposited as is possible in order to maximize the domain size. This may be accomplished, for example, by using a parallel high speed superconducting film as the driving element. Undesired capacitive coupling between the drive and pickup system is eliminated by using an intermediate ground electrostatic shield. The device is operated at cryogenic temperatures and the magnitude of the drive field is such as to switch the detector in and out of the superconducting state to thereby gate the ambient magnetic flux. This gating action affords a measure of the ambient magnetic flux in a manner which will be explained in detail below.

3,470,462
LOW VSWR MEASUREMENT SYSTEM WITH SLIDING LOAD AND PROBE

Bruno O. Weinschel, Bethesda, Md.; may be granted to United States Atomic Energy Commission under the provisions of 42 U.S.C. 2182

Filed Oct. 8, 1964, Ser. No. 402,578
Int. Cl. G01r *27/04*
U.S. Cl. 324—58 **9 Claims**

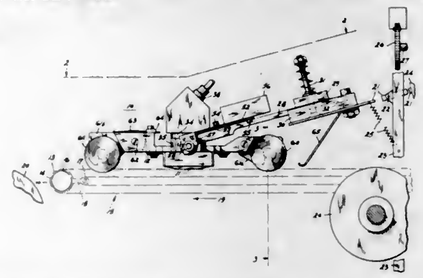


Apparatus for accurate measurement of very low reflection coefficients of VSWR values at microwave frequencies, in which a slotted line for VSWR measurement is used with a precisiton coaxial line which is terminated in a sliding load, which is coupled mechanically to the slotted line probe so that the two move together, making it easily possitble to tune out the residual reflection without requiring a perfect load, the detected probe output is compared with the detected output of a directional coupler monitoring the incident power and the difference recorded on a strip recorder synchronized with the probe travel.

3,470,463
ROTATABLE, COUNTERWEIGHTED ELECTRODE PROBE AND CARRIAGE APPARATUS FOR CAPACITIVELY MEASURING THE OUTER SHEATH OF MOVING CONDUCTOR CABLE

Georg Dornberger, Phoenix, Ariz., and Frank Wahl, North Bergen, N.J., assignors to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York

Filed Apr. 28, 1967, Ser. No. 634,636
Int. Cl. G01r *27/26*
U.S. Cl. 324—61 **7 Claims**



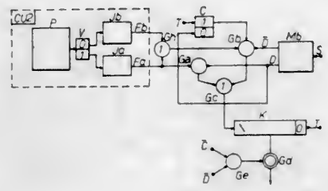
Electrode probe apparatus designed to ride on advancing cable for monitoring the capacitance between the probe and a metal jacket underlying the plastic sheath

on which the probe is positioned and characterized by a lever system linking a probe carriage assembly with a counterweight for maintaining the carriage assembly in operative position on the cable as the carriage assembly is indexed to different angular positions about the cable axis.

3,470,464
SYSTEM FOR MEASURING ELAPSED TIME

Jean Emile Turriere, Paris, France, assignor to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware

Filed Nov. 25, 1966, Ser. No. 597,101
Claims priority, application France, Dec. 1, 1965, 40,521
Int. Cl. H05k *5/20*
U.S. Cl. 324—68 **12 Claims**

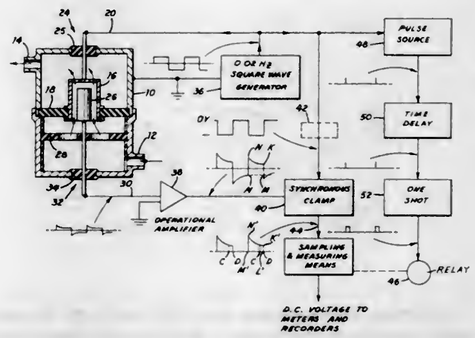


A reference pulse causes at a frequency 2F to be coupled, via gates, to a counter until the arrival of a signal pulse. The signal pulse, during its presence causes pulses at a frequency F to be coupled via said gates to said counter. The final count of the counter is a measure of the time from the occurrence of the reference pulse to the center of the received signal pulse.

3,470,465
METHOD AND MEANS FOR MEASURING FLUID CONDUCTIVITY INCLUDING A THREE ELECTRODE ARRANGEMENT

Edgar Edwin Wuschke, Pinawa, Manitoba, Canada, assignor to Atomic Energy of Canada Limited, Ottawa, Ontario, Canada, a corporation of Canada

Filed Apr. 21, 1966, Ser. No. 544,281
Int. Cl. G01r *27/02, 11/44;* **H01g** *7/00*
U.S. Cl. 324—65 **12 Claims**

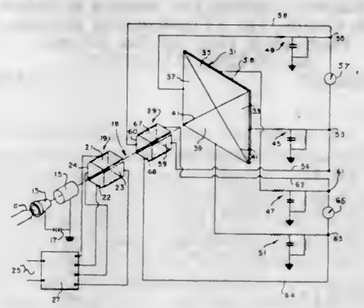


Conductivity of fluids with low conductance is measured by apparatus and a method for applying a potential to the fluid between first and second electrodes and measuring conduction between the first datum and a third electrode, while maintaining the third electrode at a potential near that of the second electrode while ensuring that insulating material contacting said first electrode and insulating material contacting said third electrode are spaced by said second electrode.

3,470,466
ELECTRON BEAM INSTRUMENT FOR MEASURING ELECTRIC FIELDS

Russell D. Shelton, Huntsville, Ala., assignor to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration

Filed Oct. 10, 1967, Ser. No. 674,356
Int. Cl. G01r *31/02*
U.S. Cl. 324—72 **2 Claims**

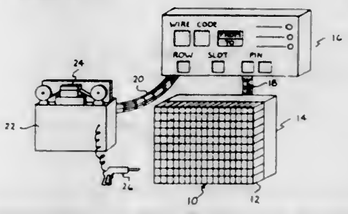


An apparatus for determining electric field strength including an electron discharge device for directing an electron beam in a circular sweep so as to normally impinge for an equal time period each segment of a target having four segments arranged in diametrically opposite pairs, said beam being deflectable by an electric field to vary the time each segment is impinged. Control deflection plates are provided to act upon the electron beam in opposition to the applied electric field and the deflection plates are energized in accordance with variations in the time diametrically opposite segments are impinged so as to establish a state of equilibrium between the deflection caused by the applied electric field and the deflection caused by the control deflection plates. The energy required to effect this state of equilibrium is proportional to the applied electric field.

3,470,467
PIN INTERCONNECTION VERIFICATION SYSTEM RESPONDING TO A REPEATED OCCURRENCE OF A PREDETERMINED VOLTAGE ON ONE OF THE PINS

Bobby E. Cammer and Selby G. Venning, Roanoke, Va., assignors to General Electric Company, a corporation of New York

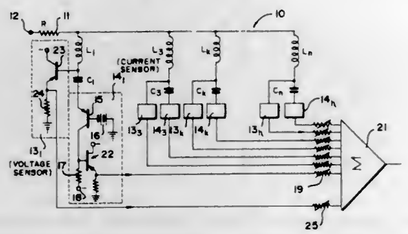
Filed Sept. 13, 1967, Ser. No. 667,525
Int. Cl. G01r *15/12, 19/08, 31/02*
U.S. Cl. 324—73 **8 Claims**



For indicating the terminal pins for wires to be installed by an operator and for automatically verfying the correctness of the wiring, a wiring station apparatus

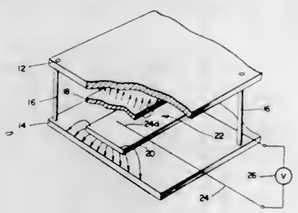
is provided which includes registers in which wiring data from punched tape is stored. Data-derived signals are applied to a pin location display panel and to addressing circuits. After an attempt to install a wire in accord with display panel information, a probe tip is held in contact with one of the wired pins. Each of the correct terminal pins is driven in succession to a predetermined voltage. If a probe senses successive predetermined voltages, wiring correctness is verified and new wiring data enters the registers.

3,470,468
SYNTHESIS AND WAVE GENERATION WITH COMPACTLY CARRIED WAVEFORMS
Peter H. Halpern, Sarasota, Fla., assignor to Melpar, Inc., Falls Church, Va., a corporation of Delaware
Filed July 6, 1965, Ser. No. 469,443
Int. Cl. G01r *23/16, 27/02*
U.S. Cl. 324—77 **15 Claims**



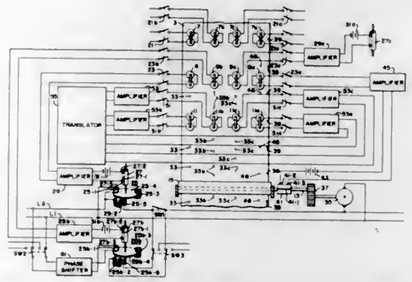
Synthesis and analysis of compactly carried waveforms is performed by a circuit in which the voltage across and current through a frequency determining element of each of a plurality of filter sections of different resonant frequencies, related to the odd harmonic Fourier coefficients of the compactly carried waveform as applied to an input terminal to which all of the filter sections are coupled, are detected and converted to respectively related values of the same parameter for subsequent summation.

3,470,469
SLOTTED STRIP TRANSMISSION LINE USING PROBE TO MEASURE CHARACTERISTICS OF THE LINE
Donald R. Ayer and William R. Lowe, Nashua, N.H., assignors to Sanders Associates, Inc., Nashua, N.H., a corporation of Delaware
Filed Aug. 7, 1963, Ser. No. 300,535
Int. Cl. G01r *23/04, 27/02*
U.S. Cl. 324—95 **10 Claims**



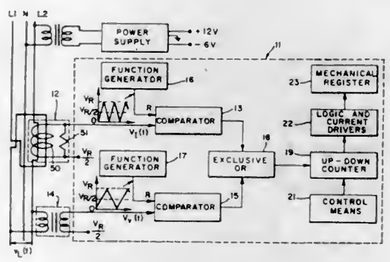
The present invention pertains to an improved slotted strip transmission line having a probe extending through the slot and disposed in the space between the conducting strips of a split center conductor which are at substantially the same potential, whereby the space wherein said probe is disposed has substantially no variation in potential, thereby enabling said probe to measure the field distribution along the line, and thus to determine the characteristics of the line such as impedance, wavelength and relative phase of the field.

3,470,470
MULTIPLE-TRACK MAGNETIC PULSE RECORDING OF RELATED QUANTITIES
Carl J. Snyder, Raleigh, N.C., assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania
Filed Aug. 12, 1963, Ser. No. 301,504
Int. Cl. G01r *7/12*
U.S. Cl. 324—141 **3 Claims**



Quantities such as real power, leading reactive power, lagging reactive power and time are magnetically recorded in tape and are processed to produce a resultant such as volt amperes.

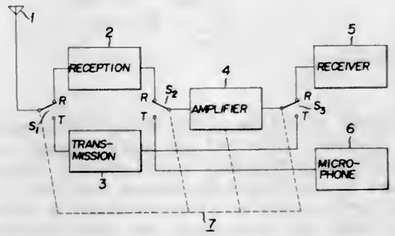
3,470,471
POLARITY COINCIDENCE CORRELATION METHOD AND APPARATUS FOR MEASURING ELECTRICAL ENERGY
Arthur D. Moore, Vancouver, British Columbia, Canada, assignor to Canadian Patents and Development Limited, Ottawa, Ontario, Canada, a corporation of Canada
Filed May 31, 1968, Ser. No. 733,575
Int. Cl. G01r *11/32*
U.S. Cl. 324—142 **10 Claims**



A device for measuring electrical energy of the watthour meter type which uses polarity-coincidence correlation consists of means for deriving first and second signal voltages related to the voltage and current on the line respectively means for generating first and second independent periodic voltage waveforms of uniform distribution of frequencies, means for comparing the levels of the first voltage and the first waveform and the second voltage and the second waveform, means for obtaining

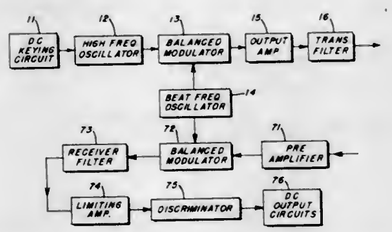
a logic signal of appropriate sign related to the product of the two comparators, means for sampling this signal periodically over an extended period of time, and an output counter that is incremented or decremented by one count at each sample.

3,470,472
TRANSCEIVER USING COMMON COMPRESSION AMPLIFIER FOR TRANSMISSION AND RECEPTION
Shigetoshi Suzuki and Eisuke Takeda, Yokosuka-shi, Japan, assignors to Tokyo Shibaura Electric Co., Ltd., Kawasaki-shi, Japan, a corporation of Japan
Filed Oct. 5, 1966, Ser. No. 584,418
Int. Cl. H04b *1/40*
U.S. Cl. 325—18 **3 Claims**



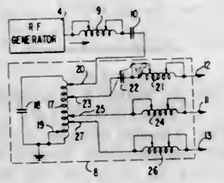
In a transceiver, a compression-type low frequency amplifier is coupled to the audio-frequency input device to compress the audio frequency input signal prior to amplitude modulation. The compressed signal is then utilized to effect amplitude modulation of a carrier wave for transmission. This increases the average degree of modulation during transmission and the compression-type amplifier is also used for automatic gain control during reception.

3,470,473
HIGH SPEED DATA TRANSMISSION SYSTEM WHICH MODULATES A HIGH FREQUENCY, FSK OSCILLATOR TO A LOWER TRANSMISSION FREQUENCY
Robert J. Gilman, Wayne, and George L. King, Morris Plains, N.J., assignors to RFL Industries, Inc., Boonton, N.J., a corporation of New Jersey
Filed Oct. 29, 1965, Ser. No. 505,662
Int. Cl. H04b *7/12*
U.S. Cl. 325—30 **2 Claims**



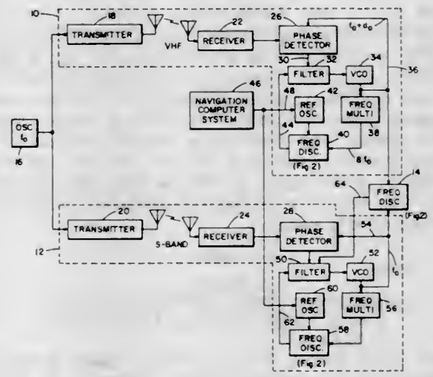
Frequency shift apparatus for transmission of high speed binary data over a voice band communication link. The frequency of a first high frequency oscillator, connected to a balanced modulator, is shifted in accordance with the data transmitted. The moduilator is driven by a second high frequency oscillator, the difference frequency between the two oscillators corresponding to a desired carrier frequency in the audio range. Both side bands of the modulated frequencies are amplified and passed through a filter tuned to the carrier frequency.

3,470,474
UNDERGROUND RADIO COMMUNICATION SYSTEM FOR HIGHWAYS
Raymond E. Rohrer, Silver Spring, Md., assignor of eighty-five percent to Donald E. Bilger, Fairfax, Va., and fifteen percent to David A. Rawley, High Point, N.C.
Filed Dec. 23, 1966, Ser. No. 604,480
Int. Cl. H04b *7/04*
U.S. Cl. 325—51 **14 Claims**



A sectionalized communication system for highways having radiating antenna elements disposed underground and beneath the road surface on opposite sides of each traffic lane, that is, on opposite sides of the highway and between adjacent traffic lanes of the highway, with means producing signals on adjacent radiating antenna elements in phase relation to each other to provide sufficient field strength across the highway for efficient radio transmission to vehicles traveling in the traffic lanes, and a field attenuated to a level which satisfies the requirements of the Federal Communications Commission outside the immediate vicinity of the highway.

3,470,475
AUTOMATIC FREQUENCY DISCRIMINATORS AND CONTROL FOR A PHASE-LOCK LOOP PROVIDING FREQUENCY PRESET CAPABILITIES
William D. Peterson, Phoenix, and Arthur J. Kline, Jr., Scottsdale, Ariz., assignors, by mesne assignments, to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration
Filed Sept. 28, 1966, Ser. No. 582,609
Int. Cl. H04b *1/06, 1/38*
U.S. Cl. 325—63 **17 Claims**



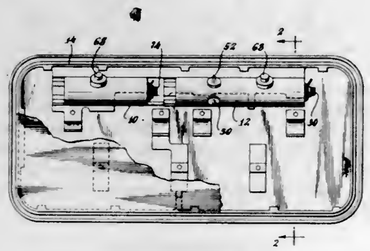
An automatic frequency control system providing automatic pre-setting of a phase-lock loop to a desired center frequency by using a closed-loop electronic frequency discriminator, and holding the phase-lock loop to such center frequency until phase-lock is achieved. The frequency pre-setting system utilizes a digital frequency

discriminator plus a reference signal in a digital type nonlinear frequency lock loop. The digital frequency discriminator control signal alters the phase-lock loop so that the loop is preset to a given or selected center frequency and oscillated above the center frequency in looking for or attempting to find the received signal. The phase-lock loop transfer characteristics are modified only slightly by the additional presetting circuitry enabling the phase-lock loop to operate normally after phase lock to the signal, thereby overriding the frequency preset. The reference signal may be provided by another communication channel.

3,470,476
MINIATURE HIGH POWER MICROWAVE RADIO TRANSMITTER

Charles B. Wilson, Tampa, Fla., assignor to Trak Microwave Corporation, Tampa, Fla.

Filed May 31, 1967, Ser. No. 642,424
Int. Cl. H04b *1/04*
U.S. Cl. 325—120 **6 Claims**



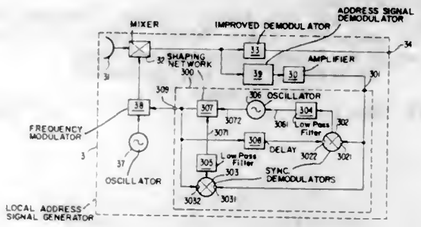
This application discloses a vacuum tube radio transmitter especially adapted for use as an airborne microwave transponder, weighing less than three ounces yet developing a minimum peak power output of 500 watts in grid pulse service at a frequency of 1,090 gHz. The transmitter comprises a grid separation coaxial cavity triode oscillator of very small diameter, less than one inch, in combination with an equally small coaxial cavity triode microwave amplifier. In order to achieve the necessary rise time, pulse length and duty cycle required for efficient and reliable operation in the AIMS air traffic control system for which the transmitter is especially intended, and to limit the frequency spectrum of radiated energy to the required narrow band, the cathode of the amplifier is isolated from ground potential, and a fixed inductance is added internally. To dissipate the substantial heat developed by the generation of so much radio frequency power, the entire transmitter is cradled in intimate contact with conforming internal surfaces of a die-cast aluminum enclosure. The cast metallic enclosure in addition to serving as an efficient heat sink also provides radio frequency shielding to effectively prevent the radiation of stray signals.

3,470,477
COMMUNICATION SYSTEM HAVING A MULTIPLE-ACCESS, MAN-MADE SATELLITE

Gerard Pierre Battail, Paris, and Pierre Claude Brossard, Montigny-le-Bretonneux, France, assignors to Communication Satellite Corporation, a corporation of Washington, D.C.

Filed Aug. 4, 1967, Ser. No. 658,565
Int. Cl. H04b *1/06*
U.S. Cl. 325—304 **6 Claims**

A communications receiver which receives F.M. communications from a plurality of transmitters but detects information only from that transmitter which modulates the carrier with an address frequency assigned to the receiver. A frequency deviation feedback loop connected between the output and input of the receiver mixer generates a local carrier frequency which differs from the received carriers by the center frequency of an improved demodulation and which is modulated by the address signal assigned to the receiver. A phase lock loop and an amplitude lock loop in the feedback path operate to control the phase and amplitude of the locally generated

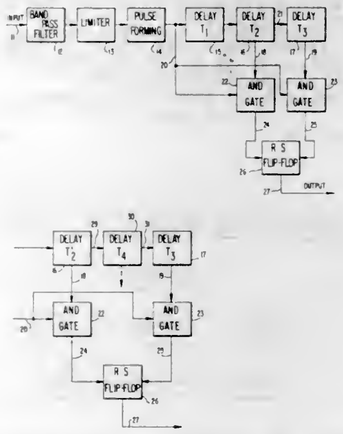


address signal so that the mixing of the F.M. modulated locally generated carrier and the received signals results in an intermediate frequency output which is frequency modulated by the desired information only. All of the received carriers which have been modulated by different address signals will come out of the mixer as intermediate frequencies modulated by a combination of signals. Only the desired information signal then is capable of passing through the improved demodulator.

3,470,478
FSK AND PSK WAVE RECEIVER

Cecil A. Crafts, Santa Ana, Calif., assignor to Robertshaw Controls Company, Richmond, Va., a corporation of Delaware

Filed Aug. 21, 1964, Ser. No. 391,216
Int. Cl. H04b *1/16*
U.S. Cl. 325—320 **12 Claims**

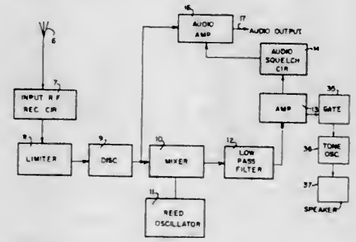


Angular modulations impressed upon a carrier wave cause changes in wave periods at the instant of phase shift, or throughout an interval of frequency shift. Apparatus of this invention marks the occurrence of all axis-crossing of one sign in a received wave and generates first, second, third (and optionally fourth) adjacent periods established from the beginning of each received AC wave. These periods are adjustable to provide selectivity without conventional filtering, eliminating periods longer or shorter than set limits thereby to respond only to narrow limits of deviation in phase-angle-modulated periods. A fourth period may be used in a cascade of periods totaling a maximum wave period to be received, effecting a further frequency or phase selection similar to a rejection notch in conventional filtering.

3,470,479
METHOD AND SYSTEM FOR DETECTING TONE SIGNAL BY MIXING WITH LOCAL OSCILLATION CLOSELY SPACED IN FREQUENCY AND SELECTING DIFFERENCE SIGNAL

Robert V. Janc, Chicago, Ill., assignor to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois

Filed Jan. 12, 1966, Ser. No. 520,235
Int. Cl. H04b *1/06, 1/10*
U.S. Cl. 325—364 **7 Claims**

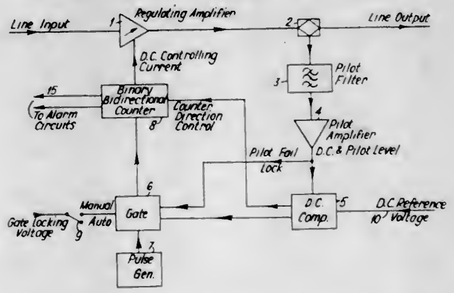


Tone signal for selective calling or selective alerting of station is transmitted as modulation of radio frequency carrier wave. The modulation is derived by a radio receiver and mixed with a stable local oscillation to produce low frequency difference signals. The difference signals below a predetermined frequency are passed by the filter to indicate the presence of the tone. A reed oscillator may be used to provide very stable local oscillations, and it may be continuously operating so that the effect of shock on the reed in the response of the detector is minimized.

3,470,480
DIGITAL COUNTER CONTROLLED AUTOMATIC GAIN REGULATOR EMPLOYING PILOT SIGNAL

Kenneth J. Smart, Strathfield, New South Wales, and Peter J. Thomson, Kingsford, New South Wales, Australia, assignors to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware

Filed Dec. 27, 1966, Ser. No. 604,719
Claims priority, application Australia, Dec. 29, 1965, 68,395/65
Int. Cl. H04b *1/16*
U.S. Cl. 325—400 **9 Claims**

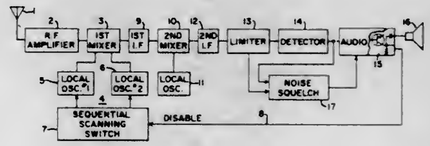


Uses the well-known principle of measuring received pilot level and by negative feedback adjusting the gain of a regulating amplifier to keep the pilot level constant. Differs from the prior art in that the feedback includes analogue to digital conversion and control is applied through a counter. The counter can operate at only one speed apart from zero and this means that short duration transients have less effect than in a conventional system. Complete failure of the pilot is arranged to lock the counter at its last automatically set position.

3,470,481
MULTICHANNEL COMMUNICATION RECEIVER WITH AUTOMATIC SAMPLING AND LOCK IN ON ONE CHANNEL

Richard T. Myers, Thomas A. McKee, Fred E. Spangler, and Kenneth L. Wright, Lynchburg, Va., assignors to General Electric Company, a corporation of New York

Filed Dec. 1, 1964, Ser. No. 414,960
Int. Cl. H04b *1/32*
U.S. Cl. 325—470 **8 Claims**

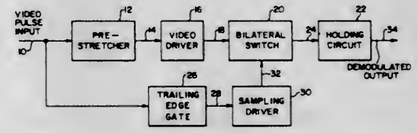


A communication receiver including circuitry for automatically monitoring a plurality of channels and locking the receiver onto the channel which first receives a signal. The receiver is switched, at a predetermined rate, between the channels. A sequential scanning switch such as a free-running multivibrator switches the local oscillator frequency to inject local oscillator signals of frequencies suitable to receive the channels. The scanning switch continues to operate in this manner to sample the channels until a signal is received to interrupt operation of the scanning switch and hold the local oscillator signal at the frequency required to lock the receiver on the channel receiving the signal.

3,470,482
VIDEO PULSE SAMPLE AND HOLD CIRCUITRY

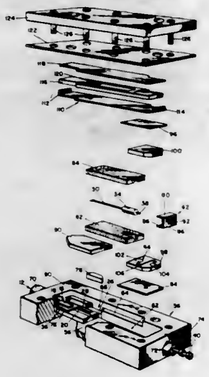
Gene R. Kolnowski, Baltimore, Md., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed May 31, 1967, Ser. No. 642,474
Int. Cl. H03d *1/18*
U.S. Cl. 329—102 **10 Claims**



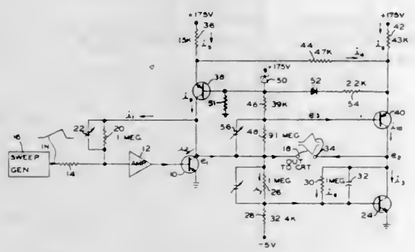
The present disclosure relates to video pulse sampling and storing or demodulating circuitry wherein a video pulse is stretched in time and then its amplitude level is sampled in response to the video pulse after the video pulse has reached its peak amplitude. A bilateral switch is provided to effect the rapid change of the stored level of a holding circuit permitting the amplitude level of the next video pulse to be stored therein.

3,470,483
MINIATURE MICROWAVE BROADBAND DETECTOR DEVICES
Walter D. Wagner, Philip E. King, Ernest Caloccia, and Robert Robbins, Nashua, N.H., assignors to Sanders Associates, Inc., Nashua, N.H., a corporation of Delaware
Filed Mar. 21, 1966, Ser. No. 535,961
Int. Cl. H03d *9/02*
U.S. Cl. 329—160 **8 Claims**



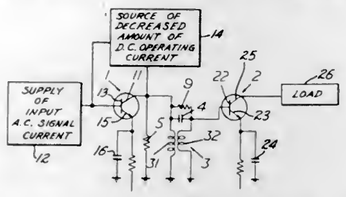
A mircrowave detector circuit having impedance matching transformers on the input signal side of the detector diode, which transformer transforms the relatively low impedance of the transmission line to the high input impedance of the diode, thereby providing relatively uniform signal detection over a wide range of operating frequencies.

3,470,484
AMPLIFIER HAVING PUSH-PULL OUTPUT WITH CURRENT SHARING OPERATION
John M. P. Gates, Portland, Oreg., assignor to Tektronix, Inc., Beaverton, Oreg., a corporation of Oregon
Filed Dec. 14, 1967, Ser. No. 690,468
Int. Cl. H03f *3/04*
U.S. Cl. 330—14 **10 Claims**



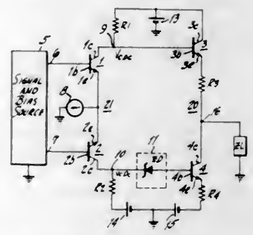
An amplifier having a push-pull output is described in which D.C. supply current is diverted from one output stage to the other by a gate means controlled by a signal derived from the output signal of such one output stage. The amplifier is employed to transmit the ramp voltage horizontal deflection signals to the cathode ray tube of an oscilloscope, and provides low power consumption by decreasing the D.C. current supplied to one output stage while simultaneously increasing the D.C. current supplied to the other output stage so that the total current drawn from the power supply is smaller than it would be if such current sharing operation were not employed. As a result the present amplifier consumes a total D.C. supply current of about 0.55 milliamp while producing positive and negative ramp output voltages of 160 volts amplitude with a maximum slope of 25 volts per microsecond when driving a capacitive load of 15 picofarads.

3,470,485
CASCADED TRANSISTOR AMPLIFIERS
Kunio Ishimoto and Kozo Tanaka, Tokyo, Japan, assignors to Nippon Electric Company, Limited, Tokyo, Japan, a corporation of Japan
Filed Dec. 28, 1965, Ser. No. 516,845
Int. Cl. H03f *3/04, 3/68*
U.S. Cl. 330—21 **2 Claims**



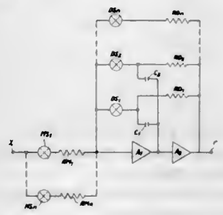
An improved multistage negative feedback transistorized amplifier comprising first and second stages, and an interstage circuit coupling the first and second stages and including a current transformer having a primary winding connected to the first stage collector output and a secondary winding connected to the second stage base input, the primary and secondary windings having a turns ratio of n:1 where n is greater than 1 for increasing the current level in the secondary winding and also having leakage inductance therebetween, and a reactive impedance (capacitor) having one terminal connected to a point common to the first stage collector output and primary winding and a second terminal connected to a point common to the second stage base input and secondary winding, the reactive impedance and leakage inductance resonating at a frequency above the transmission band of said amplifier. The interstage coupling circuit may also include a resistor connected in parallel with the reactive impedance. The first and second stages may constitute corresponding stages in a three-stage negative feedback amplifier having a negative feedback connection between the first and third stages.

3,470,486
DIFFERENTIAL AMPLIFIER SINGLE ENDING CIRCUIT
Howard R. Beelitz, Kingston, N.J., assignor to RCA Corporation, a corporation of Delaware
Filed Mar. 7, 1966, Ser. No. 532,376
Int. Cl. H03f *3/68*
U.S. Cl. 330—30 **7 Claims**



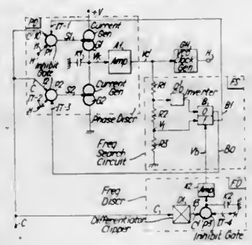
Differential amplifier single ending circuit in which one of the differential amplifier outputs is directly coupled to the input of a non-inverting type amplifier, such as a voltage follower device. A level shift means directly couples the other of the differential amplifier outputs to the input of a unity gain inverting type amplifier. An impedance means connected between the outputs of the non-inverting and inverting type amplifiers functions as a mixer or adder to provide an output signal which is the sum of the output signals of the inverting and non-inverting amplifiers.

3,470,487
VARIABLE GAIN AMPLIFYING APPARATUS FOR HYBRID COMPUTER
Paul G. Lucas, Sudbury, and Robert P. Talambiras, Brookline, Mass., assignors to Adage, Inc., Boston, Mass., a corporation of Massachusetts
Filed Oct. 23, 1965, Ser. No. 503,291
Int. Cl. H03f *1/36*
U.S. Cl. 330—86 **5 Claims**



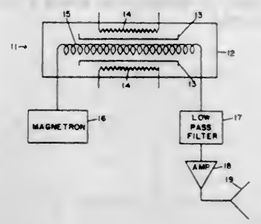
The gain of the amplifying apparatus disclosed herein can be varied by means of digital signals which control feedback and attenuator resistances. Provision is made for holding the settling time of the amplifying apparatus constant in spite of changes in the resistances.

3,470,488
AUTOMATIC FREQUENCY ACQUISITION CIRCUIT FOR A PHASE LOCKED LOOP TYPE OF SYNCHRONIZING SYSTEM
Michel Louis Avignon, Neuilly, France, assignor to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware
Filed Oct. 26, 1967, Ser. No. 678,277
Int. Cl. H03b *3/04*
U.S. Cl. 331—4 **8 Claims**



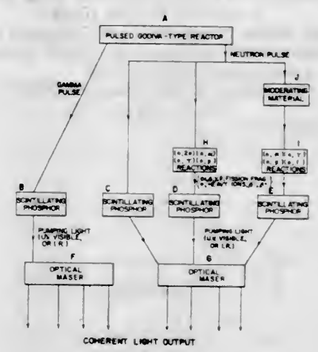
An integrating frequency discriminator produces a control voltage when the frequency of clock pulses is outside the lock-in frequency range of a phase lock loop used to synchronize the frequency of clock pulses to the frequency of reference pulses. A bistable device employs this control voltage as its supply voltage and is triggered in response to the loop control signal. When the bistable is triggered to one stable state, the loop control signal is swept in one direction and when triggered to the other stable state the loop control signal is swept in the opposite direction to dispose the frequency of clock pulses in the lock-in frequency range.

3,470,489
PARAMETRIC MICROWAVE NOISE GENERATOR
Sungik Francis Paik, Sudbury, Mass., assignor to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration
Filed Mar. 11, 1968, Ser. No. 711,971
Int. Cl. H03b *29/00*
U.S. Cl. 331—78 **7 Claims**



A radio frequency noise generator having a microwave slow-wave structure immersed in a gas discharge plasma is disclosed. A large-signal microwave traveling through the plasma on the slow-wave structure interacts with nonradiative electrostatic plasma oscillations producing idler waves which are parametrically amplified to produce an output noise signal in the microwave frequency range. Adjustment of the pump signal's amplitude and frequency controls the amplitude and bandwidth of the output noise signal.

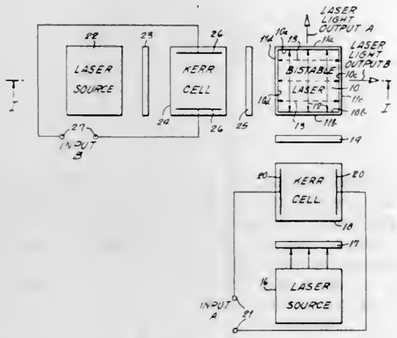
3,470,490
PHOSPHOR TRANSDUCER MEANS FOR PUMPING COHERENT LIGHT GENERATORS BY NUCLEAR ENERGY SOURCES
Kalman Held, Jericho, and Leonard R. Solon, Yonkers, N.Y., assignors to Radioptics, Inc., Carle Place, N.Y., a corporation of New York
Filed Nov. 12, 1963, Ser. No. 323,040
Int. Cl. H01s *3/02*
U.S. Cl. 331—94.5 **15 Claims**



This invention relates to a system for producing coherent light, and in particular, a system in which nuclear radiation energy from a nuclear reactor or the like is directed to excite phosphor transducer means such as a scintillating phosphor or the like to induce an electromagnetic radiation output adapted to pump an optical maser means. The invention includes the concept of providing the phosphor transducer means such as a scintillating

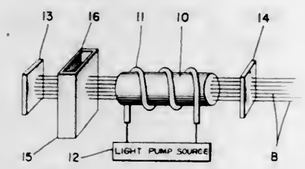
phosphor or the like to convert the nuclear radiation energy to electromagnetic radiation suitable for pumping an optical maser or masers.

3,470,491
BISTABLE LASER APPARATUS
Stephen M. MacNeille, Thompson, Conn., assignor, by mesne assignments, to American Optical Company, Southbridge, Mass., a corporation of Delaware
Filed Mar. 31, 1964, Ser. No. 356,201
Int. Cl. H01s *3/08;* **H03k** *3/42*
U.S. Cl. 331—94.5 **8 Claims**



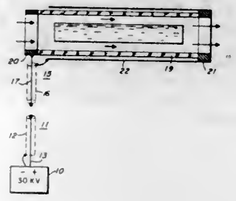
A laser apparatus including two optical resonant cavities, each cavity having a pair of parallel reflecting surfaces, with each pair of reflecting surfaces nonparallel with respect to the other and spaced to resonate at the same frequency. Included within the reflecting surfaces is a region common to both resonant cavities with a laser element occupying a substantial portion of the common region. The device provides a laser having two distinguishable output states which switchably responds to input signals.

3,470,492
REVERSIBLY BLEACHING DYE FOR USE WITH A GIANT PULSE LASER
Bernard H. Soffer, Northridge, and Raymond H. Hoskins, San Pedro, Calif., assignors to Union Carbide Corporation, a corporation of New York
Filed Sept. 9, 1964, Ser. No. 395,236
Int. Cl. H01s *3/20*
U.S. Cl. 331—94.5 **4 Claims**



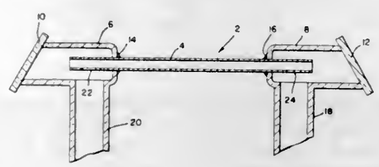
A neodymium doped giant pulse laser providing monochromatic light of wave lengths within the range of 7,000 to 10,800 A. incorporates a reversibly bleachable dye selected from the family of cyanine polymethine dyes in a solution as a Q-switching medium for the generation of giant pulses. The preferred Q-switching dye solution constitutes 3,3' - diethyl-9,11,15,17-dienopentylene-thiapentacarbocyanine iodide dissolved in quinoline.

3,470,493
LASER ENERGY PUMP WHICH EMPLOYS AN EXTENSION OF A COAXIAL TRANSMISSION LINE
Daniel E. Altman and Myer Geller, San Diego, Calif., assignors to the United States of America as represented by the Secretary of the Navy
Filed Oct. 18, 1966, Ser. No. 588,251
Int. Cl. H01s *3/02*
U.S. Cl. 331—94.5 **11 Claims**



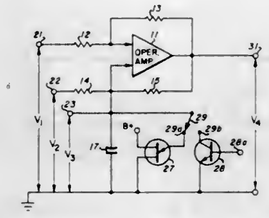
1. A laser energy pump comprising:
a cell containing a laser material having a determinable excitation spectrum;
said cell being substantially transparent to energy of said excitation spectrum;
a chamber enclosing said cell and having a second material therein surrounding said cell, the emission characteristics of said second material including substantial spectral portions of coincident wavelength relative to said excitation spectrum of said laser material;
at least two electrodes mounted on said chamber in electrical contact with the second material at separated positions;
a transmission line connected to a source of electrical energy; and
switch means arranged to connect said transmission line in circuit with said electrodes, whereby to complete an electrical path through said second material so that the electrical path and said electrodes operate in the manner of an extension of said transmission line causing said second material to emit energy which excites said first laser material.

3,470,494
PULSED LASER
Robert H. Neusel, Palos Verdes Estates, Calif., assignor to TRW Inc., Redondo Beach, Calif., a corporation of Ohio
Filed Oct. 25, 1966, Ser. No. 589,387
Int. Cl. H01s *3/22*
U.S. Cl. 331—94.5 **4 Claims**



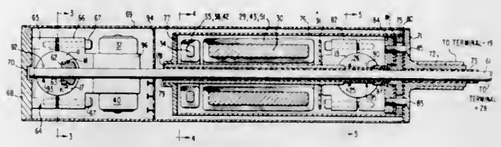
A gas ion laser is described which minimizes fogging of the Brewster angle windows, particularly toward the cathode end of the tube. In one embodimment both ends of a longitudinal gas filled tube extend into and are sealed to enlarged tubes, the enlarged tubes containing the electrodes. The ends of the longitudinal tube extend into the enlarged tubes past the seal, and the longitudinal tube has an aperture adjacent at least one of its ends, between the seal and that end.

3,470,495
FEEDBACK INTEGRATOR WITH GROUNDED CAPACITOR
Gordon J. Deboo, Sunnyvale, Calif., assignor to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration
Filed Dec. 28, 1967, Ser. No. 694,345
Int. Cl. H03k *3/26*
U.S. Cl. 331—111 **6 Claims**



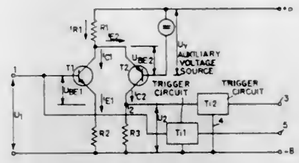
A feedback integrator employs a capacitor having one terminal grounded and the other terminal connected to one input of an operational amplifier. Input signals are applied through equal resistors to the amplifier input terminals, and the circuit operates to integrate the difference between the input signals. The polarity of the output may be controlled by appropriate connection of the inputs. Switching elements may be connected across the capacitor to produce either a free running or a controlled sweep generator. This control may also be used to reset the capacitor to an initial value when a variable input signal is being integrated.

3,470,496
STATIC INVERTER
Paul G. Dembling, General Counsel of the National Aeronautics and Space Administration, with respect to an invention of John T. Lingle, Bloomington, Minn.
Filed Apr. 19, 1967, Ser. No. 632,104
Int. Cl. H03k *3/28, 3/30*
U.S. Cl. 331—113 **17 Claims**



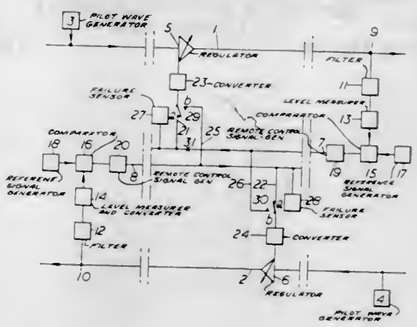
An oscillating static inverter packaged to minimize external magnetic fields comprises transistors positioned at opposite ends of an outer conducting tube coaxial with a center conductor. The tube and conductor supply current from a D.C. supply at one end of the tube to the transistors at the other end of the tube during one-half cycle of oscillation. A second outer tube and center conductor feed current in opposite directions to the transistors at the first end of the tube during the other half cycle. The two center conductors are center tapped windings of coupling and power transformers of the oscillator.

3,470,497
CIRCUIT ARRANGEMENT FOR SIGNALLING THE UPPER AND LOWER LIMITS OF A VOLTAGE
Helmut Kotter, Schnaittach, Germany, assignor to Felten & Guilleaume Fernmeldeanlagen G.m.b.H., Nuremberg, Germany, a German company
Filed Nov. 9, 1966, Ser. No. 593,219
Int. Cl. G05f *1/40, 1/60;* **H02p** *13/14*
U.S. Cl. 323—22 **8 Claims**



Electronic circuits for providing an output signal whenever the input signal varies above and below predetermined limits. These output signals are provided by triggering circuitry which may change from conductive to non-conductive or vice versa when the respective limits are exceeded and are biased to the respective conditions through a pair of transistors connected as a phase splitter circuit to a reference voltage and to the input signal to provide the desired bias operating signals to the triggering circuitry. Various connections provide more or less refinement of the results.

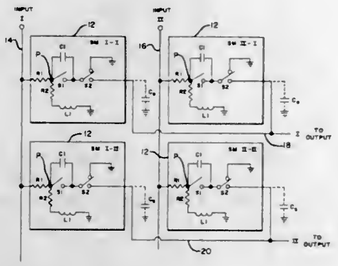
3,470,498
AUTOMATIC SYSTEM FOR PREVENTING THE USE OF ERRONEOUS PILOT INFORMATION
André Emile Serrure, Hove, Belgium, assignor to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware
Filed Apr. 26, 1965, Ser. No. 450,954
Claims priority, application Belgium, May 4, 1964, 647,461; Apr. 5, 1965, 662,030
Int. Cl. H04b *3/10*
U.S. Cl. 333—2 **12 Claims**



If the level of the recovered pilot of a carrier cable circuit falls abnormally below that of a neighbouring circuit, the higher level pilot takes over control. This might mean that an abnormal pilot level increase could lead to an undesirable switch-over. The invention proposes to dissociate the amplitude of the control signal, e.g. remote control, from the regulation function by using a variable outband frequency, e.g. from 200 to 220 kc./s. to return the pilot amplitude variations to the slave stations. Thereat, a linear element preferably shifts the range to 5–25 kc./s., with the help of a fixed signal of 225 kc./s. also transmitted from the master station. Pilot borrowing

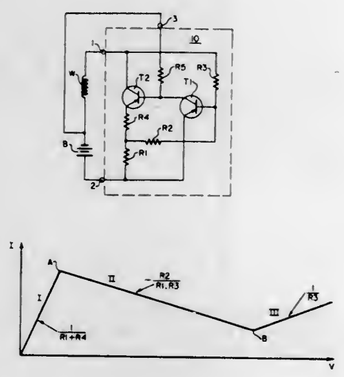
occurs only if the amplitude, before the frequency discriminator, goes beyond a fixed range.

3,470,499
MATCHED SWITCH MATRIX
John Theodore Lentz, Harrisburg, Pa., assignor to AMP Incorporated, Harrisburg, Pa.
Filed Oct. 4, 1966, Ser. No. 584,238
Int. Cl. H01p *5/12*
U.S. Cl. 333—7 **2 Claims**



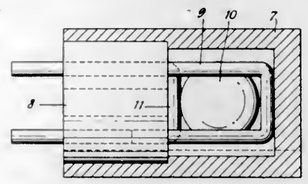
A high frequency switch matrix for video and/or audio use is disclosed featuring a plurality of input paths and a plurality of output paths arranged in coordinate fashion. At each coordinate switch point a circuit is provided including a pair of contacts operable in open and closed positions to connect a given input to a given output path. Each switch point circuit further includes a capacitor effective when the contacts are open to compensate for stray capacitance and a pair of resistors and an inductor selected and arranged to balance out the capacitive reactance due to such capacitor.

3,470,500
NEGATIVE RESISTANCE NETWORK
Henry J. Orchard, San Mateo, and William N. Lee, Burlingame, Calif., assignors to Automatic Electric Laboratories, Inc., a corporation of Delaware
Filed Nov. 17, 1966, Ser. No. 595,222
Int. Cl. H01p *1/24*
U.S. Cl. 333—80 **9 Claims**



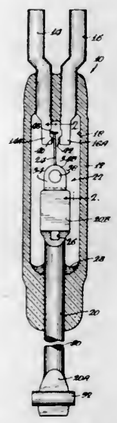
With only two transistors and five resistors, a short-circuit stable negative resistance is obtained. It may be used to cancel the dissipation resistance of inductors in a filter. The only bias supply is connected in series with a winding of the inductor, external to the negative resistance circuit. Three of the resistors form legs of a bridge, the inductor and bias supply are the fourth leg, and the transistor amplifier has input and output connected to respective diagonals.

3,470,501
CONTACT MEANS FOR ELECTRICAL SWITCHES
Terence Alexander Riley, Camberley, England, assignor to Inertia Switch Limited, Camberley, Surrey, England, a British company
Filed Oct. 10, 1967, Ser. No. 674,354
Claims priority, application Great Britain, Oct. 10, 1966, 45,136/66
Int. Cl. H01h *1/16*
U.S. Cl. 335—1 **7 Claims**



An electrical switch having a contact element in the form of a conductive sphere or cylinder rollable along a pair of wires forming a track. A further wire is disposed adjacent the track and is adapted to be contacted by the rollable contact element at a selected position. A magnet may be provided for urging the rollable contact element into a normal operating position.

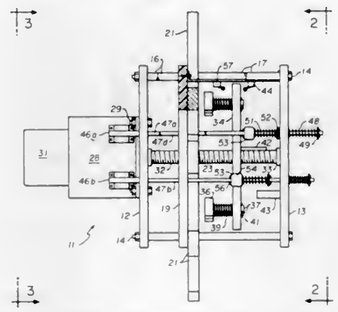
3,470,502
MERCURY-WETTED CONTACT SWITCH
Arthur J. Koda, Morton Grove, and John Kutyla, Chicago, Ill., assignors to C. P. Clare & Company, Chicago, Ill., a corporation of Delaware
Filed Oct. 11, 1967, Ser. No. 674,459
Int. Cl. H01h *29/00*
U.S. Cl. 335—47 **10 Claims**



A high speed mercury-wetted contact switch having a sealed glass housing in the upper end of which two magnetic terminals are sealed. A header sealed in the lower end of the housing carries a pivotal or hinge support for one end of a short, rigid, and mercury-wetted armature whose upper end is disposed between the contacts. The header and pivot structure provide a restricted flow path for mercury from a mercury pool in the lower end of the housing to limit mercury accumulated on the

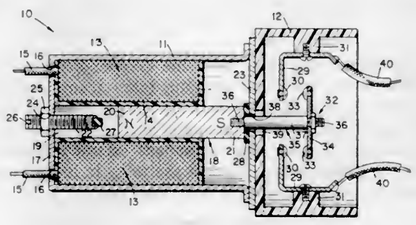
armature and permit high speed operation. The pivot structure, which is lubricated with mercury, provides bias free movement of the armature limited only by engagement with the terminal at speeds up to 800 cycles per second with little "jitter."

3,470,503
MULTI-CONTACT SELECTOR SWITCH FOR HIGH CURRENTS
Warren L. Dexter, Orinda, Calif., assignor to the United States of America as represented by the United States Atomic Energy Commission
Filed Feb. 7, 1968, Ser. No. 703,630
Int. Cl. H01h *3/02, 67/14*
U.S. Cl. 335—69 **6 Claims**



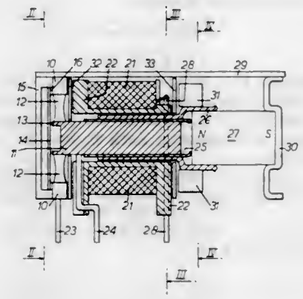
A selector switch capable of handling currents in excess of 1000 amperes and having a common switch contact which may be connected to any one of several circuit switch contacts. All switch contacts are stationary, switching being accomplished by bridging contacts which are rotated to a desired switch position and moved axially to bridge between the common contact and one of the circuit contacts. The switch may be remotely controlled.

3,470,504
POLARIZED ELECTRICAL RELAY
Henry Rogers Mallory, Winding Lane, Greenwich, Conn. 06830, and Alexander C. Wall, Beach Drive, Darien, Conn. 06820
Filed Sept. 15, 1967, Ser. No. 668,050
Int. Cl. H01h *51/22*
U.S. Cl. 335—78 **3 Claims**



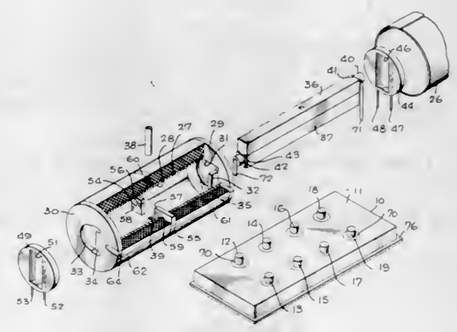
A dipole magnet moves longitudinally under the influence of a surrounding solenoid electromagnetic coil. The magnet is latched in position at either end of its travel by a magnetic element after deenergization of the coil. The magnet is mechanically coupled to a set of movable contacts for control of a load circuit. Further control over the motion of the magnet may be obtained by the use of compressible bumpers or pneumatic pressure. The magnet may be self-induced or exteriorly induced.

3,470,505
BISTABLE DIAPHRAGM RELAY
Harry Stanley Woodhead, Harlow, England, assignor to International Standard Electric Corporation
Filed Sept. 29, 1967, Ser. No. 671,762
Claims priority, application Great Britain, Oct. 21, 1966, 47,148/66
Int. Cl. H01h *51/22*
U.S. Cl. 335—83 **17 Claims**



A polarized magnetically latching miniature diaphragm relay in which a permanent magnet is mounted in line with the core of the winding at the end remote from the diaphragm. An arcuate collar around the core between the winding and the magnet provides a magnetic shunt path to the cover, lowering the necessary ampere turns required to release the contacts and reducing the demagnetizing effect on the permanent magnet.

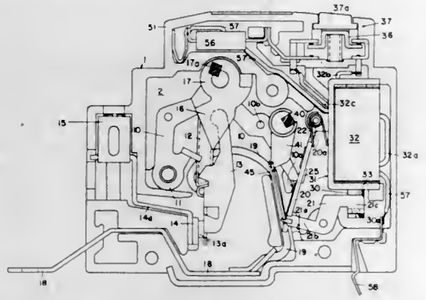
3,470,506
HORIZONTAL LATCHING TYPE RELAY
Robert L. Martin, Thousand Oaks, Calif., assignor to Consolidated Electronic Industries, Inc., New York, N.Y., a corporation of Delaware
Continuation-in-part of application Ser. No. 634,144, Apr. 27, 1967. This application Oct. 30, 1968, Ser. No. 771,893
Int. Cl. H01h *9/20, 67/02, 67/06*
U.S. Cl. 335—170 **7 Claims**



A latching type relay wherein two elongated armatures lie within the interior of a tubular coil form in which both are pivotally supported. The armatures extend outwardly of the tubular interior through magnetic plate pieces at the ends of the coil and there is a movable electric contact at one end of each armature insulated electrically from the armature. The movable contacts are moved into engagement with respective fixed contacts when electric coils around the coil form are energized. A

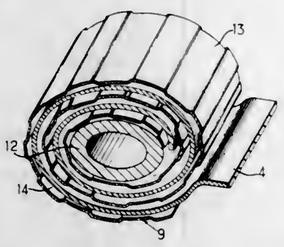
permanent magnet is located midway between opposite ends of the coil form and north and south poles of the permanent magnet extend into the interior of the coil form to locations adjacent opposite sides of the armatures at the pivot point, the permanent magnet serving to hold the armatures in the positions to which they have been moved by energization of the coils after the coils have been de-energized. By providing two electric coils wound one the reverse of the other, the armatures can be moved away from latched position by energizing the coils in the opposite direction.

3,470,507
EARTH-LEAKAGE SENSING CIRCUIT BREAKER
John S. Hall, Highworth, Peter E. G. Carpenter, Newbury, and David L. Cook, Swindon, England, assignors to Square D Company, Park Ridge, Ill., a corporation of Michigan
Filed Oct. 20, 1967, Ser. No. 676,757
Claims priority, application Great Britain, Nov. 5, 1966, 49,692/66
Int. Cl. H01h *9/00*
U.S. Cl. 335—174 **6 Claims**



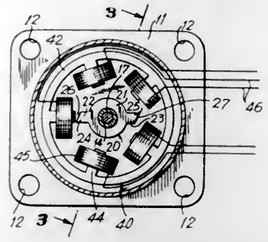
A molded case circuit breaker suitable for earth-leakage protection and arranged to be mounted in a panelboard has a sensitive double-latch mechanism which is operated by a relatively small solenoid disposed in a compartment also containing a pair of the circuit breaker contacts. A push-to-test switch is provided at the top of the circuit breaker housing.

3,470,508
SUPERCONDUCTING WINDING
Lucien Donadieu, Sevres, Edmond Kloeckner, Bures-sur-Yvette, Marcel Aupox, Paris, and Jean Royet, Orsay, France, assignors to Compagnie Generale d'Electricite, Paris, France, a corporation of France
Filed Aug. 7, 1967, Ser. No. 658,735
Claims priority, application France, Aug. 5, 1966, 72,170
Int. Cl. H01f *7/22*
U.S. Cl. 335—216 **20 Claims**



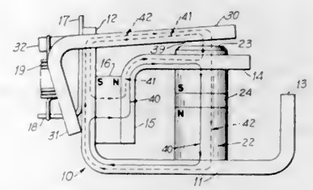
A superconducting winding including a superconducting conductor in band form wound together with an intercalary element in band form around a central mandrel, the intercalary band or the conductor being deformed so as to provide transverse undulations.

3,470,509
ELECTROMAGNETIC ROTARY INDICATING DEVICE
Alvin J. Silverman, Massapequa, and Albert Diamond, Plainview, N.Y., assignors to Vernitron Corporation, Farmingdale, N.Y., a corporation of New York
Filed Aug. 17, 1967, Ser. No. 661,308
Int. Cl. H01f *7/08, 7/18*
U.S. Cl. 335—229 **8 Claims**



An indicating device including an electromagnetically operated rotor wherein asymmetric magnetic formations are provided which do not adversely affect the desired alignment of poles, and permit 180-degree rotor rotation by the formation of an asymmetric magnetic field upon repelling energization of a coil.

3,470,510
MAGNETIC LATCH RELAY
Walter J. Richert, Princeton, Ind., assignor to American Machine & Foundry Company, a corporation of New Jersey
Filed Nov. 7, 1967, Ser. No. 681,233
Int. Cl. H01f *7/08*
U.S. Cl. 335—230 **11 Claims**

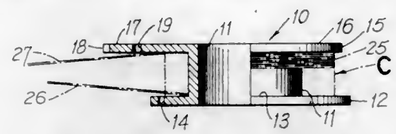


A clapper type relay with the clapper armature spring biased to its reset position, the relay frame including a permanent magnet unaffected by energization of the electromagnet, and an electromagnet energized to set the relay and having a core with remanent characteristics which with the frame magnet latches the relay in its set condition when the electromagnet is de-energized.

3,470,511
COIL AND SPOOL THEREFOR
Robert A. Heinzen, Manitowoc, Wis., assignor to American Machine & Foundry Co., a corporation of New Jersey
Filed Nov. 28, 1967, Ser. No. 686,200
Int. Cl. H01f *7/06, 3/06, 15/10*
U.S. Cl. 335—296 **12 Claims**

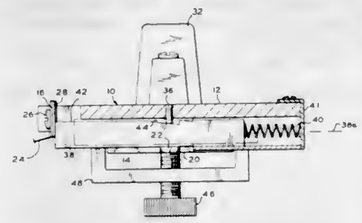
A spool assembly for electromagnetic coils comprising a spool of dielectric material having a tubular body with outwardly extending annular flanges of unequal diameters

at its ends defining an annular chamber for a wire winding; a flap extending from the smaller flange, on which the free ends of the wire winding is wrapped, being displaceable toward the larger flange and having a tab at its



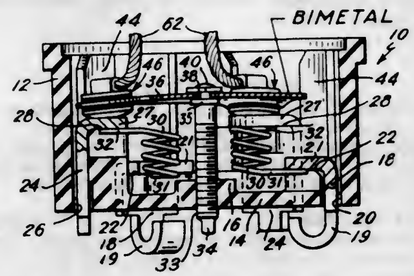
free end insertable into a slot in the larger flange to retain the flap; and a closure ring encircling the smaller flange at one end, abutting the larger flange at its other end, and having an open end slot exposing the flap therethrough.

3,470,512
THERMOSTATIC SWITCH HAVING ELEMENTS RESPONSIVE TO AMBIENT TEMPERATURE AND CURRENT FLOW
William Leiner, Rte. 2, Box 56, Corvallis, Oreg. 97330
Filed May 2, 1967, Ser. No. 635,628
Int. Cl. H01h *37/52, 61/02, 71/16*
U.S. Cl. 337—35 **4 Claims**



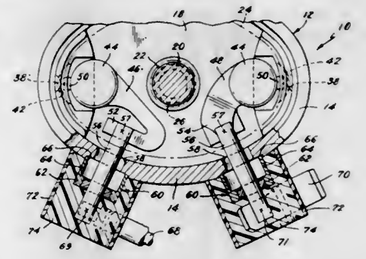
A thermostatic switch for an electric heater having a first thermostatic element responsive to the temperature of the ambient atmosphere and a second thermostatic element responsive to the flow of current through the heater. The two thermostatic elements are adapted to exert pressure on an actuating cam rod in mutually perpendicular directions to break the electrical circuit through the heater.

3,470,513
THERMALLY-RESPONSIVE SWITCH
James E. Shockroo, South Easton, Manuel R. Lopes, Attleboro, and Joseph L. McMorrow, West Bridgewater, Mass., assignors to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware
Filed Jan. 27, 1967, Ser. No. 612,264
Int. Cl. H01h *61/00*
U.S. Cl. 337—86 **3 Claims**



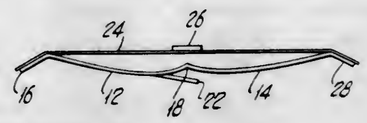
A thermally-responsive switch having six terminals provides inherent protection against abnormal conditions in either Y-connected or delta connected three-phase electrical motors including dual voltage motors. Three of the terminals are connected to respective fixed contacts in the switch through heater elements and three of the terminals are connected to respective movable contacts mounted on and electrically insulated from a thermally-responsive snap-acting bimetallic disc. The movable contacts normally engage the fixed contacts for completing electrical circuits through respective phase windings of the motor, the disc being located to be thermally responsive to abnormal winding temperatures and to abnormal current through any heater element for disengaging the contacts to open the motor winding circuits.

3,470,514
ELECTRICAL SWITCH PARTICULARLY ADAPTED FOR USE IN PRESSURIZED AREAS
Walter Reeve Harper, Jr., Barrington, R.I., assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware
Filed Aug. 9, 1966, Ser. No. 571,238
Int. Cl. H01h *61/01, 9/30*
U.S. Cl. 337—89 **12 Claims**



An electrical switch especially useful as a motor protector in the three to five horsepower range in pressurized atmospheres comprising an elliptical shaped housing having a fistular stiff casing ring forming side walls and mounting stationary contacts and a stiff center post mounting a thermostatic element with movable contacts mounted thereon. Relatively thin top and bottom covers seal the device. The spatial relationship between the thermostatic element and the contacts are unaffected in the event excessive ambient pressure collapses the covers. The covers are kept thin to confine the sections affected by collapsing to parts which will not affect the calibration of the device; to optimize heat flow from the motor to the thermal element in the switch and to facilitate original calibration of the switch.

3,470,515
SNAP ACTION BLADE FLASHER
Hemming G. Silberg, Union, N.J., assignor to Wagner Electric Corporation, a corporation of Delaware
Filed May 16, 1967, Ser. No. 638,856
Int. Cl. H01h *61/06, 81/02*
U.S. Cl. 337—138 **6 Claims**



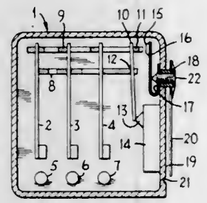
A snap action flasher is constructed by connecting a pull ribbon, having a centrally located contact, between the ends of a blade which has a deformation transverse to its longitudinal axis. A portion of this deformation is cut out to leave a space large enough to accommodate the

width of the pull ribbon within the deformation beyond the crest thereof. The pull ribbon is attached to the blade in such manner as to cause the two portions of the blade on either side of the deformation to be bowed reversely to the direction of bend of the deformation, thereby resulting in a substantial storage of mechanical energy. When mounted in a frame and associated with a stationary electrical contact opposite the contact on the pull ribbon and a mechanical stop for the free end of the blade, the flasher will operate to alternately open and close said contacts with the pull ribbon preferably moving into and out of the space provided by the cut out portion of the deformation and with the conformation of the deformation and bowed portions of the blade remaining essentially the same. This results in minimum change in the internal stresses created in the blade by the deformation and bowing thereof.

3,470,516
TEMPERATURE-RESPONSIVE BIMETAL TRIPPING DEVICE

Tage Stenberg Basse, Nordborg, Denmark, assignor to Danfoss A/S, Nordborg, Denmark, a company of Denmark

Filed Apr. 28, 1967, Ser. No. 634,520
Claims priority, application Germany, Apr. 28, 1966, D 49,984
Int. Cl. H01h *37/52*
U.S. Cl. 337—335 **3 Claims**



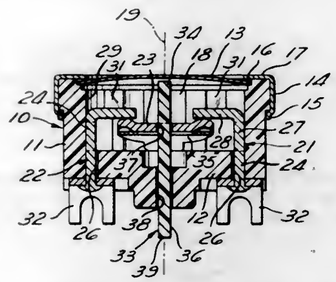
A device usable principally in electrical circuit tripping in response to temperature variations representative of variations of some variable operating condition of the circuit or phenomenon including a trip actuated by a pivoted operator actuated by a bimetallic element responding to the temperature variations. The movement of the operator is compensated for temperature variations not representative of a change in operating conditions by a compensating bimetallic element variably defining automatically in part different pivot points for the operator. The variable positions of the pivot will thereby define the different tripping points or values of the operating conditions at which tripping takes place. The range of variable positions of the pivot is set manually.

3,470,517
THERMOSTAT WITH MANUAL RESET

David H. Ohlemacher, Columbus, and Edward G. Them, Mansfield, Ohio, assignors, by mesne assignments, to Therm-O-Disc Incorporated, a corporation of Ohio (1968)

Filed Oct. 27, 1967, Ser. No. 678,690
Int. Cl. H01h *37/70, 37/74*
U.S. Cl. 337—348 **7 Claims**

A manual reset snap disc type thermostat is disclosed which can be manufactured at low cost in small sizes. A pair of similar stationary contacts provide contact portions extending inwardly from opposite sides of a body switch cavity. A bridging contact is operated through a bumper by a bimetallic disc. The discs remains in either position of stability in the normal environmental temperature range and snaps from a first such position to a second position when a predetermined temperature outside such range is reached. A unitary bumper extends through

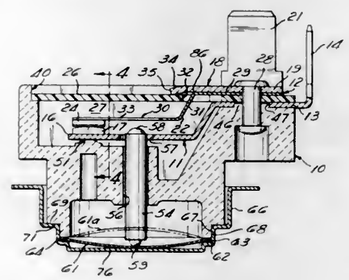


the bridging contact and out of the body to perform the dual functions of operating the switch and also permitting manual reset to return the disc to its first position.

3,470,518
THERMOSTATIC SWITCH ASSEMBLED WITH A SINGLE FASTENER

Donald J. Schmitt, Mansfield, Ohio, assignor, by mesne assignments, to Therm-O-Disc, Incorporated, a corporation of Ohio (1968)

Filed Mar. 7, 1967, Ser. No. 621,239
Int. Cl. H01h *37/46*
U.S. Cl. 337—396 **16 Claims**



A thermostat operated by a bimetallic disc constructed to minimize manufacturing costs, and to provide accuracy and reliability of operation. A single rivet mounts the two switch contacts and an insulating member. The insulating member separates the two contacts and closes the switch body. Accuracy of contact location is provided by engagement between body walls and contact members remote from the rivet. A bimetallic snap-disc switch actuator is mounted on the body by a cup-shaped cover. The cover is secured to the body by radially deforming the cover wall.

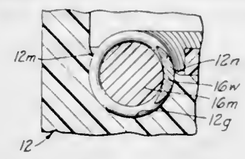
3,470,519
POTENTIOMETER

Howard H. Hatch, Riverside, Calif., assignor to Bourns, Inc., a corporation of California

Original application July 14, 1966, Ser. No. 565,156, now Patent No. 3,402,464, dated Sept. 24, 1968. Divided and this application June 20, 1968, Ser. No. 738,587
Int. Cl. H01c *5/02*
U.S. Cl. 338—162 **2 Claims**

A novel construction in potentiometers having metal-core elements or wire-wound elements, and to a method of producing the same, wherein the resistance element comprising metal element-core or a resistive wire and a core or mandrel on which the wire is wound, is precisely affixed in accurately-determined position to a part or parts

of the potentiometer such as a part or parts forming the base portion of the housing, by heating the element to a temperature sufficient to permit it to plastically deform the part when pressure is applied, and pressing the hot

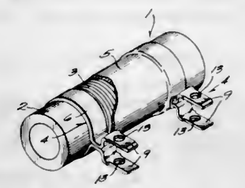


element into the part to force the element into the plastic material and bring the active or contact-brushing zone or surface of the element into a plane and into accurately determined position relative to a reference surface of the part or parts.

3,470,520
RESISTOR WITH STRIP TERMINALS

Lionel E. Weyenberg, N 35, W 23575 Capitol Drive, Pewaukee, Wis. 53072

Filed May 18, 1967, Ser. No. 639,566
Int. Cl. H01c *1/14, 3/00*
U.S. Cl. 338—302 **8 Claims**

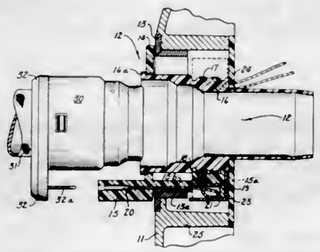


An electrical resistance device comprising a wire coil wound around an insulating core and having terminal strips connected to the ends of the coil. Each terminal strip includes a central body section bent to the contour of the core, and intermediate sections of the strip located at each end of the central body section are welded together to clamp the strip to the core. The ends of the strip are generally flat and project outwardly from the welded intermediate sections to provide terminals which are adapted to receive slip-on type of connectors.

3,470,521
CURRENT CONDUCTING ROTATABLE AIRFLOW COUPLING FOR A VACUUM CLEANER

David F. Downey, Stamford, Conn., assignor to Electrolux Corporation, Old Greenwich, Conn., a corporation of Delaware

Filed Sept. 22, 1967, Ser. No. 669,953
Int. Cl. H01r *39/08, 3/04*
U.S. Cl. 339—8 **4 Claims**

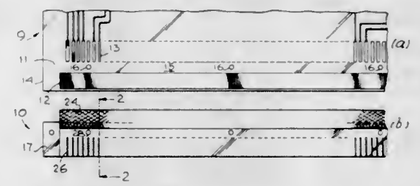


A coupling for connecting a vacuum cleaner hose with a vacuum cleaner which provides an airflow passage as well as electric coupling between conductors on the hose and a source of EMF in the cleaner and allows the hose to swivel relative to the cleaner. The hose conductors are coupled with the source of EMF via slip rings in the cleaner to provide for swivel action of the hose.

3,470,522
ELECTRICAL CONNECTOR

Robert Lawrence, Los Angeles, Calif., assignor to The Bunker-Ramo Corporation, Stamford, Conn., a corporation of Delaware

Continuation of application Ser. No. 479,182, Aug. 12, 1965. This application Feb. 26, 1968, Ser. No. 708,430
Int. Cl. H01r *3/06;* **H05k** *1/04*
U.S. Cl. 339—14 **7 Claims**

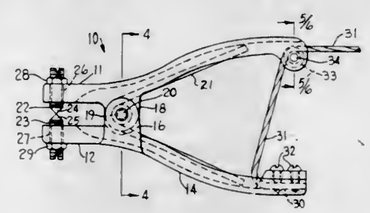


A strip type multi-contact connector for communicating with a plurality of spaced apart conductor pads or terminals carried on a circuit board. Each contact is comprised of a specially cut and shaped round spring wire forming a pair of individual contact units extending generally in parallel relationship to one another, but each being of a different length. Each contact unit comprises a substantially arcuate shaped beam portion cantilevered from a first end of a resilient arm and carrying a terminal engaging portion. The second ends of the arms are integrally joined to form a loop adapted to serve as a connection point.

3,470,523
GROUNDING CLAMP WITH AUTOMATIC DISCONNECT

August Milo, 1015 Schleifer Drive, Hillside, N.J. 07205

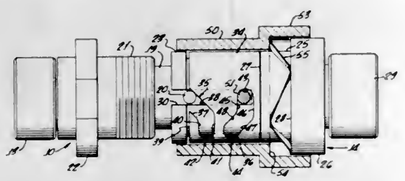
Filed Feb. 14, 1968, Ser. No. 705,337
Int. Cl. H01r *13/62*
U.S. Cl. 339—45 **2 Claims**



This invention relates to a grounding clamp used for gasoline delivery vehicles, and the like. More specifically, it deals with a spring-loaded pliers type static grounding clamp attachable by cable to a convenient ground, and having pointed grounding contacts oppositely directed at each other and designed to bite into a conductive surface on the vehicle for good electrical contact. One novel feature of the conductive clamp is an automatic disconnect which enables the clamp to disconnect readily from the conductive surface of the vehicle in the event the truck driver forgets to disconnect the clamp. This feature comprises a holding means on one handle end of

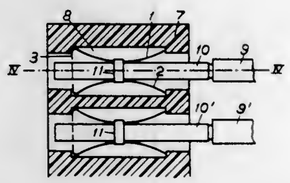
the clamp for holding, in electrical contact, the end of a wire rope or cable. Threading means is provided at the end of the other clamp handle through which said cable is loosely threaded, whereby said cable is enabled to be pulled through said means for opening said clamp jaws when said cable is pulled, so as to disengage said clamp from the conductive surface of the vehicle. A preferred threading means comprises a conductive rotatable pulley mounted on said clamp handle end over which the cable may travel during the disengaging operation.

3,470,524
PUSH-PULL CONNECTOR
Perrin C. Culver, Banning, Calif., assignor to The Deutsch Company Electronic Components Division, Banning, Calif., a corporation of California
Filed June 19, 1967, Ser. No. 646,942
Int. Cl. H01r *7/32, 13/46, 13/54*
U.S. Cl. 339—90 **11 Claims**



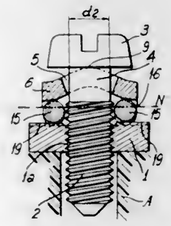
A coupling arrangement having a rotatable ring received on one part to be connected and coaxial with a collar having a pin extending into a slot into the ring, which slot has a circumferential and an angular portion. The ring includes a second slot, also having circumferential and inclined portions adapted to receiving a pin projecting from the other part to be connected. The pins act as cams during the mating and unmating of the coupling, causing the ring to rotate to hold one of the pins behind an abutment when the coupling is connected.

3,470,525
ELECTRICAL CONNECTING ELEMENT
Lembit Jaaksoo, Hokasen, and Werner Stange, Vasteras, Sweden, assignors to Allmanna Svenska Elektriska Aktiebolaget, Vasteras, Sweden, a corporation of Sweden
Filed Dec. 4, 1967, Ser. No. 687,546
Int. Cl. H01r *9/12, 13/04, 13/12*
U.S. Cl. 339—217 **3 Claims**



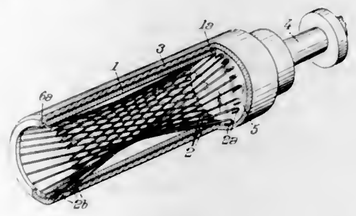
An electrical connecting element for receiving a contact element with an annular flange thereon is composed of two legs and an intermediate part constituting a connection for the legs. The legs or tongues are of resilient, electrically conducting material. Approximately in the center of each tongue there is a notch to receive the flange on the contact element. The tongues are convexly bent towards each other and are wider than the connection element so that a releasing element can be inserted which will push the tongues apart to permit the flange to be withdrawn from the notches.

3,470,526
ELECTRICAL CONNECTION TERMINAL
Jean Louis André Joly, Houilles, France, assignor to La Telemecanique Electrique, Nanterre, Hauts-de-Seine, France, a company of France
Filed Dec. 21, 1966, Ser. No. 603,476
Claims priority, application France, Dec. 29, 1965, 52,905
Int. Cl. H01r *7/24*
U.S. Cl. 339—246 **5 Claims**



The invention relates to an electrical connection terminal comprising an arched clamp which can be tightened down on to the stripped end of an electrical conductor by a tightening screw. The improvement comprises extending the thread on the tightening screw by at least one turn to allow plastic deformation of the clamp and so permit its use with conductors of small diameter or very flat.

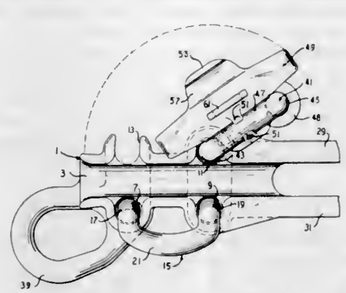
3,470,527
ELECTRICAL CONNECTOR SOCKET
Francois Robert Bonhomme, Courbevoie, France, assignor to Connectronics Corporation, New York, N.Y., a corporation of New York
Filed June 22, 1966, Ser. No. 559,516
Claims priority, application France, June 23, 1965, 21,986
Int. Cl. H01r *13/24*
U.S. Cl. 339—256 **1 Claim**



An electrical connector socket having an inner tubular sleeve of conducting material and an outer tubular piece coaxially surrounding this sleeve. At least one resilient conducting wire having its ends carried by the respective ends of the tubular sleeve extends obliquely to the longitudinal axis of this sleeve, this wire being able to resiliently engage a plug as it is inserted into the sleeve. The wire is secured in position at its ends by the cooperation of the tubular sleeve and the tubular piece.

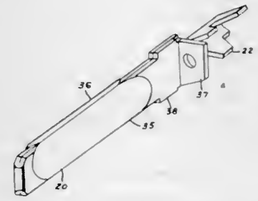
3,470,528
CLAMP
John A. Farrington, Jr., Birmingham, Gordon L. Flynn, Trussville, and Stancel D. Phillips and John V. Scott, Birmingham, Ala., assignors to Anderson Electric Corporation, Leeds, Ala., a corporation of Alabama
Filed Dec. 9, 1966, Ser. No. 600,516
Int. Cl. H01r *7/26, 7/18*
U.S. Cl. 339—265 **7 Claims**

A clamp for an electrical conductor having a first jaw with a conductor receiving groove in one face thereof and a pair of holes on one side of the groove spaced along the length of the groove. A hole and a laterally opening notch are provided on the other side of the groove and spaced along the length thereof. A first U-bolt has its legs slidably received in said pair of holes while a second U-bolt has one of its legs slidably received in the hole on said other



side of the groove and its other leg receivable in the notch. A second jaw is attached at one side thereof to the second bolt. This bolt is swingable about the axis of its said one leg between a clamping position wherein the second jaw lies opposite the first jaw and a retracted position clear of the first jaw.

3,470,529
TUBULAR BLADE FOR ELECTRICAL PLUG CAPS
Ferdinand Klumpp, Jr., Union, N.J., assignor to Heyman Manufacturing Company, Inc.
Filed May 22, 1967, Ser. No. 640,073
Int. Cl. H01r *11/08, 13/40;* **B21d** *53/36*
U.S. Cl. 339—276 **1 Claim**



A continuous blade strip which can be wound into rolls comprising a plurality of sets of generally round tubular blades positioned between a pair of generally flat blades, the blades being formed of oppositely positioned folded over and contacting portions, one of the portions of each blade having an extension forming a terminal for engaging a conductor, the oppositely disposed contacting portions providing the tubular blade having therein elongated trough-like embossed portions, the embossed portions forming an elongated tubular blade closed at its ends; also a tubular blade per se as described above; also a method for forming the strip and the tubular blade per se.

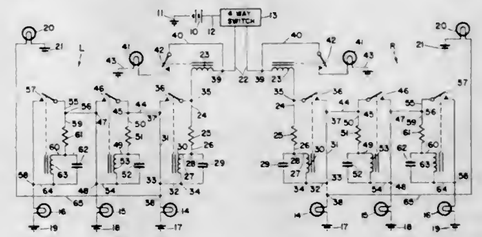
3,470,530
NOISE ANALYSIS FOR SEISMIC SYSTEM
Thomas L. Smitherman, Houston, Tex., assignor to Texaco Inc., New York, N.Y., a corporation of Delaware
Filed Dec. 12, 1967, Ser. No. 689,828
Int. Cl. G01v *1/28*
U.S. Cl. 340—15.5 **3 Claims**

In a seismic signals data processing system, noise is detected and measured by making the input seismic signal zero and encoding the noise signals in digital form for storage in a transfer register. The digital output of the transfer register is fed in the form of a digital word to a decoder comprising a number of logic elements. The decoder determines whether the magnitude of the digital word being checked is above certain selectable limits. In-



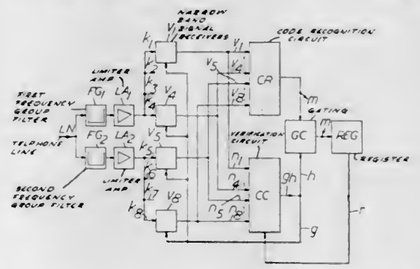
asmuch as each digital word written in the signal channels is analyzed, their variation in magnitude and sign can be interpreted as noise. Hence, the overall digital system may then be judged as to whether it complies with preselected specifications relating to system noise.

3,470,531
SEQUENTIAL FLASHER SYSTEM
Rodney Hayden, Stoney Creek, Ontario, and Mario Guarasci, Niagara Falls, Ontario, Canada, assignors to United-Carr Incorporated, Boston, Mass., a corporation of Delaware
Filed Apr. 14, 1967, Ser. No. 630,953
Claims priority, application Canada, Feb. 28, 1967, 983,942
Int. Cl. B60q *1/46*
U.S. Cl. 340—82 **7 Claims**



This is a flashing system for use in a motor vehicle for directional indicator purposes providing sequential illumination of multiple lights at either side of the rear of a vehicle at the same time as a front light on that side is illuminated.

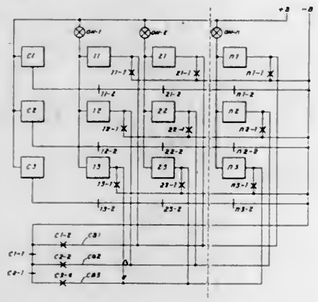
3,470,532
CODE CHECKING CIRCUIT AND MULTI-FREQUENCY DATA RECEIVER
Jean Victor Martens, Deurne-Zuid, and Marcel Clement Rene Natens, Antwerp, Belgium, assignors to International Standard Electric Corporation
Filed June 29, 1965, Ser. No. 468,070
Claims priority, application Netherlands, July 9, 1964, 6407780
Int. Cl. G08b *29/00*
U.S. Cl. 340—146.1 **10 Claims**



A low-speed multifrequency data receiver capable of operating over a telephone network incorporates a code checking circuit therein. This data receiver operates re-

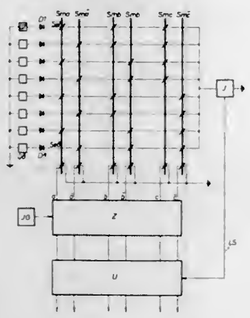
sponsive to a multifrequency code. A code verification is carried out by means of the checking circuit which comprises code checking circuit having a pair of oppositely poled rectifiers for each group of four frequency receivers and a common to all (two) groups circuit which is constituted by a level detector and a Schmitt trigger. The arrangement is designed so that the Schmitt trigger circuit is triggered only when a correct code is received.

3,470,533
MATRIX SWITCHING OF SOURCES AND CONTROL
Robert H. Tanner, Ottawa, Ontario, and Ronan M. Cambridge and Morris M. Beresford, Belleville, Ontario, Canada, assignors to Northern Electric Company Limited, Montreal, Quebec, Canada
Filed Oct. 18, 1965, Ser. No. 497,160
Int. Cl. H04q *3/42*
U.S. Cl. 340—166 **10 Claims**



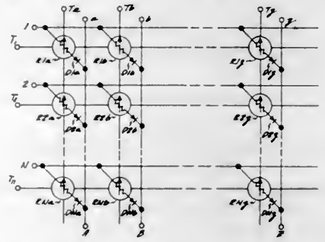
A plurality of program or signal sources and a plurality of transmission devices may be connected in selectable pairs. Circuitry provides that, with such connection, there is also provided a connection between a control actuator, associated with the connected source and a control associated with the connected transmission device, such control being actuable by the actuator to control a characteristic of the signal received from the source at the transmission device.

3,470,534
MAGNETIC CORE MATRIX ARRANGEMENT FOR THE INDIVIDUAL RECEPTION OF MARKS
Friedrich Ulrich, Stuttgart-Weilimdorf, Germany, assignor to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware
Filed Oct. 15, 1965, Ser. No. 496,341
Claims priority, application Germany, Oct. 20, 1964, St 22,836
Int. Cl. H04q *1/02*
U.S. Cl. 340—166 **3 Claims**



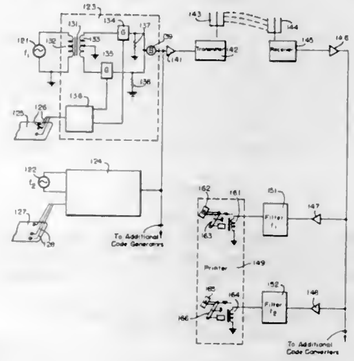
A circuit arrangement for the individual reception of marks. The arrangement comprises a plurality of marking means. Marking leads extending from the marking means are threaded through pairs of magnetic cores in an encoded distribution. A counter interrogates the magnetic cores by sequentially magnetizing different combinations of the individual ones of the pairs of cores to determine which of the marking leads is marked. Due to the magnetization of the cores by the counter, only one of the leads that extend from the marking means is not blocked for each position of the counter. All of the leads are coupled together on the side of the cores opposite the marking means and connected to a common indicator. When a lead is marked, that is not blocked, the common indicator provides a signal to equipment for providing the counter position.

3,470,535
ELECTRICALLY CONTROLLED MATRIX
Theodore Feldman, Long Branch, N.J., assignor to International Telephone & Telegraph Corporation, New York, N.Y., a corporation of Delaware
Filed Feb. 28, 1966, Ser. No. 530,708
Int. Cl. H04q *1/18*
U.S. Cl. 340—166 **11 Claims**



An electrical translator is provided by a matrix formed by two sets of wires positioned to cross each other at a plurality of points. Variable resistance devices having switch-like "conduct" and "non-conduct" characteristics are used as crosspoints at each of the points. Control of the variable resistance devices is by electric signals which determine the conductivity of each cross-point individually to enable extensive changes in the translator without rewiring.

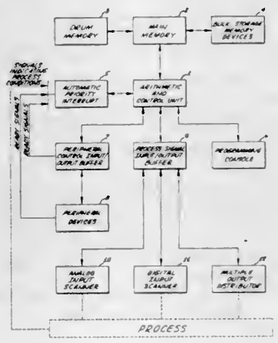
3,470,536
FREQUENCY SENSITIVE APPARATUS
Seymour T. Levine, Los Angeles, Calif. (17 Brookdale Gardens, Bloomfield, N.J. 07003)
Filed Apr. 12, 1965, Ser. No. 447,286
Int. Cl. H04q *1/18*
U.S. Cl. 340—171 **4 Claims**



A frequency sensitive apparatus is provided comprising a source of energy which is operable to transmit a signal

having a preselected frequency in a first mode and a second mode. Control means selectively controls the operation of the source so that the signal is transmitted in the first mode and the second mode sequentially. A receiver is provided comprising oscillator means which is responsive to the reception of the preselected frequency signal in the first mode for producing an output oscillatory signal. The oscillator means is further responsive to the reception of the signal in the second mode for attenuating the output oscillatory signal.

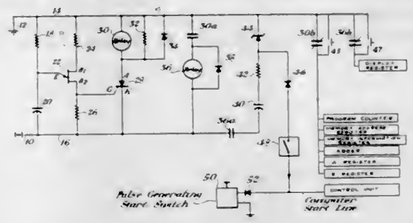
3,470,537
INFORMATION PROCESSING SYSTEM USING RELATIVE ADDRESSING
Larry A. Goshorn, Villa Park, Calif., and Sherril A. Harmon and Robert G. Erickson, Phoenix, Ariz., assignors to General Electric Company, a corporation of New York
Filed Nov. 25, 1966, Ser. No. 597,023
Int. Cl. G11b *13/00;* **G06f** *1/00, 7/00*
U.S. Cl. 340—172.5 **4 Claims**



To extend the memory addressing capability of instruction words in a computer system, each of which includes a command portion and an operand address portion, circuitry is provided which is responsive to a binary 1 in the most significant bit of the operand address portion to furnish relative addressing for the operand whose address is designated by the remaining bits of the operand address portion. Apparatus is also provided which is responsive to the next most significant bit in the operand address portion: if relative addressing is to be used and if the next-significant bit is a binary 0, the remaining bits of the operand portion are added to the address of the instruction word, as specified by a program counter, the sum being employed by the computer as the effective operand address; if relative addressing is to be used and the next most-significant bit is a binary 1, the remaining bits of the operand address portion are augmented by binary 1's in the most-significant bit position and the next-higher order bit position, and the augmented number is summed with the contents of the program counter to form the effective operand address.

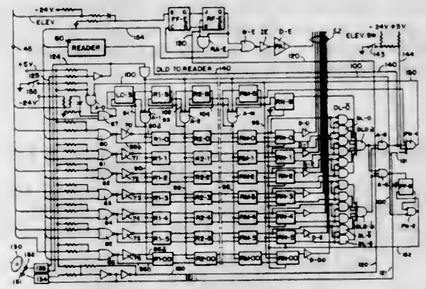
3,470,538
AUTOMATIC START CIRCUIT FOR COMPUTER
Samuel S. Harbaugh, Natrona Heights, Pa., assignor to Allegheny Ludlum Steel Corporation, Brackenridge, Pa., a corporation of Pennsylvania
Filed Dec. 28, 1966, Ser. No. 605,391
Int. Cl. G11b *13/00;* **H01h** *47/32;* **H03k** *17/00*
U.S. Cl. 340—172.5 **3 Claims**

An apparatus for sequencing the circuitry of a computer to provide automatic operation upon the initiation of power to the computer whereby means responsive to the initiation of power immediately clears the display registers and the arithmetic registers and initiates the start of the time delay period necessary for the clearing operation, the end of the time delay period then energizes switching means for the removal of the clearing circuitry



and establishes a second time delay period, the end of which initiates a start pulse to set the register to a first active memory location for the control program desired to be executed.

3,470,539
SHIFT REGISTER CONTROL FOR TYPESETTING MACHINES
Ralph A. Proud, Jr., Somerset, N.J., Richard C. O'Brien, Centerville, Ohio, and Seth Graubert, Neil Schleifman, and Theodore J. Goldstein, Long Island, N.Y., assignors To Harris-Intertype Corporation, Cleveland, Ohio, a corporation of Delaware
Filed Jan. 19, 1967, Ser. No. 610,300
Int. Cl. G11b *13/00;* **G11c** *19/00*
U.S. Cl. 340—172.5 **8 Claims**

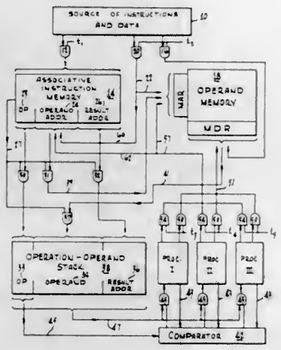


An electronic shift register receives coded inputs from a keyboard or a perforated tape reader and passes the coded information to a typesetting machine at regular intervals. When used with the keyboard, provisions are made to store temporarily a number of codes while the typesetting machine performs some functions not associated with the selection of characters, such as the elevate function in a linecasting machine, permitting the operator to continue keyboarding while this function is completed. Delays are also provided automatically, as needed, as for the selection of a double letter. The shift registers operate automatically to move information from their input to their output at a faster rate if the output can accept the information, and to store the information in the register, backed up from its output, until the typesetting machine is able to use the information from the shift register output.

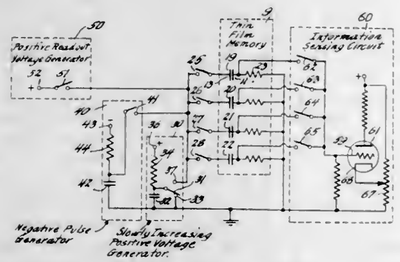
3,470,540
MULTIPROCESSING COMPUTER SYSTEM WITH SPECIAL INSTRUCTION SEQUENCING
Saul Y. Levy, Princeton, N.J., assignor to RCA Corporation, a corporation of Delaware
Filed Apr. 24, 1967, Ser. No. 633,069
Int. Cl. G11b *13/00*
U.S. Cl. 340—172.5 **5 Claims**

A multiprocessing digital computer includes a plurality of processors or processing units capable of simul-

taneously executing different respective instructions of one or more programs. An associative instruction memory contains instructions including an operation field, an operand address or symbol and a result address. An operand memory contains operands and results at addressable locations. Instructions are read out of the associative instruction memory for transfer to the processors in a sequence determined by the availability of the operands specified by the operand addresses in the instructions. This is accomplished by interrogating the operand address field of the associative instruction memory with an operand address or a result address at the same time that the operand address or the result address is supplied to the operand memory to store therein a respective operand or result.

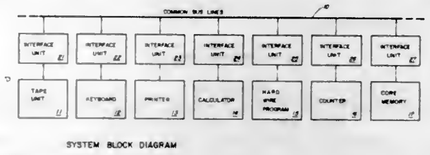


3,470.541
METAL-INSULATION-METAL STORAGE UNIT AND METHOD OF USING
John W. Balde, Raritan Township, Hunterdon County, Flemington, N.J., assignor to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York
Filed Dec. 30, 1965, Ser. No. 517,600
Int. Cl. G11c *11/24, 11/14*
U.S. Cl. 340—173 **10 Claims**



A layer of film-forming metal is anodized and coated with a conducting layer to form a metal-insulation-metal storage unit. Applying a gradual increasing voltage of opposite polarity to the anodizing voltage across the unit decreases the reverse conductivity of the unit. The unit retains the decreased reverse conductivity characteristic until a voltage of the same polarity as the anodizing voltage is applied to revert the unit to its initial reverse conductivity.

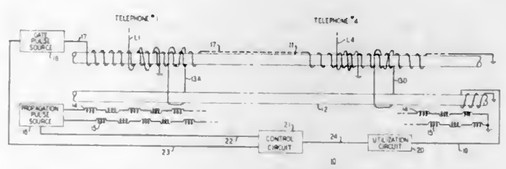
3,470,542
MODULAR SYSTEM DESIGN
Frank M. Trantanella, Lexington, Mass., assignor to Wang Laboratories, Inc., Tewksbury, Mass., a corporation of Massachusetts
Filed Mar. 17, 1967, Ser. No. 623,987
Int. Cl. G11b *31/00*
U.S. Cl. 340—173 **7 Claims**



SYSTEM BLOCK DIAGRAM

Modular system design, a number of digital devices communicating with each other through a common bus capable of transmitting control information, addresses, and data. A standard interface unit is used in conjunction with each device intermediate between the device and the common bus. The interface unit includes command decoding networks, address comparison logic, and operating-role assignment logic thereby permitting the assignment of appropriate operating roles to addressed devices, and permitting selective response to bus control information depending upon the operating role assigned.

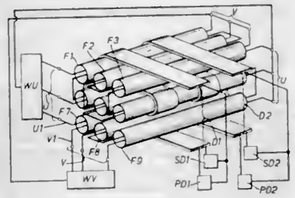
3,470,543
MAGNETIC WIRE GATING CIRCUIT
Reginald A. Kaenel, Chatham, and James L. Smith, Bedminster, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Mar. 4, 1966, Ser. No. 531,706
Int. Cl. H03k *17/30*
U.S. Cl. 340—174 **6 Claims**



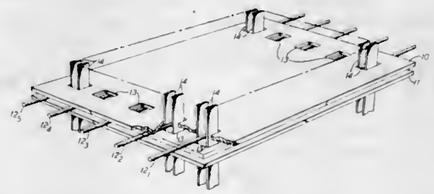
Magnetic domain wall media are linked together by a plurality of transfer loops. The expansion of domains in one wire followed by the collapse of those domains generates pulses sufficient to nucleate domains in the second for propagation to a detector. When domains are generated in the first wire selectively in response to telephone off-hook currents, the first wire functions as a gate providing complete decoupling between the fields associated with the off-hook currents and the second wire.

3,470,544
CYLINDRICAL MAGNETIC FILM STORAGE APPARATUS
David C. Stapleton, Milton Malsor, England, assignor to The Plessey Company Limited, Ilford, England, a British company
Filed Dec. 7, 1965. Ser. No. 512,153
Claims priority, application Great Britain, Dec. 7, 1964, 49,628/64
Int. Cl. G11c *11/06, 5/08*
U.S. Cl. 340—174 **4 Claims**

Magnetic storage apparatus comprising a plurality of magnetic storage elements arranged in rows and columns, each including a tubular film of isotropic rectangular hysteresis loop material, a set of first conductors, one associated with each row and extending lengthwise through the tubular films of said row, and a set of second conductors, one associated with each column and extending lengthwise through the tubular films of said column, so that energisation of a first conductor and a second conductor produces in the tubular films of the respective row and column a circumferential magnetising field, and a set of third conductors, each having a portion in close proximity to the exterior of each tubular film so that energisation of a third conductor produces in each tubular film a magnetising field in a direction lengthwise of said tubular films.



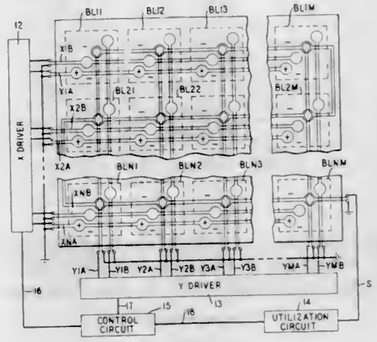
3,470,545
THIN FILM MEMORY CONSTRUCTION HAVING MAGNETIC KEEPER PLATES
Peter I. Bonyhard, Newark, N.J., assignor to Bell Telephone Laboratories, Incorporated, Murray Hill and Berkeley Heights, N.J., a corporation of New York
Filed Sept. 8, 1966, Ser. No. 578,010
Int. Cl. G11c *11/14*
U.S. Cl. 340—174 **11 Claims**



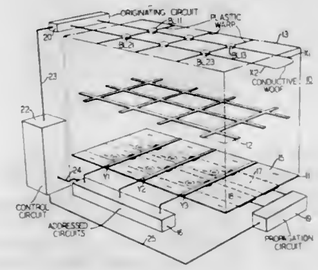
A plated wire magnetic memory element is arranged to bridge apertures in a magnetic keeper sheet lying in the same plane. Drive strap solenoids extend through respective ones of the apertures on one side of the element and return on the other side so that the memory element provides a flux path closure at each aperture for flux paths around parts of the perimeter of the aperture and encircling the solenoid. The aperture width and strap width define the bounds of each memory address along the element so that there is substantially uniform flux distribution through the element within those bounds. A memory array is formed by stacking planes of elements and their associated magnetic sheets with solenoids extending through the stack.

3,470,546
MAGNETIC MEMORY ARRANGEMENT COMPRISING DOMAIN WALL PROPAGATION CHANNELS
Andrew H. Bobeck, Chatham, N.J., assignor to Bell Telephone Laboratories, Incorporated, Murray Hill and Berkeley Heights, N.J., a corporation of New York
Filed Sept. 16, 1966, Ser. No. 579,904
Int. Cl. G11c *11/02, 5/06*
U.S. Cl. 340—174 **7 Claims**

Single wall domain propagation channels are herein adapted to provide a memory array. A matrix of two position bit locations is operated on a random-access basis to move domains selectively between the two positions at each location.



3,470,547
SWITCHING CROSSPOINT ARRANGEMENT
Andrew H. Bobeck, Chatham, N.J., assignor to Bell Telephone Laboratories, Incorporated, Murray Hill and Berkeley Heights, N.J., a corporation of New York
Filed Sept. 16, 1966, Ser. No. 579,905
Int. Cl. H01h *63/33*
U.S. Cl. 340—174 **9 Claims**

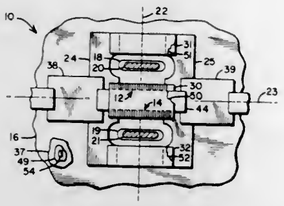


A selected one of a matrix of crosspoints defined by X and Y oriented conductors can be closed by pinching the wires together at the selected location. The movement of a magnetic domain associated with a Y conductor at each crosspoint controls the attraction of a magnet associated with the X conductor at each crosspoint.

3,470,548
MATED-FILM MEMORY ELEMENT INCORPORATING E-KEEPERS FORMING A CLOSED TRANSVERSE INTERROGATE FLUX PATH
Dean W. Morgan, St. Paul, John P. Kiernan, Bloomington, and Robert J. Bergman, St. Paul, Minn., assignors to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed Feb. 20, 1967, Ser. No. 617,329
Int. Cl. G11b *5/00*
U.S. Cl. 340—174 **18 Claims**

A magnetizable memory element that includes a plurality of ferromagnetic film layers that are formed in a stacked, superposed relationship. The element has a first portion that envelopes a suitable drive line, which first

portion has overlapping sides that form closely-coupled mated-film portions on both sides of the drive line creating a substantially-closed first flux path about the en-

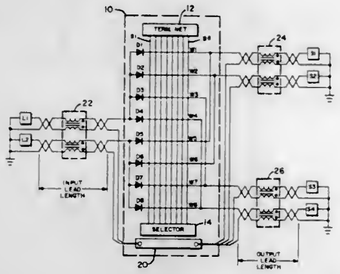


veloped drive line and that has a second portion that provides a second closed flux path to fields in the planes of said layers and orthogonal to the first flux path.

3,470,549
COMMON MODE CHOKE FOR TWO-DIMENSIONAL MEMORY ARRAY

Gordon R. Lane, White Bear Lake, Minn., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware

Filed June 9, 1967, Ser. No. 645,004
Int. Cl. G11c *5/08, 11/06*
U.S. Cl. 340—174 **10 Claims**



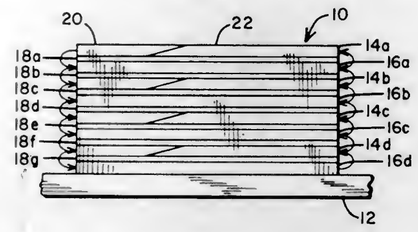
An apparatus for and a method of providing current balancing and common mode current signal rejection in the word line selection circuitry of a two-dimensional memory system. The wire coupling the one selected word line driver and the one selected word line diverter form the input wire of a two-wire, twisted-pair, transmission line, the other wire, or output wire, being formed by a ground return wire. Groups of word line driver ends and groups of word line diverter ends of the so-formed two-wire transmission lines are coupled to separately associated high permeability cores for forming common mode chokes. Electrically intermediate the common mode chokes is a non-ground level terminating strip that functions as a common signal return path for the driver and diverter currents.

3,470,550
SYNTHETIC BULK ELEMENT HAVING THIN FERROMAGNETIC FILM SWITCHING CHARACTERISTICS

Paul E. Oberg, Minneapolis, Minn., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware

Filed June 16, 1967, Ser. No. 646,638
Int. Cl. G11c *7/00, 11/14*
U.S. Cl. 340—174 **8 Claims**

An element that may be utilized as a transformer, or inductor, core or as a bistable memory core comprising a plurality of stacked, superposed layers of thin-ferromagnetic-films separated by interstitial layers of insulating material. The thin-ferromagnetic-film layers preferably possess low anisotropic fields H_k with portions of alternate layers having a high coercivity H_c for functioning as permanent magnets. The permanent magnet portions, having their magnetization aligned along a SN permanent magnetic axis M_p, bias the magnetization of the low H_k anisotropic regions: to become aligned with the polarization of the magnetization of the permanent magnet portions; or to become rotated out of alignment with their easy axes that are orthogonal to the axis M_p. Operation

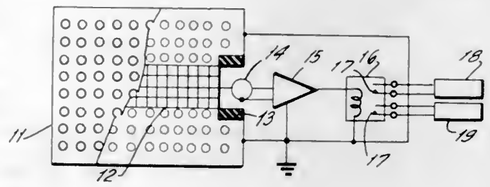


as a transformer, or inductor core is achieved by the application and detection of an AC field along a magnetic axis that is orthogonal to the axis M_p and to the easy axis of the low H_k anisotropic regions while operation as a memory core is achieved by the application of drive fields and the detection of switching fields along a magnetic axis that is orthogonal to the axis M_p but parallel to the orthogonally oriented easy axes of the low H_k anisotropic regions.

3,470,551
FIRE AND SMOKE DETECTOR

Abram Aubrey Jaffe and Eliahu Nadav, Jerusalem, Israel, assignors to Yissum Research Development Company, Jerusalem, Israel, a company of Israel

Filed Dec. 2, 1965, Ser. No. 511,100
Claims priority, application Israel, Dec. 27, 1964, 22,673
Int. Cl. G08b *21/00*
U.S. Cl. 340—237 **4 Claims**



A fire and smoke detector including an electrical conductor which has induced thereon an electrical charge when approached by the net electrical charge carried by smoke and combustion by-products. A perforated shield surrounds the electrical conductor to screen the conductor from external charges and external electrical fields while at the same time permits the flow of smoke and combustion by-products therethrough. Amplifying and alarm apparatus are provided responsive to the establishment of the induced charge on the conductor signifying the presence of smoke and combustion products.

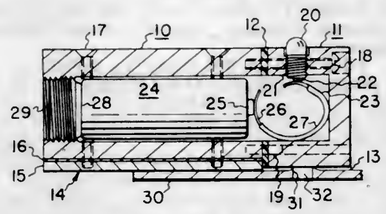
3,470,552
BURR GAGE

Russell H. Graf, Milwaukee, Wis., assignor to General Electric Company, a corporation of New York

Filed Jan. 19, 1967, Ser. No. 610,359
Int. Cl. G01b *3/22;* **G08b** *21/00*
U.S. Cl. 340—267 **5 Claims**

Two metal blocks are insulatingly joined as a unit with a surface of one block being parallel to and slightly offset

with respect to the other. A battery in one block is in series with a lamp in the other. When the unit is placed

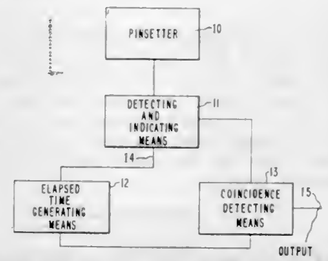


on a metal test piece that has a burr which has a height greater than the offset, a circuit is completed and the indicating lamp lights.

3,470,553
SYSTEM FOR DETECTING POTENTIAL FAILURE IN BOWLING PIN-SETTING MACHINES

Dennis William Hyde, Santa Clara, Calif., assignor to Daniel D. Miller, Sunnyvale, Calif.

Filed Oct. 28, 1966, Ser. No. 590,281
Int. Cl. G08b *21/00, 1/08*
U.S. Cl. 340—268 **7 Claims**

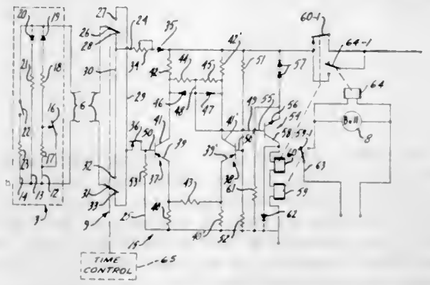


A system for detecting potential failure in bowling pin-setting machines which detects the time period during which the pin setter removes the pins from the pit and places them into a table, comparing this period to a known time period, and determining if the detected time period is too long. If so, a malfunction is probably present.

3,470,554
INTRUSION ALARM SYSTEM HAVING AUTHORIZATION CAPABILITY WITH TAMPER DETECTION MEANS

Paul I. Corbell, Milwaukee, Wis., assignor to Johnson Service Company, Milwaukee, Wis., a corporation of Wisconsin

Filed Mar. 9, 1966, Ser. No. 532,965
Int. Cl. G08b *13/08*
U.S. Cl. 340—274 **10 Claims**

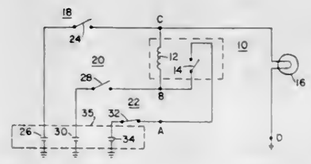


This disclosure relates to a door alarm having a normally closed detection switch connected in a voltage dividing network circuit with a diode. A normally open security switch is connected in parallel with the first branch. A current balancing resistor and an oppositely polarized diode is parallel with the first and second branches. A day-night switch applies a direct current (D.C.) signal of a polarity biasing the first diode to conduct during the night and of a polarity biasing the opposite diode of the by-pass circuit to conduct during the day. A balanced differential amplifier is connected to the D.C. leads and through a transistor amplifier operates a pair of relays. The output signal normally maintains the transistor amplifier conducting whereby the control relays are energized to deactivate the alarm. Either switch when actuated unbalances the amplifier unit to activate the alarm.

3,470,555
ELECTRICAL INDICATING AND SWITCHING SYSTEMS

Marion J. Langan, 216½ Holmes Ave. NE., Huntsville, Ala. 35801

Filed Oct. 24, 1965, Ser. No. 504,672
Int. Cl. G08b *5/00, 7/00;* **H05b** *39/00*
U.S. Cl. 340—286 **3 Claims**

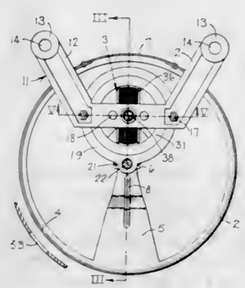


A switching and indicating circuit which includes an indicating lamp, a relay coil, normally opened relay contacts associated with the relay coil and a source of power and in which all four of these elements are in series and in which switches are included to selectively power to each terminal of the coil to selectively energize or de-energize the coil by closing one of these switches or the other.

3,470,556
NUMERAL DISPLAY FOR ELECTRONIC CALCULATING MACHINES

Wilhelm Bertram, 2 Hans-Cornelius Strasse, 8032 Grafelfing, Germany

Continuation-in-part of application Ser. No. 666,585, Sept. 11, 1967. This application June 24, 1968, Ser. No. 739,355
Claims priority, application Germany, Sept. 12, 1966, B 88,886
Int. Cl. G08b *23/00*
U.S. Cl. 340—324 **15 Claims**



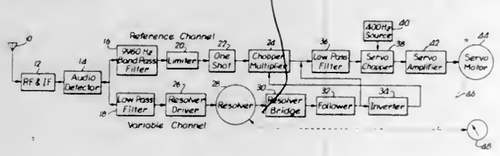
A device for displaying numerals in a calculating machine in response to electrical voltages received from an

analogue circuit. The device utilizes a motor which has a movable rotor which is angularly displaced in response to the magnitude of the voltage applied to the motor armature. A drum-like numeral carrier encircles the motor and is rotatably mounted relative thereto, the numeral carrier being geared to and driven by the rotor. A plurality of such devices may be arranged in side-by-side relation to provide the desired number of digits.

3,470,557
CHOPPER PHASE COMPARATOR FOR OMNIRANGE RECEIVERS

William S. Harries, Kansas City, Mo., Robert G. Piper, Shawnee, and Don G. Daugherty, Lawrence, Kans., and Neal Scribner, Independence, and Gul C. Asnani, Kansas City, Mo., assignors to Wilcox Electric Company, Inc., Kansas City, Mo., a corporation of Kansas

Filed June 21, 1968, Ser. No. 738,988
Int. Cl. G01s *1/44*
U.S. Cl. 343—106 **14 Claims**

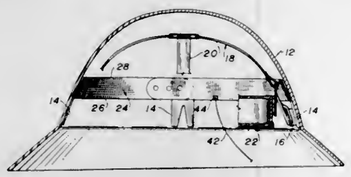


A VOR receiver effects a phase comparison of the demodulated carrier of a navigation signal and the modulating signal component of the subcarrier thereof without demodulating the subcarrier. A chopper is employed to chop the demodulated carrier with a train of pulses provided by a monostable multivibrator triggered by a limiter to which the subcarrier is fed. Multiplication is effected by the chopper and, since the frequency of the demodulated carrier and the frequency of the modulating signal component of the subcarrier are the same, the product signal thus obtained has a direct current component proportional to the cosine of the phase angle therebetween.

3,470,558
HAT MOUNTED RADIO ANTENNA

Herbert A. Raschke, Greenbrae, Calif., assignor to E. D. Bullard Company, Sausalito, Calif.

Filed Dec. 7, 1966, Ser. No. 599,910
Int. Cl. H01q *1/12, 1/00*
U.S. Cl. 343—718 **5 Claims**

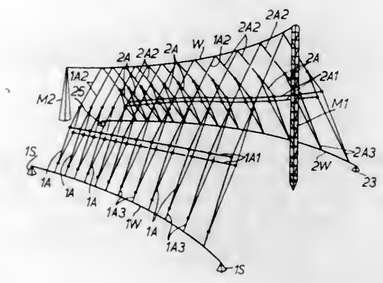


A radio receiving antenna mounted in a safety hat that includes a band of conductive wire mesh that is formed in a loop and has a upwardly converging or frustoconical form. The degree of convergence is established so that the antenna conforms generally to the degree of taper of the hat interior to the end that the mesh frictionally engages the hat interior. The disclosed band has an adjustable diameter so that the band can be adapted to different sizes and shapes of hats.

3,470,559
RADIO RECEIVING AND TRANSMITTING SYSTEMS

Matthew Frederick Radford, Essex, England, assignor to The Marconi Company Limited, London, England, a British company

Filed Nov. 21, 1966, Ser. No. 595,657
Claims priority, application Great Britain, Dec. 8, 1965, 52,142/65
Int. Cl. H01q *11/10*
U.S. Cl. 343—792.5 **8 Claims**

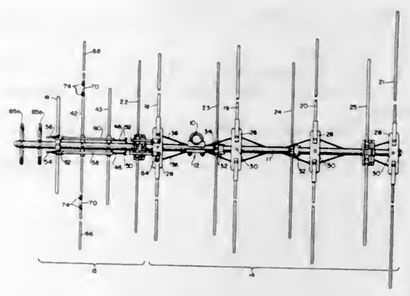


1. A high frequency radio transmitting or receiving system comprising an aerial system consisting of two logarithmic aerial arrays which incline towards one another at substantially 90° and each of which is at substantially 45° to the horizontal; and a four port hybrid circuit arrangement having two ports coupled respectively to the two arrays and two other ports serving as signal input or output ports.

3,470,560
SHORT ANTENNA ARRAY WITH DIRECTOR MOUNTED COAXIALLY ON DIPOLE

Kingsley Fray, Ellenville, N.Y., assignor, by mesne assignments, to Avnet, Inc., New York, N.Y., a corporation of New York

Filed Aug. 10, 1966, Ser. No. 571,450
Int. Cl. H01q *21/12, 15/14*
U.S. Cl. 343—815 **11 Claims**



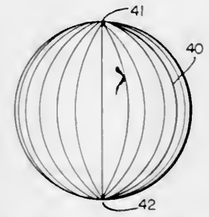
An end-fire antenna array, including high band and low band antennas for use, respectively, with the UHF and VHF television receiving bands. Each of these antennas comprises an array of dipoles with the UHF antenna being arranged in front of the VHF antenna. Parasitic director elements are associated with the VHF band antenna and intended primarily to operate over the upper VHF band. These parasitic directors are interleaved with the elements of the UHF antenna, but mounted to the sides thereof so as not to appreciably affect performance

of the UHF antenna over its operating band. Each of such parasitic directors may be mounted at an extremity of a UHF dipole element and insulated therefrom by conventional means.

3,470,561
SPHERICAL LUNEBERG LENS

Robert L. Horst, Lancaster, Pa., assignor to Armstrong Cork Company, Lancaster, Pa., a corporation of Pennsylvania

Application Aug. 2, 1965, Ser. No. 477,669, now Patent No. 3,274,668, dated Sept. 27, 1966, which is a continuation-in-part of application Ser. No. 209,075, July 11, 1962. Divided and this application Apr. 13, 1966, Ser. No. 567,021
Int. Cl. H01q *15/08*
U.S. Cl. 343—911 **7 Claims**



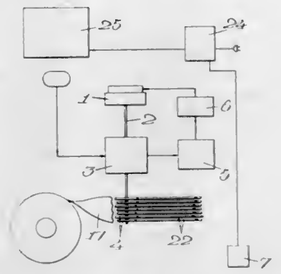
A substantially spherical dielectric lens comprises a plurality of orange-slice shaped wedges disposed in side by side relation to one another. Each wedge exhibits a variation in dielectric constant in directions normal to its thickened edge, and each wedge exhibits substantially the same density at all portions thereof between its thickened and thin edge.

3,470,562
VIDEOMETER

Akito Yanai, Tokyo, Japan, assignor to Kabushiki Kaisha Dentsu, Tokyo, Japan, a corporation of Japan

Filed Apr. 7, 1966, Ser. No. 541,002
Claims priority, application Japan, Apr. 8, 1965, 40/20,315
Int. Cl. G01d *9/02*
U.S. Cl. 346—37 **1 Claim**

Control means, including a motor with an operating shaft for turning a turret tuner, operates the motor to adjust the tuner to the frequency of the signals from the oscillator of a television receiver every time the latter is tuned to a different channel. A recording tape is continuously fed at uniform speed past a station by means operated by a synchronous motor which runs while the receiver is on, and there being at this station a plurality of punches spaced transversely of the tape and a common actuator for all punches which is activated by a relay energized at equal periodic intervals on closure of a switch by a cam driven by the synchronous motor. Directly mounted on the operating shaft are a plurality of cams with which cooperate followers, of which different combinations of cams for different tuned channels displace their respective followers intermediate therewith associated punches and the common actuator, with the latter when activated forcing into the tape only those punches with intermediate followers therebetween.



3,470,563
SHIELDED ELECTROSTATIC TRANSDUCER

David A. Starr, Jr., Southfield, Mich., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan

Filed Oct. 23, 1965, Ser. No. 503,762
Int. Cl. H04r *19/06;* **G01d** *15/06*
U.S. Cl. 346—74 **7 Claims**

The invention relates to a laminated electrostatic transducer which forms a pin electrode matrix. A thin metallic sheet is placed within the layers of the laminated assembly and serves as an electrostatic shielding device. The area of the leads connected to the electrodes of each layer is kept constant by varying the width of the lead with respect to its length. This serves to equalize interelectrode capacitive coupling which allows a balanced electrostatic signal to be produced.

DESIGNS

SEPTEMBER 30, 1969

215,399
CONFECTION
Frank V. Liberatore, 592 Crescent St., Brooklyn, N.Y. 11208
Filed Jan. 27, 1969, Ser. No. 15,504
Term of patent 14 years
Int. Cl. D1—*02*
U.S. Cl. D1—22



215,400
SAFETY HELMET
Malcolm D. Sinclair, 2279 Riverwood Place, St. Paul, Minn. 55111, Andrew S. Fraser, 120 Ashley Road, Hopkins, Minn. 55343, and Alwin J. Stahel, New Brighton, Minn.; said Stahel assignor to said Sinclair and said Fraser
Filed Sept. 16, 1968, Ser. No. 13,550
Term of patent 14 years
Int. Cl. D2—*03*
U.S. Cl. D2—231



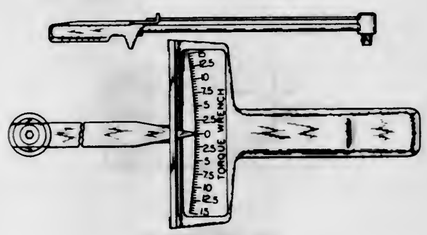
215,401
MOLDED SANDAL
Emilia Cordoba de Balseiro, San Salvador, El Salvador, assignor to Balseiro, Cordoba & Compania (Balco), a company of San Salvador, El Salvador
Filed July 18, 1967, Ser. No. 7,858
Term of patent 14 years
Int. Cl. D2—*04*
U.S. Cl. D2—294



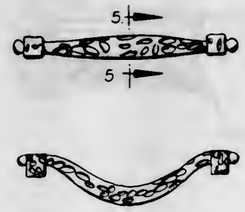
215,402
MOLDED SANDAL
Emilia Cordoba de Balseiro, San Salvador, El Salvador, assignor to Balseiro, Cordoba & Compania (Balco), a company of San Salvador, El Salvador
Filed July 18, 1967, Ser. No. 7,859
Term of patent 14 years
Int. Cl. D2—*04*
U.S. Cl. D2—294



215,403
TORQUE WRENCH OR THE LIKE
Karl-Heinz Müller, Wuppertal-Cronenberg, Germany, assignor to Belzer-Werk R. Belzer, Wuppertal-Cronenberg, Germany, a corporation of Germany
Filed July 23, 1968, Ser. No. 12,861
Claims priority, application Germany Jan. 23, 1968
Term of patent 14 years
Int. Cl. D8—*02*
U.S. Cl. D8—24



215,404
PULL OR THE LIKE
Roy A. Stone, Rockford, Ill., assignor to Keystone Consolidated Industries, Inc., a corporation of Delaware
Filed May 24, 1968, Ser. No. 12,076
Term of patent 14 years
Int. Cl. D8—*03*
U.S. Cl. D8—159



215,405
CLEAT
Henry A. Patnaude, 531 Los Molinos Way, Sacramento, Calif. 95825
Filed Oct. 25, 1968, Ser. No. 14,174
Term of patent 14 years
Int. Cl. D8—*03*
U.S. Cl. D8—232

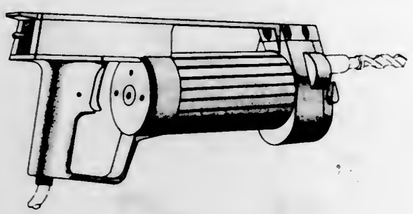


215,406
WIRE STRAIGHTENER
Charles F. Campbell, Reno, Nev. (538 I St., Sparks, Nev. 89431)
Filed Oct. 2, 1968, Ser. No. 13,814
Term of patent 14 years
Int. Cl. D8—*02*
U.S. Cl. D8—44

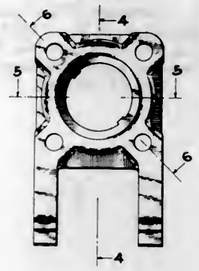




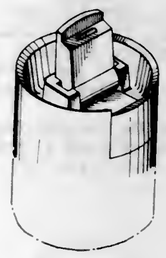
215,407
PORTABLE TOOL
Donald J. Hackman, Jack L. Hillman, and Ronald L. Legue, Columbus, Ohio, assignors to Oceanautic Manufacturing and Research Company, Cincinnati, Ohio, a corporation of Ohio
Filed Sept. 30, 1968, Ser. No. 13,767
Term of patent 14 years
Int. Cl. D8—*02*
U.S. Cl. D8—68



215,408
BRACKET FOR AN ELECTRIC WATER HEATER
Lester D. Drugmand, Pittsburgh, Pa., assignor to Emerson Electric Company, St. Louis, Mo.
Filed Aug. 14, 1968, Ser. No. 13,130
Term of patent 14 years
Int. Cl. D8—*03*
U.S. Cl. D8—233



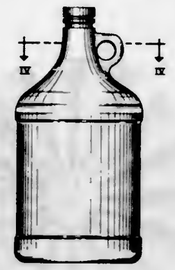
215,409
DISPENSING CONTAINER
Robert E. Hazard, North Kingstown, R.I., assignor to Polytop Corporation, Slatersville, R.I., a corporation of Massachusetts
Filed Mar. 4, 1968, Ser. No. 10,822
Term of patent 14 years
Int. Cl. D9—*01*
U.S. Cl. D9—9



215,410
JUG
David G. Hills, Collinsville, Conn., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware
Continuation of design applications Ser. No. 8,896 and Ser. No. 8,902, both Oct. 6, 1967. This application May 6, 1968, Ser. No. 12,192
Term of patent 14 years
Int. Cl. D9—*01*
U.S. Cl. D9—39



215,411
JUG
David L. Anderson, Ballwin, Mo., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware
Filed May 22, 1968, Ser. No. 12,038
Term of patent 14 years
Int. Cl. D9—*01*
U.S. Cl. D9—47



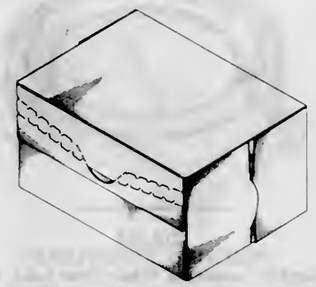
215,412
JAR OR THE LIKE
Walter J. Landor, San Francisco, Calif., assignor to Hills Bros. Coffee, Inc., San Francisco, Calif.
Filed Sept. 20, 1968, Ser. No. 13,631
Term of patent 14 years
Int. Cl. D9—*01*
U.S. Cl. D9—119



215,413
COMBINED CONTAINER AND CLOSURE THEREFOR
Donald W. Donovan, Glastonbury, Conn., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware
Continuation-in-part of design application Ser. No. 8,253, Aug. 10, 1967. This application May 10, 1968, Ser. No. 11,882
Term of patent 14 years
Int. Cl. D9—*04*
U.S. Cl. D9—219



215,414
ICE CREAM CARTON
Harry I. Roccaforte, 3301 W. 68th Place, Chicago, Ill. 60629; Elverse M. Jordan, 57 E. Franklin Place, Lake Forest, Ill. 60045; and William C. Inch, 142 22nd Ave., San Francisco, Calif. 94121
Continuation of design applications Ser. No. 6,152, Ser. No. 6,153, and Ser. No. 6,156, Mar. 10, 1967. This application Aug. 6, 1968, Ser. No. 13,381
Term of patent 14 years
Int. Cl. D9—*04*
U.S. Cl. D9—240



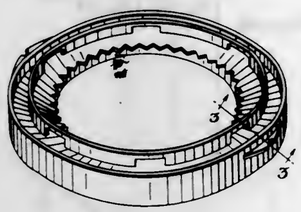
215,415
PULL TAB FOR A REMOVABLE TEAR PORTION
Don B. Peters and George T. Powell, Dayton, Ohio, assignors, by mesne assignments, to Ermal C. Fraze, Dayton, Ohio
Continuation of design applications Ser. No. 10,526 and Ser. No. 10,527, Feb. 12, 1968. This application June 6, 1968, Ser. No. 12,692
Term of patent 14 years
Int. Cl. D9—*02*
U.S. Cl. D9—256



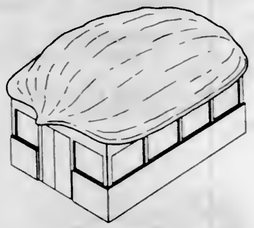
215,416
FOOD BASTING ATTACHMENT FOR BOTTLES OR THE LIKE
Bathuel R. Posada, 3700 Dean Drive, Apt. 1207, Ventura, Calif. 93003
Filed Aug. 20, 1968, Ser. No. 13,208
Term of patent 14 years
Int. Cl. D9—*02*
U.S. Cl. D9—275



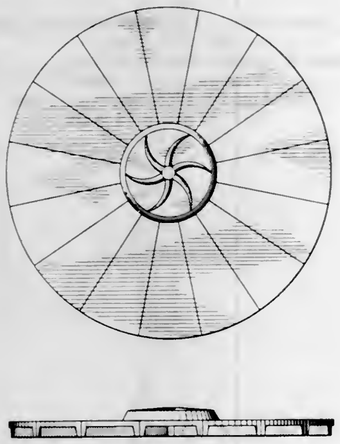
215,417
ATTACHMENT FOR A PAINT CONTAINER
Joseph R. MacDonald, 63 Franklin Road, Winchester, Mass. 18890, and Winfred A. MacDonald, 230 Essex St., Melrose, Mass. 02176
Filed Feb. 29, 1968, Ser. No. 10,788
Term of patent 14 years
Int. Cl. D9—*99*
U.S. Cl. D9—289



215,418
BUILDING STRUCTURE
Richard P. Anderson, White Bear Lake, Minn. (1732 Lawrence St., Cottage Grove, Minn. 55016)
Filed Oct. 16, 1967, Ser. No. 9,006
Term of patent 14 years
Int. Cl. D25—*04*
U.S. Cl. D13—1



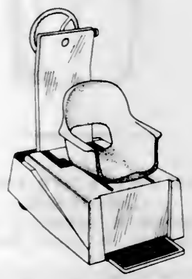
215,419
BUILDING ROOF
Jack W. Beck, Kansas City, Mo., assignor to Plasto Incorporated, Mission, Kans., a corporation of Kansas
Filed Dec. 11, 1968, Ser. No. 14,900
Term of patent 14 years
Int. Cl. D25—*04*
U.S. Cl. D13—1



215,420
BUILDING ROOF
Jack W. Beck, Kansas City, Mo., assignor to Plasto Incorporated, Mission, Kans., a corporation of Kansas
Filed Dec. 11, 1968, Ser. No. 14,925
Term of patent 14 years
Int. Cl. D25—*04*
U.S. Cl. D13—1



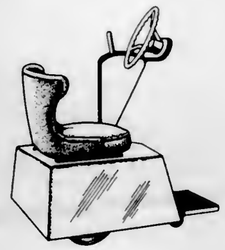
215,421
CONVERTIBLE INDUSTRIAL VEHICLE
James T. Triplett, Shamrock Drive, Chester, S.C. 02889
Filed June 4, 1968, Ser. No. 12,200
Term of patent 14 years
Int. Cl. D12—*13*
U.S. Cl. D14—3



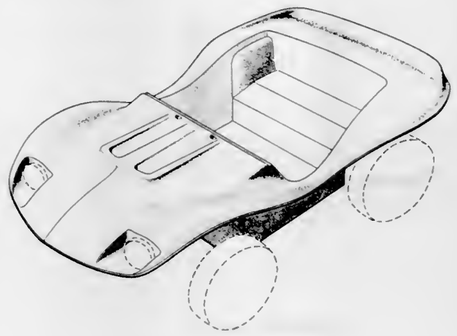
215,422
INDUSTRIAL VEHICLE
James T. Triplett, Shamrock Drive, Chester, S.C. 02889
Filed June 4, 1968, Ser. No. 12,202
Term of patent 14 years
Int. Cl. D12—*13*
U.S. Cl. D14—3



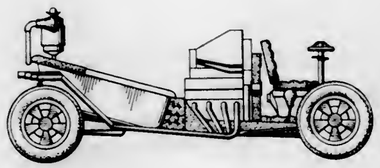
215,423
ELECTRIC VEHICLE
James T. Triplett, Shamrock Drive, Chester, S.C. 02889
Filed June 4, 1968, Ser. No. 12,203
Term of patent 14 years
Int. Cl. D12—*13*
U.S. Cl. D14—3



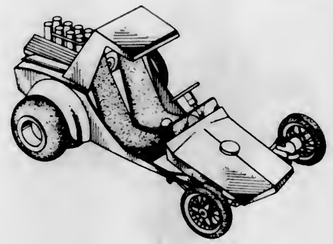
215,424
DUNE BUGGY BODY
Donald D. Arnett, 4604 Lodge, Toluca Lake, Calif. 91602
Filed Oct. 22, 1968, Ser. No. 14,107
Term of patent 14 years
Int. Cl. D12—*08*
U.S. Cl. D14—3



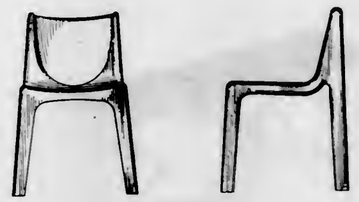
215,425
MOTOR VEHICLE
Robert W. Reisner, 11413 S. Cedar, Hawthorne, Calif. 90252
Filed Jan. 21, 1969, Ser. No. 15,414
Term of patent 14 years
Int. Cl. D12—*08*
U.S. Cl. D14—3



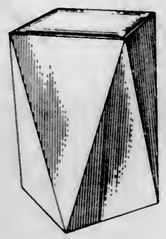
215,426
MOTOR VEHICLE
Robert W. Reisner, 11413 S. Cedar, Hawthorne, Calif. 90252
Filed Jan. 23, 1969, Ser. No. 15,465
Term of patent 14 years
Int. Cl. D12—*08*
U.S. Cl. D14—3



215,427
CHAIR
Alex Strassle, 9533 Kirchberg, St. Gallen, Switzerland
Filed Aug. 15, 1967, Ser. No. 8,274
Term of patent 14 years
Int. Cl. D6—*01*
U.S. Cl. D15—1



215,428
STOOL
John W. Tapert, Detroit, Mich., assignor to Design Workshop, Inc., Detroit, Mich., a corporation of Michigan
Filed Feb. 26, 1968, Ser. No. 10,713
Term of patent 14 years
Int. Cl. D6—*01*
U.S. Cl. D15—8



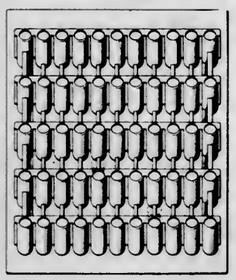
215,429
STOOL
Donald Lee Sickler, Baltimore, Md., assignor to National Industries, Inc., Odenton, Md., a corporation of Maryland
Original design application Nov. 6, 1967, Ser. No. 9,293. Divided and this application Oct. 2, 1968, Ser. No. 13,824
Term of patent 14 years
Int. Cl. D6—*01*
U.S. Cl. D15—8

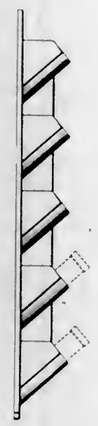


215,430
BENCH
Sohei Suzuki, 12 1-chome, Ebisu-cho, Gifu-shi, Gifu-ken, Japan
Filed Aug. 30, 1968, Ser. No. 13,349
Term of patent 14 years
Int. Cl. D6—*01*
U.S. Cl. D15—11



215,431
VIAL RACK
Ernest L. Allen, 82 Main St., Nashua, N.H. 03060
Filed Jan. 14, 1969, Ser. No. 15,343
Term of patent 14 years
Int. Cl. D24—*02*; D6—*01*
U.S. Cl. D16—1





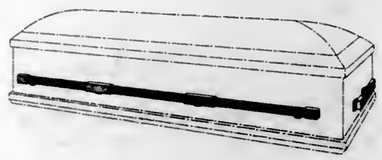
215,432
CASKET OR THE LIKE
Joseph E. Peter, Cincinnati, Ohio, assignor to The Crane & Breed Casket Company, Cincinnati, Ohio, a corporation of Ohio
Filed July 21, 1967, Ser. No. 7,922
Term of patent 14 years
Int. Cl. D31
U.S. Cl. D19—1



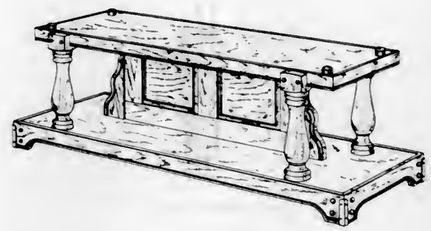
215,433
CASKET OR THE LIKE
Joseph E. Peter, Cincinnati, Ohio, assignor to The Crane & Breed Casket Company, Cincinnati, Ohio, a corporation of Ohio
Filed July 21, 1967, Ser. No. 7,923
Term of patent 14 years
Int. Cl. D31
U.S. Cl. D19—1



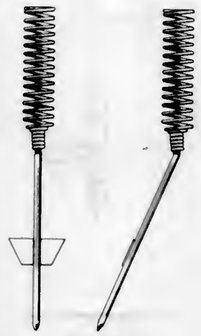
215,434
CASKET OR THE LIKE
Joseph E. Peter, Cincinnati, Ohio, assignor to The Crane & Breed Casket Company, Cincinnati, Ohio, a corporation of Ohio
Filed July 21, 1967, Ser. No. 7,924
Term of patent 14 years
Int. Cl. D31
U.S. Cl. D19—1



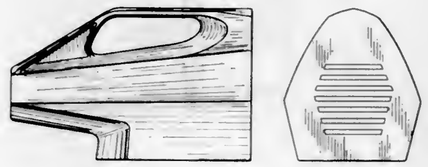
215,435
CASKET DISPLAY BIER
Ralph H. Ellsworth, Willoughby, Ohio, assignor to Superior Funeral Supply Corporation, Cleveland, Ohio, a corporation of Ohio
Filed Jan. 16, 1969, Ser. No. 15,370
Term of patent 14 years
Int. Cl. D31
U.S. Cl. D19—1

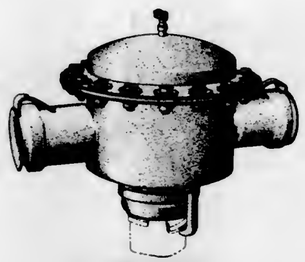


215,436
FISHING ROD HOLDER
Ivan H. Moore, Coffeyville, Kans. (345 W. 6th St., Garnett, Kans. 66032)
Filed June 10, 1968, Ser. No. 12,283
Term of patent 14 years
Int. Cl. D22—*08*; D31
U.S. Cl. D22—22

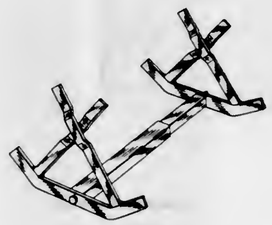


215,437
SPRAYER FOR INSECTICIDES OR THE LIKE
Samuel A. Halaby, Jr., Pittsford, and Richard C. Meisenzahl, Fairport, N.Y., assignors to Samuel Halaby Inc., Rochester, N.Y., a corporation of New York
Filed Aug. 2, 1968, Ser. No. 13,019
Term of patent 14 years
Int. Cl. D23—*01*
U.S. Cl. D23—17

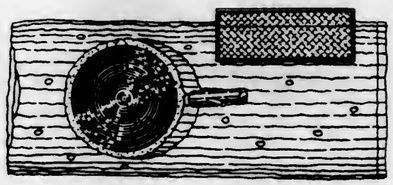




215,439
TELESCOPABLE LOG HOLDER
Raymond L. Hetu, 7 Sonora Drive, Chelmsford, Mass. 01824
Filed Jan. 17, 1969, Ser. No. 15,388
Term of patent 14 years
Int. Cl. D23—*03*
U.S. Cl. D23—98



215,440
LOG HEATER
Mary H. Jones, 2516 Anna Way, Sacramento, Calif. 95821
Filed Aug. 20, 1968, Ser. No. 13,210
Term of patent 14 years
Int. Cl. D23—*03*
U.S. Cl. D23—106

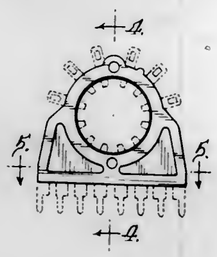


215,441
REED SWITCH FOR ELECTRICAL COMPONENTS
Bernard Edward Shlesinger, Jr., 3906 Bruce Lane, Annandale, Va. 22203
Filed Aug. 14, 1968, Ser. No. 13,139
Term of patent 14 years
Int. Cl. D13—*03*
U.S. Cl. D26—13



215,442
REED SWITCH FOR ELECTRICAL COMPONENTS
Bernard Edward Shlesinger, Jr., 3906 Bruce Lane, Annandale, Va. 22203
Filed Aug. 20, 1968, Ser. No. 13,198
Term of patent 14 years
Int. Cl. D13—*03*
U.S. Cl. D26—13

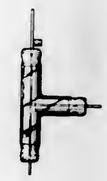
215,443
ROTARY SWITCH STATOR UNIT
Kenneth C. Allison, 1540 Lake Shore Drive, Crystal Lake, Ill. 60014
Filed Sept. 25, 1968, Ser. No. 13,704
Term of patent 14 years
Int. Cl. D13—*03*
U.S. Cl. D26—13



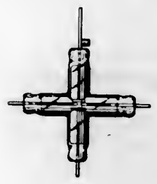
215,444
REED SWITCH FOR ELECTRICAL COMPONENTS
Bernard Edward Shlesinger, Jr., 3906 Bruce Lane, Annandale, Va. 222203
Original design application Aug. 20, 1968, Ser. No. 13,198. Divided and this application Feb. 25, 1969, Ser. No. 15,902
Term of patent 14 years
Int. Cl. D13—*03*
U.S. Cl. D26—13



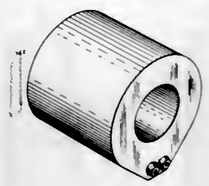
215,445
REED SWITCH FOR ELECTRICAL COMPONENTS
Bernard Edward Shlesinger, Jr., 3906 Bruce Lane, Annandale, Va. 22203
Original design application Aug. 14, 1968, Ser. No. 13,139. Divided and this application Mar. 6, 1969, Ser. No. 16,089
Term of patent 14 years
Int. Cl. D13—*03*
U.S. Cl. D26—13



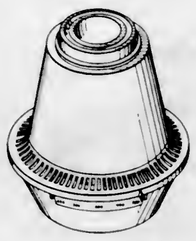
215,446
REED SWITCH FOR ELECTRICAL COMPONENTS
Bernard Edward Shlesinger, Jr., 3906 Bruce Lane, Annandale, Va. 22203
Original design application Aug. 14, 1968, Ser. No. 13,139. Divided and this application Mar. 6, 1969, Ser. No. 16,090
Term of patent 14 years
Int. Cl. D13—*03*
U.S. Cl. D26—13



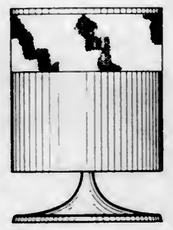
215,447
INSTRUMENT TRANSFORMER
Robert S. Canney, Berwick, Maine, assignor to General Electric Company, a corporation of New York
Filed Apr. 24, 1968, Ser. No. 11,588
Term of patent 14 years
Int. Cl. D13—*02*
U.S. Cl. D26—15



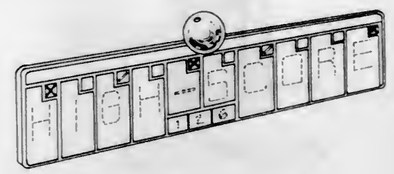
215,448
ELECTRIC SOLDER POT
Alvis R. Knowles, Torrance, Calif., assignor to Eldon Industries, Inc., Hawthorne, Calif., a corporation of California
Filed Sept. 17, 1968, Ser. No. 13,564
Term of patent 14 years
Int. Cl. D23—*03, 04*
U.S. Cl. D23—77



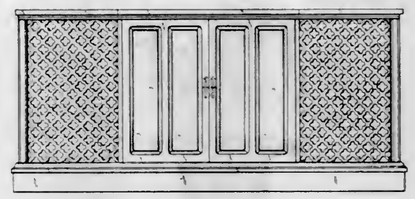
215,449
SPEAKER
Donald F. Kaminski, Downers Grove, and Robert M. Kapsaris, Northbrook, Ill., assignors to Warwick Electronics, Inc., Chicago, Ill., a corporation of Delaware
Filed Oct. 31, 1968, Ser. No. 14,256
Term of patent 14 years
Int. Cl. D14—*01*; D26—*02*
U.S. Cl. D26—14



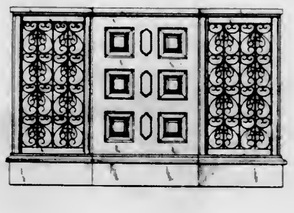
215,450
BOWLING SCORE PIN
Leon P. Ried, 301 N. Denison St., Baltimore, Md. 21229
Filed July 17, 1968, Ser. No. 12,798
Term of patent 14 years
Int. Cl. D11—*03*
U.S. Cl. D29—2



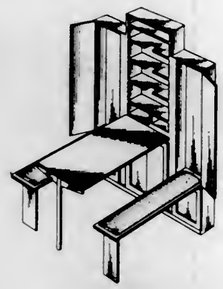
215,451
CREDENZA OR SIMILAR ARTICLE
Frank D. Durando, New York, N.Y., assignor to Delmonico International Corporation, Maspeth, N.N.Y., a corporation of New York
Filed July 16, 1968, Ser. No. 12,787
Term of patent 7 years
Int. Cl. D6—*01*
U.S. Cl. D33—13



215,452
CREDENZA OR SIMILAR ARTICLE
Frank D. Durando, New York, N.Y., assignor to Delmonico International Corporation, Maspeth, N.Y., a corporation of New York
Filed July 16, 1968, Ser. No. 12,788
Term of patent 7 years
Int. Cl. D6—*01*
U.S. Cl. D33—13



215,453
COMBINED TABLE, BENCH AND CLOSET UNIT OR SIMILAR ARTICLE
Joseph R. Menne, 946 N. Kingsley Drive, Los Angeles, Calif. 90029
Filed June 11, 1968, Ser. No. 12,297
Term of patent 14 years
Int. Cl. D6—*01*
U.S. Cl. D33—14

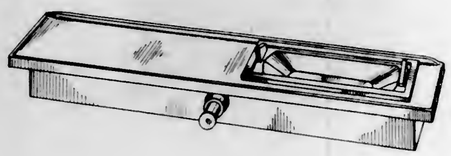


215,454
COMBINED RAZOR AND BLADE HOLDER
Sol J. Berger and John G. Rivenburgh, Chicago, Ill., assignors to Berger-Rivenburgh, Inc., Chicago, Ill., a corporation of Delaware
Filed July 15, 1968, Ser. No. 12,748
Term of patent 14 years
Int. Cl. D6—*01*
U.S. Cl. D33—23

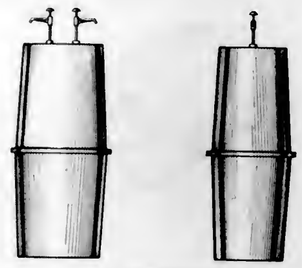




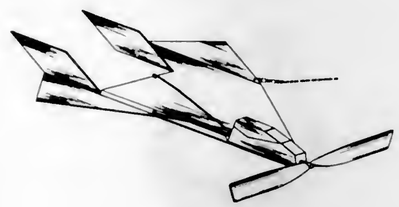
3,215,455
COMBINED SOAP DISPENSER AND ASH TRAY
Burton L. Feinson, 275 Whitman Drive, Brooklyn, N.Y. 11234
Filed July 11, 1968, Ser. No. 12,711
Term of patent 14 years
Int. Cl. D6—*01*
U.S. Cl. D33—26



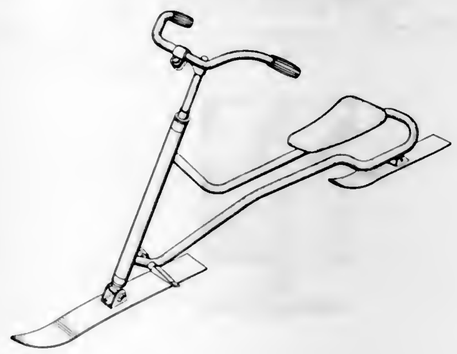
215,456
DISPENSER FOR LIQUID SOAP OR THE LIKE
Selwyn Ancel, River Forest, Ill., assignor to Madison Chemical Corporation, Maywood, Ill., a corporation of Delaware
Filed Dec. 18, 1968, Ser. No. 15,044
Term of patent 14 years
Int. Cl. D6—*01*
U.S. Cl. D33—30



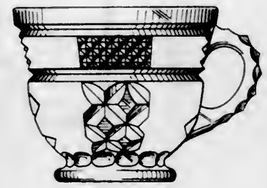
215,457
TOY AIRPLANE
Leon C. Wallace, 2483 South Fourth East, Salt Lake City, Utah 84115
Filed Dec. 16, 1968, Ser. No. 14,987
Term of patent 14 years
Int. Cl. D21—*01*
U.S. Cl. D34—15



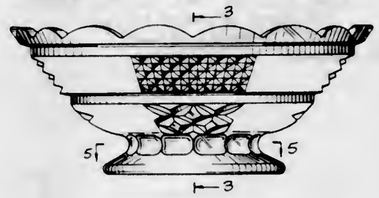
215,458
SNOW BIKE
Mason Latch, 1531 Risdon Road, Concord, Calif. 94520, and Ali R. Saeedi, 89 Orinda Way, Orinda, Calif. 94563
Filed Dec. 19, 1968, Ser. No. 15,064
Term of patent 7 years
Int. Cl. D21—*03*
U.S. Cl. D34—15



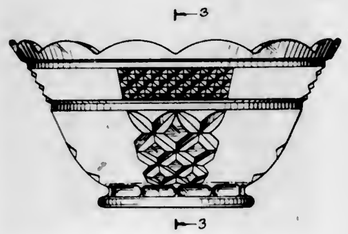
215,459
CUP OR SIMILAR ARTICLE
Frank J. Benes, Lancaster, Ohio, assignor to Anchor Hocking Corporation, Lancaster, Ohio, a corporation of Delaware
Original design application Apr. 30, 1968, Ser. No. 11,704. Divided and this application Dec. 11, 1968, Ser. No. 14,921
Term of patent 14 years
Int. Cl. D7—*01*
U.S. Cl. D36—8



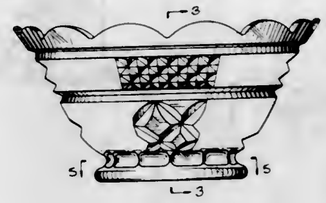
215,460
BOWL OR THE LIKE
Frank J. Benes, Lancaster, Ohio, assignor to Anchor Hocking Corporation, Lancaster, Ohio, a corporation of Delaware
Original design application Apr. 30, 1968, Ser. No. 11,701. Divided and this application Dec. 11, 1968, Ser. No. 14,922
Term of patent 14 years
Int. Cl. D7—*01*
U.S. Cl. D36—2



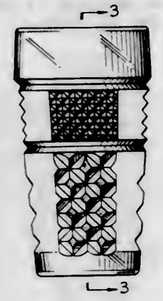
215,461
BOWL OR SIMILAR ARTICLE
Frank J. Benes, Lancaster, Ohio, assignor to Anchor Hocking Corporation, Lancaster, Ohio, a corporation of Delaware
Original design application Apr. 30, 1968, Ser. No. 11,701. Divided and this application Dec. 11, 1968, Ser. No. 14,923
Term of patent 14 years
Int. Cl. D7—*01*
U.S. Cl. D36—2



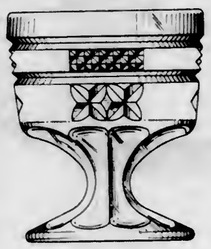
215,462
BOWL OR THE LIKE
Frank J. Benes, Lancaster, Ohio, assignor to Anchor Hocking Corporation, Lancaster, Ohio, a corporation of Delaware
Original design application Apr. 30, 1968, Ser. No. 11,701. Divided and this application Dec. 11, 1968, Ser. No. 14,924
Term of patent 14 years
Int. Cl. D7—*01*
U.S. Cl. D36—2



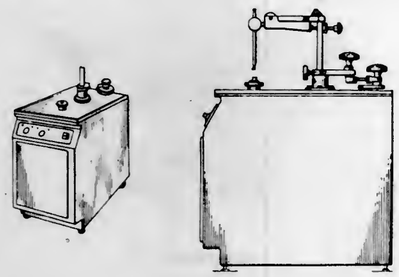
215,463
TUMBLER OR SIMILAR ARTICLE
Frank J. Benes, Lancaster, Ohio, assignor to Anchor Hocking Corporation, Lancaster, Ohio, a corporation of Delaware
Original design application Apr. 30, 1968, Ser. No. 11,702. Divided and this application Dec. 11, 1968, Ser. No. 14,908
Term of patent 14 years
Int. Cl. D7—*01*
U.S. Cl. D36—8



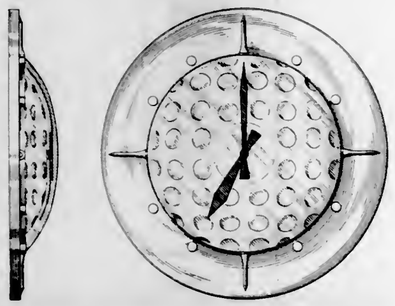
215,464
SHERBET GLASS OR SIMILAR ARTICLE
Frank J. Benes, Lancaster, Ohio, assignor to Anchor Hocking Corporation, Lancaster, Ohio, a corporation of Delaware
Original design application Apr. 30, 1968, Ser. No. 11,705. Divided and this application Dec. 11, 1968, Ser. No. 14,920
Term of patent 14 years
Int. Cl. D7—*01*
U.S. Cl. D36—8



215,465
LENS GRINDING MACHINE OR THE LIKE
Lindsay M. Ball, Medford, and George L. Guaraldi, Chelmsford, Mass., assignors to Bond Research Laboratories, Inc., Somerville, Mass., a corporation of Massachusetts
Filed Aug. 21, 1968, Ser. No. 13,223
Term of patent 14 years
Int. Cl. D15—*05*
U.S. Cl. D37—1



215,466
CLOCK
Howland B. Jones, Jr., Harwich Port, Mass., assignor to Time & Tide, Inc., Boca Raton, Fla., a corporation of Florida
Filed Oct. 22, 1968, Ser. No. 14,117
Term of patent 14 years
Int. Cl. D10—*01*
U.S. Cl D42—7



215,467
FRYING PAN
Goodwin Salkoff, Coral Gables, Fla., assignor to Atlas Metal Industries, Inc., Miami, Fla., a corporation of Florida
Filed Feb. 3, 1969, Ser. No. 15,600
Term of patent 14 years
Int. Cl. D7—*02*
U.S. Cl. D44—1



215,468
FOOD SERVING TONGS OR THE LIKE
Clint C. Callahan, Jr., 5561 Littlebow Road, Palos Verdes Peninsula, Calif. 90274
Filed Jan. 13, 1969, Ser. No. 15,327
Term of patent 14 years
Int. Cl. D7—*03*
U.S. Cl. D44—4



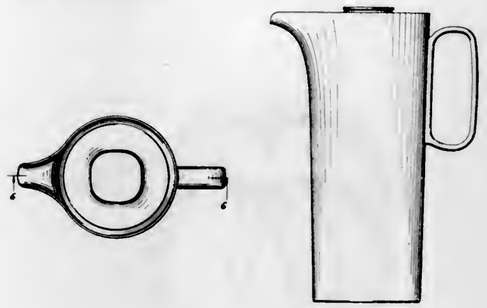
215,469
CASSEROLE
Gerald Gulotta, New City, N.Y., assignor to Block China Company, New York, N.Y., a partnership
Filed Dec. 16, 1968, Ser. No. 14,986
Term of patent 14 years
Int. Cl. D7—*01*
U.S. Cl. D44—15



215,470
SUGAR BOWL
Gerald Gulotta, New City, N.Y., assignor to Block China Company, New York, N.Y., a partnership
Filed Dec. 16, 1968, Ser. No. 15,004
Term of patent 14 years
Int. Cl. D7—*01*
U.S. Cl. D44—15



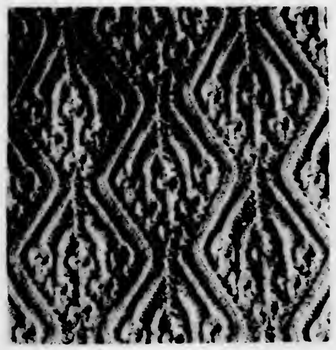
215,471
COFFEE POT
Gerald Gulotta, New City, N.Y., assignor to Block China Company, New York, N.Y., a partnership
Filed Dec. 16, 1968, Ser. No. 15,005
Term of patent 14 years
Int. Cl. D7—*01*
U.S. Cl. D44—26



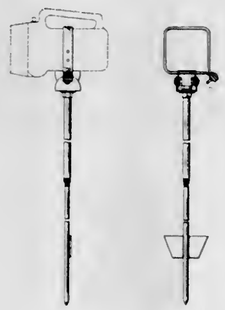
215,472
FOOD SPREADER
Charles R. Potts, Royal Oak, Mich. (20214 E. 15 Mile, Mount Clemens, Mich. 48043)
Filed Jan. 31, 1969, Ser. No. 15,585
Term of patent 3½ years
Int. Cl. D7—*99*
U.S. Cl. D44—29



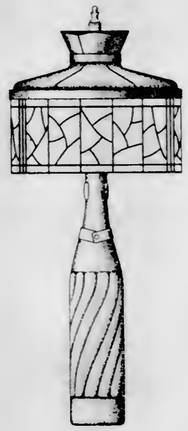
215,473
KNITTED FABRIC
Sanford J. Starkman, New York, N.Y., assignor to Rosanna Knitted Sportswear, Inc., New York, N.Y., a corporation of New York
Filed Aug. 5, 1968, Ser. No. 13,026
Term of patent 14 years
Int. Cl. D5—*02*
U.S. Cl. D47—2



215,474
TROUBLE LIGHT SUPPORT
Ivan H. Moore, Coffeyville, Kans. (345 W. 6th St., Garnett, Kans. 66032)
Filed June 10, 1968, Ser. No. 12,274
Term of patent 14 years
Int. Cl. D26—*02, 04*
U.S. Cl. D48—4



215,475
LAMP
Ben J. Seger, 5 Mead Lane, Roslyn, N.Y. 11576
Filed Aug. 26, 1968, Ser. No. 13,267
Term of patent 7 years
Int. Cl. D26—*02*
U.S. Cl. D48—20



215,476
BASE FOR SANCTUARY LAMP OR MASS CARD HOLDER
Ralph H. Ellsworth, Willoughby, Ohio, assignor to Superior Funeral Supply Corporation, Cleveland, Ohio, a corporation of Ohio
Filed Jan. 16, 1969, Ser. No. 15,374
Term of patent 14 years
Int. Cl. D26—*02*
U.S. Cl. D48—20



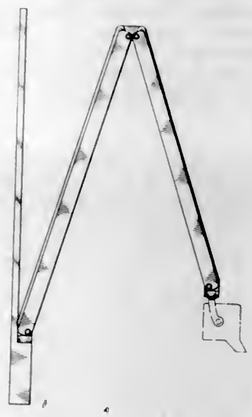
215,477
FLOOR LAMP BASE
Ralph H. Ellsworth, Willoughby, Ohio, assignor to Superior Funeral Supply Corporation, Cleveland, Ohio, a corporation of Ohio
Filed Jan. 16, 1969, Ser. No. 15,372
Term of patent 14 years
Int. Cl. D26—*02*
U.S. Cl. D48—20



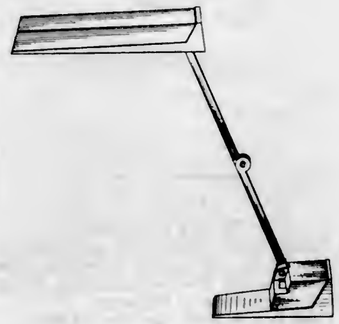
215,478
DECORATIVE LIGHT FIXTURE
Dean Myers, Newport Beach, Calif., assignor to Poly-Optics, Inc., a corporation of California
Filed Jan. 22, 1969, Ser. No. 15,443
Term of patent 14 years
Int. Cl. D26—*02*
U.S. Cl. D48—20



215,479
COMBINED SUPPORT ARM FOR EXTENSIBLE LAMP AND SERVICE OUTLET CONTROL PANEL
Mitchell Bobrick, Pacific Palisades, Calif., assignor to P. N. Luminous Equipment Co., Franklin Park, Ill.
Filed June 23, 1967, Ser. No. 7,572
Term of patent 14 years
Int. Cl. D26—*02*
U.S. Cl. D48—20



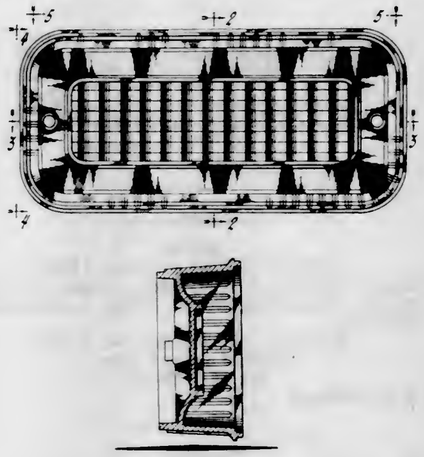
215,480
LAMP
Ronald W. Froelich, 15787 Barletta Drive, Hacienda Heights, Calif. 91745, and Jack V. Miller, 700 N. Auburn Ave., Sierra Madre, Calif. 91024
Filed June 26, 1968, Ser. No. 12,502
Term of patent 14 years
Int. Cl. D26—*02*
U.S. Cl. D48—20



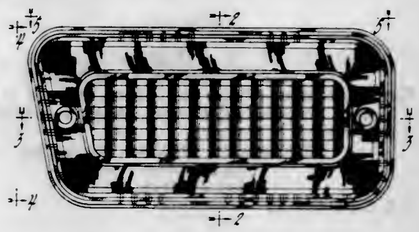
215,481
VEHICULAR SIGNAL LAMP LENS
Robert E. Dawson, Huntingdon Valley, Pa., assignor to R. E. Dietz Company, Syracuse, N.Y.
Filed Sept. 18, 1967, Ser. No. 8,640
Term of patent 14 years
Int. Cl. D12—*99*
U.S. Cl. D48—32



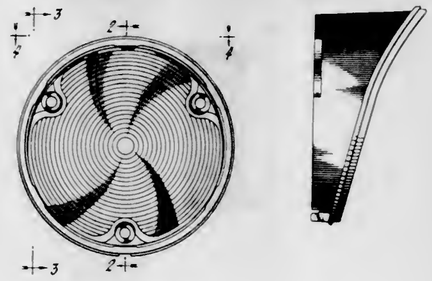
215,482
MOTOR VEHICLE LAMP LENS
Terry R. Henline, Royal Oak, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Sept. 26, 1968, Ser. No. 13,720
Term of patent 7 years
Int. Cl. D12—*99*
U.S. Cl. D48—32



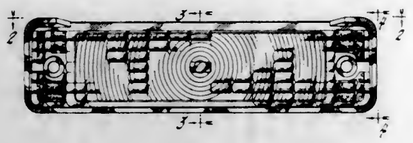
215,483
MOTOR VEHICLE LAMP LENS
Terry R. Henline, Royal Oak, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Sept. 26, 1968, Ser. No. 13,727
Term of patent 7 years
Int. Cl. D12—*99*
U.S. Cl. D48—32



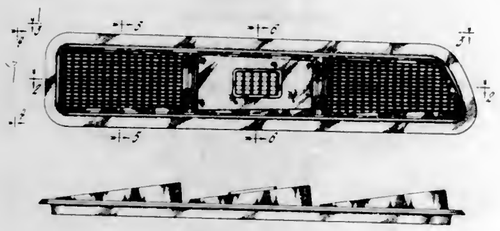
215,484
MOTOR VEHICLE LAMP LENS
James R. Ferron, Rochester, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Sept. 26, 1968, Ser. No. 13,728
Term of patent 7 years
Int. Cl. D12—*99*
U.S. Cl. D48—32



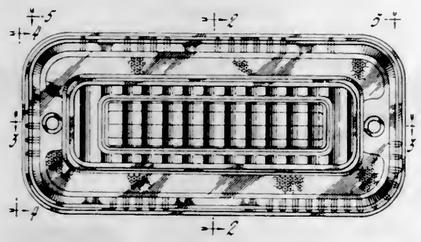
215,485
MOTOR VEHICLE LAMP LENS
Terry R. Henline, Royal Oak, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Sept. 26, 1968, Ser. No. 13,729
Term of patent 7 years
Int. Cl. D12—*99*
U.S. Cl. D48—32



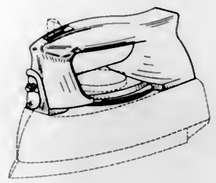
215,486
MOTOR VEHICLE LAMP LENS
George A. Gallion, Detroit, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Sept. 26, 1968, Ser. No. 13,735
Term of patent 7 years
Int. Cl. D12—*99*
U.S. Cl. D48—32



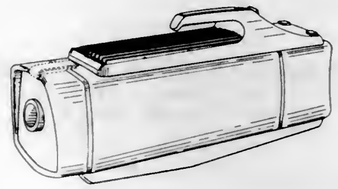
215,487
MOTOR VEHICLE LAMP LENS
Terry R. Henline, Royal Oak, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Sept. 26, 1968, Ser. No. 13,736
Term of patent 7 years
Int. Cl. D12—*99*
U.S. Cl. D48—32



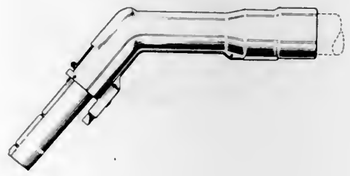
215,488
ELECTRIC IRON
Joseph T. Sestak, Canton, Ohio, assignor, by mesne assignments, to The Hoover Company, Wilmington, Del., a corporation of Delaware
Filed Feb. 20, 1968, Ser. No. 10,639
Term of patent 14 years
Int. Cl. D7—*06*
U.S. Cl. D49—6



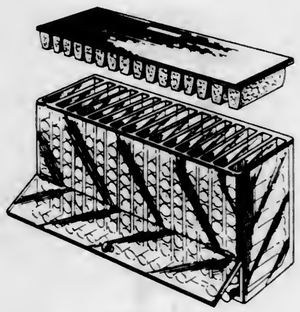
215,489
SUCTION CLEANER
Carroll M. Gantz, North Canton, Ohio, Robert H. Hose, Mountainside, N.J., and Joseph T. Sestak, Pittsburgh, Pa., assignors to The Hoover Company, North Canton, Ohio, a corporation of Delaware
Filed Oct. 9, 1968, Ser. No. 13,904
Term of patent 14 years
Int. Cl. D15—*07*
U.S. Cl. D49—14.1

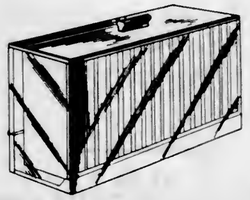


215,490
VACUUM CLEANER HOSE HANDLE
Raymond Descarries, Montreal, Quebec, Canada, assignor to Consolidated Foods Corporation, Old Greenwich, Conn., a corporation of Maryland
Filed Sept. 30, 1968, Ser. No. 13,781
Term of patent 14 years
Int. Cl. D15—*07*
U.S. Cl. D49—17.2



215,491
ANTIBIOTIC DISC CARTRIDGE STORAGE AND DISPENSER
Daniel M. Pina, 127 W. 96th St., New York, N.Y. 10025, and T. Justin Pressman, 18A Garden Terrace, North Arlington, N.J. 07032
Filed July 12, 1968, Ser. No. 12,715
Term of patent 7 years
Int. Cl. D9—*04;* D3—*99*
U.S. Cl. D52—2

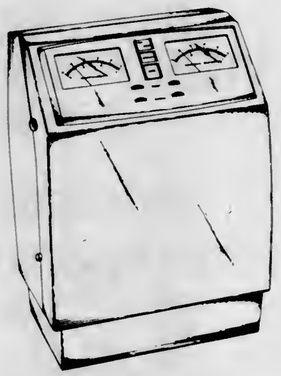




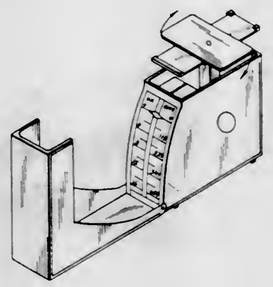
215,492
ANTENNA ROTATOR CONTROL HOUSING
Fred L. Toerge and Marvin E. Garfinkle, Stamford, Conn., assignors to Cornell-Dubilier Electric Corporation, a corporation of Delaware
Filed July 5, 1968, Ser. No. 12,640
Term of patent 14 years
Int. Cl. D10—*11*
U.S. Cl. D52—6



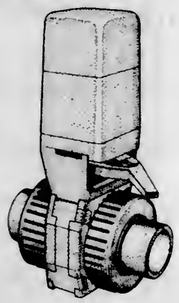
215,493
EXHAUST ANALYZER OR SIMILAR APPARATUS
Michael D. Burridge, Los Altos, Calif., assignor to Sylvania Electric Products Inc., a corporation of Delaware
Filed Nov. 18, 1968, Ser. No. 14,521
Term of patent 14 years
Int. Cl. D10—*11*
U.S. Cl. D52—6



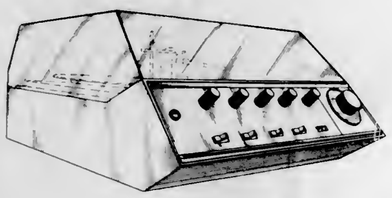
215,494
POSTAGE SCALE
Bernard Eblowitz, 68—07 61st Road, Middle Village, N.Y. 13379
Filed Aug. 16, 1968, Ser. No. 13,159
Term of patent 14 years
Int. Cl. D10—*99*
U.S. Cl. D52—10



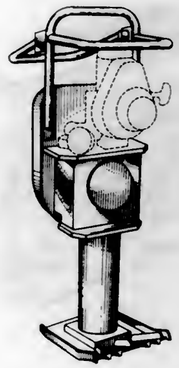
215,495
COMBINED CONTROL MOTOR HOUSING AND MOUNTING BRACKET THEREFOR
Walter Kreis, Neuhausen, and Paul Troesch, Schaffhausen, Switzerland, assignors to Georg Fischer Aktiengesellschaft, Schaffhausen, Switzerland, a corporation of Switzerland
Filed Mar. 28, 1968, Ser. No. 11.185
Claims priority, application Switzerland Oct. 3, 1967
Term of patent 14 years
Int. Cl. D8—*99*; D25—*99*
U.S. Cl. D54—1



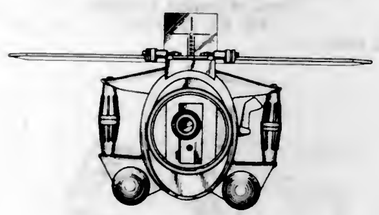
215,496
COMBINED PHONOGRAPH AND RADIO OR SIMILAR ARTICLE
Lawrence Levow, Huntington, N.Y., assignor to Harman-Kardon, Incorporated, Plainview, N.Y., a corporation of Delaware
Filed Jan. 8, 1969, Ser. No. 15,261
Term of patent 14 years
Int. Cl. D14—*01*
U.S. Cl. D56—4



215,497
IMPACTING MACHINE
Franklin M. Frohnauer, Jr., 790 S. Cassingham Road, Columbus, Ohio 43209
Continuation-in-part of design application Ser. No. 87.821, Oct. 19, 1965. This application Feb. 1, 1967, Ser. No. 8,311
Term of patent 14 years
Int. Cl. D15—*04*
U.S. Cl. D60—1



215,498
CASE FOR AN UNDERWATER CAMERA
Charles Ceccacci, 7 Rue du Poincare, Cluses, France
Filed Apr. 18, 1968, Ser. No. 11,511
Claims priority, application France Oct. 26, 1967
Term of patent 14 years
Int. Cl. D16—*01*
U.S. Cl. D61—1



215,499
PHOTOFLASH LAMP MOUNTING BRACKET
Thomas L. Eichelberger, R.R. 2, Sidney, Ohio 45365
Filed Oct. 28, 1968, Ser. No. 14,201
Term of patent 14 years
Int. Cl. D16—*07*
U.S. Cl. D61—1



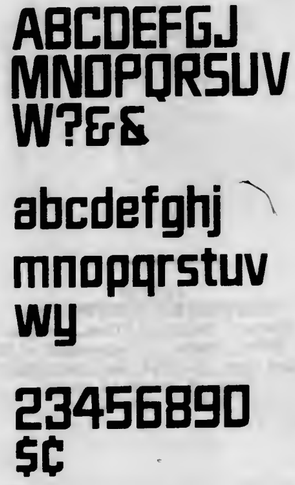
215,500
TAPE EMBOSSING TOOL
James R. Pauls, Walnut Creek, Calif., assignor to Dymo Industries, Inc., Emeryville, Calif., a corporation of California
Filed May 7, 1968, Ser. No. 11,808
Term of patent 14 years
Int. Cl. D18—*99*
U.S. Cl. D64—10



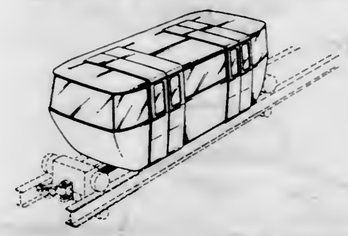
215,501
CALCULATING MACHINE
Alfons Boothby, Wilhelmshaven, Germany, assignor to Olympia Werke AG, Wilhelmshaven, Germany
Filed Apr. 29, 1968, Ser. No. 11,669
Term of patent 14 years
Claims priority, application Germany Dec. 4, 1967
Int. Cl. D18—*01*
U.S. Cl. D64—11



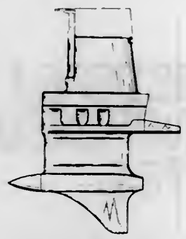
215,502
FONT OF TYPE
Carl U. Strom, Chicago, Ill., assignor to Masonite Corporation, Chicago, Ill., a corporation of Delaware
Filed June 26, 1967, Ser. No. 7,610
Term of patent 14 years
Int. Cl. D18—*04*
U.S. Cl. D64—12



215,503
PASSENGER CAR
Robert Bradley, Torrance, Calif., assignor to The Dashaveyor Company, Venice, Calif., a corporation of California
Filed Sept. 9, 1968, Ser. No. 3,470
Term of patent 14 years
Int. Cl. D12—*03*
U.S. Cl. D66—1

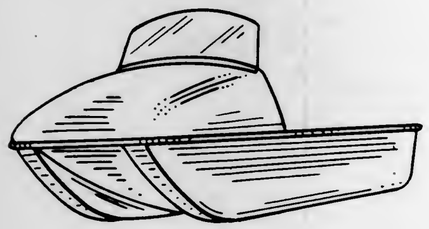


215,504
HOUSING FOR AN OUTBOARD PROPULSION UNIT
Robert T. Johnson, Arthur F. Miller, and Richard H. Schwab, Oshkosh, Wis., assignors to Brunswick Corporation, Chicago, Ill., a corporation of Delaware
Filed Aug. 26, 1968, Ser. No. 13,273
Term of patent 14 years
Int. Cl. D12—*06*
U.S. Cl. D71—1

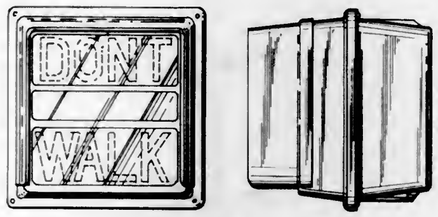


215,505
MOTORIZED SURFBOARD
Bernard C. Tierney, Hopkins, Minn., assignor to Leisure Industries, Edina, Minn., a corporation of Minnesota
Filed Aug. 21, 1968, Ser. No. 13,217
Term of patent 14 years
Int. Cl. D21—*03*
U.S. Cl. D71—1

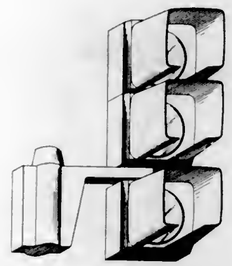
215,506
COMBINATION BOAT-SLED
Glenn Jones, Carsonville, Mich., assignor to Delta Camper Incorporated, Carsonville, Mich., a corporation of Michigan
Filed Sept. 4, 1968, Ser. No. 13,386
Term of patent 14 years
Int. Cl. D12—*06*
U.S. Cl. D71—1



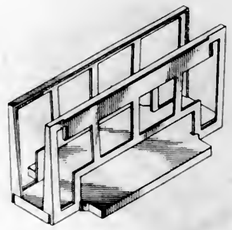
215,507
PEDESTRIAN TRAFFIC SIGNAL
Jack A. Press, Jr., 3590 Rockerman Road, Miami, Fla. 33133
Filed July 1, 1968, Ser. No. 12,567
Term of patent 14 years
Int. Cl. D29—*99*
U.S. Cl. D72—1



215,508
COMBINED TRAFFIC SIGNAL AND SUPPORT BRACKET THEREFOR
Leonard N. Albrecht, Mill Valley, Calif., assignor to Tamar Electronics Industries, Inc., Los Angeles, Calif., a corporation of Delaware
Filed Dec. 18, 1968, Ser. No. 15,042
Term of patent 14 years
Int. Cl. D29—*99*
U.S. Cl. D72—1



215,509
CALENDAR HOLDER
John H. Vernon, Des Moines, Iowa, assignor to The Vernon Company, Newton, Iowa
Filed Nov. 15, 1968, Ser. No. 14,497
Term of patent 14 years
Int. Cl. D19—*03*
U.S. Cl. D74—5

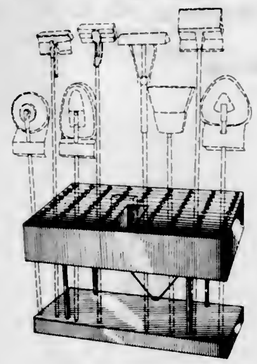


215,510
MAIL BOX
Gregory O. Corkery, St. Louis, Mo., assignor to Jackes-Evans Manufacturing Company, St. Louis, Mo., a corporation of Delaware
Filed July 17, 1968, Ser. No. 12,801
Term of patent 14 years
Int. Cl. D31
U.S. Cl. D74—9

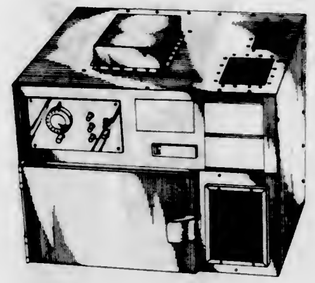


215,511
SOUVENIR PAPERWEIGHT OR SIMILAR ARTICLE
John F. Berardo, 8727½ La Tijera Blvd., Arcadia, Calif. 90045
Filed Sept. 9, 1968, Ser. No. 13,456
Term of patent 14 years
Int. Cl. D19—*02*
U.S. Cl. D74—12

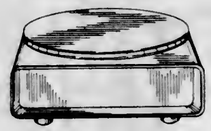
215,512
DISPLAY STAND FOR MOPS AND BROOMS
Charles Nicholas Marrelli, Cincinnati, Ohio, assignor to The Drackett Company, Cincinnati, Ohio, a corporation of Delaware
Filed Mar. 22, 1968, Ser. No. 11,093
Term of patent 14 years
Int. Cl. D6—*01*
U.S. Cl. D80—9



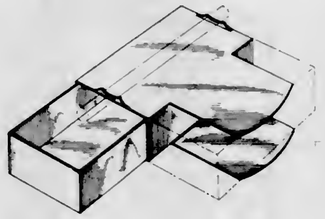
215,513
MICROWAVE OVEN
David F. Graff and Calvin A. Hagberg, Minneapolis, Minn., assignors to Litton Precision Products, Inc., Minneapolis, Minn., a corporation of Delaware
Filed Sept. 6, 1968, Ser. No. 13,432
Term of patent 14 years
Int. Cl. D7—*04*
U.S. Cl. D81—4



215,514
HOT PLATE
Cloyd L. Betzer, Kankakee, Ill., assignor to Thermolyne Corporation, Dubuque, Iowa, a corporation of Illinois
Filed Aug. 5, 1968, Ser. No. 13,020
Term of patent 14 years
Int. Cl. D7—*04*
U.S. Cl. D81—10



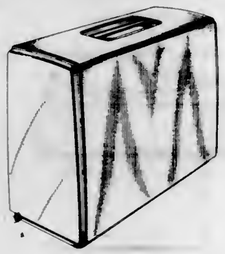
215,515
COMBINED POCKET ASH RECEPTACLE, MATCH-BOX HOLDER AND CIGARETTE REST OR SIMILAR ARTICLE
Angelo C. Antoine, 657 Pinehill Drive, Mobile, Ala. 36606
Filed Jan. 23, 1969, Ser. No. 15,471
Term of patent 14 years
Int. Cl. D27—*03*
U.S. Cl. D85—2



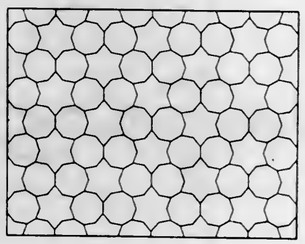
215,516
CARRYING BAG FOR HAND TOOLS
Ulrich H. Knigge, Stresemannstrasse 39, Bremen, Germany
Continuation-in-part of design application Ser. No. 5,331, Jan. 6, 1967. This application Mar. 26, 1968, Ser. No. 11,223
Term of patent 14 years
Claims priority, application Germany July 7, 1966
Int. Cl. D3—*99*
U.S. Cl. D87—1



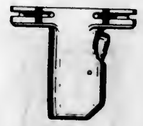
215,517
SEWING MACHINE CARRYING CASE OR SIMILAR ARTICLE
Henry Dreyfuss, South Pasadena, Calif., assignor to The Singer Company, New York, N.Y., a corporation of New Jersey
Filed Apr. 4, 1968, Ser. No. 11,307
Term of patent 14 years
Int. Cl. D3—*99*
U.S. Cl. D87—1



215,518
PLASTIC SHEET MATERIAL OR THE LIKE
Robert E. Dewar, 1000 N. Los Robles, Pasadena, Calif. 91148
Filed Feb. 12, 1968, Ser. No. 10,535
Term of patent 14 years
Int. Cl. D5—*09*
U.S. Cl. D87—3



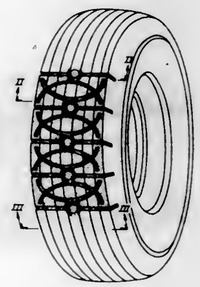
215,519
RUNNER FOR FLAT UMBRELLA
Heinz Weber, Hilden, Germany, assignor to Bremshey & Co., Solingen-Ohligs, Germany
Filed Apr. 10, 1968, Ser. No. 11,399
Term of patent 14 years
Claims priority, application Canada Mar. 14, 1968
Int. Cl. D3—*03*
U.S. Cl. D88—3



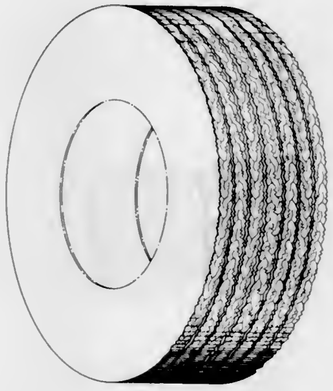
215,520
TIRE
Frank Bernard Jones, Sutton Coldfield, England, assignor to Dunlop Tire and Rubber Corporation, Buffalo, N.Y.
Filed Jan. 5, 1968, Ser. No. 10,097
Term of patent 14 years
Claims priority, application Great Britain Aug. 22, 1967
Int. Cl. D12—*14*
U.S. Cl. D90—20



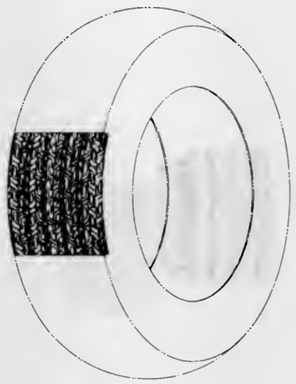
215,521
PNEUMATIC TIRE
Laurence Porten, 5836 Clark Ave. Extension, Bethel Park, Pa. 19507
Filed May 22, 1968, Ser. No. 12,040
Term of patent 14 years
Int. Cl. D12—*14*
U.S. Cl. D90—20



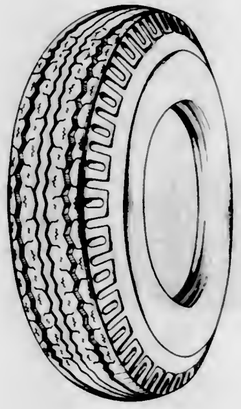
215,522
TIRE
Zoltan Mike, New Haven, Conn., assignor to The Armstrong Rubber Company, West Haven, Conn., a corporation of Connecticut
Filed June 26, 1968, Ser. No. 12,512
Term of patent 14 years
Int. Cl. D12—*14*
U.S. Cl. D90—20



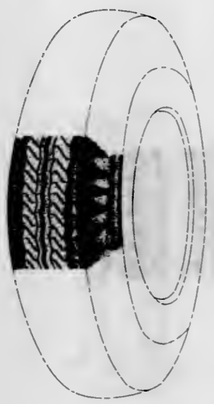
215,523
TIRE
Zoltan Mike, New Haven, Conn., assignor to The Armstrong Rubber Company, West Haven, Conn., a corporation of Connecticut
Filed July 26, 1968, Ser. No. 12,925
Term of patent 14 years
Int. Cl. D12—*14*
U.S. Cl. D90—20



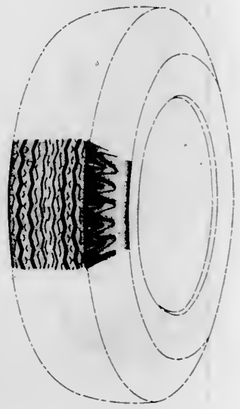
215,524
TIRE
Chester F. Schwall, Jr., Branford, Ronald J. Rode, Guilford, and Norman G. Amero, West Haven, Conn., assignors to The Armstrong Rubber Company, West Haven, Conn., a corporation of Connecticut
Filed Aug. 26, 1968, Ser. No. 13,277
Term of patent 14 years
Int. Cl. D12—*14*
U.S. Cl. D90—20



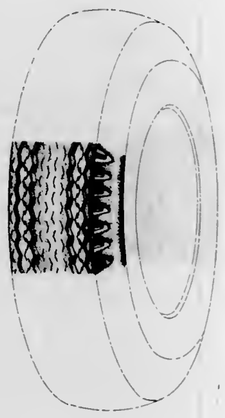
215,525
TIRE
Ellsworth R. Brown, Branford, and Ronald J. Rode, Guilford, Conn., assignors to The Armstrong Rubber Company, West Haven, Conn., a corporation of Connecticut
Filed Oct. 7, 1968, Ser. No. 13,855
Term of patent 14 years
Int. Cl. D12—*14*
U.S. Cl. D90—20



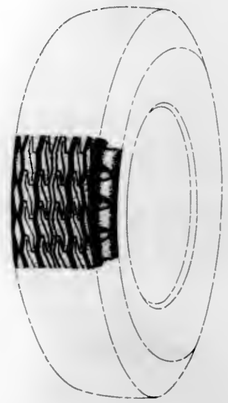
215,526
TIRE
Ellsworth R. Brown, Branford, and Ronald J. Rode, Guilford, Conn., assignors to The Armstrong Rubber Company, West Haven, Conn., a corporation of Connecticut
Filed Oct. 7, 1968, Ser. No. 13,856
Term of patent 14 years
Int. Cl. D12—*14*
U.S. Cl. D90—20



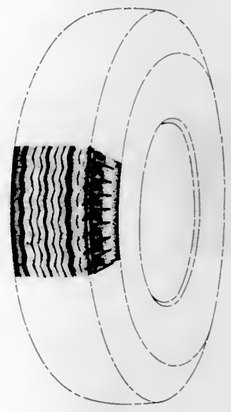
215,527
TIRE
Ellsworth R. Brown, Branford, and Ronald J. Rode, Guilford, Conn., assignors to The Armstrong Rubber Company, West Haven, Conn., a corporation of Connecticut
Filed Oct. 7, 1968, Ser. No. 13,857
Term of patent 14 years
Int. Cl. D12—*14*
U.S. Cl. D90—20



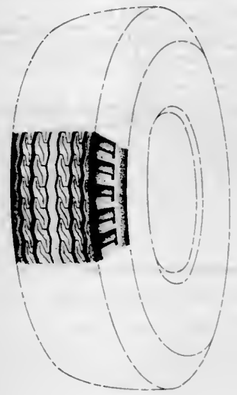
215,528
TIRE
Julian R. Jacobs, Clinton, Ellsworth R. Brown, Branford, and Ronald J. Rode, Guilford, Conn., assignors to The Armstrong Rubber Company, West Haven, Conn., a corporation of Connecticut
Filed Oct. 7, 1968, Ser. No. 13,858
Term of patent 14 years
Int. Cl. D12—*14*
U.S. Cl. D90—20



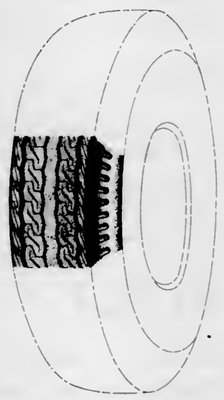
215,529
TIRE
Julian R. Jacobs, Clinton, and Ronald J. Rode, Guilford, Conn., assignors to The Armstrong Rubber Company, West Haven, Conn., a corporation of Connecticut
Filed Oct. 7, 1968, Ser. No. 13,859
Term of patent 14 years
Int. Cl. D12—*14*
U.S. Cl. D90—20



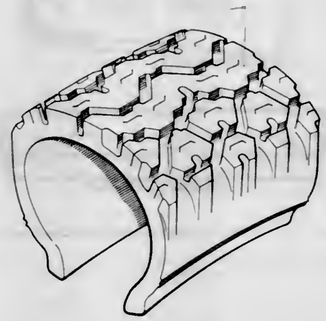
215,530
TIRE
Julian R. Jacobs, Clinton, Ellsworth R. Brown, Branford, and Norman G. Amero, West Haven, Conn., assignors to The Armstrong Rubber Company, West Haven, Conn., a corporation of Connecticut
Filed Oct. 7, 1968, Ser. No. 13,860
Term of patent 14 years
Int. Cl. D12—*14*
U.S. Cl. D90—20



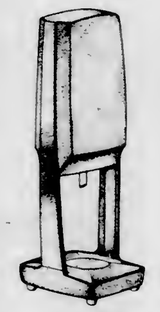
215,531
TIRE
Julian R. Jacobs, Clinton, Ellsworth R. Brown, Branford, and Norman G. Amero, West Haven, Conn., assignors to The Armstrong Rubber Company, West Haven, Conn., a corporation of Connecticut
Filed Oct. 7, 1968, Ser. No. 13,861
Term of patent 14 years
Int. Cl. D12—*14*
U.S. Cl. D90—20



215,532
TIRE
John R. K. Parry, Trowbridge, England, assignor to Avon Rubber Company Limited, Melksham, England, a company of Great Britain
Filed Feb. 6, 1969, Ser. No. 15,662
Term of patent 14 years
Claims priority, application Great Britain Aug. 7, 1968
Int. Cl. D12—*14*
U.S. Cl. D90—20



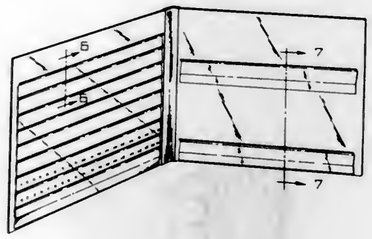
215,533
BEVERAGE DISPENSER FOR ICED TEA OR THE LIKE
Channing Wallace Gilson, Los Angeles, Calif., assignor to Columware, Inc., Lynwood, Calif., a corporation of California
Filed Aug. 19, 1968, Ser. No. 13,188
Term of patent 14 years
Int. Cl. D15—*12, 99*
U.S. Cl. D94—3



215,534
ILLUMINABLE SIGN
Peter S. Rossi, Rte. 5, Joliet, Ill. 60451
Filed Oct. 22, 1968, Ser. No. 14,114
Term of patent 14 years
Int. Cl. D20—*02*
U.S. Cl. D96—12



215,535
POCKETED RECORD FOLDER
Hartwell F. Tucker, Santa Clara County, Calif.
(3700 Holly Ave., Mountain View, Calif. 94040)
Filed Aug. 15, 1967, Ser. No. 8,275
Term of patent 14 years
Int. Cl. D19—*99*
U.S. Cl. D97—2



LIST OF DEFENSIVE PUBLICATIONS

APPLICANTS TO WHOM

DEFENSIVE PUBLICATIONS WERE ISSUED ON THE 30TH DAY OF SEPTEMBER, 1969

"Published at the request of the applicant or owner in accordance with the Notice of April 11, 1968, 849 O.G. 1221. Identification is by serial number of the application."

Beavers, Dorothy J. Cyclic diones as emulsion stabilizers and antifoggants. 822,017, 9–30–69, Cl. 96—85.
Beavers, Dorothy J.: *See*—
Kalenda, Norman W., and Beavers. 823,507.
Becraft, Lloyd G.: *See*—
Gordy, Travis L., and Becraft. 799,289.
Burch, Wendell D. Removal of carbonaceous impurity from ammoniated phosphoric acid solutions. 818,819, 9–30–69, Cl. 71—34.
Curtis, Larry G.: *See*—
Lowe, Jack W., Jr., Curtis, and Foulk. 732,021.
Curtis, Larry G., R. G. Foulk, G. R. Lappin, J. W. Lowe, Jr., and W. V. McConnell. Coating compositions and coated substrates. 732,043, 9–30–69, Cl. 117—333.
Dougherty, Gerald, L. W. Hall, Jr., and J. A. Hedge. Hot melt adhesive. 785,025, 9–30–69, Cl. 260—27.
Du Pont de Nemours, E. I., and Co.: *See*—
Wilson, Donald R. 805,938.
Zimmt, Werner S. 753,705.
Ford Motor Co.: *See*—
Johns, Robert C. 737,915.
Pietila, John M. 756,771.
Foulk, Roy G.: *See*—
Curtis, Larry G., Foulk, Lappin, Lowe, and McConnell. 732,043.
Lowe, Jack W., Jr., Curtis, and Foulk. 732,021.
Gilkey, Russell: *See*—
Martin, James C., Rush, and Gilkey. 673,959.
Gordy, Travis L., and L. G. Becraft. Method of encapsulating articles using a curtain coater. 799,289, 9–30–69, Cl. 117—105.3.
Hall, Lewis W., Jr.: *See*—
Dougherty, Gerald, Hall, and Hedge. 785,025.
Hedge, John A.: *See*—
Dougherty, Gerald, Hall, and Hedge. 785,025.
Johns, Robert C., to Ford Motor Co. Process for forming passages in threaded members. 737,915, 9–30–69, Cl. 29—25.12.
Kalenda, Norman W., and D. J. Beavers. Silver halide emulsions containing disulfides as fog inhibitors. 823,507. 9–30–69, Cl. 96—109.
Lappin, Gerald R.: *See*—
Curtis, Larry G., Foulk, Lappin, Lowe, and McConnell. 732,043.
Lowe, Jack W., Jr., L. G. Curtis, and R. G. Foulk. Polymeric coating composition and coated substrates. 732,021. 9–30–69, Cl. 117—64.
Lowe, Jack W., Jr.: *See*—
Curtis, Larry G., Foulk, Lappin, Lowe, and McConnell. 732,043.
Martin, James C., S. J. Rush, and R. Gilkey. Linear polymers of 2,2-dimethyl-5-aminopentanol-1. 673,959, 9–30–69, Cl. 260—77.5.
McConnell, Wayne V.: *See*—
Curtis, Larry G., Foulk, Lappin, Lowe, and McConnell. 732,043.
Pietila, John M., to Ford Motor Co. Hand implement with polymeric material coated surface. 756,771, 9–30–69, Cl. 228—57.
Rush, Sarah J.: *See*—
Martin, James C., Rush, and Gilkey. 673,959.
Wilson, Donald R., to E. I. du Pont de Nemours and Co. Acid-catalyzed process for cyclodehydration of shaped polyhydrazide structures. 805,938, 9–30–69, Cl. 260—78.4.
Zimmt, Werner S., to E. I. du Pont de Nemours and Co. Dual primer coating process. 753,705, 9–30–69, Cl. 117—75.

LIST OF REISSUE PATENTEES

TO WHOM

PATENTS WERE ISSUED ON THE 30TH DAY OF SEPTEMBER 1969

NOTE.—Arranged in accordance with the first significant character or word of the name (in accordance with city and telephone directory practice).

Anderson, Royal A., and E. N. Connoy, to Contour Saws, Inc. Method of making band saw blade. Re. 26,676, 9–30–69, Cl. 76—112.
Armco Steel Corp.: *See*—
Word, William W., Jr., and Walker. Re. 26,668.
Chevron Research Co.: *See*—
Ferm, Richard L., and Schmidt. Re. 26,675.
Connoy, Eugene N.: *See*—
Anderson, Royal A., and Connoy. Re. 26,676.
Contour Saws, Inc.: *See*—
Anderson, Royal A., and Connoy. Re. 26,676.
Elliot Laboratories, Inc.: *See*—
Ilg, John C. Re. 26,674.
Ferm, Richard L., and R. J. Schmidt, to Chevron Research Co. Pneumatic compaction of asphalt compositions. Re. 26,675, 9–30–69, Cl. 94—22.
General Steel Products, Inc.: *See*—
Rogers, Walter C., Jr. Re. 26,671.
Henderson, Homer I. Drilling bit. Re. 26,669, 9–30–69, Cl. 175—330.
Ilg, John C., to Elliot Laboratories, Inc. Disposable plastic bag. Re. 26,674, 9–30–69, Cl. 150—2.1.
Knolle, Ernst G. Articulated train systems. Re. 26,673. 9–30–69, Cl. 104—20.
Roger, Raymond W.: *See*—
Wilson, Robert G., and Roger. Re. 26,672.
Rogers, Walter C., Jr., to General Steel Products, Inc. Sofa bed. Re. 26,671, 9–30–69, Cl. 5—13.
Schmidt, Robert J.: *See*—
Ferm, Richard L., and Schmidt. Re. 26,675.
Schweizer, Gottfried: *See*—
Smolka, Thomas G., and Schweizer. Re. 26,670.
Smolka, Thomas G., and G. Schweizer, to Weiner Metallwarenfabrik Smolka & Co. Safety binding. Re. 26,670. 9–30–69, Cl. 280—11.35.
Walker, Michael A.: *See*—
Word, William W., Jr., and Walker. Re. 26,668.
Weiner Metallwarenfabrik Smolka & Co.: *See*—
Smolka, Thomas G., and Schweizer. Re. 26,670.
Wilson, Robert G., and R. W. Roger. Deep fat pressure cooker. Re. 26,672, 9–30–69, Cl. 99—336.
Word, William W., Jr., and M. A. Walker, to Armco Steel Corp. Method and apparatus for installing flow lines and the like in underwater well installations. Re. 26,668. 9–30–69, Cl. 166—.5.

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Ecke, Paul, to Paul Ecke, Inc. Poinsettia plant. 2,924, 9–30–69, Cl. 86.
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Ecke, Paul, to Paul Ecke, Inc. Poinsettia plant. 2,926, 9–30–69, Cl. 86.
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Ecke, Paul. 2,926.
Holtkamp, Hermann, Sr. African violet plant. 2,922. 9–30–69, Cl. 69.

LIST OF DESIGN PATENTEES

TO WHOM

PATENTS WERE ISSUED ON THE 30TH DAY OF SEPTEMBER 1969

NOTE.—Arranged in accordance with the first significant character or word of the name (in accordance with city and telephone directory practice).

Albrecht, Leonard N., to Tamar Electronics Industries, Inc. Combined traffic signal and support bracket therefor. 215,508, 9–30–69, Cl. D72—1.
Allen, Ernest L. Vial rack. 215,431, 9–30–69, Cl. D16—1.
Allison, Kenneth C. Rotary switch stator unit. 215,443, 9–30–69, Cl. D26—13.
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Jacobs, Julian R., Brown, and Amero. 215,531.
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Benes, Frank J. 215,460.
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Anderson, David L., to Monsanto Co. Jug. 215,411, 9–30–69, Cl. D9—47.
Anderson, Richard P. Building structure. 215,418, 9–30–69, Cl. D13—1.
Antoine, Angelo C. Combined pocket ash receptacle, match box holder and cigarette rest or similar article. 215,515, 9–30–69, Cl. D85—2.
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Brown, Ellsworth R., and Rode. 215,526.
Brown, Ellsworth R., and Rode. 215,527.
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Jacobs, Julian R., and Rode. 215,529.
Jacobs, Julian R., Brown, and Amero. 215,530.
Jacobs, Julian R., Brown, and Amero. 215,531.
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Mike, Zoltan. 215,523.
Schwall, Chester F., Jr., Rode, and Amero. 215,524.
Arnett, Donald D. Dune buggy body. 215,424, 9–30–69, Cl. D14—3.
Atlas Metal Industries, Inc.: *See*—
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De Balseiro, Emilia C. 215,402.
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Beck, Jack W., to Plasto Inc. Building roof. 215,420, 9–30–69, Cl. D13—1.
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Benes, Frank J., to Anchor Hocking Corp. Bowl or the like. 215,460, 9–30–69, Cl. D36—2.
Benes, Frank J., to Anchor Hocking Corp. Bowl or similar article. 215,461, 9–30–69, Cl. D36—2.
Benes, Frank J., to Anchor Hocking Corp. Bowl or the like. 215,462, 9–30–69, Cl. D36—2.
Benes, Frank J., to Anchor Hocking Corp. Tumbler or similar article. 215,463, 9–30–69, Cl. D36—8.
Benes, Frank J., to Anchor Hocking Corp. Sherbet glass or similar article. 215,464, 9–30–69, Cl. D36—8.
Berardo, John F. Souvenir paperweight or similar article. 215,511, 9–30–69, Cl. D74—12.
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Berger, Sol J., and Rivenburgh. 215,454.
Berger, Sol J., and J. G. Rivenburgh, to Berger-Rivenburgh, Inc. Combined razor and blade holder. 215,454, 9–30–69, Cl. D33—23.
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Gulotta, Gerald. 215,470.
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Bobrick, Michell, to P. N. Luminous Equipment Co. Combined support arm for extensible lamp and service outlet control panel. 215,479, 9–20–69, Cl. D48—20.
Boothby, Alfons, to Olympia Werke AG. Calculating machine. 215,501, 9–30–69, Cl. D64—11.
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Brown, Ellsworth R., and R. J. Rode, to The Armstrong Rubber Co. Tire. 215,526, 9–30–69, Cl. D90—20.
Brown, Ellsworth R., and R. J. Rode, to The Armstrong Rubber Co. Tire. 215,527, 9–30–69, Cl. D90—20.
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Burridge, Michael D., to Sylvania Electric Products Inc. Exhaust analyzer or similar apparatus. 215,493, 9–30–69, Cl. D52—6.
Callahan, Clint C., Jr. Food serving tongs or the like. 215,468, 9–30–69, Cl. D44—4.
Campbell, Charles F. Wire straightener. 215,406, 9–30–69, Cl. D8—44.
Canney, Robert S., to General Electric Co. Instrument transformer. 215,447, 9–30–69, Cl. D26—15.
Ceccacci, Charles. Case for an underwater camera. 215,498, 9–30–69, Cl. D61—1.
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De Balseiro, Emilia C., to Balseiro, Cordoba & Compania (Balco). Molded sandal. 215,402, 9–30–69, Cl. D2—294.
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Durando, Frank D., to Delmonico International Corp. Credenza or similar article. 215,452, 9–30–69, Cl. D33—13.
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Jacobs, Julian R., and R. J. Rode, to The Armstrong Rubber Co. Tire. 215,529, 9–30–69, Cl. D90—20.
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Peter, Joseph E., to The Crane & Breed Casket Co. Casket or the like. 215,433, 9–30–69, Cl. D19—1.
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Reisner, Robert W. Motor vehicle. 215,426, 9–30–69, Cl. D14—3.
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Brown, Ellsworth R., and Rode. 215,526.
Brown, Ellsworth R., and Rode. 215,527.
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Jacobs, Julian R., and Rode. 215,529.

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Burkard, Herbert G., and Bosniack, David S., to Esso Research and Engineering Company. Esters of polynuclear alcohols and lubricating oils containing same. 3,470,099, Cl. 252-057.
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Burrough, Donald E., Fairbank, Raymond Harry, and Soteropulos, Gust, to Deere & Company. Hydraulic drive and controls for a self-propelled windrower. 3,469,381, Cl. 056-209.

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Campbell, Jackson E., and Thomsen, Erich. Apparatus for reducing shells in outer-curve rails. 3,469,784, Cl. 238-287.

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Caperton, Charles B. Sewer rodding machine. 3,469,273, Cl. 015-104.3

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Chang, Kern K. N., to RCA Corporation. High frequency semiconductor systems using electric fields perpendicular to the direction of wave propagation. 3,470,375, Cl. 250-199.

Charlade, Jean, to Commissariat a l'Energie Atomique. Machine for taking samples from a conduit wall. 3,469,639, Cl. 175-078.

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Clifford, Daisy E. Self-storing hair-clip device for hair rollers. 3,469,585, Cl. 132-040.

Cline, Jack V. Food display package. 3,469,682, Cl. 206-056.

Cloup, Francis Jean Gabriel, to Promat S. A. R. L. Combined punching and reaming tool. 3,469,306, Cl. 029-564.

Cloup, Francis J. Hydraulic punching machine. 3,469,481, Cl. 083-140.

Cobbledick, David S., to Allied Chemical Corporation. Novel polyol compositions and filled polyurethanes prepared therefrom. 3,470,121, Cl. 260-018.

Coccoli, Joseph D., and Koso, Dusan A., to Massachusetts Institute of Technology. Gas ring laser gyroscope system. 3,469,922, Cl. 356-106.

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Conrad, Martin B. Well packer having two sets of slips. 3,469,628, Cl. 166-134.

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Cook, Gerald L., and Presley, William E. Automatically adjusted mirrors for tractor-trailers. 3,469,901, Cl. 350-289.

Cook, Rufus Lee, and Whatley, Lucius D., Jr., to United States of America, Navy. Double serrated crystal transducer. 3,470,394, Cl. 310-008.

Coons, Royal E. Fruit segment squeezer. 3,469,525, Cl. 100-234.

Cooper, David J., to Schering Corporation. Alkyl glycosides derived from gentamicin. 3,470,149, Cl. 260-210.

Corbell, Paul I., to Johnson Service Company. Intrusion alarm system having authorization capability with tamper detection means. 3,470,554, Cl. 340-274.

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Crain, Edward I. Brackets for supporting a shelf. 3,469,811, Cl. 248-248.

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Crockford, Joseph R., to Kimberly-Clark Corporation. Method for fabricating compressed and folded absorbent tampons. 3,469,286, Cl. 019-144.5

Crone, Alfred F., to Acme Highway Products Corporation. Adjustable bridge for sealing machines. 3,469,511, Cl. 094-051.

Crowe, John E., to Amsted Industries. Process of removing metal from slag-surfaced melt. 3,469,740, Cl. 222-001.

Crutchfield, Marvin M., and Irani, Riyad R., to Monsanto Company. Tetrakis (dihydrogen phosphono methyl)-ethylene diamine, N,N' dioxide and related compounds. 3,470,243, Cl. 260-502.5

Crutchfield, Marvin M., and Irani, Riyad R., to Monsanto Company. Methyl, bis(dihydrogen phosphono methyl)-amine oxide and related compounds. 3,470,244, Cl. 260-502.5

Csapilla, Joseph, to American Cyanamid Company. Photochromic dihydrodibenzo-furans and thiophenes and synthesis thereof. 3,470,211, Cl. 260-346.2

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Damm, Carl A., and Eichmann, Albert Carl, to United States of America, Navy. Low profile load-releasing lock-on coupling. 3,469,872, Cl. 287-119.
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Freyberger, Donald L., and Longenecker, John F., to Lukens Steel Company. Process for the production of bonded metal structures. 3,469,301, Cl. 029-480.
Freyberger, Wilfred Lawson, to American Cyanamid Company. Use of organic dithiols as flotation reagents. 3,469,692, Cl. 209-166.
Friden, Inc.: *See—*
Anderson, Maynard E., Balaz, Charles S., Reus, John F., and Thorson, Sheldon E., 3,469,777.
Frisby, Clinton D., and Spence, David W., to Infotronics Corporation. Wide-range analog-to-digital integrator for use with analytical measuring instruments. 3,470,367, Cl. 235-183.
Frohbach, Hugh F., to Southern Pacific Company. Video signal encoding technique for reduced bandwidth transmission. 3,470,325, Cl. 179-015.55
Fruehauf Corporation: *See—*
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Fuel Engineering: *See—*
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Fuji Shashin Film Kabushiki Kaisha: *See—*
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Fujimoto, Katsuro: *See—*
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Fujita, Norimasa: *See—*
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Fukuda, Masataro, Elving, Philip J., and Rulfs, Charles L., to Atlantic Richfield Company. Process for the preparation of a fuel electrode for a fuel cell. 3,470,031, Cl. 136-120.
Fulgenzi, Crescenzo F., to Union Carbide Corporation. Die casting apparatus. 3,469,621, Cl. 164-316.
Fullton, James M., Jr., to Western Electric Company, Incorporated. Circuit for detecting a register malfunction. 3,470,364, Cl. 235-153.
Fulmer, Keith H., to Bendix Corporation, The. Reaction means for hydraulic control valve. 3,469,890, Cl. 303-052.
Fulmini, Sergio: *See—*
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Futterer, Lothar: *See—*
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Futty, Robert C., and Kugle, John L., to IRL Daffin Associates, Incorporated. Mixing and conveying means. 3,469,824, Cl. 259-178.
Fyler, George W., to Zenith Radio Corporation. Circuit for adding the luminance and color difference signals in a signal processing apparatus for a color television receiver. 3,470,311, Cl. 178-005.4
GAF Corporation: *See—*
Diener, Carl E., and Herrick, William G., 3,469,983.
Gageur, Fritz, to Lindaure Dornier Gesellschaft m.b.H. Chain track assembly for tenter clips. 3,469,291, Cl. 026-061.
Gagne, Archie R. Amphibious vehicle. 3,469,553, Cl. 115-001.
Gagolski, Julian, and Smythe, Bruce M., to Colonial Sugar Refining Company, Limited, The. Animal feed supplement containing a salt of sucrose phosphate. 3,469,989, Cl. 099-002.
Gal, George, and Sletzinger, Meyer, to Merck & Co., Inc. Intermediates for preparing 1-aroylindole-3- alkanoic acids. 3,470,203, Cl. 260-326.15
Gallagher, John P., to Dick, A. B., Company. Air and vacuum control mechanism for a duplicating machine. 3,469,526, Cl. 101-142.
Ganiere, Herbert Carl, and Sherwood, Edwin Theodore, to Globe-Union Inc. Multiple temperature controller. 3,470,356, Cl. 219-508.
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Jongbloed, Johannes, Gardeniers, Jan G., Nusser, Hubertus W., and Peeters, Pierre H. 3,469,323.
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Garrison, Dale Leroy, and Lulay, Arthur, to Du Pont de Nemours, E. I., and Company. Apparatus and process for stretch breaking filamentary tow. 3,469,285, Cl. 019-000.37
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Gas Council, The: *See—*
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Gaspari, Anthony M. Stencilling die. 3,469,488, Cl. 083-652.
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Gaudry, Edouard, to Electrolux Corporation. Noise reduction of gear train. 3,469,470, Cl. 074-443.
Gaudry, Paul E., Gaudry, Edouard, Descarries, Raymond, and Anderson, James, to Electrolux Corporation. Floor and rug treating apparatus. 3,469,272, Cl. 015-050.
Gaumer, Marvin W., to Perkin-Elmer Corporation, The. Automatically controlled multiple sampling measurement system. 3,469,438, Cl. 073-053.
Gavin, David F.: *See—*
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Gaylor, Robert B., Jr., to Sinclair-Koppers Company. Foam plastic egg carton. 3,469,764, Cl. 229-044.
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Gebr. Orthlinghaus: *See—*
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Gehlbach, Albert E.: *See—*
Blough, Ronald S., and Gehlbach, Albert E. 3,469,816.
Gehrig, Neil E., to Atlas Chemical Industries, Inc. Nitric acid sensitized cap sensitive explosives with gelation catalyst and entrapped air. 3,470,041, Cl. 149-002.
Geiger, Max, to Ciba Limited. Pesticidal preparations. 3,470,293, Cl. 424-084.
Geigy Chemical Corporation: *See—*
Clarke, Frank H., Jr., 3,470,171.
Lipman, Roger D. A., 3,470,145.
Gelardo, Ralph P., and Reitlinger, Otto, to United States of America, Navy. Method of stabilizing nitric acid esters. 3,470,231, Cl. 260-466.
Gelfand, Peter C., to Buell Engineering Company, Inc. Apparatus for controlling the removal of particle accumulations from the electrodes of an electric precipitator. 3,469,371, Cl. 055-110.
Geller, Alan R., to International Business Machines Corporation. Fast flush adder. 3,470,366, Cl. 235-175.
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General Dynamics Corporation: *See—*
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General Electric Company: *See—*
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Goshorn, Larry A., Harmon, Sherril A., and Erickson, Robert G., 3,470,537.
Graf, Russell H., 3,470,552.
Hagan, Ralph S., and Hartlage, Francis J., 3,470,277.
Lane, James W., 3,469,828.
Larew, John J., 3,470,423.
Myers, Richard T., McKee, Thomas A., Spangler, Fred E., and Wright, Kenneth L., 3,470,481.
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Wu, Tse C., 3,470,130.

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Mc Lellan, David R., 3,469,652.

Genovese, David: *See—*
de Robertis, Joseph, and Genovese, David 3,470,334.

Gentry, Hermond G., to Mead Corporation, The. Correlator apparatus. 3,469,673, Cl. 198-031.

George, James H. B., Dennard, Albert E., and Kreidl, Ekkehard L., to Little, Arthur D., Inc. Recombination systems for sealed batteries and batteries incorporating them. 3,470,024, Cl. 136-006.

Gerber Products Company: *See—*
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Geringer, Henry J., to United States of America, National Aeronautics and Space Administration. Induction furnace with perforated tungsten foil shielding. 3,470,304, Cl. 013-026.

Gerisch, Rudolph F. Article spacing apparatus. 3,469,667, Cl. 193-040.

Gerzon, Koert, and Krumkalsn, Eriks V., to Lilly, Eli, and Company. Adamantyl azidoformates. 3,470,210, Cl. 260-349.

Gesnel, Andre Paul: *See—*
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Getman, Ronald K., to Gresen Manufacturing Company. Multi-port rotary and reciprocating fluid control valve. 3,469,606, Cl. 137-636.4

Gevaert-Agfa N.V.: *See—*
Deschuttere, Lucien Roger, Scharpe, Ludo Adriaan, Schaltin, Walter Malvine, and Peeters, Gustaaf Joannes, 3,469,275.
Eerdekens, Pieter Hendrik, and Pollet, Robert Joseph, 3,470,191.

Gevaert Photo-Producten N.V.: *See—*
Hendricx, Serge, and Loots, Francois Pierre, 3,470,021.

Ghys, Lodewijk Viktor Hendrik Maria: *See—*
Leyssens, Francois Jeanne Charles, and Ghys, Lodewijk Viktor Hendrik Maria 3,469,312.

Giacosa, Dante, to Fiat Societa per Azioni. Motor vehicle suspensions. 3,469,859, Cl. 280-096.2

Giancarlo, Horeschi: *See—*
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Gibbons, Carl B., to Eastman Kodak Company. Method of altering electrostatic charge on an insulating material. 3,470,417, Cl. 317-004.

Gibson, Willard C.: *See—*
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McCann, Walter L., 3,469,497.

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Gilbert, John R.: *See—*
Bowden, George F., and Gilbert, John R. 3,469,817.

Gill, Joseph, and Rouvalis, George, to Westinghouse Electric Corporation. Alternating current motor control system particularly for position regulating applications. 3,470,428, Cl. 318-018.

Gilman, David John, to Imperial Chemical Industries Limited. Antidepressant compositions and methods employing α-aminodesoxybenzoin derivatives. 3,470,301, Cl. 424-331.

Gilman, Robert J., and King, George L., to R F L Industries, Inc. High speed data transmission system which modulates a high frequency, FSK oscillator to a lower transmission frequency. 3,470,473, Cl. 325-030.

Giner, Jose: *See—*
Sizer, John H., Jr., and Giner, Jose 3,470,028.

Ginsig, Robert, to Syntex Corporation. Process for the preparation of alkynyl carbinols. 3,470,217, Cl. 260-397.4

Girdler Corporation: *See—*
Bocard, Joseph P., and Harvin, Richard L., 3,469,934.

Giuffre, Anthony A. Humidity and temperature control apparatus. 3,469,412, Cl. 062-173.

Giuliano, James C. Shank button tacker attachment for industrial sewing machines. 3,469,546, Cl. 112-114.

Givaudan Corporation: *See—*
Lamparsky, Hans Dietmar, and Marbet, Roman, 3,470,209.

Glaros, Emanuel Michael. Airless spray apparatus and methods. 3,469,788, Cl. 239-307.

Glaros, Emanuel Michael. Joint with planar connector member. 3,469,873, Cl. 287-189.36

Glass Laboratories Company: *See—*
Shanok, Jesse P., and Shanok, Victor, 3,470,015.

Globe-Union Inc.: *See—*
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Godin, Raphael W.: *See—*
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Goldentone Electronics, Inc.: *See—*
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Goldstein, Theodore J.: *See—*
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Goodacre, Cecil, to Lansing Bagnall Limited. Vehicle differential steering mechanisms. 3,469,858, Cl. 280-093.

Goode, Wilson R. Clutch release bearing clearance monitor device. 3,469,666, Cl. 192-030.

Goodwin, Raymond Wendell, and Greenspan, Marshall, to United Aircraft Corporation. System for aligning remote lines of position. 3,470,429, Cl. 318-018.

Goodwin, Robert J., and Pekarek, Joseph L., to Gulf Research & Development Company. Hydraulic drilling bit and nozzle. 3,469,642, Cl. 175-393.

Gordon, Jerry D. Tumbling device including plural coating- source means. 3,469,561, Cl. 118-016.

Gordon, Stuart, Mowate, Arthur Jack, Morris, James Paul, and Cunliffe, Alwyn, to Imperial Metal Industries (Kynoch) Limited. Top casting under pressure of rocket motor propellants. 3,470,273, Cl. 264-003.

Gorman, Harry. Foldable recording. 3,469,849, Cl. 274-042.

Goshorn, Larry A., Harmon, Sherril A., and Erickson, Robert G., to General Electric Company. Information processing system using relative addressing. 3,470,537, Cl. 340-172.5

Gosse, Gerard: *See—*
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Gottlieb, Michael, to Liberty Fabrics of New York, Inc. Girdle-stocking combination. 3,469,583, Cl. 128-519.

Goundry, Paul C., and Boatman, James C., to Texas Instruments, Incorporated. Continuous junction growth. 3,470,039, Cl. 148-172.

Grace, W. R., & Co.: *See—*
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Graczyk, Bronislaus S.: *See—*
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Graef, John R.: *See—*
Wegmann, Jerome B., and Graef, John R. 3,469,532.

Graf, Russell H., to General Electric Company. Burr gage. 3,470,552, Cl. 340-267.

Graham, James L.: *See—*
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Granco Equipment Inc.: *See—*
Scanlon, Robert M., 3,469,675.

Granger, Clifford E., to RCA Corporation. Current pulse driver with means to steepen and stabilize trailing edge. 3,470,391, Cl. 307-270.

Graubert, Seth: *See—*
Proud, Ralph A., Jr., O'Brien, Richard C., Graubert, Seth, and Goldstein, Theodore J. 3,470,539.

Green, A. P., Refractories Co.: *See—*
Kuhn, William E., 3,469,941.

Greenberg, Malvin, to Schoolhouse Industries, Inc. Coordinated group of elements constituting a teaching aid. 3,469,325, Cl. 035-009.

Greeninger, Carroll D. Screen-tightening apparatus. 3,469,695, Cl. 209-403.

Greenspan, Marshall: *See—*
Goodwin, Raymond Wendell, and Greenspan, Marshall 3,470,429.

Greenstein, Leon: *See—*
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Greiner, Leonard, to United Aircraft Corporation. Underwater power plant. 3,469,555, Cl. 115-006.1

Grekila, Richard B., Ho, Shih-Ming, Knochel, William J., and Lin, Francis C. M., 10% each to Berman, Robert J. Westinghouse Electric Corporation. Sealing compositions for bonding ceramics to metals. 3,469,729, Cl. 220-002.3

Grelecki, Chester J., Keeler, Robert A., and Szabo, Barna, Jr., to United States of America, Navy, mesne. Thixotropic gelled bipropellant composition containing sulphated galactose polymer. 3,470,042, Cl. 149-022.

Gresen Manufacturing Company: *See—*
Getman, Ronald K., 3,469,606.

Gretteberg, Fredrik, to A/S Lehmkuhl. Employing an interdigital tone to selective calling system aid in discrimination between signal zones. 3,470,326, Cl. 179-041.

Grichnik, James A., and Kupferschmidt, Albert, to Beckman Instruments, Inc. Nystagmus gonioscope. 3,469,903, Cl. 351-001.

Griffin, Brian William, and Simons, William Richard, to Smiths Industries Limited. Rate gyroscopes. 3,469,458, Cl. 074-005.46

Griggs, Sam F. Self-regulating skimming weir apparatus having a constant discharge at any desired setting. 3,469,404, Cl. 061-023.

Grillot, Homer N.: *See—*
Pool, Stuart D., Everett, Charles V., and Grillot, Homer N. 3,469,773.

Grimmeiss, Hermann Georg, and Scholz, Heinz, to U.S. Philips Corporation, mesne. Device for detecting radiation. 3,470,379, Cl. 250-211.

Griot, Rudolf G., to Sandoz Inc. Bicyclodecenes containing three ring nitrogen atoms. 3,470,198, Cl. 260-309.7

Groening, Harvey F.: *See—*
McLeod, James E., Taborosi, Steve, Groening, Harvey F., and Riechers, Harold D. 3,469,938.

Gross, Seymour, Downes, William A., and Rakoff, Frank B., to United States of America, Navy. Depth control system for towed body. 3,469,821, Cl. 254-173.

Grosse-Oetringhaus, Hellmuth, to Shell Oil Company. Corrosion-inhibited hydrocarbon compositions. 3,469,955, Cl. 044-063.

Grove Manufacturing Company: *See—*
Felix, Paul C., and Johnson, Allen A., 3,469,718.

Grow, Harlow B. Board game apparatus wherein advancement of pieces is controlled by movements of other pieces. 3,469,845, Cl. 273-134.

Gruber, Milan: *See—*
Breneman, Jack L., and Gruber, Milan 3,469,340.

Grun, Gustav. Apparatus for treating powdered or granulated substances. 3,469,562, Cl. 118-024.

Guadalupi, Mario, to SNAM S.p.A. Process for the production of urea by synthesis of ammonia and carbon dioxide, with total recycling of the portion which has not been converted into urea. 3,470,247, Cl. 260-555.

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Hayden, Rodney, and Guarasci, Mario 3,470,531.

Guenther, William, to Lion Packaging Products Company, Inc. Interconnected bags having closure flaps and bottom gussets. 3,469,769, Cl. 229-069.

Guerrero, Fernando V., to Continental Oil Company. Conduit connector. 3,469,864, Cl. 285-308.

Guertler, Rudolf W., to International Harvester Company. Fuel injection system. 3,469,793, Cl. 239-533.

Gulf Research & Development Company: *See—*
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Gulfo, Jon: *See—*
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Gullick, Denzil S., to Dowty Rotol Limited. Sealing devices. 3,469,853, Cl. 277-112.

Gundlach, Robert W., to Xerox Corporation. Powder cloud development of electrostatic images. 3,470,009, Cl. 117-017.5

Gutsche, Henry W., Harris, Darrel M., and Walsh, Robert J., to Monsanto Company. Retaining trays for semiconductor wafers and the like. 3,469,686, Cl. 206-065.

Gyorgak, Charles A., and Hoover, Robert J., to United States of America, National Aeronautics and Space Administration. Extrusion die for refractory metals. 3,469,436, Cl. 072-467.

Gyugyi, Laszlo, and Pelly, Brian R., to Westinghouse Electric Corporation. Static frequency converter with novel voltage control. 3,470,447, Cl. 321-061.

Haag, Franz, to Junkers & Co., GmbH. Pulse jet burner. 3,469,929, Cl. 431-001.

Habermehl, Clark L., and Newell, James T., to United States of America, Navy, mesne. Electronic pressure sensitive semiconductor device. 3,470,392, Cl. 307-308.

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Hacskaylo, Michael: *See—*
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Hadden, George H., to Baldwin, D. H., Company. Bass register keying system. 3,470,306, Cl. 084-001.19

Hagan, Ralph S., and Hartlage, Francis J., to General Electric Company. Process of making cellular plastic products. 3,470,277, Cl. 264-053.

Hagberg, John E., and Lensner, Herbert W., to Westinghouse Electric Corporation. Phase comparison relaying network. 3,470,418, Cl. 317-027.

Hagerborg, John G.: *See—*
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Hakka, Leo E., to Butts, Ernest O. Leak detection apparatus. 3,470,340, Cl. 200-061.04

Halcon International, Inc.: *See—*
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Halderman, Joseph, Jr.: *See—*
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Hale, Arthur N., and Kosrow, Robert L., to Union Special Machine Company. Conveyor sewing unit with shiftable top feed belt and work loading arrangement. 3,469,545, Cl. 112-002.

Hale, James F., and Tressler, Donald K., to Borden Company, The. Frozen mushroom product. 3,470,000, Cl. 099-193.

Hall, Albert M.: *See—*
Feure, Henry, and Hall, Albert M. 3,470,253.

Hall & Hall Limited: *See—*
Linwood, Derek Arthur, 3,469,854.

Hall, John S., Carpenter, Peter E. G., and Cook, David L., to Square D Company. Earth-leakage sensing circuit breaker. 3,470,507, Cl. 335-174.

Halperin, Edward B., to Perin Products Corporation. Calendar attachment for telephones. 3,469,336, Cl. 040-336.

Halpern, Peter H., to Melpar, Inc. Synthesis and wave generation with compactly carried waveforms. 3,470,468, Cl. 324-077.

Hamline, Thomas M. Hook and line structure. 3,469,287, Cl. 024-073.

Hammann, Ingeborg: *See—*
Schrader, Gerhard, Behrenz, Wolfgang, and Hammann, Ingeborg 3,470,229.
Hausweiler, Arnold, Hammann, Ingeborg, and Behrenz, Wolfgang 3,470,236.

Handler, Martin M., Gulfo, Jon, and Bonat, Jerome B., to Bonat, Samuel, & Bro., Inc. Adjustable hair-dryer hoods. 3,469,328, Cl. 034-099.

Hanifin, John William, Jr., Capuzzi, Rosemary Angela, and Cohen, Eliott, to American Cyanamid Company. Substituted 4-anilino-3-quinoline- carboxylic acids and esters. 3,470,186, Cl. 260-287.

Hanks, Fletcher. Device for opening and closing windows. 3,469,345, Cl. 049-002.

Hansen, Walter, and Heidenreich, Karl, to Eltra Corporation. Slide and mechanism for photographic drafting machines. 3,469,513, Cl. 095-004.5

Harbaugh, Samuel S., to Allegheny Ludlum Steel Corporation. Automatic start circuit for computer. 3,470,538, Cl. 340-172.5

Harding, David G., to Boeing Company, The. Weight indicating mechanism. 3,469,644, Cl. 177-136.

Hardtmann, Goetz E., and Ott, Hans, to Sandoz Inc. 4-Amino-substituted quinazolines. 3,470,182, Cl. 260-256.4

Hardy, Derek James, and Riddle, Lavis Albert Henry, to British Hovercraft Corporation Limited. Air cushion vehicle having a flexible skirt provided with automatic air lubrication means. 3,469,650, Cl. 180-128.

Hardy, Edgar E.: *See—*
Biles, James R., Brennan, Wendell E., Alexander, Stephen H., and Hardy, Edgar E. 3,470,016.

Harmon, Sherril A.: *See—*
Goshorn, Larry A., Harmon, Sherril A., and Erickson, Robert G. 3,470,537.

Harmuth, Henning, to Battelle-Institut E.V. System for the transmission of information by carrier waves over a single conductor. 3,470,324, Cl. 179-015.

Harper, John D. Conduit support apparatus. 3,469,601, Cl. 137-615.

Harper, Walter Reeve, Jr., to Texas Instruments, Incorporated. Electrical switch particularly adapted for use in pressurized areas. 3,470,514, Cl. 337-089.

Harper-Wyman Company: *See—*
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Sekera, George F., Jr., 3,469,781.

Harrell, Patrick Harwood, and Lemin, Denis Ronald, to Imperial Chemical Industries Limited. Wool dyeing process. 3,469,930, Cl. 008-054.

Harris, Charles J. Plastic rainwear hood. 3,469,264, Cl. 002-187.

Harris, Darrel M.: *See—*
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Harris-Intertype Corporation: *See—*
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Hartl, John J. Sod cutting machines. 3,469,635, Cl. 172-019.

Hartlage, Francis J.: *See—*
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Hartmann, Rolf, to Aug. Gundlach GmbH. Device for producing refractory bodies and a method of producing such bodies. 3,470,284, Cl. 264-119.

Hartwell Corporation: *See—*
Henrichs, Bernard W., and Brown, Frank A., 3,469,277.

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Maknis, Walter. Heat treatment of metal. 3,470,035, Cl. 148-013.

Malickson, Ephraim. Snow shovelling apparatus. 3,469,326, Cl. 037-053.

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Martens, Jean Victor, and Natens, Marcel Clement Rene, to International Standard Electric Corporation. Code checking circuit and multifrequency data receiver. 3,470,532, Cl. 340-146.1

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Martin, Donald J., to Stauffer Chemical Company. Process for preparing organic ethers and sulfide ethers. 3,470,206, Cl. 260-327.

Martin, Robert L., to Consolidated Electronic Industries, Inc. Horizontal latching type relay. 3,470,506, Cl. 335-170.

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McClendon, Jack C., and Dick, Clarence R., to Dow Chemical Company, The. Water-soluble polyesters containing alkylenepolyamine groups. 3,470,136, Cl. 260-075.

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McGlamery, Benjamin L., to Stromberg-Carlson Corporation. Flying spot scanner employing fiber optics. 3,470,319, Cl. 178-007.1

McGonigal, Samuel, to Barcro-Olympic Stranders Limited. Stranding machines. 3,469,386, Cl. 057-058.36

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Mersch, Georges. Phase displacement device of two shafts. 3,469,460, Cl. 074-057.

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Mertz, Lawrence N., to Block Engineering, Inc. Optical device for detecting a relatively low intensity spectrum line. 3,469,923, Cl. 356-106.

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Meyers, George L., to American Can Company. Method of packaging bread. 3,469,999, Cl. 099-173.

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Middleton, Ralph E., to United States of America, Army, and/or Administrator of the Federal Aviation Agency. Bypass system for control surface actuator cylinders. 3,469,501, Cl. 091-411.

Miles Laboratories, Inc.: *See—*
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Van Dyke, John William, Jr., 3,470,197.

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Miller, Donald L., Paul, James H., and Kavanaugh, Sherman W. Fertilizer plant. 3,469,742, Cl. 222-030.

Miller, Monroe A., to Milgo Electronic Corporation. Computer with logic controlled analog computing components which automatically change mathematical states in response to a control means. 3,470,362, Cl. 235-150.4

Milner, Ernest, and Davies, Gwyn, to A. B. Electronic Components Limited. Push button electrical switches. 3,470,332, Cl. 200-005.

Milo, August. Grounding clamp with automatic disconnect. 3,470,523, Cl. 339-045.

Milwaukee Chaplet & Mfg. Company, Inc.: *See—*
Ahrens, Robert H., 3,470,338.
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Minekawa, Saburo, Yamaguchi, Koretaka, and Sakamoto, Kuniaki, to Asahi Kasei Kogyo Kabushiki Kaisha. Process for producing copolymer. 3,470,144, Cl. 260-085.3

Miner, Robert G., to Trane Company, The. Refrigerant apparatus control. 3,469,413, Cl. 062-184.

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Zollinger, Joseph La Mar, 3,470,176.

Minton, Clarence W. Knitting machine size changer. 3,469,422, Cl. 066-155.

Mitchell, Eugene P. Tent/canopy and housing therefor. 3,469,589, Cl. 135-005.

Mitchell Industries, Inc.: *See—*
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Mitsubishi Denki Kabushiki Kaisha: *See—*
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Miyata, Akira, Okubo, Hideyo, Tomita, Chikayoshi, and Suzuki, Akio, to Nippon Kokan Kabushiki Kaisha. Method of electroplating aluminum. 3,470,073, Cl. 204-039.

Miyayama, Shigeru: *See—*
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Melton, Thomas M., 3,470,272.

Moedritzer, Kurt, and Van Wazer, John R., to Monsanto Company. Germanium and tin compounds. 3,470,220, Cl. 260-429.

Moffatt, Elbert Marston, to United Aircraft Corporation. Gas flow measuring system. 3,469,445, Cl. 073-194.

Moffatt, Elbert Marston, to United Aircraft Corporation. Acoustic wave sensor. 3,470,395, Cl. 310-008.1

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Moncorge, Gerard, to CSF-Compagnie Generale de Telegraphie Sans Fil. High ionization density thermionic coverters. 3,470,393, Cl. 310-004.

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Crutchfield, Marvin M., and Irani, Riyad R., 3,470,244.
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Moore, William P., Jr., and MacGregor, Rob R., to Allied Chemical Corporation. Process for making non-shrinking urea- formaldehyde foams. 3,470,115, Cl. 260-002.5

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Mori, Kyoichiro: *See—*
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Morin, Joseph C., to Cupples Container Company. Drive mechanism. 3,469,459, Cl. 074-037.

Moroto, Shuzo, and Kawabe, Tsuneo, to Aisin Seiki Company Limited. Automatic vehicle stop sensing device. 3,469,443, Cl. 073-121.

Morris, Albert E., Jr., to Wren Aircraft Corporation. Aircraft yaw correction means. 3,469,807, Cl. 244-090.

Morris, Drew W. Christmas tree stand. 3,469,342, Cl. 047-038.

Morris, Herbert C., and Nixon, John I., deceased (by Nixon, Roberta Lois, administratrix), to Texaco Inc. Separation of solvent from raffinate phase in the solvent refining of lubricating oil stocks with N-methyl-2-pyrrolidone. 3,470,089, Cl. 208-326.

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Mottram, Anthony William Thomas. Generating duct for a magnetohydrodynamic electrical generator. 3,470,398, Cl. 310-011.

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Munsey, Robert J., to Eaton Yale & Towne, Inc. Self-tapping screw. 3,469,491, Cl. 085-047.

Munters, Carl Georg, and Meek, George W. Method for the production of diagonally pleated paper material. 3,470,280, Cl. 264-090.

Murata, Toshiya, Takahashi, Toshiyuki, and Kobayashi, Yoshiharu, to Mitsubishi Denki Kabushiki Kaisha. Electromagnetic connector. 3,469,665, Cl. 192-021.5

Murray Corporation: *See—*
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Myers, Richard T., McKee, Thomas A., Spangler, Fred E., and Wright, Kenneth L., to General Electric Company. Multichannel communication receiver with automatic sampling and lock in on one channel. 3,470,481, Cl. 325-470.

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Nagel, Robert W., to American Standard Inc. Fold-up tub spout. 3,469,603, Cl. 137-625.11

Nagin, Harold, to Reliance Steel Products Company. Method for friction welding metal bars. 3,469,300, Cl. 029-470.3

Nagin, Leon, to Reliance Steel Products Company. Friction locked grating and other open grid structures. 3,469,359, Cl. 052-177.

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Nakai, Akira, Nakagawa, Kei, Kume, Kazunari, and Aida, Tadayoshi, to Citizen Tokei Kabushiki Kaisha. Electromechanical vibrator assembly for a timepiece. 3,469,389, Cl. 058-023.

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Neeff, Rutger, Gohrbandt, Wilhelm, and Kuth, Robert, to Farbenfabriken Bayer Aktiengesellschaft. Anthraquinone dyestuffs. 3,470,178, Cl. 260-249.

Neff, Charles W., and Huntsman, Raleigh L., to McDonnell Douglas Corporation, mesne. Nestable shaped cargo carrier construction. 3,469,730, Cl. 220-005.

Nehring, John Richard, to Becton, Dickinson and Company. Apparatus for taking multiple fluid samples. 3,469,572, Cl. 128-002.

Nehring, Rudolf, Feinauer, Roland, and Seeliger, Wolfgang, to Chemische Werke Huls Aktiengesellschaft. Method for the preparation of segment polyesters with short, alternating segments of polycarbonate and polyester. 3,470,268, Cl. 260-860.

Neighorn, Roy G., to Omark Industries, Inc. Powder actuated tool. 3,469,504, Cl. 092-085.

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Newallis, Peter E., and Cheema, Zafarullah K., to Allied Chemical Corporation. Bicyclic amides having herbicidal properties. 3,469,966, Cl. 071-118.

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Ernst, Otto, Niklaus, Ulrich, and Batzer, Hans 3,470,129.
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Nishikata, Goro, to Numata, Yehan. Straight-moving micrometer. 3,469,320, Cl. 033-166.

Nishimoto, Kan-ichi. Vertically reciprocating apparatus for carrying film hangers in a developing tank. 3,469,517, Cl. 095-094.

Nixon, John I.: *See—*
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Nixon, Roberta Lois: *See—*
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Berry, Eugene H., and Nola, Frank J. 3,470,446.

Noll, Klaus Reinhold, Berg, Alex, Machleidt, Hans, Roethele, Werner, and Engelhardt, Gunther, to Boehringer Ingelheim G.m.b.H. 10-[(N-lower alkyl-pyrrolidyl)-methylidene] and 10-(N-lower alkyl-piperidylidene) derivatives of 9,10-dihydro-9-anthrol. 3,470,190, Cl. 260-294.7

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Nyberg, John, to International Telemeter Corporation. Billing and decoding box. 3,470,309, Cl. 178-005.1

Oates, Norford L., to Smith-Berger Manufacturing Corporation. Fish beheading and cleaning machine. 3,469,278, Cl. 017-059.

Oberg, Paul E., to Sperry Rand Corporation. Synthetic bulk element having thin ferromagnetic film switching characteristics. 3,470,550, Cl. 340-174.

O'Brien, Joseph Francis. Portable enclosure. 3,469,822, Cl. 256-025.

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Odendahl, Wilhelm. Method of reducing fluid pressure and device for same. 3,469,591, Cl. 137-014.

Oesterhelt, Gerhard, de Bucs, Eugen Szabo, Kunert, Alfred, and Rupprecht, Joachim, to Siemens Aktiengesellschaft. Thermoelectric device comprising silicon alloy thermocouple legs bonded by a solder composed of palladium alloy. 3,470,033, Cl. 136-237.

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Ohio Brass Company, The: *See—*
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Oikawa, Tadashi, and Yaguchi, Hiroyasu, to Kabushiki Kaisha Nihon Seikosho. High speed forging hammer apparatus. 3,469,400, Cl. 060-057.

O. K. Partnership: *See—*
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Olchawa, Joseph M., to Hewitt-Robins Incorporated. Drive mechanism operating against variable resistance. 3,469,806, Cl. 244-046.

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O'Mant, Derrick Michael, to Imperial Chemical Industries Limited. Phenyl and benzyl oxazole acetic acid compounds. 3,470,195, Cl. 260-307.

Omark Industries, Inc.: *See—*
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Silvon, Kay, 3,469,610.

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Onishi, Shigeru, and Yui, Saburo. Gas turbine. 3,469,396, Cl. 060-039.35

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Ortlinghaus, Otto, Ortlinghaus, Adolf, and Lemp, Jurgen, to Gebr. Orthlinghaus. Combined coupling and brake mechanism. 3,469,664, Cl. 192-018.

Osako, Kyoichi: *See—*
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Owens-Corning Fiberglas Corporation: *See—*
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Ozawa, Lyuji, Toshinai, Akio, and Nagashima, Yoshihisa, to Dai Nippon Toryo Kabushiki Kaisha. Yttrium-indium vanadate phosphors. 3,470,411, Cl. 313-092.

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Rijssenbeek, Robertus C. J. M., 3,469,683.

Paik, Sungik Francis, to United States of America, National Aeronautics and Space Administration. Parametric microwave noise generator. 3,470,489, Cl. 331-078.

Painter, Phillip, to Jenn-Air Corporation. Roof ventilator. 3,469,519, Cl. 098-043.

Palazzo, Giuseppe, to Aziende Chimiche Riunite Angelini, Francesco A.C.R.A.F. S.p.A. (Indazole-3-yl)-oxyalkanoic acids. 3,470,194, Cl. 260-299.

Palazzo, Giuseppe, to Aziende Chimiche Riunite Angelini, Francesco A.C.R.A.F. S.p.A. Topical anti-inflammatory composition containing (indazole-3-yl)-oxyalkanoic acids. 3,470,298, Cl. 424-273.

Palmason, Einar Henry, to Parkson Industrial Equipment Company. Method for stripping of volatile substances from fluids. 3,469,617, Cl. 159-047.

Pande, Kailash Chandra: *See—*
Chadha, Rajendra Nath, and Pande, Kailash Chandra 3,470,221.

Pangier, Douglas John, to Miles Laboratories, Inc., mesne. Lipolyzed milk fat products. 3,469,993, Cl. 099-059.

Panofsky, Wolfgang K. H., and Marshall, William F., to United States of America, Atomic Energy Commission. Stretched reference wire magnetic pickup alignment system. 3,470,460, Cl. 324-034.

Paquette, Cyril D., to Taylor & Gaskin, Inc. Stacking machine. 3,469,714, Cl. 214-006.

Parker, Charles A., to Litton Business Systems, Inc. Tag feed device. 3,469,754, Cl. 226-068.

Parker, George E., to Woodward Governor Company. Gas turbine speed governor with acceleration fuel schedule. 3,469,397, Cl. 060-039.28

Parker, Robin J., to Universal Oil Products Company. Method for stabilizing pyrolysis gasoline. 3,470,085, Cl. 208-143.

Parkson Industrial Equipment Company: *See—*
Palmason, Einar Henry, 3,469,617.

Parmentier, Alfred Henri. Method and apparatus for regenerating the filter cloth of a rotary filter table. 3,469,703, Cl. 210-393.

Parry, Robert D.: *See—*
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Parsons, Howard Grubb, Sir., & Company Limited: *See—*
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Fleury, Paul, Patel, Chandra K. N., Slusher, Richart E., and Yafet, Yako 3,470,453.

Patrick, Jean V. Hawser steering anti-yawing and safety mechanism for towed barges and the like. 3,469,552, Cl. 114-236.

Patrick, Robert F.: *See—*
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Patsch, Glenn F., to General Electric Company. Bromine regenerative cycle incandescent lamps with protective overwind coils on coiled filament legs. 3,470,410, Cl. 313-037.

Patterson, John A.: *See—*
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Patterson, John A., Menapace, Lawrence W., and Doyle, William P., to Texaco Inc. Production of secondary alkyl primary amines. 3,470,250, Cl. 260-583.

Paul, James H.: *See—*
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Paul, William T.: *See—*
Heatwaite, Hewart H., Mead, Robert H., and Paul, William T. 3,469,466.
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Payne, Le Roy, to Weyerhaeuser Company. Method and apparatus for extruding and applying plastic materials. 3,469,281, Cl. 018-012.

Pearce, Malcolm B., Jr., to Loctite Corporation. Self-sealing mechanical fastener. 3,469,490, Cl. 085-001.

Pearce, Michael L., to Air Reduction Company, Incorporated. High strength refractory body. 3,470,117, Cl. 260-002.5

Pearlman, Lawrence. Orthodontic device. 3,469,314, Cl. 032-014.

Peck, Bruce E., and Fujimoto, Calvin, to National Cash Register Company, The. Methods for making magnetic core memory structures. 3,469,310, Cl. 029-604.

Peeters, Gustaaf Joannes: *See—*
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Peeters, Pierre H.: *See—*
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Pennsalt Chemical Corporation: *See—*
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Percival, George, and Phillips, Thomas Rowland, to Gas Council, The. Process for the production of combustible gases. 3,469,957, Cl. 048-214.

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Peropoulos, Peter C.: *See—*
Siegart, William R., Peropoulos, Peter C., Jones, Ronald E., and Smolin, William 3,470,251.
Doyle, William P., Patterson, John A., and Peropoulos, Peter C. 3,470,252.

Perren, Benno, to Hectronic AG. Apparatus for separating fluid earth-oil products from an earth-oil-in-water mixture. 3,469,702, Cl. 210-265.

Persson, Erik, Claesson, Nils-Erik, Trulsson, Ingvar, and Melandsor, Osvald, to Allmanna Svenska Elektriska Aktiebolaget. Device for measuring the width of glowing objects by scanning with a photocell. 3,470,383, Cl. 250-219.

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Peterson, John L., to Atlas Spokane, Inc. Noncylindrical particle storage facility. 3,469,719, Cl. 214-017.

Peterson, John L., to Atlas Spokane, Inc. Central particle removing system for noncylindrical storage facilities. 3,469,720, Cl. 214-017.

Peterson, John L., and Pettis, George H., to Atlas Spokane, Inc. Drive mechanism including chain. 3,469,464, Cl. 074-221.

Peterson, Roger W.: *See—*
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Peterson, William D., and Kline, Arthur J., Jr., to United States of America, National Aeronautics and Space Administration. Automatic frequency discriminators and control for a phase-lock loop providing frequency preset capabilities. 3,470,475, Cl. 325-063.

Petrella, Robert Gabriel: *See—*
Koblitz, Francis Frederick, and Petrella, Robert Gabriel 3,470,014.

Petrow, Valdimir, Burgess, Colin Michael, and Feather, Peter, to British Drug Houses Limited, The. 17α-Chloroethinyl-17β-hydroxy steroidal derivatives. 3,470,193, Cl. 260-397.4

Petrucci, Raymond Mark, and Sicard, Marcel Clarence, to American Machine & Foundry Company. Filtration apparatus. 3,469,696, Cl. 210-097.

Petrusson, Sigurdur G., to Danfoss Manufacturing Co., Ltd. Fluid-pressure equalizing and mixing valves. 3,469,595, Cl. 137-100.

Pettis, George H.: *See—*
Peterson, John L., and Pettis, George H. 3,469,464.

Pfizer, Chas., & Co., Inc.: *See—*
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Philco-Ford Corporation: *See—*
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Phillips, Edward H., to Tydeman Machine Works, Inc. Heat exchanger for cooling liquids. 3,469,625, Cl. 165-125.

Phillips Petroleum Company: *See—*
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Bracken, Robert C., and Lea, Eugene D., 3,470,069.
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Mayhue, Luther F., 3,470,264.

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Phillips, Thomas Rowland: *See—*
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Phillips, Warren D. Fracture board. 3,469,268, Cl. 005-082.

Phillips, Warren D. Hospital carafe. 3,469,739, Cl. 221-096.

Piemontesi, Jean, to Kugler Fonderie et Rolinetterie S.A. Thermostatic devices. 3,469,450, Cl. 073-368.3

Piero, Barozzi Gian, and Giancarlo, Horeschi, to Citizen Watch Co., Ltd. Simultaneous transfer mechanism for calculating machines. 3,469,778, Cl. 235-137.

Pietronuto, Joseph A., and Sands, Robert. Baseball bat choke device. 3,469,839, Cl. 273-025.

Pignone, Joseph, to Beseler, Charles, Company. Film carrier. 3,469,917, Cl. 355-072.

Pike, Charles A., and Woodland, Norman J., to International Business Machines Corporation. Fibre deflection means. 3,470,320, Cl. 178-007.6

Pilkington Brothers Limited: *See—*
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Owen, David Edward, 3,469,962.

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Pilsworth, Edward A.: *See—*
Owens, James M., Graham, James L., and Pilsworth, Edward A. 3,469,987.

Pitner, Alfred, to Nadella S.A. Flexible thrust rolling bearing having needles or rollers. 3,469,896, Cl. 308-231.

Pitney-Bowes, Inc.: *See—*
O'Keefe, Robert F., 3,469,593.

Pizzagalli, Remo R., to Atlas Pipe Popper Corporation, mesne. Pipe pulling apparatus. 3,469,298, Cl. 029-237.

Plasser, Franz, and Theurer, Josef. Track lining machine. 3,469,533, Cl. 104-007.

Plasser, Franz, and Theurer, Josef. Mobile track liner and tamper. 3,469,534, Cl. 104-007.

Plessey Company Limited, The: *See—*
Stapleton, David C., 3,470,544.
Wood, Robert S., 3,469,531.

Plock, Layne F.: *See—*
Bertea, Octavian, Bomberger, Howard B., Jr., and Plock, Layne F. 3,469,975.

Plumb, John Beckett, and Stuart, Ronald Sangster, to Imperial Chemical Industries Limited. Polybutadiene organosilicon polymers having poly-oxyalkylene group attached to the silicon atoms. 3,470,226, Cl. 260-448.8

Pohl, Herbert Ackland, to Sci-Tech Corporation. Methods of measuring strain. 3,469,441, Cl. 073-088.5

Pohl, Russell A.: *See—*
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Pollet, Robert Joseph: *See—*
Eerdekens, Pieter Hendrik, and Pollet, Robert Joseph 3,470,191.

Pomerantz, Daniel I., and Wallis, George, to Mallory, P. R., and Co., Inc. Anodic bonding of liquid metals to insulators. 3,470,348, Cl. 219-117.

Pontelandolfo, Joseph John, to American Cyanamid Company. Aqueous textile treating emulsion. 3,470,095, Cl. 252-008.9

Pool, Stuart D., Everett, Charles V., and Grillot, Homer N., to International Harvester Company. Fan for combine. 3,469,773, Cl. 230-125.

Poris, Harry, and Hendrie, George S., to Macoid Industries, Inc. Method of making plastic file folder. 3,470,290, Cl. 264-291.

Porter, Donald C., to McCaffrey, D. M., and McCaffrey, Patricia Ann. Hydraulic-operated fluid mixing pump. 3,469,594, Cl. 137-099.

Porth, Horst: *See—*
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Potter, Nelson H.: *See—*
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Potts, William F., and Duval, Francois, to Liberty Combustion Corporation. Spark detector. 3,470,386, Cl. 307-218.

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Powers, Thomas J.: *See—*
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Powrmatic Limited: *See—*
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PPG Industries, Inc.: *See—*
D'Alelio, Gaetano F., 3,470,079.
Ohme, Howard R., 3,470,133.
Wilson, William L., 3,469,943.

Praetzel, Hans Eberhard, Wirth, Ernst-Friedrich, and Jenkner, Herbert, to Chemische Fabrik Kalk G.m.b.H. Self-extinguishing styrene polymer compositions and method of making same. 3,470,116, Cl. 260-002.5

Presley, William E.: *See—*
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Pressed Steel Fisher Limited: *See—*
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Prezewowsky, Klaus: *See—*
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Priestley, Eric, to Elliot Brothers (London) Limited. Stabilization systems. 3,469,550, Cl. 114-066.5

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Promat S. A. R. L.: *See—*
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Prosen, Gildo G. Device for brewing beverage. 3,469,522, Cl. 099-308.

Prototech Incorporated: *See—*
Juda, Walter, Moulton, David McLeod, and Novack, Robert L., 3,470,026.

Proud, Ralph A., Jr., O'Brien, Richard C., Graubert, Seth, and Goldstein, Theodore J., to Harris-Intertype Corporation. Shift register control for typesetting machines. 3,470,539, Cl. 340-172.5

Provence, Thomas K., Jr.: *See—*
Foy, Leonard A., and Provence, Thomas K., Jr. 3,469,520.

Provi, Mike A., Stinson, George E., and Lang, Lawrence V., to Brearley Company, The. Bathroom scale with electronically operated readout instrument. 3,469,645, Cl. 177-210.

Pullman Incorporated: *See—*
Heffner, George R., 3,470,058.

Purdue Research Foundation: *See—*
Feure, Henry, and Hall, Albert M., 3,470,253.

Puretic, Mario J. Marine propulsion unit. 3,469,558, Cl. 115-041.

Puretic, Mario J. Net retriever apparatus. 3,469,819, Cl. 254-137.

Puschmann, Sigfrid: *See—*
Zipp, Ottmar, Nickl, Josef, Machleidt, Hans, Keck, Johannes, Kruger, Gerd, Engelhorn, Robert, and Puschmann, Sigfrid 3,470,152.

Putzig, Max. Apparatus for producing mineral wool. 3,469,960, Cl. 065-015.

Quadflieg, Therese: *See—*
Hirsch, Lothar, Hornig, Lothar, Mau, Gunther, and Quadflieg, Therese 3,470,230.

R F L Industries, Inc.: *See—*
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Radimer, Kenneth J., to FMC Corporation. Electrolytic regeneration of spent ammonium persulfate etchants. 3,470,044, Cl. 156-019.

Radington-Meech, John Richard, and Wright, George Thomas, to Industrial Electrical Company Limited. Static eliminators. 3,470,416, Cl. 317-002.

Radioptics, Inc.: *See—*
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Rae, Randolph S. Planing boat. 3,469,549, Cl. 114-066.5

Raha-Automaattiyhdistys: *See—*
Martti, Lauri, 3,469,669.

Rainero, Aldo A., Jr.: *See—*
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Rainwater, Orman M. Articulated multi-section shelter or frame structure. 3,469,588, Cl. 135-005.

Rakoff, Frank B.: *See—*
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Ralston, Wilson P.: *See—*
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Ramakers, Theodoor Hubertus, to Meubelindustrie 'Thereca' N.V. Furniture connecting means. 3,469,869, Cl. 287-054.

Rank Organisation Limited, The: *See—*
Bilbrough, Jack, 3,470,343.

Ranke, Edward K.: *See—*
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Ransome, John Gooch, to Pressed Steel Fisher Limited. Process for the electro-deposition of paint coating onto article having predeposited porous zinc layer. 3,470,072, Cl. 204-181.

Rausing, Gad Anders: *See—*
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Rausing, Hans Anders, and Rausing, Gad Anders, to Sebrefina SA. Liquid package for filling material under pressure. 3,469,760, Cl. 229-014.

Rawley, David A.: *See—*
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Rawlings, Bernard Samuel, to Marston Excelsior Limited. Plate-type heat exchanger. 3,469,623, Cl. 165-070.

Raymond, Louis W., and Reath, Roger E. Electroplating method and system. 3,470,082, Cl. 204-228.

Raymond, Samuel, and Broome, John. Multi-phase electrophoretic distribution. 3,470,080, Cl. 204-180.

Raznick, Aaron L.: *See—*
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Raznick, David L.: *See—*
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RCA Corporation: *See—*
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Chang, Kern K. N., 3,470,375.
Granger, Clifford E., 3,470,391.
Levy, Saul Y., 3,470,540.
Olden, Roger G., 3,469,911.
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Reactive Metals, Inc.: *See—*
Bertea, Octavian, Bomberger, Howard B., Jr., and Plock, Layne F., 3,469,975.
Kastanek, Joseph, and Kessler, Harold D., 3,470,034.

Reath, Roger E.: *See—*
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Rebut, Paul-Henri, and Torossian, Antoine, to Commissariat a l'Energie Atomique. Electrical generators, more particularly for delivering electrical energy in pulse form. 3,470,454, Cl. 322-020.

Reddi-Bacon, Inc.: *See—*
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Reece, Orvil Y., to United States of America, National Aeronautics and Space Administration. Horizontal cryostat for fatigue testing. 3,469,437, Cl. 073-015.6

Reed, Benjamin E.: *See—*
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Reed, Gordon Howard, to Television Research Limited. Magnetic transducer track changing apparatus. 3,470,327, Cl. 179-100.2

Reeve, Leonard, Brown, Stanley Clifford, and Beckett, Harold, to Wickman Wimet Limited. Toolholders for use with detachable inserts. 3,469,296, Cl. 029-096.

Reeves, Alec Harley, and Kitajewski, Ryszard, to International Standard Electric Corporation. Digitally expanding decoder for pulse code modulation systems. 3,470,387, Cl. 307-231.

Reichhold Chemicals, Inc.: *See—*
Forster, Wolfgang C., 3,470,118.

Rein, Walter: *See—*
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Reiners, Fritz: *See—*
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Reinert, Owen E., to Sperry Rand Corporation. Generator control circuit having means for rapid voltage build-up. 3,470,456, Cl. 322-032.

Reinhold, Richard H., to Layne-New York Company, Inc. Mine water barrier. 3,469,405, Cl. 061-035.

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Reliance Steel Products Company: *See—*
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Rennels, David A.: *See—*
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Renner, Alfred, to Ciba Limited. Polyglycidyl ethers of polyglycols. 3,470,110, Cl. 260-002.

Rennick, John L., to Zenith Radio Corporation. Color television receiver utilizing a modified luminance signal. 3,470,312, Cl. 178-005.4

Repko, John P., to Dow Chemical Company, The. Dual compartment container. 3,469,768, Cl. 229-056.

Reus, John F.: *See—*
Anderson, Maynard E., Balaz, Charles S., Reus, John F., and Thorson, Sheldon E. 3,469,777.

Reusch, Gotthilf, to Eberspacher, J. Method of encapsulating reactive layer exhibiting reversible variable light permeability. 3,470,049, Cl. 156-145.

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Revici, Emanuel. Compositions and methods for treating posttraumatic shock, pain and hemorrhage. 3,470,295, Cl. 424-180.

Rexall Drug and Chemical Company: *See—*
Anderson, John E., Holloway, Francis H., and Steen, William A., 3,469,948.
Berkebile, Glenn S., 3,469,826.
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Reynolds, John Windley, to Cominco Ltd. Reaming bit assembly. 3,469,641, Cl. 175-389.

Reynolds Metals Company: *See—*
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Becker, William C., 3,469,743.
Hrishikesan, Kizhakke Govind, Kane, James Franklin, Teas, Edward Bruce, and Brown, William Haddon, 3,469,935.
Roberts, Richard C., and Kane, James F., 3,469,937.
Serio, Vincent J., Jr., Smith, Gary W., and Westerlund, Donald R., 3,469,745.

Reznick, David E., and Fekete, Ernoe A. Vibration-absorbing base. 3,469,809, Cl. 248-020.

Rheingold, Michael, and Debrunner, Jean R. E., to International Standard Electric Corporation. Storage battery charging equipment. 3,470,440, Cl. 320-025.

Rheinische Kalksteinwerke GmbH: *See—*
Flachsenberg, Paul, Wuherer, Josef, and Stein, Walter, 3,470,005.

Rheinstahl Huttenwerke AG: *See—*
Benthake, Henrich, Futterer, Lothar, and Kunnen, Josef, 3,469,656.

Rice, Charles F., and Kimtantas, Charles. Combination conference connection and call transfer device for telephone subscriber lines. 3,470,322, Cl. 179-001.

Richer, Benjamin F., and Charlton, Thomas, to Westinghouse Electric Corporation. Concentric coil windings for three-speed single-phase induction motor stator. 3,470,407, Cl. 310-166.

Richert, Walter J., to American Machine & Foundry Company. Magnetic latch relay. 3,470,510, Cl. 335-230.

Richman, Peter L., to Weston Instruments, Inc. R.M.S. to D.C. converter for periodic signals. 3,470,445, Cl. 321-001.5

Richmond, Roy H., Jr., to Eagle Manufacturing Company. Storage can for flammable liquids. 3,469,747, Cl. 222-469.

Richter, Sidney B., and Mayer, David P., to Velsicol Chemical Corporation. N-Methyl-2-dimethylamino-5-chloro benzhydrylcarbamates. 3,470,237, Cl. 260-482.

Riddell, Vernon A., to Vinco Corporation. Spline gauge. 3,469,321, Cl. 033-179.5

Riddle, Lavis Albert Henry: *See—*
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Ridgeway, Lee R., and Fischer, Joseph, to National Distillers and Chemical Corporation. Compositions comprising ethylene-vinyl acetate copolymer, fatty acid salt, fatty acid amide and particulate material. 3,470,122, Cl. 260-023.

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Riester, Oskar. Optical sensitizing cyanine dyes containing oxazine-type ring. 3,470,166, Cl. 260-240.7

Riester, William C., and Graczyk, Bronislaus S., to Trico Products Corporation. Fluid coupling assembly. 3,469,863, Cl. 285-137.

Rijssenbeek, Robertus C. J. M., to Page Zellstoffkrepp GmbH. Toilet paper roll comprising one or more layers of paper, and method of making same. 3,469,683, Cl. 206-058.

Rike, Howard W., to Smith, A. O., Corporation. Lock plate for fixed motor rotor bearing. 3,469,897, Cl. 308-236.

Riley, Terence Alexander, to Inertia Switch Limited. Contact means for electrical switches. 3,470,501, Cl. 335-001.

Ringle, John, III, to Wausau Metals Corporation. Window construction. 3,469,347, Cl. 049-394.

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Riordan, Hugh E., and Ganther, Robert Joseph, to Singer-General Precision, Inc. Digital fluid accelerometer. 3,469,456, Cl. 073-515.

Risberg, Robert L., to Cutler-Hammer, Inc. Constant frequency inverter with frequency override. 3,470,449, Cl. 321-011.

Ritzerfeld, Elviar nee Weiss, and said: *See—*
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Roberts, Richard C., and Kane, James F., to Reynolds Metals Company. Production of synthetic cryolite by fluidized dry process. 3,469,937, Cl. 023-088.

Roberts, Robert Herman. Album page stabilization system. 3,469,333, Cl. 040-104.17

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Schramm, Walter, and Baldus, Wolfgang, to Linde Aktiengesellschaft. Process and apparatus for the removal of traces of impurities from carbon dioxide. 3,469,410, Cl. 062-028.

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Shorr, Leonard Marshall, and Sofer, Noah, to Israel Mining Industries-Institute of Research and Development, and Israel Petrochemical Enterprises Ltd. Chlorination of polyethylene. 3,470,147, Cl. 260-094.9

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Siegart, William R., Peropoulos, Peter C., Jones, Ronald E., and Smolin, William, to Texaco Inc. Separation and purification of secondary alkyl primary amines. 3,470,251, Cl. 260-583.

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Simjian, Luther G. Apparatus for preparing a beverage. 3,469,521, Cl. 099-287.

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Skorcz, Joseph A., to Colgate-Palmolive Company. Compositions and methods for relaxing skeletal muscles with O-substituted benzocyclobutenyl ketone oximes. 3,470,300, Cl. 424-327.

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Sloan, Donald D., to Dennison Manufacturing Company. Apparatus for developing electrostatic images. 3,469,563, Cl. 118-325.

Sloan, Donald D., to Dennison Manufacturing Company. Photographic copying apparatus. 3,469,916, Cl. 355-051.

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Stabeler, Eberhard, and Dunger, Alfred, to VEB Gardinen-u. Dekowerke Zwickau. Apparatus for the regulation of knitting machines. 3,469,418, Cl. 066-056.

Stallman, Neal E., to P and S Grain Equipment. Grain scalper. 3,469,688, Cl. 209-010.

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Stange, Klaus K., Lux, Adalbert A., and Michaels, Thomas B., to Xerox Corporation. Sheet feeder and separator apparatus. 3,469,834, Cl. 271-010.

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Steen, William A.: *See—*
Anderson, John E., Holloway, Francis H., and Steen, William A. 3,469,948.

Stein, Harold A., to Carborundum Company, The. Aluminosilicate zeolite in a synthetic resin bonded abrasive article. 3,469,959, Cl. 051-298.

Stein, Walter: *See—*
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Strandskov, Frede B., and Ziliotto, Henry L., to T. & M. Schaefer Brewing Company, The. Chill stability and foam adherence of beer. 3,469,992, Cl. 099-048.

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Sundermann, Henry L. Remote controlled actuating and release toggle. 3,469,659, Cl. 188-074.

Suozzo, Leonard S. Hydraulic shock and sway arrestor. 3,469,833, Cl. 267-069.

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Suzuki, Kazuhisa, to Mitsubishi Jukogyo Kabushiki Kaisha. Method of treating alloy steel. 3,470,037, Cl. 148-127.

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Svedberg, Per, to Allmanna Svenska Elektriska Aktiebolaget. Rectifying semi-conductor body. 3,470,036, Cl. 148-033.5

Swaneck, Anthony J., and Wilcox, Charles A., to Westinghouse Electric Corporation. Shelf construction for refrigerator door. 3,469,711, Cl. 211-176.

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Anthony, William C., and Szmuszkovicz, Jacob 3,470,205.

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Therm-O-Disc, Incorporated: *See—*
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Thomas, John M. Interconnecting tubes. 3,469,339, Cl. 046-028.

Thomas, Robert S. Means for cleaning screens in place in a pipeline. 3,469,705, Cl. 210-411.

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Thorp, James H., to Smyth Manufacturing Company, The. Book pressing machine with improved presser plate and conveyor mechanism and with improved dual channel arrangement. 3,469,270, Cl. 011-001.
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CLASSIFICATION OF PATENTS

ISSUED SEPTEMBER 30, 1969

NOTE.—First number, class; second number, subclass; third number, patent number

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4— 1	3,469,265	37— 53	3,469,326	173	3,469,412	216	3,469,483	123	3,470,006	624.2	3,469,602
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213	3,469,267	141	3,469,331	309	3,469,414	491	3,469,485	107— 12	3,469,540	.43	3,469,604
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230	3,469,945	586	3,469,362	170	3,469,444	.7	3,469,979	325	3,469,563	47	3,469,616
277	3,469,946	53— 25	3,469,363	194	3,469,445	35.1	3,469,982	123— 30	3,469,564		3,469,617
281	3,469,947	37	3,469,364	196	3,469,446	36.3	3,469,980	119	3,469,565	48	3,469,618
285	3,469,948	54	3,469,365	342	3,469,447	49	3,469,981		3,469,566	160— 19	3,469,619
	3,469,949	124	3,469,366	356	3,469,448	75	3,469,983	126— 39	3,469,567	161— 69	3,470,058
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.17	3,469,289	71	3,469,370		3,469,452	102	3,469,987	128— 2	3,469,571	152	3,470,062
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26— 61	3,469,291	158	3,469,372	432	3,469,454	43	3,469,519	.1	3,469,577	314	3,470,064
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29— 25.42	3,469,294	208	3,469,375	74— 5.4	3,469,457	2	3,469,989		3,469,578	165— 55	3,469,622
57	3,469,295	56— 6	3,469,376	.46	3,469,458		3,469,990	.4	3,469,579	70	3,469,623
96	3,469,296	9	3,469,377	37	3,469,459	17	3,469,991	215	3,469,580	105	3,469,624
180	3,469,297	25.4	3,469,378	57	3,469,460	48	3,469,992	221	3,469,581	125	3,469,625
183	3,469,951	41	3,469,379	107	3,469,461	59	3,469,993	245	3,469,575	166	3,469,626
191.4	3,469,952	202	3,469,380	142	3,469,462	98	3,469,994	276	3,469,582	166— .5	RE.26,668
193.5	3,469,953	209	3,469,381	206	3,469,463	108	3,469,995	519	3,469,583		3,469,627
200	3,469,299	282	3,469,382	221	3,469,464	118	3,469,996	595	3,469,576	134	3,469,628
237	3,469,298	327	3,469,383	233	3,469,512	138	3,469,997	131— 10	3,469,584	182	3,469,629
470.3	3,469,300	57— 34	3,469,384	243	3,469,465	171	3,469,998	132— 40	3,469,585	250	3,469,630
480	3,469,301		3,469,385		3,469,466	173	3,469,999	134— 3	3,470,022	168— 4	3,469,631
481	3,469,302	58.36	3,469,386		3,469,467	193	3,470,000	29	3,470,023	169— 39	3,469,632
484	3,469,303	140	3,469,387		3,469,468	287	3,469,521	93	3,469,586	170—160.16	3,469,633
494	3,469,304	157	3,469,388	409	3,469,469	308	3,469,522	135— 1	3,469,587	171—101	3,469,634
527.4	3,469,305	58— 23	3,469,389	443	3,469,470	336	RE.26,672	5	3,469,588	172— 19	3,469,635
564	3,469,306	34	3,469,390	552	3,469,471	404	3,469,523		3,469,589	314	3,469,636
573	3,469,307	88	3,469,391	761	3,469,472	425	3,469,524	136— 6	3,470,024	709	3,469,637
589	3,469,308	140	3,469,392	781	3,469,473	100—215	3,469,530		3,470,025	174— 12	3,470,307
598	3,469,309	60— 13	3,469,393	75— .5	3,469,967	234	3,469,525	83	3,470,027	141	3,470,308
604	3,469,310	39.06	3,469,394	10	3,469,968	101—142	3,469,526	86	3,470,026	175— 53	3,469,638
620	3,469,311	.28	3,469,395	26	3,469,969	102— 42	3,469,527		3,470,028	78	3,469,639
629	3,469,312		3,469,397	33	3,469,970	103— 25	3,469,528	90	3,470,029	321	3,469,640
30—167	3,469,313	.35	3,469,396	121	3,469,971	111	3,469,529	120	3,470,030	330	RE.26,669
32— 14	3,469,314	.82	3,469,398	126	3,469,972	126	3,469,531		3,470,031	389	3,469,641
	3,469,315	52	3,469,399	168	3,469,974	178	3,469,532	160	3,470,032	393	3,469,642
15	3,469,317	57	3,469,400	170	3,469,973	104— 7	3,469,533	237	3,470,033	394	3,469,643
17	3,469,316	204	3,469,401	175.5	3,469,975		3,469,534	137— 1	3,469,590	176— 39	3,470,065
27	3,469,318	61— 1	3,469,402	204	3,469,976	20	RE.26,673	14	3,469,591	60	3,470,066
33— 30	3,469,319	3	3,469,403	76—112	RE.26,676	88	3,469,535	81.5	3,469,592	177—136	3,469,644
166	3,469,320	23	3,469,404	77— 3	3,469,474	105— 30	3,469,536		3,469,593	210	3,469,645
179.5	3,469,321	35	3,469,405	4	3,469,475	197	3,469,537	99	3,469,594	178— 5.1	3,470,309
215	3,469,322	36	3,469,406	82— 14	3,469,476	199	3,469,538	100	3,469,595	.2	3,470,310
34— 9	3,469,323	45	3,469,407	83— 8	3,469,477	249	3,469,539	205	3,469,596	.4	3,470,311
13	3,469,324	69	3,469,408	9	3,469,478	106— 2	3,470,001	209	3,469,597		3,470,312
92	3,469,327	62— 6	3,469,409	16	3,469,479	49	3,470,002	334	3,469,598	6	3,470,313
99	3,469,328	13	3,469,271	50	3,469,480	56	3,470,003	587	3,469,599		3,470,314
137	3,469,329	28	3,469,410	140	3,469,481	59	3,470,004	596.17	3,469,600	.6	3,470,315

178– 6.6	3,470,316	210–163	3,469,698	235–193	3,470,368	260– 67.6	3,470,134	260–502.5	3,470,244	296– 1	3,469,880
	3,470,317	166	3,469,699	194	3,470,369	75	3,470,136	534	3,470,245	23	3,469,881
7.1	3,470,318	238	3,469,700	236– 15	3,469,779	78	3,470,139	543	3,470,246	297–118	3,469,882
	3,470,319	258	3,469,701		3,469,780		3,470,140	555	3,470,247	353	3,469,883
.6	3,470,320	265	3,469,702	99	3,469,781	.5	3,470,137	563	3,470,248	299– 33	3,469,884
179– 1	3,470,321	393	3,469,703	237– 2	3,469,782		3,470,141	570.5	3,470,249	71	3,469,885
	3,470,322	401	3,469,704	238– 8	3,469,783	79.5	3,470,142	583	3,470,250	80	3,469,886
.5	3,470,323	411	3,469,705	287	3,469,784	80.78	3,470,138		3,470,251	302– 29	3,469,887
15	3,470,324	448	3,469,706	239– 4	3,469,785	82.5	3,470,143		3,470,252	52	3,469,888
.55	3,470,325	484	3,469,707	126	3,469,786	85.3	3,470,144	586	3,470,253	303– 6	3,469,889
41	3,470,326	211– 1.5	3,469,708	127.3	3,469,787	93.5	3,470,146	606.5	3,470,254	52	3,469,890
100.2	3,470,327	82	3,469,709	307	3,469,788	94.9	3,470,147	609	3,470,255	305– 11	3,469,891
107	3,470,328	116	3,469,710	338	3,469,789	124	3,470,148	611	3,470,256	307–218	3,470,386
121	3,470,329	176	3,469,711	402.5	3,469,790	210	3,470,149	613	3,470,257	231	3,470,387
146	3,470,330	212– 55	3,469,712	419.5	3,469,791	236.5	3,470,150	615	3,470,258	235	3,470,388
175.3	3,470,331	213– 75	3,469,713	456	3,469,792	239.1	3,470,151	621	3,470,259	237	3,470,389
180– 43	3,469,646	214– 6	3,469,714	533	3,469,793	.3	3,470,152	654	3,470,260		3,470,390
	3,469,647	14	3,469,715	597	3,469,794		3,470,153	671	3,470,261	270	3,470,391
	3,469,648	15	3,469,716	241–176	3,469,795		3,470,154	680	3,470,262	308	3,470,392
71	3,469,649	16.1	3,469,717	242– 47.13	3,469,796	.55	3,470,156	683	3,470,263	308– 3.8	3,469,892
128	3,469,650	17	3,469,718	54	3,469,797		3,470,157	.57	3,470,264	6	3,469,893
181– 24	3,469,651		3,469,719		3,469,801		3,470,158	.59	3,470,265		3,469,894
44	3,469,652		3,469,720	83	3,469,798		3,470,159	834	3,470,266	9	3,469,895
54	3,469,653	18	3,469,721	84.2	3,469,799		3,470,160	857	3,470,267	231	3,469,896
182– 88	3,469,654	309	3,469,722	190	3,469,800		3,470,161	860	3,470,268	236	3,469,897
184– 1	3,469,655	516	3,469,723	244– 12	3,469,802	.57	3,470,162	897	3,470,145	310– 4	3,470,393
6	3,469,656	776	3,469,724		3,469,803	.6	3,470,155		3,470,269	8	3,470,394
187– 29	3,469,657	215– 9	3,469,725		3,469,804	240	3,470,164	926	3,470,270	.1	3,470,395
188– 73	3,469,658		3,469,726	31	3,469,805		3,470,165	968	3,470,271	10	3,470,396
74	3,469,659	42	3,469,727	46	3,469,806	.7	3,470,166	978	3,470,272	11	3,470,397
78	3,469,660	100	3,469,728	90	3,469,807	.9	3,470,167	261– 71	3,469,825		3,470,398
100	3,469,661	219– 10.61	3,470,343	110	3,469,808	243	3,470,168	263– 3	3,469,826	13	3,470,399
181	3,469,662	62	3,470,344	246–122	3,470,370		3,470,169	6	3,469,827	15	3,470,400
192– 3.33	3,469,663	70	3,470,345	163	3,470,371	244	3,470,170	32	3,469,828	25	3,470,401
18	3,469,664	74	3,470,346	248– 20	3,469,809		3,470,171	264– 3	3,470,273	26	3,470,402
21.5	3,469,665	76	3,470,347	228	3,469,810	247.5	3,470,172	22	3,470,274	37	3,470,403
30	3,469,666	117	3,470,348	248	3,469,811	.7	3,470,173	29	3,470,275	42	3,470,404
193– 40	3,469,667	136	3,470,349	430	3,469,812		3,470,174	44	3,470,276	68	3,470,405
194– 3	3,469,668	211	3,470,350	475	3,469,813	248	3,470,175	53	3,470,277	95	3,470,406
58	3,469,669	366	3,470,351	492	3,469,814		3,470,176	54	3,470,278	166	3,470,407
195– 1.5	3,470,067	368	3,470,352	249– 41	3,469,815		3,470,177	72	3,470,279	168	3,470,408
198– 22	3,469,670	393	3,470,353	118	3,469,816	249	3,470,178	90	3,470,280	180	3,470,409
25	3,469,671		3,470,354	183	3,469,817	.7	3,470,163	94	3,470,281	313– 37	3,470,410
30	3,469,672	505	3,470,355	250– 43.5	3,470,372	251	3,470,179	97	3,470,282	92	3,470,411
31	3,469,673	508	3,470,356	71.5	3,470,373		3,470,180		3,470,283	237	3,470,412
54	3,469,674	220– 2.3	3,469,729	83.3	3,470,374		3,470,181	119	3,470,284	331	3,470,413
195	3,469,675	5	3,469,730	199	3,470,375	256.4	3,470,182	147	3,470,285	315– 12	3,470,414
201	3,469,676	26	3,469,731	202	3,470,376	.5	3,470,183	167	3,470,286	117	3,470,415
208	3,469,677	31	3,469,732	204	3,470,377	268	3,470,184	183	3,470,287	317– 2	3,470,416
232	3,469,678	89	3,469,733	211	3,470,378		3,470,185	210	3,470,288	4	3,470,417
200– 5	3,470,332		3,469,734		3,470,379	287	3,470,186	229	3,470,289	27	3,470,418
11	3,470,333	90	3,469,735	213	3,470,380	292	3,470,187	291	3,470,290	80	3,470,419
	3,470,334	115	3,469,736	218	3,470,381	293.4	3,470,188	292	3,470,291	101	3,470,420
38	3,470,335		3,469,737	219	3,470,382	294	3,470,189	310	3,470,199		3,470,421
42	3,470,336	221– 75	3,469,738		3,470,383	.7	3,470,190	266– 3	3,469,829	120	3,470,422
43	3,470,337	96	3,469,739	224	3,470,384	.8	3,470,191	4	3,469,831	125	3,470,423
46	3,470,338	222– 1	3,469,740	231	3,470,385	297	3,470,192	23	3,469,830	130	3,470,424
50	3,470,339	2	3,469,741	251–129	3,469,818	299	3,470,194	39	3,469,832	137	3,470,425
61.04	3,470,340	30	3,469,742	252– 8.1	3,470,094	307	3,470,195	267– 69	3,469,833	234	3,470,426
144	3,470,341	105	3,469,743	.55	3,470,096	308	3,470,196	271– 10	3,469,834		3,470,427
152	3,470,342	193	3,469,744	.9	3,470,095	309	3,470,197	54	3,469,835	318– 18	3,470,428
201– 33	3,470,068	399	3,469,745	33	3,470,097	.7	3,470,198	64	3,469,836		3,470,429
203– 2	3,470,069	400.12	3,469,746	47.5	3,470,098	314.5	3,470,200	272– 8	3,469,837		3,470,430
88	3,470,070	469	3,469,747	57	3,470,099		3,470,201	273– 1	3,469,838		3,470,431
204– 1	3,470,071	563	3,469,748	62.9	3,470,100	326.15	3,470,203	25	3,469,839	127	3,470,432
39	3,470,073	224– 4	3,469,749	67	3,470,101		3,470,204	26	3,469,840	138	3,470,433
55	3,470,074	225– 94	3,469,750	152	3,470,102	.16	3,470,205	54	3,469,841	146	3,470,434
67	3,470,075	226– 25	3,469,751	186	3,470,103	.5	3,470,202	95	3,469,842	176	3,470,435
130	3,470,076	56	3,469,752	188	3,470,104	327	3,470,206	102.2	3,469,843	227	3,470,436
148	3,470,077	62	3,469,753	301.4	3,470,106		3,470,207	105	3,469,844	308	3,470,437
159.14	3,470,078	68	3,469,754		3,470,107	340	3,470,208	134	3,469,845	312	3,470,438
.15	3,470,079	172	3,469,755	.6	3,470,108	345.8	3,470,209	176	3,469,846	331	3,470,439
180	3,470,080	177	3,469,756	316	3,470,109	346.2	3,470,211	274– 4	3,469,847	320– 6	3,470,441
181	3,470,072	227– 10	3,469,757	363.5	3,470,213	.3	3,470,214	41	3,469,848	25	3,470,440
206	3,470,081	120	3,469,758	455	3,470,105	347.4	3,470,212	42	3,469,849	321– 1.5	3,470,445
228	3,470,082	228– 20	3,469,759	254–137	3,469,819	349	3,470,210	277– 83	3,469,850	2	3,470,442
243	3,470,083	229– 14	3,469,760	172	3,469,820	397.3	3,470,215	85	3,469,851		3,470,443
206– 7	3,469,679	32	3,469,761	173	3,469,821		3,470,216	101	3,469,852		3,470,446
52	3,469,680		3,469,762	256– 25	3,469,822	.4	3,470,193	112	3,469,853	5	3,470,444
	3,469,681	33	3,469,765	65	3,469,823		3,470,217	124	3,469,854	7	3,470,447
56	3,469,682	44	3,469,763	259–178	3,469,824	.5	3,470,218	235	3,469,855	9	3,470,448
58	3,469,683		3,469,764	260– 2	3,470,110	413	3,470,219	279–119	3,469,856	11	3,470,449
59	3,469,684	51	3,469,766		3,470,111	429	3,470,220	280– 11.35	Re.26,670	16	3,470,450
63.2	3,469,685		3,469,767		3,470,112	.7	3,470,221		3,469,857	18	3,470,451
65	3,469,686	56	3,469,768	.5	3,470,113	.9	3,470,222	93	3,469,858		3,470,452
66	3,469,687	69	3,469,769		3,470,114	448	3,470,223	96.2	3,469,859	69	3,470,453
208–101	3,470,084	78	3,469,770		3,470,115		3,470,224	104.5	3,469,860	322– 20	3,470,454
138	3,470,090	230–114	3,469,771		3,470,116	.2	3,470,225	479	3,469,861	28	3,470,455
143	3,470,085	117	3,469,772		3,470,117	.8	3,470,226	285– 41	3,469,862	32	3,470,456
209	3,470,086	125	3,469,773		3,470,118	453	3,470,227	137	3,469,863	323– 22	3,470,457
321	3,470,087	234– 1	3,469,774		3,470,119		3,470,228	308	3,469,864		3,470,458
	3,470,088	235– 1	3,469,775	17	3,470,120	455	3,470,229	330	3,469,865		3,470,497
326	3,470,089	60	3,469,776	18	3,470,121	465.3	3,470,230	287– 20.924	3,469,866	52	3,470,459
209– 10	3,469,688	61.11	3,470,357	23	3,470,122	466	3,470,231	51	3,469,867	324– 34	3,470,460
80	3,469,689		3,470,358	28.5	3,470,123	471	3,470,232	52	3,469,868	43	3,470,461
102	3,469,690		3,470,359	29.6	3,470,124	473	3,470,233	54	3,469,869	58	3,470,462
133	3,469,691		3,470,360		3,470,125		3,470,234	58	3,469,870	61	3,470,463
166	3,469,692	92	3,470,361	.7	3,470,126		3,470,235	119	3,469,871	65	3,470,465
	3,469,693	101	3,469,777	33.6	3,470,127	479	3,470,236		3,469,872	68	3,470,464
255	3,469,694	137	3,469,778	37	3,470,128	482	3,470,237	189.36	3,469,873	72	3,470,466
403	3,469,695	150.4	3,470,362		3,470,129	486	3,470,238	292– 5	3,469,874	73	3,470,467
210– 10	3,470,091	.52	3,470,363		3,470,130		3,470,239	175	3,469,875	77	3,470,468
15	3,470,092	153	3,470,364	41	3,470,131	488	3,470,240	177	3,469,876	95	3,470,469
22	3,470,093	156	3,470,365	47	3,470,132		3,470,241	241	3,469,877	141	3,470,470
97	3,469,696	175	3,470,366		3,470,133	501.13	3,470,242	294– 19	3,469,878	142	3,470,471
132	3,469,697	183	3,470,367	67	3,470,135	502.5	3,470,243	106	3,469,879	325– 18	3,470,472

325– 30	3,470,473	331–113	3,470,496	338–162	3,470,519	340–173	3,470,541	346– 74	3,470,563	356– 4	3,469,919
51	3,470,474	333– 2	3,470,498	302	3,470,520		3,470,542	350–103	3,469,898	75	3,469,920
63	3,470,475	7	3,470,499	339– 8	3,470,521	174	3,470,543	123	3,469,899	102	3,469,921
120	3,470,476	80	3,470,500	14	3,470,522		3,470,544	203	3,469,900	106	3,469,922
304	3,470,477	335– 1	3,470,501	45	3,470,523		3,470,545	289	3,469,901		3,469,923
320	3,470,478	47	3,470,502	90	3,470,524		3,470,546	294	3,469,902		3,469,924
364	3,470,479	69	3,470,503	217	3,470,525		3,470,547	351– 1	3,469,903	122	3,469,925
400	3,470,480	78	3,470,504	246	3,470,526		3,470,548	36	3,469,904	247	3,469,926
470	3,470,481	83	3,470,505	256	3,470,527		3,470,549	352– 39	3,469,905	401– 95	3,469,927
329–102	3,470,482	170	3,470,506	265	3,470,528		3,470,550	72	3,469,906	122	3,469,928
160	3,470,483	174	3,470,507	276	3,470,529	237	3,470,551	225	3,469,907	424– 47	3,470,292
330– 14	3,470,484	216	3,470,508	340– 15.5	3,470,530	267	3,470,552	353– 98	3,469,909	84	3,470,293
21	3,470,485	229	3,470,509	82	3,470,531	268	3,470,553	117	3,469,910	89	3,470,294
30	3,470,486	230	3,470,510	146.1	3,470,532	274	3,470,554	355– 3	3,469,908	180	3,470,295
86	3,470,487	296	3,470,511	166	3,470,533	286	3,470,555		3,469,911	217	3,470,296
331– 4	3,470,488	337– 35	3,470,512		3,470,534	324	3,470,556	18	3,469,912	263	3,470,297
78	3,470,489	86	3,470,513		3,470,535	343–106	3,470,557		3,469,913	273	3,470,298
94.5	3,470,490	89	3,470,514	171	3,470,536	718	3,470,558	32	3,469,914	285	3,470,299
	3,470,491	138	3,470,515	172.5	3,470,537	792.5	3,470,559	38	3,469,915	327	3,470,300
	3,470,492	335	3,470,516		3,470,538	815	3,470,560	51	3,469,916	331	3,470,301
	3,470,493	348	3,470,517		3,470,539	911	3,470,561	72	3,469,917	339	3,470,302
	3,470,494	396	3,470,518		3,470,540	346– 37	3,470,562	97	3,469,918	431– 1	3,469,929
111	3,470,495										

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D 1– 22	215,399	D14– 3	215,422	D26– 13	215,444	D44– 4	215,468	D52– 2	215,491	D81– 10	215,514
D 2–231	215,400		215,423		215,445	15	215,469	6	215,492	D85– 2	215,515
294	215,401		215,424		215,446		215,470		215,493	D87– 1	215,516
	215,402		215,425	14	215,449	26	215,471	10	215,494		215,517
D 8– 24	215,403		215,426	15	215,447	29	215,472	D54– 1	215,495	3	215,518
44	215,406	D15– 1	215,427	D29– 2	215,450	D47– 2	215,473	D56– 4	215,496	D88– 3	215,519
68	215,407	8	215,428	D33– 13	215,451	D48– 4	215,474	D60– 1	215,497	D90– 20	215,520
159	215,404		215,429		215,452	20	215,475	D61– 1	215,498		215,521
232	215,405	11	215,430	14	215,453		215,476		215,499		215,522
233	215,408	D16– 1	215,431	23	215,454		215,477	D64– 10	215,500		215,523
D 9– 9	215,409	D19– 1	215,432	26	215,455		215,478	11	215,501		215,524
39	215,410		215,433	30	215,456		215,479	12	215,502		215,525
47	215,411		215,434	D34– 15	215,457		215,480	D66– 1	215,503		215,526
119	215,412		215,435		215,458	32	215,481	D71– 1	215,504		215,527
219	215,413	D22– 22	215,436	D36– 2	215,460		215,482		215,505		215,528
240	215,414	D23– 17	215,437		215,461		215,483		215,506		215,529
256	215,415	19	215,438		215,462		215,484	D72– 1	215,507		215,530
275	215,416	77	215,448	8	215,459		215,485		215,508		215,531
289	215,417	98	215,439		215,463		215,486	D74– 5	215,509		215,532
D13– 1	215,418	106	215,440		215,464		215,487	9	215,510	D94– 3	215,533
	215,419	D26– 13	215,441	D37– 1	215,465	D49– 6	215,488	12	215,511	D96– 12	215,534
	215,420		215,442	D42– 7	215,466	14.1	215,489	D80– 9	215,512	D97– 2	215,535
D14– 3	215,421		215,443	D44– 1	215,467	17.2	215,490	D81– 4	215,513		

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Defensive Publications Applications

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17– 33.3	732,043	17– 75	753,705	28– 57	756,771	60– 27	785,025	60– 78.4	805,938
64	732,021	105.3	799,289	29– 25.12	737,915	77.5	673,959	71– 34	818,819

96– 85	822,017
109	823,507

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Design Patents

1	215,515	6	215,518	17	215,449	26	215,485	36	215,471	39	215,477
6	215,405		215,533		215,454		215,486		215,473		215,488
	215,412		215,535		215,456		215,487		215,475		215,489
	215,416	9	215,410		215,502		215,506		215,478		215,497
	215,424		215,413		215,514	27	215,400		215,491		215,499
	215,425		215,492		215,534		215,418		215,494		215,512
	215,426		215,522	19	215,509		215,505		215,496	42	215,408
	215,438		215,523	20	215,436		215,513	39	215,407		215,481
	215,440		215,524		215,474	29	215,411		215,415		215,521
	215,448		215,525	23	215,447		215,419		215,432	44	215,409
	215,453		215,526	24	215,429		215,420		215,433	45	215,421
	215,458		215,527		215,450		215,510		215,434		215,422
	215,468		215,528	25	215,417	32	215,406		215,435		215,423
	215,479		215,529		215,439	33	215,431		215,459	49	215,457
	215,480		215,530		215,465	36	215,399		215,460	51	215,441
	215,493		215,531		215,466		215,437		215,461		215,442
	215,500	12	215,467	26	215,428		215,451		215,462		215,444
	215,503		215,507		215,472		215,452		215,463		215,445
	215,508	17	215,404		215,482		215,455		215,464		215,446
	215,511		215,414		215,483		215,469		215,476	55	215,504
	215,517		215,443		215,484		215,470				

Plant Patents

6	2,923	6	2,924	6	2,925	6	2,926

Defensive Publications Applications

Reference is by Serial No. (Notice of Apr. 11, 1968, 849 O.G. 1221)

10	785,025	26	756,771	36	823,507	40	799,289	42	753,705	47	732,021
	805,938	36	822,017	39	737,915		818,819	47	673,959		732,043

U.S. DEPARTMENT OF COMMERCE

OFFICIAL GAZETTE of the UNITED STATES PATENT OFFICE

September 30, 1969 Volume 866 Number 5

TRADEMARKS

NOTICES

Orders for Copies of Foreign Patents and/or Published Applications

Some foreign countries are not publishing their patents and/or applications in numerical order. Since the U.S. Patent Office will begin supplying orders for copies of these foreign documents from master microfilm reels made up on weekly or other periodic publishing sequences, effective immediately all orders must include the country, patent or application number, and the publication date (if known) of the ordered document. Reference should be made to Section 901 05(a) of the Manual of Patent Examining Procedure to assist in determining the publication date of the commonly encountered foreign patents and applications.

W. R. ARMSTRONG,
Aug. 21, 1969. *Director, Office of Patent Services.*

Service by Publication

A petition to cancel the registrations identified below having been filed, and the notice of default of such proceedings sent by registered mail to each registrant at the last known address having been returned by the Post Office as undeliverable, notice is hereby given that unless the registrants listed herein, its assigns or legal representatives, shall enter an appearance within thirty days from the date of this publication, judgment will be entered against registrant and said registrations will be canceled.

Peterson & Sanborn, Geneva, Ohio, Reg. No. 852,782, Canc. No. 9366.

Grand Bag & Paper Co., Inc., Mount Vernon, N.Y., Reg. No. 540,330, Canc. No. 9377.

EDWIN L. REYNOLDS,
First Assistant Commissioner of Patents.

Termination of Daylight Saving Time

Attention is called to the Notice published in 861 O.G. 680, April 15, 1969, as to the operation of the Patent Office on Daylight Saving Time. This operation will terminate on October 26, 1969.

Trademark Suits

Notices under 15 U.S.C. 1116; Trademark Act of July 5, 1946

Reg. No. 155,951 (ALFRED DUNHILL (Signature)), Alfred Dunhill Limited, Tobacco, manufactured or unmanufactured; cigars and cigarettes; **Reg. No. 208,732** ("UNIQUE DUNHILL LIGHTER" AND DESIGN), same, Portable and packet cigar and cigarette lighters; **Reg. No. 527,207** ("DUNHILL"), same, Pyrophoric lighters; **Reg. No. 527,208**, same, Tobacco pipes, cigar and cigarette holders; **Reg. No. 534,705**, same, Tobacco pouches made of leather; **Reg. No. 539,892**, same, Raw tobacco, smoking and chewing tobacco, snuff, cigars, and cigarettes; **Reg. No. 540,389**, same, Billfolds, purses, handbags, document cases, and wallets, all being goods made of leather; **Reg. No. 541,949** (DUNHILL DOUBLE-CLARO), same, Tobacco products, particularly cigars; **Reg. No. 634,071** (ALFRED DUN-

CONDITION OF TRADEMARK APPLICATIONS AS OF JULY 31, 1969

Total number of applications awaiting action [excluding renewals and Sec. 12(c)]	14,039
Date of oldest new application	October 9, 1968
Date of oldest amended application (filing date)	April 1, 1966

C. M. WENDT, Director, Trademark Examining Operation

TRADEMARK EXAMINING DIVISIONS, EXAMINERS AND TRADEMARK CLASSES UNDER EXAMINATION	Oldest Application: New	Oldest Application: Amended
(I) L. J. BETTENDORF, Classes 2, 3, 4, 5, 7, 9, 10, 11, 27, 28, 30, 32, 33, 37, 38, 39, 40, 41, 42, 43, 50; Certification Marks, Classes A and B	2-17-69	5-3 -66
(II) F. H. WETHERBEE, Classes 1, 6, 15, 18, 45, 46, 47, 48, 49, 51, 52; Collective Membership Mark, Class 200	10-28-68	5-24-66
(III) P. S. BALL, Classes 19, 21, 23, 26, 31, 34, 35, 36	12-18-68	11-10-66
(IV) M. E. ABRAMSON, Classes 8, 12, 13, 14, 16, 17, 20, 22, 24, 25, 29, 44; Service Marks, Classes 100, 101, 102, 103, 104, 105, 106, and 107	10-9 -68	4-1 -66
Renewals (All Classes)	6-3 -69	----------
Sec. 12(c) Publications (All Classes)	6-16-69	----------

Applications filed during the month of July 1969—2,747

Registrations Issued ----------394—No. 877,587 to No. 877,980
Renewals Issued ----------150

The TRADEMARK SECTION of the OFFICIAL GAZETTE, issued weekly, is mailed under the direction of the Superintendent of Documents, Government Printing Office, Washington, D.C., 20402 to whom all subscriptions should be made payable and all communications addressed; subscription price, $20.50 per annum, foreign mailing $5.75 additional; single copies, 40 cents each.

PRINTED COPIES OF TRADEMARK REGISTRATIONS are furnished by the Patent Office for 20 cents each. Address orders to the Commissioner of Patents, Washington, D.C. 20231.

HILL), same, Men's neckties, **filed** Aug. 18, 1966, D.C., S.D.N.Y., Doc. 66–C–2607, *Alfred Dunhill of London, Inc.* v. *Dunhill Records, Ltd. et al.* Stipulation and order of discontinuance, June 18, 1969.

Reg. No. 203,732. (See Reg. No. 155,951.)

Reg. No. 382,071 (LIVING), International Latex Corporation, Girdles; **Reg. No. 604,907**, same, Girdles, gloves and brassieres; **Reg. No. 627,138**, same, All purpose cosmetic creams useful as a cleansing night or hand cream or foundation base; **Reg. No. 640,481**, same, Baby powder; **Reg. No. 703,495**, same, Novelty and toy dolls; **Reg. No. 780,400**, same, Baby pants; **Reg. No. 799,929**, same, Bathing caps; **Reg. No. 823,057**, same, Antiperspirants and deodorants, **filed** Jan. 26, 1967, D.C., S.D.N.Y., Doc. 67–C–343, *International Playtex Corporation* v. *Bendyne Ltd. et ano.* Stipulation and order of discontinuance, July 16, 1969.

Reg. No. 527,207. (See Reg. No. 155,951.)

Reg. No. 527,208. (See Reg. No. 155,951.)

Reg. No. 534,705. (See Reg. No. 155,951.)

Reg. No. 539,892. (See Reg. No. 155,951.)

Reg. No. 540,389. (See Reg. No. 155,951.)

Reg. No. 541,949. (See Reg. No. 155,951.)

Reg. No. 593,643 (LONDON), London Records, Inc., Grooved phonograph records; **Reg. No. 748,481**, same, Tape recordings, **filed** July 22, 1969, D.C.N.J. (Newark), Doc. 849–69, *London Records, Inc.* v. *Ultra Ristic Design Co., Inc. et al.*

Reg. No. 613,699 (EMBA), Mutation Mink Breeders Association, Mink fur pelts; **Reg. No. 670,052** (AUTUMN HAZE), same, **filed** Jan. 8, 1969, D.C., N.D. Ill. (Chicago), Doc. 69c39, *Emba Mink Breeders Association* v. *Irving D. Singer and Lester J. Dernberg, doing business as Dernberg-Singer Fur Co.* By stipulation dismissed without prejudice, July 14, 1969.

Reg. No. 604,907. (See Reg. No. 382,071.)

Reg. No. 627,138. (See Reg. No. 382,071.)

Reg. No. 634,071. (See Reg. No. 155,951.)

Reg. No. 640,481. (See Reg. No. 382,071.)

Reg. No. 670,052. (See Reg. No. 613,699.)

Reg. No. 703,495. (See Reg. No. 382,071.)

Reg. No. 732,863 (DIAMOND JIM'S), Diamond Jim Brady, Inc., Cocktail lounge and restaurant services; **Reg. No. 756,197**, same, whiskey, **filed** July 16, 1969, D.C., C.D. Calif. (Los Angeles), Doc. 69–1368–FW, *Diamond Jim Brady, Inc.* v. *James Purtell, doing business as Diamond Jim's and/or Diamond Jim.*

Reg. No. 748,481. (See Reg. No. 593,643.)

Reg. No. 756,197. (See Reg. No. 732,863.)

Reg. No. 759,958 (REPRESENTATION OF A KNOT), B. H. Bunn Company, Package tying machines; **Reg. No. 821,114** (KNOT DESIGN), same, Replacement parts for packaging tying machines, **filed** Dec. 19, 1967, D.C., S.D.N.D., Doc. 67–C–4966, *B. H. Bunn Company* v. *International Office Appliances, Inc.* Consent judgment, Nov. 15, 1968.

Reg. No. 780,400. (See Reg. No. 382,071.)

Reg. No. 792,877. (See Reg. No. 844,496.)

Reg. No. 799,929. (See Reg. No. 382,071.)

Reg. No. 821,114. (See Reg. No. 759,958.)

Reg. No. 823,057. (See Reg. No. 382,071.)

Reg. No. 844,496 (PACER), Rozel Industries, Inc., Billiard tables, pool tables, and cue sticks; **Reg. No. 844,497** (TROPHY), same; **Reg. No. 792,877** (THE HUSTLER), same, Billiard tables and pool tables, **filed** July 24, 1969, D.C., N.D. Ill. (Chicago), Doc. 69c1552, *Rozel Industries, Inc.* v. *Dynaball Company.*

Reg. No. 844,497. (See Reg. No. 844,496.)

Reg. No. 868,275 (FOTOMAT), Fotomat Corporation, Retail drive-in photographic supply store services; **Reg. No. 871,493** (FOTOMATE), same, **filed** July 25, 1969, D.C., C.D. Calif. (Los Angeles), Doc. 69–1433–CC, *Fotomat Corporation* v. *Fotofast Corporation et al.*

Reg. No. 871,493. (See Reg. No. 868,275.)

MARKS PUBLISHED FOR OPPOSITION

SECTION 1

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Application for the registration of these marks in more than one class has been filed as provided in section 30 of said act as amended by Public Law 772, 87th Congress, approved Oct. 9, 1962, 76 Stat. 769. Opposition under section 13 may be filed within thirty days of this publication. See Rules 2.101 to 2.105.

A separate fee of twenty-five dollars for each class opposed must accompany the opposition.

[NOTE: For publication of marks presented in applications for registration in one class, see section 2.]

SN 261,608. Westinghouse Air Brake Company, Chicago, Ill. Filed Dec. 29, 1966.

WABCO

Owner of Reg. Nos. 764,162, 800,542, and others.

Class 19—Vehicles

For Industrial Vehicles, or Parts Thereof—Namely, Shuttle Cars, Trucks for Kerf-Cutting Machines, Utility Trucks, and Cable Reel Truck (Int. Cl. 12).

First use Dec. 30, 1965.

Class 21—Electrical Apparatus, Machines, and Supplies

For Electrical Apparatus and Components—Namely, Armature Coils, Contactors and Circuit Breakers, Distribution Boxes, Lights, Motors, Motor Starters, Motor Controllers, Rheostats, Resistance Units, Relays, and Switches, or Parts Thereof (Int. Cls. 7 and 9).

First use Feb. 17, 1966.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Mining and Tunneling Machinery and Material Handling Machinery, or Parts Thereof—Namely, Cable Reels; Chip Mills for Wood and the Like; Air Compressors; Continuous Mining and Tunneling Machines; Belt, Chain and Shaker Conveyors; Conveyor Idlers and Rollers; Chain Conveyor Sub-Assemblies and Flights; Conveyor Loading Stations; Crawler Treads; Cutter Chains, Including Cutter Bits; Crushing Apparatus Including Jaw Crushers, Roll Crushers, Gyrating Single Roll Crushers; Crushing and Screening Plants, Portable and Stationary; Mobile Crawler-Tread-Mounted, Track-Mounted, Rubber-Tire-Mounted and Skid-Mounted Kerf-Cutting Machines for Mining and Tunneling, Including Cutter Bars, Cutter Chains and Cutter Bits; Bugdusters—Namely, Apparatus Associated With Kerf-Cutting Machines, for Transferring Cuttings Away From the Cutter Chain; Bucket Elevators; Feeding Devices—Namely, Apron Feeders, Conveyor Feeders, Plate Feeders; Hammermills; Feed Hoppers and Storage Bins; Hogs—Namely, Machines With Revolving Knife Cutters for Grinding up Wood, Scrap, Meat, Plastics and Other Materials; Mobile Crawler-Tread-Mounted, Track-Mounted and Rubber-Tire-Mounted Coal, Ore and Rock Loading Machines for Mining and Tunneling; Longwall Mining Machines; Vibrator Screens; Scrubber Screens; Sheet Metal Processing Equipment—Namely, Cleaning Machines, Scrubbers, Dryers, Brushing Units, Roller Levelers, Shears, Slitters, Coilers, Tension Reels, Blockers, Coil Openers, Stitchers, Pinch Roll Stands; Roof Supports and Jacks for Underground Mining; Drag Washers and Locomotives (Int. Cls. 7 and 12).

First use Nov. 30, 1965.

SN 262,654. Columbia Broadcasting System, Inc., New York, N.Y. Filed Jan. 17, 1967.



the learning center

Class 22—Games, Toys, and Sporting Goods

For School-Type Play Equipment (Int. Cl. 28).

Class 26—Measuring and Scientific Appliances

For Laboratory Teaching Apparatus—Namely, Counting Frames, Pattern Boards, Number Frames, Measurement Boards, Globes, and Geometric Shapes (Int. Cl. 9).

Class 38—Prints and Publications

For Educational Materials—Namely, Manuals, Books, Bulletins, and Magazines (Int. Cl. 16).

First use Feb. 28, 1953.

SN 274,025. Hitco, Gardena, Calif. Filed June 16, 1967.

HITCO

Owner of Reg. Nos. 685,612, 810,684, and others.

Class 1—Raw or Partly Prepared Materials

For Fiber Glass, Carbon and Graphite Materials in the Form of Bulk Fiber, Batt and Molded, Woven and Laminated Sheeting, Sleeving and Tape, for General Use in the Industrial Arts (Int. Cls. 1 and 17).

Class 7—Cordage

For Fiber Glass, Carbon and Graphite Cordage (Int. Cl. 22).

Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

For Fiber Glass, Carbon, and Graphite Cloth, Sold in the Bolt or Piece (Int. Cl. 24).

Class 43—Thread and Yarn

For Fiber Glass, Carbon and Graphite Thread and Yarn (Int. Cl. 23).

First use June 1, 1962.

SN 274,132. Solutec Corporation, Largo, Fla. Filed June 19, 1967.

SOLUTEC

Class 4—Abrasives and Polishing Materials

For Polish for Copper and Copper Alloys (Int. Cl. 3).

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Self-Contained Electro-Mechanical Cleaning Unit for the Removal of Contaminants From Plastic and Metal (Int. Cl. 7).

Class 52—Detergents and Soaps

For Aqueous Cleaning Solvents (Int. Cl. 1).

First use Nov. 3, 1966.

SN 274,479. Hitco, Gardena, Calif. Filed June 22, 1967.

HITCO

Owner of Reg. Nos. 685,612, 810,684, and others.

Class 1—Raw or Partly Prepared Materials

For Fiber Glass, Carbon and Graphite Materials in the Form of Bulk Fiber, Batt and Molded, Woven and Laminated Sheeting, Sleeving and Tape, for General Use in the Industrial Arts (Int. Cls. 1 and 17).

Class 7—Cordage

For Fiber Glass, Carbon and Graphite Cordage (Int. Cl. 22).

Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

For Fiber Glass, Carbon, and Graphite Cloth, Sold in the Bolt or Piece (Int. Cl. 24).

Class 43—Thread and Yarn

For Fiber Glass, Carbon and Graphite Thread and Yarn (Int. Cl. 23).

First use June 1, 1962.

SN 279,226. Stewart In-Fra-Red, Inc., Harvard, Ill. Filed Aug. 28, 1967.

STEWART

Owner of Reg. Nos. 729,803 and 789,121.

Class 100—Miscellaneous

For Operation of Food Commissaries From Which Applicant Delivers Partly Prepared Food to Retail Establishments (Int. Cl. 42).

First use on or about July 1, 1963.

Class 101—Advertising and Business

For Aiding in the Establishment and Operation of Food Commissaries for Others (Int. Cl. 35).

First use not later than Dec. 15, 1953.

SN 282,022. Clairol Incorporated, New York, N.Y. Filed Oct. 9, 1967.

GOLDEN ROD

Owner of Reg. No. 868,242.

Class 51—Cosmetics and Toilet Preparations

For Cologne, After-Shave Lotion, Hair Tonic, and Body Talc (Int. Cl. 3).

Class 52—Detergents and Soaps

For Men's Hair Shampoo (Int. Cl. 3).

First use Aug. 16, 1967.

SN 288,963. Dimitri Markoglu, d.b.a. Treo Automotive Export Co., Brooklyn, N.Y. Filed Jan. 16, 1968.



The drawing is lined for the color red, but no claim is made to color.

Class 19—Vehicles

For Front End Parts for Motor Vehicles—Namely, Coil Springs, Ball Joints, Control Arms and Forks (Int. Cl. 12).

Class 21—Electrical Apparatus, Machines, and Supplies

For Ignition Parts for Motor Vehicles—Namely, Starters and Spark Plugs (Int. Cl. 12).

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Transmission Parts for Motor Vehicles—Namely, Clutches, Clutch Plates and Release Bearings (Int. Cl. 12).

First use Jan. 1, 1961.

SN 291,229. Minit Burger Corporation, Nashville, Tenn. Filed Feb. 16, 1968.



The word "Burger" is disclaimed apart from the mark shown, as is the representation of a sandwich, per se.

Class 45—Soft Drinks and Carbonated Waters

For Carbonated Soft Drinks (Int. Cl. 32).

Class 46—Foods and Ingredients of Foods

For Cooked Sandwiches, Vegetables, Soups, Milkshakes, Coffee, Tea, and Milk (Int. Cls. 29 and 30).

Class 100—Miscellaneous

For Restaurant and Restaurant Carry-Out Services (Int. Cl. 42).

First use Mar. 9, 1967.
Subj. to Intf. with SN 285,231.

SN 294,660. Richardson-Merrell Inc., New York, N.Y. Filed Apr. 1, 1968.

LAVORIS

Owner of Reg. No. 53,922.

Class 18—Medicines and Pharmaceutical Preparations

For Preparation for Use as a Mouthwash and Gargle (Int. Cl. 5).

Class 51—Cosmetics and Toilet Preparations

For Breath Spray Used as a Breath Freshener (Int. Cl. 3).

First use at least as early as Apr. 1, 1901.

SN 294,768. Polychrome Corporation, Yonkers, N.Y. Filed Apr. 3, 1968.

PC

Owner of Reg. Nos. 542,664, 704,376 and others.

Class 6—Chemicals and Chemical Compositions

For Chemicals and Chemical Compositions for Photomechanical Films, Offset Platemaking and Pressrooms—Namely, Conditioners, Sensitizers, Desensitizers, Correction Fluids and Image Removers, Blanket Washes, Fountain Solutions, Developers, Developing Lacquers, Desensitizing and Plate Gums and Etchants (Int. Cl. 1).

First use January 1967.

Class 37—Paper and Stationery

For Direct Image Paper Offset Plates and Mats, Transfer Process Paper Plates, and Mimeograph Stencils (Int. Cl. 37).

First use January 1968.

Class 50—Merchandise Not Otherwise Classified

For Presensitized Offset Plates, Wipe-On Metal Offset Plates, Film Base Screen Tints, and Blankets and Dampener Covers for Offset Presses (Int. Cl. 7).

First use January 1968.

SN 295,257. Earl E. Seynak, d.b.a. Seynak Sign Letters, Detroit, Mich. Filed Apr. 9, 1968.

BURGLAREE-GLO

Class 16—Protective and Decorative Coatings

For Fluorescent Material in Liquid Form, for Coating Surfaces (Int. Cl. 2).

Class 50—Merchandise Not Otherwise Classified

For Fluorescent Material in Sheet Form (Int. Cl. 20).

First use Sept. 23, 1967.

SN 295,586. Robintech Incorporated, Mount Kisco, N.Y. Filed Apr. 15, 1968.

ROBINTECH

The graphical symbol comprises four rectangles and a circle arranged so that portions form a stylized lower case letter "r," for all orientations of the symbol.

Class 1—Raw or Partly Prepared Materials

For Plastic Tubing, Braid-Covered Tubing, and Tubing Covered With Plastic, for General Industrial Use (Int. Cl. 17).

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

For Metal Tubing in Either Rough or Finished Dimensions, Fluid Control Valves, Tubular Parts Formed of Wrapped or Braided Wire, Flexible Casing, Wire Strand, Armored or Covered Wire Strand, and Wire Mesh (Int. Cl. 6).

Class 21—Electrical Apparatus, Machines, and Supplies

For Electrical Circuit Modules, Logic Circuits, Power Supplies, Electrical Harnesses and Electrical Cables, Shielding for Electrical Conductors and for Radio-Frequency Isolation, Wiring Assemblies, Printed Circuitry and Parts Thereof; and Vibration Isolators for Electrical Equipment (Int. Cl. 9).

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Machinery Supports, Machinery Vibration Isolators, Machinery Shock Mounts and Vibration Absorption Metal Mesh for Machinery, Mechanical Remote Controls for Transmitting Translational and Rotational Movement From One Point to Another, Flexible Shafting, Flexible Shaft Couplings, Machinery Shaft Couplings, Universal Joints, and Angle Drives (Int. Cl. 7).

Class 26—Measuring and Scientific Appliances

For Eddy-Current Metal-Testing Equipment, and Parts Thereof, and Vibration Isolators for Scientific Appliances and Measuring Equipment (Int. Cl. 9).

First use August 1967; in the fall of 1966 as to "Robintech."

SN 296,414. Fortunoff Silver Sales of Westbury, Inc., Westbury, N.Y. Filed Apr. 24, 1968.

OXFORD HALL

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Stainless Steel Flatware and Cutlery—Namely, Knives, Forks and Spoons (Int. Cl. 8).

Class 28—Jewelry and Precious-Metal Ware

For Silver Plated Holloware (Int. Cl. 14).

First use July 14, 1967.

SN 296,481. Stewart-Warner Corporation, Chicago, Ill. Filed Apr. 25, 1968.



Owner of Reg. Nos. 148,635, 838,725, and others.

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

For Lubrication Fittings, Compressed Air Line Fittings, Couplings, Regulators, Adapters, Nozzles, Valves, and Hose Fittings and Couplings (Int. Cl. 6).

First use Apr. 15, 1968.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Lubricator Units for Industrial Vehicles and Machinery Comprising Pumps, Meters, Valves, Filters, Pump Hoistts, Spring-Wound Lubricant Hose Reels and Parts Thereof; Oil Mist Generators; Pumping and Pressurizing Systems for Transferring, Extruding, Spraying and Flowing Industrial Fluid and Semi-Fluid Materials and Parts Thereof; Air Compressors; Automotive Lifts; Tire Changing Machines; High Pressure Detergent Washing Systems and Car Underbody Coating Systems; Spring Tensioned Pay-Out and Take-Up Reels; and Portable Lubricating and Servicing Stations Comprising All Industrial Lubrication Equipment Listed Above (Int. Cl. 7).

First use Mar. 21, 1967.

Class 35—Belting, Hose, Machinery Packing, and Non-metallic Tires

For Hydraulic Hoses and Hose Assemblies (Int. Cl. 17).
First use Apr. 16, 1968.

SN 297,418. Kali-Chemie Aktiengesellschaft, Hannover, Germany. Filed May 6, 1968.

KALI-CHEMIE



Owner of German Reg. No. 838,614, dated Nov. 2, 1967.

Class 6—Chemicals and Chemical Compositions

For Aluminum Salts and Compounds; Barium Salts and Compounds; Fluorine and Fluorine Compounds; Sulfur and Sulfur Compounds; Alkali Metal Salts and Compounds; Inorganic Acids; Hydrogen Peroxide; Fluorinated Alkane Compounds Useful as Propellants; Foaming Agents, Refrigerants, and Solvents; Catalysts; Desiccants for Gases and Liquids; Inorganic Pigments; Silicon Compounds; and Boron Compounds (Int. Cls. 1 and 2).

Class 10—Fertilizers

For Potash Fertilizers, Thermal Phosphate Fertilizers, and Superphosphate Mixtures Used as Fertilizers (Int. Cl. 1).

Class 18—Medicines and Pharmaceutical Preparations

For Medicines and Pharmaceutical Preparations (Int. Cl. 5).

SN 299,130. The Hoover Company, North Canton, Ohio. Filed May 27, 1968.

HOOVER

Owner of Reg. Nos. 502,428, 779,256, and others.

Class 21—Electrical Apparatus, Machines, and Supplies

For Blenders, Broiler-Bakers, Fry Pans, Toasters, and Repair and Replacement Parts for Such Goods (Int. Cls. 7 and 11).
First use Jan. 12, 1965.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Can Openers, Floor Washer-Dryer Combinations, Knives, Knife Sharpener-Can Opener Combinations, Upholstery Shampooers Which Create and Apply Foam to the Surface Being Cletaned, and Repair and Replacement Parts for Such Goods (Int. Cls. 7 and 11).
First use July 11, 1963.

Class 24—Laundry Appliances and Machines

For Clothes Dryers Which Extract Liquid by Spinning the Clothes, Clothes Dryers Which Dry by Application of Heat, and Repair and Replacement Parts for Such Goods (Int. Cl. 7).
First use Feb. 18, 1963.

Class 29—Brooms, Brushes, and Dusters

For Shoe Polishers, Toothbrushes, and Repair and Replacement Parts for Such Goods (Int. Cls. 7 and 21).
First use Jan. 25, 1965.

Class 44—Dental, Medical, and Surgical Appliances

For Hair Dryers, and Repair and Replacement Parts Therefor (Int. Cl. 11).
First use July 12, 1963.

SN 300,180. F. W. Albion Laboratories, Inc., Ogden, Utah. Filed June 11, 1968.

METALOSATE

Class 10—Fertilizers

For Organic Chelated Nutrients for Plants (Int. Cl. 1).

Class 18—Medicines and Pharmaceutical Preparations

For Organic Chelated Nutrient Food Supplements for Livestock (Int. Cl. 5).

First use at least as early as Dec. 6, 1967.

SN 300,854. Venetian International, Inc., Dallas, Tex., assignee of Venetian Marble Company, Dallas, Tex. Filed June 19, 1968.

FORTIFIED

Class 12—Construction Materials

For Shower Walls, Window Sills (Int. Cl. 11).

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

For Lavatories, Bath Tubs (Int. Cl. 19).

Class 32—Furniture and Upholstery

For Counter Tops, Desk Tops and Bar Tops (Int. Cl. 20).

First use at least as early as June 1968.

SN 305,019. The Great Atlantic & Pacific Tea Company, Inc., New York, N.Y. Filed Aug. 13, 1968.



The drawing is lined for the color red. Owner of Reg. Nos. 501,830, 841,538, and others.

Class 1—Raw or Partly Prepared Materials

For Grass Seed (Int. Cl. 31).
First use Mar. 1, 1968.

Class 10—Fertilizers

For Fertilizer and a Weed and Feed Preparation for a Combination Turf Food and Herbicide (Int. Cl. 1).
First use Mar. 29, 1968.

SN 306,419. The Klinger Manufacturing Company, Ltd., Edmonton, London, England. Filed Sept. 3, 1968.

SOFLONS

Owner of Reg. No. 842,488.

Class 39—Clothing

For Men's, Women's and Children's Suits, Jackets, Slacks, Sweaters, Scarves, Neckties, Underwear, Swimsuits, Pajamas, Nightgowns, Nightshirts, and Dressing Gowns; Women's and Girls' Dresses, Skirts, Blouses, Cardigans, Gloves, Hats, and Lingerie; Men's and Boys' Shirts (Int. Cl. 25).

Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

For Textile Piece Goods for Making Into Table Linens and Bed Linens, Made of Man-Made Fibers, or Blends Thereof, (Int. Cl. 24).

First use June 18, 1968; in commerce June 18, 1968.

SN 306,721. Avon Products, Inc., New York, N.Y. Filed Sept. 6, 1968.

ANTICIPATION

Class 51—Cosmetics and Toilet Preparations

For Cologne, Perfume, and Dusting Powder (Int. Cl. 3).

Class 52—Detergents and Soaps

For Toilet Soap (Int. Cl. 3).

First use July 17, 1968.

SN 306,722. Avon Products, Inc., New York, N.Y. Filed Sept. 6, 1968.

EXCURSION

Class 51—Cosmetics and Toilet Preparations

For Cologne, Perfume, and Dusting Powder (Int. Cl. 3).

Class 52—Detergents and Soaps

For Toilet Soap (Int. Cl. 3).

First use July 17, 1968.

SN 306,724. Avon Products, Inc., New York, N.Y. Filed Sept. 6, 1968.

EPISODE

Class 51—Cosmetics and Toilet Preparations

For Cologne, Perfume, and Dusting Powder (Int. Cl. 3).

Class 52—Detergents and Soaps

For Toilet Soap (Int. Cl. 3).

First use July 17, 1968.

SN 306,725. Avon Products, Inc., New York, N.Y. Filed Sept. 6, 1968.

SORRENTO

Class 51—Cosmetics and Toilet Preparations

For Cologne, Perfume, and Dusting Powder (Int. Cl. 3).

Class 52—Detergents and Soaps

For Toilet Soap (Int. Cl. 3).

First use July 17, 1968.

SN 306,835. Johanna Farms, Inc., Flemington, N.J. Filed Sept. 9, 1968.

TROPICOOL

Class 45—Soft Drinks and Carbonated Waters

For Fruit Flavored Drinks Containing Water (Int. Cl. 32).

Class 46—Foods and Ingredients of Foods

For Prepared Refrigerated Tea and Orange Juice (Int. Cls. 30 and 32).

First use May 25, 1967.

SN 307,033. Lux Kabushiki Kaisha (Lux Corporation), Nishinari-ku, Osaka-shi, Osaka-fu, Japan. Filed Sept. 10, 1968.

LUXMAN

Owner of Japanese Reg. No. 774,462, dated Mar. 14, 1968.

Class 21—Electrical Apparatus, Machines, and Supplies

For Phono-Motors, Hi-Fi Output Transformers, Power Transformers, Moduration Transformers, Input Transformers, A.F. Choke Coils, B. Type A.F. Choke Coils, Nickel Core A.F. Transformers, Rotary Switches, Toggle Switches, Bakelite Moulded Tube Sockets, Bakelite Moulded Rotary Switches, Bakelite Moulded Knobs, Stereo Amplifier, Stereo Preamplifier, Stereo Tuner, Channel Selector, Speaker System and Parts (Int. Cl. 9).

Class 36—Musical Instruments and Supplies

For Record Players, Tape Recorders, and Pick Up Cartridge Arm (Int. Cl. 9).

SN 307,373. Direct Image Corporation, Monterey Park, Calif. Filed Sept. 16, 1968.

DICO

Owner of Reg. No. 715,171.

Class 5—Adhesives

For Spray Adhesive for Adhering Photographic Positives and Negatives to Acetate Sheets (Int. Cl. 1).
First use on or about Aug. 17, 1959.

Class 6—Chemicals and Chemical Compositions

For Fountain Solutions, Blanket Washes and Etch Solutions as Used in the Graphic Arts (Int. Cl. 1).
First use on or about Oct. 10, 1963.

Class 26—Measuring and Scientific Appliances

For Measuring Microscopes, Magnifiers, Linen Testers and Graduated Bottles (Int. Cl. 9).
First use in or about May 1964.

Class 50—Merchandise Not Otherwise Classified

For Lithographic Masking Sheets, Clean-Up Sheets for Ink Rollers and Dampening Roller Molleton Covers (Int. Cl. 16).
First use on or about Aug. 17, 1959.

SN 307,609. Hoover Ball and Bearing Company, Saline, Mich. Filed Sept. 18, 1968.

TOTE SYSTEMS

The word "Systems" is disclaimed apart from the mark as a whole. Owner of Reg. Nos. 517,618, 783,179, and others.

Class 2—Receptacles

For Bins for Storing and Transporting Granular Material in Bulk (Int. Cl. 6).
First use on or about July 1, 1949.

Class 19—Vehicles

For Vehicle Apparatus for Transporting Fertilizer—Namely, Tank Trailers and Truck Bodies Which Include Conveyor Equipment for Unloading Fertilizer Therefrom (Int. Cl. 12).
First use on or about Jan. 1, 1966.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Machinery Used in Connection With the Handling and Transporting of Bulk Material in Bins—Namely, Equipment for Filling Bins, Shaking Bins So As To Compact the Contents, Discharging Material From Bins, Manipulating Bins So As To Tumble the Contents, and the Like; Fertilizer Applicators and Spreaders Adapted To Carry and Apply Fertilizer to the Ground, and Parts Thereof (Int. Cl. 7).

First use on or about July 1, 1949.

SN 308,071. Ideal Industries, Inc., Sycamore, Ill. Filed Sept. 24, 1968.

IDEAL

Owner of Reg. Nos. 133,579, 825,947, and others.

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

For Plastic Screw Anchors (Int. Cl. 20).

Class 21—Electrical Apparatus, Machines, and Supplies

For Electrical Specialties—Namely, Electronic Dimmers; Electrical Apparatus—Namely, Fuse Clip Clamps, Fuse Reducers; Wire Connectors—Namely, Screw-On Type Connectors, Set Screw Connectors; Insulators; Electricians' Tools and Supplies—Namely, Connectors for Flexible Metallic Conduit (Int. Cls. 9 and 17).

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Maintenance Equipment—Namely, Commutator Undercutters, Mica Undercutters; Small Tools—Namely, Slotting Files, Slotter and Scraper; Wire Insulation Strippers—Namely, Brush Type Strippers, Rotary Type Strippers, Bench Type Strippers, Wire Skinners; Electricians' Tools and Supplies—Namely, Crimp Tool and Electricians' Pliers, Fish Tapes and Reels, Fish Tape Leaders and Balls, Pulling Elbows, Fuse Pullers (Int. Cl. 8).

Class 26—Measuring and Scientific Appliances

For Air Gap Gauges (Int. Cl. 9).

First use 1928.

SN 308,169. Marriott Corporation, Washington, D.C. Filed Sept. 25, 1968.

ROY ROGERS

"Roy Rogers" is a living individual, whose consent is of record.

Class 38—Prints and Publications

For Publications—Namely, Franchise Technical Manuals Used by Franchisees as Guides for the Operation of All Phases of Their Businesses (Int. Cl. 16).

First use May 24, 1968.

Class 45—Soft Drinks and Carbonated Waters

For Soft Drinks (Int. Cl. 32).

First use on or about Apr. 6, 1968.

Class 46—Foods and Ingredients of Foods

For Foods and Food Products—Namely, Roast Beef Sandwiches, French Fried Potatoes, Barbecue Sauce, Horseradish Sauce, Milk Shakes, Coffee, Tea, Hot Chocolate and Sugar (Int. Cls. 29 and 30).

First use on or about Apr. 6, 1968.

Class 100—Miscellaneous

For Serving of Foods and Beverages in Restaurants (Int. Cl. 42).

First use on or about Apr. 6, 1968.

Class 101—Advertising and Business

For Franchising Services—Namely, Rendering Technical Assistance and Services to Restaurant Operators in All Phases of Their Businesses (Int. Cl. 35).

First use on or about Apr. 1, 1968.

SN 309,134. Central Quality Industries, Inc., Polo, Ill. Filed Oct. 8, 1968.



Class 2—Receptacles

For Boxes and Cases for Packaging and Carrying, and Tool Boxes (Int. Cl. 20).

Class 19—Vehicles

For Wheeled Supports for Trash and Garbage Cans (Int. Cl. 12).

Class 21—Electrical Apparatus, Machines, and Supplies

For Utility Vacuum Cleaners (Int. Cl. 7).

Class 22—Games, Toys, and Sporting Goods

For Exercise Equipment Generally of the Rawing Machine and Bicycle Types (Int. Cl. 28).

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Spreaders, for Seed, Fertilizer, Pesticide and Herbicide (Int. Cl. 7).

First use September 1967.

SN 309,135. Red Diamond Supply Co., Inc., Luling, La. Filed Oct. 8, 1968.



The drawing is lined for the color red.

Class 6—Chemicals and Chemical Compositions

For Oxygen, Acetylene, and Propane Sold in Cylinders (Int. Cl. 1).

Class 39—Clothing

For Safety Caps and Gloves for Welding (Int. Cl. 9).

First use Nov. 14, 1966.

SN 310,016. The American Tobacco Company, New York, N.Y. Filed Oct. 21, 1968.

American Brands

Without waiver of its common law rights, applicant makes no claim of exclusive right to use the words "American Brands" apart from the mark as shown.

Class 45—Soft Drinks and Carbonated Waters

For Fruit Drinks Containing Water (Int. Cls. 29, 30, and 32).

Class 46—Foods and Ingredients of Foods

For Canned and Bottled Food Products—Namely, Fruits, Vegetables, Fruit Preserves, Fruit Juices, Vegetable Juices, Vegetable Drinks, Prepared Soups, Stews and Mixtures of Meat, Vegetable and Pastes, Canned and Frozen Seafood Products, Mixture of Tomato Juice and Clam Juice, Imitation Maple Flavored Syrup, and Apple Sauce (Int. Cl. 32).

First use Oct. 15, 1968.

SN 312,928. Barbara M. Wells, d.b.a. Teen Age Republicans, Washington, D.C. Filed Nov. 22, 1968.



Class 100—Miscellaneous

For Preparation and Distribution of Patriotic and Political Educational Literature To Promote the Cause of a Political Party (Int. Cl. 42).

Class 107—Education and Entertainment

For Scheduling and Conduct of Patriotic Lectures, Seminars, Conferences and Regional Workshops (Int. Cl. 41).

First use Dec. 15, 1965.

SN 312,929. Barbara M. Wells, d.b.a. Teen Age Republicans, Washington, D.C. Filed Nov. 22, 1968.

TEEN AGE REPUBLICANS

Class 100—Miscellaneous

For Preparation and Distribution of Patriotic and Political Educational Literature To Promote the Cause of a Political Party (Int. Cl. 42).

Class 107—Education and Entertainment

For Scheduling and Conduct of Patriotic Lectures, Seminars, Conferences and Regional Workshops (Int. Cl. 41).

First use Dec. 15, 1965.

SN 312,930. Barbara M. Wells, d.b.a. Teen Age Republicans, Washington, D.C. Filed Nov. 22, 1968.



Class 100—Miscellaneous

For Preparation and Distribution of Patriotic and Political Educational Literature To Promote the Cause of a Political Party (Int. Cl. 42).

Class 107—Education and Entertainment

For Scheduling and Conduct of Patriotic Lectures, Seminars, Conferences and Regional Workshops (Int. Cl. 41).

First use as early as May 30, 1968.

SN 312,948. Beaumont Design Group Incorporated, Monterey Park, Calif. Filed Nov. 25, 1968.

FUNKY

Class 28—Jewelry and Precious-Metal Ware

For Bead Necklaces, Pendants, Rings and Earrings (Int. Cl. 14).

First use Nov. 12, 1968.

Class 38—Prints and Publications

For Decorative Vinyl Decals (Int. Cl. 16).

First use June 25, 1968.

SN 313,859. Marquette Corporation, St. Paul, Minn. Filed Dec. 9, 1968.

MARQUETTE

Owner of Reg. Nos. 505,250, 851,634, and others.

Class 21—Electrical Apparatus, Machines, and Supplies

For Battery Chargers and Boosters (Int. Cl. 9).

First use Feb. 15, 1965; June 15, 1918, as to "Marquette" in other forms.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Frame Straighteners for Automotive Vehicles (Int. Cl. 7).

First use June 2, 1967.

Class 34—Heating, Lighting, and Ventilating Apparatus

For Electrical Welders and Parts Thereof, Gas Welding and Cutting Equipment—Namely, Torch Handles and Tips, Cutting Attachments With Cutting Tips, Hose, and Gas Regulators, and Welding Rods (Int. Cls. 6 and 9).

First use Mar. 1, 1965.

SN 314,511. Athena Products Corporation, d.b.a. Athena Corporation, Dallas, Tex. Filed Dec. 16, 1968.



Class 37—Paper and Stationery

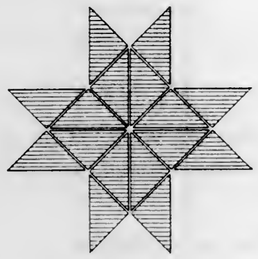
For Paper Shelf Linings (Int. Cl. 16).

Class 50—Merchandise Not Otherwise Classified

For Plastic Shelf Linings (Int. Cl. 20).

First use on or about Dec. 8, 1967.

SN 317,484. The Regents of the University of Minnesota, Minneapolis, Minn. Filed Jan. 27, 1969.



The drawing is lined for blue but no claim is made to color.

Class 38—Prints and Publications

For Catalogs, Brochures, Booklets, Leaflets, Bulletins, Manuals, Reports, Magazines, Newsletters, Pamphlets, and Journals (Int. Cl. 16).

Class 100—Miscellaneous

For Research Services in the Health Sciences (Int. Cl. 42).

Class 107—Education and Entertainment

For Educational Services—Namely, Conducting Classes, Seminars, and Lectures in the Health Sciences (Int. Cl. 41).

First use on or about May 15, 1968.

SN 318,353. W. R. Grace & Co., New York, N.Y. Filed Feb. 5, 1969.



Class 6—Chemicals and Chemical Compositions

For Chemical Used for Etching Printing Plates (Int. Cl. 1).
First use Oct. 22, 1968.

Class 26—Measuring and Scientific Appliances

For Photocomposing Apparatus for Preparing Flexible Printing Plates Comprising Camera Unit, Exposure Unit and Processing Unit (Int. Cl. 9).
First use Oct. 28, 1968.

Class 50—Merchandise Not Otherwise Classified

For Printing Plates and a Coated Film Used as a Backing for Printing Plates (Int. Cl. 7).
First use Oct. 31, 1968.

SN 321,601. Sprague & Carleton, Inc., Houston, Tex. Filed Mar. 13, 1969.

ACCENTS AMERICANA

Class 21—Electrical Apparatus, Machines, and Supplies

For Electric Lamps (Int. Cl. 11).

Class 34—Heating, Lighting, and Ventilating Apparatus

For Candlesticks (Int. Cl. 21).

Class 50—Merchandise Not Otherwise Classified

For Statuary (Int. Cl. 20).

First use Dec. 11, 1967.

SN 325,425. Associated Spring Corporation, Bristol, Conn. Filed Apr. 24, 1969.

BOWMAN

Owner of Reg. Nos. 541,630, 555,216, and 666,233.

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

For Fastener Hardware—Namely, Bolts, Screws, Nuts, Lock Nuts, and Washers; Cap Screws, Marine Hardware and Accessories, Fasteners, Studs, Bolts, Screws and Nuts, Washers, Clips and Cotter Pins, Hardware Cabinets, Fuel Lines, Fuel Line Fittings and Valves, and Shear Pins; and Canvas Fastening Equipment—Namely, Eyelets, Studs, Buttons, and Sockets; Cap Screw Type Bolts for Motor Vehicles and Off-The-Road Equipment (Int. Cl. 6).
First use 1935.

Class 19—Vehicles

For Service and Replacement Parts for Automotive and Aviation Vehicles—Namely, Windshield Wipers and Parts Therefor, Steering Gear Mechanism and Component Parts Thereof, Radiator and Gasoline Tank Caps, Running Board Moldings, Shackles and Component Parts Thereof; Shock Absorber Parts—Namely, Link Pins and Assemblies, Tie Rod Ends, Spindle and King Pin Assemblies, Wheel Weights, Radiator Hose and Windshield Tubing Fitted With End Connectors, U-Bolts, Wheel Studs, Window Channels, Window Regulators, Rubber Grommets for Pedal Aperture in Floor Boards, and Brake Shoes; Marine Steering Apparatus and Parts Thereof, Rope and Cable Clamping, Tightening, Guiding and Clipping Equipment, Deck Hooks and Sockets, Step Plates, Transom Pads, Oar Locks, Cleats, Chocks and Handles (Int. Cl. 12).
First use 1935.

Class 21—Electrical Apparatus, Machines, and Supplies

For Electrical Service and Replacement Automotive Parts—Namely, Battery Bolts, Cables, and Ground Straps; Motor and Generator Parts—Namely, Brushes, Bearings, and Regulators; Ignition System Parts—Namely, Distributor Rotors, Caps and Points, Condensers and Spark Plug Terminals, Wiring Assemblies and Terminals, Switches, Fuses, Lamp Assemblies; Marine Electrical Switches, Lights, Pilot Lamps, Deck Lamps, Wire and Wire Terminals, Fuses, Points and Condensers, Electric Horns, Switch Plates, Fuse Blocks, Electrical Contacts and Connectors (Int. Cls. 9 and 11).
First use 1935.

Class 22—Games, Toys, and Sporting Goods

For Water Skis and Related Accessories (Int. Cl. 28).
First use Sept. 1, 1957.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Structural and Replacement Parts for Automotive and Aviation Vehicles—Namely, Connecting Rod Bearings, Pistons, Carburetors and Parts Thereof, Fuel Pumps, Poppet Valves for Internal Combustion Engines, Fan Blades, Generator Pulleys, Mufflers and Clutch Springs; Marine Resinous Pulley Blocks and Screw Drivers (Int. Cls. 7, 8, and 12).
First use 1935.

SECTION 2

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Opposition under section 13 may be filed within thirty days of publication. See Rules 2.101 to 2.105.

A fee of twenty-five dollars must accompany the opposition.

[NOTE: For publication of marks presented in a combined application for registration in more than one class, see section 1.]

Class 1—Raw or Partly Prepared Materials

SN 271,010. J. L. Prescott Company, Passaic, N.J. Filed May 9, 1967.

VULCANOL

For Mold Release in the Form of a Graphite Emulsion for Foundry Use (Int. Cl. 1).
First use at least as early as Nov. 2, 1905.

SN 299,555. J. Freeman, Inc., Dorchester, Mass. Filed June 3, 1968.

WIREX

For Plastic Sheet Material Embedded With Wire for Use as a Glazing Material and for Use as a Protective Screen for Signs (Int. Cl. 17).
First use at least as early as Apr. 24, 1968.

SN 303,799. The International Synthetic Rubber Company, Southampton, England. Filed July 29, 1968.

INTENE

Owner of British Reg. No. 829,401, dated Jan. 8, 1962.
For Synthetic Rubber (Int. Cl. 17).

SN 310,354. Nichols & Company, Inc., Boston, Mass. Filed Oct. 23, 1968.

HYSPIN

For Wool Top (Int. Cl. 22).
First use Aug. 8, 1968.

SN 312,694. Betty Lou Raskin, Baltimore, Md. Filed Nov. 20, 1968.

HOLEY SMOKE

For Small Plastic Particles for General Use (Int. Cl. 1).
First use Oct. 31, 1968.

SN 315,122. Tri-Point Industries, Inc., Commack, N.Y. Filed Dec. 23, 1968.

TRI-TUBE

For Precision Extruded Tubing for General Use in the Industrial Arts (Int. Cl. 17).
First use Dec. 5, 1968.

SN 315,589. Phillips Petroleum Company, Bartlesville, Okla. Filed Jan. 2, 1969.



Applicant disclaims the word "Petroleum" apart from the mark as shown. The drawing is lined for the color red. Owner of Reg. Nos. 756,604, 758,603, and 864,419.
For Synthetic Rubber (Int. Cl. 17).
First use Mar. 23, 1968.

SN 323,634. Dow Badische Company, Williamsburg, Va. Filed Apr. 4, 1969.

FIBRISSA

For Synthetic Textile Fiber (Int. Cl. 22).
First use Mar. 27, 1969.

SN 323,635. Dow Badische Company, Williamsburg, Va. Filed Apr. 4, 1969.

FILACE

For Synthetic Textile Fiber (Int. Cl. 22).
First use Mar. 27, 1969.

SN 323,636. Dow Badische Company, Williamsburg, Va. Filed Apr. 4, 1969.

ENVIRA

For Synthetic Textile Fiber (Int. Cl. 22).
First use Mar. 27, 1969.

SN 323,637. Dow Badische Company, Williamsburg, Va. Filed Apr. 4, 1969.

CONTEGO

For Synthetic Textile Fiber (Int. Cl. 22).
First use Mar. 27, 1969.

SN 323,640. Dow Badische Company, Williamsburg, Va. Filed Apr. 4, 1969.

FABRISE

For Synthetic Textile Fiber (Int. Cl. 22).
First use Mar. 27, 1969.

Class 3 — Baggage, Animal Equipments, Portfolios, and Pocketbooks

SN 317,180. Nicholas M. Brecher, Lawrence, N.Y. Filed Jan. 22, 1969.

Brevoni

For Wallets, Purses, Attache Cases, Brief Cases, Travelling Bags, Carrying Cases and Utility Cases for Use in Travelling (Int. Cl. 18).
First use June 14, 1968.

Class 4 — Abrasives and Polishing Materials

SN 297,871. Meguiar Enterprises, Pasadena, Calif. Filed May 10, 1968.

COMPETITION FINISH

The word "Finish" is disclaimed apart from the mark as shown.
For Polish and Finish Preserver of the Type Which Applies a Protective Coating, for Use on Painted Surfaces of Automobiles and on Fiberglass (Int. Cl. 3).
First use Apr. 11, 1968.

SN 312,766. P. B. Gast & Sons, Inc., Grand Rapids, Mich. Filed Nov. 21, 1968.

COMMANDO

For Protective and Polishing Preparations for Floors (Int. Cl. 3).
First use on or about Sept. 1, 1968.

SN 326,710. American Home Products Corporation, New York, N.Y. Filed May 8, 1969.

WIZARD

Owner of Reg. Nos. 106,820, 743,975, and others.
For Floor Wax (Int. Cl. 3).
First use June 14, 1968.

Class 5 — Adhesives

SN 316,657. S. S. Kresge Company, Detroit, Mich. Filed Jan. 15, 1969.

Kmart

For Pressure Sensitive Tape (Int. Cl. 16).
First use on or before Dec. 4, 1968.

SN 322,403. Borden, Inc., New York, N.Y. Filed Mar. 21, 1969.

HEAVY GRIP

For Adhesive Cement (Int. Cl. 1).
First use on or about Feb. 20, 1968.

SN 325,309. Polymer Industries, Inc., Springdale, Conn. Filed Apr. 23, 1969.

SNAK-FLEX

For Adhesive for Use in Laminations Used in Packaging of Foods Such as, Cellophane, Coated and Uncoated Oriented Polypropylenes, and Coated and Uncoated Glassines (Int. Cl. 1).
First use Mar. 21, 1969.

Class 6 — Chemicals and Chemical Compositions

SN 280,444. Madison Chemical Corporation, Maywood, Ill. Filed Sept. 15, 1967.

SFS TRIANGLES

The word "Triangles" is disclaimed apart from the mark as a whole.
For Germicidal-Deodorant for Urinals (Int. Cl. 5).
First use Apr. 18, 1967.

SN 296,012. First Mississippi Corporation, Jackson, Miss. Filed Apr. 19, 1968.



Applicant's mark is a fanciful single letter "f."
For Industrial Chemicals—Namely, Ammonia, and Ammonia Products, Said Products Being Urea and Nitrogen Substituted Aromatic Compounds, Namely, Nitrobenzene, Aniline, Di-Phenylamine, o-Nitrotoluene, n-Nitrotoluene, p-Nitrotoluene and o-Toluidine (Int. Cl. 1).
First use Mar. 26, 1968.

SN 297,096. Shelco Industries, Fresno, Calif. Filed May 1, 1968.

BURNT PINE

For Scented Deodorant Matches (Int. Cl. 5).
First use Sept. 15, 1967.

SN 297,324. Velsicol Chemical Corporation, Chicago, Ill. Filed May 3, 1968.

GOLD CREST PROTECTION PEST CONTROL CHEMICALS

All of the words shown on the drawing except "Gold Crest" are disclaimed apart from the mark.
For Insecticides (Int. Cl. 5).
First use Sept. 24, 1967.

SN 297,804. Rhodia Inc., New Brunswick, N.J. Filed May 9, 1968.

RHONOX

For Selective Herbicides (Int. Cl. 5).
First use Mar. 1, 1968.

SN 298,361. Conrad Sovig Co., Inc., San Francisco, Calif. Filed May 16, 1968.

KONKURE

For Chemical Solution Applied to Concrete Slabs or Walls Following the Removal of the Forms for Curing, Sealing, Hardening, Dust-Proofing and Other Protection of Concrete (Int. Cl. 1).
First use Apr. 20, 1968.

SN 298,525. American Heritage Products, Inc., Portage, Ind. Filed May 20, 1968.

ORIENTAL SPICE

For Air Freshener (Int. Cl. 5).
First use Feb. 15, 1968.

SN 299,453. Stanley E. Fleming, Miami, Fla. Filed May 31, 1968.

Exclusive! The Best World Over SEM CHEMICAL SPECIALTIES

The phrase "The Best World Over" and the words "Exclusive!" and "Chemical Specialties" are disclaimed.
For Fire Extinguishing Chemical (Int. Cl. 1).
First use September 1963.

SN 306,255. Masanori Konaka, Chuo-ku, Tokyo, Japan. Filed Aug. 29, 1968.

TOKYO

FUJI

The word "Tokyo" means "eastern capital" and the word "Fuji" is the name of a mountain.
For Incense (Int. Cl. 3).
First use Sept. 1, 1961; in commerce Sept. 1, 1962.

SN 308,529. Pfister Chemical Inc., Ridgefield, N.J. Filed Sept. 30, 1968.



The drawing is lined for the color red, but no claim is made for color. Owner of Reg. No. 523,177.
For Organic Chemical Intermediates for Pharmaceuticals, Clinical Reagents for Laboratory Use, and Germicides in Bulk Form (Int. Cls. 1 and 5).
First use on or about Nov. 10, 1966.

SN 310,286. Pharmacia Laboratories, Inc., Piscataway, N.J. Filed Oct. 23, 1968.

PHADEBAS

For Chemical Substances Useful for the Quantitative Determination of a Variety of Biologically-Active Substances, Such Determinations Being Useful Both in Research and in the Clinical Diagnosis of Disease (Int. Cl. 1).
First use Oct. 9, 1968.

SN 310,579. Monsanto Company, St. Louis, Mo. Filed Oct. 25, 1968.

FINAL

For Rodenticide (Int. Cl. 5).
First use Sept. 19, 1968.

SN 311,628. Thomson Research Associates Limited, Toronto, Ontario, Canada. Filed Nov. 7, 1968.

STERI-SEPTIC

Owner of Reg. No. 804,542.
For Chemical Germicidal Compositions for Rendering Materials Self-Sterilizing (Int. Cl. 5).
First use 1968; in commerce Oct. 31, 1968.

SN 314,653. Calbiochem, Los Angeles, Calif. Filed Dec. 9, 1968.

CALATOMIC

For Radioactive Compounds Consisting in Whole or in Part of Unstable Isotopes and Intended for Use in Biological Research or Medicine (Int. Cl. 1).
First use Feb. 1, 1968.

SN 322,460. Norris Industries, Inc., Los Angeles, Calif. Filed Mar. 21, 1969.

ULTRAFOAM

For Foam Liquid Concentrate for Use in Extinguishing Fires (Int. Cl. 1).
First use Jan. 30, 1969.

Class 11 — Inks and Inking Materials

SN 314,503. Standard Products Corporation, New Rochelle, N.Y. Filed Dec. 16, 1968.

STANDARD PRODUCTS S P

Owner of Reg. No. 442,658.
For Ink Transfer Impression Making Fabrics and Films (Int. Cl. 16).
First use 1950.

Class 12 — Construction Materials

SN 305,083. Texas Instruments Incorporated, Dallas, Tex. Filed Aug. 13, 1968.

TI-GUARD

For Composite or Clad Metal Sheet Materials for Use in Building Construction (Int. Cl. 6).
First use Apr. 12, 1965.

SN 305,242. H. K. Porter Company, Inc., Pittsburgh, Pa. Filed Aug. 15, 1968.

PORTER RAM

The word "Ram" is disclaimed apart from the mark as shown. Owner of Reg. Nos. 655,459 and 826,335.
For Plastic Refractory (Int. Cl. 19).
First use May 10, 1968.

SN 312,825. Twin Pane Corporation, Detroit, Mich. Filed Nov. 21, 1968.

TWIN PANE

Owner of Reg. No. 747,379.
For Metal Banded Insulating Glass Units Using Two or More Panes To Enclose a Sealed Air Space (Int. Cl. 19).
First use May 4, 1959.

SN 314,827. Sonneborn Building Products, Inc., Des Plaines, Ill. Filed Dec. 19, 1968.

FRICTEX

For Surface Hardening Agent for Concrete (Int. Cl. 19).
First use at least as early as Jan. 1, 1950.

SN 315,414. Isococ GmbH, Oberwesel, Germany. Filed Dec. 30, 1968.

PRENOTEKT

Owner of German Reg. No. 849,318, dated Mar. 13, 1968.
For Bitumen and Rubber Compounds for the Protective Coating, Insulation and Sealing of Surfaces, Especially Spray-On Layers of Bitumen and Rubber Compounds (Int. Cls. 17 and 19).

SN 318,743. Bank Consultants, Inc., Indianapolis, Ind. Filed Feb. 10, 1969.

PORT-A-Teller

For Mobile Bank Teller's Windows and Cages (Int. Cl. 6).
First use July 1967.

SN 319,799. Atlos Rubber, Inc., Los Angeles, Calif. Filed Feb. 24, 1969.

OVER-FLEX

For Rubber Grindings for Use With Asphalt in Paving Compositions, and Prefabricated Asphalt-Rubber Paving Patches (Int. Cl. 19).
First use January 1969.

SN 322,136. U.S. Plywood-Champion Papers Inc., New York, N.Y. Filed Mar. 19, 1969.

HEATH

For Wood, Lumber, and Fibrous Products, i.e., Plywood for Use in Home, Office and Commercial Establishments, and in the General Construction, and Furniture Fields (Int. Cl. 19).
First use in or about December 1968.

SN 324,729. Louisville Cement Company, Louisville, Ky. Filed Apr. 16, 1969.

BRIXMENT-IN-COLOR

Owner of Reg. No. 117,169.
For Mortar Cement for Building Materials (Int. Cl. 19).
First use at least as early as Feb. 26, 1969; at least as early as July 16, 1916, as to "Brixment."

Class 13 — Hardware and Plumbing and Steam-Fitting Supplies

SN 273,314. Sargent Industries, Inc., Huntington Park, Calif. Filed June 7, 1967.

SHURVOL

For Control Valves for Oil Well Equipment (Int. Cl. 7).
First use Jan. 25, 1967.

SN 313,213. Republic Steel Corporation, Cleveland, Ohio. Filed Nov. 27, 1968.

Blue Spiral

For Hydraulic Pipe and Tubing (Int. Cl. 6).
First use Oct. 22, 1968.

SN 315,249. Oneida Ltd., Oneida, N.Y. Filed Dec. 26, 1968. Owner of Reg. No. 596,716.

NORTHLAND

For Hollow Tableware Made of Non-Precious Metal (Int. Cl. 21).
First use Oct. 2, 1968.

SN 318,345. The Virtis Company, Inc., Gardiner, N.Y. Filed Feb. 4, 1969.

QUICKSEAL

For Valves (Int. Cl. 6).
First use Mar. 14, 1968.

SN 318,801. Henry F. McCan, Ontario, Calif. Filed Feb. 10, 1969.

Safe-T-Shield S T S

For Garage Door Spring Safety Shields (Int. Cl. 6).
First use Apr. 16, 1967.

SN 318,875. Rudolph Parisien, d.b.a. Capital Fence & Wire, Ottawa, Ontario, Canada. Filed Nov. 13, 1968.

SLINKY

Owner of Canadian Reg. No. 159,088, dated Nov. 1, 1968.
For Securing Devices To Secure Fence Fabric to Fence Posts and Fence Framing (Int. Cl. 6).

SN 319,169. Kennedy Valve Mfg. Co., Inc., Elmira, N.Y. Filed Feb. 14, 1969.

SQUARESEAL

For Tapping Sleeve (Int. Cl. 6).
First use Jan. 20, 1969.

SN 319,317. KMS Industries, Incorporated, Ann Arbor, Mich. Filed Feb. 17, 1969.

For All Purpose Plastic Fastening Device (Int. Cl. 20).
First use May 27, 1968.

SN 319,609. Keystone Brass & Rubber Co. Inc., Hatboro, Pa. Filed Feb. 19, 1969.

EXTRA TOUCH

For Prefabricated Trim for Use on Doors, Cabinets, and the Like and for Decorating Furniture and the Like (Int. Cl. 6).
First use on or about Jan. 14, 1969.

Class 14 — Metals and Metal Castings and Forgings

SN 303,508. Catalyst International, Inc., Wilmington, Del. Filed July 24, 1968.

The mark is a configuration of the letters "CI."
For Nickel Aluminum Powder (Int. Cl. 6).
First use on or about Feb. 10, 1965.

SN 306,166. Patents & Investments Limited, Bushbury, Wolverhampton, England. Filed Aug. 28, 1968.

UNIGON

Owner of British Reg. No. 900,503, dated Oct. 15, 1966.
For Unwrought and Partly Wrought Common Metals, in the Form of: Ingots, Pigs, Bars, Billets, Slabs, Rods, Hoops, Sheets, Coils, Plates, Strips and Sections All Being Goods of Common Metal; and Wire of Common Metal (Not Insulated and Not Being Fuse Wire) (Int. Cl. 6).

SN 325,333. Bergische Stahl-Industries, Remscheid, Germany. Filed Apr. 23, 1969.

BSI

Owner of German Reg. No. 469,007, dated Apr. 24, 1924.
For Raw and Partly Worked Base Metals (Int. Cl. 6).

Class 15 — Oils and Greases

SN 305,133. The Hodson Corporation, Chicago, Ill. Filed Aug. 14, 1968.

HODSON

For Industrial Oils and Greases (Int. Cl. 4).
First use August 1935.

SN 312,553. Air Instruments, Inc., d.b.a. Hall, Inc. Surgical Systems, Santa Barbara, Calif. Filed Nov. 19, 1968.

HALL

Owner of Reg. No. 774,676.
For Lubricant for Tools and Accessories Used in the Surgical and Dental Field (Int. Cl. 4).
First use Aug. 15, 1968.

SN 319,470. National Service Industries, Inc., d.b.a. Zep Manufacturing Company, Atlanta, Ga. Filed Feb. 18, 1969.

ZEP-AID

Owner of Reg. Nos. 681,037, 696,197, and others.
For Lubricant and Release Agent Preparation (Int. Cl. 4).
First use May 27, 1963.

SN 319,471. National Service Industries, Inc., d.b.a. Zep Manufacturing Company, Atlanta, Ga. Filed Feb. 18, 1969.

ZEPAR

Owner of Reg. Nos. 681,037, 696,197, and others.
For Lubricant and Release Agents Preparation (Int. Cl. 4).
First use Jan. 2, 1966.

SN 321,620. Antar Industries, Inc., New York, N.Y. Filed Mar. 13, 1969.

ANTAR-U.S.A.

For Motor Oils and Lubricants (Int. Cl. 4).
First use May 13, 1968.

SN 322,784. Diamond Shamrock Corporation, Cleveland, Ohio. Filed Mar. 26, 1969.

POWER MASTER

For Diesel Fuel (Int. Cl. 4).
First use Mar. 13, 1969.

Class 16 — Protective and Decorative Coatings

SN 311,690. Mid-State Materials Co., Inc., Chattanooga, Tenn. Filed Nov. 8, 1968.



The drawing is lined for the color blue.
For Chemical Non-Oily Emulsion Preparation Used on Surfaces To Prevent Asphalt From Sticking Thereto (Int. Cl. 1).
First use Sept. 24, 1968.

Class 18 — Medicines and Pharmaceutical Preparations

SN 286,526. Immuno (Canada) Ltd., Montreal, Quebec, Canada. Filed Dec. 8, 1967.

IMMUNO

Owner of Canadian Reg. No. 136,995, dated Aug. 14, 1964.
For Medicines and Pharmaceutical Preparations for Both Human and Veterinary Use (Int. Cl. 5).

SN 296,989. St. Aubrey Associates, Inc., New York, N.Y. Filed Apr. 30, 1968.

EVERFREE

For Liquid Veterinary Pharmaceutical Preparation—Namely, a Vitamin and Mineral Food Supplement for Dogs and Cats (Int. Cl. 5).
First use Apr. 23, 1968.

SN 322,940. American Home Products Corporation, New York, N.Y. Filed Mar. 27, 1969.

IODOCIDE

For Veterinary Medicinal Preparation—Namely, Germicides and Disinfectants (Int. Cl. 5).
First use Jan. 23, 1968.

Class 19 — Vehicles

SN 312,898. Lake Shore, Inc., Iron Mountain, Mich. Filed Nov. 22, 1968.

TELETRAM

For Motorized Mine Vehicle for Hauling Ore (Int. Cl. 12).
First use February 1966.

SN 315,451. Travco Corporation, Brown City, Mich. Filed Dec. 30, 1968.



For Van Type Motor Vehicles Equipped for Business Purposes (Int. Cl. 12).
First use Aug. 13, 1968.

SN 316,562. Cruisaire Motor Corporation, Gardena, Calif. Filed Jan. 15, 1969.

CRUISAIRE

For Vehicle Conversion Units for Use in Converting a Motor Vehicle Into a Camper or Motor Home, Motor Homes (Int. Cl. 12).
First use Nov. 2, 1968.

SN 317,005. Daybrook-Ottawa Corporation, d.b.a. Ottawa Steel Products, Ottawa, Kans. Filed Jan. 21, 1969.

OTTAWAN

Owner of Reg. No. 550,665.
For Truck Tractors of the Fifth Wheel Type for Terminal Operations (Int. Cl. 12).
First use Dec. 10, 1968.

SN 320,090. Cobia Boats, Inc., Sanford, Fla., by change of name from Southern Fiber Glass Products, Inc., Sanford, Fla. Filed Feb. 25, 1969.

CONDOR

For Boats (Inboard and Outboard) (Int. Cl. 12).
First use Oct. 31, 1968.

SN 321,959. Matco Products Corporation, Chicago, Ill. Filed Mar. 17, 1969.

LOONEY MOONS

Applicant disclaims the word "Moons" apart from the mark as shown.
For Hub Caps (Int. Cl. 12).
First use Mar. 6, 1969.

SN 322,707. Falcon Coach Co., Inc., Great Bend, Kans. Filed Mar. 25, 1969.

WESTPORT

For Mobile Homes (Int. Cl. 12).
First use June 5, 1968.

SN 323,513. Herter's, Inc., Waseca, Minn. Filed Apr. 3, 1969.

NITRO G

For Snowmobile (Int. Cl. 12).
First use Mar. 17, 1969.

Class 21 — Electrical Apparatus, Machines, and Supplies

SN 295,382. Stevens-Arnold Inc., South Boston, Mass. Filed Apr. 10, 1968.

NANOTRAN

For Transformers (Int. Cl. 9).
First use Jan. 19, 1968.

SN 299,957. Elecmag Corporation, Monette, Ark. Filed June 7, 1968.



For Electronic Magnetos; Ignition Coils; and Ignition Conversion Kits Comprising Electronic Magneto, Ignition Coil, Spark Plugs, Spark Plug Wires, Distributor Cap, Distributor Rotor, Safety Switch and Lead-In Wire (Int. Cl. 7).
First use Nov. 29, 1967.

SN 301,744. W. R. Grace & Co., Cambridge, Mass. Filed July 1, 1968.

DALKASEP

For Microporous Polymeric Sheet Material for Use as Battery Separators (Int. Cl. 17).
First use Mar. 21, 1968.

SN 306,182. The Standard Oil Company, Cleveland, Ohio. Filed Aug. 28, 1968.

FACTOVOLT

Owner of Reg. Nos. 190,708 and 666,242.
For Transformer Oil (Int. Cl. 17).
First use July 11, 1968.

SN 307,094. Filtech Corporation, Franklin Park, Ill. Filed Sept. 11, 1968.



For Electric Filters of the Crystal and LC (Inductance, Capacitance) Type (Int. Cl. 9).
First use in or before June 1960.

SN 309,407. Technical Wire Products, Inc., Cranford, N.J. Filed Oct. 10, 1968.

CONSIL

For Thermally and Electrically Conductive Silicones (Int. Cl. 9).
First use July 1, 1968.

SN 311,548. Fuchs Electrical Industries (Proprietary) Limited, Alberton, Transvaal, Republic of South Africa. Filed Nov. 7, 1968.

PLUGUARD

Priority claimed under Sec. 44(d) on African Reg. No. 68/3266, dated Aug. 2, 1968.
For Electrical Fault Detectors—Namely, Ground Current Leakage Protection Units, for Use as Electrical Safety Devices (Int. Cl. 9).

SN 322,225. Kaman Corporation, Bloomfield, Conn. Filed Mar. 20, 1969.

AUDIENT

For Electro-Mechanical Speakers and Microphones (Int. Cl. 9).
First use October 1968.

Class 22 — Games, Toys, and Sporting Goods

SN 300,023. Tanda Toys Ltd., Enfield, Middlesex, England. Filed June 7, 1968.

CLIPPETY CLIPS

Priority claimed under Sec. 44(d) on British Reg. No. 922,691, dated Mar. 19, 1968. No claim is made to the exclusive right to use "Clips," but applicant waives none of its common law rights therein.
For Playthings—Namely, Toy Clips, in the Shape of Human Figures (Int. Cl. 28).

SN 303,900. Roger F. Erickson, d.b.a. Diane Roger, St. Paul, Minn. Filed July 30, 1968.

WHAT IF

For Equipment (or Apparatus), Sold as a Unit for Playing a Question and Answer Game (Int. Cl. 28).
First use June 14, 1968.

SN 305,391. Arlan's Dept. Stores, Inc., New York, N.Y. Filed Aug. 19, 1968.

playworld

For Dolls, Doll Accessories, Doll Houses, Doll Furniture, Doll Carriages, Doll Strollers; Housekeeping Toys, Comprising Ironing Boards, Irons, Washing Machines, Tea Sets, Cook and Bake Sets; Musical Toys, Comprising Guitars, Trumpets, Drums, Phonographs; Jack in the Box; Tops; Miniature Toy Trucks, Cars, Planes and Boats; Games and Arts and Crafts Sets, Comprising Puzzles, Building Sets, Blackboards, Darts, Coloring Books, Cutout Books, Paints, Crayons, Weaving Sets, Wood-Burning Sets, Finger Paints; Toy Balloons; Toy Guns, Holsters, Rifles, Caps; Science Toys, Comprising Microscope Sets, Electronic Sets; Toy Train Sets and Accessories; Model Airplanes and Gliders, Ready To Fly and in Cut Form; Polyurethane Foating Toys; Sand Toys; Portable Pools and Accessories; Toy Gardening Equipment; Kites; Pull Toys; Puppets; Toy Doctor Kits, Nurse Kits; Toy Banks; Toy Cash Registers; Toy Typewriters; Toy Telephones; Toy Bowling Pins and Pin Spotters; Toy Riding Vehicles, Comprising Wagons, Scooters, Velocipedes, Bicycles, Tractors, Cars; Spring Horses, Rocking Horses; Plush Animals; Sleds, Skis, Roller Skates, Ice Skates; Outdoor Swing Sets and Slides, Sand Boxes; Basketballs, Footballs, Baseballs, Baseball Gloves, Baseball Bats, Basketball Rims; Boxing Gloves, Punching Bags, Tether Balls; Archery Sets; Camping Equipment—Namely, Tents and Sleeping Bags for Outdoor or Campers' Use and Air Mattresses Therefor; Pool Tables and Accessories (Int. Cls. 20, 22, and 28).
First use May 10, 1968.

SN 306,415. Wilson Sporting Goods Co., River Grove, Ill. Filed Aug. 30, 1968.

HAIG ULTRA

Owner of Reg. No. 185,264.
For Golf Balls and Golf Clubs (Int. Cl. 28).
First use Nov. 1, 1954.

SN 307,633. Eagle Druggists Supply Co. Inc., New York, N.Y. Filed Sept. 18, 1968.

BINKYTOYS

Owner of Reg. Nos. 408,918 and 408,919.
For Rattles (Int. Cl. 28).
First use January 1939.

SN 308,290. Good Games, Inc., Boston, Mass. Filed Sept. 26, 1968.

Beeline

For Equipment Sold as a Unit for Playing a Board-Type Game of Skill (Int. Cl. 28).
First use Aug. 8, 1968.

SN 311,419. Tensor Corporation, Brooklyn, N.Y. Filed Nov. 5, 1968.

Melbourne

For Tennis Racquets (Int. Cl. 28).
First use at least as early as Sept. 20, 1968.

SN 311,715. Wilson Sporting Goods Co., River Grove, Ill. Filed Nov. 1, 1968.

STAR-LINE

For Golf Clubs (Int. Cl. 28).
First use July 19, 1968.

SN 312,217. Pacific Tent and Awning Company, d.b.a. Pacific Tent, Fresno, Calif. Filed Nov. 14, 1968.

MINERAL KING

For Game Pack Bags, Sleeping Bags, and Tents (Int. Cls. 18, 20, and 22).
First use Aug. 15, 1968.

SN 312,274. Berkley & Company, Inc., Spirit Lake, Iowa. Filed Nov. 15, 1968.

SPIRIT LAKE

For Monofilament Fishing Line (Int. Cl. 28).
First use Oct. 25, 1968.

SN 316,044. Mary C. Bass, d.b.a. Mary Bass Productions, New York, N.Y. Filed Jan. 8, 1969.

ZIP ZOO

For Stuffed Animal Toys (Int. Cl. 28).
First use Nov. 14, 1968.

SN 316,165. Business Futures, Inc., Northfield, Ill. Filed Jan. 9, 1969.

PAR BREAKERS

For Squeeze-Type Hand Exercisers for Golfers (Int. Cl. 28).
First use at least as early as Aug. 13, 1968.

SN 318,132. Dynamic Classics, Ltd., New York, N.Y. Filed Feb. 3, 1969.

SLIM WHEEL

No claim of exclusive right is made to the word "Wheel" for the goods recited.
For Exercise Device—Namely, an Exercise Wheel for Use by an Individual Grasping the Device in His Hands and Rolling It Toward and Away From His Knees (Int. Cl. 28).
First use Dec. 1, 1968.

SN 319,557. Superga S.p.A., Turin, Italy. Filed Feb. 19, 1969.
Owner of Italian Reg. No. 161,008, dated Jan. 26, 1963.

G3

For Footwear, More Particularly Ski Shoes (Int. Cl. 25).
First use Jan. 1, 1963; in commerce Oct. 3, 1963.

SN 322,948. Mattel, Inc., Hawthorne, Calif. Filed Mar. 27, 1969.

TASTITOY

For Toy Candy Forming Machine (Int. Cl. 28).
First use Feb. 13, 1969.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

SN 272,183. Hooker Headers, Inc., Ontario, Calif. Filed May 23, 1967.



The word "Headers" and the representation of the goods are disclaimed apart from the mark as shown.
For Automobile Exhaust Gas Piping Means Connected Between the Cylinder Block and the Muffler for Improving Engine Performance (Int. Cl. 12).
First use Mar. 31, 1964.

SN 281,203. Jet Pulverizer Co., Palmyra, N.J. Filed Sept. 26, 1967.

MICRON-MASTER

For Fluid Energy Mills for Pulverizing Dry Solid Materials to Micron Size Powders (Int. Cl. 7).
First use Nov. 15, 1963.

SN 288,102. Lange Lift Company, Butler, Wis. Filed Jan. 4, 1968.



For Boat Lifts and Boat Hoists, Truck Mounted Platform Lifts, Material Handling Lift Tables, Roller Conveyors, Elevators, and Pump Valves (Int. Cls. 7 and 12).
First use Dec. 3, 1966.

SN 294,599. Dazey Products Company, Kansas City, Mo. Filed Apr. 1, 1968.

DūMORE
by Dazey

Owner of Reg. Nos. 147,298, 737,102, and others.
For Can Openers and Combination Can Openers and Knife Sharpeners (Int. Cl. 8).
First use at least as early as Jan. 20, 1966.

SN 298,037. Paramount Pool Engineering Corp., Scottsdale, Ariz. Filed May 13, 1968.

POOL TENDER

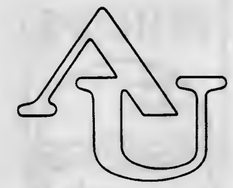
No claim of exclusive right is made to "Pool" for the goods recited.
For Pressure Automated Vacuum Systems for Use in Cleaning Swimming Pools (Int. Cl. 7).
First use Mar. 14, 1968.

SN 298,251. Rico Machine Company, Inc., Bristol, R.I. Filed May 15, 1968.



For Header Tools, Punches, Extrusion Dies, Cutoff Quills, Cutoff Knives, and Carbide Inserts (Int. Cl. 7).
First use Mar. 1, 1968.

SN 307,077. Asbury Universal, Inc., Murrysville, Pa. Filed Sept. 11, 1968.



For Material Handling Buckets for Front End Loaders (Int. Cl. 7).
First use about Aug. 9, 1968.

SN 309,857. Federal-Mogul Corporation, Southfield, Mich. Filed Oct. 17, 1968.

Fm

For Anti-Friction Materials and Bearing Components—Namely, Sleeve Bearings, Thrust Washers, Wear Plates for Pumps, Machinery Bushings, Thrust Collars, and Spacer Tubes (Int. Cls. 6 and 7).
First use in or about 1940.

SN 310,867. The Dashaveyor Company, Venice, Calif. Filed Oct. 30, 1968.



For Material Handling Track Conveyors (Int. Cl. 7).
First use March 1966.

SN 312,188. General Motors Corporation, Detroit, Mich. Filed Nov. 14, 1968.

TEREX

For Earth-Moving Vehicles—Namely, Crawler-Tractors, Front-End Loaders and Scrapers (Int. Cl. 12).
First use Oct. 11, 1968.

SN 312,493. Pasadena Finance Company, d.b.a. Torginol Special Products Company, Montebello, Calif. Filed Nov. 18, 1968.

KarBar

The term "Kar" is disclaimed apart from the mark as shown.
For Beverage Dispensing Apparatus for Use in a Vehicle (Int. Cl. 7).
First use Sept. 22, 1966.

SN 313,199. N.V. Philips' Gloeilampenfabrieken, Eindhoven, Netherlands. Filed Nov. 27, 1968.

PHILIPS

Owner of U.S. Reg. Nos. 681,200, 837,968, and others.
For Electric Shavers and Parts Thereof (Int. Cl. 8).
First use December 1939; in commerce as early as April 1961.

SN 313,312. Liqui-Trol Systems, Inc., Brookfield, Ill. Filed Nov. 29, 1968.

OFF-TROL

Owner of Reg. No. 862,353.
For Liquid Handling Systems Including Motors, Pumps, Valves, Piping, and Related Components (Int. Cl. 7).
First use on or before Oct. 29, 1968.

SN 314,421. R. Hoe & Co., Inc., Bronx, N.Y. Filed Dec. 13, 1968.

ONE-17

For Automatic Printing Plate Combination Casting, Shaving, Cooling, Drying, Trimming, and Milling Machine (Int. Cl. 7).
First use July 15, 1968.

SN 314,559. Imperial Knife Associated Companies, Inc., Providence, R.I. Filed Dec. 16, 1968.

GOLDEN FROST

For Stainless Steel Knives, Forks and Spoons (Int. Cl. 8).
First use Nov. 15, 1968.

SN 314,560. Imperial Knife Associated Companies, Inc., Providence, R.I. Filed Dec. 16, 1968.

GOLDEN NARVIK

For Stainless Steel Knives, Forks, and Spoons (Int. Cl. 8).
First use Nov. 15, 1968.

SN 315,400. Empak Industries, Inc., d.b.a. The Unimite Co., Omaha, Nebr. Filed Dec. 30, 1968.

UNIMITE

For Trigger-Operated Grease Gun (Int. Cl. 8).
First use on or about June 1, 1965.

SN 315,765. Houdaille Industries, Inc., Buffalo, N.Y. Filed Jan. 3, 1969.

ECON O CENTER

For Metal Drilling Machines (Int. Cl. 7).
First use Nov. 4, 1968.

SN 316,317. Kennametal Inc., Latrobe, Pa. Filed Jan. 10, 1969.

K·MILL

For Milling Tools for Use in Machine Tools for Metal Cutting Operations—Namely, Milling Tool Bodies, Cutting Inserts for Milling Tools, and Devices for Retaining the Inserts in the Bodies (Int. Cl. 7).
First use Sept. 1, 1968.

SN 317,560. Herman Pneumatic Machine Company, Pittsburgh, Pa. Filed Jan. 27, 1969.

HERMAN

Owner of Reg. No. 512,087.
For Molding Machines and Related Handling Equipment—Namely, Conveyers, Rollover Machines, Closing Devices, Transfer Mechanisms, Raising and/or Lowering Devices, for Making Molds and Cores for Forming Castings of Metal and Other Pourable Materials (Int. Cl. 7).
First use December 1931.

SN 317,867. Paperboard Converters, Inc., Seaford, N.Y. Filed Jan. 29, 1969.

Gyrodie Cutter

Applicant disclaims the word "Cutter" apart from the mark as shown.
For Rotary Die Cutting Machines (Int. Cl. 7).
First use Sept. 19, 1968.

SN 318,163. Leon J. Cohen, d.b.a. Time Engineered Products, Minneapolis, Minn. Filed Feb. 3, 1969.

GREASE 'N GO

For Lubricating Equipment, Supplies and Accessories—Namely, Snowmobile Lubrication Kits Consisting of a Plastic Case, a Grease Gun, and a Grease Cartridge (Int. Cl. 8).
First use July 15, 1968.

SN 318,229. Rol-Lift Corporation, Little Rock, Ark. Filed Feb. 3, 1969.

Rol Lift

For Hand-Operated Pallet Trucks, and Parts Thereof (Int. Cl. 12).
First use Nov. 23, 1965.

SN 319,054. Industrial Sales Co. Inc., Buffalo, N.Y. Filed Feb. 13, 1969.

INSCO

For Saw Blades (Int. Cl. 7).
First use September 1958.

SN 320,255. The Equipment Aids Co., Berkeley, Ill. Filed Feb. 27, 1969.

TENSILCRAFT

For Hand Operated Staplers (Int. Cl. 16).
First use Sept. 21, 1968.

SN 320,934. Joseph R. Arno, d.b.a. Airtek Company, Buffalo, N.Y. Filed Mar. 6, 1969.

AIRTEK

For Water Cooled Aftercoolers for Air Compressors (Int. Cl. 11).
First use on or about Nov. 11, 1966.

SN 321,250. McGill Manufacturing Company, Inc., Valparaiso, Ind. Filed Mar. 10, 1969.

LUBRI-DISC

For Cam Follower and Cam Yoke Roller Bearings (Int. Cl. 7).
First use Feb. 24, 1969.

SN 321,521. Miehle-Goss-Dexter, Incorporated, Chicago, Ill. Filed Mar. 12, 1969.

Headliner Mark II

Owner of Reg. No. 578,434.
For Power Operated Printing Presses and Parts Thereof (Int. Cl. 7).
First use July 1961.

SN 321,678. Master Pneumatic-Detroit, Inc., Utica, Mich. Filed Mar. 13, 1969.

SSL

For Lubricating Systems and Parts Thereof, Including Pumps, Valves, and Pressure Devices Therefor (Int. Cl. 7).
First use Feb. 10, 1969.

SN 321,800. Imperial Knife Associated Companies, Inc., Providence, R.I. Filed Mar. 14, 1969.

GOLDEN WAVE

For Stainless Steel Knives, Forks, and Spoons (Int. Cl. 8).
First use Feb. 26, 1969.

SN 321,801. Imperial Knife Associated Companies, Inc., Providence, R.I. Filed Mar. 14, 1969.

GOLDEN SONG

For Stainless Steel Knives, Forks, and Spoons (Int. Cl. 8).
First use Feb. 19, 1969.

SN 321,945. Kyoritsu Noki Co., Ltd., Mitaka, Tokyo, Japan. Filed Mar. 17, 1969.

ECHO

For Chain Saw, Power Scythe, Power Digger, Power Mower and Engine (Int. Cl. 7).
First use at least as early as January 1963; in commerce at least as early as May 1963.

SN 322,235. Rodney Hunt Company, Orange, Mass. Filed Mar. 20, 1969.

WRING-MASTER

For Textile Machinery—Namely, Squeeze Roll Units Used With Washing, Dyeing, Carbonizing, Bleaching, Scouring and Like Machinery (Int. Cl. 7).
First use Sept. 1, 1943.

SN 322,482. The Richline Company, Incorporated, St. Paul, Minn. Filed Mar. 21, 1969.

PRO 400

For Rivet Guns (Int. Cl. 8).
First use on or about Jan. 24, 1966.

SN 322,718. Lewis Sanitary Tool Co., Inc., Racine, Wis. Filed Mar. 25, 1969.

LEWISAN

For Coil Augers, Closet Augers, Cannister Augers, Flat Sewer Rods, and Power Auger Attachments (Int. Cls. 7 and 8).
First use May 10, 1968.

SN 322,790. Heli-Coil Corporation, Danbury, Conn. Filed Mar. 26, 1969.

WHITNON

For Rotary Spindles for Boring, Milling, Drilling, Slicing and Turning Machines (Int. Cl. 7).
First use 1946.

Class 25—Locks and Safes

SN 315,865. Acme Appliance Manufacturing Company, Monrovia, Calif. Filed Jan. 6, 1969.

ACME

For Locksets (Int. Cl. 6).
First use Dec. 2, 1968.

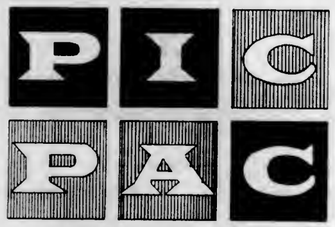
SN 319,323. Lefebure Corporation, Cedar Rapids, Iowa. Filed Feb. 17, 1969.

MONOLITHIGUARD

For Vault Doors (Int. Cl. 6).
First use on or about Aug. 23, 1968.

Class 26—Measuring and Scientific Appliances

SN 277,741. Vornado, Inc., Garfield, N.J. Filed Aug. 7, 1967.



Applicant disclaims the term "Pac" apart from the mark as shown. The drawing is lined for red, and claim is made to such color.
For Pancromatic Film (Int. Cl. 1).
First use on or about Sept. 15, 1960.

SN 285,047. Norman Industries, Inc., Chicago, Ill. Filed Nov. 16, 1967.



Owner of Reg. No. 712,132.
For Dummy Cameras for Mounting on a Wall or Ceiling for the Purpose of Deterring Shoplifting, Reducing Pilferage Losses and Robberies, and Surveillance Cameras for Mounting on a Wall or Ceiling for Detecting, Among Other Things, Shoplifting, Pilferage and Robbery (Int. Cl. 9).
First use Nov. 30, 1959.

SN 290,309. Miller Industries, Inc., Seattle, Wash. Filed Feb. 5, 1968.

TURN-A-VIEW

For Mechanical Calculators for Calculating Interest Payments of Interest Due (Int. Cl. 9).
First use Dec. 30, 1967.

SN 291,850. Ellar Products, Inc., Silver Creek, N.Y. Filed Feb. 26, 1968.

CLING-SPRINGS

For Spectacle Temple Tensioners (Int. Cl. 9).
First use Feb. 13, 1968.

SN 295,500. Bach Auricon, Inc., Los Angeles, Calif. Filed Apr. 12, 1968.

BACH Auricon

Owner of Reg. No. 509,314.
For Photographic and Sound-Recording Equipment—Namely, Cameras, Optical Recording Galvanometers and Magnetic Sound Recording Units for Recording Sound-On-Motion Picture Film, Sound-On-Film Recording Amplifiers, Lenses, Camera Range and View Finders, Tripods, Film Magazines and Kinescope Recorders, and Carrying Cases and Trunks Therefor (Int. Cl. 9).
First use prior to December 1959.

SN 297,552. Fischer-Davila Industries, Inc., d.b.a. Heinrich Fischer & Co., Cincinnati, Ohio. Filed May 7, 1968.

EKOMETER

For Proportioning Controls for Liquifying and Diluting Dry High Organic Detergents in a Container and Metering the Resultant Dilute Solution Dispensed From the Container (Int. Cl. 9).
First use May 31, 1956.

SN 297,701. Princeton Applied Research Corporation, Princeton, N.J. Filed May 8, 1968.

PAR PRINCETON APPLIED RESEARCH

No registration rights are claimed for the words "Applied" and "Research" apart from the mark as shown, but the applicant waives none of its common law rights in the mark shown or any feature thereof. Owner of Reg. Nos. 769,724 and 775,569.
For Electronic Apparatus—Namely, High Temperature Ovens for Laboratory Use; Laboratory Instrumentation, Laboratory Test Equipment, and Process Control Equipment, Comprising, Calibrators, Voltmeters, Thermometers/Temperature Controllers, Cryogenic Temperature Controllers, Reference Signal Generators, Light Choppers, Correlation Function Computers, Fourier Analyzers, Waveform Analyzers, Pulse Analyzers, Magnetometers, Polarographic Analyzers and Recorders, Electromechanical Material Analyzers, Audiometers, Interferometers, Densitometers, Lock-In Amplifiers (Also Known in the Trade as Voltmeters, Mixers, Phase Sensitive Detectors, A.C./D.C. Converters, Synchronous Detectors, Synchronous Demodulators), Tuned Amplifier/Oscillators (Also Known in the Trade as Notch Filters, Distortion Analyzers, Harmonic Analyzers, Harmonic Filters, Delay Filters), and Modular Instrument Enclosures for Instrumention Such as Those Noted Above (Int. Cl. 9).
First use Apr. 9, 1962.

SN 299,171. Tele-Norm Corporation, Woodside, N.Y. Filed May 27, 1968.

ERS-300

For Dial-Access Electronic Retrieval System, for Use in Connection With Computerized Data Storage, Including a Push Button Dial, a Control and Switching Cabinet With Computer-Type Logic and Memory, and an Audio or Video Program Source (Int. Cl. 9).
First use Mar. 11, 1968.

SN 302,163. O. S. Walker Company, Inc., Worcester, Mass. Filed July 5, 1968.

MAGNEMETRICS

For Apparatus for Generating and Measuring Magnetic Fields—Namely, Fluxmeters, Gaussmeters, Permeameters, Hysteresisgraphs, Coercivity Meters, Hall Probes, and Power Supplies Used in Magnetic Tests and Measurements (Int. Cl. 9).
First use Dec. 8, 1964.

SN 302,170. Westinghouse Air Brake Company, Chicago, Ill. Filed July 2, 1968.

WABCO

Owner of Reg. Nos. 764,162, 777,325, and others.
For Electric Meters for Mining Equipment (Int. Cl. 9).
First use May 24, 1968.

SN 305,126. Fritz Hellige & Co., GmbH, Freiburg im Breisgau, Germany. Filed Aug. 14, 1968.

ERYMAT

Owner of German Reg. No. 729,809, dated Oct. 8, 1959.
For Photo-Electric Instrument for Determining the Erythrocyte Count and the Hemoglobin Content in Blood (Int. Cl. 9).

SN 305,619. American Bowser Corporation, Aurora, Ill. Filed Aug. 21, 1968.

SCCS

For Solids Concentration Controls, Probes, and Meters for Sewage Plant Pumps, Responsive to Sludge Concentration (Int. Cl. 11).
First use July 25, 1968.

SN 309,283. Neoweld Electric Inc., Cornwall Bridge, Conn. Filed Oct. 9, 1968.

KAOPAK

For Temperature Recorder (Int. Cl. 9).
First use May 17, 1967.

SN 314,788. Gould Ionics Inc., Canoga Park, Calif. Filed Dec. 18, 1968.

COULISTOR

For Electrochemical Timing Devices (Int. Cl. 9).
First use Oct. 25, 1968.

SN 316,252. Tapeler Corporation, Newton, Mass. Filed Jan. 9, 1969.

TAPELER

For Machines for Measuring and Dispensing Definite Lengths of Adhesive Tape (Int. Cl. 9).
First use at least as early as Aug. 12, 1968.

SN 316,793. Johannes Bockemuehl, Derschlag, Bezirk, Cologne, Germany. Filed Jan. 16, 1969.

JOBO

For Photographic Apparatus; Photographic Articles—Namely, Developer, Developer Tanks With Holding Frames, Developer Trays, Developing Receptacles, Funnels, Film Clips, and Measuring Glasses (Int. Cl. 9).
First use Dec. 31, 1938; in commerce Jan. 5, 1951.

SN 316,979. Blue M Electric Company, Blue Island, Ill. Filed Jan. 21, 1969.

VERSA-RANGE

For Controlled-Temperature Test Chambers With Both Refrigeration and Heating Means (Int. Cl. 9).
First use March 1966.

SN 317,306. Bach Auricon, Inc., Hollywood, Calif. Filed Jan. 23, 1969.

D-FLEX

For Photographic and Sound-Recording Apparatus—Namely, Cameras With Optical Recording Galvanometers and Magnetic Sound-Recording Units, Cameras With Reflex-Shutter Optics, and Sound-on-Film Recording Amplifiers (Int. Cl. 9).
First use prior to July 1968.

SN 317,701. Atlas Supply Company, Springfield, N.J. Filed Jan. 28, 1969.

ATLAS

Owner of Reg. Nos. 572,627, 837,520, and others.
For Wiper Arm Tester, PCV Valve Tester for Use on Motor Vehicles (Int. Cl. 9).
First use Dec. 16, 1968.

SN 317,772. Systems Engineering Laboratories Incorporated, Fort Lauderdale, Fla. Filed Jan. 28, 1969.

COMPAS

For Computers (Int. Cl. 9).
First use Oct. 24, 1968.

SN 318,386. Automated Control Technology, Inc., Palo Alto, Calif. Filed Feb. 5, 1969.

LogicProbe

For Test Probes for Visually Indicating the Logic Condition of Digital Devices (Int. Cl. 9).
First use Dec. 6, 1968.

SN 320,246. Cybernex Corporation, Detroit, Mich. Filed Feb. 27, 1969.

cybernex

For Precision Dimensional Measuring Apparatus and More Specifically Indicator Gauges (Int. Cl. 9).
First use Feb. 12, 1969.

SN 321,417. Victory Optical Manufacturing Co., Newark, N.J. Filed Mar. 11, 1969.



Owner of Reg. Nos. 502,481 and 515,432.
For Spectacle Frames, Sunglasses, and Parts Thereof (Int. Cl. 9).
First use Feb. 1, 1969.

SN 322,031. M-R-S, Inc., Oklahoma City, Okla. Filed Mar. 18, 1969.

METER SENTRY

Owner of Reg. Nos. 856,419 and 856,420.
For Protective Housing for Service Meters (Int. Cl. 9).
First use on or about July 22, 1968.

SN 322,894. Miracle Pet Products, Inc., Jersey City, N.J. Filed Mar. 26, 1969.

MIRACLE

Owner of Reg. Nos. 647,468 and 863,509.
For Aquarium Thermometers (Int. Cl. 9).
First use Nov. 17, 1966.

SN 326,791. Polaroid Corporation, Cambridge, Mass. Filed May 8, 1969.

POLAMATIC

Owner of Reg. Nos. 540,179, 762,287, and others.
For Photographic Cameras, Sensitized Photographic Film, and Sensitized Photographic Paper (Int. Cls. 1 and 9).
First use Mar. 31, 1969.

Class 27 — Horological Instruments

SN 277,881. Bulova Watch Company, Inc., Flushing, N.Y. Filed Aug. 9, 1967.

ATOCHRON

For Watches and Parts Thereof (Int. Cl. 14).
First use July 28, 1967.

Class 28 — Jewelry and Precious-Metal Ware

SN 313,754. Numismatica Italiana S.p.A., Milan, Italy. Filed Dec. 4, 1968.



Owner of Italian Reg. No. 217,753, dated Dec. 11, 1967.
For Medals, Single Coins, Modern and Old Coin Collections, Memorial Medals, and Trophies, All in Precious Metals (Int. Cl. 14).

SN 315,042. Brite Industries Inc., Providence, R.I. Filed Dec. 23, 1968.

DATEWATCHER

For Watchbands and Straps (Int. Cl. 14).
First use on or about Dec. 9, 1968.
Subj. to Intf. with SN 323,409.

Class 29 — Brooms, Brushes, and Dusters

SN 300,048. Anchor Brush Company, Montgomery, Ill. Filed June 10, 1968.

CHIC

For Hairbrushes (Int. Cl. 21).
First use May 31, 1968.

Class 31 — Filters and Refrigerators

SN 296,856. Mister Chill, Roanoke, Ala. Filed Apr. 29, 1968.

Mister Chill

Applicant disclaims the word "Chill" apart from the mark as shown.
For Portable Electric Refrigerators (Int. Cl. 11).
First use about April 1965.

SN 308,045. Star Metal Corporation, Philadelphia, Pa. Filed Sept. 23, 1968.

STAR * FROST

No claim is made to the word "Frost" apart from the mark as shown.
For Domestic and Industrial Refrigerating Apparatus—Namely, Refrigerators, Freezers, in Combination Sandwich, Salad, and Other Food Storage Units (Int. Cl. 11).
First use May 27, 1968.

SN 311,948. Sylvan Pools, Inc., Doylestown, Pa. Filed Nov. 12, 1968.

THE COMBO

For Swimming Pool Water Filters Which Include a Water Heater (Int. Cl. 11).
First use on or about July 1, 1962.

Class 32 — Furniture and Upholstery

SN 298,706. Congoleum Industries, Inc., Kearny, N.J., assignee of Congoleum-Nairn Inc., Kearny, N.J. Filed May 21, 1968.

JEFFERSON MANOR

For Tables (Int. Cl. 20).
First use Mar. 26, 1968.

SN 301,617. Faces West, Incorporated, Santa Monica, Calif. Filed June 28, 1968.

MODEL'S CHOICE

For Vanity Mirror (Int. Cl. 20).
First use May 21, 1968.

SN 303,829. Sheller-Globe Corporation, Toledo, Ohio. Filed July 29, 1968.

SPACEMAKER

For Desks (Int. Cl. 20).
First use Dec. 8, 1966.

SN 304,066. Joseph Dyson & Sons, Inc., Eastlake, Ohio. Filed Aug. 1, 1968.

DY-RACK

For Storage Rack Units (Int. Cl. 20).
First use in or about July 1968.

SN 304,914. The Goldsmith Metal Lath Co., Cincinnati, Ohio. Filed Aug. 12, 1968.

METRORAK

Owner of Reg. No. 431,686.
For Metal Shelving (Int. Cl. 20).
First use on or about May 24, 1968.

SN 311,589. Fleischman Industries, Inc., Compton, Calif. Filed Nov. 7, 1968.



For Display Racks for Slacks and Other Articles of Men's Clothing (Int. Cl. 20).
First use Jan. 1, 1958.

SN 315,602. Servco Equipment Company, St. Louis, Mo. Filed Jan. 2, 1969.



The drawing is lined for the colors red and blue, but the rights in the instant mark are not limited to a particular color combination. The mark consists of two interlocking letter "C's."
For Commercial Food Display and Food Handling Counters and Cabinets of the Type Used in Food Markets, Restaurants, and Food Service Areas of Institutions (Int. Cl. 20).
First use Dec. 20, 1968.

Class 33 — Glassware

SN 320,013. American Saint Gobain Corporation, Kingsport, Tenn. Filed Feb. 25, 1969.

NEBULEX STARDUST

For Rolled Glass With Decorative Material Therein (Int. Cl. 21).
First use Oct. 13, 1961.

SN 320,014. American Saint Gobain Corporation, Kingsport, Tenn. Filed Feb. 25, 1969.

NEBULEX CONSTELLATION

For Rolled Glass With Decorative Material Therein (Int. Cl. 21).
First use Oct. 13, 1961.

SN 320,015. American Saint Gobain Corporation, Kingsport, Tenn. Filed Feb. 25, 1969.

NEBULEX ASTRAL

For Rolled Glass With Decorative Material Therein (Int. Cl. 21).
First use Oct. 13, 1961.

SN 320,016. American Saint Gobain Corporation, Kingsport, Tenn. Filed Feb. 25, 1969.

NEBULEX COMET

For Rolled Glass With Decorative Material Therein (Int. Cl. 21).
First use Oct. 13, 1961.

SN 320,017. American Saint Gobain Corporation, Kingsport, Tenn. Filed Feb. 25, 1969.

NEBULEX METEOR

For Rolled Glass With Decorative Material Therein (Int. Cl. 21).
First use Oct. 13, 1961.

SN 320,018. American Saint Gobain Corporation, Kingsport, Tenn. Filed Feb. 25, 1969.

NEBULEX POLARIS

For Rolled Glass With Decorative Material Therein (Int. Cl. 21).
First use Oct. 13, 1961.

Class 34 — Heating, Lighting, and Ventilating Apparatus

SN 293,047. Nichols Engineering and Research Corporation, New York, N.Y. Filed Mar. 12, 1968.

WATERGRATE

For Industrial and Municipal Incineration Equipment for the Removal of Waste Greases, Oils, Skimmings, and Other Floatable Waste Materials (Int. Cl. 11).
First use on or about Dec. 13, 1967.

SN 299,393. Rexarc, Incorporated, West Alexandria, Ohio. Filed May 31, 1968.

REXARC

Owner of Reg. No. 800,904.
For Welding Fluxes (Int. Cl. 1).
First use on or before Dec. 31, 1947.

SN 301,021. American Farm Equipment Co., Lake Zurich, Ill. Filed June 21, 1968.

AFE

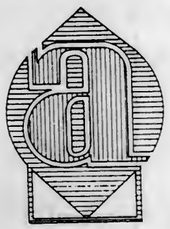
For Crop Dryers and Parts Therefor (Int. Cl. 11).
First use May 10, 1968.

SN 306,659. Federal Incinerators, Inc., Springfield, Mo. Filed Sept. 5, 1968.

Federal

For Commercial and Industrial Incinerators (Int. Cl. 11).
First use at least as early as June 1967.

SN 312,647. American Farm Equipment Co., Lake Zurich, Ill. Filed Nov. 20, 1968.



The drawing is lined for the colors red and blue. Owner of Reg. No. 821,985.
For Portable Space Heaters (Int. Cl. 11).
First use Mar. 27, 1968.

SN 313,422. Hobart Brothers Company, Troy, Ohio. Filed Dec. 2, 1968.

FABLOY

For Welding Electrodes—Namely, Welding Wire (Int. Cl. 9).
First use August 1964.

SN 313,423. Hobart Brothers Company, Troy, Ohio. Filed Dec. 2, 1968.

FABTUF

For Welding Electrodes—Namely, Welding Wire (Int. Cl. 9).
First use August 1964.

SN 316,866. International Telephone and Telegraph Corporation, New York, N.Y. Filed Jan. 17, 1969.

WIND-O-LINE

For Space Heating Radiation Units and Parts Therefor (Int. Cl. 11).
First use Dec. 29, 1958.

SN 316,873. Sola Basic Industries, Inc., Milwaukee, Wis. Filed Jan. 17, 1969.

HYAM

For Ammonia Disassociators (Int. Cl. 11).
First use Nov. 7, 1966.

SN 316,928. Cargo Safe Inc., Bell Gardens, Calif. Filed Jan. 21, 1969.



For Catalytic Heaters and Parts Thereof (Int. Cl. 11).
First use Jan. 3, 1966.

SN 318,404. Crown Stove Works, Chicago, Ill. Filed Feb. 5, 1969.

CAREFREE

For Gas Ovens (Int. Cl. 11).
First use Jan. 23, 1969.

Class 35 — Belting, Hose, Machinery Packing, and Nonmetallic Tires

SN 289,544. Tri-Point Industries, Inc., Commack, N.Y. Filed Jan. 24, 1968.



For Fabricated Parts and Components Made of Polytetrafluoroethylene—Namely, Valve Seats, Ring Seals, and Gaskets (Int. Cl. 17).
First use Sept. 11, 1967.

SN 310,794. Nippon Oil Seal Industry Co., Ltd., Minato-ku, Tokyo-to, Japan. Filed Oct. 29, 1968.



The representation of the outline of the map of the United States is disclaimed apart from the mark as shown.
For Oil Seals, Mechanical Seals, Packings and O-Rings (Int. Cl. 17).
First use May 1, 1968; in commerce May 1, 1968.

SN 325,049. S. S. Kresge Company, Detroit, Mich. Filed Apr. 21, 1969.

KM 300

For Tires (Int. Cl. 12).
First use on or before Jan. 30, 1969.

SN 320,337. The Firestone Tire & Rubber Company, Akron, Ohio. Filed Feb. 28, 1969.

GLASS RIDE

Applicant disclaims the word "Glass" apart from the mark as shown. Owner of Reg. No. 862,726.
For Resilient Vehicle Tires (Int. Cl. 12).
First use Jan. 8, 1969.

Class 36 — Musical Instruments and Supplies

SN 311,009. Harry M. Billings, San Francisco, Calif. Filed Oct. 31, 1968.

mb
II

For Sound Recording and Reproducing Machine—Namely, Dictating Machines (Int. Cl. 9).
First use Sept. 21, 1968.

SN 316,245. Simpac International, Inc., Santa Monica, Calif. Filed Jan. 9, 1969.

SIMPAC

For Tape Transports—Namely, Magnetic Tape Cassettes and Cartridges, and Components Thereof (Int. Cl. 9).
First use Aug. 30, 1968.

Class 37 — Paper and Stationery

SN 305,330. Kaiser Aluminum & Chemical Corporation, Oakland, Calif. Filed Aug. 16, 1968.

HOT 'n' TASTY

For Laminated Aluminum Foil and Paper Sheet for Wrapping Food (Int. Cl. 6).
First use at least as early as Mar. 8, 1968.

SN 305,839. Mastercraft Pen Company, Inc., Monterey, Calif. Filed Aug. 23, 1968.

TEL-O-PEN

For Pen Sets (Int. Cl. 16).
First use June 15, 1957.

SN 312,479. Massey's Business Equipment Center, Inc., Muscatine, Iowa. Filed Nov. 18, 1968.

M RING KING VISIBLES

For Paper Record Strips for Indexing Lists and Panel Holders for Said Paper Record Strips (Int. Cl. 16).
First use Sept. 15, 1968.

SN 313,276. Delta American Corporation, Wheeling, Ill. Filed Nov. 29, 1968.

WHAT-NOT

For Multi-Purpose Plastic Wrapping and Covering Material (Int. Cl. 16).
First use Oct. 21, 1968.

SN 316,916. Tuckersharpe Pen Company, Inc., Richmond, Va. Filed Jan. 17, 1969.

TUCKER EDITOR

Owner of Reg. Nos. 628,269, 704,972, and 851,048.
For Writing Instruments—Namely, Fine Line Markers (Int. Cl. 16).
First use at least as early as about February 1964.

Class 38 — Prints and Publications

SN 274,723. Eastman Kodak Company, Rochester, N.Y. Filed June 26, 1967.

Kodak

Owner of Reg. Nos. 195,218, 763,542, and others.
For Audiovisual Promotional and Informational Brochures and Bulletins Published From Time to Time (Int. Cl. 16).
First use Mar. 1, 1966.

SN 288,191. Consolidated Engineering Company Incorporated, Baltimore, Md. Filed Jan. 5, 1968.

ACHIEVEMENT

For Magazine Published Periodically (Int. Cl. 16).
First use January 1953.

SN 295,017. Concrete Construction Publications, Inc., Elmhurst, Ill. Filed Apr. 5, 1968.

concrete construction

For Periodic Publications—Namely, Journal, Yearbook, and Booklets Relating to Concrete Industry (Int. Cl. 16).
First use on or about May 1, 1956.

SN 295,613. Daniel Cappon, Willowdale, Ontario, Canada. Filed Apr. 15, 1968.

dreamscreen

Priority claimed under Sec. 44(d) on Canadian application filed Dec. 14, 1967; Reg. No. 157,877, dated Aug. 2, 1968.
For Motion Picture Films of Cartoons and Puppets for Television (Int. Cl. 9).

SN 297,460. Arlene Van Breems, New York, N.Y. Filed May 6, 1968.

A Woman's Work

For Annual Magazine (Int. Cl. 16).
First use Nov. 15, 1967.

SN 312,330. Mort Reed, Wooster, Ohio. Filed Nov. 15, 1968.

COINOLOGY

For Column Printed From Time to Time (Int. Cl. 16).
First use Dec. 7, 1966.

SN 317,835. GAF Corporation, New York, N.Y. Filed Jan. 29, 1969.

GAFACTS

Owner of Reg. Nos. 509,124, 837,005, and others.
For Newspapers, Newsletters, Magazines, and Booklets (Int. Cl. 16).
First use Nov. 8, 1968.

SN 317,892. United States National Bank of Oregon, Portland, Oreg. Filed Jan. 29, 1969.

TAP

For Kit of Documentary Materials, Including Instruction Manual, Printed Survey Questionnaire Forms and Computer Program With Related Software, for Use in the Market Survey and Analysis of a Business' Trade Market Area (Int. Cl. 16).
First use on or about Jan. 10, 1969.

SN 318,950. DCA Educational Products, Inc., Philadelphia, Pa. Filed Feb. 12, 1969.

COMPILE-A-TOPIC

For Teaching Kit Comprising a Compilation of Relevant Documents Including Maps, Drawings, Portraits, Informational Sheets, and Other Similar Materials Which Relate to Particular Events or People (Int. Cl. 16).
First use Jan. 22, 1969.

SN 320,785. American Optical Corporation, Southbridge, Mass. Filed Mar. 5, 1969.

REFLECTIONS

For Optical Technology Newsletter (Int. Cl. 16).
First use Feb. 1, 1969.

SN 322,524. International Association of Clothing Designers, Philadelphia, Pa. Filed Mar. 24, 1969.

INTERNATIONAL DESIGNER

For Periodical Trade Newspaper (Int. Cl. 16).
First use October 1964.

SN 323,409. W. T. Rogers Company, Madison, Wis. Filed Apr. 2, 1969.

DATE WATCHER

For Calendars for Use on Watch Bands and Watch Straps (Int. Cl. 16).
First use June 3, 1968.
Subj. to Intf. with SN 315,042.

SN 325,818. National Tribune Corporation, Washington, D.C. Filed Apr. 29, 1969.

The Stars and Stripes
The National Tribune

For Weekly Newspaper (Int. Cl. 16).
First use 1877.

SN 326,078. Dana Chase Publications, Inc., Elmhurst, Ill. Filed May 1, 1969.

APPLIANCE ENGINEER

For Periodical Magazine (Int. Cl. 16).
First use on or about Mar. 15, 1967.

Class 39—Clothing

SN 286,837. Elton Meltzer & Co., Inc., New York, N.Y. Filed Dec. 13, 1967.

dino ponti

The name "Dino Ponti" is fanciful.
For Men's Dress and Sport Shirts (Int. Cl. 25).
First use May 1, 1967.
Subj. to Intf. with SN 312,699.

SN 297,364. Apogee International, Inc., Boston, Mass., assignee of Apogee Apparels, Inc., Boston, Mass. Filed May 6, 1968.

APOGEE

For Ladies' Headwear, Footwear, Beachwear, Scarves, Coats, Suits, Blouses, Sweaters, Dresses, Slacks, and Skirts (Int. Cl. 25).
First use as early as Apr. 5, 1968.

SN 312,699. Rob-Scot Knitting Mills, Inc., Philadelphia, Pa. Filed Nov. 20, 1968.

Dino Ponti

The name "Dino Ponti" is fanciful.
For Men's Sweaters (Int. Cl. 25).
First use Oct. 30, 1967.
Subj. to Intf. with SN 286,837.

SN 313,328. Olympic Mills Corporation, San Juan, Puerto Rico. Filed Nov. 29, 1968.

GRANA

For Men's and Boys' Undershirts, Shorts, T-Shirts, Ties, Pajamas, and Handkerchiefs (Int. Cl. 25).
First use 1949.

SN 315,548. Funny Girl Incorporated, New York, N.Y. Filed Jan. 2, 1969.

FUNNY GIRL

For Women's Clothes—Namely, Dresses, Skirts, Blouses, Suits, and Slacks (Int. Cl. 25).
First use Dec. 12, 1968.

SN 316,244. Salant & Salant, Incorporated, New York, N.Y. Filed Jan. 9, 1969.

PUDDIN' HEAD FASHIONS

No claim is made to the word "Fashions" apart from the mark as shown.
For Shirts, Pants, and Jackets (Int. Cl. 25).
First use Nov. 5, 1968.

SN 318,121. Work Wear Corporation, Cleveland, Ohio. Filed Jan. 31, 1969.

CAREER CLOTHES
BY

The drawing is lined for the colors red and gray or silver, but no claim is made as to color. No claim is made to the words "Clothes" and "Work Wear" apart from the mark as shown. Owner of Reg. Nos. 742,019 and 819,542.
For Women's Dresses, Jackets, Suits, and Coats (Int. Cl. 25).
First use on or about July 18, 1968.

SN 318,452. Norwich Mills Inc., Norwich, N.Y. Filed Feb. 5, 1969.

MILL HOUSE

For Boys' and Men's Underwear; Boys', Men's, Girls' and Ladies' Knit Shirts; Boys' and Men's Sweatshirts; Men's Boys', Girls' and Ladies' Night Clothes—Namely, Pajamas, Night Shirts and Night Gowns; Boys', Men's, Girls', and Ladies' Dickies (Int. Cl. 25).
First use Nov. 8, 1968.

SN 319,003. Everitt W. Vero & Company Limited, London, England. Filed Feb. 12, 1969.

For Hats, Caps, and Helmets (Int. Cl. 25).
First use 1952; in commerce December 1959.

SN 320,107. Robert P. Beaudry, Indianapolis, Ind. Filed Feb. 26, 1969.

Indy

For Jackets, T-Shirts, and Sweat Shirts (Int. Cl. 25).
First use at least as early as Jan. 12, 1968.

SN 321,349. Varsity Industries, Inc., New York, N.Y. Filed Jan. 28, 1969.

VARSITY

Owner of Reg. Nos. 81,813, 774,188, and others.
For Pajama and Robe Sets (Int. Cl. 25).
First use on or about Oct. 17, 1963.

SN 323,561. Grey Hosiery Mills, d.b.a. Mary Grey Hosiery Mills, Bristol, Va. Filed Apr. 3, 1969.

STAY UP
Hip-Petters
with elastic top

"Mary Grey" is the name of a living individual whose consent is of record. The words "Stay Up With Elastic Top" are disclaimed apart from the mark shown. Owner of Reg. Nos. 396,554, 565,274, and others.
For Hosiery (Int. Cl. 25).
First use about Dec. 2, 1968.

SN 323,680. Columbia Sportswear Company, Portland, Oreg. Filed Apr. 4, 1969.

"the Steelheader"

For Vests for Fishermen (Int. Cl. 25).
First use Feb. 1, 1966.

SN 324,278. Daniel Industries Corporation, New York, N.Y. Filed Apr. 11, 1969.

TWO-ZEES

For Hose and Panty Hose (Int. Cl. 25).
First use Dec. 10, 1968.

SN 325,925. Dino Boutiques, Inc., Miami, Fla. Filed Apr. 30, 1969.

Mr. Dino

"Mr. Dino" is a fictitious name. Owner of Reg. Nos. 742,694 and 806,008.
For Women's Sportswear—Namely, Dresses, Shirts, Sweaters, Coats, Capes, Blouses, Slacks, Skirts, Jackets, and Shorts (Int. Cl. 25).
First use on or before Aug. 19, 1960.

Class 43 — Thread and Yarn

SN 325,238. Threads-Incorporated, Gastonia, N.C. Filed Apr. 22, 1969.



For Thread (Int. Cl. 23).
First use 1900.

Class 44 — Dental, Medical, and Surgical Appliances

SN 281,278. Dynacor Manufacturing Company, Evanston, Ill. Filed Sept. 27, 1967.

DYNACOR

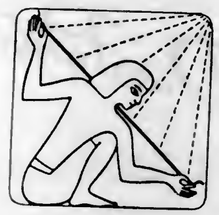
For Hospital and Surgical Appliances—Namely, Intravenous Arm Boards, Catheters, Medicine Dosage Cups, Disposable Shaving Kits, Post-Mortem Care Kits and Swabs (Int. Cls. 5 and 10).
First use on or about Mar. 31, 1967.

SN 312,902. Milton Roy Company, St. Petersburg, Fla. Filed Nov. 22, 1968.

AUTOMBALMER

For Fluid Injector Apparatus for Injecting Embalming Chemicals (Int. Cl. 7).
First use Nov. 13, 1967.

SN 324,634. Biometrics, Inc., Cambridge, Mass. Filed Apr. 16, 1969.



For Biomedical Instrumentation—Namely, Eye Measuring Equipment and Cardio Activity Monitors (Int. Cl. 10).
First use Mar. 17, 1969.

Class 46 — Foods and Ingredients of Foods

SN 287,159. Orlando E. Farina, Stockton, Calif. Filed Dec. 18, 1967.

ANGELINA

For Fresh Grapes, Sold Only for the Purpose of Wine Making (Int. Cl. 31).
First use about Sept. 1, 1935.

SN 292,696. Koninklijke Fabrieken C. J. Van Houten & Zoon N.V., Weesp, Netherlands. Filed Mar. 7, 1968.

JEM*MA

For Chocolate Covered Candy Bars (Int. Cl. 30).
First use Febe. 7, 1968; in commerce Feb. 7, 1968.

SN 301,316. Agway, Inc., Dewitt, N.Y. Filed June 25, 1968.

WORK HORSE

For Horse Feed (Int. Cl. 31).
First use May 12, 1968.

SN 305,551. Kellogg Company, Battle Creek, Mich. Filed Aug. 20, 1968.

POP-A-HOT CAKES

Without waiver of any common law rights in any feature of its mark, applicant disclaims exclusive right to use of the word "Cakes" apart from the mark as shown. Owner of Reg. No. 860,651.
For Pastry Bakery Product That May Be Filled With Fruit, Fruit Preserves, Spices and Other Flavoring Agents, and Which May Be Covered With a Coating of Sugar or Other Flavoring Material (Int. Cl. 30).
First use at least as early as Mar. 14, 1968.

SN 314,414. The Donruss Company, Memphis, Tenn. Filed Dec. 13, 1968.

SUPER BUBBLE

Owner of Reg. No. 504,862.
For Chewing Gum, Bubble Gum, and Candy (Int. Cl. 30).
First use Sept. 6, 1946.

SN 317,095. Pet Incorporated, St. Louis, Mo. Filed Jan. 21, 1969.

AZTEC GOLD

For Frozen Pineapple in the Form of Whole Frozen Pineapple, Sliced Frozen Pineapple and Frozen Pineapple Spears (Int. Cl. 29).
First use Jan. 29, 1968.

SN 317,121. Seneca Foods Corporation, Dundee, N.Y. Filed Jan. 21, 1969.

SENECA

Owner of Reg. No. 755,615.
For Apple Sauce (Int. Cl. 29).
First use Oct. 5, 1965.

SN 318,748. Bremner Biscuit Company, Chicago, Ill. Filed Feb. 10, 1969.

FRISCO WAFERS

Exclusive rights of the term "Wafers" are disclaimed apart from the mark as shown.
For Baked Sweet Wafers (Int. Cl. 30).
First use Jan. 28, 1969.

Class 47 — Wines

SN 307,549. Bodegas Bilmainas, S.A., Bilbao, Spain. Filed Sept. 17, 1968.

VIÑA POMAL

For Wine (Int. Cl. 33).
First use Nov. 10, 1914; in commerce Dec. 2, 1937.

SN 307,552. Bodegas Bilbainas, S.A., Bilbao, Spain. Filed Sept. 17, 1968.

VIÑA PACETA

For Wine (Int. Cl. 33).
First use July 10, 1928; in commerce May 6, 1965.

Class 49 — Distilled Alcoholic Liquors

SN 302,845. "La Sorgente" di Carmine Cammardella, Naples, Italy. Filed July 30, 1969.



The drawing is lined for the colors yellow, orange, and green, however, no claim is made to said colors. The word "Sciarada" means "a game with words" in the Italian language. Owner of Italian Reg. No. 231,375, dated Sept. 25, 1968.
For Aromatic Liqueurs (Int. Cl. 33).

SN 314,623. Schenley Distillers, Inc., d.b.a. The Dant Distillery Co., New York, N.Y. Filed Dec. 16, 1968.

FIELD BIRDS

For Whiskey (Int. Cl. 33).
First use Nov. 12, 1968.

Class 50 — Merchandise Not Otherwise Classified

SN 309,957. Textron Inc., Providence, R.I. Filed Oct. 18, 1968.

SAFE-MARK

For Portable Traffic Control Guides (Int. Cl. 19).
First use at least as early as Apr. 19, 1968.

SN 309,958. Textron Inc., Providence, R.I. Filed Oct. 18, 1968.

MINI-MARK

For Portable Traffic Control Guides (Int. Cl. 19).
First use at least as early as Sept. 19, 1968.

SN 317,429. Alabe Crafts, Inc., Cincinnati, Ohio. Filed Jan. 24, 1969.

SOCKET TO ME

For Statuette (Int. Cl. 20).
First use Jan. 7, 1969.

Class 51 — Cosmetics and Toilet Preparations

SN 288,959. Kevin Products, Inc., Arlington, Mass. Filed Jan. 16, 1968.

MR. KEVIN

For Hand Lotions and Colognes (Int. Cl. 3).
First use on or about Sept. 7, 1967.

SN 293,306. Sakowitz, Inc., Houston, Tex. Filed Mar. 14, 1968.

911

For Hair Styling Gel, Hair Dressing and Hair Grooming Spray (Int. Cl. 3).
First use Feb. 5, 1968.

SN 295,675. Roger et Gallet, Paris, France. Filed Apr. 15, 1968.

Rivages

Applicant's mark translates to be "shores." Owner of French Reg. No. 471,424, dated Apr. 3, 1958 (Seine); Natl. Inst. No. 105,667.
For Perfumes, Toilet Creams, and Dentifrices (Int. Cl. 3).

SN 296,660. Helene Curtis Industries, Inc., Chicago, Ill. Filed Apr. 26, 1968.

DER MOIST

Reserving its common law rights, applicant disclaims "Moist" apart from the mark as shown.
For Bath Oil (Int. Cl. 3).
First use on or about Mar. 13, 1968.

SN 296,662. Helene Curtis Industries, Inc., Chicago, Ill. Filed Apr. 26, 1968.

BOMB SHELLS

For Eye Make Up (Int. Cl. 3).
First use on or about Mar. 13, 1968.

SN 301,000. Rexall Drug and Chemical Company, d.b.a. Vanda Cosmetics Company, Los Angeles, Calif. Filed June 20, 1968.

CITRUS SPA

Applicant disclaims "Citrus" apart from the mark as shown.
For Bath Toiletries—Namely, Bath Oil (Int. Cl. 3).
First use June 6, 1968.

SN 311,502. Leon Products, Inc., Jacksonville, Fla. Filed Nov. 6, 1968.

ROYAL MINK

The word "Mink" is disclaimed apart from the mark as shown, but applicant waives none of its common law rights in the mark or any feature thereof. Owner of Reg. Nos. 690,670 and 764,068.
For Moisture Creme (Int. Cl. 3).
First use Oct. 30, 1968.

SN 311,619. Virginia B. Pflueger, d.b.a. Roses of Texas, Houston, Tex. Filed Nov. 7, 1968.

THE YELLOW ROSE OF TEXAS

For Perfumes, Colognes, and Toilet Waters (Int. Cl. 3).
First use Aug. 20, 1968.

SN 313,805. Caron Corporation, New York, N.Y. Filed Dec. 6, 1968.

CARON ROYALE

Owner of Reg. Nos. 164,476 and 844,727.
For Perfume, Cologne, Toilet Water, Face Powder, Talcum Powder, Skin Moisturizing Cream, and Bath Oil (Int. Cl. 3).
First use Oct. 28, 1968.

SN 319,109. Elizabeth Arden Sales Corporation, d.b.a. Elizabeth Arden, New York, N.Y. Filed Feb. 14, 1969.

SEASPRAY

For Bath Preparations—Namely, Bath Salts, Dusting Powder, Talcum Powder, Bath Oils, and Cologne (Int. Cl. 3).
First use Jan. 17, 1969.

SN 319,326. Lewis-Howe Company, St. Louis, Mo. Filed Feb. 17, 1968.

SCOTCH-IT

For Breath Freshener (Int. Cl. 3).
First use Dec. 23, 1968.

SN 321,192. Clairol Incorporated, New York, N.Y. Filed Mar. 10, 1969.

NICE N STRONG

The word "Strong" is disclaimed apart from the mark as shown.
For Nail Enamel and Nail Hardener (Int. Cl. 3).
First use Feb. 19, 1969.

SN 323,921. The Sovera Company, Winter Haven, Fla. Filed Apr. 8, 1969.

Sovera

For Skin Moisturizer Lotion, Suntan Lotion, Eye Gel Moisturizer, Creme Perfume, Facial Make-Up, Eye Make-Up, Hand and Body Lotion, Skin Cream Moisturizer, Lipstick, Lip Pomade, Deodorant, Anti-Perspirant, Cosmetic Skin Cleanser, Make-Up Remover Pads Impregnated With Cosmetic Cleanser, Hair Conditioner, Freshener and Astringent, Facial Masque, Rouge, Face Powder, and Mascara (Int. Cls. 3 and 5).
First use Sept. 16, 1968, on skin moisturizer lotion.

Class 52 — Detergents and Soaps

SN 297,872. Meguiar Enterprises, Pasadena, Calif. Filed May 10, 1968.

COMPETITION FINISH CONDITIONER

The words "Finish Conditioner" are disclaimed apart from the mark as shown.
For Cleaning Preparation for Use on Finished Surfaces—Namely, Fiberglass Surfaces and Painted Metal Surfaces of Automobiles (Int. Cl. 3).
First use Apr. 11, 1968.

SN 298,021. Meguiar Enterprises, Pasadena, Calif. Filed May 13, 1968.

LIQUID SOUND

The word "Liquid" is disclaimed apart from the mark as shown.
For Preparation for Cleaning and Preserving Phonograph Records (Int. Cl. 3).
First use Nov. 23, 1967.

SN 298,376. Wyandotte Chemicals Corporation, Wyandotte, Mich. Filed May 16, 1968.

BEST EGG

No claim is made to the word "Egg" apart from the mark as shown. Owner of Reg. No. 688,907.
For Egg Washing Composition (Int. Cl. 3).
First use Mar. 29, 1968.

SN 298,470. Perfumeria Parera, S.A., Badalona, Barcelona, Spain. Filed May 17, 1968.

Romance Espanol

The word "Espanol" means "Spanish."
For Toilet Soaps (Int. Cl. 3).
First use January 1967; in commerce January 1967.

SN 299,874. Sea & Ski Corporation, San Francisco, Calif. Filed June 6, 1968.

SEA & SKI

Owner of Reg. Nos. 586,288, 841,768, and others.
For Hair Shampoo (Int. Cl. 3).
First use May 13, 1968.

SN 300,169. Bull & Roberts, Inc., Murray Hill, N.J. Filed June 11, 1968.

BROMAR

For Emulsifying Degreaser for Cleaning Oil Tanks (Int. Cl. 3).
First use Mar. 1, 1968.

SN 307,627. Drew CTI Corporation, Hialeah, Fla., assignee of Chemical Technical Industries, Inc., Hialeah, Fla. Filed Sept. 18, 1968.

FORMULA 32

The word "Formula" is disclaimed apart from the mark as shown.
For Household and Industrial Cleaners and Detergents for Removing Rust, Water Stain and Mildew From Tile and Metals, for Brick and Masonry Cleaning, for Removing Algae, Slime and Calcium From Air Conditioners and Refrigeration Equipment, and for Preparing Concrete or Metal Surfaces Prior to Painting (Int. Cl. 3).
First use Aug. 16, 1968.

SN 308,031. The Purdue Frederick Company, Yonkers, N.Y. Filed Sept. 23, 1968.

STERI-PREP BETADINE SPONGE

Applicant disclaims the word "Sponge" apart from the mark as shown. Owner of Reg. Nos. 711,741 and 844,417.
For Sponge Impregnated With a Microbicidal Cleanser (Int. Cl. 3).
First use Aug. 2, 1968.

SN 308,164. Joseph F. Uddo, d.b.a. The Uddo Company, New Orleans, La. Filed Sept. 24, 1968.

LEM 'N' SPARKLE

Applicant disclaims the term "Lem 'n' " separate and apart from the mark as shown.
For Dishwashing Compound (Int. Cl. 3).
First use July 29, 1968.

SN 311,503. Leon Products, Inc., Jacksonville, Fla. Filed Nov. 6, 1968.

ROYAL MINK

The word "Mink" is disclaimed apart from the mark as shown, but applicant waives none of its common law rights in the mark or any feature thereof. Owner of Reg. Nos. 690,670 and 764,068.
For Hair Shampoo (Int. Cl. 3).
First use Oct. 30, 1968.

SN 313,804. Caron Corporation, New York, N.Y. Filed Dec. 6, 1968.

CARON ROYALE

Owner of Reg. Nos. 164,476 and 844,727.
For Toilet Soap (Int. Cl. 3).
First use Oct. 28, 1968.

SN 314,967. Glastonbury Toiletries, Inc., Glastonbury, Conn. Filed Dec. 20, 1968.



For Toilet Soap (Int. Cl. 3).
First use June 5, 1968.

SN 315,450. Texize Chemicals, Inc., Greenville, S.C. Filed Dec. 30, 1968.

STUPENDOUS

For Spray Cleaner for Household Use (Int. Cl. 3).
First use Nov. 21, 1968.

SN 316,798. Leon Products, Inc., Jacksonville, Fla. Filed Jan. 16, 1969.

WHITE MINK

The word "Mink" is disclaimed apart from the mark as shown, but applicant waives none of its common law rights in the mark or any feature thereof. Owner of Reg. Nos. 690,670 and 764,068.
For Hair Shampoo (Int. Cl. 3).
First use Dec. 13, 1968.

SN 320,590. Genovese Drug Stores, Inc., Long Island City, N.Y. Filed Mar. 3, 1969.

JO-GEN

For Egg Shampoo and Castile Shampoo (Int. Cl. 3).
First use May 1958.

SN 324,561. Lever Brothers Company, New York, N.Y. Filed Apr. 15, 1969.

VOLT

For Household Detergent for General Washing and Cleansing (Int. Cl. 3).
First use Apr. 7, 1969.

SN 326,711. American Home Products Corporation, New York, N.Y. Filed May 8, 1969.

WIZARD

Owner of Reg. Nos. 106,820, 743,975, and others.
For Household, Oven, and Window Cleaning Preparations (Int. Cl. 3).
First use June 14, 1968.

SERVICE MARKS

Class 100 — Miscellaneous

SN 275,142. Robert W. Hunt Company, Chicago, Ill. Filed June 30, 1967.



Owner of Reg. Nos. 228,550, 243,419, and others.
For Inspection and Testing Services Rendered to Others With Regard to Machinery and Equipment Items, Fabrications and Materials in Various Fields of Industry (Int. Cl. 42).
First use Apr. 1, 1887.

SN 290,878. John F. North, Medford, Oreg. Filed Feb. 12, 1968.

north's CHUCK WAGON

For Restaurant Services (Int. Cl. 42).
First use 1945.
Subj. to Intf. with SN 286,905 and SN 305,252.

SN 290,879. John F. North, Medford, Oreg. Filed Feb. 12, 1968.



north's CHUCK WAGON

For Restaurant Services (Int. Cl. 42).
First use 1966.
Subj. to Intf. with SN 286,905 and SN 305,252.

SN 293,633. Litchfield Farms, Inc., Middlebury, Conn. Filed Mar. 19, 1968.

LITCHFIELD FARM HOUSE

For Restaurant Services (Int. Cl. 42).
First use Apr. 26, 1962.

SN 293,941. Meditest Corporation, Chicago, Ill. Filed Mar. 22, 1968.

MEDITEST

For Scientific Medical Testing Services, Comprising Laboratory Testing of Blood and Urine and Other Body Fluids and Compositions (Int. Cl. 42).
First use on or about Dec. 15, 1966.

SN 294,066. Meditest Corporation, Chicago, Ill. Filed Mar. 25, 1968.



The representation of the caduceus is disclaimed apart from the mark as shown.
For Scientific Medical Testing Services, Comprising Laboratory Testing of Blood and Urine and Other Body Fluids and Compositions (Int. Cl. 42).
First use on or about Dec. 15, 1966.

SN 297,188. Robert A. Hampton and Garland W. Hampton (joint owners), d.b.a. Taco Toro, Greeley, Colo. Filed May 2, 1968.

TACO TORO

Applicant disclaims the word "Taco" apart from the mark as shown. "Toro" is the Spanish word for "bull."
For Restaurant Services (Int. Cl. 42).
First use Mar. 28, 1968.

SN 300,742. Printing Industries of Northern California, San Francisco, Calif. Filed June 18, 1968.



The drawing is lined for the color red.
For Association Services to the Printing Industry (Int. Cl. 42).
First use in or about March 1966.

SN 301,765. RDS, Incorporated, Corpus Christi, Tex. Filed July 1, 1968.



The words "Chicken" and "Texas Style Fried Chicken" are disclaimed apart from the mark as shown.
For Restaurant Services (Int. Cl. 42).
First use Nov. 29, 1963.
Subj. to Intf. with SN 317,655.

SN 307,764. Sudmeier Enterprises, Incorporated, Gardena, Calif. Filed Sept. 19, 1968.



For Providing Subsurface Surveys (Int. Cl. 42).
First use on or about July 3, 1968.

SN 308,083. Baba Originals, Inc., New York, N.Y. Filed Sept. 24, 1968.

BABA

For Fashion Consulting Services; Styling and Designing of Wearing Apparel for Others, Such as Costumes for Theatrical Products, Uniforms for Airlines, and the Like (Int. Cl. 42).
First use 1962.

SN 308,377. International Association of Chiefs of Police, Washington, D.C. Filed Sept. 27, 1968.



For Association Services—Namely, Promoting Crime Prevention and Cooperation Between Citizens and Police Departments (Int. Cl. 42).
First use June 3, 1968.

SN 313,723. The Purple Pickle, Inc. (Delaware corporation), Harper Woods, Mich., assignee of The Purple Pickle, Inc. (Michigan corporation), Harper Woods, Mich. Filed Dec. 5, 1968.



The drawing is lined for the color purple.
For Restaurant Services (Int. Cl. 42).
First use on or about Oct. 17, 1966.

SN 314,324. Consolidated Franchising Corporation, Lewisburg, Pa. Filed Dec. 12, 1968.

HIRAM'S DUTCH BOY

For Restaurant Services (Int. Cl. 42).
First use Sept. 15, 1968.

SN 315,542. Digital Applications, Inc., New York, N.Y. Filed Jan. 2, 1969.

DILACS

For Designing Automated Chromatograph Systems for Others (Int. Cl. 42).
First use Nov. 12, 1968.

SN 317,655. Chicken Shack, Inc., Bryan, Tex., by change of name from Western Franchise Corporation, Bryan, Tex. Filed Jan. 27, 1969.

THE CHICKEN SHACK

Applicant disclaims the word "Chicken" apart from the mark as shown.
For Restaurant Services (Int. Cl. 42).
First use at least as early as Apr. 1, 1934.
Subj. to Intf. with SN 301,765.

SN 317,656. Chicken Shack, Inc., Bryan, Tex., by change of name from Western Franchise Corporation, Bryan, Tex. Filed Jan. 27, 1969.

LESLIE'S FRIED CHICKEN

Applicant disclaims the expression "Fried Chicken" apart from the mark as shown.
For Restaurant Services (Int. Cl. 42).
First use at least as early as Apr. 1, 1934.

SN 317,657. Chicken Shack, Inc., Bryan, Tex., by change of name from Western Franchise Corporation, Bryan, Tex. Filed Jan. 27, 1969.



For Restaurant Services (Int. Cl. 42).
First use at least as early as Apr. 1, 1934.

SN 325,145. Sizzler Family Steak Houses, Culver City, Calif. Filed Apr. 22, 1969.

SIZZLER
STEAK HOUSES

Applicant disclaims the exclusive right to the use of the words "Steak Houses." The drawing is lined for the color red, but no claim is made for any particular color. Owner of Reg. No. 827,319.
For Restaurant Services (Int. Cl. 42).
First use at least as early as about Jan. 26, 1957.

SN 325,822. Sveden House International, Inc., Minneapolis, Minn. Filed Apr. 29, 1969.



Owner of Reg. Nos. 847,741, 852,917, and 865,499.
For Restaurant Services (Int. Cl. 42).
First use on or about May 1, 1964.

SN 325,823. Sveden House International, Inc., Minneapolis, Minn. Filed Apr. 29, 1969.

Scanda House

Owner of Reg. Nos. 847,741, 852,917, and 865,499.
For Restaurant Services (Int. Cl. 42).
First use in or about May 1965.

SN 326,051. Ready Rent-All Systems Inc., Boston, Mass. Filed May 1, 1969.

READY

For Rental of Tools, Construction Equipment, Party Supplies, Sick Room Equipment, Sporting Equipment, Camping Equipment, Vehicular Trailers, Furniture, and Miscellaneous Consumer and Industrial Rental Articles (Int. Cl. 42).
First use Jan. 15, 1968.

SN 326,828. Holiday Inns of America, Inc., Memphis, Tenn. Filed May 9, 1969.



Owner of Reg. Nos. 592,540, 795,357, and others.
For Motel Services—Namely, Providing Lodgings and Meals in Motels (Int. Cl. 42).
First use Mar. 5, 1957.

Class 101 — Advertising and Business

SN 291,854. Florists' Transworld Delivery Association, Detroit, Mich. Filed Feb. 26, 1968.

SPEED-A-GIFT

For Florists' Clearing House and Promotion Services—Namely, Arranging for the Sale of Flowers, Plants and Floral Arrangements Combined With Useful and Decorative Household Gift Products (Int. Cl. 35).
First use Jan. 12, 1968.

SN 304,571. Arles Corporation, McLean, Va. Filed Aug. 7, 1968.

AUTODIAGRAMMER

For Planning Computer Programs for Others (Int. Cl. 35).
First use November 1965.

SN 317,692. Regensteiner Publishing Enterprises, Inc., Chicago, Ill. Filed Jan. 28, 1969.

CMS

For Mailing and Shipping Services, Including Selecting Goods for Mailing or Shipment and/or Packaging Goods for Mailing or Shipment for Others (Int. Cl. 35).
First use on or about May 1, 1968.

SN 325,934. Nu-Way Stamps of Cleburne, Incorporated, Cleburne, Tex. Filed Apr. 30, 1969.



For Promoting the Sale of the Goods and Service of Others by Issuance of Trading Stamps Redeemable in Merchandise (Int. Cl. 35).
First use Feb. 3, 1969.

Class 102 — Insurance and Financial

SN 280,408. First Union National Bank of North Carolina, Charlotte, N.C. Filed Sept. 15, 1967.



The drawing is lined for the color blue.
For Banking Services (Int. Cl. 36).
First use June 25, 1967.

SN 290,002. Members Insurance Company, San Francisco, Calif. Filed Jan. 31, 1968.



The drawing of record is lined for the color blue, but no claim is made for color.
For Underwriting Fire, Casualty, Surety, and All Other Lines of Insurance Except Life (Int. Cl. 36).
First use September 1963.

SN 299,103. Jack G. Clark, d.b.a. Jack G. Clark & Associates, Dallas, Tex. Filed May 27, 1968.



For Securities Brokerage Services (Int. Cl. 36).
First use June 1, 1962.

SN 299,994. National Association Plans, Inc., New York, N.Y. Filed June 7, 1968.

MEDI-GAP

For Insurance Brokerage Services (Int. Cl. 36).
First use May 28, 1968.

SN 307,837. First National City Bank, New York, N.Y. Filed Sept. 20, 1968.

THE EVERYWHERE CARD

The word "Card" is disclaimed apart from the mark as shown.
For Issue of Credit Cards, Central Billing of Customer's Charges and Collection of Accounts (Int. Cl. 36).
First use July 15, 1968.

SN 323,520. United Insurance Company of America, Chicago, Ill. Filed Apr. 3, 1969.



For Underwriting Life, Health, and Accident Insurance (Int. Cl. 36).
First use on or about Dec. 23, 1968.

SN 323,521. United Insurance Company of America, Chicago, Ill. Filed Apr. 3, 1969.



For Underwriting Life, Health, and Accident Insurance (Int. Cl. 36).
First use on or about Dec. 23, 1968.

Class 103 — Construction and Repair

SN 256,252. Wonder Wand, Inc., Mentor, Ohio. Filed Oct. 11, 1966.

WONDER WAND

The term "Wand" is disclaimed apart from the mark as shown.
For Operating Coin Operated Car Washes (Int. Cl. 37).
First use in or about January 1965.

SN 266,191. American Permac, Inc., Garden City, N.Y. Filed Mar. 8, 1967.

Jiffy

The drawing of the mark is lined for the color red. Owner of Reg. No. 829,292.
For Dry-Cleaning Services (Int. Cl. 37).
First use Nov. 13, 1964.

SN 295,604. American Safeguard Engineers, New York, N.Y. Filed Apr. 15, 1968.

QUALITY WORKER

Owner of Reg. No. 636,068.
For Inspection of Plants and Manufactured Products To Insure Adherence to Established Criteria (Int. Cl. 37).
First use Mar. 1, 1967.

SN 295,605. American Safeguard Engineers, New York, N.Y. Filed Apr. 15, 1968.

SAFEGUARD QUALITY

Owner of Reg. No. 636,068.
For Inspection of Plants and Manufactured Products To Insure Adherence to Established Criteria (Int. Cl. 37).
First use Mar. 1, 1967.

SN 297,452. Otho Gordon Taylor, Atlanta, Ga. Filed May 6, 1968.

MASTER Kleen

The word "Kleen" is disclaimed apart from the mark as shown. The drawing is lined for the color green.
For Dry Cleaning Services (Int. Cl. 37).
First use Dec. 1, 1967.

SN 307,526. Work Wear Corporation, Cleveland, Ohio. Filed Sept. 16, 1968.



Owner of Reg. Nos. 742,019, 819,542, and 861,498.
For Furnishing Work Uniforms, Industrial Towels and Linens on a Periodic Basis (Int. Cl. 37).
First use June 26, 1968.

SN 313,843. Jacob Toutloian, d.b.a. Hy's Dry Cleaning Systems, St. Louis, Mo. Filed Dec. 6, 1968.

Hy*S

For Dry Cleaning Services (Int. Cl. 37).
First use Sept. 5, 1967.

SN 322,125. The British Petroleum Company Limited, London, England. Filed Mar. 19, 1969.

BP

Owner of Reg. No. 654,019.
For Gasoline Service Station Services and Marine and Aviation Terminal Services (Int. Cl. 37).
First use Mar. 11, 1969; in commerce Mar. 11, 1969.

Class 105 — Transportation and Storage

SN 295,330. Great Lakes Overseas, Inc., Chicago, Ill. Filed Apr. 10, 1968.

SL

The mark comprises a fanciful representation of the letters "SL."
For Arranging for the Transportation of Freight by Ship (Int. Cl. 39).
First use Mar. 1, 1968.

SN 311,422. Vacations West, Inc., New York, N.Y. Filed Nov. 5, 1968.



For Travel Services and Operating Inclusive Tours (Int. Cl. 39).
First use February 1968.

Class 107 — Education and Entertainment

SN 279,488. Keyboard Training, Inc., New York, N.Y. Filed Aug. 31, 1967.



For Conducting Courses of Instruction in the Operation of Keyboard-Type Business Machines (Int. Cl. 41).
First use July 1967.

SN 304,019. Schinto-Platt Inc., New York, N.Y. Filed July 31, 1968.

SPi

For Production and Preparation of Television Commercials (Int. Cl. 41).
First use on or about May 29, 1968.

SN 316,208. The Journal Company, Milwaukee, Wis. Filed Jan. 9, 1969.

COMPUTER CASH

For Entertainment Services—Namely, an Audience Participation Game Rendered Through the Medium of Radio (Int. Cl. 41).
First use Nov. 18, 1968.

COLLECTIVE MEMBERSHIP MARKS

Class 200

SN 314,400. Potato Growers Association of California, Inc., Bakersfield, Calif. Filed Dec. 13, 1968.



For Indicating Membership in Applicant Association.
First use on or about Jan. 1, 1963.

TRADEMARK REGISTRATIONS ISSUED
PRINCIPAL REGISTER

Class 1 — Raw or Partly Prepared Materials

877,587. WARREN'S. Warren's Turf Nursery, Inc. MULTIPLE CLASS (Classes 1 and 10). SN 292,991. Pub. 7–15–69. Filed 3–11–68.

877,588. PERMAGRAIN. The Goodyear Tire & Rubber Company. SN 294,180. Pub. 7–15–69. Filed 3–26–68.

877,589. FOSTAFOAM. Foster Grant Co., Inc. SN 295,134. Pub. 2–25–69. Filed 4–8–68.

877,590. SURE-STRIP. The Quaker Oats Company. SN 297,634. Pub. 7–15–69. Filed 5–8–68.

877,591. PETESTRONG. Peter, Strong & Co. Inc. SN 298,625. Pub. 7–15–69. Filed 5–20–68.

877,592. BA. Universal Oil Products Company, assignee of Bostrom-Amalga Corporation. SN 303,010. Pub. 7–15–69. Filed 7–15–68.

877,593. LANDIA. Irving Tanning Company. SN 308,378. Pub. 7–15–69. Filed 9–27–68.

877,594. PROVOSIL. Redco, Inc. SN 308,719. Pub. 7–15–69. Filed 10–2–68.

877,595. PAMPA. Euro-Tan Ltd. SN 309,030. Pub. 7–15–69. Filed 10–7–68.

877,596. CALIDRIA. Union Carbide Corporation. SN 309,124. Pub. 7–15–69. Filed 10–7–68.

877,597. SUPERFAB. Albany Felt Company. SN 309,149. Pub. 7–15–69. Filed 10–8–68.

877,598. COATERTHANE. The Nazar Rubber Company. SN 309,282. Pub. 7–15–69. Filed 10–9–68.

877,599. ULTRAFIL. Star Textile and Research, Inc. SN 309,999. Pub. 7–15–69. Filed 10–18–68.

877,600. LINRON. Kirkpatrick Brothers Limited. SN 310,236. Pub. 7–15–69. Filed 10–22–68.

877,601. TOUGH STUFF. Beaunit Corporation. SN 317,196. Pub. 7–15–69. Filed 1–22–69.

Class 2 — Receptades

877,602. BREARLEY AND DESIGN. The Brearley Company. MULTIPLE CLASS (Classes 2, 13, 26, 32, and 50). SN 300,152. Pub. 7–15–69. Filed 6–11–68.

877,603. LOX-IT. Gelatin Capsules Limited. SN 309,370. Pub. 7–15–69. Filed 10–10–68.

877,604. FANCIFUL DESIGN OF LETTERS DP. Dyna-Pak. SN 311,847. Pub. 7–15–69. Filed 11–12–68.

877,605. DAVID DOUGLAS. David Douglas & Co., Inc. SN 312,757. Pub. 7–15–69. Filed 11–21–68.

877,606. DURAWOOD. Pouliot Designs Corporation. MULTIPLE CLASS (Classes 2 and 50). SN 314,160. Pub. 7–15–69. Filed 12–11–68.

Class 3 — Baggage, Animal Equipments, Portfolios, and Pocketbooks

877,607. BARK. Items, Incorporated. SN 306,668. Pub. 7–15–69. Filed 9–5–68.

877,608. LUCKY. Katsuyasu Higuchi. SN 315,487. Pub. 7–15–69. Filed 12–31–68.

Class 4 — Abrasives and Polishing Materials

877,609. PATINA. Trina, Inc. SN 318,253. Pub. 7–15–69. Filed 2–3–69.

877,610. EZI SHEEN. Faultless Starch Company. SN 320,397. Pub. 7–15–69. Filed 3–3–69.

Class 5 — Adhesives

877,647. (See Class 13 for this trademark.)

877,611. TIME INSTROMARK. Professional Tape Co., Inc. SN 270,002. Pub. 4–8–69. Filed 4–25–67.

877,612. 3M. Minnesota Mining and Manufacturing Company, d.b.a. 3M Company. SN 307,806. Pub. 7–15–69. Filed 9–20–68.

877,613. SCOTCHFLEX. Minnesota Mining and Manufacturing Company, d.b.a. 3M Company. SN 307,807. Pub. 7–15–69. Filed 9–20–68.

Class 6 — Chemicals and Chemical Compositions

877,614. NEOTIS. Neotis S.a.S. MULTIPLE CLASS (Classes 6, 18, 51, and 52). SN 280,244. Pub. 7–15–69. Filed 9–13–67.

877,615. CRAVA-CLEAN. Crown-Metro, Inc., assignee of Crown Chemical Corporation. SN 280,571. Pub. 7–15–69. Filed 9–18–67.

877,616. DESICCHLORA. J. T. Baker Chemical Company. SN 285,715. Pub. 7–15–69. Filed 11–28–67.

877,617. CHELIG 32. American Can Company. SN 287,506. Pub. 3–11–69. Filed 12–26–67.

877,618. AZAMIDE. A.Z. Products, Inc. SN 291,334. Pub. 7–15–69. Filed 2–19–68.

877,619. KLEARFAC. Wyandotte Chemicals Corporation. SN 292,034. Pub. 7–15–69. Filed 2–27–68.

877,620. AIR SWEEP. The Drackett Company. SN 292,192. Pub. 7–15–69. Filed 2–29–68.

877,621. GLYCOLENE. The Drackett Company. SN 292,193. Pub. 7–15–69. Filed 2–29–68.

877,622. BACTO-FUN-ZYME. Jack Huppert Company, Inc. SN 293,827. Pub. 7–15–69. Filed 3–21–68.

877,623. FUNZIMATIC. Jack Huppert Company, Inc. SN 293,828. Pub. 7–15–69. Filed 3–21–68.

877,624. BROXGON. Bull & Roberts, Inc. SN 293,899. Pub. 7–15–69. Filed 3–22–68.

877,625. BR AND DESIGN. Bull & Roberts, Inc. SN 293,901. Pub. 7–15–69. Filed 3–22–68.

877,626. SINVALCO. Martin Marietta Corporation. SN 294,520. Pub. 7–15–69. Filed 3–29–68.

877,627. KERKORTAN. Zavody Antonina Zapotockeho, Narodni Podnik. SN 297,233. Pub. 1–28–69. Filed 5–2–68.

877,628. LEGURAME. Societe des Usines Chimiques Rhone-Poulenc. SN 300,294. Pub. 7–15–69. Filed 6–12–68.

877,629. MI-CHROME. The Mitchell-Bradford Chemical Co. SN 300,472. Pub. 7–15–69. Filed 6–14–68.

877,630. LO 'N SLO. Bio-Lab, Inc. SN 300,549. Pub. 7–15–69. Filed 6–17–68.

877,631. CAPSIZE. General Foods Corporation. SN 301,524. Pub. 7–15–69. Filed 6–27–68.

877,632. VISUANT. Joseph J. Packo. SN 302,244. Pub. 7–15–69. Filed 7–8–68.

877,633. NO. 826. Philip A. Hunt Chemical Corporation. SN 303,419. Pub. 7–15–69. Filed 7–23–68.

877,634. MB MELLE-BEZONS AND DESIGN. Societe Anonyme dite: Melle Bezons. SN 307,869. Pub. 7–15–69. Filed 9–23–68.

877,635. END SHOCK AND DESIGN. Glamorene Products Corporation. SN 308,426. Pub. 7–15–69. Filed 9–30–68.

877,636. ULTREX. J. T. Baker Chemical Company. SN 308,738. Pub. 7–15–69. Filed 10–3–68.

877,637. SHAMROCK. Diamond Shamrock Corporation. SN 314,138. Pub. 7–15–69. Filed 12–11–68.

Class 9 — Explosives, Firearms, Equipments, and Projectiles

877,638. ARGO. The Susquehanna Corporation. SN 300,383. Pub. 7–15–69. Filed 6–13–68.

877,639. ASTROLITE. Explosives Corporation of America. SN 300,694. Pub. 7–15–69. Filed 6–18–68.

Class 10 — Fertilizers

877,587. (See Class 1 for this trademark.)

877,640. ENCO. Standard Oil Company. SN 296,275. Pub. 7–15–69. Filed 4–23–68.

877,641. AGRITEC. Agritec Co., Inc. SN 311,343. Pub. 5–6–69. Filed 11–5–68.

Class 12 — Construction Materials

877,642. CAC. Joslyn Mfg. and Supply Co. SN 291,269. Pub. 7–15–69. Filed 2–16–68.

877,643. SSLC. Shingu Shoko, Ltd. SN 298,477. Pub. 7–15–69. Filed 5–17–68.

877,644. ACMASEAL AND HALF ARROW DESIGN. Acme Highway Products Corporation. SN 309,345. Pub. 7–15–69. Filed 10–10–68.

877,645. REGENCY. K-S-H, Inc. SN 316,654. Pub. 7–15–69. Filed 1–15–69.

Class 13 — Hardware and Plumbing and Steam-Fitting Supplies

877,602. (See Class 2 for this trademark.)

877,646. CLASSIQUE. Classique Decorative Hardware Ltd. SN 277,821. Pub. 5–13–69. Filed 8–8–67.

877,647. DANFORTH. The Eastern Company. MULTIPLE CLASS (Classes 5, 13, 14, 19, 21, 23, 26, and 27). SN 286,515. Pub. 7–15–69. Filed 12–8–67.

877,648. FESCO AND DESIGN. Columbian Carbon Company. SN 293,113. Pub. 7–15–69. Filed 3–13–68.

877,649. TYA AND DESIGN. The Young Associates. SN 312,838. Pub. 7–15–69. Filed 11–21–68.

877,650. THERMO TILT. A.R.B. Window Sales Company. SN 312,968. Pub. 7–15–69. Filed 11–25–68.

Class 14 — Metals and Metal Castings and Forgings

877,647. (See Class 13 for this trademark.)

877,651. SIGOPLAT. Eugen Durrwachter & Eberhard Bosch (joint owners), d.b.a. Dr. Eugen Durrwachter Doduco. SN 307,565. Pub. 7–15–69. Filed 9–17–68.

877,652. TEM-TUF. Reynolds Metals Company. SN 308,142. Pub. 7–15–69. Filed 9–24–68.

877,653. GENEMET. General Aerospace Materials Corp. SN 310,319. Pub. 7–15–69. Filed 10–23–68.

Class 15 — Oils and Greases

877,654. SEA-LUBE. North & Judd Manufacturing Company. SN 294,647. Pub. 7–15–69. Filed 4–1–68.

877,655. KEM-A-LOOSE. Kem Manufacturing Corporation. SN 312,303. Pub. 7–15–69. Filed 11–15–68.

Class 16 — Protective and Decorative Coatings

877,656. COR-BOND. The Polymer Corporation. SN 267,662. Pub. 9–17–68. Filed 3–27–67.

877,657. AQUATRONIC. O'Neil-Duro Company. SN 313,133. Pub. 7–15–69. Filed 11–26–68.

877,658. STAR-GLO. Hooker Glass & Paint Mfg. Co. SN 317,950. Pub. 7–15–69. Filed 1–30–69.

877,659. GANICIN. E. I. du Pont de Nemours and Company. SN 319,767. Pub. 7–15–69. Filed 2–24–69.

Class 17 — Tobacco Products

877,660. SABERS. Universal Cigar Corporation. SN 309,344. Pub. 7–15–69. Filed 10–10–68.

Class 18 — Medicines and Pharmaceutical Preparations

877,614. (See Class 6 for this trademark.)

877,661. FAMILY PRIDE. The Kroger Co. MULTIPLE CLASS (Classes 18, 51, and 52). SN 274,832. Pub. 7–15–69. Filed 6–27–67.

877,662. ASEPTICON. Neotis S.p.A., by change of name from Neotis S.a.S. SN 280,245. Pub. 4–22–69. Filed 9–13–67.

877,663. PANSIRON. Rohto Pharmaceutical Co., Ltd. SN 284,040. Pub. 7–15–69. Filed 1–31–69.

877,664. GLYCERO DERMINE. United Laboratories, Ltd. SN 284,849. Pub. 7–15–69. Filed 11–14–67.

877,665. DISPENSA-TROL. Bristol-Myers Company. SN 286,630. Pub. 7–15–69. Filed 12–11–67.

877,666. DOSATROL. Bristol-Myers Company. SN 286,634. Pub. 7–15–69. Filed 12–11–67.

877,667. THERACARD. Bristol-Myers Company. SN 287,888. Pub. 7–15–69. Filed 1–2–68.

877,668. SAN RAFAEL. Metro International Distributors, Inc. SN 292,280. Pub. 4–15–69. Filed 3–1–68.

877,669. RITE AID AND DESIGN. Rack Rite Distributors, Inc. SN 296,714. Pub. 7–15–69. Filed 4–26–68.

877,670. FLEAVAC. Evsco Pharmaceutical Co. SN 297,775. Pub. 7–15–69. Filed 5–9–68.

877,671. CRENEM. Cole Pharmacal Company, Inc., d.b.a. Cole Pharmacal Co., Inc. SN 299,107. Pub. 7–15–69. Filed 5–27–68.

877,672. HYDRO TABS. Michigan Pharmacal Corp. SN 302,103. Pub. 7-15-69. Filed 7-5-68.

877,673. MENSERENE. Alberto-Culver Company. SN 302,265. Pub. 7-15-69. Filed 7-9-68.

877,674. WORTHALL. Fred Meyer, Inc. SN 302,747. Pub. 5-13-69. Filed 7-15-68.

877,675. KESTROGEN. Foremost-McKesson, Inc., d.b.a. McKesson Laboratories. SN 309,564. Pub. 7-15-69. Filed 10-14-68.

877,676. LEVAPTIN. Aktiebolaget Astra. SN 309,823. Pub. 7-15-69. Filed 10-17-68.

877,677. MINOCIN. American Cyanamid Company. SN 309,825. Pub. 7-15-69. Filed 10-17-68.

877,678. ORIOTEM. Geigy Chemical Corporation. SN 309,964. Pub. 7-15-69. Filed 10-18-68.

877,679. PRENSOR. Smith Kline & French Laboratories. SN 310,189. Pub. 7-15-69. Filed 10-22-68.

877,680. MASS-BLEN. Abbott Laboratories, d.b.a. Amdal Company. SN 310,620. Pub. 7-15-69. Filed 10-28-68.

877,681. SEMED. The S. E. Massengill Company. SN 310,679. Pub. 7-15-69. Filed 10-28-68.

877,682. ONTOSEIN. Diagnostic Data, Inc. SN 310,759. Pub. 7-15-69. Filed 10-29-68.

877,683. WOLO. Wolo AG. MULTIPLE CLASS (Classes 18 and 51). SN 320,393. Pub. 7-15-69. Filed 3-3-69.

Class 19—Vehicles

877,647. (See Class 13 for this trademark.)

877,684. MASECO. Marine Safety Equipment Corporation. MULTIPLE CLASS (Classes 19 and 23). SN 298,136. Pub. 7-15-69. Filed 5-14-68.

877,685. ASTRO AND DESIGN. Astro Reinforced Plastics, Inc. SN 313,884. Pub. 7-15-69. Filed 12-9-68.

877,686. TRICE. Sea Rovers, Inc. SN 313,976. Pub. 7-15-69. Filed 12-9-68.

877,687. TERRY. Delhi Manufacturing Corporation. SN 314,876. Pub. 7-15-69. Filed 12-19-68.

877,688. SLICKER. Fenton Manufacturing Corp. SN 315,070. Pub. 7-15-69. Filed 12-23-68.

877,689. STRATO-BAR. Fairchild Hiller Corporation. SN 319,536. Pub. 7-15-69. Filed 2-19-69.

877,690. SPORTSTER. Cobia Boats, Inc., by change of name from Southern Fiber Glass Products, Inc. SN 320,096. Pub. 7-15-69. Filed 2-25-69.

Class 20—Linoleum and Oiled Cloth

877,691. QUIET FLOOR. Mannington Mills Inc. SN 295,936. Pub. 3-4-69. Filed 4-18-68.

Class 21—Electrical Apparatus, Machines, and Supplies

877,647. (See Class 13 for this trademark.)

877,692. SHARP AND DESIGN. Hayakawa Electric Co. Ltd. SN 275,659. Pub. 7-15-69. Filed 7-10-67.

877,693. QUADRILLE. Lightolier Incorporated. SN 288,626. Pub. 7-15-69. Filed 1-11-68.

877,694. CORKER. Regus AG, and A. Hoeffleur Holding AG (joint owners). MULTIPLE CLASS (Classes 21 and 23). SN 291,429. Pub. 7-15-69. Filed 2-19-68.

877,695. THE FANTASTIC SOUND. Sparkomatic Corporation. SN 295,852. Pub. 7-15-69. Filed 4-17-68.

877,696. THE NOW SOUND. Sparkomatic Corporation. SN 295,853. Pub. 7-15-69. Filed 4-17-68.

877,697. SILENT KNIGHT. Silent Knight Security Systems, Inc. SN 298,629. Pub. 7-15-69. Filed 5-20-68.

877,698. WELLTROL. Wells Television, Inc. SN 301,288. Pub. 7-15-69. Filed 6-24-68.

877,699. ORCHESTRATA. Electronics Inc. of Pa. SN 304,214. Pub. 7-15-69. Filed 8-2-68.

877,700. 3M. Minnesota Mining and Manufacturing Company, d.b.a. 3M Company. SN 306,203. Pub. 7-15-69. Filed 8-29-68.

877,701. VAROFORMER. Varo, Inc. SN 309,129. Pub. 7-15-69. Filed 10-7-68.

877,702. ULTRAMET. Buehler Ltd. SN 310,756. Pub. 7-15-69. Filed 10-29-68.

877,703. SORGEL IN DIAMOND DESIGN. Sorgel Electric Corporation. SN 311,183. Pub. 7-15-69. Filed 11-1-68.

877,704. DIRECTA AND ARROW DESIGN. Silvray-Litecraft Corporation. SN 313,524. Pub. 7-15-69. Filed 12-3-68.

877,705. INDAK. Indak Manufacturing Corp. SN 313,704. Pub. 7-15-69. Filed 12-5-68.

Class 22—Games, Toys, and Sporting Goods

877,706. RAY COOK. Ray Cook Golf Putters, Inc. SN 281,038. Pub. 7-15-69. Filed 9-25-67.

877,707. BRIGHT EYES AND DESIGN. Joseph B. Zahn & Sons, Inc. SN 283,049. Pub. 7-15-69. Filed 10-20-67.

877,708. THE TOM BARRETT. Unicorn Products Limited SN 294,759. Pub. 7-15-69. Filed 4-2-68.

877,709. PENCRON. Outdoor Supply Co., Inc. SN 297,697. Pub. 7-15-69. Filed 5-8-68.

877,710. AMC FLASH AND DESIGN. Aimcee Wholesale Corporation. SN 297,934. Pub. 7-15-69. Filed 5-13-68.

877,711. CONVERTA-POINT. Victor Comptometer Corporation. SN 303,847. Pub. 7-15-69. Filed 7-29-68.

877,712. STACEY. Mattel, Inc. SN 305,893. Pub. 7-15-69. Filed 8-26-68.

877,713. W IN A CIRCLE. Wharf Forging and Welding Corp. SN 306,532. Pub. 7-15-69. Filed 9-3-68.

877,714. JOHNNY LIGHTNING. De Luxe Topper Corporation. SN 307,317. Pub. 7-15-69. Filed 9-13-68.

877,715. MULTI-POWERED. Wilson Sporting Goods Co. SN 308,340. Pub. 7-15-69. Filed 9-26-68.

877,716. BUZZY BEAR. Mattel, Inc. SN 308,983. Pub. 7-15-69. Filed 10-7-68.

877,717. TALKING CUDDLE-SNUGGLES. Mattel, Inc. SN 308,984. Pub. 7-15-69. Filed 10-7-68.

877,718. SMALL-TALK. Mattel, Inc. SN 309,519. Pub. 7-15-69. Filed 10-14-68.

877,719. NIBBLES THE MOUSE. Mattel, Inc., SN 310,398. Pub. 7-15-69. Filed 10-24-68.

877,720. ICKY YUKS. Mattel, Inc. SN 310,399. Pub. 7-15-69. Filed 10-24-68.

877,721. PUSH 'N PLAY. Mattel, Inc. SN 310,404. Pub. 7-15-69. Filed 10-24-68.

877,722. BANDERSNATCH. Mattel, Inc. SN 310,410. Pub. 7-15-69. Filed 10-24-68.

877,723. SAUCER TOSSER. Continental Promotions, Inc. SN 312,381. Pub. 7-15-69. Filed 11-18-68.

877,724. ZAPPO. Mattel, Inc. SN 319,777. Pub. 7-15-69. Filed 2-24-69.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

877,647. (See Class 13 for this trademark.)

877,684. (See Class 19 for this trademark.)

877,694. (See Class 21 for this trademark.)

877,725. ACCUMAVEYOR. Aseeco Corporation. SN 284,437. Pub. 7-15-69. Filed 11-9-67.

877,726. DEGREMONT. Degremont S.A. SN 292,894. Pub. 7-15-69. Filed 3-11-68.

877,727. PLUS AREA AND DESIGN. Crane Engineering Co., Inc. SN 297,176. Pub. 7-15-69. Filed 5-2-68.

877,728. CLOVER AND DESIGN. Clover Manufacturing Co., Ltd. SN 298,501. Pub. 7-15-69. Filed 5-20-68.

877,729. STERNCO AND DESIGN. Sternco Industries, Inc. MULTIPLE CLASS (Classes 23 and 32). SN 299,049. Pub. 7-15-69. Filed 5-24-68.

877,730. DODGEN NYLA-FLITE AND DESIGN. Dodgen Industries, Inc. SN 300,072. Pub. 7-15-69. Filed 6-10-68.

877,731. HOLODEC. Holodec Corporation. SN 300,082. Pub. 7-15-69. Filed 6-10-68.

877,732. VARCO. Abegg and Reinhold Co. SN 302,208. Pub. 7-15-69. Filed 7-8-68.

877,733. OLSON. American Chain & Cable Company, Inc. SN 303,756. Pub. 7-15-69. Filed 7-29-68.

877,734. STONE AND DESIGN. Stone Container Corporation. SN 304,263. Pub. 7-15-69. Filed 8-2-68.

877,735. LOTUS. Tavaro S.A. SN 305,080. Pub. 7-15-69. Filed 8-13-68.

877,736. TURNACUT AND DESIGN. The Lodge & Shipley Company. SN 305,146. Pub. 7-15-69. Filed 8-14-68.

877,737. USEMCO. Universal Sanitary Equipment Mfg. Co., Inc. SN 305,360. Pub. 7-15-69. Filed 8-16-68.

877,738. STARMATIC. Hermann Kronseder, d.b.a. Hermann Kronseder Maschinenfabrik. SN 306,782. Pub. 5-20-69. Filed 9-6-68.

877,739. ACTIVENT. Charles W. Barrett. SN 307,079. Pub. 7-15-69. Filed 9-11-68.

877,740. GOLD MEDAL. Harsco Corporation. SN 314,790. Pub. 7-15-69. Filed 12-18-68.

877,741. HAMILAIR. Combined Engineered Products Limited. SN 316,523. Pub. 7-15-69. Filed 1-14-69.

877,742. SKORPIOUS. Imperial Knife Associated Companies, Inc. SN 317,843. Pub. 7-15-69. Filed 1-29-69.

Class 24—Laundry Appliances and Machines

877,743. HI-DRY. Albany Felt Company. SN 298,300. Pub. 7-15-69. Filed 5-16-68.

Class 25—Locks and Safes

877,744. PROOFLOCK. Prooflock International, Ltd. SN 315,103. Pub. 7-15-69. Filed 12-23-68.

877,745. SONY. Sony Corporation. SN 317,141. Pub. 7-15-69. Filed 1-21-69.

Class 26—Measuring and Scientific Appliances

877,602. (See Class 2 for this trademark.)

877,647. (See Class 13 for this trademark.)

877,746. PHOROSCOPE. Millipore Corporation. SN 268,886. Pub. 7-15-69. Filed 4-11-67.

877,747. VITATRON. Vitatron N.V. MULTIPLE CLASS (Classes 26 and 44). SN 284,128. Pub. 7-15-69. Filed 11-6-67.

877,748. OB (DESIGN). Ostby & Barton Co. SN 284,498. Pub. 7-15-69. Filed 11-9-67.

877,749. BALCAR. Balcar S.A. SN 285,713. Pub. 7-15-69. Filed 11-28-67.

877,750. CAE DATAPATH AND DESIGN. CAE Industries Ltd. SN 287,417. Pub. 7-15-69. Filed 12-22-67.

877,751. T (DESIGN). Technicon Corporation. SN 293,865. Pub. 7-15-69. Filed 3-21-68.

877,752. UNISPEC. Leesona Limited. SN 296,434. Pub. 7-15-69. Filed 4-24-68.

877,753. OMNITOOLSET. Sundstrand Corporation. SN 298,365. Pub. 7-15-69. Filed 5-16-68.

877,754. VARIOGON. Jos. Schneider & Co., Optische Werke Kreuznach. SN 300,375. Pub. 7-15-69. Filed 6-13-68.

877,755. GERMICON. Applied Ultra Violet Technology, Inc. SN 302,581. Pub. 7-15-69. Filed 7-12-68.

877,756. LYON METAL PRODUCTS AND DESIGN. Lyon Metal Products, Incorporated. SN 302,850. Pub. 7-15-69. Filed 7-16-68.

877,757. BUDGETMASTER. Litton Business Systems, Inc. SN 306,788. Pub. 7-15-69. Filed 9-6-68.

877,758. BEERTROL. Swingspout Measure Co. SN 308,241. Pub. 7-15-69. Filed 9-25-68.

877,759. P.G.S. American Standard Inc. SN 313,153. Pub. 7-15-69. Filed 11-27-68.

877,760. R (DESIGN). Redington Counters, Inc. SN 314,817. Pub. 7-15-69. Filed 12-18-68.

877,761. DENSI-LUX. Lektra Laboratories, Inc. SN 315,574. Pub. 7-15-69. Filed 1-2-69.

Class 27—Horological Instruments

877,647. (See Class 13 for this trademark.)

877,762. ACON AND DESIGN. Acon Watch Crown Co. SN 315,525. Pub. 7-15-69. Filed 1-2-69.

877,763. SONY. Sony Corporation. SN 317,142. Pub. 7-15-69. Filed 1-21-69.

Class 28—Jewelry and Precious-Metal Ware

877,764. COAT OF ARMS (DESIGN). C. D. Peacock, Inc. SN 295,161. Pub. 7-15-69. Filed 4-8-68.

877,765. FM FOR THE MAN AND DESIGN. Foster Metal Products, Inc. SN 300,922. Pub. 7-15-69. Filed 6-20-68.

877,766. W (DESIGN). Wilbar Casting Co., Inc. SN 315,670. Pub. 7-15-69. Filed 12-30-68.

Class 29—Brooms, Brushes, and Dusters

877,767. TOUCH 'N-GO. Albert J. Sills, d.b.a. Sills & Associates. SN 312,703. Pub. 7-15-69. Filed 11-20-68.

877,768. SCANDENT. Montclair Imports Inc. SN 317,915. Pub. 7-15-69. Filed 1-30-69.

877,769. THALCO. United Merchants and Manufacturers, Inc. SN 319,785. Pub. 7-8-69. Filed 2-24-69.

Class 30—Crockery, Earthenware, and Porcelain

877,770. HERALDO-MUG. R. F. Simmons Company. SN 310,986. Pub. 7-15-69. Filed 10-31-68.

Class 31—Filters and Refrigerators

877,771. PERMUTIT Q. Sybron Corporation, by change of name from Ritter Pfaudler Corporation. SN 283,036. Pub. 7-15-69. Filed 10-20-67.

Class 32 — Furniture and Upholstery

877,602. (See Class 2 for this trademark.)

877,729. (See Class 23 for this trademark.)

877,772. SONY. Sony Corporation. SN 317,145. Pub. 7–15–69. Filed 1–21–69.

877,773. MADRID. Clopay Corporation. SN 317,724. Pub. 7–15–69. Filed 1–28–69.

877,774. CROWN (DESIGN). The United States Bedding Company. SN 317,891. Pub. 7–15–69. Filed 1–29–69.

Class 33 — Glassware

877,775. GC (DESIGN). Glass Containers Corporation. SN 315,754. Pub. 7–15–69. Filed 1–3–69.

Class 34 — Heating, Lighting, and Ventilating Apparatus

877,776. MS AND DESIGN. Mid-States Welder Manufacturing Company. SN 251,067. Pub. 7–15–69. Filed 7–26–66.

877,777. DURA-LIFE AND DESIGN. Kerrco, Inc. SN 287,075. Pub. 7–15–69. Filed 12–18–67.

877,778. TRADITIONAL. Dukor Industries, Inc., by change of name from Dura-Vent Corporation of California. SN 290,591. Pub. 7–15–69. Filed 2–8–68.

877,779. INTRAFIX. Intravend A.G. SN 293,928. Pub. 7–15–69. Filed 3–22–68.

877,780. MINEVENT AND DESIGN. American Brattice Cloth Corporation. SN 295,093. Pub. 7–15–69. Filed 4–8–68.

877,781. ECONO-CAIRE AND DESIGN. Carl Munters & Co. SN 298,843. Pub. 7–15–69. Filed 5–22–68.

877,782. WHIRLWIND. Universal Oil Products Company, d.b.a. REF Dynamics Division. SN 301,793. Pub. 7–15–69. Filed 7–1–68.

877,783. FABCO. Hobart Brothers Company. SN 306,488. Pub. 7–15–69. Filed 9–3–68.

877,784. PBR. Energy Systems Corporation. SN 307,320. Pub. 7–15–69. Filed 9–13–68.

877,785. TEMPMATIC. Weller Electric Corporation. SN 314,994. Pub. 7–15–69. Filed 12–20–68.

877,786. FLEETWOOD. National Presto Industries, Inc. SN 315,248. Pub. 7–15–69. Filed 12–26–68.

877,787. IRON CURTAIN. International Air Equipment Corporation. SN 315,315. Pub. 7–15–69. Filed 12–27–68.

877,788. CYBAR. J. Howard Bratt, d.b.a. Cybar Mfg. Co. SN 315,382. Pub. 7–15–69. Filed 12–30–68.

877,789. JETMASTER. Acme Engineering and Manufacturing Corporation. SN 315,701. Pub. 7–15–69. Filed 10–24–68.

877,790. LI'L DARLIN'. International Thermal Corporation. SN 320,912. Pub. 7–15–69. Filed 3–6–69.

Class 35 — Belting, Hose, Machinery Packing, and Nonmetallic Tires

877,791. QUAD-X. Minnesota Rubber Company. SN 295,246. Pub. 7–15–69. Filed 4–9–68.

877,792. QUAD-O-DYN. Minnesota Rubber Company. SN 295,247. Pub. 7–15–69. Filed 4–9–68.

877,793. PLASMA-PLIED. Ramsey Corporation. SN 299,863. Pub. 7–15–69. Filed 6–6–68.

Class 36 — Musical Instruments and Supplies

877,794. PHONOTAPE. Mobilab of New Hampshire, Inc. SN 279,209. Pub. 7–15–69. Filed 8–28–67.

877,795. LABO. TEC Company, Ltd. SN 303,753. Pub. 7–15–69. Filed 7–29–68.

877,796. OLYMPIC. The Premier Drum Company Limited. SN 311,300. Pub. 7–15–69. Filed 11–4–68.

877,797. TORODOR. Strum & Drum, Inc. SN 313,546. Pub. 7–15–69. Filed 12–4–68.

877,798. LABO '70 AND DESIGN. TEC Company, Ltd. SN 314,504. Pub. 7–15–69. Filed 12–16–68.

877,799. CO/ED AND DESIGN. Condensed Education, Inc. SN 316,415. Pub. 7–15–69. Filed 1–13–69.

877,800. FAST. Farfisa S.p.A. SN 321,055. Pub. 7–15–69. Filed 3–7–69.

877,801. EVOLUTION AND DESIGN. Longines-Wittnauer Watch Co., Inc. SN 321,367. Pub. 7–15–69. Filed 3–11–69.

877,802. CANDIDE VOX AND DESIGN. Vox Productions, Inc. SN 321,706. Pub. 7–15–69. Filed 3–13–69.

Class 37 — Paper and Stationery

877,803. ACME. Blessings, Inc. SN 263,527. Pub. 7–15–69. Filed 1–30–67.

877,804. PONDEROSA. Western Family Foods, Inc. SN 292,734. Pub. 7–15–69. Filed 3–7–68.

877,805. C COLORCOUNTING AND DESIGN. Colorcounting Systems, d.b.a. Colorcounting. SN 294,812. Pub. 7–15–69. Filed 4–3–68.

877,806. REMTEX. Sperry Rand Corporation. SN 296,587. Pub. 7–15–69. Filed 4–25–68.

877,807. GAKKEN PENCIL SAM. Gakken Company Limited. SN 296,686. Pub. 7–15–69. Filed 4–26–68.

877,808. DOMTAR. Domtar Limited. SN 298,282. Pub. 7–15–69. Filed 5–16–68.

877,809. COMMUNICATION AND DESIGN. The Lynn Pacific Corporation. SN 299,242. Pub. 7–15–69. Filed 4–25–68.

877,810. PADVELOPES AND DESIGN. Artistic Greetings, Incorporated. SN 309,948. Pub. 7–15–69. Filed 10–18–68.

877,811. ATTACH-A-PEN. Cory Corporation. SN 316,884. Pub. 7–15–69. Filed 1–17–69.

877,812. CARGO. Sanford Ink Company. SN 317,115. Pub. 7–15–69. Filed 1–21–69.

877,813. ARCO. Hasbro Industries, Inc. SN 317,053. Pub. 7–15–69. Filed 1–21–69.

Class 38 — Prints and Publications

877,814. GRAPHIC COMMUNICATIONS WEEKLY ETC. AND DESIGN. Composition Information Services, Inc. SN 295,421. Pub. 7–15–69. Filed 4–11–68.

877,815. TRIPLE CHECK AND DESIGN. Sperry Rand Corporation. SN 296,358. Pub. 7–15–69. Filed 4–23–68.

877,816. FANCIFUL TREE (DESIGN). Jewel Companies, Inc. SN 304,796. Pub. 7–15–69. Filed 8–9–68.

877,817. LE LIVRE DE POCHE UNIVERSITE AND DESIGN. Hachette, Inc. SN 312,771. Pub. 7–15–69. Filed 11–21–68.

877,818. JEANE DIXON'S OPEN LINE. Jeane L. Dixon. SN 319,439. Pub. 7–15–69. Filed 2–18–69.

Class 39 — Clothing

877,819. ZAZIE AND DESIGN. Sample Dress Mfg. Corp. SN 276,178. Pub. 7–15–69. Filed 7–17–67.

877,820. PAK-CAP. Bancroft Cap Company. SN 279,611. Pub. 7–15–69. Filed 9–5–67.

877,821. LA COLETTE. College-Town Sportswear, Inc., d.b.a. College-Town of Boston. SN 280,565. Pub. 7–15–69. Filed 9–18–67.

877,822. BORDER TOWN. Standard Garments, Inc. SN 289,041. Pub. 7–15–69. Filed 1–17–68.

877,823. EDCO. Standard Oil Company. SN 296,263. Pub. 7–15–69. Filed 4–23–68.

877,824. BONNIE DAY. Mono Sales Corporation. SN 296,705. Pub. 7–15–69. Filed 4–26–68.

877,825. LOUNGEWEAR BY RAYMOND HALPERN. Raymond Halpern Loungewear Corp. SN 296,743. Pub. 7–15–69. Filed 4–29–68.

877,826. ALL-WEATHER CHAMP. Champ Hats, Inc. SN 297,764. Pub. 7–15–69. Filed 5–9–68.

877,827. DUNBAR-KEITH. Stromberg's. SN 298,763. Pub. 7–15–69. Filed 5–21–68.

877,828. BUKTA AND DESIGN. Edward R. Buck & Sons Limited. SN 300,252. Pub. 7–15–69. Filed 6–12–68.

877,829. GIRDLECRAFT. De Luxe Girdlecraft Co., Inc. SN 301,047. Pub. 7–15–69. Filed 6–21–68.

877,830. LADY SWISS. Hairnet Corporation of America. SN 304,090. Pub. 7–15–69. Filed 8–1–68.

877,831. RING-A-LEE-VEEO. Terry Sue Casuals, Inc. SN 304,656. Pub. 7–15–69. Filed 8–8–68.

877,832. MISCELLANEOUS DESIGN. Etablissements Camuset. SN 305,426. Pub. 7–15–69. Filed 8–19–68.

877,833. SOLID "W" IN CIRCLE DESIGN. Murray Wilson. SN 307,603. Pub. 7–15–69. Filed 9–17–68.

877,834. SSK AND DESIGN. S. S. Kresge Company. SN 308,380. Pub. 7–15–69. Filed 9–27–68.

877,835. TOP KNOT. Cournoyer Industries, Inc., assignee of Cort Industries, Inc. SN 309,755. Pub. 7–15–69. Filed 10–16–68.

877,836. BEAU JAC. Macshore Classics, Inc. SN 311,282. Pub. 7–15–69. Filed 11–4–68.

877,837. NEW GENERATION. International Playtex Corporation. SN 314,230. Pub. 7–15–69. Filed 12–11–68.

877,838. STYLISH STORK. Sidney J. Kreiss, Inc. SN 315,237. Pub. 7–15–69. Filed 12–26–68.

877,839. HANDI-PAC. Raymond E. Holstad. SN 315,563. Pub. 7–15–69. Filed 1–2–69.

877,840. BRA MATES. Delightform Foundations, Inc. SN 316,191. Pub. 7–15–69. Filed 1–9–69.

877,841. LITTLE UGLY. Charles H. Bacon Company, Inc. SN 320,761. Pub. 7–15–69. Filed 3–5–69.

877,842. MINI-WIZARD. Charles H. Bacon Company, Inc. SN 320,762. Pub. 7–15–69. Filed 3–5–69.

Class 40 — Fancy Goods, Furnishings, and Notions

877,843. TRULASH. Helen of St. Moritz, Inc. SN 279,648. Pub. 7–15–69. Filed 9–5–67.

Class 41 — Canes, Parasols, and Umbrellas

877,844. KNIRPS AND DESIGN. Telesco Brophey Limited. SN 307,149. Pub. 7–15–69. Filed 9–11–68.

Class 42 — Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

877,845. EDCO. Standard Oil Company. SN 296,264. Pub. 7–15–69. Filed 4–23–68.

877,846. SUPREME COURT AND DESIGN. Tennis Development Corp. SN 315,671. Pub. 7–15–69. Filed 12–31–68.

877,847. CHALLENGE. Robertson Carpet Corp. SN 317,258. Pub. 7–15–69. Filed 1–22–69.

877,848. DANCHEK. Dan River Mills, Incorporated. SN 317,325. Pub. 7–15–69. Filed 1–23–69.

877,849. SALONEAU. Fieldcrest Mills, Inc. SN 317,334. Pub. 7–15–69. Filed 1–23–69.

Class 44 — Dental, Medical, and Surgical Appliances

877,747. (See Class 26 for this trademark.)

Class 46 — Foods and Ingredients of Foods

877,850. SPRECKELS AND S DESIGN. American Sugar Company. SN 285,381. Pub. 7–15–69. Filed 11–22–67.

877,851. HYDE PARK AND DESIGN. Malone & Hyde, Inc. SN 293,158. Pub. 5–13–69. Filed 3–13–68.

877,852. BEEF LOG. The Swiss Colony, Inc. SN 293,180. Pub. 7–15–69. Filed 3–13–68.

877,853. ASHLEY'S. Ashley's Inc. SN 293,790. Pub. 7–15–69. Filed 3–21–68.

877,854. DANISH HOME STYLE AND DESIGN. American Biscuit Company, d.b.a. Danish Cookie Co. SN 295,492. Pub. 5–6–69. Filed 4–12–68.

877,855. GOLDEN TRAIL. The Porterville Citrus Association. SN 295,555. Pub. 7–15–69. Filed 4–12–68.

877,856. SOYAGEN. Pacific Union Association of Seventh-Day Adventists, d.b.a. Loma Linda Foods. SN 296,185. Pub. 7–15–69. Filed 4–22–68.

877,857. WUNDERBAR. Wardley Products Co. Inc. SN 296,369. Pub. 7–15–69. Filed 4–4–68.

877,858. TOASTA. Toasta Foods Company. SN 297,106. Pub. 4–29–69. Filed 5–1–68.

877,859. JESTA. Food Science Research Corp. SN 297,995. Pub. 5–13–69. Filed 5–13–68.

877,860. TON 'O' GUM. Topps Chewing Gum, Incorporated. SN 299,266. Pub. 7–15–69. Filed 5–28–68.

877,861. ROYAL VALLEY. Royal Valley Fruit Growers Association, d.b.a. Royal Valley Fruit Growers Ass'n. SN 299,613. Pub. 7–15–69. Filed 6–7–68.

877,862. PRINGLES. General Foods Corporation. SN 300,583. Pub. 7–15–69. Filed 6–17–68.

877,863. NICKLES. Hale Tintle Foods, Inc. SN 301,528. Pub. 7–15–69. Filed 6–27–68.

877,864. STONE MOUNTAIN. Stokely-Van Camp, Inc. SN 302,349. Pub. 7–15–69. Filed 7–9–68.

877,865. POMONA. Stokely-Van Camp, Inc. SN 302,350. Pub. 7–15–69. Filed 7–9–68.

877,866. GEORGIA BELLE. Stokely-Van Camp, Inc. SN 302,351. Pub. 7–15–69. Filed 7–9–68.

877,867. POT-LIKKER. The Merchants Company, d.b.a. Valley Mills. SN 303,182. Pub. 7–15–69. Filed 7–19–68.

877,868. OCEAN. Ocean Coffee Co., Inc. SN 303,192. Pub. 5–20–69. Filed 7–19–68.

877,869. JOHN BULL. The Gorton Corporation, d.b.a. Gorton's of Gloucester. SN 303,305. Pub. 7–15–69. Filed 7–22–68.

877,870. KELPMATE. Sea-Glo Products, Inc. SN 304,817. Pub. 7–15–69. Filed 8–9–68.

877,871. DIROL. Dansk Tyggegummi Fabrik A/S, d.b.a. The Danish Chewing Gum Factory Ltd. SN 304,901. Pub. 7–15–69. Filed 8–12–68.

877,872. CARAMEL CONES. General Mills, Inc. SN 311,443. Pub. 5–27–69. Filed 11–6–68.

877,873. WORLD'S FARE. R. J. Reynolds Foods, Inc. SN 312,400. Pub. 7–15–69. Filed 11–18–68.

877,874. ELAM'S. National Bakers Services, Inc. SN 315,015. Pub. 7-15-69. Filed 12-23-68.

877,878. (EXTRA PRO). Ralston Purina Company. SN 316,943. Pub. 5-27-69. Filed 1-21-69.

Class 48 — Malt Beverages and Liquors

877,875. METBREW. Champale, Inc. SN 302,300. Pub. 7-15-69. Filed 7-9-68.

Class 50 — Merchandise Not Otherwise Classified

877,602. (See Class 2 for this trademark.)

877,606. (See Class 2 for this trademark.)

877,876. PUT-ON. Tackmer Corporation. SN 308,665. Pub. 4-29-69. Filed 10-2-68.

877,877. STEWART FORM. Stewart Products Corporation. SN 315,818. Pub. 7-15-69. Filed 12-31-68.

877,878. (See Class 46 for this trademark.)

877,879. THERMADOME. Samson Plastics, Inc. SN 317,114. Pub. 7-15-69. Filed 1-21-69.

877,880. IR (DESIGN). International Rubber Corporation. SN 317,344. Pub. 7-15-69. Filed 1-23-69.

877,881. DUNKS. Dunkelman & Son, Ltd. SN 317,831. Pub. 7-15-69. Filed 1-29-69.

Class 51 — Cosmetics and Toilet Preparations

877,614. (See Class 6 for this trademark.)

877,661. (See Class 18 for this trademark.)

877,683. (See Class 18 for this trademark.)

877,882. HOLD THAT TAN. Clairol Incorporated. SN 273,867. Pub. 7-15-69. Filed 6-14-67.

877,883. LASHWORKS. Helena Rubinstein, Inc. SN 286,761. Pub. 7-15-69. Filed 12-12-67.

877,884. JUST BEFORE. Del Laboratories, Inc. SN 287,809. Pub. 7-15-69. Filed 12-29-67.

877,885. NATURE FILM. Clairol Incorporated. SN 288,785. Pub. 7-15-69. Filed 1-15-68.

877,886. GLEAM-ON. Del Laboratories, Inc. SN 289,787. Pub. 7-15-69. Filed 1-29-68.

877,887. PADISHAH. Yardley of London, Inc. SN 290,122. Pub. 7-15-69. Filed 2-1-68.

877,888. MAQUIFINISH. Lancome S.A. SN 293,933. Pub. 7-15-69. Filed 3-22-68.

877,889. MOISTURET. Bristol-Myers Company. SN 298,800. Pub. 7-15-69. Filed 5-22-68.

877,890. ORAL-CHEK. Mountain States Wholesale Company. SN 300,475. Pub. 7-15-69. Filed 6-14-68.

877,891. FAMILY MATE. The Stephan Co. SN 301,367. Pub. 5-20-69. Filed 6-25-68.

877,892. ANGELA VARONA. Angela Varona Cosmetics, Inc. SN 301,395. Pub. 7-15-69. Filed 6-26-68.

877,893. ANVA. Angela Varona Cosmetics, Inc. SN 301,396. Pub. 7-15-69. Filed 6-26-68.

877,894. HALL OF FAME. Carley, Inc. SN 304,049. Pub. 7-15-69. Filed 8-1-68.

877,895. ONE WOMAN. Clairol Incorporated. MULTIPLE CLASS (Classes 51 and 52). SN 304,728. Pub. 4-29-69. Filed 8-9-68.

877,896. CLAIRCARE DE PARIS. Clairol Incorporated. MULTIPLE CLASS (Classes 51 and 52). SN 304,847. Pub. 7-15-69. Filed 8-12-68.

877,897. TWICE A BLONDE. Clairol Incorporated. SN 308,867. Pub. 7-15-69. Filed 10-4-68.

877,898. SMOOTH 'N EASY. Clairol Incorporated. MULTIPLE CLASS (Classes 51 and 52). SN 308,941. Pub. 7-15-69. Filed 10-7-68.

877,899. HC. White Cross Stores, Inc. SN 311,709. Pub. 7-15-69. Filed 11-8-68.

877,900. LEMON TREE. Colgate-Palmolive Company. SN 311,879. Pub. 7-15-69. Filed 11-13-68.

877,901. V.I.P. Richard Hudnut. SN 315,717. Pub. 5-13-69. Filed 1-3-69.

Class 52 — Detergents and Soaps

877,614. (See Class 6 for this trademark.)

877,661. (See Class 18 for this trademark.)

877,895. (See Class 51 for this trademark.)

877,896. (See Class 51 for this trademark.)

877,898. (See Class 51 for this trademark.)

877,902. IOQUAT. Ciba Corporation, d.b.a. The Gland-O-Lac Company. SN 283,864. Pub. 7-15-69. Filed 11-1-67.

877,903. MISCELLANEOUS DESIGN. Sumitomo Chemical Co., Ltd. SN 292,022. Pub. 7-15-69. Filed 2-27-68.

877,904. AMMONI-OXIDE. The Drackett Company. SN 292,898. Pub. 7-15-69. Filed 3-11-68.

877,905. DE-NE-NES. Antonio Puig, S.A. SN 295,953. Pub. 7-15-69. Filed 4-18-68.

877,906. APELIC AND DESIGN. Laboratoire Garnier S.A. SN 297,421. Pub. 7-15-69. Filed 5-6-68.

877,907. MOISTURET. Bristol-Myers Company. SN 298,801. Pub. 7-15-69. Filed 5-22-68.

877,908. WHAT. Oxford Chemical Corporation, d.b.a. Oxford Home Products. SN 300,368. Pub. 7-15-69. Filed 6-13-68.

877,909. KLEER-MOR. Economics Laboratory, Inc. SN 303,289. Pub. 7-15-69. Filed 7-22-68.

877,910. LITTLE GUY. Tussy Cosmetics, Inc. SN 308,176. Pub. 4-8-69. Filed 9-25-68.

877,911. BENDIX AND DESIGN. The Bendix Corporation. SN 309,227. Pub. 7-15-69. Filed 10-9-68.

877,912. BLADE. Remwood Chemicals, Inc. SN 309,899. Pub. 7-15-69. Filed 10-17-68.

877,913. NOK-OFF. Travaco Laboratories, Inc. SN 310,007. Pub. 7-15-69. Filed 10-18-68.

877,914. MOISTURUX. Bristol-Myers Company. SN 311,233. Pub. 7-15-69. Filed 11-4-68.

877,915. MOISTURIS. Bristol-Myers Company. SN 312,015. Pub. 7-15-69. Filed 11-13-68.

Service Marks

Class 100 — Miscellaneous

877,916. LONGHORN. Longhorn Steak Pits, Inc. SN 241,909. Pub. 8-15-67. Filed 3-25-66.

877,917. LEWIS AND CLARK TRAIL AND DESIGN. U.S. Department of the Interior. SN 260,613. Pub. 7-15-69. Filed 12-12-66.

877,918. GAI-GMX. EG & G International, Inc., d.b.a. Gravity Meter Exploration Company, Geophysical Associates International, GMX, and GAI-GMX. SN 291,500. Pub. 7-15-69. Filed 2-20-68.

877,919. Y NOT. Dan Creson. SN 305,927. Pub. 7-15-69. Filed 8-26-68.

877,920. COMPUSCAN. Paine, Webber, Jackson & Curtis. SN 307,130. Pub. 7-15-69. Filed 9-11-68.

877,921. HRC. Hydrospace Research Corporation. SN 310,332. Pub. 7-15-69. Filed 10-23-68.

877,922. ROARING SEVENTIES. Beechnut, Inc. SN 310,744. Pub. 7-15-69. Filed 10-29-68.

877,923. YUMMERS. United States Franchise Corporation. SN 318,514. Pub. 5-27-69. Filed 2-6-69.

877,924. ANCHOR INN AND DESIGN. Anchor Inn, Inc. SN 320,395. Pub. 7-15-69. Filed 3-3-69.

Class 101 — Advertising and Business

877,925. EXEC-U-GIFTS. King Korn Stamp Company. SN 279,788. Pub. 7-15-69. Filed 9-7-67.

877,926. THE INDEPENDENT PET INDUSTRY TRADE SHOW. H. H. Backer Associates, Inc. SN 289,959. Pub. 7-15-69. Filed 1-31-68.

877,927. TRINC. Dun & Bradstreet, Inc. SN 293,487. Pub. 7-15-69. Filed 3-18-68.

877,928. CLC AND DESIGN. Certified Leasing Company, Inc. SN 293,623. Pub. 7-15-69. Filed 3-19-68.

877,929. BIND-O-MATIC ETC. AND DESIGN. Passco, Inc. SN 295,945. Pub. 7-15-69. Filed 4-18-68.

877,930. CASH CARD SHOW-DOWN. Glendinning Companies, Inc. SN 300,185. Pub. 7-15-69. Filed 6-11-68.

877,931. CASH CARTOONS. Glendinning Companies, Inc. SN 300,186. Pub. 7-15-69. Filed 6-11-68.

877,932. ALLIED AND DESIGN. Allied Farm Equipment, Inc. SN 300,667. Pub. 7-15-69. Filed 6-18-68.

877,933. HFC ORBIT AND DESIGN. Household Finance Corporation. SN 303,309. Pub. 4-15-69. Filed 7-22-68.

877,934. WIKI WIKI DOLLARS. Curtin Associates, Inc. SN 313,808. Pub. 7-15-69. Filed 12-6-68.

Class 102 — Insurance and Financial

877,935. MULTIFUND. First Multifund of America Inc. SN 278,480. Pub. 7-15-69. Filed 8-17-67.

877,936. CODA (DESIGN). Committee on Data Analysis, Inc. SN 320,213. Pub. 7-15-69. Filed 2-27-69.

877,937. S AND ARROW DESIGN. Counsel for Investors, Inc. SN 320,214. Pub. 7-15-69. Filed 2-27-69.

Class 103 — Construction and Repair

877,938. MICRO GEAR. MSL Industries, Inc. SN 300,947. Pub. 5-27-69. Filed 6-20-68.

Class 104 — Communication

877,939. TELE-VUE. Tele-Vue Systems, Inc. SN 245,353. Pub. 6-18-68. Filed 5-10-66.

877,940. DOWVUE. Dow Jones & Company, Inc. SN 316,631. Pub. 7-15-69. Filed 1-15-69.

Class 106 — Material Treatment

877,941. TEMP TROL. Cardinal Chemical, Inc. SN 282,679. Pub. 7-15-69. Filed 10-17-67.

877,942. PHOTO-T. Interstate Mail Film Service, Inc., d.b.a. Photo-T. SN 286,011. Pub. 5-20-69. Filed 12-1-67.

877,943. COIT. Coit Drapery Cleaners, Inc. SN 306,339. Pub. 7-15-69. Filed 8-30-68.

Class 107 — Education and Entertainment

877,944. MAGIC BLOCK. Nannette Manufacturing Company, Inc. SN 269,443. Pub. 7-15-69. Filed 4-18-67.

877,945. MEDCOM. Medical Communications, Inc. SN 288,442. Pub. 1-7-69. Filed 1-9-68.

877,946. FANCIFUL LIKENESS OF LUCILLE BALL. Lucille Ball Productions, Inc. SN 307,407. Pub. 7-15-69. Filed 9-16-68.

877,947. HERE'S LUCY. Lucille Ball Productions, Inc. SN 307,408. Pub. 7-15-69. Filed 9-16-68.

Collective Membership Mark

Class 200

877,948. INSIGNIA (DESIGN). The Church of Scientology of California. SN 310,819. Pub. 7-15-69. Filed 10-30-68.

Certification Marks

Class A — Goods

877,949. LP AND DESIGN. Western Wood Products Association. SN 290,782. Pub. 7-15-69. Filed 2-9-68.

877,950. PP AND DESIGN. Western Wood Products Association. SN 290,783. Pub. 7-15-69. Filed 2-9-68.

877,951. DOUG. FIR-L AND DESIGN. Western Wood Products Association. SN 290,784. Pub. 7-15-69. Filed 2-9-68.

877,952. D FIR AND DESIGN. Western Wood Products Association. SN 290,786. Pub. 7-15-69. Filed 2-9-68.

877,953. IWP. Western Wood Products Association. SN 290,787. Pub. 7-15-69. Filed 2-9-68.

877,954. SP. Western Wood Products Association. SN 290,788. Pub. 7-15-69. Filed 2-9-68.

877,955. LARCH AND DESIGN. Western Wood Products Association. SN 290,790. Pub. 7-15-69. Filed 2-9-68.

877,956. ES AND DESIGN. Western Wood Products Association. SN 290,791. Pub. 7-15-69. Filed 2-9-68.

SUPPLEMENTAL REGISTER

These registrations are not subject to opposition.

Class 2 — Receptades

877,957. William Prym, Inc., Dayville, Conn. SN 300,480. Filed P.R. 6-14-68; Am. S.R. 6-5-69.

OPE-N-SHAKE

For Blister Packages for Pins, Safety Pins, Snap Fasteners, Hooks and Eyes, Thumb Tacks and Needles (Int. Cl. 20). First use Apr. 19, 1968.

Class 3 — Baggage, Animal Equipments, Portfolios, and Pocketbooks

877,958. Egan-Wagner Mdse. Corp., New York, N.Y. SN 300,916. Filed P.R. 6-20-68; Am. S.R. 6-16-69.

CASUAL MODE

For Ladies' Handbags (Int. Cl. 18). First use May 20, 1968.

Class 6 — Chemicals and Chemical Compositions

877,959. Leon J. Wirth, d.b.a. Wirth Co. Inc., Oakland, Calif. SN 294,984. Filed P.R. 4–4–68; Am. S.R. 3–10–69.

WIRTH Liquid RE-TYPE

For Correction Fluid (Int. Cl. 16).
First use Jan. 12, 1968.

Class 9 — Explosives, Firearms, Equipments, and Projectiles

877,960. L. W. Loyd Company, Inc., South Pittsburg, Tenn. SN 254,608. Filed P.R. 9–16–66; Am. S.R. 11–2–67.



For Firecrackers (Int. Cl. 13).
First use Jan. 8, 1966.

Class 12 — Construction Materials

877,961. Interpace Corporation, Los Angeles, Calif., by change of name from International Pipe & Ceramics Corporation, Los Angeles, Calif. SN 278,969. Filed P.R. 8–24–67; Am. S.R. 5–19–69.

TRACERY

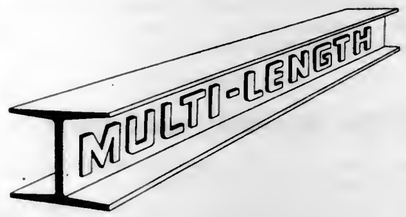
For Ceramic Tile (Int. Cl. 19).
First use Apr. 25, 1967.

877,962. Contour Packaging, Inc., Kansas City, Mo. SN 296,945. Filed P.R. 4–30–68; Am. S.R. 5–14–69.

CONTOUR TAPER TILE

For Plastic Material in Various Forms for Use in Making Roof Drainage Systems (Int. Cl. 19).
First use Apr. 22, 1968.

877,963. General Pipe & Supply Co., Inc., Compton, Calif. SN 297,405. Filed P.R. 5–6–68; Am. S.R. 5–6–69.



No claim is made to the representation of the goods apart from the mark.
For Steel Beams and Channels (Int. Cl. 6).
First use on or about Mar. 25, 1968.

Class 16 — Protective and Decorative Coatings

877,964. Didier-Werke A.G., Wiesbaden, Germany. SN 276,420. Filed P.R. 7–20–67; Am. S.R. 10–1–68.

DIDIER

Owner of German Reg. No. 784,675, dated Aug. 16, 1962.
For Protective Coating Preparations for Application to Wall and Concrete Surfaces To Make the Same Resistant to Acids and Water (Int. Cl. 1).

Class 21 — Electrical Apparatus, Machines, and Supplies

877,965. Dolan-Jenner Industries, Inc., Melrose, Mass. SN 278,883. Filed P.R. 8–23–67; Am. S.R. 4–2–69.

FIBER-LITE

For Fiber Optic Illuminators (Int. Cl. 11).
First use Aug. 4, 1966.

877,966. Moteurs Drouard (Societe Anonyme), Paris, France. SN 295,451. Filed P.R. 4–11–68; Am. S.R. 7–2–69.

MOTEURS DROUARD

Owner of French Reg. No. 725,720, dated Jan. 11, 1967.
For Electric Motors (Int. Cl. 7).

Class 22 — Games, Toys, and Sporting Goods

877,967. Con W. Colburn, d.b.a. Newport Paipo, Newport Beach, Calif., assignee of Newport Paipo, Newport Beach, Calif. SN 282,914. Filed P.R. 10–19–67; Am. S.R. 4–9–69.

NEWPORT PAIPO

For Surfboards (Int. Cl. 28).
First use Nov. 3, 1966.

877,968. Wham-O Mfg. Co., San Gabriel, Calif. SN 294,789. Filed P.R. 4–3–68; Am. S.R. 5–22–69.

TINY-TRINKETS

For Printed Plastic Sheets Containing Various Illustrative Designs for Children's Use as Toys and Other Items of Amusement (Int. Cl. 28).
First use Feb. 26, 1968.

877,969. John M. Williams, Phoenix, Ariz. SN 296,733. Filed P.R. 4–26–68; Am. S.R. 6–2–69.

KARDZ

For Pack of Domino-Shaped Playing Cards (Int. Cl. 16).
First use Feb. 19, 1968.

Class 30 — Crockery, Earthenware, and Porcelain

877,970. M. Fortunoff of Westbury Corp., Westbury, N.Y. SN 302,612. Filed P.R. 7–12–68; Am. S.R. 6–20–69.

BONAPARTE

For Dinnerware and Tableware Made of China (Int. Cl. 21).
First use on or about June 6, 1968.

Class 37 — Paper and Stationery

877,971. Consolidated Packaging Corporation, Chicago, Ill. SN 292,763. Filed P.R. 3–8–68; Am. S.R. 4–8–69.

ULTRA LINER

For Paperboard (Int. Cl. 16).
First use Jan. 30, 1968.

Class 38 — Prints and Publications

877,972. Hitchcock Publishing Company, Wheaton, Ill. SN 291,391. Filed P.R. 2–19–68; Am. S.R. 6–23–69.

MACHINE AND TOOL DIRECTORY

Owner of Reg. Nos. 626,235, 633,359, and 734,576.
For Annual Trade Directory (Int. Cl. 16).
First use December 1954.

877,973. Index Creations, Inc., Madison, Wis. SN 299,912. Filed P.R. 6–7–68; Am. S.R. 6–30–69.

PLUMBING HEATING COMPARISON BLUE BOOK

For Annual Publication Containing Conversion and Comparison Charts for Products of Various Manufacturers for Plumbing and Heating Trade (Int. Cl. 16).
First use Mar. 22, 1968.

Class 44 — Dental, Medical, and Surgical Appliances

877,974. Karl Storz K.G., Tuttlingen, Wuerttemberg, Germany. SN 292,039. Filed P.R. 2–26–68; Am. S.R. 4–4–69.

HOPKINS

Owner of German Reg. No. 831,551, dated Apr. 6, 1967.
For Medical-Optical Instruments for Endoscopy, Endoscopes, Optical Lens Systems for Endoscopes (Int. Cl. 10).
First use July 1967; in commerce Nov. 3, 1967.

Class 51 — Cosmetics and Toilet Preparations

877,975. Candygram, Inc., d.b.a. Perfume-By-Wire, Beverly Hills, Calif. SN 265,157. Filed P.R. 2–21–67; Am. S.R. 5–8–69.

PERFUME-BY-WIRE

For Perfumes (Int. Cl. 3).
First use Sept. 26, 1966.

Service Marks

Class 100 — Miscellaneous

877,976. Bosworth Studio of Springfield, Inc., Springfield, Mass. SN 261,040. Filed P.R. 12–19–66; Am. S.R. 4–7–69.

Full Fidelity

The drawing is lined for the colors green, blue, yellow, pink, and brown.
For Color Photography and Color Portraiture (Int. Cl. 42).
First use Oct. 30, 1966.

877,977. Minit Burger Corporation, Nashville, Tenn. SN 291,275. Filed P.R. 2–16–68; Am. S.R. 3–10–69.

"EXPRESS SERVICE FOR EXPRESSWAY TRAVELERS"

For Restaurant and Catering Services (Int. Cl. 42).
First use Mar. 9, 1967.

Class 101 — Advertising and Business

877,978. French's Western Auto Store, Sentinel, Okla. SN 282,452. Filed P.R. 10–13–67; Am. S.R. 6–10–69.

EASY TO BUY FROM

For Retail Store Services in the Field of Appliances, Radios, Television Sets, Auto Parts and Supplies, Veterinary Supplies, and Sporting Goods (Int. Cl. 35).
First use on or about Apr. 13, 1963.

Class 102 — Insurance and Financial

877,979. Continental Casualty Company, Chicago, Ill. SN 303,893. Filed P.R. 7–30–68; Am. S.R. 5–20–69.

MAJOR HOSPITAL CARE

Owner of Reg. Nos. 835,727, 838,582, and 838,583.
For Underwriting Health Insurance (Int. Cl. 36).
First use Nov. 6, 1967.

Class 106 — Material Treatment

877,980. Duffens Optical Company, d.b.a. Precision Coating Service, Topeka, Kans. SN 248,790. Filed P.R. 6–23–66; Am. S.R. 3–18–69.

KOLOR KOTE

For Coating of Optical Lenses for Others (Int. Cl. 40).
First use during November 1965.

TRADEMARK REGISTRATIONS RENEWED

33,944. SWAN. Cl. 4 (Int. Cl. 3). 12–26–1899.
33,945. REPRESENTATION OF SWAN. Cl. 4 (Int. Cl. 3). 12–26–1899.
75,148. FIFTH AVENUE. Cl. 39 (Int. Cl. 25). 9–7–09.
75,747. LUNKENHEIMER. Cl. 13 (Int. Cl. 6). 11–9–09.
252,682. WM PENN. Cl. 7 (Int. Cl. 22). 2–12–29.
257,341. KLENOSEAL. Cl. 39 (Int. Cl. 24). 6–4–29.
258,262. C.A.C. Cl. 46 (Int. Cls. 29, 30, and 31). 7–2–29.
258,648. ESSO. Cl. 16 (Int. Cl. 2). 7–9–29.
259,507. EMULPHOR. Cl. 6 (Int. Cl. 1). 7–30–29.
260,058. STYLIST. Cl. 39 (Int. Cl. 25). 8–13–29.
261,793. MARCOL. Cl. 15 (Int. Cl. 4). 9–24–29.
261,794. PARMO. Cl. 15 (Int. Cl. 4). 9–24–29.
264,663. COMAX. Cl. 52 (Int. Cls. 3 and 5). 12–3–29.
264,711. PYNOCO. Cl. 52 (Int. Cls. 3 and 5). 12–3–29.
264,939. PARAMOUNT. Cl. 23 (Int. Cl. 8). 12–10–29.
264,940. PARAGON. Cl. 23 (Int. Cl. 8). 12–10–29.
265,362. MISS FIFTH AVENUE. Cl. 27 (Int. Cl. 14). 12–24–29.
442,829. SURMAS. Cl. 21 (Int. Cl. 9). 6–7–49.
505,380. ROYAL PLUMBERS SPUN OAKUM. Cl. 1 (Int. Cl. 17). 1–4–49.
507,043. CARBOND. Cl. 34 (Int. Cl. 9). 2–22–49.
508,231. NU-BLAC. Cl. 21 (Int. Cl. 17). 4–5–49.
508,752. YELLOWSTONE. Cl. 37 (Int. Cl. 16). 4–19–49.
510,067. ANCHOR. Cl. 32 (Int. Cl. 20). 5–24–49.
510,687. TITE-ON. Cl. 12 (Int. Cl. 19). 6–7–49.
510,819. FULLER FABRICS. Cl. 42 (Int. Cl. 24). 6–7–49.
510,904. YANKEE HANDYMAN. Cl. 23 (Int. Cl. 8). 6–14–49.
510,966. ECONSERV. Cl. 37 (Int. Cl. 16). 6–14–49.
511,126. BLACRETE. Cl. 12 (Int. Cl. 19). 6–21–49.
511,261. SKIPPER. Cl. 16 (Int. Cl. 2). 6–21–49.
511,370. ECONOFOLD. Cl. 37 (Int. Cl. 16). 6–21–49.
511,372. NEATFORM. Cl. 37 (Int. Cl. 16). 6–21–49.
511,374. ERVINGWEAVE. Cl. 37 (Int. Cl. 16). 6–21–49.
511,375. ERVINGOLD. Cl. 37 (Int. Cl. 16). 6–21–49.
511,559. PERRYGRAF. Cl. 26 (Int. Cl. 9). 6–28–49.
511,625. GIBSON. Cl. 23 (Int. Cl. 16). 6–28–49.
511,807. RED SEAL. Cl. 42 (Int. Cl. 24). 7–5–49.
511,808. BLUE SEAL. Cl. 42 (Int. Cl. 24). 7–5–49.
511,809. GOLD SEAL. Cl. 42 (Int. Cl. 24). 7–5–49.
511,810. VARNOSEAL. Cl. 42 (Int. Cl. 24). 7–5–49.
511,937. CONVAIR. Cl. 19 (Int. Cl. 12). 7–5–49.
512,025. ELECTRO ZINCBOND. Cl. 14 (Int. Cl. 6). 7–12–49.
512,037. TENDER QUICK AND DESIGN. Cl. 46 (Int. Cl. 1). 7–12–49.
512,039. FFF. Cl. 23 (Int. Cl. 9). 7–12–49.
512,044. THE COAT THAT GROWS. Cl. 39 (Int. Cl. 25). 7–12–49.
512,125. PATE. Cl. 15 (Int. Cl. 4). 7–12–49.
512,126. TOOLGLIDE. Cl. 15 (Int. Cl. 4). 7–12–49.
512,155. MISCELLANEOUS DESIGN. Cl. 31 (Int. Cl. 11). 7–12–49.
512,158. TROPICAL BRAND. Cl. 46 (Int. Cls. 29 and 31). 7–12–49.
512,168. ALPANA. Cl. 39 (Int. Cl. 25). 7–12–49.
512,169. GLEN COVE. Cl. 39 (Int. Cl. 25). 7–12–49.
512,172. PUSSYWILLOW. Cl. 39 (Int. Cl. 25). 7–12–49.
512,177. DOVER. Cl. 39 (Int. Cl. 25). 7–12–49.
512,184. STABLE-ARC. Cl. 14 (Int. Cl. 6). 7–12–49.
512,204. SHIELD-O-MATIC. Cl. 14 (Int. Cl. 6). 7–12–49.
512,249. VARIGRAPH. Cl. 26 (Int. Cl. 16). 7–12–49.
512,265. MULTO. Cl. 26 (Int. Cl. 9). 7–12–49.
512,280. RODEO. Cl. 39 (Int. Cl. 25). 7–12–49.
512,298. AS YOU NEED IT. Cl. 101 (Int. Cl. 35). 7–12–49.
512,299. UPDW (DESIGN). Cl. 106 (Int. Cl. 40). 7–12–49.
512,330. SHIREY. Cl. 39 (Int. Cl. 25). 7–12–49.
512,333. PAN AMERICAN BANK OF MIAMI, FLORIDA ETC. AND DESIGN. Cl. 102 (Int. Cl. 36). 7–12–49.
512,334. PAN AMERICAN BANK OF MIAMI AND DESIGN. Cl. 102 (Int. Cl. 36). 7–12–49.
512,355. ANDREA SHARP-FOCUS TELEVISION. Cl. 21 (Int. Cl. 9). 7–19–49.
512,361. CITRIN. Cl. 18 (Int. Cl. 5). 7–19–49.
512,408. GOOD FORM. Cl. 32 (Int. Cl. 20). 7–19–49.
512,427. TRIANGLES FORMED IN A CIRCLE. Cl. 18 (Int. Cls. 1, 4, and 5). 7–19–49.
512,458. COLUMBIA. Cl. 29 (Int. Cl. 16). 7–19–49.
512,496. AMC. Cl. 21 (Int. Cl. 9). 7–19–49.
512,497. AMC. Cl. 21 (Int. Cl. 11). 7–19–49.
512,524. GLOSSEAL. Cl. 37 (Int. Cl. 16). 7–19–49.
512,525. LINFOLD. Cl. 37 (Int. Cl. 16). 7–19–49.
512,526. TISFOLD. Cl. 37 (Int. Cl. 16). 7–19–69.
512,573. ANNULAR BAND (BLUE). Cl. 52 (Int. Cl. 3). 7–19–49.
512,642. LIVELY AIRE. Cl. 21 (Int. Cl. 11). 7–19–49.
512,759. LAURA SCUDDER'S. Cl. 46 (Int. Cl. 29). 7–26–49.
512,923. AMERTITE. Cl. 106 (Int. Cl. 40). 7–26–49.
512,924. FLAVOR-SEALD. Cl. 2 (Int. Cl. 6). 7–26–49.
513,006. METAL MENDER. Cl. 14 (Int. Cl. 6). 8–2–49.
513,145. ANNULAR. Cl. 52 (Int. Cl. 3). 8–2–49.
513,146. RECTANGULAR BAND. Cl. 52 (Int. Cl. 3). 8–2–49.
513,166. GILL'S. Cl. 52 (Int. Cl. 3). 8–2–49.
513,200. ANTARATE. Cl. 52 (Int. Cl. 3). 8–2–49.
513,424. ACE. Cl. 32 (Int. Cl. 20). 8–9–49.
513,425. BELMONT. Cl. 32 (Int. Cl. 20). 8–9–49.
513,502. UNIFAST. Cl. 106 (Int. Cl. 40). 8–9–49.
513,503. UNIDURE. Cl. 106 (Int. Cl. 40). 8–9–49.
513,831. THERMAPLY. Cl. 37 (Int. Cl. 16). 8–16–49.
513,970. HEALD AND DESIGN. Cl. 23 (Int. Cl. 7). 8–23–49.
514,057. SPERSER VOLCLAY AND DESIGN. Cl. 1 (Int. Cl. 1). 8–23–49.
514,058. MX VOLCLAY 80. Cl. 1 (Int. Cl. 1). 8–23–49.
514,150. TAMPTITE. Cl. 9 (Int. Cl. 13). 8–23–49.
514,153. FAULTLESS. Cl. 13 (Int. Cl. 6). 8–23–49.
514,175. INFALLIBLE. Cl. 9 (Int. Cl. 13). 8–23–49.
514,189. OZITONE. Cl. 6 (Int. Cl. 5). 8–23–49.
514,205. BLANCOPHOR. Cl. 6 (Int. Cl. 2). 8–23–49.
514,210. TINTOFFEN. Cl. 6 (Int. Cl. 2). 8–23–49.
514,289. UNISEC. Cl. 106 (Int. Cl. 40). 8–23–49.
514,336. TEMPO. Cl. 36 (Int. Cl. 9). 8–30–49.
514,348. INTERCOLLEGIATE PRESS BULLETINS. Cl. 38 (Int. Cl. 16). 8–30–49.
514,441. BLACK MASK AND DESIGN. Cl. 16 (Int. Cl. 2). 8–30–49.
514,561. OZACLOTH. Cl. 26 (Int. Cl. 1). 8–30–49.
514,563. OZAPLASTIC. Cl. 26 (Int. Cl. 1). 8–30–49.
514,596. ANTARON. Cl. 52 (Int. Cl. 3). 8–30–49.
514,613. UNIDYE. Cl. 106 (Int. Cl. 40). 8–30–49.
515,448. S IN A CIRCLE. Cl. 38 (Int. Cl. 16). 9–20–49.
516,161. STONE LINED. Cl. 36 (Int. Cl. 15). 10–11–49.
516,514. TECODAN. Cl. 18 (Int. Cl. 5). 10–18–49.
516,577. TUBADIL. Cl. 18 (Int. Cl. 5). 10–18–49.
517,251. LUX-EEZ. Cl. 39 (Int. Cl. 25). 11–1–49.
517,390. BARNSTEAD. Cl. 31 (Int. Cl. 11). 11–8–49.
517,567. ZILLER. Cl. 38 (Int. Cl. 16). 11–8–49.
517,633. LONGWOOD. Cl. 49 (Int. Cl. 33). 11–15–49.
517,704. REPRESENTATION OF A LION'S HEAD. Cl. 6 (Int. Cls. 1 and 3). 11–22–49.
517,731. CLEARGLIDE. Cl. 15 (Int. Cl. 4). 11–22–49.
517,895. CINCH. Cl. 13 (Int. Cl. 6). 11–22–49.
517,964. 3 FLEUR DE LIS (DESIGN). Cl. 42 (Int. Cl. 24). 11–22–49.
517,965. FORSTMANN. Cl. 42 (Int. Cl. 24). 11–22–49.
517,966. NUKEM. Cl. 12 (Int. Cl. 19). 11–22–49.
517,969. WESTFIELD. Cl. 27 (Int. Cl. 14). 11–22–49.
517,983. ZARA. Cl. 42 (Int. Cl. 24). 11–22–49.
518,064. J. B. VAN SCIVER CO. AND DESIGN. Cl. 32 (Int. Cls. 20 and 24). 11–29–49.
518,113. COPPER PENNY. Cl. 46 (Int. Cl. 31). 11–29–49.
518,120. ANGEL FOOD. Cl. 46 (Int. Cl. 30). 11–29–49.
518,156. SCIENCO. Cl. 46 (Int. Cl. 30). 11–29–49.
518,230. LINDY'S BEST. Cl. 46 (Int. Cl. 30). 11–29–49.
518,328. PYROLEX. Cl. 37 (Int. Cl. 16). 12–6–49.
518,360. RED SPOT SYNREZ AND DESIGN. Cl. 16 (Int. Cl. 2). 12–6–49.
518,394. KWIKSET. Cl. 25 (Int. Cl. 6). 12–6–49.
518,473. DENSITE. Cl. 21 (Int. Cl. 17). 12–6–49.
518,550. LENOX. Cl. 23 (Int. Cl. 8). 12–6–49.
518,617. SHAWNEE CHIEF THE BAKERS PIPE OF PEACE AND DESIGN. Cl. 46 (Int. Cl. 30). 12–13–49.
518,652. WOLF CLOTH CUTTERS SET THE PACE. Cl. 23 (Int. Cl. 7). 12–13–49.

518,659. COLORADO COOL. Cl. 39 (Int. Cl. 25). 12–13–49.
518,671. AMPCO. Cl. 14 (Int. Cls. 6 and 9). 12–13–49.
518,672. AMPCO AND DESIGN. Cl. 14 (Int. Cls. 6 and 9). 12–13–49.
518,693. COLLIER-C. Cl. 9 (Int. Cl. 13). 12–13–49.
518,702. BARRON-GRAY'S. Cl. 46 (Int. Cl. 29). 12–13–49.
518,720. CHIEFTAIN. Cl. 35 (Int. Cl. 12). 12–13–49.
518,723. BELLEVILLE. Cl. 39 (Int. Cl. 25). 12–13–49.
518,763. EASY-FLO. Cl. 14 (Int. Sl. 6). 12–13–49.
518,793. DEEPSLEEP. Cl. 32 (Int. Cl. 20). 12–13–49.
518,794. OLYMPIC. Cl. 32 (Int. Cl. 20). 12–13–49.
518,836. LASTING SPRING. Cl. 28 (Int. Cl. 8). 12–13–49.
518,860. FARBEST. Cl. 46 (Int. Cl. 29). 12–13–49.
519,239. PAGLIACCIO. Cl. 46 (Int. Cl. 29). 12–27–49.
519,312. PELMENAL. Cl. 18 (Int. Cl. 5). 12–27–49.
519,335. VISTARA. Cl. 42 (Int. Cl. 24). 12–27–49.
519,380. TU-TURN. Cl. 29 (Int. Cl. 21). 12–27–49.
519,540. ORANGE TRUE. Cl. 45 (Int. Cl. 32). 1–3–50.
519,750. NISENTIC. Cl. 18 (Int. Cl. 5). 1–10–50.

TRADEMARK REGISTRATIONS CANCELED

Section 8

The following registrations issued Aug. 13, 1963

754,381. AQUA POL. Cl. 1.
754,388. COGEGAL. Cl. 2.
754,389. ZIP'ER-'N-DIPPER. Cl. 2.
754,391. COCKTAIL TIME. Cl. 2.
754,392. COMMANDO. Cl. 2.
754,394. AQUAMATIC. Cl. 2.
754,398. SOPHISTIGIFT. Cl. 2.
754,405. SHOE COSMETIC. Cl. 4.
754,411. COLMAT. Cl. 6.
754,415. SOL-U-COP. Cl. 6.
754,418. U-D-TEK. Cl. 6.
754,421. MIAVAL. Cl. 6.
754,426. AGRI-VITA. Cl. 10.
754,429. HILINEWALL. Cl. 12.
754,433. CCM AND CROWN DESIGN. Cl. 12.
754,434. "CROWN-O-LASTIC." Cl. 12.
754,435. "MULTI-SEAL." Cl. 12.
754,436. ECON-A-FRAME. Cl. 12.
754,437. ELECTRO QUEEN. Cl. 13.
754,440. DESIGN OF HOUSE, ETC. IN SQUARE. Cl. 13.
754,447. GEOMETRIC DESIGN. Cl. 13.
754,455. QUEEN BRAND AND DESIGN. Cl. 14.
754,456. MXI. Cl. 14.
754,458. VIKING. Cl. 14.
754,459. AUDIOLOY. Cl. 14.
754,463. INSULUBE. Cl. 15.
754,465. ECONODYNE. Cl. 15.
754,466. FUEL-MATE. Cl. 15.
754,469. VIT-GRIT. Cl. 16.
754,490. SERVAL AND DESIGN. Cl. 18.
754,493. RED COMB AND DESIGN. Cl. 18.
754,494. PICNIC. Cl. 19.
754,495. POINTER. Cl. 19.
754,496. POLY-FLOR. Cl. 20.
754,497. VISTELLE. Cl. 20.
754,498. ROCHELLE. Cl. 20.
754,499. ROBBINETTE. Cl. 20.
754,502. AMTICO CARTOON AND DESIGN. Cl. 20.
754,510. SPRAY-A-MATIC SYSTEM. Cl. 21.
754,511. PRODUCTOGRAPH. Cl. 21.
754,513. STEAMSTIR. Cl. 21.
754,514. STEAMSTIR (DESIGN). Cl. 21.
754,518. WELDBLOC. Cl. 21.
754,521. ALPARTS. Cl. 21.
754,522. IF IRVAN AND DESIGN. Cl. 21.
754,523. LEC ON A GLOBAL DESIGN WITH LIGHTNING BOLT. Cl. 21.
754,536. HAUNTED HOUSE. Cl. 22.
754,537. SPRING-GO. Cl. 22.
754,540. EP. Cl. 22.
754,541. TRACERS. Cl. 22.
754,544. UNICASTER. Cl. 23.
754,545. FLEX-SET. Cl. 23.
754,548. SATELLITE. Cl. 23.
754,549. TOPS POWER AND DESIGN. Cl. 23.
754,550. RETRACTO-GLIDE. Cl. 23.
754,555. 2 C.A. Cl. 23.
754,556. E.V. Cl. 23.
754,561. HAM-WHIRL-SEAT. Cl. 23.
754,564. AUTO-CYCLE. Cl. 23.
754,566. REPCO. Cl. 23.
754,570. AIM AND DESIGN. Cl. 23.
754,580. ELECTRO-MAGIC. Cl. 23.
754,581. J.C.I. Cl. 23.
754,583. HYDRA-VIBE. Cl. 23.
754,584. PAYLOSTATIC. Cl. 23.
754,589. ACE-O-TRONIC. Cl. 24.
754,596. GRAPHICORDER. Cl. 26.
754,601. EH. Cl. 28.
754,602. 4–A AND DESIGN. Cl. 28.
754,604. M-J-B. Cl. 28.
754,606. BLUE RIDGE CHINA U.S.A. AND DESIGN. Cl. 30.
754,607. JET Co_2LD SHOT. Cl. 31.
754,609. ICE-A-CUP. Cl. 31.
754,612. COLONIAL CHARM. Cl. 32.
754,613. ULTRA REST. Cl. 32.
754,620. COGEGAL. Cl. 34.
754,621. COMMANDO. Cl. 34.
754,622. TECTROL. Cl. 34.
754,631. MEGMB. Cl. 36.
754,632. BRIMAR. Cl. 36.
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Essex Master Mold Co., Inc., Essex, Conn. 754,666, canc. Cl. 39.
Esteem Associates Inc., Stillwater, Okla. 754,636, canc. Cl. 36.
Etablissements Camuset, Aube, France. 877,832, pub. 7–15–69. Cl. 39.
Euro-Tan Ltd., New York, N.Y. 877,595, pub. 7–15–69. Cl. 1.
Evans Products Co., Plymouth, Mich. 754,540, canc. Cl. 22.
Everpure, Inc.: *See*—
Tested Appliance Co.
Evsco Pharmaceutical Co., Oceanside, N.Y. 877,670, pub. 7–15–69. Cl. 18.
Explosives Corp. of America, Issaquah, Wash. 877,639, pub. 7–15–69. Cl. 9.
Exquisite Form Industries, Inc., New York, N.Y. 754,677, canc. Cl. 39.
Fairchild Hiller Corp., Germantown, Md. 877,689, pub. 7–15–69. Cl. 19.
Fairfield Laboratories, Inc., Pasadena, from Fawson Drug & Sundry Co., Inc., Oakland, Calif. 754,747, canc. Cl. 46.
Farfisa S.p.A., Camerano (Ancona), Italy. 877,800, pub. 7–15–69. Cl. 36.
Faultless Caster Corp., Evansville, Ind., to Bliss & Laughlin Industries Inc., Oak Brook, Ill. 514,153, ren. 9–30–69. Cl. 13.
Faultless Starch Co., Kansas City, Mo. 877,610, pub. 7–15–69. Cl. 4.
Fendrich Industries, Inc.: *See*—
Douglas & Green, Inc.
Fenton Mfg. Corp., Gardena, Calif. 877,688, pub. 7–15–69. Cl. 19.
Fieldcrest Mills, Inc., Eden, N.C. 877,847, pub. 7–15–69. Cl. 42.
First Multifund of America Inc., New York, N.Y. 877,935, pub. 7–15–69. Cl. 102.
Fitler, Edwin H., Co., The, Philadelphia, Pa., to Columbian Rope Co., Auburn, N.Y. 252,682, ren. 9–30–69. Cl. 7.
Food Science Research Corp., Burbank, Calif. 877,859, pub. 5–13–69. Cl. 46.
Foremost-McKesson, Inc., d.b.a. McKesson Laboratories, New York, N.Y. 877,675, pub. 7–15–69. Cl. 18.
Forstmann Woolen Co., Passaic, N.J., to J. P. Stevens & Co., Inc., New York, N.Y. 517,964–5, ren. 9–30–69. Cl. 42.
Forstmann Woolen Co., Passaic, N.J., to J. P. Stevens & Co., Inc., New York, N.Y. 517,983, ren. 9–30–69. Cl. 42.
Forstmann Woolen Co., Passaic, N.J., to J. P. Stevens & Co., Inc., New York, N.Y. 519,335, ren. 9–30–69. Cl. 42.
Fortunoff, M., of Westbury Corp., Westbury, N.Y. 877,970. Cl. 30.
Foster Grant Co., Inc., Leominster, Mass. 877,589, pub. 2–25–69. Cl. 1.
Foster Metal Products, Inc., Attleboro, Mass. 877,765, pub. 7–15–69. Cl. 28.
Four Aces Jewelry Corp., New York, N.Y. 754,602, canc. Cl. 28.
Franconia Ski Wear, Inc., Boston, Mass. 754,698, canc. Cl. 39.
French's Western Auto Store, Sentinel, Okla. 877,978. Cl. 101.
Fuller, D. B., & Co., Inc., to J. P. Stevens & Co., Inc., New York, N.Y. 510,819, ren. 9–30–69. Cl. 42.
Fun Books, Inc., New York, N.Y. 754,661, canc. Cl. 38.
GAF Corp.: *See*—
I.G. Farbenindustria Aktiengesellschaft.
Ruberoid Co., The.
GAI-GMX: *See*—
EG & G International, Inc.
GMX: *See*—
EG & G International, Inc.
Gakken Co. Ltd., Ota-Ku, Tokyo, Japan. 877,807, pub. 7–15–69. Cl. 37.
Gasket Engineering Co., Inc., Kansas City, Mo. 754,775, canc. Cl. 50.
Gate-Way, Inc., Los Angeles, Calif., to Emhart Corp., Hartford, Conn. 518,394, ren. 9–30–69. Cl. 25.
Geigy Chemical Corp., Ardsley, N.Y. 877,678, pub. 7–15–69. Cl. 18.
Gelatin Capsules Ltd., Toronto, Ontario, Canada. 877,603, pub. 7–15–69. Cl. 2.
General Aerospace Materials Corp., Plainview, N.Y. 877,653, pub. 7–15–69. Cl. 14.
General Aniline & Film Corp., to GAF Corp., New York, N.Y. 513,200, ren. 9–30–69. Cl. 52.
General Aniline & Film Corp., to GAF Corp., New York, N.Y. 514,561, ren. 9–30–69. Cl. 26.
General Aniline & Film Corp., to GAF Corp., New York, N.Y. 514,563, ren. 9–30–69. Cl. 26.
General Aniline & Film Corp., to GAF Corp., New York, N.Y. 514,596, ren. 9–30–69. Cl. 52.
General Boats Corp., Irvington, N.Y. 754,494, canc. Cl. 19.
General Dynamics Corp.: *See*—
Consolidated Vultee Aircraft Corp.
General Dynamics Corp., Chicago, Ill. 754,607, canc. Cl. 31.
General Dyestuff Corp., to GAF Corp., New York, N.Y. 514,205, ren. 9–30–69. Cl. 6.
General Dyestuff Corp., to GAF Corp., New York, N.Y. 514,210, ren. 9–30–69. Cl. 6.
General Fireproofing Co., The, Youngstown, Ohio. 512,408, ren. 9–30–69. Cl. 32.
General Foods Corp., White Plains, N.Y. 754,763, canc. Cl. 46.
General Foods Corp., White Plains, N.Y. 877,631, pub. 7–15–69. Cl. 6.
General Foods Corp., White Plains, N.Y. 877,862, pub. 7–15–69. Cl. 46.
General Mills, Inc., Minneapolis, Minn. 877,872, pub. 5–27–69. Cl. 46.
General Pipe & Supply Co., Inc., Compton, Calif. 877,963. Cl. 12.
General Precision, Inc., Little Falls, N.J. 754,518, canc. Cl. 21.
Gibson, A. C., Co., Inc., Buffalo, N.Y. 511,625, ren. 9–30–69. Cl. 23.
Gill, Thomas, Soap Co.: *See*—
Thomas Gill Soap Co., Inc.
Gill, Thomas, Soap Co., Inc., Brooklyn, to Thomas Gill Soap Co., White Plains, N.Y. 513,166, ren. 9–30–69. Cl. 52.
Glamorene Products Corp., Clifton, N.J. 877,635, pub. 7–15–69. Cl. 6.
Gland-O-Lac Co., The: *See*—
Ciba Corp.
Glass Containers Corp., Fullerton, Calif. 877,775, pub. 7–15–69. Cl. 33.
Glendinning Companies, Inc., Westport, Conn. 877,930–1, pub. 7–15–69. Cl. 101.
Goldstine, Sam, & Son, Phoenix, to J. A. Wood Co., Growers, Packers & Shippers, Tolleson, Ariz. 518,113, ren. 9–30–69. Cl. 46.
Goodyear Tire & Rubber Co., The, Akron, Ohio. 877,588, pub. 7–15–69. Cl. 1.
Gorton Corp., The, d.b.a. Gorton's of Gloucester, Gloucester, Mass. 877,869, pub. 7–15–69. Cl. 46.
Gorton's of Gloucester: *See*—
Gorton Corp., The.
Grant, R. D., Co., The, Cleveland, Ohio. 754,730, canc. Cl. 44.
Gravity Meter Exploration Co., Geophysical Associates International: *See*—
EG & G International, Inc.
Grumbacher, M., Inc., New York, N.Y. 512,458, ren. 9–30–69. Cl. 29.
Hachette, Inc., New York, N.Y. 877,817, pub. 7–15–69. Cl. 38.
Haggar Co., Dallas, Tex. 518,659, ren. 9–30–69. Cl. 39.
Hairnet Corp. of America, New York, N.Y. 877,830, pub. 7–15–69. Cl. 39.
Hales & Hunter Co., Chicago, Ill. 754,493, canc. Cl. 18.
Hale Tintle Foods, Inc., Bernardsville, N.J. 877,863, pub. 7–15–69. Cl. 46.
Hales & Hunter Co., Chicago, Ill. 754,766, canc. Cl. 46.
Hall, Howard E., d.b.a. Hall and Malling, Grand Rapids, Mich. 754,662, canc. Cl. 38.
Halpern, Raymond, Loungewear Corp., New York, N.Y. 877,825, pub. 7–15–69. Cl. 39.
Hamilton, Ted J., Van Nuys, Calif. 754,561, canc. Cl. 23.
Handy & Harman, New York, N.Y. 518,763, ren. 9–30–69. Cl. 14.
Harry and David, Medford, Oreg. 754,398, canc. Cl. 2.
Harsco Corp., Wormleysburg, Pa. 877,740, pub. 7–15–69. Cl. 23.
Hasbro Industries, Inc., Pawtucket, R.I. 877,813, pub. 7–15–69. Cl. 37.
Hayakawa Electric Co. Ltd., Osaka, Japan. 877,692, pub. 7–15–69. Cl. 21.
Heald Machine Co., The, to The Heald Machine Co., Worcester, Mass. 513,970, ren. 9–30–69. Cl. 23.
Helen of St. Moritz, Inc., San Francisco, Calif. 877,843, pub. 7–15–69. Cl. 40.
Hercules Inc.: *See*—
Hercules Powder Co.
Hercules Powder Co., to Hercules Inc., Wilmington, Del. 514,150, ren. 9–30–69. Cl. 9.
Hercules Powder Co., to Hercules Inc., Wilmington, Del. 514,175, ren. 9–30–69. Cl. 9.
Hercules Powder Co., to Hercules Inc., Wilmington, Del. 518,693, ren. 9–30–69. Cl. 9.
Kronseder, Hermann, d.b.a. Herman Kronseder Maschinenfabrik, Bavaria, Germany. 877,738, pub. 5–20–69. Cl. 23.
Hicks-Hayward Co., El Paso, Tex., to Blue Bell, Inc., Greensboro, N.C. 512,280, ren. 9–30–69. Cl. 39.
Hitchcock Publishing Co., Wheaton, Ill. 877,972. Cl. 38.
Hobart Bros. Co., Troy, Ohio. 877,783, pub. 7–15–69. Cl. 34.
Hoffmann-La Roche Inc., Nutley, N.J. 519,750, ren. 9–30–69. Cl. 18.
Holeproof Hosiery Co., Milwaukee, Wis., to Kayser-Roth Corp., New York, N.Y. 517,251, ren. 9–30–69. Cl. 39.
Holiday Foods, Inc., Waterloo, Iowa. 754,770, canc. Cl. 46.
Holodec Corp., Knoxville, Ark. 877,731, pub. 7–15–69. Cl. 23.
Holstad, Raymond R., Wichita, Kans. 877,839, pub. 7–15–69. Cl. 39.
Holzman, Egon, New York, N.Y. 754,601, canc. Cl. 28.
Hooker Glass & Paint Mfg. Co., Chicago, Ill. 877,658, pub. 7–15–69. Cl. 16.
Hough, Frank G., Co., The, Libertyville, Ill. 754,584, canc. Cl. 23.
House of Perfection, Inc., The, New York, N.Y. 754,684, canc. Cl. 39.
Household Finance Corp., Chicago, Ill. 877,933, pub. 4–15–69. Cl. 101.
Hudnut, Richard, Morris Plains, N.J. 754,647, canc. Cl. 38.
Hudnut, Richard, Morris Plains, N.J. 877,901, pub. 5–13–69. Cl. 51.
Humes & Berg Mfg. Co., Inc., Chicago, Ill., to Humes & Berg Mfg. Co., Inc., East Chicago, Ind. 516,161, ren. 9–30–69. Cl. 36.
Hunt, Philip A., Chemical Corp., Palisades Park, N.J. 877,633, pub. 7–15–69. Cl. 6.
Huppert, Jack, Co., Inc., San Antonio, Tex. 877,622–3, pub. 7–15–69. Cl. 6.
Hyde-Park Fashions, Inc., New York, N.Y. 522,193, canc. Cl. 39.
Hyde Park Fashions Inc., New York, N.Y. 532,733, canc. Cl. 39.

Hydrospace Research Corp., Rockville, Md. 877,921, pub. 7–15–69. Cl. 100.
I. G. Farbenindustrie Aktiengesellschaft, Frankfort-on-the-Main, Germany, to GAF Corp., New York, N.Y. 259,507, ren. 9–30–69. Cl. 6.
Ideal Toy Corp., Hollis, N.Y. 754,536, canc. Cl. 22.
Ilford, Ltd., Ilford, England. 754,660, canc. Cl. 38.
Illinois Upholsterer's Supply Co., Inc., Chicago, Ill. 754,613, canc. Cl. 32.
Imperial Knife Associated Companies, Inc., Providence, R.I. 877,742, pub. 7–15–69. Cl. 23.
Indak Mfg. Corp., Northbrook, Ill. 877,705, pub. 7–15–69. Cl. 21.
Index Creations, Inc., Madison, Wis. 877,973. Cl. 38.
International Air Equipment Corp., Chicago, Ill. 877,787, pub. 7–15–69. Cl. 34.
International Minerals & Chemical Corp., Skokie, Ill. 754,469, canc. Cl. 16.
International Pipe & Ceramics Corp.: *See*—
Interpace Corp.
International Playtex Corp., Dover, Del. 877,837, pub. 7–15–69. Cl. 39.
International Rubber Corp., Avon, Mass. 877,880, pub. 7–15–69. Cl. 50.
International Thermal Corp., St. Louis, Mo. 877,790, pub. 7–15–69. Cl. 34.
Interpace Corp., from International Pipe & Ceramics Corp., Los Angeles, Calif. 877,961. Cl. 12.
Interstate Mail Film Service, Inc., d.b.a. Photo-T, South Bend, Ind. 877,942, pub. 5–20–69. Cl. 106.
Intravend A.G., Zurich, Switzerland. 877,779, pub. 7–15–69. Cl. 34.
Irvan Ferromagnetics Corp., Van Nuys, Calif. 754,522, canc. Cl. 21.
Irving Tanning Co., Boston, Mass. 877,593, pub. 7–15–69. Cl. 1.
Items, Inc., St. Louis, Mo. 877,607, pub. 7–15–69. Cl. 3.
Jewel Companies, Inc., Melrose Park, Ill. 877,816, pub. 7–15–69. Cl. 38.
Joanna Western Mills Co., Chicago, Ill. 510,067, ren. 9–30–69. Cl. 32.
Joanna Western Mills Co., Chicago, Ill. 511,807–10, ren. 9–30–69. Cl. 42.
Joanna Western Mills Co., Chicago, Ill. 518,328, ren. 9–30–69. Cl. 37.
Jorgensen Conveyors, Inc., Milwaukee, Wis. 754,581, canc. Cl. 23.
Joslyn Mfg. & Supply Co., Chicago, Ill. 877,642, pub. 7–15–69. Cl. 12.
K-S-H, Inc., St. Louis, Mo. 877,645, pub. 7–15–69. Cl. 12.
Katsuyasu Higuchi, Gifu-Ken, Japan. 877,608, pub. 7–15–69. Cl. 3.
Kayser-Roth Corp.: *See*—
Holeproof Hosiery Co.
Kellogg Co., Battle Creek, Mich. 754,761, canc. Cl. 46.
Kellwood Co., Chicago, Ill. 754,714, canc. Cl. 42.
Kem Mfg. Corp., Tucker, Ga. 877,655, pub. 7–15–69. Cl. 15.
Kent Products, Inc., Kansas City, Mo. 518,860, ren. 9–30–69. Cl. 46.
Kerrco, Inc., Hastings, Nebr. 877,777, pub. 7–15–69. Cl. 34.
Kester Solder Co., to Kester Solder Co., Chicago, Ill. 513,006, ren. 9–30–69. Cl. 14.
Keuffel & Esser Co., Hoboken, N.J. 754,794, canc. Cl. 101.
King Korn Stamp Co., Chicago, Ill. 877,925, pub. 7–15–69. Cl. 101.
Kirkpatrick Brothers Ltd., County Antrim, Northern Ireland. 877,600. pub. 7–15–69. Cl. 1.
Knudson, Archie W., Minneapolis, Minn. 754,463, canc. Cl. 15.
Kreiss, Sidney J., Inc., New York, N.Y. 877,838, pub. 7–15–69. Cl. 39.
Kresge, S. S., Co., Detroit, Mich. 877,834, pub. 7–15–69. Cl. 39.
Kroger Co. The, Cincinnati, Ohio. 877,661, pub. 7–15–69. Multiple Class (Classes 18, 51, and 52).
Kronseder, Hermann, Maschinenfabrik: *See*—
Kronseder, Hermann.
Lab-Line Instruments, Inc., Chicago, Ill. 754,596, canc. Cl. 26.
Laboratoire Garnier S.A., Paris, France. 877,906, pub. 7–15–69. Cl. 52.
Lackawanna Pants Mfg. Co., The, Scranton, Pa. 754,700, canc. Cl. 39.
Lancome S.A., Paris France. 877,888. pub. 7–15–69. Cl. 51.
Leesona Ltd., Heywood, England. 877,752, pub. 7–15–69. Cl. 26.
Lektra Laboratories, Inc., Queens, N.Y. 877,761, pub. 7–15–69. Cl. 26.
Levers Brothers, Ltd., Port Sunlight, England, to Lever Brothers Co., New York, N.Y. 33,944–5, ren. 9–30–69. Cl. 4.
Levers Brothers Co.: *See*—
Lever Brothers, Ltd.
Levine & Co. Inc., New York, N.Y. 754,715, canc. Cl. 42.
Link-Age Corp., West Nyack, N.Y. 754,447, canc. Cl. 13.
Litton Business Systems, Inc., New York, N.Y. 877,757, pub. 7–15–69. Cl. 26.
Lightolier Inc., New York, N.Y. 877,693, pub. 7–15–69. Cl. 21.
Lincoln Electric Co., The, Cleveland, Ohio. 512,184, ren. 9–30–69. Cl. 14.
Lindenmeyr Paper Corp., Long Island City, N.Y. 754,642, canc. Cl. 37.
Lodge & Shipley Co., The, Cincinnati, Ohio. 877,736, pub. 7–15–69. Cl. 23.
Logan, A. J., Co., Pittsburgh, Pa. 540,017, canc. Cl. 32.
Logan Electronic Corp., East Boston, Mass. 754,523, canc. Cl. 21.
Loma Linda Foods: *See*—
Pacific Union Association of Seventh-Day Adventists.
Longhorn Steak Pits, Inc., Knoxville, Tenn. 877,916, pub. 8–15–67. Cl. 100.
Longines-Wittnauer Watch Co., Inc., New York, N.Y. 877,801, pub. 7–15–69. Cl. 36.
Loyd, L. W., Co., Inc., South Pittsburg, Tenn. 877,960. Cl. 9.
Lunkenheimer Co., The, to The Lunkenheimer Co., Cincinnati, Ohio. 75,747, ren. 9–30–69. Cl. 13.
Lynn Pacific Corp., The, Union City, Calif. 877,809, pub. 7–15–69. Cl. 37.
Lyon Metal Products, Inc., Aurora, Ill. 877,756, pub. 7–15–69. Cl. 26.
MSL Industries, Inc., Chicago, Ill. 877,938, pub. 5–27–69. Cl. 103.
Macshore Classics, Inc., New York, N.Y. 877,836, pub. 7–15–69. Cl. 39.
Mallen, Steven L., d.b.a. The Viva Tones, Chattanooga, Tenn. 754,804, canc. Cl. 107.
Malone & Hyde, Inc., Memphis, Tenn. 877,851, pub. 5–13–69. Cl. 46.
Mannington Mills Inc., Salem, N.J. 877,691, pub. 3–4–69. Cl. 20.
Marine Safety Equipment Corp., Farmingdale, N.J. 877,684, pub. 7–15–69. Multiple Class (Classes 19 and 23).
Martie, R. B., Inc., New York, N.Y. 297,206, canc. Cl. 52.
Martin Marietta Corp., New York, N.Y. 877,626, pub. 7–15–69. Cl. 6.
Martin, C. J., & Sons, Inc., Austin, Tex. 754,757, canc. Cl. 46.
Massengill, S. E., Co., The, Bristol Tenn. 877,681, pub. 7–15–69. Cl. 18.
Mattel, Inc., Hawthorne, Calif. 877,712, pub. 7–15–69. Cl. 22.
Mattel, Inc., Hawthorne, Calif. 877,716–22, pub. 7–15–69. Cl. 22.
Mattel, Inc., Hawthorne, Calif. 877,724, pub. 7–15–69. Cl. 22.
Mavec, Frank V., d.b.a. Stanford Institute, Cleveland, Ohio. 754,635, canc. Cl. 36.
Mayborn Food Products Co., The, Cleveland, Ohio. 519,540, ren. 9–30–69. Cl. 45.
McCulloch Corp., Minneapolis, Minn. 754,809, canc. Cl. 23.
McGraw-Edison Co., Elgin, Ill. 754,589, canc. Cl. 24.
McGraw-Hill, Inc.. *See*—
Dodge, F. W., Corp.
McKesson Laboratories: *See*—
Foremost-McKesson, Inc.
Medical Communications, Inc., Boston, Mass. 877,945, pub. 1–7–69. Cl. 107.
Megmb Hope Recordings, Altoona, Pa. 754,631, canc. Cl. 36.
Melville Shoe Corp., New York, N.Y. 754,692, canc. Cl. 39.
Merchants Co., The, d.b.a. Valley Mills, Vicksburg, Miss. 877,867, pub. 7–15–69. Cl. 46.
Metro International Distributors, Inc., Union City, N.J. 877,668, pub. 4–15–69. Cl. 18.
Metro-Monitor, Inc., Port Washington, N.Y. 754,657, canc. Cl. 38.
Meyer, Fred, Inc., Portland, Oreg. 877,674, pub. 5–13–69. Cl. 18.
Michigan Pharmacal Corp., Detroit, Mich. 877,672, pub. 7–15–69. Cl. 18.
Mid-States Welder Mfg. Co., Chicago, Ill. 877,776, pub. 7–15–69. Cl. 34.
Millipore Corp., Bedford, Mass. 877,746, pub. 7–15–69. Cl. 26.
Minit Burger Corp., Nashville, Tenn. 877,977. Cl. 100.
Minnesota Mining & Mfg. Co., d.b.a. 3M Co., St. Paul, Minn. 877,612–13, pub. 7–15–69. Cl. 5.
Minnesota Mining & Mfg. Co., d.b.a. 3M Co., St. Paul, Minn. 877,700, pub. 7–15–69. Cl. 21.
Minnesota Rubber Co., Minneapolis, Minn. 877,791–2, pub. 7–15–69. Cl. 35.
Mr. Boston Distiller Inc., Boston, Mass. 754,773, canc. Cl. 49.
Mitchell-Bradford Chemical Co., The, Milford, Conn. 877,629. pub. 7–15–69. Cl. 6.
Mobilab of New Hampshire, Inc., New London, N.H. 877,794, pub. 7–15–69. Cl. 36.
Mohawk Rubber Co., The, Akron, Ohio. 518,720, ren. 9–30–69. Cl. 35.
Mono Sales Corp., New York, N.Y. 877,824, pub. 7–15–69. Cl. 39.
Montclair Imports Inc., Westbury, N.Y. 877,768, pub. 7–15–69. Cl. 29.
Morris, Bervil E., Fresno, Calif. 754,541, canc. Cl. 22.
Morton International, Inc.: *See*—
Morton Salt Co.
Suppiger, G. S., Co., The.
Morton Salt Co., to Morton International, Inc., Chicago, Ill. 512,037, ren. 9–30–69. Cl. 46.
Moteurs Drouard (Societe Anonyme), Paris, France. 877,966. Cl. 21.
Mountain States Wholesale Co., Boise, Idaho. 877,890, pub. 7–15–69. Cl. 51.
Munsingwear, Inc., Minneapolis, Minn. 754,678, canc. Cl. 39.
Munters, Carl, & Co., Sollentuna, Sweden. 877,781, pub. 7–15–69. Cl. 34.
Nannette Mfg. Co., Inc., Philadelphia, Pa. 877,944, pub. 7–15–69. Cl. 107.
Nashau Corp.: *See*—
Perrygraf Corp.
National Bakers Services, Inc., Hollywood, Fla. 877,874, pub. 7–15–69. Cl. 46.
National Cylinder Gas Co., to Chemetron Corp., Chicago, Ill. 512,204, ren. 9–30–69. Cl. 14.
National Presto Industries, Inc., Eau Claire, Wis. 877,786, pub. 7–15–69. Cl. 34.
Natric Sales Co., Inc., New York, N.Y. 754,696, canc. Cl. 39.
Navarre Corp., The, Chattanooga, Tenn. 754,545, canc. Cl. 23.

Nazar Rubber Co., The, Toledo, Ohio. 877,598, pub. 7–15–69. Cl. 1.
Neotis S.A.S., Como, Italy. 877,614, pub. 7–15–69. Multiple Class (Classes 6, 18, 51, and 52).
Neotis S.A.S.: *See*—
Neotis S.p.A.
Neotis S.p.A., from Neotis S.A.S., Villaguardia, Como, Italy. 877,662, pub. 4–22–69. Cl. 18.
Newport Paipo: *See*—
Colburn, Con W.
Nino Gesellschaft mit beschrankter Haftung & Co., Nordhorn, Germany. 754,676, canc. Cl. 39.
Nino Gesellschaft mit beschrankter Haftung & Co., Nordhorn, Germany. 754,712, canc. Cl. 42.
Norstan Research & Development Co., Minneapolis, Minn. 754,791, canc. Cl. 101.
North Bros. Mfg. Co., Philadelphia, Pa., to The Stanley Works, New Britain, Conn. 510,904, ren. 9–30–69. Cl. 23.
North & Judd Mfg. Co., New Britain, Conn. 877,654, pub. 7–15–69. Cl. 15.
Norwood Studios, Inc., Washington, D.C. 754,646, canc. Cl. 38.
Nukem Products Corp., Buffalo, N.Y., to Amercoat Corp., Brea, Calif. 517,966, ren. 9–30–69. Cl. 12.
O & V Associates, Toledo, Ohio. 754,703, canc. Cl. 40.
Ocean Coffee Co., Inc., Shreveport, La. 877,868, pub. 5–20–69. Cl. 46.
Omas Co., Inc., Milwaukee, Wis. 754,708, canc. Cl. 40.
Oneida Ltd., Oneida, N.Y. 518,836, ren. 9–30–69. Cl. 28.
O'Neil Duro Co., Milwaukee, Wis. 877,657, pub. 7–15–69. Cl. 16.
Ostby & Barton Co., Providence, R.I. 877,748, pub. 7–15–69. Cl. 26.
Outdoor Supply Co., Inc., Oxford, N.C. 877,709, pub. 7–15–69. Cl. 22.
Owens-Corning Fiberglas Corp., Toledo, Ohio. 754,440, canc. Cl. 13.
Oxford Chemical Corp., d.b.a. Oxford Home Products, Atlanta, Ga. 877,908, pub. 7–15–69. Cl. 52.
Oxford Home Products: *See*—
Oxford Chemical Corp.
Pacific Union Association of Seventh-Day Adventists, d.b.a. Loma Linda Foods. La Sierra. Calif. 877,856, pub. 7–15–69. Cl. 46.
Packo, Joseph J., Fort Lauderdale, Fla. 877,632, pub. 7–15–69. Cl. 6.
Paine, Webber, Jackson & Curtis, New York, N.Y. 877,920, pub. 7–15–69. Cl. 100.
Pan American Bank of Miami, Miami, Fla. 512,333–4, ren. 9–30–69. Cl. 102.
Parents' Magazine's Education Press, Inc., The, New York, N.Y. 754,645, canc. Cl. 38.
Parma Motors, Inc., Parma, Ohio. 754,495, canc. Cl. 19.
Passco, Inc., Kansas City, Mo. 877,929, pub. 7–15–69. Cl. 101.
Pate Oil Co., Milwaukee, Wis., to Standard Oil Co., New York, N.Y. 512,125–6, ren. 9–30–69. Cl. 15.
Pate Oil Co., Milwaukee, Wis., to Standard Oil Co., New York, N.Y. 517,731, ren. 9–30–69. Cl. 15.
Pastene & Co., Inc., d.b.a. Splendor Products Co., and Pagliaccio Products Co., New York, N.Y. 519,239, ren. 9–30–69. Cl. 46.
Peacock, C. D., Inc., Chicago, Ill. 877,764, pub. 7–15–69. Cl. 28.
Perfume-by-Wire: *See*—
Candygram, Inc.
Perrygraf Corp., Maywood, Ill., to Nashau Corp., d.b.a. Perrygraf, Los Angeles, Calif. 511,559, ren. 9–30–69. Cl. 26.
Pet Inc.: *See*—
Scudder Food Products, Inc.
Peter, Strong & Co. Inc., New York, N.Y. 877,591, pub. 7–15–69. Cl. 1.
Photo-T: *See*—
Interstate Mail Film Service, Inc.
Pollak, Henry, Inc., New York, N.Y. 512,168–9, ren. 9–30–69. Cl. 39.
Pollak, Henry, Inc., New York. N.Y. 512,172, ren. 9–30–69. Cl. 39.
Pollak, Henry, Inc., New York N.Y. 512,177, ren. 9–30–69. Cl. 39.
Polymer Corp., The, Reading, Pa. 877,656, pub. 9–17–68. Cl. 16.
Porterville Citrus Association, The, Porterville, Calif. 877,-855, pub. 7–15–69. Cl. 46.
Pouliot Designs Corp., Minneapolis, Minn. 877,606, pub. 7–15–69. Multiple Class (Classes 2 and 50).
Power Tools Inc., Chicago, Ill. 754,549–50, canc. Cl. 23.
Precision Coating Service: *See*—
Duffens Optical Co.
Premier Drum Co. Ltd., The, South Wigston, Leicester, England. 877,796, pub. 7–15–69. Cl. 36.
Premiums Infinite, Inc., Rutland, Vt. 754,394, canc. Cl. 2.
Professional Tape Co., Inc., Riverside, Ill. 877,611, pub. 4–8–69. Cl. 5.
Prooflock International, Ltd., New York, N.Y. 877,744, pub. 7–15–69. Cl. 25.
Prym, William, Inc., Dayville, Conn. 877,957. Cl. 2.
Puig, Antonio, S.A., Barcelona City, Spain. 877,905, pub. 7–15–69. Cl. 52.
Puritan Fashions Corp., New York, N.Y. 754,689, canc. Cl. 39.
Quaker Oats Co., The, Chicago, Ill. 877,590, pub. 7–15–69. Cl. 1.
R & R Import Co., Elmira, N.Y. 754,707, canc. Cl. 40.
Rack Rite Distributors, Inc., Harrisburg, Pa. 877,669, pub. 7–15–69. Cl. 18.
Ralston Purina Co., St. Louis, Mo. 877,878, pub. 5–27–69. Cl. 46.
Ramsey Corp., St. Louis, Mo. 877,793, pub. 7–15–69. Cl. 35.
Red Spot Paint & Varnish Co. Inc., Evansville, Ind. 518,360, ren. 9–30–69. Cl. 16.
Redco, Inc., North Hollywood, Calif. 877,594, pub. 7–15–69. Cl. 1.
Redington Counters, Inc., Windsor, Conn. 877,760, pub. 7–15–69. Cl. 26.
Regua AG, & A. Hoeffleur Holding AG, Regensdorf, Switzerland. 877,694, pub. 7–15–69, Multiple Class (Classes 21 and 23).
Remwood Chemicals, Inc., Tulsa, Okla. 877,912, pub. 7–15–69. Cl. 52.
Republic Mills Corp., New York, N.Y. 754,688, canc. Cl. 39.
Republic Steel Corp., Cleveland, Ohio. 512,025, ren. 9–30–69. Cl. 14.
Reynolds, R. J., Foods, Inc., New York, N.Y. 877,873, pub. 7–15–69. Cl. 46.
Reynolds Metals Co., Richmond, Va. 877,652, pub. 7–15–69. Cl. 14.
Rheem Mfg. Co., New York, N.Y. 754,621, canc. Cl. 34.
Richard Best Pencil Co., Inc., Springfield, N.J. 508,752, ren. 9–30–69. Cl. 37.
Richardson, Essie D.: *See*—
Dewalssey, Evelyn R.
Ritter Pfaudler Corp.: *See*—
Sybron Corp.
Robbins Floor Products, Inc., Tuscumbia, Ala. 754,499, canc. Cl. 20.
Robertson Carpet Corp., New York, N.Y. 877,847. pub. 7–15–69. Cl. 42.
Rockwood Sprinkler Co. of Massachusetts, Worcester, Mass., to E. W. Bliss Co., South Portland, Maine. 512,039, ren. 9–30–69. Cl. 23.
Rodney Milling Co., to Seaboard Allied Milling Corp., d.b.a. The Lindsborg Milling and Elevator Co., Kansas City, Mo. 518,230, ren. 9–30–69. Cl. 46.
Rohto Pharmaceutical Co., Ltd., Osaka, Japan. 877,663, pub. 7–15–69. Cl. 18.
Rower Dental Mfg. Corp., Boston, Mass. 754,731–3, canc. Cl. 44.
Royal Valley Fruit Growers Association, d.b.a. Royal Valley Fruit Growers Ass'n, Reedley, Calif. 877,861, pub. 7–15–69. Cl. 46.
Ruberoid Co., The to GAF Corp., New York, N.Y. 510,687, ren. 9–30–69. Cl. 12.
Ruble Blade Corp., New York, N.Y., to Colton Razor Blade Co., Boston, Mass. 264,939–40, ren. 9–30–69. Cl. 23.
Rubinstein, Helena, Inc., New York, N.Y. 877,883, pub. 7–15–69. Cl. 51.
Rudd-Melikian, Inc., Hatboro, Pa. 754,609, canc. Cl. 31.
St. Lawrence Sales Inc., Birmingham, Mich. 754,665, canc. Cl. 39.
Sample Dress Mfg. Corp., Montreal, Quebec, Canada. 877,819, pub. 7–15–69. Cl. 39.
Samson Plastics, Inc., Cherry Hill, N.J. 877,879, pub. 7–15–69. Cl. 50.
Sanford Ink Co., Bellwood, Ill. 877,812, pub. 7–15–69. Cl. 37.
Schenker-Winkler, Fritz, Zurich, Switzerland. 754,411, canc. Cl. 6.
Schnadig Corp., Chicago, Ill. 754,612, canc. Cl. 32.
Schneider, Jos. & Co., Optische Werke Kreuznach, Rhineland, Germany. 877,754. pub. 7–15–69. Cl. 26.
Scudder Food Products, Inc., Monterey Park, Calif., to Pet Inc., St. Louis, Mo. 512,759, ren. 9–30–69. Cl. 46.
Schultz, Jack, Inc., St. Louis, Mo. 754,679, canc. Cl. 39.
Sea Rovers, Inc., Christiansted, St. Croix, Virgin Islands. 877,686, pub. 7–15–69. Cl. 19.
Seaboard Allied Milling Corp.: *See*—
Rodney Milling Co.
Sea-Glo Products, Inc., Kenyon, Minn. 877,870, pub. 7–15–69. Cl. 46.
Serval Pharmaceuticals, Inc., Fort Worth, Tex. 754,490, canc. Cl. 18.
Shawnee Milling Co., Shawnee, Okla. 518,617, ren. 9–30–69. Cl. 46.
Shingu Shoko, Ltd., Otaru, Hokkaido, Japan. 877,643, pub. 7–15–69. Cl. 12.
Shirey, Ferrell E., Greenville, Tex. 512,330, ren. 9–30–69. Cl. 39.
Siemens & Halske Aktiengesellschaft, Munich, Germany. 754,511, canc. Cl. 21.
Silent Knight Security Systems, Inc., Hopkins, Minn. 877,-697, pub. 7–15–69. Cl. 21.
Sills, Albert J., d.b.a. Sills & Associates, Glendale, Calif. 877,767, pub. 7–15–69. Cl. 29.
Sills & Associates: *See*—
Sills, Albert J.
Silvray-Litecraft Corp., Passaic, N.J. 877,704, pub. 7–15–69. Cl. 21.
Simmons Co., New York, N.Y. 513,424–5, ren. 9–30–69. Cl. 32.
Simmons Co., New York, N.Y. 518,793–4, ren. 9–30–69. Cl. 32.
Simmons, R. F., Co., Attleboro, Mass. 877,770, pub. 7–15–69. Cl. 30.
Siro Fashions, Inc., New York, N.Y. 754,681, canc. Cl. 39.
Smith, Elwin G., & Co., Inc., Emsworth, Pittsburgh, Pa. 754,429, canc. Cl. 12.
Smith Kline & French Laboratories, Philadelphia, Pa. 877,-679, pub. 7–15–69. Cl. 18.
Soabar Co., Philadelphia, Pa., to Avery Products Corp., San Marino, Calif. 513,831, ren. 9–30–69. Cl. 37.
Societe Anonyme Dite: Melle Bezons, Deux-Sevres, France. 877,634, pub. 7–15–69. Cl. 6.
Societe Des Usines Chimiques Rhone-Poulenc, Paris, France. 754,421, canc. Cl. 6.
Societe Des Usines Chimiques Rhone-Poulenc, Paris, France. 877,628, pub. 7–15–69. Cl. 6.
Sony Corp., Shinagawa-ku, Tokyo, Japan. 877,745, pub. 7–15–69. Cl. 26.

Sony Corp., Shinagawa-ku, Tokyo, Japan. 877,763, pub. 7–15–69. Cl. 27.
Sony Corp., Tokyo, Japan. 877,772, pub. 7–15–69. Cl. 32.
Sorgel Electric Corp., Milwaukee, Wis. 877,703, pub. 7–15–69. Cl. 21.
Southern Fiber Glass Products, Inc.: *See*—
Cobia Boats, Inc.
Sparkomatic Corp., Milford, Pa. 877,695–6, pub. 7–15–69. Cl. 21.
Sperry Rand Corp., New York, N.Y. 877,806, pub. 7–15–69. Cl. 37.
Sperry Rand Corp., New York, N.Y. 877,815, pub. 7–15–69. Cl. 38.
Spring-Go, Inc., Roseburg, Oreg. 754,537, canc. Cl. 22.
Stanco Inc., to Standard Oil Co., New York, N.Y. 261,793–4, ren. 9–30–69. Cl. 15.
Standard Garments, Inc., Baltimore, Md. 877,822, pub. 7–15–69. Cl. 39.
Standard Oil Co.: *See*—
Pate Oil Co.
Stanco Inc.
Standard Oil Co. of New Jersey.
Standard Oil Co., Flemington, N.J. 877,640, pub. 7–15–69. Cl. 10.
Standard Oil Co., Flemington, N.J. 877,823, pub. 7–15–69. Cl. 39.
Standard Oil Co., Flemington, N.J. 877,845, pub. 7–15–69. Cl. 42.
Standard Oil Co. of New Jersey, Wilmington, Del., to Standard Oil Co., New York, N.Y. 258,648, ren. 9–30–69. Cl. 16.
Stanley Works, The: *See*—
North Bros. Mfg. Co.
Star Porcelain Co., The, Trenton, N.J. 508,231, ren. 9–30–69. Cl. 21.
Star Textile & Research, Inc., Cohoes, N.Y. 877,599, pub. 7–15–69. Cl. 1.
Steamstir Corp., San Mateo, Calif. 754,513–14, canc. Cl. 21.
Stephan Co., The, Fort Lauderdale, Fla. 877,891, pub. 5–20–69. Cl. 51.
Sternco Industries, Inc., Harrison, N.J. 877,729, pub. 7–15–69. Multiple Class (Classes 23 and 32).
Stevens, J. P., & Co., Inc.: *See*—
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Stone Container Corp., Chicago, Ill. 877,734, pub. 7–15–69. Cl. 23.
Storz, Karl, K.G., Wuerttemberg, Germany. 877,974. Cl. 44.
Stromberg's, Albuquerque, N. Mex. 877,827, pub. 7–15–69. Cl. 39.
Strum & Drum, Inc., Wheeling, Ill. 877,797. pub. 7–15–69. Cl. 36.
Sumitomo Chemical Co., Ltd., Osaka, Japan. 877,903, pub. 7–15–69. Cl. 52.
Sundstrand Corp., Rockford, Ill. 877,753, pub. 7–15–69. Cl. 26.
Suppiger, G. S., Co., The, d.b.a. Scientific Tablet Co., St. Louis, Mo., to Morton International, Inc., Chicago, Ill. 518,156, ren. 9–30–69. Cl. 46.
Susquehanna Corp., The, Alexandria, Va. 877,638, pub. 7–15–69. Cl. 9.
Swingspout Measure Co., Los Angeles, Calif. 877,758, pub. 7–15–69. Cl. 26.
Swiss Colony, Inc., The, Monroe, Wis. 877,852, pub. 7–15–69. Cl. 46.
Sybron Corp.: *See*—
Barnstead Still & Sterilizer Co.
Sybron Corp., from Ritter Pfaudler Corp., Rochester, N.Y. 877,771, pub. 7–15–69. Cl. 31.
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Tackmer Corp., Palo Alto, Calif. 877,876, pub. 4–29–69. Cl. 50.
Tavaro S.A., Geneva, Switzerland. 877,735, pub. 7–15–69. Cl. 23.
Tec Co., Ltd., Tokyo, Japan. 877,795, pub. 7–15–69. Cl. 36.
Tec Co., Ltd., Tokyo, Japan. 877,798, pub. 7–15–69. Cl. 36.
Technical Porcelain and Chinaware Co., El Cerrito, Calif. 754,606, canc. Cl. 30.
Technicon Corp., Ardsley, N.Y. 877,751, pub. 7–15–69. Cl. 26.
Teco Societe Anonyme, Bois-De-Breux, Near Liege, Belgium. 442,829, ren. 9–30–69. Cl. 21.
Telesco Brophey Ltd., Montreal, Quebec, Canada. 877,844, pub. 7–15–69. Cl. 41.
Tele-Sound Productions, Inc., Washington, D.C. 754,793, canc. Cl. 101.
Tele-Vue Syatems, Inc., Seattle, Wash. 877,939, pub. 6–18–68. Cl. 104.
Tempo Record Co. of America, from Technical Research of America, to Tempo Record Co. of America, Hollywood, Calif. 514,336, ren. 9–30–69. Cl. 36.
Tennessee Corp., New York, N.Y. 754,415, canc. Cl. 6.
Tennis Development Corp., New York, N.Y. 877,846, pub. 7–15–69. Cl. 42.
Terry Sue Casuals, Inc., Miami, Fla. 877,831, pub. 7–15–69. Cl. 39.
Tested Appliance Co., Chicago, to Everpure, Inc., Oak Brook, Ill. 512,155, ren. 9–30–69. Cl. 31.
Thompson, John R., Co., Chicago, Ill. 754,753, canc. Cl. 46.
Thorn-AEI Radio Valves and Tubes Ltd., London, England. 754,632, canc. Cl. 36.
3M Co.: *See*—
Minnesota Mining & Mfg. Co.
Titan Industrial Corp., The, New York, N.Y. 754,455, canc. Cl. 14.
Toasta Foods Co., Minneapolis, Minn. 877,858, pub. 4–29–69. Cl. 46.
Topps Chewing Gum, Inc., Brooklyn, N.Y. 877,860, pub. 7–15–69. Cl. 46.
Tower Fabrics Co., Inc., New York, N.Y. 754,717. canc. Cl. 42.
Travaco Laboratories, Inc., Chelsea, Mass. 877,913, pub. 7–15–69. Cl. 52.
Trenton Milling Co., Trenton, Ill., to Martha White Foods, Inc., South Nashville, Tenn. 518,120, ren. 9–30–69. Cl. 46.
Trina, Inc., Providence, R.I. 877,609, pub. 7–15–69. Cl. 4.
Tussy Cosmetics, Inc., New York, N.Y. 877,910, pub. 4–8–69. Cl. 52.
Unicorn Products Ltd., Forest Hill, London, England. 877,708, pub. 7–15–69. Cl. 22.
Union Carbide Corp., New York, N.Y. 877,596, pub. 7–15–69. Cl. 1.
United Laboratories, Ltd., Montreal, Quebec, Canada. 877,664, pub. 7–15–69. Cl. 18.
United Merchants and Manufacturers, Inc., New York, N.Y. 877,769, pub. 7–8–69. Cl. 29.
United Piece Dye Works, The, Lodi, N.J. 512,299, ren. 9–30–69. Cl. 106.
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United Piece Dye Works, The, Lodi, N.J. 514,289, ren. 9–30–69. Cl. 106.
United Piece Dye Works, The, Lodi, N.J. 514,613, ren. 9–30–69. Cl. 106.
United Shoe Repairing Machine Co., Boston, Mass. 754,566, canc. Cl. 23.
United States Bedding Co., The, St. Paul, Minn. 877,774, pub. 7–15–69. Cl. 32.
U.S. Dept. of the Interior, Washington, D.C. 877,917, pub. 7–15–69. Cl. 100.
U.S. Franchise Corp., San Francisco, Calif. 877,923, pub. 5–27–69. Cl. 100.
United States Steel Corp., Pittsburgh, Pa. 754,456, canc. Cl. 14.
United Steel Companies Ltd., The, Sheffield, England. 754,544, canc. Cl. 23.
Universal Cigar Corp., New York, N.Y. 877,660, pub. 7–15–69. Cl. 17.
Universal Oil Products Co., Des Plaines, Ill., from Bostrom-Amalga Corp., Menomonee Falls, Wis. 877,592, pub. 7–15–69. Cl. 1.
Universal Oil Products Co., d.b.a. Ref Dynamics Division, Des Plaines, Ill. 877,782, pub. 7–15–69. Cl. 34.
Universal Research Corp., Philadelphia, Pa. 754,510, canc. Cl. 21.
Universal Sanitary Equipment Mfg. Co., Inc., Tomah, Wis. 877,737, pub. 7–15–69. Cl. 23.
University Medical Laboratory Service, Inc., Chicago, Ill. 754,789, canc. Cl. 100.
Van Sciver, J. B., Co., Camden, N.J. 518,064, ren. 9–30–69. Cl. 32.
Varigraph Co., The, Lincoln, Nebr., to Varigraph Inc., Madison, Wis. 512,249. ren. 9–30–69. Cl. 26.
Variagraph Inc.: *See*—
Variagraph Co., The.
Varo, Inc., Garland, Tex. 877,701, pub. 7–15–69. Cl. 21.
Varona, Angela, Cosmetics, Inc., Brooklyn, N.Y. 877,892–3, pub. 7–15–69. Cl. 51.
Victor Comptometer Corp., Chicago, Ill. 877,711, pub. 7–15–69. Cl. 22.
Victorius, A. V., & Co., New York, N.Y., to Wear Right Hosiery Co., Inc., Claremont, N.C. 260,058, ren. 9–30–69. Cl. 39.
Vitatron N.V., Dieren, Netherlands. 877,747, pub. 7–15–69. Multiple Class (Classes 26 and 44).
Vox Productions, Inc., New York, N.Y. 877,802, pub. 7–15–69. Cl. 36.
Wardley Products Co., Inc., Long Island City, N.Y. 877,857, pub. 7–15–69. Cl. 46.
Warren's Turf Nursery, Inc., Palos Park, Ill. 877,587, pub. 7–15–69. Multiple Class (Classes 1 and 10).
Wasco Engineering Corp., New York, N.Y. 517,704, ren. 9–30–69. Cl. 6.
Washington Financial Reports, Inc., Washington, D.C. 754,654. canc. Cl. 38.
Wear Right Hosiery Co., Inc.: *See*—
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Weller Electric Corp., Easton, Pa. 877,785, pub. 7–15–69. Cl. 34.
Wells Television, Inc., New York, N.Y. 877,698, pub. 7–15–69. Cl. 21.
West Chemical Products, Inc.: *See*—
West Disinfecting Co.
West Disinfecting Co., to West Chemical Products, Inc., Long Island City, N.Y. 264,663, ren. 9–30–69. Cl. 52.
West Disinfecting Co., to West Chemical Products, Inc., Long Island City, N.Y. 264,711, ren. 9–30–69. Cl. 52.
West Virginia Pulp and Paper Co., to Westvaco Corp., New York, N.Y. 518,473, ren. 9–30–69. Cl. 21.
Western Family Foods, Inc., San Francisco, Calif. 877,804, pub. 7–15–69. Cl. 37.
Western Wood Products Assn., Portland, Oreg. 877,949–56, pub. 7–15–69. Cl. A.
Westfield Watch Co., Inc., New York, to Bulova Watch Co., Inc., Flushing, N.Y. 265,362, ren. 9–30–69. Cl. 27.
Westfield Watch Co., Inc., New York, to Bulova Watch Co., Inc., Flushing, N.Y. 517,969, ren. 9–30–69. Cl. 27.
Westinghouse Electric Corp., East Pittsburgh, Pa. 512,642, ren. 9–30–69. Cl. 21.
Westvaco Corp.: *See*—
West Virginia Pulp & Paper Co.

Weyerhaeuser Co., Tacoma, Wash. 754,392, canc. Cl. 2.
Wham-O Mfg. Co., San Gabriel, Calif. 877,968. Cl. 22.
Wharf Forging and Welding Corp., Boston, Mass. 877,713, pub. 7–15–69. Cl. 22.
Whirlpool Corp., St. Joseph, Mich. 754,622, canc. Cl. 34.
White Cross Stores, Inc., Monroeville, Pa. 877,899, pub. 7–15–69. Cl. 51.
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Trenton Milling Co.
Wilbar Casting Co., Inc., Buffalo, N.Y. 877,766, pub. 7–15–69. Cl. 28.
Williams, John M., Phoenix, Ariz. 877,969. Cl. 22.
Wilson, Murray, New York, N.Y. 877,833, pub. 7–15–69. Cl. 39.
Wilson Sporting Goods Co., River Grove, Ill. 877,715, pub. 7–15–69. Cl. 22.
Wirth Co, Inc.: *See*—
Wirth, Leon J.
Wirth, Leon J., d.b.a. Wirth Co. Inc., Oakland, Calif. 877,959. Cl. 6.
Wolf Machine Co., The, Cincinnati, Ohio. 518,652, ren. 9–30–69. Cl. 23.
Wolo AG, Zurich, Switzerland. 877,683, pub. 7–15–69. Multiple Class (Classes 18 and 51).
Wolverine Insurance Co., Federal Life and Casualty Co., Secured Insurance Co., Riverside Insurance Co., Battle Creek, Mich. 754,797, canc. Cl. 102.
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Wood, G. H., Co. Ltd., Toronto, Ontario, Canada, to Woodlets, Inc., Buffalo, N.Y. 514,189, ren. 9–30–69. Cl. 6.
Wood, J. A., Co., Growers, Packers & Shippers: *See*—
Goldstine, Sam, & Son.
Woodlets, Inc.: *See*—
Wood, G. H., & Co. Ltd.
Wyandotte Chemicals Corp., Wyandotte, Mich. 877,619, pub. 7–15–69. Cl. 6.
Yardley of London, Inc., Totowa, N.J. 877,887, pub. 7–15–69. Cl. 51.
Young Associates, The, Santa Monica, Calif. 877,649, pub. 7–15–69. Cl. 13.
Zahn, Joseph B., & Sons, Inc., Jericho, N.Y. 877,707, pub. 7–15–69. Cl. 22.
Zavody Antonina Zapotockeho, Narodni Podnik, Jaromer, Czechoslovakia. 877,627, pub. 1–28–69. Cl. 6.
Ziller, Stephen A., Kansas City, Mo. 517,567, ren. 9–30–69. Cl. 38.

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